CarbonFrontier

CLASS VI PERMIT

APPLICATION NARRATIVE

40 CFR 146.82(a)

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AERA

Aera Energy LLC and Geosyntec Consultants, Inc., with technical support from SLB, Blade Energy Partners, and Netherland, Sewell & Associates, prepared the documents that comprise the Class VI Permit Application

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CLASS VI PERMIT APPLICATION
NARRATIVE 40 CFR 146.82(a)
CarbonFrontier Project

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Appendix 5A Class VI CO_2 Injection and Monitoring Well Construction Details

Appendix 5B FEED Study for the Aera North Belridge CCS Project

ACRONYMS AND ABBREVIATIONS

ΔSh	horizontal stress
°	degrees
1D MEM	one-dimensional Mechanical Earth Model
2D	two-dimensional
3D	three-dimensional
Aera	Aera Energy LLC
ANSI	American National Standards Institute
AoI	Area of Interest
AoR	Area of Review
API	American Petroleum Institute
atm	atmospheric units
BCF	billion cubic feet
bgs	below ground surface
Breitburn	Breitburn Operating LP
CalGEM	California Geologic Energy Division
CCS	Carbon Capture and Sequestration
CFR	Code of Federal Regulations
CGS	California Geological Survey
CO_2	carbon dioxide
CRA	corrosion-resistant alloy
CUP	Conditional Use Permit
DAS	distributed acoustical sensing
DOGGR	Division of Oil, Gas, and Geothermal Resources
DSA	discontinuity stability analysis
DTS	distributed temperature sensing
DWR	Department of Water Resources
ECS	elemental capture spectroscopy
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
Fm	formation

FSA	fault stability analysis
ft	feet
g/cm^3	grams per cubic centimeter
gCO_2e/MJ	grams of CO_2 equivalent per megajoule
GAMA	Groundwater Ambient Monitoring and Assessment
GES	Groundwater and Environmental Services Inc.
Greka	Greka Oil & Gas Inc.
GWB	Geochemist's Workbench™
HCl	hydrochloric acid
I/S	illite/smectite
K-feldspar	potassium feldspar
Km	kilometer(s)
LCM	lost circulation material
LLNL	Lawrence-Livermore National Laboratory
m.y.	million years
Ma	million years before present
MD	measured depth
mD	millidarcy
mD.ft	milliDarcy feet
mg/L	milligrams per liter
MM mt	million metric tons
MM mt/yr	million metric tons per year
mm/year	millimeters per year
mol/L	moles per liter
MSCFD	thousand standard cubic feet per day
nD	nanodarcy
NMR	nuclear magnetic resonance
NTG	net-to-gross
OBMI	oil-based microimager
PISC	Post-Injection Site Care
PoSTM	post-stack time migrations

ppg	parts per gram
psi	pounds per square inch
psi/ft	pounds per square inch per foot
psia	pounds per square inch absolute
QA	quality assurance
QC	quality control
Q:F:R	quartz, feldspar, and lithic (rock)
RWQCB	Central Valley Regional Water Quality Control Board
SAF	San Andreas Fault
SCADA	Supervisory Control and Data Acquisition
SCEDC	Southern California Earthquake Data Center
SEM	scanning electron microscope
SI	saturation index
SWRCB	California State Water Resources Control Board
TD	total depth
TDS	total dissolved solids
TRA	tight rock analysis
TVD	true vertical depth
TVDss	true vertical depth sub sea level
TVT	true vertical thickness
UCS	unconfined compressive strength
UIC	Underground Injection Control
USDWs	underground sources of drinking water
USGS	United States Geological Survey
v/v	volume per volume
Wood	Wood Environmental & Infrastructure Solutions, Inc.
wt.%	percent weight
XRMI	extended range micro-imager
XRD	X-ray diffraction
XRF	X-ray fluorescence

Version History

File Name	Version	Date	Description of Change
Aera CCS Application Narrative.pdf	1	January 19, 2023	Original document
CarbonFrontier Application Narrative_REV1_03062023.pdf	2	March 6, 2023	Revisions made based on EPA administrative review comments from February 23, 2023
CarbonFrontier Application Narrative V3 12202023.pdf	3	December 21, 2023	Revisions made based on EPA Technical Review comments from October 10, 2023
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1. PROJECT BACKGROUND AND CONTACT INFORMATION

GSDT Submission - Project Background and Contact Information
GSDT Module: Project Information Tracking **Tab(s):** General Information tab; Facility Information and Owner/Operator Information tab Please use the checkbox(es) to verify the following information was submitted to the GSDT: ☒Required project and facility details **[40 CFR 146.82(a)(1)]**

1.1 Project Summary/Background

Aera Energy LLC (Aera) is submitting the following preconstruction phase application for its CarbonFrontier Carbon Capture and Sequestration (CCS) Project (Project). Aera proposes to construct and operate geologic sequestration wells located in Kern County, California. This narrative document summarizes the detailed information found in the following attachments, which are based on templates provided by the U.S. Environmental Protection Agency (EPA):

- Attachment A: CarbonFrontier Summary of Requirements
- Attachment B: CarbonFrontier Area of Review and Corrective Action Plan
- Attachment C: CarbonFrontier Financial Responsibility Demonstration

- Attachment D: CarbonFrontier Pre-Operational Well Testing Plan
- Attachment E: CarbonFrontier Testing and Monitoring Plan
    - Quality Assurance and Surveillance Plan
- Attachment F: CarbonFrontier Injection Well Plugging Plan
- Attachment G: CarbonFrontier Post-Injection Site Care (PISC) and Site Closure Plan
- Attachment H: CarbonFrontier Alternative PISC Timeframe
- Attachment I: CarbonFrontier Emergency and Remedial Response Plan
- Attachment J: CarbonFrontier Stimulation Plan
- Attachment K: CarbonFrontier Construction Details

The proposed Project is located in the Central Valley portion of unincorporated Kern County (**Figure 1.1-1**) and is primarily contained within the South and North Belridge oil fields located approximately seven miles southwest of the community of Lost Hills and west of Highway 33. Together, the two Belridge oil fields cover an area of approximately 13 miles long and three miles wide. Aera is the primary operator within both oil fields and will develop and operate the CarbonFrontier Project. **Figure 1.1-2** displays a map of pertinent features within the Area of Review (AoR) to fulfill the requirements of 40 Code of Federal Regulations (CFR) 146.82(a)(2).

The proposed Project would capture carbon dioxide (CO_2) from existing produced gas streams (pre-combustion) and emissions from existing stationary sources (post-combustion) within the South Belridge oil field and transport the CO_2 through a new, approximately 10-mile long, pipeline to the North Belridge oil field. There, the CO_2 would be injected into nine dedicated Underground Injection Control (UIC) Class VI injection wells and permanently sequestered in a depleted oil and gas reservoir, roughly 8,500 feet (ft) below the ground surface. CO_2 pipelines and associated infrastructure will be sized to also accept CO_2 from yet to-be-determined third-party sources, received by truck and pipeline. **Figure 1.1-1** displays the main Project components within the North Belridge oil field. Refer to **Table 1-1** below for a list of the proposed injection and monitoring wells. The proposed underground CO_2 sequestration field would be located within the North Belridge oil field with surface and mineral rights held by Aera and other private owners. Oil and gas production activities within the proposed underground CO_2 sequestration field would cease as a result of the implementation of the proposed Project.

As indicated above, the Project will also have the potential to receive third-party sources of CO_2, though none have been secured at this time. The Project, as proposed, will have the capacity to inject up to approximately 3.3 million metric tons per year (MM mt/yr) CO_2 starting in 2026 (pending regulatory approvals) and will operate for approximately 9.5 years, permanently sequestering a total of roughly 31.7 MM mt CO_2. Monitoring activities will occur throughout the operational life of the Project and will continue for 15 years after cessation of injection after which, the site will be closed.

CO_2 injection for the proposed Project will occur in a depleted oil and gas reservoir with saline formation water, more than a mile below any potential underground sources of drinking water (USDWs); therefore, neither an injection depth waiver nor an aquifer exemption expansion are requested.

1.2 Carbon Dioxide Capture Method

1.2.1 Pre-Combustion Capture: Process Description Summary

Aera is proposing to use an ammonia- or amine-based reactive solvent as the CO_2 capture technology on associated produced gas streams. In this process, produced natural gas from Aera's existing operations will be directed to a dedicated CO_2 capture facility in Section 32, Township 28 South, Range 21 East, Mound Diablo Base and Meridian. In that CO_2 capture facility, the produced gas stream will be passed through an absorber column where the absorbent will chemically react with and bind over 90% of the incoming CO_2. The rich absorbent carrying CO_2 will be piped to a regenerator column, where, through the combination of reduced pressure and applied heat, the CO_2 will be released and captured in nearly pure concentration. Following CO_2 release, the reconstituted absorbent will be recycled back to the absorber column. The captured CO_2 will be compressed, dehydrated, and directed to the sequestration storage site. The proposed CO_2 capture facility is expected to yield a total volume of approximately 0.2 MM mt/yr CO_2. The fully processed produced gas stream will have a carbon intensity of about 56 grams of CO_2 equivalent per megajoule ($gmCO_2e/MJ$), reduced from the preprocessing value of about 80 $gmCO_2e/MJ$.

1.2.2 Post-Combustion Capture: Process Description Summary

Aera is proposing to use an amine-based reactive solvent as the post-combustion capture technology. In this process, flue gas from several existing stationary sources (e.g., steam generators and cogeneration facility) will be ducted to a dedicated CO_2 capture facility. In the CO_2 capture facility, the flue gas will be cooled before passing through an absorber column where an absorbent will chemically react with and bind about 90 percent of the CO_2. The remaining flue gas (primarily oxygen, nitrogen, and the remaining uncaptured CO_2), will be vented to the atmosphere. The rich absorbent carrying CO_2 will be piped to a regenerator column, where, through the application of heat, the CO_2 will be released and captured in relatively pure concentration. Following CO_2 release, the lean absorbent will be recycled back to the absorber column. The CO_2 will then be compressed, dehydrated, removed of oxygen, and piped to the sequestration storage site. The proposed post-combustion CO_2 capture facilities are expected to yield a total volume of approximately 1.3 MM mt/yr CO_2.

1.2.3 Imported CO_2: Process Description Summary

California's commitment to carbon neutrality by 2045 (Executive Order B-55-18) and goal to decrease the carbon intensity of existing industries is expected to stimulate development of carbon capture projects in the state. While most projects remain speculative, Aera anticipates a need for CO_2 storage services in the future and will design the project to receive outside sources of CO_2 by truck and pipeline to supplement the pre- and post-combustion streams, up to the project's injection capacity. While these sources are not yet defined, imported CO_2 is likely to come from carbon-intensive sectors and where carbon capture incentives are in place (e.g., direct air capture, blue

hydrogen, power plants, other oil and gas operators). Imported CO_2 will be restricted to a composition specification, closely aligned with Aera's proposed pre- and post-combustion CO_2 streams.

1.3 Contact Information

Aera Energy LLC
Faisal Latif, Storage Development Manager
(661) 763-6274, Faisal.latif@crc.com

1.4 Project Goals

- Construct and operate facilities and infrastructure to capture, transport, inject, and permanently sequester up to 42.6 MM Mt of CO_2 in a safe, secure, and economically feasible manner for storage, not enhanced recovery.
- Minimize new disturbance by siting and designing project facilities and infrastructure within the existing developed oil field footprint.
- Reduce the carbon intensity of Aera's produced oil and gas by capturing CO_2 from produced gas and stationary sources.
- Generate environmental, social, and economic benefits for Kern County and the State of California by implementing low carbon technologies, developing CCS infrastructure, and providing living-wage jobs in the region.
- Contribute to California's goal to achieve carbon neutrality by 2045 (Executive Order B-55-18) by integrating carbon capture in existing operations as well as ending oil and gas production from select reservoirs and repurposing them for the permanent storage of CO_2.

1.5 Required Permits/Consultations

Table 1-2 identifies local, state, and federal agencies that have or may have jurisdiction over the proposed Project. The status of each consultation is noted for each of the permits that are in progress. Note: for some permits, the Project is in the process of evaluating if a permit/approval would be needed; hence, this list will be updated to reflect changes regarding agencies that may have jurisdiction over the proposed Project.

1.6 Environmental Review

A Conditional Use Permit/Zone Change (CUP/ZC) application was submitted to Kern County Planning and Natural Resources Department on July 7, 2022, and the application was deemed complete on September 26, 2022. Issuance of a CUP is a discretionary action that requires compliance with the California Environmental Quality Act, and Kern County has determined that the proposed Project will require the preparation of an Environmental Impact Report (EIR). The EIR will analyze the environmental effects of the proposed Project and will identify measures to avoid, minimize, and mitigate environmental impacts. During the public review period of the EIR, stakeholders are consulted, including tribes, community members, and other federal, state, and local agencies. For a list of state, tribe, and territory contacts please refer to **Table 1-3**.

1.6.1 Endangered Species Act: Section 7 Consultation

Section 7(a)(2) of the Endangered Species Act requires that, for actions authorized, funded, or carried out by a federal agency, the agency shall consult with the United States Fish and Wildlife Service and/or the National Marine Fisheries Service to promote actions that will not jeopardize the continued existence of listed species or adversely modify designated critical habitat. To facilitate this consultation, the applicant prepared a biological assessment that was submitted to the EPA in December 2023.

1.6.2 National Historic Preservation Act: Section 106 Consultation

Section 106 of the National Historic Preservation Act requires a federal agency to identify and assess the effects its proposed action may have on historic properties and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the proposed action. Therefore, prior to issuance of a UIC Class VI Permit, the EPA must consider the effect issuance of the permit may have on historic properties. Historic properties may include prehistoric or historic districts, sites, buildings, structures, objects, sacred sites, and traditional cultural places, that are included in, or eligible for inclusion in, the National Register of Historic Places. The consultation process provides for participation by several stakeholders including, but not limited to, the State Historic Preservation

Officer, the Tribal Historic Preservation Officer, tribal, state, and local governments, Indian tribes and Native Hawaiian organizations, interested organizations, private citizens, and the public. To help facilitate this consultation, the applicant has prepared a cultural resources inventory that was submitted to the EPA in July 2023.

2. SITE CHARACTERIZATION

2.1 Regional Geology, Hydrogeology, and Local Structural Geology [40 CFR 146.82(a)(3)(vi)]

The Area of Interest (AoI) includes the North Belridge oil field and adjacent area and is described further in **Sections 2.2** and **3.0**. The AoI is located along the western side of the southern San Joaquin Basin, within the southern portion of California's Central Valley. The San Joaquin Basin is part of the Great Valley geomorphic province, which forms an asymmetrical structural trough approximately 400 miles long and approximately 50 miles wide in Central California (**Figure 2.1-1**; Bailey 1966).

The Great Valley formed in the Mesozoic Era as a forearc basin between the subducting Farallon plate and associated Franciscan subduction complex to the west and the Sierra Nevada magmatic arc to the east (Ingersoll 1979, 1982; Dickinson 1995). The Jurassic to Cretaceous history of the basin is recorded by the basement rocks, the Coast Range Ophiolite and Franciscan Complex to the west, and the Sierra Nevada Batholith to the east (**Figure 2.1-2**; Bailey and Blake 1974; Wentworth et al. 1984; Hosford Scheirer and Magoon 2007). Over 30,000 ft of sedimentary rocks infill the basin, recording approximately 100 million years (m.y.) of sedimentation (**Figure 2.1-3**; Peters et al. 2007; Hosford Scheirer and Magoon 2007), which includes the shift from basin-wide depositional sequences to more localized depositional sequences (Bartow 1991). While late Cretaceous to Paleocene marine sedimentary rocks are observed in the central and northern San Joaquin Basin, they have not been identified within the lateral and vertical extents of the AoI near the southern end of the San Joaquin Basin (**Figures 2.1-4** and **2.1-5**; Bartow 1991; Hosford Scheirer and Magoon 2007). Late Cretaceous sedimentary rocks do occur west of the AoI within the Temblor Range (Dibblee 2006) and, therefore, are likely present within the AoI below the extent of historical petroleum exploration.

A marine depositional environment persisted in the southern San Joaquin Basin from the Paleocene through the Oligocene as the basin amassed a thick succession of mudstones and sands in bathyal to subtidal depths (Bartow 1991; Hosford Scheirer and Magoon 2007). These strata represent some of the oldest sedimentary units in the southern end of the basin (i.e., the Eocene Kreyenhagen Formation [Fm]) (Hosford Scheirer and Magoon 2007).

In the Oligocene, approximately 30 m.y. before present (Ma), subduction of the East Pacific Rise caused a dramatic shift from a convergent to transform continental margin, establishing the San Andreas Fault (SAF) (Atwater 1970; Atwater and Molnar 1973; Page and Engebretson 1984; Bent 1985) and marking the end of basin-wide depositional sequences (**Figure 2.1-6**; Blake et al. 1978; Bartow 1991). The deposition of the Temblor Fm along the western margin of the southern San Joaquin Basin coincided with this change in tectonic regime and this formation contains the injection zone "64 Zone" turbidite sands facies (regionally recognized as the Wygal Member consisting of the "Bloemer" or "First Phacoides" Sandstone, and "Main Phacoides" or "Wygal" Sandstone) and the primary confining zone facies of the Lower Santos Shale (Bent 1985; Carter 1985; Taylor and Soule 1993; Hosford Scheirer and Magoon 2007).

The Temblor Fm is stratigraphically complex and comprises up to three unconformities and four depositional sequences in the southwestern San Joaquin Basin and within the AoI (Bent 1985; Johnson and Graham 2007). In the central San Joaquin Basin, west of present-day Fresno, the Temblor Fm consists of a single marine sandstone facies (Cooley 1985; Hosford Scheirer and Magoon 2007). In contrast, on the western side of the central San Joaquin Basin, near Coalinga, the Temblor Fm consists of complexly bedded basal conglomerates, sandstones, siltstones, and claystones of variable thickness (Bridges and Castle 2002). In the southwestern San Joaquin Basin, the Temblor Fm comprises interbedded deposits of shales and sandstones (Bent 1985; Carter 1985; Callaway 1990; Johnson and Graham 2007). Many of the distinctive beds of the Temblor Fm observed on the southwestern side of the basin have equivalent/similar deposits on the southeastern side (Callaway 1990; Hosford Scheirer and Magoon 2007), although some shale deposits appear to be continuous across the axis of the San Joaquin Basin, that is, approximately 10 miles to the east of the North Belridge oil field (Bartow 1990; Callaway 1990; Hosford Scheirer and Magoon 2007). Transpression along the SAF resulted in localized uplift (i.e., the Diablo Range) and partially isolated the San Joaquin Basin from the Pacific Ocean to the west (Nilsen 1984; Bent 1985; Graham and Williams 1985; Bartow 1991). Over time, this restriction deprived the basin of oxygen, creating conditions for abundant diatom blooms and the deposition of thousands of feet of bio-siliceous mudrocks of the Miocene Monterey Fm, which overlies the Temblor Fm (Graham and Williams 1985; Johnson and Graham 2007).

Continued transpression along the SAF during the Mio-Pliocene led to the continued folding and uplift in the Temblor and Diablo Ranges, as well as the formation of many of the NW-SE trending fold-belts on the west side of the San Joaquin Basin (Harding 1976; Blake et al. 1978; Bartow 1991). The resulting anticlines, synclines, and faulted structures have contributed to the localization of hydrocarbon resources in the region, serving as structural traps and delineating most of the existing oil fields in the area (**Figure 2.1-7**; Harding 1976).

Progressive right-lateral slip along the SAF continued through the Pliocene, gradually closing off the basin from any marine influence. The resulting sedimentary deposits record the gradual transition from a shallow marine (Pliocene Etchegoin Fm), marginal marine (Plio-Pleistocene San Joaquin Fm), to freshwater lacustrine and fluvial (Pleistocene Tulare Fm) depositional environments and document the final stages of the San Joaquin Basin fill (Bartow 1991; Hosford Scheirer 2007).

2.1.1 Hydrologic Setting

The San Joaquin Valley Groundwater Basin is located within the San Joaquin River and Tulare Lake hydrologic regions . The southern and largest portion of the San Joaquin Valley Groundwater Basin lies within the Tulare Lake hydrologic region. The San Joaquin Valley Groundwater Basin consists of nine groundwater subbasins: Kings, Westside, Kaweah, Tulare Lake, Pleasant Valley, Kettleman Plain, Tule, Kern County, and White Wolf (Central Valley Regional Water Quality Control Board [RWQCB] 2008). The Kern County Groundwater Subbasin has an area of 3,040 square miles and is the southernmost division of the San Joaquin Valley Groundwater Basin (California Department of Water Resources [DWR] 2003). The AoI is located within the southwestern portion of the Kern County Groundwater Subbasin (**Figure 2.1-8**).

Groundwater occurs in disconnected, isolated locations scattered between oil-bearing zones throughout the southwestern San Joaquin Valley, with several large groundwater basins underlying the valley floor. In the western portion of the Kern County Groundwater Subbasin, the continental Pleistocene-aged Tulare Fm consists of poorly consolidated, interbedded, oxidized to reduced sands, gypsiferous clays, and gravels derived from the Temblor Range (DWR 2003). Additionally, within the Tulare Fm are interbedded clay layers of lacustrine origin (i.e., the regional Corcoran Clay) (Croft 1972; Gillespie et al. 2019). The Tulare Fm is locally overlain by the Pleistocene age Older Alluvium, which consists of poorly consolidated to cemented lenticular deposits of clay, silt, sand, and gravel (Bean and Logan 1983; DWR 2003). These deposits are often indistinguishable from the underlying Tulare Fm and are primarily exposed along the basin margins. The Older Alluvium is not present within the AoI. The uppermost deposit in the western portion of the Kern County Groundwater Subbasin and North Belridge oil field is the Holocene age continental Alluvium, composed of unconsolidated deposits of interstratified beds, stringers, and lenses of sand, silt, clay, and gravel also sourced from the Temblor Range (Bean and Logan 1983; DWR 2003). A basal alluvial clay layer may be locally present and marks the contact between the Alluvium and underlying Tulare Fm (Gillespie et al. 2019). However, differentiation of the Alluvium and Tulare Fm from geophysical logs or boring logs is difficult due to their similar composition, provenance, and depositional processes. The Tulare Fm is typically structurally deformed from folding and faulting and overlies various marine formations. In the southwest San Joaquin Basin, the Tulare Fm has been interpreted to represent a fluviodeltaic system with fluvial, alluvial, and lacustrine deposits. The thickening of the Tulare Fm towards the basin to the east suggests concurrent deposition and structural growth of the fold-fault system (Aera and Greka Oil & Gas Inc. [Greka] 2018).

2.1.2 Site-Specific Overview

The North Belridge oil field is a northwest trending, doubly plunging anticline with dips on the west flank of approximately 45 degrees (°) and on the east flank of approximately 35° (Kaczorowski et al. 1986). The macro-structure is that of an open fold with an axial trend of 150° and axial plane dipping approximately 85° to the northeast. The field contains NW-SE striking bounding faults on either side of the anticline, a roughly N-S striking bounding fault in the southern portion of the North Belridge oil field, and a SW-NE striking fault that crosscuts the structure near its northern nose. A more detailed discussion of the faults and fractures within the AoI is presented in **Section 2.3** and a detailed description of the seismic history for the AoI is presented in **Section 2.6.**

The major stratigraphic units observed at the North Belridge oil field are shown in **Figures 2.1-9** and **2.1-10**. The proposed CO_2 storage complex for this Project lies within the Oligo-Miocene Temblor Fm. The stratigraphic units present within the AoI/North Belridge oil field include the following:

- Tulare Fm: 0.6 to 2.5 Ma
- San Joaquin Fm: 2.5 to 4.5 Ma
- Etchegoin Fm: 4.5 to 5.5 Ma

- Monterey Fm: 5.5 – 16 Ma
- Temblor Fm: 16 to 33 Ma
- Tumey Fm: 33 to 37 Ma
- Kreyenhagen Fm: 37 to 48.5 Ma
- Basement: 66 to 160 Ma

The proposed injection zone within the AoI is the "64 Zone" Sandstones of the Lower Temblor Fm. As illustrated in **Figure 2.1-9**, within the AoI, the Temblor Fm is divided into five stratigraphic Members. From stratigraphic base to the top of the Temblor Fm, these Members include: the Salt Creek/Cymric Shale Member; the 64 Zone/Wygal Sandstone Member; the Santos Shale Member; the Carneros Member; and the Media Shale Member. Where distinctive patterns of interbedded sandstone and shale are observed, individual beds may have unique names, such as the Gibson Sandstone bed within the Salt Creek Shale Member and the Agua Sandstone bed(s) within the Santos Shale Member. In some cases, a variety of names have historically been used to identify the same units at different times or places in the region, as well as in various oil field operations. The nomenclature presented in this application attempts to unify the most common naming conventions presented in literature with the operational names in common use in the North Belridge oil field. To that end, throughout this application, the Wygal Sandstone Member is referred to as the 64 Zone.

The 64 Zone Sandstones are interbedded within deep water shale deposits (the underlying Cymric/Salt Creek Shale and the overlying Lower Santos Shale) (Carter 1985; Bartow 1991; Taylor and Soule 1993). The overlying strata consist of interbedded sandstones and shales, which provide numerous thick confining layers (Lower and Upper Santos Shale, as well as the Media Shale), and monitoring zones (Agua Sandstone).

The Santos Shale is generally described as medium dark gray to dark-brownish gray clayey to silty shale that becomes siltier, sandier, and more siliceous up-section (Carter 1985; Adkinson 1973). The Santos Shale can be divided into the "Upper Santos" and "Lower Santos," separated by the Agua Sandstone (Adkinson 1973 and references therein). The primary confining zone is the Lower Santos Shale and the secondary confining zone is the Upper Santos Shale (see **Section 2.4** for further discussion). Maps, cross sections, and additional discussion on the site-specific geologic features and structures are presented in **Section 2.2**.

The Temblor Fm within the AoI is underlain by the Tumey Fm and the Kreyenhagen Fm (**Figures 2.1-9** and **2.1-10**). The Tumey Fm consists of the Oceanic Sandstone bed overlain by the Tumey Shale. The depth to the top of the Tumey Fm on the anticline is on average approximately 8,000 ft true vertical depth (TVD) below mean sea level (ft TVDss). The Tumey Fm has an average stratigraphic thickness of approximately 300 to 400 ft throughout the AoI. The lowest formation identified in well logs from the North Belridge oil field is the Kreyenhagen Fm, which consists of the Point of Rocks Sandstone Member and overlying Kreyenhagen Shale. The base of the Kreyenhagen Fm has not been penetrated by historical petroleum exploration; therefore, the stratigraphic thickness of the Kreyenhagen Fm within the AoI is unknown.

First-encountered hydrocarbon-saturated sands within the North Belridge oil field are found in the Tulare Fm near the crest and along the flanks of the anticline. Groundwater is present further east as the Tulare Fm thickens along the flanks. The Alluvium is mostly dry along the crest of the anticline structure in the southern portion of the AoI (Aera 2014; California State Water Resources Control Board [SWRCB] 2014); however, manmade perched zones of produced water exist from former produced water ponds atop the basal alluvial clay in the southern and eastern portions of the North Belridge oil field and the northern portion of the South Belridge oil field (Aera 2014, 2017; SWRCB 2014; Aera and Greka 2018), and groundwater with elevated (>10,000 milligrams per liter [mg/L]) concentrations of total dissolved solids (TDS) is present in the eastern and southern portion of the AoI (SWRCB 2018). A more detailed discussion of the hydrology and hydrogeologic information within the AoI is presented in **Section 2.7**.

2.1.3 Injection Zone

The 64 Zone Sandstones consist mainly of shaly, arkosic sands, with an overall coarsening upwards trend, and have been interpreted as turbidites within submarine fans deposited at upper bathyal depths (continental shelf-slope) (Kaczorowski et al. 1986; Callaway 1990; Taylor and Soule 1993; Aera 2002). The 64 Zone Sandstones are divided into two zones: the upper U Sandstone (referred to as "Bloemer" or "First Phacoides" in other literature) and the lower W Sandstone (referred to as "Main Phacoides" or "Wygal" in other literature), separated by a shale deposit (U Shale); the U Shale has a stratigraphic thickness of approximately 65 ft, on average, within the AoI (**Figure 2.1-11**). The W Sandstone has an average approximate stratigraphic thickness between 250 and 495 ft within the anticline structure (**Figure 2.1-12**). The stratigraphic thickness of the U Sandstone is up to approximately 155 ft to the west of the anticline, thins to approximately 55 ft on the structure towards the north, and has an average stratigraphic thickness of approximately 100 ft in the AoI (**Figure 2.1-13**). Stratigraphic thicknesses were calculated from the geologic model horizons derived from seismic and well data. The geologic model is discussed in detail in **Section 2.2**. A list of wells and thicknesses calculated from the geologic model are provided in **Appendix 2A**.

The lateral continuity of the 64 Zone Sandstones of the Temblor Fm is limited to the southwestern San Joaquin Basin, extending approximately 25 miles from the North Belridge oil field to the area east of the Lost Hills and the Bowerbank oil fields (**Figure 2.1-14**; Taylor and Soule 1993; Hosford Scheirer and Magoon 2007). The 64 Zone Sandstones extend to the south to the Cymric and Belgian Anticline oil fields (Callaway 1990; Taylor and Soule 1993) and as far south as approximately 35 to 40 miles to the Buena Vista oil field and abandoned Capitola Park oil field (Hosford Scheirer and Magoon 2007). The northernmost extent of the unit within the San Joaquin Basin is just past the Devils Den oil field approximately 30 miles north of North Belridge oil field (**Figure 2.1-14**; Bartow 1990; Callaway 1990; Hosford Scheirer and Magoon 2007).

2.1.4 Confining Zone

The 64 Zone Sandstones are overlain by the Santos Shale Member. The Santos Shale Member is divided into the Upper Santos Shale, the Agua Sandstone, and the Lower Santos Shale, with the Lower Santos Shale forming the primary confining zone for the proposed CO_2 storage complex.

The Santos Shale is a dark brown to gray shale with varying amounts of silt or sand (Carter 1985) and has been interpreted as bathyal deposits formed in a marine basin along the slope and the basin plain (Adkinson 1973; Carter 1985, Johnson and Graham 2007). The Lower Santos Shale has an average stratigraphic thickness of approximately 250 ft, with a maximum stratigraphic thickness of approximately 375 ft (**Figure 2.1-15**). Regionally, the Santos Shale, as a whole, has a maximum stratigraphic thickness of 2,000 to 2,300 ft (Adkinson 1973).

In the southern portion of the AoI, the continuity of the Agua Sandstone is less well constrained. The net-to-gross (NTG) ratio in the Agua Sandstone varies across the AoI. The Agua Sandstone thins in the southern portion of the AoI, consistent with observations in published literature (Carter 1985; Johnson and Graham 2007; Mitchell 2018), where it has a low NTG ratio, indicating that it is a lower quality reservoir and that its permeability is more heterogeneous. Despite this, there is an identifiable Agua Sandstone bed (or several beds) in well logs across the AoI.

The Santos Shale Member has a similar lateral distribution as the 64 Zone Sandstones, extending approximately 25 miles to the north to Devils Den oil field and further south near the abandoned San Emedio oil field approximately 47 miles from the North Belridge oil field (**Figure 2.1-14**; Hosford Scheirer and Magoon 2007). The eastern extent of the Santos Shale is poorly constrained but has been identified in a well by Hosford Scheirer and Magoon (2007) located approximately 25 miles from the North Belridge oil field in the area east of the Bowerbank oil field.

Detailed discussion of the injection and confining zones, including the depth and thickness, as well as their porosity, permeability, mineralogy, and geochemical characteristics is presented in **Sections 2.4** and **2.8**. Geomechanical and petrophysical information for the confining zone is presented in **Section 2.5**.

2.2 Maps and Cross-Sections of the AoR [40 CFR 146.82(a)(2), 146.82(a)(3)(i)]

The proposed 64 Zone injection reservoir was discovered in 1931 and has been developed through primary production and secondary recovery with water and gas injection. Original reservoir conditions consisted of a connate water leg, oil leg, and a gas cap. Decades of production have resulted in a depleted hydrocarbon system with mixed-phase liquids throughout the structure. To date, more than 164 wells have been drilled into and through the 64 Zone Sandstones (**Figure 2.2-1; Appendix 2B**). There are shallower oil and gas reservoirs that are vertically isolated from the 64 Zone and that continue to be produced today. Exploration and operation activities provide extensive information from the field, forming a comprehensive database including two-dimensional (2D) and three-dimensional (3D) seismic surveys (discussed below), conventional core, electric logs, and substantial production data. These data were assembled to assess the feasibility of geologic sequestration. Structural maps and cross sections were generated using the Petrel™ software platform (model parameters discussed below). The geologic model utilized well logs from 151 wells which penetrate the 64 Zone (**Appendix 2B**) as the primary input, and 2D and 3D seismic data as secondary inputs.

The AoI first presented in **Section 2.1**, corresponds to the geologic model boundary (discussed below). The North Belridge oil field and the proposed storage complex is defined by a northwest trending, doubly plunging anticline. The anticline has an axial trend of 150° and the axial plane

dips approximately 85° to the northeast. The west limb of the anticline dips approximately 45° to the southwest, and the east limb dips approximately 35° to the northeast (**Figures 2.2-2**, **2.2-3,** and **2.2-4**; Kaczorowski et al. 1986). The AoR (described in detail in **Section 3** and **Attachment B**) is the maximum extent of the modeled pressure front induced by injection of CO_2.

The stratigraphic units identified in well logs and penetrated by historical drilling operations within the AoR range from the Oligocene Kreyenhagen formation to the Pleistocene Tulare formation. The internal stratigraphy of individual Members is discussed in **Section 2.1** (see **Figure 2.1-9**). The proposed underground CO_2 sequestration project is in the Temblor Formation. The 64 Zone U and W Sandstones are the proposed injection zone, and the Lower Santos Shale is the primary confining zone (see **Sections 2.1** and **2.4** for further discussion). Petrophysical well logs from key wells within the AoI illustrate the internal stratigraphy above and below the injection and confining zones (**Figure 2.2-5**).

Within the AoI, there are two potential USDWs: the nonexempted portions of the Tulare Fm and the Alluvium. Within the AoR, however, only those nonexempt portions of the Tulare Fm are considered potential USDWs, as the Alluvium is either dry or the TDS concentrations in groundwater exceed acceptable limits for a USDW (see **Section 2.7** for further discussion). Therefore, the nonexempt portions of the Tulare Fm constitute the lowermost potential USDW within the AoR.

The lowermost potential USDW, where present, is separated from the proposed injection zone by more than 7,000 vertical ft of strata, including many confining zones above the Lower Santos Shale, such as the Upper Santos Shale, the Carneros Shale, and the Media Shale of the Temblor Fm. Additional confining layers exist above the Temblor Fm which help to protect any potential USDW in the Tulare. These confining layers are the McDonald Shale, Antelope Shale, Reef Ridge Shale, and shales in the Etchegoin Fm (see **Figures 2.1-9**, **2.2-3** and **2.2-4**). The potential USDWs within the Tulare Fm are further isolated from the injection zone by the multiple confining clay layers within the Tulare Fm. The injection zone is on average 7,250 ft TVD below the Tulare Fm across the AoR. The Alluvium, where present, is separated from the injection zone by a vertical distance of approximately 8,000 ft.

Using seismic and well data, the injection and confining zones were determined to be laterally continuous throughout the AoR (**Figures 2.2-6** and **2.2-7**). Regionally, the 64 Zone Sandstones extend approximately 30 miles to the north, 35 to 40 miles to the south, 25 miles to the east, and 5-6 miles to the west (Bartow 1990; Callaway 1990; Taylor and Soule 1993; Hosford Scheirer and Magoon 2007). Similarly distributed, the Santos Shale extends beyond the AoR approximately 25 miles to the north, 47 miles to the south, up to 25 miles to the east, and 5 to 6 miles to the west (Hosford Scheirer and Magoon 2007), though the eastern extent of the Santos Shale is poorly constrained. There is no evidence of pinch-out of the 64 Zone Sandstones within the western portion of the San Joaquin Valley, though the thickness of these deposits does vary. Furthermore, there is no evidence of pinch-out for either the U or W Sandstones within the AoR based on well logs and seismic data.

2.2.1 Geophysical Characterization

2.2.1.1 Seismic Data Availability

Multiple 2D and 3D seismic datasets span the AoI. Regional 2D lines (**Table 2.2-1**) acquired in 1979 and throughout the 1980s cover the largest area, with a merged 3D seismic volume consisting of overlapping 3D datasets acquired in the late 1990s and 2000s providing dense data coverage over the North Belridge oil field (**Figure 2.2-8**).

A majority of the regional 2D seismic grid was acquired as multi-client data by Western Geophysical Company using standard acquisition parameters. Select 2D lines have benefitted from more recent reprocessing; however, the bulk of the dataset consists of the original post-stack time migrations (PoSTM), typical of 1980s vintage data processing. This dataset is primarily used for regional correlations and large-scale structural features. Acquisition parameters, vintage PoSTM processing, out-of-plane energy, and steeply dipping geometries contribute to uncertainty when using this seismic dataset.

The 3D seismic data used for the subsurface mapping and site characterization of the proposed North Belridge storage complex is comprised of portions of two separate 3D surveys; the South Belridge 3D survey acquired by Global Geophysical for Aera in 2006/2007 and the Antelope Hills 3D survey (also known as NS40/Areas A-F) acquired by SOLID State Geophysical for Prime Natural Resources in 1999–2001. These data were subsequently merged and reprocessed in 2018 by Advanced Geophysical Technology using a Kirchhoff Prestack Depth Migration. The focus of this reprocessing effort was to improve structural imaging of the Temblor Fm, including better correlation between reflector dips (and overall structural geometries) to existing well picks, correlations and, where available, dip-meter data. This 3D seismic dataset is the basis for the injection zone volume, fault geometries, 3D generated surfaces using well picks, and the structural grid for the AoR model. Although this dataset benefits from denser sampling and higher end reprocessing, potential errors in the velocity model, steeply dipping geometries, ground noise, and shallow gas accumulations may cause uncertainty in interpretations. A detailed history of processing and reprocessing for the original 3D surveys and combined 3D survey can be found in **Appendix 2B**.

It is important to note that multiple processing versions of the same 3D survey utilized for site characterization have yielded very similar results in terms of temporal and spatial resolution and detectability of existing faults within the AoR. The interpreted faults from the numerous seismic processing volumes yield very similarly positioned fault planes and fault offsets. Specifically, the major bounding faults of the AoR (see **Section 2.3** for further discussion) vary, between the seismic processing volumes, by approximately +/- 5° in strike orientation and by +/- 10° in average dip. The geometry of these bounding faults is also constrained by existing well data that help corroborate the dip and strike of these faults as observed in the 3D seismic data. The fault stability analysis (see **Section 2.3.3.2** for further discussion) was assessed using the least stable strike azimuth and a range of 60° to 90° variation in dip. Consequently, using these parameters, the analysis covers a sufficient range in uncertainty to account for the resolution of the seismic interpretation. Aera will perform shale gouge ratio analysis based on the updated model.

2.2.2 Geologic Model (Petrel™)

To assess the depth, areal extent, and thickness of the injection and confining zones, well picks and interpreted 2D and 3D seismic data were used to develop a 3D static geologic model in Petrel™, a geologic modeling software package (Schlumberger 2019). The 3D static geologic model consists of 13 modelled stratigraphic horizons within a structural fault framework. The fault framework for the AoI consists of 12 faults. Two large thrust faults run the entire length of the anticline structure. The West Bounding Thrust Fault truncates in the east against the East Bounding Thrust Fault as shown in **Figure 2.2-4**. Additionally, three southern faults and seven central and northern faults exist in the AoI (**Figure 2.2-2**). For detailed discussion of faulting in the AoI, please refer to **Section 2.3**. In the horizon modeling process, the volume-based modeling algorithm was used to create a stratigraphic function based on the framework faults and the specified stratigraphy and horizon interpretation. The stratigraphic function was defined throughout the structural model but is discontinuous across faults and unconformities. The algorithm used is designed to reduce dip and thickness variations in the stratigraphic function.

Thirteen horizons were modeled within the AoI (**Figure 2.2-6**). The modeling process uses well tops as a primary input, except for wells where the vintage log quality was too poor to reliably pick a horizon. Other structural controls, including seismic interpretation for several horizons and isochore maps, were used as secondary inputs to build the stratigraphic framework and were critical to modeling the structure away from the anticline axis where the majority of well control exists. When the volume-based modeling process runs, it uses inputs from the horizons together in a 3D space to solve for the stratigraphic function simultaneously. The solution for each horizon is then inspected and refined. During the quality control (QC) process for the structural framework, anomalous well tops were identified and reinterpreted where possible.

In general, the resulting stratigraphic framework correlates with seismic reflections except where faulting creates steep dips and seismic reflection positioning becomes unreliable. The stratigraphic function relies on semiconsistent thicknesses (based on well tops) away from well control and may not follow seismic reflections where dips are high and relative positioning of reflections is not accurate. In contrast with horizon generation, faults were primarily interpreted on 2D/3D seismic data with minimal well control. In this area, seismic data provides the most robust understanding of large-scale faulting and fault geometries. Although the majority of fault properties (extent, throw, dip, etc.) were derived from seismic data, small-scale modifications to the geometries of individual faults through the modeling process were required to maintain geologic principles with respect to the structural framework. In **Section 2.3**, fault properties are presented based on seismic geometries and may not precisely match the interpretations shown on cross-sections in this section. After many QC iterations, the horizon and fault geometries converged on a geologically sound solution for the structure.

The completed model result allows for evaluation of the structure and thickness of geologic units of interest and allows for detailed investigation of the AoI. A detailed description of the structural and property modeling framework is provided in **Appendix 2B** and **Attachment B**. Additionally, planned acquisition of new log and core data from new wells will be used to validate observations made from existing data, and if needed, refine the static model (see **Attachment D**).

2.3 Faults and Fractures [40 CFR 146.82(a)(3)(ii)]

2.3.1 Fractures

There is limited data available to inform the extent and nature (i.e., fracture conductivity) of fracturing within the injection and confining zones within the AoR. Nevertheless, the assessment of two data sets within the AoI indicates that the primary confining zone is only very slightly fractured and the injection zone is effectively unfractured. Consequently, fractures are expected to have negligible influence on the sealing capacity of the primary confining zone and the transmissivity of the injection zone. Extended range micro-imager (XRMI) logs were available for the Shideler 1-28 well, and oil-based microimager (OBMI) logs were collected for the Thebe 888N-12 well (see **Figure 2.2-2** for well locations). Both wells are outside the AoR, but within the AoI. XRMI logs were collected and interpreted by Halliburton. Compiled fracture data are provided in **Appendix 2C**.

For the Shideler 1-28 well, eight types of discontinuities were identified in the XRMI fracture frequency logs and include: conductive fractures, partial conductive fractures, resistive fractures, partial resistive fractures, induced fractures, borehole breakout, faults, and micro-faults. Drilling-induced fractures were logged for representative samples only and not every occurrence of this fracture type was logged or attempted to be logged. The Lower Santos Shale occurs from 9,006 to 9,186 ft measured depth (MD) and was logged from 9,013 to 9,156 ft MD, with the upper 7 ft and basal 20 ft not logged. Within the logged 143 ft of the Lower Santos Shale, 106 discontinuities were noted, including eight resistive fractures, two induced fractures, one conductive fracture, and one possible subvertical fault. The other 94 discontinuities were attributed to bed boundaries/bedding. With a total of nine non-induced factures over 143 logged ft, the measured average fracture density within the primary confining zone of Lower Santos Shale is approximately 0.06 fractures/linear foot. The nine measured fractures were oriented sub-parallel to the borehole, with dips ranging from 75° to 87° either to the southeast or the northeast. The U Sandstone occurs from 9,186 to 9,219 ft MD and was not logged. The W Sandstone occurs from 9,256 to 9,573 ft MD and was logged from 9,288 to 9,568 ft MD; the basal 4 ft and the upper 33 ft were not logged. Within the logged 280 ft of the W Sandstone, 115 discontinuities were noted: four induced fractures and 111 attributed to bed boundaries/bedding.

OBMI logs collected for the Thebe 888N-12 well identified six types of discontinuities, including the following: bedding, carbonate-cemented bedding, cross bedding, internal bedding, fracture, and resistive fracture. The Lower Santos Shale occurs from 8,793 to 8,988 ft MD and was logged from 8,793 to 8,805 ft MD. The U Sandstone occurs from 8,988 to 9,117 ft MD and was logged from 9,095 to 9,105 ft MD. The W Sandstone occurs from 9,166 to 9,507 ft MD and was logged from 9,193 to 9,497 ft MD. Within the 12-foot, 10-foot, and 304-foot intervals logged from the Lower Santos Shale, U Sandstone, and W Sandstone, respectively, 76 discontinuities were identified, each related to bedding.

The data available from both these wells identified only nine non-induced fractures over the 155 logged ft of the primary confining zone, and zero non-induced fractures over 584 logged ft of the injection zone. More data will be collected with a borehole formation microresistivity imaging tool

from new injection wells installed for the proposed CO_2 storage complex to assess the extent and presence of fractures within the injection and confining zones.

2.3.2 Faults

Twelve faults with measurable vertical offset have been identified within the AoI and have been incorporated into the 3D static geologic model. None of the faults identified within the AoI offset Quaternary strata or have ground surface expressions and are consequently interpreted to be inactive. Fault geometries and offsets are interpreted based on a combination of 2D and 3D seismic data correlated with well log data, where available. In addition, pressure data has been used, where available, to validate fault compartmentalization. For more detailed discussion of seismic data and processing methods, see **Section 2.2**.

Faults within the AoI, based on the seismic data, are discussed individually below. Four of the identified faults form the boundaries of the AoR, and an additional six are contained within the AoR and transect the injection zone. The characteristics of the faults within the AoI are summarized in **Table 2.3-1**, including a comparison between the vertical offset of the injection zone based on the seismic data/interpretation, and the vertical offset based on the geologic model. The fault locations relative to the top of the injection zone for the proposed CO_2 storage complex (top of the U Sandstone) are illustrated in **Figures 2.3-1** and **2.3-2**. **Figures 2.3-3** through **2.3-6** present 2D seismic cross sections, which illustrate the geometry of many of the faults identified within the AoI relative to the 13 modeled stratigraphic horizons in the 3D static geologic model (see **Section 2.2** for model details). Fault properties presented in the text below are based on seismic interpretation.

2.3.2.1 East Bounding Thrust Fault

The East Bounding Thrust Fault bounds the North Belridge anticline to the northeast and extends over 8 miles along the entire length of the North Belridge oil field. This fault defines the northeastern edge of the AoR. The fault has an average strike of 130° and an average dip of 35° to the southwest, but is interpreted to progressively flatten with depth, soling into the basement. The vertical extent of the fault is limited to the Reef Ridge Member of the Monterey Fm where it terminates at an average depth of 4,500 ft TVDss. The fault is interpreted to have accommodated primarily reverse motion. The vertical offset within the 64 Zone varies along strike with a maximum offset of over 700 ft in the southern portion of the AoI and approximately 500 ft of offset in the central portion of the AoI. Vertical offset continues to progressively decrease to the northwest and the fault terminates near the northwest edge of the AoI.

2.3.2.2 West Bounding Thrust Fault

The West Bounding Thrust Fault bounds the North Belridge anticline and the AoR to the southwest and extends over seven miles along the entire length of the North Belridge oil field. The fault has an average strike of 330° and an average dip of 40 to 45° to the northeast. This fault is interpreted as antithetic to the East Bounding Thrust Fault within the Tumey Fm. The vertical extent of the fault is limited to the Upper Reef Ridge Member of the Monterey Fm where it terminates at an average depth of 2,500 ft TVDss. The fault is interpreted to have accommodated primarily reverse motion.

The vertical offset of the 64 Zone ranges from greater than 300 ft in the southern portion of the AoI to approximately 200 ft in the central portion of the AoI. Vertical offset progressively decreases to the northwest where the fault terminates towards the northern-most extent of the AoI.

2.3.2.3 MB13 Fault

The MB13 fault transects the North Belridge anticline to the southeast and extends across the entire width of the structure for approximately 3 miles. This fault defines the southern boundary of the AoR. The fault has an average strike of 180° and an average dip of 75° to the west. MB13 is a scissor fault as its apparent sense of slip changes from reverse in the northern portion of the fault to normal in the southern portion of the fault, which may be the result of differential uplift and rotation of the northern and southern structural segments of the North Belridge anticline. Given the tectonic history and development of the San Joaquin Fold Belt (Harding 1976), the right-stepping nature from the South Belridge anticline to the North Belridge anticline would be consistent with the interpretation of the MB13 fault motion. The vertical extent of the fault extends into the Etchegoin Fm where it terminates at an average depth of 2,000 ft TVDss. The vertical offset of the 64 Zone ranges from 200 to 300 ft in the southern and central portions of the fault, decreasing to 100 to 150 ft in the northern portion of the fault.

2.3.2.4 Southern Crestal Fault

The Southern Crestal Fault is truncated by MB13 at its southern limit and extends approximately 1 to 1.5 miles to the northwest within the anticline structure. The fault has an average strike of 145° and an average dip of 80° to the southwest. This apparent reverse-offset fault has a vertical extent limited to the Media Shale Member of the Temblor Fm where it terminates at an average depth of approximately 5,500 ft TVDss. The vertical offset of the 64 Zone ranges from 150 to 200 ft in the southern and central portions of the fault to 50 to 100 ft near the northwest termination point.

2.3.2.5 West Limb Thrust Fault

The West Limb Thrust Fault is oriented subparallel to the West Bounding Thrust Fault and extends from its apparent northern termination at the Northern Crestal Fault (2) for approximately 2 miles to the southeast. The fault is interpreted to splay off the East Bounding Thrust at depth. The fault has an average strike of 315° and an average dip of 35° to the northeast. The vertical extent of the fault is limited to the Santos Shale Member where it terminates at an average depth of approximately 6,800 ft TVDss. The fault is interpreted to have accommodated primarily reverse motion. The vertical offset of the 64 Zone varies along strike from approximately 200 ft in the southeastern portion of the fault to approximately 50 to 100 ft in its northwestern limit. Offset gradually decreases to the northeast towards its termination point.

2.3.2.6 Northern Crestal Fault (1)

The Northern Crestal Fault (1) extends about 1 mile northwest within the northwestern portion of the anticline structure. This apparent reverse-offset fault is antithetical to the West Limb Thrust Fault. The fault has an average strike of 130° and an average dip of 70° to the southwest. The fault extends up into the Media Shale Member of the Temblor Fm where it terminates at an average

depth of approximately 6,000 ft TVDss. The fault is interpreted to have accommodated primarily reverse motion. The vertical offset of the 64 Zone ranges along the strike of the fault from approximately 50 to 100 ft in the northwestern segments of the fault to 100 to 150 ft in the central portion of the fault. There is little to no offset towards southeast where the fault terminates. The northern termination point is at the intersection with Northern Crestal Fault (2). Northern Crestal Fault (3), located outside the AoR, may be a continuation of Northern Crestal Fault (1), offset by Northern Crestal Fault (2).

2.3.2.7 Northern Crestal Fault (2)

The Northern Crestal Fault (2) extends in a northeast to southwest direction approximately 1 mile orthogonally across the North Belridge anticline and defines the northern boundary of the AoR. This normal offset fault extends from the southwestern limb of the anticline to the northeastern limb. The fault has an average strike of 240° and an average dip of 85° to the northwest. The vertical offset of the fault extends into the Media Shale Member of the Temblor Fm where it terminates at an average depth of approximately 6,000 ft TVDss. The 64 Zone's vertical offset ranges from about 100 ft in the fault's western and central portions to less than 50 ft towards the east.

2.3.2.8 MB12 Fault

The MB12 fault transects the North Belridge anticline with an approximate 1-mile lateral extent and is interpreted as a subsidiary fault to the larger MB13 fault. This fault has an average strike of 200° and an average dip of 75° to the northwest. The vertical extent of the fault extends into the Etchegoin Fm where it terminates at an average depth of approximately 2,000 ft TVDss. The fault is interpreted to have accommodated a right-lateral oblique (transpressional) slip. The vertical offset within the 64 Zone ranges from 50 to 150 ft in the southern and central portion of the fault to <50 ft in the northern extent of the fault. Although it is difficult to resolve this fault with the seismic data, the fault is interpreted to be truncated by the West Bounding Fault at depth.

2.3.2.9 Central Crestal Fault (1)

The Central Crestal Fault (1) extends for approximately 0.5 miles on the northeastern flank of the North Belridge anticline. This fault has an average strike of 110° and an average dip of 85° to the southwest, sub-parallel to the Northern Crestal Fault (1), and may be genetically related to that fault. The vertical extent of the fault is limited to the Media Shale Member of the Temblor Fm where it terminates at an average depth of approximately 6,000 ft TVDss. The fault is interpreted to have accommodated primarily reverse motion. The vertical offset of the 64 Zone is approximately 150 ft in the southern portion of the fault and progressively decreases to the northwest where it abruptly terminates.

2.3.2.10 Central Crestal Fault (2)

The Central Crestal Fault (2) extends for 0.5 miles across the crest of the North Belridge anticline, with an average strike of 80° and an average dip of 85° to the southeast. It is interpreted to splay off the West Limb Thrust Fault at depth and terminates at the Central Crestal Fault (1). The vertical extent of fault is limited to the Media Shale Member of the Temblor Fm or Lower Monterey Fm

and terminates at an average depth of approximately 5,000 ft TVDss. The fault is interpreted to have accommodated primarily normal motion. The vertical offset of the 64 Zone ranges from 50 to 100 ft along the length of the fault.

2.3.2.11 Downdip West Flank Cross Fault

The Downdip West Flank Cross Fault is outside of the AoR, but within the AoI, and extends for approximately 1.5 miles to the west of the North Belridge anticline and within the footwall of West Bounding Thrust Fault. The fault has an average strike of 255° and an average dip of 80° to the northwest. The vertical extent of the fault is limited to the Upper Santos Shale where it terminates at an average depth of approximately 6,000 ft TVDss. The fault is interpreted to have accommodated primarily reverse motion. The vertical offset of the 64 Zone ranges from 250 to 300 ft in the eastern to central portions of the fault to zero at its western termination point. The footwall of this fault appears to correspond with the structural low of the 64 Zone to the south (see **Figures 2.2-1** and **2.2-2**) where the depth to the top of the U Sandstone reaches up to 13,500 ft TVDss.

2.3.2.12 Northern Crestal Fault (3)

The Northern Crestal Fault (3) is outside of the AoR, but within the North Belridge anticline and the AoI, and extends for approximately 0.5 miles to the northwest from its termination point at the Northern Crestal Fault (2). The fault has an average strike of 125° and an average dip of 85° to the southwest. This nearly vertical fault is interpreted to splay off of the Western Bounding Thrust Fault and may be a continuation of Northern Crestal Fault (1). The vertical extent is limited to the Media Shale Member of the Temblor Fm where it terminates at an average depth of approximately 6,000 ft TVDss. The vertical offset of the 64 Zone ranges from 50 to 100 ft across the fault.

2.3.3 Fault Stability and Sealing Capacity

2.3.3.1 Pressure Compartmentalization - Seals

The 64 Zone is a multiphase fluid reservoir composed of a free gas cap, oil, and saline water. Pressure data were collected from oil- and gas-producing wells throughout the North Belridge oil field with pressure data from only the 64 Zone collected from wells shown in **Figure 2.3-7.** These pressure data are provided in **Appendix 2C**.

Static pressure measurements collected from the 64 Zone Sandstones were used to demonstrate compartmentalization and barriers to flow in the injection zone within the AoR. To compare pressure data from across the North Belridge oil field collected from different depths and locations within the fluid column, pressure data were normalized to a reference depth of 7,700 TVDss using an oil gradient of 0.321 pounds per square inch per foot (psi/ft) (Kaczorowski et al. 1986).

The production and reservoir history of the 64 Zone is described in detail in Kaczorowski et al. (1986). The 64 Zone pressure data (**Figure 2.3-8**) reflect the development history of the reservoir within the AoR. The rapid production of the reservoir from 1935 to 1941 was marked by a sharp decline in reservoir pressure from the initial reservoir pressure of 4,125 psi to 1,750 psi in 1941 (Kaczorowski et al. 1986). The pressure decline was arrested with the onset of gas injection and

reservoir pressure stabilized until injection activities ceased in 1947. Continued production without gas injection resulted in a rapid decline in pressure to approximately 1,150 psi. Gas injection activities resumed in 1950 and the reservoir pressure recovered. The continued production along with gas injection led to a steady decline in reservoir pressures since the 1960s.

Recent pressure data collected in 2022 from wells 25-26N and 2A-22N located within the AoR had pressure measurements from the 64 Zone of approximately 700 psi. Conversely, in 2020, when well 1-28—located on the downthrown block of the West Bounding Thrust Fault, north of the Downdip West Flank Cross Fault and outside the AoR—was perforated within the 64 Zone, it was observed that the well flowed oil and water to the surface. This production demonstrated that the 64 Zone pressures west of the West Bounding Thrust Fault are much greater than those within the North Belridge anticline structure and AoR. This pressure differential is indicative that the West Bounding Fault acts as a pressure seal to the main 64 Zone in the AoR.

The bulk of the historical production was concentrated along the flanks of the anticline within the AoR. A portion of the production came from a fault block north of the Northern Crestal Fault (2), which defines the northernmost limits of the AoR and modeled CO_2 plume. As illustrated on **Figure 2.3-9**, the reservoir pressures to the north of this fault do not follow the same trend as the main reservoir compartment. Wells to the north of the fault show a more gradual decrease in pressure and more variability in pressure measurements, before rebounding and repressurizing to a greater extent than seen in wells within the AoR (shown in blue). Historically, there has been no injection north of the Northern Crestal Fault (2); therefore, the rebound in pressure is not related to gas injection but is due to some other mechanism. The repressurization of the northern fault block suggests that, north of the Northern Crestal Fault (2), the 64 Zone could be connected to a saline aquifer that equilibrated within the produced area, contributing to the pressure rebound. Overall, the pressure data to the north of the Northern Crestal Fault (2) suggest that this area is isolated from the AoR, and the variability in pressure data suggests that this area is more compartmentalized compared to the 64 Zone to the south of this fault.

The 64 Zone pressure data from within the AoR and pressure differentials across the Northern Crestal Fault (2) suggest lateral containment within the 64 Zone reservoir in AoR.

In 2011, well 888N-12 was drilled south of the MB13 fault outside of the AoR. The formation pressure, measured with a Modular Dynamic Tester tool, was provided in a formation pressure test log in the 64 Zone and was approximately 4,000 psi, which is close to the original reservoir pressure for the main compartment of the 64 Zone reservoir. In comparison, historical pressure data from just north of MB13 and recent pressure data from within the AoR, indicated pressures of 1,150 psi and approximately 700 psi, respectively (**Figure 2.3-10**). The pressure data from the 64 Zone indicate that the MB13 fault is sealing and that well 888N-12 is in a separate compartment of the 64 Zone than the AoR.

Kaczorowski et al. (1986) reported that the sealing capacity of the East Bounding Thrust Fault was poorly constrained. The evidence available at the time suggested it to be potentially leaky, based on the apparent pressure depletion of the 64 Zone on the footwall side of the fault. However, historical reservoir pressures and current reservoir behavior, such as lack of water influx, suggest

that the 64 Zone is isolated from other permeable formations across the East Bounding Thrust Fault. Additionally, for numerical modeling of the AoR to successfully replicate the observed pressure history of the 64 Zone and maintain an underpressurized reservoir (of approximately 700 psi), the bounding faults must be sealing to prevent re-pressurization of the reservoir. For further discussion see **Section 3** and **Attachment B**.

Vertical containment is illustrated considering the pressure differentials between the 64 Zone Sandstones and the Agua Sandstones (overlying the primary confining unit). Pressure data from only the Agua Sandstone were collected from wells shown on **Figure 2.3-11** and the data are provided in **Appendix 2C**.

The pressure data from the Agua Sandstone show a different trend than those from the 64 Zone (**Figure 2.3-12**). As the 64 Zone was depleted during early production (1935–1941), the pressures in the Agua Sandstone showed no pressure change until production started from that reservoir in the early 1950s. This behavior illustrates that the Agua Sandstone is isolated from the deeper 64 Zone Sandstones. Additional pressure data from the Agua Sandstone will be gathered to illustrate the current pressure differential between the two sandstone units and further demonstrate vertical containment and isolation from the proposed injection zone.

The trends in 64 Zone pressures and the differences in reservoir pressures from outside the main fault block demonstrated sealing faults and reservoir compartmentalization, which will act to confine the CO_2 within the injection zone. Additional pressure measurements are planned to be collected from the Agua Sandstone within the AoR and from the 64 Zone north of the Northern Crestal Fault (2) and the AoR boundary.

2.3.3.2 Fault Stability Analysis

Faults can either act as seals or potential pathways for fluid migration and need to be considered in injection operations. Faults are inactive when effective normal stress is high, which is inversely proportional to pore pressure. As CO_2 is injected, pore pressure increases and effective normal stress decreases, which can cause faults to reactivate and lead to unexpected CO_2 leakage and undesirable seismicity. 2D distances from the injection wells to the faults at the U Sandstone and W Sandstone intervals within the AoI are provided in **Table 2.3-2.**

Mohr-Coulomb criterion (shear failure) was used for a fault stability analysis (FSA) based on a one-dimensional Mechanical Earth Model (1D MEM) developed for the Project and described in detail in **Section 2.5**. Inputs required for the FSA include stresses, friction angle, cohesion, and dip and azimuth angles (presented in **Tables 2.5-1**, **2.5-2**, and **2.5-3** in **Section 2.5**). Based on the wellbore centric model, the discontinuity stability analysis (DSA) plug-in within Petrel™ was used for the FSA. DSA considers the relative orientation between the in-situ stresses and identified fault planes. For this analysis, fault geometries from the 3D static geologic model were used in combination with the static 3D stress tensor defined in the 1D MEM from well 888N-12. Additionally, based on the defined 1D MEM, for the upper reservoir pressure limit scenario, the dynamic reservoir model (flow grid) is overlapped by a 3D geogrid to perform the 3D stress transformation (stress distribution) and fault stability analysis.

The DSA plug-in primarily calculates the shear and normal stress on the fault/fracture plane and accounts for the specific relative orientation of the 3D tensorial stress field and the orientation of the fault/fracture surface provided. Based on the shear and normal stress, the friction coefficient (the tangent of the friction angle), and the pore pressure, several additional result quantities are calculated, including the slip tendency (or slip tolerance). The slip tendency ranges between 0.00 and 1.00, with 0.00 indicating no tendency and 1.00 indicating the risk of slippage along the plane of weakness.

The FSA using DSA was conducted for three model scenarios to cover permutations of reservoir pressure and vertical model domain. Reservoir pressure conditions analyzed were as follows: initial/pre-development conditions (base model: 0.4 psi/ft, based on current conditions at 888N-12 well location [off-structure]), pre-injection conditions (present-day depleted reservoir: 0.024 psi/ft), and post-injection conditions (4,750 psi at the datum of 7,700 ft below mean sea level), resulting in a 0.592 psi/ft pressure gradient. No reservoir pressure compartmentalization was considered, nor was the dynamic reservoir model coupled. The friction angle analyzed was the assumed most likely value of 31° (Zoback 2010). Cohesion was assumed to be zero, which is conservative compared to the measured (**Table 2.5-1**) and average modelled cohesive strength values (greater than 2,000 psi) (**Table 2.5-3**). Vertical model domains tested were the injection zone domain (top of the U Sandstone to bottom of the W Sandstone) and the full model domain (the full vertical extent of the 3D static geologic model).

The results of the FSA from the DSA plug-in indicate that the identified faults within the AoI are stable in the three pressure scenarios for friction angle = 31° and cohesion = 0 psi. Plots of the FSA results for pre-injection and post-injection conditions are presented in terms of slip tolerance (equivalent to slip tendency) in **Figure 2.3-13**. In general, fault planes with azimuth non-oriented along the maximum horizontal stress (most of the faults in the southern part of the AoI) were found to have higher slip tolerance values but below the threshold of 1.00 (stable fault indication).

A second FSA was performed using a 3D geomechanical model (which used the rock properties from the 1D MEM combined with the 3D grid and forecasted pressures from the reservoir simulation model) and predicts that the slip tendencies experienced on the faults, indicated by maximum shear and tensile stress levels of 0.58 to 0.67, respectively, are below the levels that would indicate potential slippage (greater or equal to 1.00), as described in **Attachment B**. The results of the FSA indicate that the 12 faults are stable at planned injection volumes and pressures.

Thermal effects on fault stability were evaluated in the 3D geomechanical model by using the thermal option in CMG-GEM, with a CO_2 injection stream temperature of 180 ˚F. This sensitivity case resulted in maximum shear and tensile stress levels of 0.65 and 0.68, respectively (**Table 2.5-2**). Similarly, additional sensitivity runs for injection stream temperatures from 135˚F-216˚F were run which are well documented within **Section 1.7.1** of **Attachment B**. For the base case maximum injection pressure scenario of 4750 psi, except for the tensile shear stress level when injection temperature is 135˚F, the maximum fault stress levels for all the cases of injection temperatures from 135˚F-216˚F are estimated to be less than 0.8. Thus, a low injectate temperature causing thermal cooling effect on the stresses over the fault leading to a potential fault slippage is not foreseen until the injectate temperature differential with the reservoir temperature is as high as

40%, as described in the **Section 1.7.1** of **Attachment B**. It is to be highlighted here that this analysis considers 0.8 to be the maximum value for all stress levels which allows for a 20% safety factor from reaching either the shear or tensile failures for fault reactivation or slippage to occur.

This analysis indicates that the bounding faults remain stable for a wide range of injectate temperature variations, when considering temperature effects within the geomechanical model.

2.3.4 Data Gaps

Because none of the faults identified within the AoI have ground surface expressions, fault geometries are interpreted from 2D and 3D seismic data and correlation of well picks. Fault sealing capacity is interpreted from direct measurements of pressure differentials between fault blocks collected during the production lifespan of the 64 Zone reservoirs and are corroborated by numerical modeling based on the production/depressurization history of the 64 Zone. Additional pressure measurements will be collected from across the AoR within the 64 Zone and the Agua Sandstone. Additional fault seal analysis could be developed through direct modeling of zonal facies juxtaposition and shale gouge ratio along the bounding faults, but this analysis has not yet been completed. Additional fracture data (XRMI logs, OBMI logs, or similar) within the injection and confining zones will be collected during installation of the four new injection wells proposed for the CO_2 storage complex, which will improve the characterization of the sealing capacity of the confining zone. Fluid geochemical data are currently limited, but additional data collection through geochemical analysis of fluids from the Temblor Fm, Monterey Fm, Etchegoin Fm, and Tulare Fm could help identify oil families, evaluate the depth and extent of fluid migration, and evaluate the sealing capacity of the confining zone and faults within the AoR.

2.4 Injection and Confining Zone Details [40 CFR 146.82(a)(3)(iii)]

2.4.1 Depth, Areal Extent, and Thickness

The injection and confining zones for the proposed North Belridge CO_2 storage complex, also referred to as the AoR, are comprised of the 64 Zone Sandstones and the Santos Shale Member, respectively, of the Oligocene-Miocene Temblor Fm. At injection well sites, the stratigraphic sequence of sedimentary units consists of, from top to bottom, the following: the Tulare, Monterey, Temblor, Tumey, and Kreyenhagen Fms, underlain by locally unidentified Basement rocks at greater than 9,000 ft TVDss. The depth, thickness, and areal extent of the injection and confining zones within the AoR have been evaluated based on well logs and seismic data which, together with published research on units of interest, were used to develop a model of the proposed CO_2 storage complex in the Petrel™ software package. Details of the geometry of the injection and confining zones are presented in the following subsections of the application narrative. Within the AoR, depth and thickness of the units of interest are controlled by the Temblor Fm depositional patterns and the doubly plunging anticlinal structure of the North Belridge oil field. The anticlinal geometry will ultimately contribute to confinement and injection capacity, but the depth and thickness of the injection and confining zones vary across the AoR related to their relative position in the regional macrostructure. Discussion of injection and confining zone geometry includes the broader AoI for context of geologic conditions surrounding the AoR.

2.4.1.1 Data Sources/ Methods

To assess the depth, areal extent, and thickness of the injection and confining zones, formation tops picked from well logs and 2D and 3D seismic interpretation were used to develop a 3D static geologic model in the Petrel™ software package. A detailed description of the geologic model, including a discussion of the constituent data sources, is provided in **Section 2.2** and in **Attachment B**.

2.4.1.2 Injection Zone

CO_2 injection will target the 64 Zone Sandstones of the Temblor Fm, comprising the U Sandstone and W Sandstone and separated by the U Shale (**Figure 2.1-9**). The 64 Zone Sandstones are conformably and unconformably overlain by the Lower Santos Shale and are underlain by the Salt Creek Shale (Foss and Blaisdell 1968). Taken together, the 64 Zone Sandstones are present across the North Belridge oil field with about 600 ft of gross interval thickness (Aera 2002).

The following subsections describe in detail the areal extent, depth, and thickness of the injection zone, and **Table 2.4-1** summarizes the geometric properties of each unit that makes up the injection zone.

Areal Extent

The lateral continuity of the 64 Zone Sandstones is limited to the southwestern San Joaquin Basin and can be correlated regionally in literature. Please refer to **Section 2.1** of this application for a discussion of source literature documenting the areal extent of the 64 Zone Sandstones.

As shown in Petrel™ model outputs in **Figures 2.4-1** and **2.4-2**, the 64 Zone Sandstones extend across the entire AoI.

Depth

Figures 2.4-1 and **2.4-2** display depths of the 64 Zone U and W Sandstones in TVDss. Ground level elevation in the AoR averages 650 ft above mean sea level and can be added to reported values of TVDss to approximate depth below ground level. Within the AoR, the average depth of the top of the U Sandstone is 7,810 ft TVDss and the average depth of the top of the W Sandstone is 8,005 ft TVDss. Within the larger AoI, the depth of both units increases on the east and west limbs of the anticline.

Thickness

The U and W Sandstones of the 64 Zone each have varying thicknesses within the AoI.

Figure 2.4-3 shows the true vertical thickness (TVT) of the U Sandstone. The thickness range of the U Sandstone is 60 to 100 ft within the AoR. Within the broader AoI, the U Sandstone generally increases in thickness on the west side of the anticline and thins to the north.

Literature documentation of the U Sandstone thickness is limited; however, Kaczorowski et al. (1986) noted a varied thickness of the U Sandstone in agreement with the Petrel™ model output,

reporting unit thickness as roughly 40 ft in the northwest end of the 1973/74 oil field boundary to over 150 ft in the southeast portion of the field.

Figure 2.4-4 illustrates the TVT of the W Sandstone. Within the AoR, the interpreted thickness of the W Sandstone ranges from 260 to 600 ft TVT. Within the surrounding AoI, the W Sandstone reflects thickness patterns of the U Sandstone as it thins in the north and northeast, generally maintains an average thickness of 450 ft to the east and thickens to the west. Outside of the AoI, documentation of W Sandstone thickness is limited. Carter (1985) describes the W Sandstone as 200 ft thick, while Kaczorowski et al. (1986) reported an average W Sandstone thickness of 320 ft. Additionally, Foss and Blaisdell (1968) estimated the W Sandstone to be over 400 ft thick. The U and W Sandstones are separated by the U Shale, which has a TVT of 40 to 115 ft within the AoR.

2.4.1.3 Confining Zone

The 64 Zone Sandstones of the injection zone are conformably and unconformably overlain by the Santos Shale Member of the Temblor Fm. The Santos Shale Member is most often documented as the Upper Santos Shale (early Miocene) and the Lower Santos Shale (late Oligocene) in reference to the shale beds above and below the Agua Sandstone interbed (Foss and Blaisdell 1968; Adkinson 1973; Carter 1985). The Lower Santos Shale forms the primary confining zone, and the Upper Santos Shale forms the secondary confining zone for the proposed CO_2 storage complex.

In the southern portion of the AoI, the Agua Sandstone is characterized by a low NTG ratio, meaning that while there may be a lithologically distinctive bed present between the Upper and Lower Santos Shales, it is of poor reservoir quality/producibility relative to the Agua Sandstone in the northern portion of the AoI and is more difficult to reliably identify using traditional wireline logging tools. For example, an interval of low gamma ray values may be observed within the Santos Shale Member that is not accompanied by a significant response in spontaneous potential and resistivity indicative of a producible reservoir. Furthermore, although the lower NTG may be related to low permeability, intrinsic permeability data for the unit are not currently available in the southern portion of the AoR. However, intrinsic permeability data available from northern portion of the AoR indicate that the Agua Sandstone in the northern portion has a relatively higher permeability which aligns well with the higher NTG ratio observed in this area. The variation in thickness of the Agua Sandstone is consistent with observations in the published literature (Carter 1985; Johnson and Graham 2007; Mitchell 2018) and, although the Agua Sandstone thins to the south, there is an identifiable Agua Sandstone layer across the AoI. The boundary of the identified shift in NTG ratio is shown as the Extent of the High NTG Agua Sandstone on **Figure 2.4-5**.

The following subsections describe in detail the areal extent, depth, and thickness of the confining zone. **Table 2.4-1** summarizes the geometric properties of each unit that makes up the confining zone.

Areal Extent

The Santos Shale has a similar lateral distribution as the 64 Zone Sandstones and extends far beyond the limits or the AoR. Regional well data indicate that the Santos Shale occurs along the San Joaquin Basin's southwest margin (Hosford Scheirer and Magoon 2007). Please refer to

Section 2.1 of this application for a discussion of the available source literature documenting the areal extent of the Santos Shale.

As shown on **Figures 2.4-6** and **2.4-7** the Upper and Lower Santos Shale each extend across the entire AoI.

Depth

The depth to the top of the Upper Santos Shale, the uppermost unit of the Santos Shale Member, is on average 7,330 ft TVDss within the AoR. Within the broader AoI, the depth of the Upper Santos Shale increases on both east and west sides of the anticline and shallows to the north (**Figure 2.4-6**). The depth to the top of the Lower Santos Shale is shown on **Figure 2.4-7** and closely matches the structural form of the Upper Santos Shale. The average depth to the top of the Lower Santos Shale is 7,528 ft TVDss within the AoR.

Thickness

Figure 2.4-8 illustrates the TVT of the Upper Santos Shale. The approximate thickness of the Upper Santos Shale is 30 to 85 ft TVT within the AoR. Beyond the AoR, the unit generally maintains an average thickness of 70 ft on the east side of the anticline and shows a slightly increased thickness on the west side of the anticline.

Figure 2.4-9 illustrates the TVT of the Lower Santos Shale. Within the AoR, the Lower Santos Shale has a thickness range of 230 to 370 ft TVT. The Lower Santos Shale includes local areas of increased thickness where the Agua Sandstone thins or is characterized by a low NTG ratio. Please refer to the previously introduced **Figure 2.4-5** for modeled thickness of the Agua Sandstone. Within the AoI, the Lower Santos Shale generally maintains an average thickness of 315 ft TVT on the east side of the anticline, shows increased thickness on the west side of the anticline, and thins to the north.

Figure 2.4-10 illustrates the TVT of the total Santos Shale Member, including the Upper Santos Shale, the Agua Sandstone, and the Lower Santos Shale. Within the AoR, the thickness of the Santos Shale Member is 340 to 645 ft TVT.

Literature documentation of the Santos Shale thickness is limited. As described by both Dibblee (1973) and Adkinson (1973), an exposed reference section of the Santos Shale Member in Zemorra Creek, approximately 10 miles south of the AoI, is 275 to 295 ft thick and is divided into the Upper and Lower Santos Shale at 180 and 60 ft, respectively, by the Agua Sandstone. Foss and Blaisdell (1968) documented an Upper Santos Shale maximum thickness of 1,500 ft in the Bitterwater Creek outcrop area and documented the Lower Santos Shale as 275 ft thick at N.E. McKittrick (15 to 20 miles south-southeast of the AoI). Regionally, the Santos Shale Member has a maximum stratigraphic thickness of 2,000 to 2,300 ft (Adkinson 1973).

2.4.1.4 Uncertainty

Present understanding of the depth, thickness, and areal extent of the proposed injection and confining zones is based on the 3D static geologic model, which is inherently limited by the density, type, and quality of available data inputs. The depths of the strata of interest are understood

with high confidence at the location of wells with open-hole log data but must be interpolated and/or extrapolated where log data do not exist. In these instances, interpolation of stratigraphic horizons is guided with interpretations of 2D and 3D seismic data. In areas where wells are more sparsely distributed, or where seismic data quality is poor, the confidence of the modeled horizons is decreased. These conditions are more likely to occur along the flanks of the North Belridge anticline, where historic exploration has been limited. Additional data to characterize the geometry of the injection and confining zones, including modern petrophysical logs and cores, will be collected from each of the newly drilled injection wells proposed for the CO_2 storage complex. Details of the proposed new injection wells are provided in **Section 5**.

As outlined in the Pre-Operational Testing Plan (**Attachment D**), Aera will attempt to acquire open-hole or cased-hole logs of the newly drilled and repurposed injection wells, which will be used to confirm thicknesses and depths of the injection and confining zones. Information collected during the pre-injection period will be incorporated/compared with the geologic model. If depth/thicknesses are substantively different at well locations compared to the current geologic model, an updated model will be generated. In addition, Aera will attempt the acquisition of rotary sidewall cores during drilling of new injection wells to validate observations made from core acquired in vintage wells (described in **Sections 2.4.2** and **2.4.3** below). Rotary sidewall cores are preferred over percussion sidewall cores because of their suitability for porosity and permeability measurements. However, recovery of rotary sidewall cores can be challenging, especially considering the extent of pressure depletion in the 64 Zone Sandstones. The initial plan is to collect up to 50 plug samples per well, which would be evenly distributed through the Lower Santos Shale (primary confining zone) and the 64 Zone Sandstone (injection zone) intervals to confirm observations on vertical heterogeneity. A percussion sidewall coring tool will be available as back-up to collect up to 30 samples if rotary sidewall recovery is not satisfactory. Percussion sidewall cores are not suitable for porosity and permeability measurements, but mineralogy and lithology analyses can be performed.

2.4.2 Mineralogy and Petrology

2.4.2.1 Injection Zone

The target injection zone is comprised of the U Sandstone and underlying W Sandstone, collectively known as the 64 Zone Sandstones (**Figure 2.1-9**). The W Sandstone is the thicker, and stratigraphically deeper, of the two units. It is a well cemented, fine- to coarse-grained sandstone that is generally massive and varies from poorly sorted and subangular to very well sorted and subrounded to rounded. Visual classification of the W Sandstone is based on conventional core samples collected from wells 4-1N, 17-2N, and 43-27N within the AoR (**Appendix 2D**) and published literature (Carter 1985; Kaczorowski et al. 1986). This sandstone is typically gray in color and contains some fossiliferous and bioturbated sections (Dibblee 1973; Taylor and Soule 1993). Within the North Belridge oil field, the bottom ~50 ft of the W Sandstone is bioturbated, fine-grained, clay-rich sandstone with both horizontal and vertical burrows (Taylor and Soule 1993). The top of the basal section is scoured and overlain by ~3 ft of medium-grained, clean (minimal interstitial fines), parallel-bedded sandstone which grades into massively bedded sandstone (Taylor and Soule 1993). The remainder of the W Sandstone in the North Belridge oil

field is dominantly non-bioturbated, medium-grained, massive, clay-poor sandstone (Taylor and Soule 1993).

The upper 64 Zone Sandstone, the U Sandstone, overlies the U Shale that separates the W and U Sandstones. The U Sandstone has visual characteristics similar to the underlying W Sandstone. The U Sandstone has been similarly altered by mechanical compaction of framework grains and cementation. Cementing material comprises primarily quartz overgrowths, but also includes minor carbonate and clay mineral cements (mainly kaolinite). To the north, the reservoir quality of the U Sandstone degrades because of thinning, cementation, and possible faulting (Kaczorowski et al. 1986). To the southwest, reservoir quality degrades by cementation (Kaczorowski et al. 1986).

Quantitative characterization of the target injection zone mineralogy and petrology is based on analytical data generated for this evaluation and supplemented with information from academic studies. The dataset supporting mineralogic and petrologic characterization consists of x-ray diffraction (XRD) analyses and point-counted thin section analyses from extracted cores. A total of 44 samples from well 17-2N, seven samples from well 4-1N, and four samples from well 43-27N were collected from the W Sandstone interval of the cores and analyzed via petrographic light microscopy and point-counted using 300 points per thin section to evaluate modal mineralogy. Three additional samples from well 43-27N were collected (one from the U Sandstone and two from the W Sandstone) and analyzed via XRD to quantify mineral weight percentages. Results and depths of each sample are presented in **Table 2.8-1** in **Section 2.8**. The locations of sampled wells are shown on **Figure 2.4-11**. The injection zone dataset is inclusive of multiple wells, depths, and units and, therefore, is considered to provide a representative assessment of injection zone petrology and mineralogy.

Although data from point-count analyses and XRD analyses are not directly comparable, results of each analytical method from well 43-27N show similar abundances of quartz, feldspar, and clay minerals. Detection threshold constraints on XRD analyses do not allow minerals to be quantified at small abundances, so it is likely that minerals such as glauconite, calcite, and dolomite, which were reported as small quantities in point-count analyses, were not detected in XRD analyses despite possibly being present. Generally, available data suggest consistency between the two analytical methods. Furthermore, mineralogy analytical results presented herein are consistent with the conclusions of academic studies.

Sandstone petrology is typically classified based on the ratio of common detrital components: quartz, feldspar, and lithic (rock) fragments, referred to as a Q:F:R ratio. This ratio forms the basis of sandstone petrologic interpretation by indicating the relative proportion of common clastic components. The 64 Zone Sandstones are classified as arkosic sandstone (**Figure 2.4-12**), meaning that mineralogy of the 64 Zone Sandstones is dominated by clastic minerals quartz and feldspar. The 64 Zone Sandstones also contain various cementing minerals, including quartz overgrowth cement, clay mineral cement, and carbonate cement. Clay cements are primarily authigenically formed kaolinite, although smectite, illite, and mixed-layer illite/smectite (I/S) are present as detrital components as well. Minor amounts of carbonate cements, consisting of pore-filling dolomite and calcite, are present at an average abundance of 1.0% (based on point-count analyses

and hydrochloric acid [HCl] solubility testing). Authigenic glauconite was observed in some samples during point-count analyses (Taylor and Soule 1993).

Compositionally, the 64 Zone Sandstones' framework contains quartz, potassium feldspar (K-feldspar), plagioclase, and various lithic fragments of volcanic and metasedimentary origin (**Figure 2.4-12**; Taylor and Soule 1993; Kaczorowski et al. 1986). Abundant feldspar and higher proportions of K-feldspar relative to plagioclase indicate that these sandstones were derived from a dominantly granitic to granodioritic plutonic source terrain (Taylor and Soule 1993).

The 64 Zone Sandstones were deposited in a submarine-fan environment. Diagenetic alteration of these sandstones generally includes the following: (1) grain compaction, which reduced porosity to an average of 20%; (2) quartz overgrowth formation/cementation, which further reduced porosity by an average of 6.2%; and (3) feldspar dissolution and subsequent precipitation of authigenic kaolinite, resulting in little to no net change in porosity (Taylor and Soule 1993). Feldspars consist of K-feldspar, observed at an average abundance of 16.5%, and plagioclase, observed at an average abundance of 10.1% (**Table 2.8-1**). Formation of four separate stages of carbonate cementation was believed to have occurred throughout the paragenetic sequence. Carbonate cements include pore-filling dolomite and calcite. These cements are absent in the majority of samples for which petrographic analyses were conducted. Carbonate cements are present at an average abundance of 1.0% (sum of calcite and dolomite) based on petrographic thin section point-count analysis, although intervals have been observed containing carbonate cements at 20 to 30% of bulk volume (Kaczorowski et al. 1986). The point-count average carbonate cement abundance of 1.0% is reinforced by HCl solubility testing completed on 64 Zone Sandstone samples. Three samples collected from well 43-27N within the 64 Zone Sandstones (one sample from the U Sandstone and two samples from the W Sandstone) yielded an average HCl solubility of 1.2%, which is similar to the average carbonate abundance quantified by point-counting. The analytical report containing HCl solubility testing results is included in **Appendix 2D**.

Quartz overgrowths comprising the cementing material were observed to be small and poorly developed in samples that were primarily cemented by calcite. Dolomite was observed as both a pore-filling cement and as an authigenic replacement of existing calcite cement. Minor amounts of secondary anhydrite cement have been reported (Kaczorowski et al. 1986). Authigenic clays are present at an average abundance of 4.7%. Mean effective porosity of the 64 Zone Sandstones was found to be 9.9%, based on visual determination from point-counting (**Table 2.8-1**), and approximately 11% to 15%, based on laboratory porosity testing (**Table 2.4-4**). Quantification of total porosity based on visual determination from point-counting is subject to potential error associated with the instrument operator's assessment of empty space and of porosity in the presence of skeletal grains and secondary cementing minerals that partially occlude pore throats but do not completely fill pore space. As such, laboratory methods specifically designed to assess total porosity provide more accurate results (**Table 2.4-4**).

Specific analysis of the clay-sized fraction within the 64 Zone Sandstones has not been completed on samples collected for this evaluation but is based on the findings of Taylor and Soule (1993). Clay minerals within the 64 Zone Sandstones include kaolinite, glauconite, illite, and mixed-layer I/S (Taylor and Soule 1993). Taylor and Soule (1993) report an average clay mineralogy

distribution of 50% I/S, 36% illite, and 14% kaolinite based on scanning electron microscope (SEM) and XRD analyses of the clay-sized fraction of eight samples. The percentage of illite in mixed-layer I/S ranges from 75% to 85%, indicating prevalent illitization of smectite. Although illitization of smectite is prevalent, distinct smectite layering was confirmed in SEM micrographs from the 64 Zone Sandstone. These SEM micrographs are provided as **Appendix 2D**. The W Sandstone also includes a basal layer that contains a greater component of detrital clay minerals (up to 16.3% by point-counting) (**Table 2.8-1**). This basal layer contains lower total porosity (2.6 to 7.9%) as a function of the increased abundance of detrital clays (Taylor and Soule 1993).

The majority of the 64 Zone Sandstones are composed of quartz and feldspar, minerals that are typically chemically inert. However, at temperature and pressure conditions relevant to the injection zone, feldspar grains in sandstones may experience dissolution or precipitation of overgrowth cements, and quartz may experience some degree of overgrowth precipitation. Often, feldspar dissolution/precipitation occurs as one side of a feldspar-clay mineral geochemical reaction (Lanson et al. 2002). Precipitation of secondary clay minerals (kaolinite and illite) at the expense of feldspar grains in deep sandstone systems is well documented. The 64 Zone Sandstones contain both detrital and diagenetically formed clay minerals that could supply mass for both sides of these reversible reactions. Alteration reactions between these clay minerals and other aluminosilicate minerals are also possible, as are alteration reactions between different clay minerals (e.g., transformation of smectite to illite). The 64 Zone Sandstones also contain a small component of carbonates as pore-filling cement. Carbonate mineral stability is highly sensitive to several conditions, including pressure, temperature, and pH (Drever 1988). Dissolution or precipitation of carbonate minerals is a likely byproduct of altering geochemical conditions in the system. Generally, a decrease in pH would be expected to initiate carbonate dissolution; likewise, increases in pH, aqueous calcium, or aqueous bicarbonate may result in carbonate precipitation. Introducing CO_2-dominated injectate gas into formation groundwater will likely result in the dissolution of some CO_2 into the aqueous phase, leading to a subsequent decrease in formation water pH levels. In turn, existing carbonate minerals within the 64 Zone Sandstones may dissolve to buffer the initial pH decrease brought on by gas injection but would be expected to reprecipitate as aqueous bicarbonate concentrations increase in formation water. Carbonate minerals account for a very small percentage of the bulk rock by volume and the effect on porosity is expected to be small.

Site-specific data were used in **Section 2.8.1** as input for geochemical modeling efforts to assess mineral stability and evaluate which reactions are likely to occur from introducing CO_2-dominated injectate gas into the geochemical system. These results are discussed in greater detail in **Section 2.8.4**. Some geochemical reactions between minerals (both precipitation reactions and dissolution reactions) are expected to occur, but the injection zone is dominantly comprised of quartz and feldspar primary grains and, therefore, solid-phase mass changes are expected to be minimal. As such, the injection zone can be characterized as compatible with the proposed CO_2-dominated injection gas stream.

Further refinement of the injection zone characterization efforts is achievable through additional sampling and analysis of existing cores. Sandstone mineralogy and petrology are well defined

using a combination of petrologic thin-section point-counting and XRD analyses, so additional analytical techniques are not required. However, performing point-counting and XRD on a greater number of samples from additional wells at additional depths would provide strong assurance that average mineralogical values used as inputs in geochemical models are representative of the entire injection zone. At present, most samples comprising the injection zone dataset were collected from the W Sandstone. Additional sampling of the U Sandstone would strengthen confidence in the representativeness of modeling inputs. To improve characterization of lateral and vertical heterogeneity, mineralogic sample collection within the injection formation (U and W Sandstones) will be attempted during drilling of new wells. As stated in the Pre-Operational Testing Plan (**Attachment D**), a subset of the sidewall core samples collected from each well (five to eight samples from the 64 Zone Sandstones) will be selected to perform mineralogy and petrology analyses. The specific depths of the samples for mineralogy and petrology analyses will be selected using well logs and will be located to capture vertical heterogeneity. Aera will also acquire open-hole or cased-hole logs of the newly drilled and repurposed injection wells that will be used to confirm mineralogy and identify vertical heterogeneity.

2.4.2.2 Confining Zones

The 64 Zone Sandstones are overlain by the Santos Shale Member of the Temblor Fm in the southwestern San Joaquin Basin. The Santos Shale is further divided and locally named as the "Lower Santos Shale" and "Upper Santos Shale" in reference to the beds below and above the Agua Sandstone (**Figure 2.1-9**; Adkinson 1973). The Lower Santos and Upper Santos Shales constitute the primary and secondary confining zones for this Project, respectively. The Lower Santos Shale is a generally massively bedded medium to dark-gray and brown claystone with very little silt or sand (Carter 1985). Occasional intervals of hard, platy siliceous shale, and platy to blocky calcareous shale are also observed.

The Upper Santos Shale comprises two general facies: dark gray to brown clay shale with thin-silt and sand-interbedded laminations, and tan, platy, siliceous and calcareous clay shales (Carter 1985; Foss and Blaisdell 1968). Although the two units are broadly similar, the Upper Santos Shale contains greater silt and sand components relative to the Lower Santos Shale (Foss and Blaisdell 1968; Carter 1985). Some shale laminations observed within the Upper Santos were found to contain lenses of glauconitic sandstone. The Upper Santos Shale is decreasingly fossiliferous with increased depth (Adkinson 1973).

The intervening Agua Sandstone (between the Lower and Upper Santos Shale) is described as having a distinct facies change corresponding to the abrupt thinning of this deposit to the south along a NE-SW striking line through the middle of the North Belridge oil field (Carter 1985; Pacific Geotechnical Associates Inc. 1997; Mitchell 2018). The northern deposits of the Agua Sandstone, roughly correlating to the northern half of the North Belridge oil field, are described as a friable, fine to coarse grained, arkosic sandstone with at least two thin oyster beds, interpreted to have a shallow marine depositional environment on a sand-rich middle shelf (Carter 1985). To the south, the Agua Sandstone is described as a fine to medium grained, phosphatic and glauconitic sandstone, with pelletal phosphorite, many of the sand-sized grains of glauconite partially phosphatized, and an organic-rich argillaceous matrix with varying amounts of siliciclastic silt and

fine sand, interpreted to represent a sediment-starved outer shelf or upper slope setting (Carter 1985).

Five samples of the Upper Santos Shale have been collected from whole core recovered from well 888N-12 (location shown in **Figure 2.2-1**) and were submitted for XRD analyses for total mineralogy and clay mineralogy, petrographic light microscope analysis of thin sections, and SEM analysis of rock chip samples. These samples were collected using 10-foot spacing from a depth interval of approximately 50 ft to address the potential for localized heterogeneity.

Mineralogy results obtained from XRD are provided in **Table 2.4-2**. While expected minor variability was observed, the five samples were found to be mineralogically similar (i.e., the samples contained similar major and minor mineral abundances). As such, these results are believed to provide a representative assessment of the Upper Santos Shale mineralogy. Samples generally consist of siltstone with detrital clay matrix material which occludes intergranular pore space. XRD was completed to quantify mineral abundances for bulk samples and clay-size fractions. Samples contained an average of 48 percent weight (wt.%) clay-sized material which is comprised primarily of mixed-layer I/S (32 wt.% average) and amorphous organic clay-size material (12 wt.% average), with minor amounts of kaolinite, chlorite, and illite. Mixed-layer I/S consists of 36% illite layers on average. Plagioclase (18 wt.% average), quartz (16 wt.% average), and calcite (11 wt.% average) comprise the majority of granular material. Siderite and pyrite cements were present at low abundances. Dolomite was present at low abundances as a replacement mineral to calcite or as fine crystals of cement locally admixed with clay matrix.

Petrographic analyses of the five samples were completed using polarized light microscopy (thin sections) and SEM (rock chips). The laboratory analytical report for these analyses is provided as **Appendix 2D**. The samples were found to consist of matrix-rich siltstone with some sand-sized fossils. The silt grains primarily consist of quartz and plagioclase. Calcite fossils are present at grain sizes larger than the clastic silt material. The fossils are dominantly composed of calcite but some were found to have been partially replaced by dolomite. Matrix material consists almost entirely of detrital clay. Organic material is observed within the matrix as well, identified by the opaque black color in thin sections. Detrital clays have experienced ductile deformation and fill nearly all intergranular porosity. Some authentic cementing materials have been identified. Pyrite framboids are observed in SEM rock chip analyses. Siderite was documented in XRD results but was not explicitly identified in petrographic analyses.

Additionally, the Santos Shale Member has been sampled, and mineralogy and petrology have been evaluated as part of academic studies of the unit. Mitchell (2018) analyzed 40 samples from five wells located in the southernmost portion of the San Joaquin Basin (within 7 to 26 miles south-southeast of the South Belridge oil field [**Figure 2.4-11**]) using XRD, X-ray fluorescence (XRF), and inductively coupled plasma mass spectrometry. These samples were collected from three distinct depth intervals: shallow burial depths ranging from 1,061 to 1,944 ft below ground surface (bgs) (as reported in Mitchell [2018]), intermediate burial depths ranging from 4,063 to 6,505 ft bgs, and deep burial depths ranging from 14,910 to 14,970 ft bgs. The Santos Shale dataset from Mitchell (2018) accounts for both spatial and depth variability and, therefore, allows for a holistic assessment of petrology of the primary and secondary confining zones.

XRD analyses from academic studies indicate that the bulk composition of Santos Shale samples comprises 45% clay minerals, 29% quartz, 15% carbonate minerals, and 11% feldspar. These results are generally corroborated by analysis of samples collected for this study (**Table 2.4-2**), although the Upper Santos Shale samples were found to contain slightly less quartz and slightly more feldspar. Similar percentages of clay minerals, carbonate minerals, and quartz + feldspar were interpreted in elemental capture spectroscopy (ECS) logs (**Appendix 2G**) over the Lower Santos Shale interval in well 888N-12 (8,794 to 8,988 ft MD; 8,055 to 8,247 ft TVDss), located within the AoI[1] (**Figure 2.2-5**). Analyses of the clay-sized fraction from academic studies indicate 45.5% smectite, 43.3% illite, 8.2% kaolinite, and 3.0% chlorite (as percentage of the clay-sized fraction). Analyses from the samples collected for this study found lower abundances of kaolinite. The average composition of the overall (Upper and Lower) Santos Shale (from both academic studies and XRD results of samples collected for this study) is classified as an argillaceous/siliceous mudstone based on the classification scheme of Gamero-Diaz et al. (2012). The carbonate component of the Santos Shale is the most reactive component, but the potential impact of carbonate reactivity is mitigated by the mudstone's low permeability and the limited surface area in contact with fluids along the injection zone-confining unit interface. As such, the Santos Shale is believed to be compatible with the proposed CO_2-dominated injection gas stream. An expanded discussion of expected confining zone mineral reactivity is provided in **Section 2.8**.

Characterization of the primary confining zone may be improved by collecting and analyzing samples from new injection wells planned for the proposed CO_2 storage complex. At present, much of the information supporting the petrologic and mineralogic assessments of the primary and secondary confining zones originates from academic studies, although analysis of core from the Upper Santos Shale was completed and constitutes a primary mineralogical data source for the secondary confining zone. Pulsed neutron wireline log measurements are planned to be conducted in the injection wells. These analyses will expand the existing primary and secondary confining zone dataset and allow for a more robust understanding of the rock properties. While geochemical modeling of injectate-influenced pore fluid interactions with the primary and secondary confining zone mineralogy was not completed as part of this evaluation, increased understanding of mineralogy and geochemistry will allow for more confident conclusions regarding the nature of injectate gas interaction with the confining zones.

Uncertainty related to the current understanding of the primary confining zone is primarily associated with the small sample size of the dataset and current reliance on external sources. The academic XRD dataset comprising the mineralogical characterization of the entire Santos Shale (Upper and Lower) consists of 40 samples. This dataset was supplemented with petrographic and XRD analyses of 5 samples from the Upper Santos Shale (secondary confining unit). These samples were found to maintain general consistency with the academic dataset as evidenced by the identical petrologic classification using averages of both datasets. Increasing the number of samples analyzed, particularly within the Lower Santos Shale (primary confining unit), would result in a better understanding of heterogeneity within the Santos Shale and allow for better-

[1] ECS logs report mineral abundance values as mineral weight fractions, as opposed to XRD analyses which report mineral abundance values as mineral weight percentages.

informed opinions regarding its mineral interactions with injectate gas. Additionally, internal collection and analysis of samples from the primary confining unit will serve to demonstrate that appropriate quality assurance (QA)/QC measures are taken during analytical work.

To improve characterization of lateral and vertical heterogeneity, mineralogic sample collection within the primary confining unit (Lower Santos Shale) will be attempted during drilling of new wells. As stated in the Pre-Operational Testing Plan (**Attachment D**), a subset of the sidewall core samples collected from each well (five to eight samples from the Lower Santos Shale) will be selected to perform mineralogy and petrology analyses. The specific depths of the samples for mineralogy and petrology analyses will be selected using well logs and will be located to capture vertical heterogeneity. Aera will also acquire open-hole or cased-hole logs of the newly drilled and repurposed injection wells that will be used to confirm mineralogy and identify vertical heterogeneity.

2.4.3 Porosity (φ), Permeability (k), and Capillary Pressure (P_C)

Having a rich history of oil and gas production from multiple reservoirs, including the U Sandstone and the underlying W Sandstone, collectively known as the 64 Zone Sandstones, the North Belridge oil field has been the subject of several reservoir characterization studies. Over the years, a significant amount of subsurface data (core description and analysis, mudlogs, wireline logs, etc.) have been collected, much of which is available in analog and/or digital format to inform the petrophysical characterization of the 64 Zone storage complex. With most of the North Belridge oil field 64 Zone development occurring before the 1970s (**Figure 2.4-13**), modern wireline log data are scarce and generally representative of a depleted 64 Zone reservoir.

Several conventional cores were acquired during early phases of field development in the 1930s and 1940s; however, few cores were sampled for laboratory analysis of reservoir properties. Three of those cores exhibited good recovery through the 64 Zone W Sandstone, and routine core analyses were conducted from the following cores: 4-36N, 7-1N, and 8-1N (later renamed as 511-1N). In the 1980s, three conventional cores in the 64 Zone U and W Sandstones were acquired as part of a large reservoir evaluation conducted by Shell California Production Inc.: 17-2N, 43-27N, and 4-1N. The locations of wells with conventional core data are shown in **Figure 2.4-14**. Hole conditions caused by pressure depletion negatively impacted core recovery and wireline logs. As a result, continuous modern wireline logs and core recovered through the 64 Zone Sandstones are not available in the same wells. Well 17-2N reported the best core recovery, while 43-27N had the highest-quality wireline logs (**Figure 2.4-15**).

The six cored wells described in the previous paragraph contribute a total of 1,170 samples with analysis data, of which 1,011 are from the proposed injection zone: 72 and 939 from the 64 Zone U and W Sandstones, respectively (**Table 2.4-3**; **Figure 2.4-16**; **Appendix 2D**).

Although uncertainty is introduced to porosity and permeability measurements by the vintage of the 4-36N, 7-1N, and 511N-1 cores, their nearly complete vertical coverage of the W Sandstone section supplements the dataset, mitigating the poor recovery experienced in the upper W Sandstone in more recent cores. The W Sandstones have been identified in previous studies as the

interval with highest porosity and permeability in the proposed CO_2 storage complex (Kaczorowski et al. 1986) and confirmed by observations in the more recent cores.

In 2011, Aera drilled the deep exploratory well 888N-12, located between the North and South Belridge oil fields (**Figure 2.4-17**), with a total depth (TD) in the Point of Rocks Member of the Kreyenhagen Formation. Among multiple conventional cores, 80 ft of continuous core was recovered from the Upper Santos Shale, in an area where the Agua Sandstone is thin. Routine core analysis was performed on 64 samples taken from the Upper Santos Shale interval in this core (**Table 2.4-3** and **Figure 2.4-16**), providing direct measurements of porosity, grain density, and permeability to air of the confining zone formation.

As described in detail in **Section 2.4.2.2**, the Lower Santos Shale is a generally massively bedded medium to dark-gray and brown claystone with very little silt or sand with few intervals of hard, platy siliceous shale, and platy to blocky calcareous shale (Carter 1985). The Upper Santos Shale comprises two general facies: dark gray to brown clay shale with thin-silt and sand-interbedded laminations, and tan, platy, siliceous and calcareous clay shales (Carter 1985; Foss and Blaisdell 1968). Because the two units are broadly similar, petrophysical properties developed from conventional core analyses of the Upper Santos Shale are also applied to the Lower Santos Shale in the storage complex simulation model. Because the Upper Santos Shale generally contains greater silt and sand components relative to the Lower Santos Shale (Foss and Blaisdell 1968; Carter 1985), this assumption is understood to be conservative for the purposes of evaluating the sealing capacity of the primary confining zone. Results of conventional core analyses from the Upper Santos Shale presented in tables and figures in this section are thus denoted simply as "Santos Shale" because they are taken as representative of both shale units of the Santos Shale Member.

Routine core analyses were also performed for samples collected from additional core intervals (including Temblor Sands, Carneros Sandstones, Agua Sandstone, and Oceanic Sandstone) and/or additional core locations (including 1B-21N, 2R-27N, and 50X-27N [**Figures 2.4-14** and **2.4-16**]), for a grand total of 1,310 core samples (**Table 2.4-3**).

Other exploratory wells with modern log suites have been drilled through the confining and injection zones near the North Belridge oil field (**Figure 2.4-17**). Such wells, although not located in the field, are considered key to the characterization effort due to the advanced log suites that were acquired in them (including elemental capture spectroscopy, nuclear magnetic resonance [NMR], dipole sonic, microresistivity image, among others) with continuous coverage of the injection and confining zones. The most data-rich of such wells are the already mentioned 888N-12 (located approximately 1 mile south of the North Belridge oil field boundary, near the southern end of the AoR) and Gump Trust 30-1 (located in the Beer Nose oil field approximately 8 miles to the northwest of the North Belridge oil field and the AoR).

As outlined in the Pre-Operational Testing Plan (**Attachment D**), Aera will attempt the acquisition of rotary sidewall cores during drilling of new injection wells to validate observations made from core acquired in vintage wells. Rotary sidewall cores are preferred over percussion sidewall cores because of their suitability for porosity and permeability measurements. However, recovery of

rotary sidewall cores can be challenging, especially considering the extent of pressure depletion in the 64 Zone Sandstones. The initial plan is to collect up to 50 plug samples per well, which would be evenly distributed through the Lower Santos Shale (primary confining zone) and the 64 Zone Sandstone (injection zone) intervals to confirm observations on vertical heterogeneity. A percussion sidewall coring tool will be available as backup to collect up to 30 samples if rotary sidewall recovery is not satisfactory. Percussion sidewall cores are not suitable for porosity and permeability measurements, but mineralogy and lithology analyses can be performed.

Routine core analysis will be performed on rotary sidewall core samples of sufficient dimensions, which includes porosity measurements via the Boyle's Helium expansion method. A subset of the samples collected from the injection zone (up to five) will be selected in each new well to perform stressed porosity and permeability measurements. A similar number of samples will be selected from the confining layer to perform tight rock analysis (TRA) measurements, including crushed-rock porosity and permeability measurements. If sufficient core material is recovered, additional capillary pressure measurements can also be performed in a subset of the samples, especially for the primary confining unit (Lower Santos Shale) samples. In case rotary sidewall core recovery is not satisfactory, bulk and grain density measurements will be conducted on percussion core plugs or recovered rotary sidewall core material. The specific depths of the samples selected for the special core analysis described above will be selected using well logs with the intent to capture vertical heterogeneity.

2.4.3.1 Porosity (φ)

Defined as the unitless ratio of pore volume to bulk volume of rock (v/v), porosity is a critical reservoir property with direct implications to the storage capacity of the injection zone. Porosity was measured on 1,010 samples from the 64 Zone Sandstones (72 and 938 samples from the U and W Sandstones, respectively) and 64 samples from the Upper Santos Shale by either Archimedes principle or Boyle's law method.

Sedimentary rocks tend to exhibit a general trend of decreasing porosity with increasing depth due to compaction (with deviations from such trend possible due to diagenetic alterations); therefore, variability in the average porosity is expected. The conventional cores available are representative of the depth range (7,894 to 9,141 ft MD) where the 64 Zone Sandstones are encountered in the North Belridge anticline.

Conventional core data exhibit mean (arithmetic) porosity values of approximately 0.07, 0.11, and 0.15 v/v for the Upper Santos Shale, U, and W Sandstones, respectively (**Table 2.4-4**). Larger variability is observed in data from the Upper Santos Shale and the more heterogenous U Sandstone (**Figure 2.4-18**). Log-derived porosity was used to further understand variability of porosity in the 64 Zone Sandstones and Santos Shale. Unfortunately, borehole washouts are common in the few wells with density logs, significantly impacting log quality. Neutron logs are slightly less affected than density logs by borehole rugosity, but their hydrogen index measurement can be affected by the presence of clay minerals and free gas. A density-neutron crossplot porosity (ϕ_{D-N}) was computed as an estimate of total porosity (ϕ_{Total}) in the U and W Sandstones and the Santos Shale. The

density-neutron crossplot porosity accounts for the effects of mineralogy and fluid saturation on log measurements:

$$\phi_{Total} = \phi_{D-N} = \sqrt{\frac{\phi_{density}^2 + \phi_{neutron}^2}{2}};$$

where density porosity ($\phi_{density}$) was computed assuming a fluid density of 1 gram per cubic centimeter (g/cm^3) and using the average (arithmetic mean) grain density values observed from core of 2.65 g/cm^3 for the U Sandstone and the Upper Santos Shale, and 2.63 g/cm^3 for the W Sandstone (**Figure 2.4-19**). Neutron porosity ($\phi_{neutron}$) is a direct log measurement.

Figure 2.4-20 presents the distribution of log-derived total porosity from 11 wells, displaying wider distributions than core data, particularly for units other than the W Sandstone. The log data also appear to capture the higher porosity values (in excess of 0.15 v/v) commonly observed in the upper W Sandstone. **Table 2.4-5** contains the respective summary statistics for log-derived porosity, also reflecting the wider distributions of porosity for both 64 Zone U and W Sandstones observed from log data. The mean value of log-derived porosity is around 0.13 v/v for both the U and W Sandstones (slightly higher than the 0.11 v/v and lower than the 0.15 v/v observed from core for the U and W Sandstones, respectively). It is important to note that the volume of investigation of log measurements is larger than that of core analysis. Also, log measurements are expected to yield a total porosity measurement at reservoir conditions, as compared to core measurements, which are conducted at ambient conditions. The U Shale and Lower Santos Shale reported a mean value of log-derived total porosity of 0.08 v/v, exhibiting much larger variability than the sandstone reservoirs. The shale intervals were observed to be particularly affected by borehole washouts, so only values from in-gauge hole were used to compute statistics.

Porosity measurements from routine core analyses were performed at atmospheric conditions and are not representative of reservoir conditions. Special core analyses for the 17-2N core included porosity measurements at simulated original reservoir conditions (confining stress of 3,700 psi) in eight samples. A comparison of unstressed and stressed porosity values is presented in **Figure 2.4-21** (note: two of the eight samples plot exactly on top of each other). Reported stressed porosity values (at simulated reservoir conditions) are between 0.004 and 0.007 v/v lower than their corresponding measurements at ambient conditions, with the exception of a sample in the lower W Sandstone with a difference of 0.017 v/v. A previous study reported correction factors of 0.01 v/v for low-quality reservoir rocks and 0.005 v/v for high-quality reservoir rocks (Kaczorowski et al. 1986).

Several direct comparisons of the log-derived porosity data with porosity measured in core have been made. Where there are good quality modern logs, the core data support the log derived data. Modern logging suites, including density and neutron porosity logs, were collected in the three wells with conventional core taken from the 64 Zone Sandstones in the 1980s (17-2N, 43-27N, and 4-1N). However, borehole rugosity was a prevalent issue, compromising log data quality in cored intervals. In well 17-2N, continuous core was recovered from the bottom 60 ft of the U Sandstone and almost the entire W Sandstone interval; however, porosity logs were only run in the W Sandstone interval, and due to the pervasive borehole washouts, density log measurements

are not usable in the top 120 ft of that sandstone member (see 17-2N log layout in **Figure 2.4-22**), allowing for partial comparison of core- and log-derived porosity in that well. Stressed porosity data are available for 14 samples from well 17-2N subjected to mercury-injection capillary pressure and electrical properties measurements; however, only five samples come from depths with porosity logs not significantly affected by borehole rugosity. A few short cores were recovered from well 43-27N: approximately 20 ft in the U Sandstone, 3 ft from the upper W Sandstone, and approximately 25 ft from the lower W Sandstone (see 43-27N log layout in **Figure 2.4-22**). Borehole integrity was much better in this well, resulting in better quality porosity log data that allow for comparison to core measurements. In 2012, rotary sidewall cores were recovered from the 64 Zone Sandstones in well 888N-12 (one and 11 sidewall cores from the U and W Sandstones, respectively). Borehole condition was conducive to acquiring density, neutron, and NMR logs, providing three independent measurements to estimate porosity (see 888N-12 log layout in **Figure 2.4-22**). There is generally a good visual correspondence between the computed density-neutron crossplot porosity and unstressed core porosity measurements (**Figure 2.4-22**). Conventional core in the U Sandstone and NMR logs through the U and W Sandstone intervals were also acquired in off-site (outside of AoI) well Gump Trust 30-1 (**Figure 2.4-22**).

A crossplot of core porosity versus log-derived total porosity (**Figure 2.4-23**) shows that the W Sandstone core porosity (most samples are from 17-2N) is on average 2 to 3 porosity units higher than the log-derived total porosity. It is important to note that core porosity measurements in the crossplot are unstressed. As indicated above, the previous study (Kaczorowski et al. 1986) found stressed porosity to be 0.5 to 1 porosity units lower than unstressed porosity. The larger difference between the log-derived and core porosities may be explained by the presence of free gas affecting the crossplot porosity computation. A crossplot comparing log-derived total porosity data with the five stressed porosity measurements on 17-2N samples (**Figure 2.4-24**) displays what appears to be a better agreement in the samples with porosity above 10 porosity units. In contrast, the log-derived total porosity estimates for the U Sandstone (primarily from the Gump Trust 30-1 well) appear to be generally higher than the unstressed porosity measurements by an average of 1 to 2 porosity units, driven by higher neutron porosity values potentially caused by the presence of clay minerals. It is also important to note that core and log measurements have significantly different volumes of investigation (much larger for log measurements), which in the presence of reservoir heterogeneity can explain the lack of agreement between measurements.

There has not been a systematic attempt to convert total porosity to effective porosity due to the lack of a calibration dataset for effective porosity. The term effective porosity is of widespread use, but its definition is somewhat subjective. Herein, the log analysis definition of effective porosity proposed by Hook (2003) has been adopted, which excludes clay-bound water (not accessible to other fluids at reservoir conditions) from pore volume but includes capillary bound water (which depends not only on rock properties but also on column height). Both neutron and density log measurements respond to the total pore volume in the near wellbore region (as a function of electron density or hydrogen index). Core porosity via gas expansion or re-saturation is an effective porosity measurement in the sense that it measures the connected fraction of the bulk rock volume. However, the amount of retained clay-bound water depends on sample preparation, particularly the drying technique (Hook 2003). For oven-dried samples, the

measurement will be close to total porosity, while in humidity-controlled drying it is uncertain whether results are representative of reservoir conditions. Therefore, a core-based calibration dataset for effective porosity derived from logs is not available. However, considering the low clay content measured in the 64 Zone Sandstones (**Section 2.8.2.1**), it is expected that total and effective porosity will be similar.

NMR logs respond to the abundance of hydrogen atoms in pore fluids, providing a measurement of total porosity relatively insensitive to lithology. Historically, T2 relaxation times of less than 3 milliseconds have been associated with clay-bound water, so removing that portion of the total pore volume can lead to an estimate of effective porosity (Coates et al. 1997). A crossplot of NMR estimates for total and effective porosity was generated using data from the 888N-12 and Gump Trust 30-1 wells near the North Belridge oil field, showing that estimates of effective porosity are 1 to 2 porosity units lower than total porosity for the U and W Sandstones and 5 to 8 porosity units lower for the Lower Santos Shale and U Shale (**Figure 2.4-25**). It should be noted that NMR porosity estimates are sensitive to borehole rugosity, free gas saturation, and operating parameters (logging speed).

Overall, the existing dataset provides sufficient information to characterize porosity in the 64 Zone U and W Sandstones. Additionally, in the Pre-Operational Testing Plan (**Attachment D**), Aera has included the intent to acquire continuous wireline porosity logs and rotary sidewall core samples from the newly drilled and repurposed injection wells to confirm observations made regarding porosity trends. Aera also intends to acquire NMR logs to provide another independent porosity measurement if borehole conditions are suitable. As mentioned above (**Section 2.4.3**), routine core analysis performed on rotary sidewall core samples of sufficient dimensions includes porosity measurements via the Boyle's helium expansion method. A subset of the samples collected from the injection zone (up to five) will be selected in each new well to perform stressed porosity measurements and a similar number of samples will be selected from the confining layer to perform TRA measurements, including crushed-rock porosity measurements. In case rotary sidewall core recovery is not satisfactory, bulk and grain density measurements will be conducted on percussion core plugs or recovered rotary sidewall core material.

2.4.3.2 Permeability (k)

In addition to porosity, permeability is another key property of both the injection and confining zones. Permeability controls the ability and rate at which CO_2 can be injected and determines the suitability of the confining zone to keep injected volumes from migrating upwards. As was the case with porosity, the conventional core analysis data acquired in the North Belridge oil field throughout its history provide a useful dataset to understand trends in permeability for both the U and W Sandstones. Data from conventional core acquired in the 1940s (7-1N, 511-1N and 4-36N) and the 1980s (17-2N, 4-1N, 43-27N) were used to compute sample statistics, exhibiting good vertical coverage of the 64 Zone W Sandstone. Core data collected from the Upper Santos Shale in well 888N-12 was used to provide insights for permeability of the confining zone.

Intrinsic (absolute) permeability to air was measured on 1,066 horizontal plugs from the Upper Santos Shale and the U and W Sandstones from seven cores, which includes most of the samples subjected to total porosity measurements. Probability density plots and summary statistics of the

64 Zone Sandstones are presented in **Figure 2.4-26** and **Table 2.4-6**. There is a clear difference in the empirical distributions of absolute permeability to air measured on samples from the 64 Zone U and W Sandstones. Values in the U Sandstone generally vary in the 0.1 to 10 millidarcy (mD) range, with a median around 1 mD; whereas, in the W Sandstone, permeability can vary in the 1 to 150 mD range, with a median value around 29 mD and values as high as 400 mD. A log layout of well 17-2N, including routine core analysis data, clearly displays significant vertical variability in absolute permeability to air through the 64 Zone W Sandstone (**Figure 2.4-27**), with dramatically different average permeability in the upper and lower portions of the W Sandstone. In addition, the lower permeability observed from core analysis data in well 17-2N around 8,560 ft and 8,700 ft appears to correlate with slightly lower porosity values. Core descriptions indicate observed calcite cementation at 8,566.7 ft and 8,692.2 ft (**Appendix 2D**). NMR logs in well 888N-12 (discussed further below in this section) show multiple thin spikes of low Timur-Coates and Schlumberger-Doll Research permeability values (around 9,200 ft; 9,252 ft; and 9,348 ft), correlating with indication of calcite from the ECS logs. Such calcite-cemented intervals could have an impact on vertical (or lateral) fluid migration only if laterally continuous.

Many of the air permeability measurements performed on the plugs extracted from the Upper Santos Shale core reported values below the lower limit of routine (steady state) analysis methods. This indicates a very low matrix permeability in the Upper Santos Shale. One pressure decay measurement on crushed rock (unsteady-state method), which is more suitable to tight rocks, was made in 2012 from the 888N-12 core, yielding a value of 0.00014 mD (140 nanodarcies [nD]). An additional three pressure decay permeability measurements were performed on the Upper Santos Shale samples from the 888N-12 core in 2023, yielding a range of estimates from 0.000046 to 0.000114 mD (46 to 114 nD), which is four to six orders of magnitude lower than the permeability measured in the W Sandstone.

Air permeability correlations were used to generate the geocellular model permeability property (**Section 2.2.2** and **Appendix 2B**), which was used as an input to the reservoir simulation model (described in **Attachment B**). Geomodel permeability values within the W Sandstone were calculated based on a function (permeability prediction algorithm) utilizing estimated porosity curves from wells with valid porosity log data and depth below the top of the W Sandstone surface. This function is calibrated to core permeability measurements; however, the limited vertical resolution of the calcite cemented intervals (discussed above for the W Sandstone in well 17-2N), as well as the lack of presence in other wells used to calibrate the model, resulted in little-to-no representation in the geomodel at the 17-2N well location. Larger-scale permeability trends, which will have a more significant effect on simulation and fluid flow, are observed throughout the W Sandstone and other permeable layers within the geomodel (see **Appendix 2B**). Within these larger-scale features, fluid migration is anticipated to follow high permeability streaks, manifesting as preferential lateral fluid flow in the upper W Sandstone where permeabilities are higher.

As was the case with porosity, absolute permeability measured in the laboratory reflects ambient conditions. In addition to correcting for the effect of confining stress, absolute permeability to air can be converted to permeability to the liquid phase encountered in the reservoir. Even though data from measurements of stressed permeability to brine have not been located at this time, Shell

California Production Inc. reported to have conducted measurements for 30 samples from the 17 2N and 4-1N cores (Kaczorowski et al. 1986), proposing empirical correlations of the form:

$$k_{brine,stressed} = c * k_{air,unstressed}$$

With a constant c = 0.305 for the higher-quality reservoir facies encountered in the upper portion of the 64 Zone W Sandstone. Alternatively, relative permeability functions can be used to account for reservoir conditions in the modeling effort. The information herein was presented to inform the site characterization effort; however, neither the empirical correlation obtained by Shell California Production, Inc., nor the relative permeability functions, were used to transform the air permeametry values into formation fluid permeability for use in the geomodel. The geomodel is a 3D representation of air permeability values, as discussed in **Appendix 2B**.

NMR logs can be used to make empirical estimates of absolute permeability because they are sensitive to liquid-filled porosity and pore size distribution by exciting hydrogen nuclei in the pore fluid, inducing a magnetic field. **Figure 2.4-28** presents a log layout of the injection and confining layers in the two key recent offset wells with NMR logs: 888N-12 and Gump Trust 30-1 (locations shown on **Figure 2.4-17**). Only data from intervals of relatively good log quality are displayed in the log layouts and probability density plots and are used for generating summary statistics. Both the density plot (**Figure 2.4-29**) and summary statistics (**Table 2.4-7**) display a marked difference in NMR Timur-Coates permeability between the U and W Sandstones and the shales (Lower Santos Shale and U Shale). The median permeability values in the Lower Santos Shale and the 64 Zone W Sandstone are 0.02 mD and 1.8 mD, respectively, which is a difference of two orders of magnitude.

Timur-Coates and Schlumberger-Doll Research empirical permeability calculations exhibit good agreement with core permeability measurements (Timur 1968; Chang et al. 1994); however, discrepancies are expected due to differences in volume of investigation and experimental conditions (reservoir conditions for NMR logs versus laboratory conditions for core analysis). NMR logs are a relatively shallow measurement, and as a result, are highly sensitive to borehole washouts, which unfortunately are a common occurrence in the Santos Shale in the 888N-12 well. Without having NMR core data, no attempt has been made to calibrate NMR permeability estimates to core data due to the lack of a calibration dataset. Thus, NMR permeability estimates presented herein were used for comparison to core measurements and are used for discussion of vertical heterogeneity of permeability.

As presented on **Figure 2.4-28**, there is generally a good correspondence in trends of core permeability to air and NMR Timur-Coates permeability estimates, especially for the W Sandstone rotary sidewall cores from 888N-12 (**Figure 2.4-30**). A crossplot of core permeability to air and depth-shifted NMR Timur-Coates estimates shows positive correlation but significant dispersion around the one-to-one line (**Figure 2.4-31**). Timur-Coates permeability is generally higher than core measurements of permeability to air for the U Sandstone data from well Gump Trust 30-1. For most of the rotary sidewall cores from well 888N-12, Timur-Coates permeability appears to overestimate core permeability. However, the observation of NMR porosity potentially

underestimating total porosity may imply sufficient polarization was not achieved, thus affecting the permeability estimates as well.

It should be noted that core permeability was measured with air at ambient conditions, whereas NMR logging is a downhole measurement. However, it is also important to note that the Timur-Coates permeability estimation is empirical and relies on a formation-specific constant and the ratio of free fluid to bound fluid, which is based on the selection of a T2 relaxation time cutoff that is generally set to 33 milliseconds for sandstones but can also vary by formation. Calibration of NMR Timur-Coates estimates to reservoir conditions will be pursued if Aera can successfully acquire NMR logs and core data through the proposed CO_2 storage complex in new wells.

At the very low permeabilities (nD range) observed in pressure-decay measurements for four Upper Santos Shale samples from well 888N-12, log-derived methods such as Timur-Coates estimates are not expected to be valid (Wang et al. 2021). For that reason, and because of the presence of borehole washouts in the Upper Santos Shale interval of well 888N-12, no comparison between core measurements and log estimates was possible in the confining unit.

Overall, the existing dataset provides sufficient information to conclude that, apart from the presence of a few calcite-cemented intervals with lower permeability, there appears to be some extent of permeability degradation at the base of the 64 Zone W Sandstone. Additionally, in the Pre-Operational Testing Plan (**Attachment D**), Aera has included the intent to acquire NMR logs and rotary sidewall core samples from the newly drilled injection wells to confirm observations made regarding permeability trends. As mentioned above (**Section 2.4.3**), a subset of the samples collected from the confining layer (up to five) will be selected in each new well to perform TRA measurements, including crushed-rock permeability measurements. If borehole conditions are suitable, NMR logs will be acquired to provide a vertically continuous estimate of permeability in the AoR and another independent permeability measurement. It is important to note that NMR logs have a small radius of investigation and are extremely sensitive to borehole rugosity. Aera will also plan for NMR porosity measurements on core for calibration purposes if rotary sidewall cores are successfully recovered. If the attempts to acquire rotary sidewall cores and modern log suites (including NMR) in new injection wells are successful, newly acquired data will be used to first validate the permeability prediction algorithm (mentioned above and described in more detail in **Appendix 2B**); if significant discrepancies are observed, the algorithms will be refined with the newly acquired data.

2.4.3.3 Capillary Pressure (P_C)

Capillary pressure measurements provide information on the distribution of pore throat size and how fluids occupy the pore space under the balance of buoyancy and capillary forces. That information is critical to understanding how CO_2 penetrates the injection zone and the ability of the confining zone to impede leakage.

The conventional cores of the injection zone (64 Zone U and W Sandstones), including 7-1N, 511-1N, 4-36N, 17-2N, 4-1N, and 43-27N, provide the dataset used in this section to describe reservoir properties. Mercury-injection capillary pressure was measured in 27 samples from the 17-2N, 4-1N, and 43-27N cores: five from the U Sandstone and 22 from the W Sandstone at the

time of acquisition (1980s [Kaczorowski et al. 1986]). At present day, only a subset of the tabular capillary pressure data is available in digital format along with their corresponding porosity and permeability values, which includes 15 capillary pressure curves from 17-2N. Additionally, capillary pressure curves are available for three sidewall cores from well 23-1N; however, due to the nature of percussion sidewall coring, which can potentially alter the pore system, those measurements should be used with caution. Mercury-injection capillary pressure measurements were also performed on five plugs extracted from the Upper Santos Shale core in well 888N-12, which were used due to their relevance to the confining zone.

A plot of the mercury/air capillary pressure curves available in digital format of the samples from the 64 Zone Sandstones and Upper Santos Shale exhibits markedly different entry pressures and curve shapes (**Figure 2.4-32 inset a**). Mercury entry pressures vary in the 5 to 60 pounds per square inch absolute (psia) range for the U and W Sandstones, with lower values corresponding to higher-permeability samples (**Figure 2.4-32 inset b**). Mercury entry pressures vary between 2,500 and 7,950 psia for the Upper Santos Shale samples. Similar results were reported in a previous evaluation using the capillary pressure collected at the time, with entry pressure ranging between 9 and 70 psia for the U and W Sandstones, inversely correlated with average porosity and permeability (Taylor 1987). It is generally expected that higher permeability rocks will contain larger pores and that the non-wetting fluid (mercury in laboratory conditions) can enter at lower injection pressures. Pore throat radius (r) can be computed from capillary pressure as:

$$r = \frac{2\sigma\cos(\theta)}{P_C};$$

where Pc is the capillary pressure at any non-wetting phase saturation, while σ and θ are the interfacial tension and contact angle of wetting and non-wetting phase (mercury/air in laboratory conditions), respectively. Empirical pore throat size distributions were computed from each available capillary pressure curve using the following assumptions, as reported in Purcell (1949):

$$\sigma_{Hg/Air} = 480\ dyne/centimeter$$

$$\theta_{Hg/Air} = 140\ degrees$$

The largest pore throats within the 64 Zone Sandstones vary in size between 1 and 10 micrometers, while they are generally smaller than 0.02 µm for the Upper Santos Shale samples (**Figure 2.4-33 inset a**). Pore throat size generally increases with permeability (**Figure 2.4-33 inset b**).

Mercury injection capillary pressure testing results available in digital format were converted to CO_2/brine equivalents using the following assumptions, as reported in Lohr and Hackley (2018):

$$\sigma_{CO2/Brine} = 25\ dyne/centimeter$$

$$\theta_{CO2/Brine} = 70\ degrees$$

As noted on the mercury/air plots, the CO_2/brine capillary pressure curves of the samples from the 64 Zone Sandstones and Upper Santos Shale exhibit markedly different entry pressures and curve shapes (**Figure 2.4-34 inset a**), with lower entry pressure values corresponding to higher-permeability samples (**Figure 2.4-34 inset b**).

As discussed in the Pre-Operational Testing Plan (**Attachment D**) and in **Section 2.4.3** above, Aera has included the intent to acquire rotary sidewall core samples from the newly drilled injection wells to confirm observations made from core acquired in vintage wells. If sufficient core material is recovered, it is expected that additional capillary pressure measurements can be performed in a subset of the samples, especially those from the primary confining unit (Lower Santos Shale).

2.4.4 Injectivity, Storage Capacity, and Integrity

2.4.4.1 Injectivity

The injectivity of the proposed storage complex is demonstrated experientially by the long history of production and injection of the 64 Zone Sandstones and quantitatively by historical multipoint gas injection tests. As described in detail in **Section 2.10.1**, a discretized wellbore PROSPER model was built to match the gas test results and calibrate the model to the reservoir and well conditions before running predictions and sensitivities for CO_2 injection modeling. Results of the well injectivity sensitivity based on two permeability models estimate between 2,000 to 5,000 tonnes/day injection capacity, with an imposed adaptive 80% of fracture pressure limitation under reservoir re-pressurization, as required by 40 CFR 146.88 (a). These results indicate 64 Zone injectivity is sufficient to support CO_2 injection, given proper sizing of the tubing, manageable well skin, sufficient pressure differential with the reservoir, surface control, and pressure monitoring.

2.4.4.2 Storage Capacity

CO_2 storage capacity in the 64 Zone was estimated using the Oil and Natural Gas Reservoirs Production Method, as described in detail in **Section 2.10.3**, and summarized in **Table 2.10-1**. The method converts surface volumes of produced oil and gas to subsurface CO_2 volumes on a volume-for-volume basis. A high estimate of potential CO_2 storage capacity, based on the cumulative production of hydrocarbons (oil and gas), is 42.6 MM mt of CO_2. A low estimate of potential CO_2 storage capacity is 22.9 MM mt of CO_2, which is calculated with a material balance approach focused on recovery of free gas from the reservoir's gas cap—the most accessible storage target. A mid-range estimate at 32.7 MM mt of CO_2 storage capacity is proposed using an average of the low and high range estimates.

The injection zone is a depleted oil and gas reservoir; therefore, the storage efficiency was not utilized in the storage capacity calculations. The sequestered CO_2 is modeled to primarily occupy the original free gas cap of the oil and gas reservoir. Consequently, the primary factor in estimating storage capacity was the pore volume of the withdrawn gas and fluids from the reservoir and not the storage efficiency of the water leg.

As discussed in the Pre-Operational Well Testing Plan (**Attachment D**), the AoR model will be updated and refined as data are gathered. As mentioned above, initial estimates of storage capacity were performed using material balance methods, as complements to the model-derived estimates presented in **Attachment B**. Subsequent storage capacity estimates have been performed using a refined simulation model derived from a geologic model that incorporates existing seismic data,

well tops, and petrophysical data from both core and well logs. These models will be supplemented and updated with well tops and petrophysical data gathered during well construction. New well tops will help to refine the top and base of the injection zone. Newly acquired petrophysical data will supplement the existing database to better inform reservoir properties, such as porosity and permeability, that affect storage capacity. In addition, leak-off tests will be performed during well construction to better refine the fracture gradient, which dictates the maximum injection pressure for each well in the project and, consequently, impacts the storage capacity. Once these data are incorporated into the existing model, additional simulation runs will be used to further constrain the storage capacity.

2.4.4.3 Integrity

The data related to integrity of the proposed CO_2 storage complex are analyzed in detail in **Sections 2.3** and **2.5**, and a detailed discussion of the confinement of the proposed storage complex is presented in **Section 2.10.2**. Fracture data sets from two wells within the AoI indicate that the primary confining zone is only very slightly fractured and the injection zone is effectively unfractured. Consequently, fractures are expected to have a negligible influence on the sealing capacity of the primary confining zone and the transmissivity of the injection zone. Static pressure measurements collected from the 64 Zone Sandstones were utilized to demonstrate that bounding faults of the AoR create compartmentalization and serve as barriers to flow out of the injection zone. Mechanical integrity analysis of the caprock indicates that the stress state in the Lower Santos Shale is below the Mohr Coulomb shear failure envelope, assuming the formation has zero cohesive strength and with frictional angle of 31º. A pore pressure increase of 741 psi, and a post-injection pore pressure increase of 379 psi, is required to move the Lower Santos Shale stress state into a critically stressed condition from the current static state. Given the elevated confining zone entry pressure and the low permeability, the anticipated maximum differential pressure at the base of the confining zone under the proposed operating condition is expected to be close to zero. These results suggest that within the model constraints the confining zone is stable without risk for shear failure.

2.5 Geomechanical Characterization [40 CFR 146.82(a)(3)(iv)]

The geomechanical characterization provides the basis to accomplish the following:

- Evaluate the injection and confining zone fracture gradients to determine safe injection and storage pressures.
- Evaluate the ductility of the primary and secondary confining zones for the storage complex.
- Evaluate fault seal and fault stability at injection operations and storage conditions.
- Demonstrate confining zone integrity and, thus, its capacity to be a seal to injection fluids (**Section 2.10**).

A one-dimensional Mechanical Earth Model (1D MEM) was developed for the 13 modelled horizons that comprise the 3D static geologic model using modern log suites, including density and dipole sonic logs, from well 888N-12 (**Figure 2.5-1**). Well 888N-12 is located about a half a

mile southeast of the storage complex (**Figure 2.2-1**). Log-based properties were calibrated with rock mechanics testing of existing core samples of the 64 Zone W Sandstone from wells 17-2N and 4-1N and samples of the Upper Santos Shale from well 888N-12.

Rock mechanics analyses performed included indirect tensile strength, unconfined compressive strength (UCS), triaxial compression, multiple stress-path compression, and ultrasonic velocity tests of 16 core samples of the 64 Zone W Sandstone across four depth intervals and 18 samples of the Upper Santos Shale across three depth intervals. A summary of core sample properties and test results is provided in **Table 2.5-1**. Mohr-Coulomb diagrams summarizing the results of triaxial compression testing, including calculated values for friction angle and cohesion, are provided on **Figure 2.5-2** and **Figure 2.5-3**.

Average strength and static elastic properties were calculated for each core interval to calibrate log-based estimates of rock properties. Average UCS was calculated from direct test results and Mohr-Coulomb estimates from triaxial testing. Friction angle and cohesion were calculated using best fit Mohr-Coulomb failure envelopes. In samples of the 64 Zone W Sandstone, Young's Modulus and Poisson's Ratio did not vary significantly at confining pressures above 3,800 psi, and average values were calculated using logarithmic regression. In samples of the Upper Santos Shale, Young's Modulus increased with confining pressure across all test conditions and, thus, maximum values were selected for log calibration. In contrast, Poisson's Ratio did not show a clear correlation with confining pressure in samples of the Upper Santos Shale, so minimum values were selected for log calibration.

Log-based estimates of rock properties were calibrated with average values from core analyses of the 64 Zone W Sandstone and Upper Santos Shale (with core results from the 64 Zone W Sandstone depth-shifted to their corresponding depth on 888N-12 logs). UCS and friction angle were estimated using empirical correlations (Chang, Zoback, and Khaksar 2006). Dynamic elastic properties, including Young's Modulus and Poisson's Ratio, were computed based on the bulk density, compressional, and shear slowness measured with open-hole wireline logs and empirically correlated to the corresponding values for static elastic properties. Young's Modulus is frequency dependent; therefore, estimates from log measurements must be transformed into static conditions. The dynamic Young's Modulus was transformed into the static Young's Modulus using empirical correlations for the 64 Zone W Sandstone (Equation 1) and Upper Santos Shale (Equation 2) calibrated to the average static Young's Modulus values calculated from core measurements. The static Poisson's Ratio is assumed to be equal to the dynamic Poisson's Ratio multiplied by an empirically derived multiplier: 1.0 for the 64 Zone W Sandstone and 0.85 for the Upper Santos Shale.

Equation 1:

$$E_{static} = 0.01 \times E_{dynamic}^{2.16} \; [GPa]$$

Equation 2:

$$E_{static} = 1.2 \times E_{dynamic}^{0.85} \; [GPa]$$

The characterization of the in-situ stress field consists of the quantification of magnitude and orientation of its three components: vertical stress (S_V), minimum horizontal stress (S_{HMIN}), and maximum horizontal stress (S_{HMAX}). S_V was determined by integrating the density logs (**Figure 2.5-1**) with depth. S_{HMIN} and S_{HMAX} were estimated using the poroelastic horizontal strain model, which assumes that the rocks are a semi-infinite poroelastic medium subjected to overburden and horizontal strain loadings (Higgins et al. 2008).

S_{HMAX} was obtained by modeling the borehole breakout features (Zoback et al. 2003) and found to be consistent with a strike-slip stress regime ($S_{HMAX} > S_V > S_{HMIN}$), as indicated from a recent study of the North America crustal stress field (Lund Snee and Zoback 2020). The orientation of S_{HMAX} of N29 ± 15°E was determined from the borehole image logs from well 888N-12 on borehole breakout (**Figure 2.5-4**) and corroborated by the Fast Shear Azimuth calculated from the dipole sonic log of the same borehole. This is consistent with the world stress map (https://www.world-stress-map.org/) and a study from Chanchani et al. (2003) in the Buena Vista Hills field in the southern San Joaquin Valley.

The S_{HMIN} profile was constrained by leak-off test data from the shallower interval in the Temblor Sands of the Monterey Fm and diagnostic fracture injection test data from the deeper intervals in the Kreyenhagen Shale and Point of Rocks Sandstone Members of the Kreyenhagen Fm in well 888N-12. Pore pressure (PP) for well 888N-12 was estimated using the drilling mud weight, constrained by kick events, and formation pressure analysis from Modular Dynamic Tester data (**Figure 2.5-1**). Due to the production history of the field, the state of stress has changed over time. To extrapolate the S_{HMIN} to the initial condition in the 64 Zone U and W Sandstones, the theory of poroelasticity is employed, which describes the change in horizontal stress (ΔSh) as a function of pore pressure (Engelder and Fischer 1994). The ratio of change in horizontal stress to change in pore pressure ΔSh/ΔPP is approximately 0.75 using an average Poisson's Ratio of 0.2 and a Biot coefficient of stress (α) of approximately 1. The change in the S_{HMIN} over time can be analyzed from step-rate tests. These tests can be used to evaluate the stress path of the formation and to guide the maximum injection pressure to prevent the initiation and/or propagation of fractures in the injection and confining zones, as shown in **Figure 2.5-5**. Injection rates and volumes are presented in **Section 7**.

A 3D analytical geomechanical model was developed using the rock properties from the 1D MEM combined with the 3D grid and forecasted pressures from the reservoir simulation model (described in **Section 1.7** of **Attachment B**) to further evaluate the spatial distribution of the stress level changes across the model domain. This 3D model was used to evaluate the induced stresses on the injection zone as well as the primary confining layer (**Table 2.5-2**), the results of which are discussed in detail in **Section 1.7.1** of **Attachment B**. Thermal sensitivity cases were run and are described in detail in **Section 1.7.1** of **Attachment B**; results of the 180 °F case are presented in **Section 2.3.3.2** and **Table 2.5-2.** A summary of the thermal sensitivity cases run over the fault stability analysis for injectate temperatures other than 180˚F is also described in **Section 2.3.3.2.**

2.6 Seismic History [40 CFR 146.82(a)(3)(v)]

The San Joaquin Basin is located on the western margin of the North American Plate, which is bounded to the west by the SAF (**Figure 2.1-2**). The SAF is a northwest-trending right-lateral (dextral) transform fault that marks the tectonic plate boundary between the North American Plate to the east and the Pacific Plate to the west. The SAF accommodates much of the relative plate motion between the North American and Pacific Plates and has an average slip rate of 20 to 35 millimeters per year (mm/year) (Southern California Earthquake Data Center [SCEDC] 2013a). Additional plate motion is accommodated along numerous faults distributed throughout California.

Estimates of earthquake shaking potential prepared by the California Geological Survey (CGS) and United States Geological Survey (USGS) indicate that the AoI/AoR are located within an area of moderate seismic risk. **Figure 2.6-1** presents a map of earthquake shaking potential for the southern San Joaquin Basin and surrounding regions, which depicts the relative intensity of shaking that has a 2% chance of occurrence in 50 years (adapted from Branum et al. 2016). Estimates of earthquake shaking potential are derived from the Uniform California Earthquake Rupture Forecast (Version 3.0; Field et al. 2013), a probabilistic seismic risk model that considers the location and activity of major faults, historical earthquake observations, and amplification effects of near-surface geologic materials. On **Figure 2.6-1**, relative intensity of shaking is represented by a color gradient ranging from green (lowest intensity) through red (moderately high intensity) to pale purple (highest intensity). Within the southwestern San Joaquin Basin, estimated shaking intensity is highest along the SAF and decreases to the northeast with distance from the fault. The AoI is located approximately 21 kilometers (km) (13 miles) northeast of the SAF, in an area of moderate earthquake shaking potential – 2% probability of experiencing a peak ground acceleration of 0.2 to 0.5 standard gravity (g) within 50 years (Branum et al. 2016; Petersen et al. 2008). While earthquake shaking potential is useful as a metric of overall seismic risk, it does not necessarily and adequately characterize the seismic risk of the proposed CO_2 storage complex. Moderate to strong ground shaking may not pose an inherent threat to CO_2 containment capacity (including confining zone integrity, fault sealing properties, and well integrity at the surface or at depth), unless it is accompanied by fault slip within the storage complex.

Evaluating the effects of seismic shaking on the integrity of oil and gas reservoirs and underground storage projects is an area of active and evolving research. Studies of existing wells in seismically active regions have attempted to quantify the risk of well bore leakage due to ground shaking (Kim et al. 2023) or identify high-risk areas where the density of existing wells and probability of strong ground motions are greatest (Kang et al. 2019), but few specific examples of well bore leakage resulting from seismic activity have been identified (Kang et al. 2019; Iyer et al. 2022).

Similarly, while there is evidence that the permeability of active fault zones may be temporarily increased following large slip events, at least in crystalline bedrock terranes (e.g., the 1995 magnitude 7.3 Hyogoken-Nanbu earthquake on the Nojima Fault near Kobe, Japan [Kitagawa et al. 2022]), studies documenting similar effects resulting from seismic shaking without induced slip were not identified. Furthermore, studies of induced seismicity associated with CO_2 injection indicate that fault leakage is unlikely to result from such events due to the high clay content of caprock formations (Vilarrasa and Carrera 2015) and is especially unlikely in thick multi-caprock systems (Rinaldi et al. 2014); both conditions apply to the proposed CO_2 storage complex.

To evaluate whether seismic activity may pose a threat to the containment capacity of the proposed CO_2 storage complex, the location and activity of known regional faults and the locations of historical earthquake epicenters in the vicinity of the AoI were also examined. As documented below, faults with known Quaternary activity and surface rupture were not identified within the AoR or AoI. While there are active faults within the region that have the potential to produce significant shaking, none are expected to induce subsurface ruptures within the AoR. Since 1950, only one earthquake event greater than magnitude 4.0 has been recorded within 15 km of the AoI. Over the same period, only ten events greater than magnitude 2.0 have been recorded within the AoI boundary, with only two of those occurring inside the AoR. The two earthquakes located within the AoR had a magnitude of 2.1 and occurred at a depth between 9 and 20 km (29,529 to 65,620 ft). Given that the average depth of the base of the 64 Zone W Sandstone is approximately 9,100 ft bgs within the geologic model domain, these earthquakes could not have been associated with fault slip at depths equivalent to the proposed CO_2 storage complex. Based on these observations, Aera believes it is unlikely that shaking resulting from an earthquake on the SAF or another known fault would induce slip on the pre-Quaternary inactive faults within the AoR or result in a release of CO_2 from the storage complex.

2.6.1 Regional Fault Activity

Significant faults with known Quaternary activity and surface rupture have not been identified within the AoI. A fault activity map for the southern San Joaquin Basin and surrounding regions is presented on **Figure 2.6-2**. Major faults with known Quaternary activity (motion within the last 1.6 m.y.) are depicted, along with a reference circle with a 100-km radius. Faults are color coded by recency of last motion, with historic activity (<150 years) shown in red, Latest Quaternary activity (<15,000 years) shown in orange, Late Quaternary activity (<130,000 years) shown in green, and undifferentiated Quaternary activity (<1.6 m.y.) shown in black.[2] Historic fault activity is recognized from direct observations of surface ground rupture and/or seismometer measurements of ground shaking. Older Quaternary fault activity is recognized from geologic fault investigations.

The most significant source of historical ground motion within 100 km of the AoI is the SAF. The SAF has been divided into 10 named sections, with the closest section to the AoI being the Cholame-Carrizo section. The Cholame-Carrizo section spans approximately 201 km of the 1,080-km total length of the SAF (Bryant and Lundberg 2002) and is well-known for its role in the formation of the Carrizo Plains geomorphic province. The most recent earthquake associated with the section was the magnitude 7.9 Fort Tejon earthquake of January 9, 1857 (SCEDC 2013b), which had an epicenter approximately 48 km west-northwest of the AoI. The recurrence interval for the San Andreas Cholame-Carrizo section is estimated at 160 to 450 years, and the fault creeps 33.9+/-2.9 mm/year (Sieh and Jahns 1984).

[2] The USGS/CGS Quaternary Fault and Fold Database (USGS and CGS 2020) does not include a separate category for Holocene activity (<11,700 years). Structures for human occupancy planned to be built within approximately 1/8-mile of a Holocene-active fault are subject to the Earthquake Fault Zone Investigation requirements of the Alquist-Priolo Earthquake Fault Zoning Act of 1972. The AoI is not located within an Earthquake Fault Zone. The closest Holocene-active fault to the Site is the SAF, approximately 21 km to the southwest.

Other significant Quaternary faults within 100 km of the AoI include the San Juan, Rinconada, and La Panza fault zones, located west of the SAF. Portions of the San Juan fault zone—at its northern extent near the SAF, approximately 50 km west-northwest of the AoI—have experienced activity in the Latest Quaternary, though the majority of the fault appears to be much less active (Bryant 2017). The Rinconada fault zone, approximately 71 km southwest of the AoI, has an estimated slip rate of 0.2 to 1 mm/year and an average recurrence interval of approximately 1,880 years (Wesnousky 1986). The La Panza fault zone appears to have had limited activity throughout the Quaternary (Bryant 2017).

North of the AoI is the Great Valley thrust fault system, which tips out at its southern end approximately 53 km north of the AoI. The Great Valley thrust fault system has a recurrence interval of 200 to 1,000 years and a slip rate of 1.0 to 5.0 mm/year (Namson and Davis 1988; Wentworth and Zoback 1990; Stein and Ekström 1992). Greater than 40 km east of the AoI are the Poso Creek, Pond, and Premier Faults (on the east side of the basin). These faults are unlikely to cause major ground motion within the AoI due to their distance from the AoI, size, and/or relative inactivity (Bryant 2017). South of the AoI are the Wheeler Ridge, Pleito, and White Wolf fault zones. The Wheeler Ridge fault zone is located approximately 77 km southeast of the AoI and experienced its most recent activity in the Latest Quaternary (Bryant 2017). The Pleito fault, located approximately 87 km southeast of the AoI, has a similar trend to the Wheeler Ridge fault zone, experienced Latest Quaternary activity, and is approximately 43 miles long (Bryant 2017). The Pleito fault has an estimated slip rate between 0.2 and 1.0 mm/year and an average recurrence interval of approximately 500 to 600 years (Hall 1984; Smith 1984; Jennings 1994). The White Wolf fault is located approximately 95 km southeast of the AoI (Bryant 2017). It has an average slip rate of 1.0 to 5.0 mm/year and experienced ground surface rupture during the Kern County Earthquake of 1952 (SCEDC 2013c).

Fault rupture probabilities based on the Uniform California Earthquake Rupture Forecast (Field et al. 2015) are shown for Quaternary faults located within 100 km of the AoI on **Figure 2.6-3**. Rupture probabilities shown represent the chance of occurrence of a magnitude 6.7 or greater earthquake over a 30-year period. Rupture probabilities are represented by a color gradient ranging from blue (0.01%) to pink (100%). The fault with the highest probability of producing a magnitude 6.7 or greater earthquake within 100 km of the AoI is the SAF. The portion of the Cholame-Carrizo segment of the SAF closest to the AoI has a mean 30-year probability of 21.45%. No other fault within 100 km of the AoI has a mean 30-year probability greater than 2% (Field et al. 2015).

As noted above, faults with known Quaternary activity and surface rupture have not been identified within the AoI. While there are active faults within the region that have the potential to produce significant shaking, none are expected to induce subsurface ruptures within the AoI. To evaluate seismic activity within the AoI, historical earthquake epicenters were examined.

2.6.2 Historical Earthquake Epicenters

Historical earthquake epicenters within a 100-km radius of the AoI, from the USGS Comprehensive Earthquake Catalog (USGS 2022), are shown on **Figure 2.6-4**. Events included have a recorded magnitude of 2.0 or greater and a date of occurrence between 1900 and 2022. Individual events are represented by white circles with radii proportional to their magnitude. The areas of highest

earthquake frequency occur along the SAF to the northwest of the AoI, the Great Valley Thrust Fault system to the north of the AoI, and the Wheeler Ridge, Pleito, and White Wolf faults to the southeast of the AoI. Over the same period, far fewer earthquakes occurred in the immediate vicinity of the AoI or on the Cholame-Carrizo segment of the SAF closest to the AoI.

Historical earthquake epicenters within a 15-km radius of the geographic center of the AoI are shown on four figures: **Figures 2.6-5** through **2.6-8**. Also shown on each figure is the 15 km-radius circle, the center point of the circle, and the limits of the AoI and the AoR. The data in these figures are drawn from two datasets: the USGS Comprehensive Earthquake Catalog (USGS 2023) and SCEDC Southern California Seismic Network Catalog (SCEDC 2023). Queries to both data sets included events of magnitude 2.0 or greater with a date of occurrence between 1950 and 2023. The minimum magnitude was selected to exclude events commonly characterized as "microearthquakes." The query start date of 1950 was selected because prior to this date, the minimum magnitude of events accurately resolvable by the available seismometer network was relatively high. Nonetheless, there is a relative paucity of events from the 1950s and 1960s in both data sets that may be attributed to sample bias. Continued seismometer deployment since the 1970s has allowed the accurate recording of smaller magnitude (<3.0) events.

Historical earthquake epicenters within a 15-km radius of the AoI from the USGS catalog are shown on **Figures 2.6-5** and **2.6-6**. On **Figure 2.6-5** earthquake epicenters are represented by gray circles with a radius proportionate to the associated event magnitude and color coded by depth of occurrence. On **Figure 2.6-6**, the same data are represented by placemarks, color coded by date of occurrence (decade). A total of 43 events of magnitude 2.0 or greater were recorded within the past 73 years. Over 88% of the events were below magnitude 3.0. Ten events were recorded within the AoI, each in the southern quadrant or along the southeast perimeter of the AoI. Of these ten events, only two occurred within the AoR. The magnitudes of the ten events recorded within the AoI ranged from 2.1 to 2.6.

Historical earthquake epicenters within a 15-km radius of the AoI from the SCEDC catalog are shown on **Figures 2.6-7** and **2.6-8**, following the data presentation style of **Figures 2.6-5** and **2.6-6**. Data from the SCEDC catalog are nearly identical to the USGS catalog. A total of 43 events of magnitude 2.0 or greater were recorded within the past 73 years. Over 85% of the events were below magnitude 3.0. Ten events were recorded within the AoI, each in the southern quadrant or along the southeast perimeter of the AoI. Of these ten events, only two occurred within the AoR. The magnitudes of the ten events recorded within the AoI ranged from 2.1 to 2.6. An earthquake magnitude of 2.6 corresponds to an area of fault slip with a diameter of approximately 700 meters (m), approximately 2,300 ft, or a radius of 350 m, approximately 1,150 ft (Zoback and Gorelick 2012).

Due to its regional proximity to the SAF, the CGS earthquake shaking potential map places the AoI within a moderate earthquake risk area; however, based on the record of earthquake events from the past 73 years, the AoI appears to be in a relatively low seismicity area of the western San Joaquin Basin. Since 1950, publicly available catalogs from the USGS and SCEDC consist of essentially identical events (in location and magnitude) totaling 43 recorded earthquakes within 15 km of the AoI. Of the total, albeit limited, events within 15 km of the AoI, only one exceeded

magnitude 4.0, approximately 11 km east of the AoR. Of the 10 events recorded within the AoI boundary, eight had hypocentral depths of 9 to 20 km bgs (29,529 to 65,620 ft bgs), one had a hypocentral depth of 4 to 9 km bgs (13,124 to 29,529 ft bgs), and one occurred at a poorly constrained shallow depth of less than 4 km bgs (<13,124 ft bgs). Of these 10 events recorded within the AoI, only two occurred within the AoR at depths between 9 and 20 km (29,529 to 65,620 ft). Due to uncertainty in the estimated depths of the recorded earthquake events, it is not possible to correlate the location of these events to specific faults of the North Belridge anticline. However, given that the average depth of the base of the 64 Zone W Sandstone is approximately 9,100 ft bgs within the geologic model domain, it appears that only the poorly constrained shallow earthquake could have been associated with fault slip at depths equivalent to or shallower than the injection zone. Tabulated historical seismicity data presented on **Figures 2.6-4** through **2.6-8** are provided in **Appendix 2E**.

Based on these observations, it appears unlikely that shaking resulting from an earthquake on the SAF or another known fault would induce slip on the pre-Quaternary inactive faults within the AoR that could result in a release of CO_2 from the storage complex. Earthquakes that may occur within the AoR during the operational lifetime of the CarbonFrontier CCS Project are likely to be below magnitude 3.0. Events of magnitude 3.0 produce fault displacements of approximately 1 millimeter to a few centimeters (Zoback and Gorelick 2012). Given that the average thickness of the Lower Santos Shale primary confining unit is approximately 260 ft within the AoR, and that the Santos Shale Member in its entirety has a maximum stratigraphic thickness of approximately 2,000 to 2,300 ft (see **Section 2.4**), the risk of earthquakes within the AoR producing sufficient offset to impact the CO_2 containment capacity of the storage complex is considered to be negligible.

2.7 Hydrologic and Hydrogeologic Information [40 CFR 146.82(a)(3)(vi), 146.82(a)(5)]

The climate of the southwestern San Joaquin Valley is semi-arid to arid, characterized by hot, dry summers and cool, moist winters. The average annual precipitation is 5 to 8 inches, which occurs primarily from November through April (Faunt 2009; DWR 2016). The average annual evapotranspiration rates for the region are approximately 53 to 55 inches per year (Faunt 2009). These low precipitation and high evapotranspiration rates in the AoI and vicinity explain the absence of perennial streams and little to no recharge to groundwater. There are no mapped springs within the AoI.

The southwestern San Joaquin Basin regional groundwater flow direction is generally to the east towards the San Joaquin Valley (Burton et al. 2012; Kern County Planning and Natural Resources Department 2020a). Within the AoI, however, the local hydraulic gradient is typically affected by local geologic structures, such as the anticlines and synclines that typify the western San Joaquin fold belt (Harding 1976; Aera 2014; Kern County Planning and Natural Resources Department 2020b).

The EPA, under the Safe Drinking Water Act, requires protection of USDWs that have TDS concentrations less than 10,000 mg/L. If the TDS concentration is greater than 10,000 mg/L, the formation can be considered a non-USDW. Oil-bearing formations include a mixture of typically

poor-quality to saline groundwater and hydrocarbons (Kern County Planning and Natural Resources Department 2020a). Within the North Belridge oil field, groundwater within the Tulare Fm and deeper formations is typically intermingled with oil.

The UIC program administered by EPA granted the California Department of Conservation Division of Oil, Gas and Geothermal Resources (DOGGR)[3] primacy to administer the UIC program in 1982. The oil- and gas-producing formations identified in the 1973 and 1974 California Oil and Gas Fields Volumes I, II, and III submitted in accordance with Section 1425 (a) of the Safe Drinking Water Act dated April 20, 1981, were exempt as USDWs (**Figure 2.7-1**; EPA 1982). In the North Belridge oil field, this includes the Tulare Fm, Etchegoin Fm, Monterey Fm, Temblor Fm, and Tumey Fm; whereas in the South Belridge oil field, this includes the Tulare Fm, Etchegoin Fm, and Monterey Fm.

In accordance with the EPA groundwater exemption criteria specified in Title 40, CFR, Part 146.4, on November 7, 2018, Aera and Greka submitted an Underground Injection Control Aquifer Exemption Application for the Tulare Formation, North Belridge oil field (Revision 1 [Aera and Greka 2018]) to the DOGGR and the SWRCB to expand the existing USDW-exempt areas of the North Belridge oil field. On July 26, 2016, Aera, Belridge Energy Resources, California Resources Corporation, E&B Natural Resource Management, Freeport-McMoran Oil & Gas, Linn Operating Inc., Vaquero Energy Inc., and West American Energy submitted an Underground Injection Control Aquifer Exemption Application for the Tulare Formation, South Belridge oil field (Aera et al. 2016) to expand the existing USDW-exempt areas of the South Belridge oil field. These documents were intended to demonstrate the groundwater within the Tulare Fm met the following EPA exemption criteria specified in Title 40, CFR, Part 146.4 (directly cited):

- It does not currently serve as a source of drinking water; and
- It cannot now and will not in the future serve as a source of drinking water because:
    - It is mineral-, hydrocarbon-, or geothermal-energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or Class III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible, or
    - The TDS content of the groundwater is more than 3,000 mg/L and less than 10,000 mg/L and is not reasonably expected to supply a public water system or to have any other beneficial uses.

The applications were approved by EPA June 7, 2019 (EPA 2019) and March 13, 2020 [EPA 2020), respectively.

2.7.1 Groundwater Occurrence within Alluvium

Alluvium occurs throughout the AoI, except along and to the west of the North Belridge oil field anticline axis where the underlying Tulare Fm crops out (**Figure 2.7-2**). Within the AoR, the Alluvium is present along the eastern margin and in its southern portion. The Alluvium primarily

[3] Agency replaced by the California Energy Management Division (CalGEM) in 2020.

consists of interdigitated beds of sand, silt, clay, and gravel. The base of the Alluvium is marked by an unconformity that defines the contact with the underlying Tulare Fm within the AoI. The Alluvium extends from the ground surface to maximum depths of 425 ft TVD within the AoI and to approximately 385 ft TVD within the AoR. An isopach map of the Alluvium was constructed by subtraction of the seismically mapped and well-verified upper boundary of the Tulare Fm from a digital elevation model of the ground surface; because the upper bound of the Alluvium is the ground surface, this map also represents the depth to the base of the Alluvium (**Figure 2.7-3**). A list of wells used to define the base of the Alluvium/top of the Tulare Fm, as well as the base of the Tulare Fm, is provided in **Appendix 2F**. The Alluvium thickens away from the North Belridge oil field anticline axis towards the valleys/synclines to approximately 250 ft thick in the eastern portion of the AoI, with a maximum thickness of approximately 425 ft in the southern portion of the AoI.

Within the eastern and southern-most portion of the AoI, including the northern portion of the South Belridge oil field, groundwater within the Alluvium occurs as a perched zone atop the unconformity at the base of the Alluvium and/or upper clay layer within the Tulare Fm. In this area, alluvial groundwater consists of produced water from former produced water percolation ponds (see **Figure 2.7-1** for former disposal pond locations; Aera 2017; Aera and Greka 2018; EPA 2019; Wood Environmental & Infrastructure Solutions Inc. [Wood] 2021). This produced groundwater transitions into native groundwater to the east and northeast, with a mixed zone occurring between these two groundwater types (Aera 2017; Wood 2021, 2022). Native alluvial groundwater occurs to the east of the North Belridge oil field and within/to the east of the South Belridge oil field, where the western extent of native alluvial groundwater is controlled by the North and South Belridge oil field anticline structures (**Figure 2.7-4**; Wood 2019, 2021, 2022). There is no native alluvial groundwater within the southern portion of the North Belridge oil field (**Figure 2.7-5**; Aera 2014, 2017; SWRCB 2014; Wood 2022). Within the AoR, alluvial groundwater occurs in the southern-most portion only.

Publicly available groundwater elevation data and groundwater quality data from monitoring wells within portions of the Alluvium were compiled from the North and South Belridge oil fields and are presented in **Table 2.7-1** (Breitburn Operating LP [Breitburn] 2018a; Wood 2021, 2022; Groundwater and Environmental Services Inc. [GES] 2022). Of these 19 wells, only three wells[4] are located within the AoR. The potentiometric surface map for the Alluvium (**Figure 2.7-5**) indicates groundwater flow in the North Belridge oil field area to the north-northeast, and in the South Belridge oil field area to the east-northeast. There are no groundwater elevation data for the Alluvium in the northern half of the AoI, likely because the Alluvium is less than 150 ft thick (**Figure 2.7-3**) and the depth to groundwater, where available, is mostly greater than 150 ft (**Table 2.7-1**). Therefore, the Alluvium in the northern portion of the AoI is most likely dry due to the structural elevation.

Measured and calculated TDS concentrations for alluvial groundwater vary from 2,900 mg/L to 39,000 mg/L (**Figure 2.7-6**; Breitburn 2018a, 2018b; SWRCB 2018; Wood 2021, 2022; GES 2022). Where TDS concentrations exceed 10,000 mg/L, groundwater in the Alluvium can be

[4] Wells GWMP-5, MW-12G1, and 276(2)-26

considered a non-USDW. In contrast, areas where alluvial groundwater TDS concentrations are less than 10,000 mg/L are considered a potential USDW; however, such areas of the Alluvium lie outside of the AoR.

2.7.2 Groundwater Occurrence within Tulare Fm

The Tulare Fm outcrops across much of the North Belridge oil field and the western portion of the AoI (**Figure 2.7-2**). The Tulare Fm consists of interbedded oxidized to reduced sands and gypsiferous clay deposits and unconformably overlies the shallow marine San Joaquin/Etchegoin Fm (DWR 2003; Aera et al. 2016; Aera and Greka 2018). Within the Tulare Fm, there are multiple low-permeability clay layers which provide vertical seals that isolate groundwater within the Alluvium from the underlying Tulare Fm (Wood 2022) and have historically confined injected steam volumes to the oil-bearing portions of the Tulare Fm (Aera and Greka 2018). The Tulare Fm extends from the ground surface where it crops out to maximum depths of approximately 1,700 ft TVD in the southeastern portion of the AoI (**Figure 2.7-7**). Within the AoR, the Tulare Fm extends to a maximum depth of 1,130 ft TVD in the southeast. An isopach map of the Tulare Fm was constructed by subtraction of the seismically mapped base of the Tulare Fm from the top of the Tulare Fm merged with a DEM (**Figure 2.7-8**). The Tulare Fm thickens away from the crest of the anticlines in both the North and South Belridge oil fields, with a maximum thickness of approximately 845 ft in the southeastern portion of the AoR and approximately 1,450 ft in the eastern portion of the AoI.

The Tulare Fm is unsaturated (air sands) along the crest of the North and South Belridge oil field anticlines, within the AoR, and the air sand deposits thin towards the east of the AoI (Aera et al. 2016; Aera and Greka 2018). The first encountered fluids can be oil, or groundwater intermingled with oil, depending on location along the North and South Belridge oil field anticline structures and within the AoR. East of the North and South Belridge oil fields, and outside of the AoR, native groundwater occurs within the upper Tulare Fm (Wood 2022). Tulare Fm groundwater has TDS concentrations ranging from 6,055 to 22,540 mg/L within the North Belridge oil field (Area and Greka 2018). Within the South Belridge oil field, the Tulare Fm groundwater has TDS concentrations ranging from 4,300 mg/L to 33,985 mg/L (Aera et al. 2016). In the North and South Belridge oil fields, the Tulare groundwater boron concentrations have been reported to be between 6 and >100 parts per million, which is above the SWRCB drinking water Notification Level of 1 mg/L (i.e., 1 part per million) for boron (Aera et al. 2016; Aera and Greka 2018). The Tulare Fm is a non-USDW within the North and South Belridge aquifer exemption areas, and there is no groundwater quality data for outside of these areas within the AoI. Publicly available groundwater elevation data within the AoI are limited to a single depth to groundwater measurement, collected in 2006 from a well at 278 ft bgs (Wood 2019 and references therein). Without data to support otherwise, the Tulare Fm outside of the aquifer exempt areas within the AoI cannot be eliminated from consideration as a potential USDW.

In order to better constrain whether the Tulare Fm is a potential USDW outside of the aquifer exempt areas but within the AoR, Aera will develop a work plan for the collection of additional groundwater samples in the Tulare Formation outside the aquifer exemption area but within the

AoR. Results from the proposed sample collection efforts will be submitted to EPA under separate cover.

2.7.3 Potential USDWs

The Alluvium and Tulare Fm are considered to be potential USDWs over a portion of the area within the AoI outside of the aquifer exemption boundary (for the Tulare Fm), and/or where groundwater with TDS concentrations less than 10,000 mg/L is present (for the Alluvium and outside of the Tulare Fm exempt area). The injection zone is separated from these potential USDWs by numerous confining layers at depth including the Lower Santos Shale, the Upper Santos Shale, the Carneros Shale, and the Media Shale of the Temblor Fm; the McDonald Shale, Antelope Shale, and Reef Ridge Shale (or Belridge Diatomite) of the Monterey Fm; the Etchegoin Fm; and, locally, the San Joaquin Fm (**Figure 2.1-9**). The potential USDWs within the Tulare Fm are further isolated from the injection zone by the multiple confining clay layers within the Tulare Fm. These clay layers, as well as the basal unconformity of the Alluvium, further isolate the potential USDW within the Alluvium. The injection zone is on average 7,250 ft TVD below the Tulare Fm across the North Belridge oil field anticline, whereas the Alluvium, where present, is separated from the injection zone by a vertical distance of approximately 8,000 ft. The potential impacts of CO_2 injection on groundwater quality in the potential USDWs are expected to be minimal due to the following:

- The limited aerial extent of the potential USDWs within the AoI
- The elevated TDS concentrations (especially within the Tulare Fm)
- The confining units at the base of the Alluvium, within the Tulare Fm, and at depth
- The structural geometry of the North Belridge oil field anticline and injection zone
- The vertical distance separating the potential USDWs from the injection zone

2.7.4 Groundwater Occurrence within Deeper Formations

Within the North and South Belridge oil fields and the AoI, there are numerous non-USDWs. Deeper formations within the AoI, described below, are of a marine origin, are oil-bearing, and contain saline connate water (DOGGR 1998; Aera 2014). Therefore, groundwater in these formations within the AoI is not suitable for consumption. Furthermore, it has been reported that the estimated base of freshwater in the general area of the AoI is between 656 ft and 1,640 ft (Kang et al. 2020), which is shallower than the top of these formations.

The Etchegoin Fm contains shallow marine deposits, primarily composed of interbedded sandstones and mudstones, and is present along the flanks of the North Belridge oil field anticline and South Belridge oil field. According to DOGGR records, aqueous phase TDS concentrations for the Etchegoin Fm are greater than 10,000 mg/L (DOGGR 1998; Area and Greka 2018; Aera et al. 2016). Formation water from the Etchegoin Fm within the South Belridge oil field has reported TDS concentrations ranging from 19,000 mg/L to 26,000 mg/L and, therefore, this formation is not a USDW (DOGGR 1998; Area and Greka 2018; Aera et al. 2016).

The oil- and gas-producing zones of the Monterey Fm—including the Reef Ridge Shale (or Belridge Diatomite) Member, Antelope Shale Member, McDonald Shale Member, and Temblor Sands—have aqueous phase TDS concentrations greater than 10,000 mg/L (DOGGR 1998; Aera and Greka 2018; Aera et al. 2016). Furthermore, produced water from the Reef Ridge Shale Member has reported TDS concentrations ranging from 26,000 mg/L to 44,000 mg/L in the North Belridge oil field, and from 20,000 mg/L to 28,000 mg/L in the South Belridge oil field (Aera and Greka 2018; Aera et al. 2016). Based on these results, the Monterey Fm is not a USDW (DOGGR 1998; Area and Greka 2018; Aera et al. 2016).

The Temblor Fm contains several oil- and gas-producing zones (e.g., Carneros Sandstone, Agua Sandstone, and the 64 Zone Sandstones, which includes the U and W Sandstones) within the North Belridge oil field. Water samples from the 64 Zone Sandstones have TDS concentrations ranging from 21,000 mg/L to 41,000 mg/L (see **Section 2.8**). Aqueous phase TDS concentrations in the Carneros and Agua Sandstones are also greater than 10,000 mg/L and, therefore, these sandstones are not a USDW (DOGGR 1998). To better understand TDS concentrations and possible vertical variability in TDS, formation water samples will be collected from the Agua Sandstone and the Carneros Sandstone (first and second permeable units above the primary confining zone) for the purpose of geochemical characterization. These samples will be collected from monitoring wells upon their completion, as these wells will be screened in the target formations and are anticipated to provide representative samples from the monitored permeable formations.

2.7.5 Water Supply Wells within the AoI

Water supply well databases were reviewed for information on water wells within the AoI and adjacent area (1.5-mile buffer zone). This includes the California Geologic Energy Management Division (CalGEM), USGS, DWR, GeoTracker Groundwater Ambient Monitoring and Assessment (GAMA), Sustainable Groundwater Management Act, and the Kern County Environmental Health Well Permit online databases. The Kern County Public Health Services Department Environmental Health Division, West Kern Water District, Belridge Water Storage District, and Berrenda Mesa Water District were also contacted to identify whether there were additional water supply wells within the AoI and adjacent area and to evaluate the veracity of the wells on record.

Water wells identified by the above water districts, as well as the Kern County Public Health Services Environmental Health Department, were compared to wells identified from the CalGEM, USGS, DWR, GAMA, and the Sustainable Groundwater Management Act online databases to confirm that water wells were listed only once. When available, well completion reports were reviewed to evaluate the well usage and screened interval; however, the quality of these reports varied with many wells not having complete and/or legible publicly available documents. Additional well completion reports were requested from the Kern County Water Agency for water wells where online reports were not available. Where precise location information was not available, well locations were placed at the centroid of the section; however, field surveys have not been completed to verify well locations, use, status, or the existence of additional wells not included as part of the online databases. Wells identified through these public sources were compared to the internal database of the Water Resources Management group at Aera to confirm

their use and status and remove mislocated, destroyed, or misclassified wells. Several wells have been removed from further assessment based on operator knowledge.

Water supply wells identified within the AoI include one domestic well and one other/unknown/not specified well (**Figure 2.7-9**; **Appendix 2F**). There are no water supply wells within the AoR. Potential water supply wells within a 1.5-mile buffer zone around the AoI include one public well, three agricultural wells, and four other/unknown/not specified wells. Cathodic protection wells and monitoring wells were not included as part of this assessment. It is generally understood that other/unknown/not specified wells from public databases are typically groundwater monitoring wells. As a conservative approach, where documentation to support this could not be located, the other/unknown/not specified wells were retained in the well list.

Information on screened intervals was available for the domestic well within the AoI. The domestic well was screened from 125-300 ft bgs[5] within the Alluvium and the Tulare Fm. Output information from searched databases, including location information, use, and screened interval and/or well depth information (where available), along with available well completion reports, is provided in **Appendix 2F**.

The nearest potential water supply well is 0.95 miles east of the storage complex (**Figure 2.7-10**). The nearest municipal water supply wells are located approximately 11 miles east of the surface projection of the storage complex (**Figure 2.7-10**; Aera and Greka 2018). As part of the aquifer exemption process, the Dudley Ridge, Lost Hills, and Belridge Water Storage District were contacted by DOGGR, and it was confirmed that neither district nor individual growers have operational agricultural source wells within 1 mile of the North Belridge aquifer exemption boundary (Aera and Greka 2018).

2.7.6 Potential Impact of CO_2 Injection on Potential USDWs

The injection of CO_2 associated with the development of the proposed storage complex is not expected to impact the groundwater quality of potential USDWs. There are no known water supply wells or springs within the AoR (**Figure 2.7-9**), no USDWs have been conclusively identified within the AoR, and the areas where potential USDWs may be present (**Figure 2.7-11**) are limited to a total area of approximately 0.88 square miles along the western and eastern margins of the AoR.

There are no known USDWs in the Alluvium within the AoR, which is only present on the eastern/northeastern and southern margins of the AoR. In the eastern and northeastern portions of AoR the Alluvium is likely dry and, therefore, presumably cannot contain USDWs. Groundwater does occur within the Alluvium in the southeastern corner of the AoR, though it does not meet the criteria to be considered a USDW as TDS concentrations from monitoring wells[6] in the area exceed 10,000 mg/L.

[5] The depth of the screened interval for water supply wells is reported using nomenclature provided on the well completion reports, where ft bgs is equivalent to MD for groundwater wells.
[6] Monitoring wells within the AoR include GWMP-5 and MW-12G1 (**Figures 2.7-5** and **2.7-6**).

Throughout the portions of the AoR where Alluvium is absent, the Tulare Fm is exposed at the surface. Potential USDWs may be present in select areas of the Tulare Fm along the western margins of the AoR but have not been conclusively identified. The majority of the AoR is contained within the aquifer exemption areas for the Tulare Fm (**Figures 2.7-2** and **2.7-11)**. The AoR boundary extends slightly past the aquifer exempt areas to the east and west, but groundwater conditions in these areas are unknown. These areas on the eastern and western margins of the AoR are therefore considered to be potential USDWs. The potential for CO_2 injection to impact groundwater quality in the potential USDWs within the AoR is expected to be minimal, as there are approximately 7,250 vertical ft of strata (including numerous confining layers) separating the injection zone from the potential USDWs. Analysis of the potential impact of CO_2 injection on USDWs is discussed in greater depth in **Section 3** and **Attachment B**.

2.8 Geochemistry [40 CFR 146.82(a)(6)]

2.8.1 Geochemical Characterization Summary

Chemical data collected from solid, aqueous, and gaseous phases comprising the target CO_2 storage complex were evaluated to characterize geochemistry of the injection and confining zones and to inform the geochemical compatibility modeling of injectate gas with the target injection zone. The target injection zone, the 64 Zone Sandstones, consists of arkosic sandstone containing quartz overgrowth cements, detrital clay minerals (approximately 2–3% on average), and smaller amounts of clay (approximately 2% on average) and carbonate (approximately 1% on average) cements. The formation water of the 64 Zone Sandstones is slightly basic, brackish water that can be classified as having a sodium-chloride hydrogeochemical signature. The injectate gas is expected to be comprised primarily of CO_2 with minor amounts of impurities (approximately 1.3% of total composition).

Thermodynamic geochemical modeling was completed using the PHREEQC software package (Parkhurst and Appelo 2013), and thermodynamic/kinetic geochemical modeling was completed using the Geochemists Workbench™ (GWB) software package (Bethke 1998) to predict expected changes in mineral stabilities and identify geochemical reactions that may occur within the target injection zone as a result of interactions with the injectate gas.

Sensitivity analyses were performed to evaluate the potential impact of variable model inputs and injection zone ambient conditions on mineral stabilities. Variables evaluated via sensitivity analyses include ion activity model selection and pressure-temperature conditions.

Modeling results indicate that up to 14 different geochemical reactions may occur within the target injection zone following the introduction of injectate gas. These reactions are driven primarily by the dissolution of CO_2 into formation water and the subsequent decrease in pH and increase in alkalinity resulting from the dissociation of carbonic acid into aqueous bicarbonate and carbonate. These chemical processes drive changes in the thermodynamic stability of minerals comprising the 64 Zone Sandstones. Modeling results suggested that the precipitation of additional quartz overgrowth cement and carbonate cement and the dissolution of aluminosilicate minerals such as feldspars and clays may occur. Results suggested that these opposing reactions nearly balance total mineral mass changes, resulting in limited associated changes in total porosity of the 64 Zone

Sandstones. Kinetic modeling set to run over a 50-year period predicted a total porosity increase of approximately 0.15% (i.e., 0.15 porosity units) for the base model conditions and <2.0% (i.e., <2.0 porosity units) for pressure-temperature sensitivity conditions. Such an increase falls within the range of target injection zone total porosity measurements obtained from multiple methods, suggesting that overall injectivity is not expected to be substantially altered from geochemical reactions brought on because of gas injection. As such, target injection zone mineralogy and formation waters are considered to be compatible with the proposed gas injection.

2.8.2 Baseline Geochemical Characterization

2.8.2.1 Petrology/Mineralogy of the Injection Zone and Confining Unit

Geological characterization of the Temblor Fm is discussed in detail in **Section 2.1**. Mineralogy and petrology of the target injection zone and confining zone pertaining to geochemical compatibility modeling efforts are discussed primarily in **Section 2.4.2**, with an expanded discussion provided in this section as relating to geochemical compatibility modeling efforts.

Rock core samples from wells 17-2N, 4-1N, and 43-27N were analyzed for mineral identification (**Figure 2.2-5**). Locations of sample cores are shown in **Figure 2.4-11**. The sampled target injection zone wells are within the defined AoR model boundary. Well 17-2N is located near the center of the subsurface anticlinal structure with regards to lateral position and depth of the target injection zone (**Figure 2.2-5**). Wells 43-27N and 4-1N are located along the edge of the North Belridge oil field, and the target injection zone within these wells is within a down-dip portion of the anticline. As detailed in **Section 2.4.2.1**, collection of additional samples for mineralogical analyses (point-counting, XRD) from the U and W Sandstones will be attempted during the drilling of new wells in order to improve characterization of potential lateral and vertical heterogeneity within the target injection zone and to provide refined input for geochemical modeling.

The mineral identification results are provided in **Table 2.8-1**. Mineralogy results presented for wells 17-2N, 4-1N, and 43-27N were obtained via point-counting petrographic thin sections of the W Sandstone, using a standard light petrographic microscope with 300 points per thin section. Mineralogy results presented in the lower portion of **Table 2.8-1** for well 43-27N were obtained using XRD. One sample from the U Sandstone and two samples from the W Sandstone were analyzed via XRD from well 43-27N. Analytical reports associated with these datasets are included in **Appendix 2G** (petrographic point counting for samples from well 17-2N) and **Appendix 2D** (XRD). Despite differences between the two datasets, general trends within the injection zone XRD and point-count data appear to be similar.[7] Both datasets appear to indicate primary grain mineral abundances within similar ranges and comparable abundances of clay minerals. As indicated by XRD data, variation within 64 Zone Sandstones appears to be dominated by quartz-feldspar abundance differences, although XRD analysis does not have the capability to quantify lithic (rock) fragments which constitute the third type of primary grain. Point-count data from the three wells are considered to be representative of the injection zone mineralogy as the data are more

[7] Point-count and XRD data cannot be directly compared, as point-count data yields observed mineral abundances in percentages and includes pore space and lithic fragments, whereas XRD data yields individual mineral abundances in weight percentages.

comprehensive than the XRD results and do not contain variable ranges of abundances. Only one XRD sample is available for the U Sandstone. As indicated above, point-count and XRD data cannot be directly compared. When compared to XRD data from the two W Sandstone samples, the U sandstone sample contains more quartz (50-65 wt.% compared to 35-50 wt.%), slightly less feldspar (35-45 wt.% compared to 40-55 wt.%), identical carbonate (0 wt.% for the XRD samples), and slightly less clay-sized material (1-4 wt.% compared to 4.5-12 wt.%). The similarities observed between the U Sandstone and the W Sandstone XRD samples suggest that the U Sandstone is compositionally similar to the W Sandstone and that the more robust point-count dataset for the W Sandstone adequately represents the holistic composition of the 64 Zone Sandstones.

The point-count dataset contains mineralogical samples collected over a depth range of 8,482 to 9,119 ft from three wells within the W Sandstone (**Table 2.8-1**). Four trends in mineralogy as a function of increasing depth are identifiable from data at location 17-2N:

- A general slight decrease in quartz abundance with increasing depth is observed across the entire sampled interval.
- A general slight increase in plagioclase feldspar abundance with increasing depth is observed across the entire sampled interval.
- An increase in the total clay-sized fraction abundance within the basal portion of the W Sandstone is observed with increasing depth, beginning at approximately 8,822 ft and continuing to the base of the sampled interval (this trend was noted in **Section 2.4.2.1**., with the noted interval containing an average abundance of 8.5% clay, compared to an average abundance of 3.7% clay in the overlying interval of the W Sandstone).
- A decrease in abundance/absence of kaolinite within the basal portion of the W Sandstone is observed beginning at approximately 8,829 ft in depth and continuing through the base of the sampled interval (this interval contains an average of 0.3% kaolinite, compared to an average kaolinite abundance of 2.3% in the overlying interval).

The vertical heterogeneity in mineralogy noted above will be further characterized as part of the additional proposed sampling and may be considered in future modeling efforts, if necessary.

Sandstone petrology is typically classified based on the ratio of common detrital components: quartz, feldspar, and lithic (rock) fragments, referred to as a Q:F:R ratio. This ratio forms the basis of sandstone petrologic interpretation by indicating the relative proportion of common clastic components. The 64 Zone Sandstones are classified as arkosic sandstone with an average thin section point-count measurement Q:F:R ratio of 60:32:8 (**Table 2.8-1**, normalized to exclude other minerals). Point-count data from three cores (17-2N, 4-1N, and 43-27N) spanning the 64 Zone Sandstones were presented in Kaczorowski et al. (1986) and are shown on a ternary diagram (**Figure 2.4-12**). The samples presented in **Figure 2.4-12** plot within arkosic sandstone classification, indicating petrologic conformity within the target injection zone.

Detailed discussion of the Santos Shale mineralogy is provided in **Section 2.4.2**. The Santos Shale Member of the Temblor Fm consists of the Upper Santos Shale and the Lower Santos Shale which

are separated by the Agua Sandstone (**Figure 2.1-9**). The Lower Santos Shale directly overlies the target injection zone and is, therefore, considered the primary confining unit. The average composition of the Santos Shale (undifferentiated) is classified as an argillaceous/siliceous mudstone based on the classification scheme of Gamero-Diaz et al. (2012). This classification is supported by the academic dataset encompassing the entire Santos Shale and the XRD results of samples collected from the Upper Santos Shale for the purposes of this evaluation.

The Santos Shale contains high total organic carbon content, which ranges from 1.4 to 15.8 wt.% with an average of 7.7 wt.%. The high total organic carbon content is attributed to the oxic ocean depositional environment (Mitchell 2018; Mitchell and Guo 2018). As detailed in **Section 2.4.2.2**, collection of additional samples for mineralogical analyses (point-counting, XRD) from the Lower Santos Shale will be attempted during the drilling of new wells to improve characterization of potential lateral and vertical heterogeneity within the primary confining unit.

Geochemical modeling of interactions between formation water in the primary confining unit, injectate gas, and the confining unit mineralogy was not completed due to the perceived lack of reactivity expected between pore fluids and the fine-grained shale comprising the confining unit. Lower porosity/permeability associated with shale lithologies compared to the 64 Zone Sandstones significantly restricts the surface area of the formation in contact with injectate gases and formation water, thus increasing the activation energy required to initiate mineral reactions. Quartz and feldspar minerals within mudstones are expected to be geochemically inert. The clay mineral component may be subject to alteration reactions between clay minerals. Illitization of smectite within shales at comparable temperature and depth systems is common, although this process is controlled by pressure and temperature conditions more so than geochemical changes and would likely not be influenced by injection of CO_2-dominated gas. Such reactions may result in dehydration as interlayer water particles exit the solid-phase, but significant changes in porosity and permeability are not expected to occur as a byproduct (Colton-Bradley 1987). Carbonate minerals are likely to be the only component vulnerable to geochemical changes initiated by injectate gas. As evidenced in petrographic analyses of the Upper Santos Shale, carbonate minerals were typically observed as sand-sized fossil fragments within ductily deformed detrital clay matrix. As such, very little injectate gas would be expected to interact with these carbonate grains due to the low permeability of the bulk rock caused by the detrital clays. The potential impact of these reactions is significantly mitigated by the mudstone's low permeability and the limited surface area in contact with fluids along the injection zone-confining unit interface. Therefore, the Santos Shale is believed to be compatible with the proposed CO_2-dominated injection gas stream.

2.8.2.2 Characteristics of the Injection Zone Formation Water

Formation water samples were collected from the following wells on the following dates:

- 43-27N on October 22, 1985
- 17-2N on November 20, 2003
- 25-26N on September 4, 2014
- 25-26N on January 16, 2017

- 3-22N on December 21, 2021

Data for one additional sample collected from a well (ID: BN5) screened within the 64 Zone Sandstones is available in McMahon et al. (2018). Data from these five primary well samples and the 64 Zone well from McMahon et al. (2018) were incorporated into the geochemical models.

The wells listed above contain perforated intervals (corresponding to the water sample depth) spanning at least part of the 64 Zone U Sandstone and part of the 64 Zone W Sandstone. The locations of wells with reported formation water analytical results are shown in **Figure 2.4-11**. Formation water samples were analyzed for various parameters depending on the purpose of sample collection. Parameters considered for geochemical modeling include major cations (calcium, magnesium, sodium, and potassium) and anions (chloride, sulfate, and alkalinity [CO3 + HCO3]), pH, sulfide, iron, manganese, boron, barium, aluminum, silica, and strontium. Laboratory analytical reports for these samples are provided as **Appendix 2G.** Results of laboratory analyses are summarized in **Table 2.8-2**.

64 Zone Sandstone formation water samples display consistent geochemical facies regardless of the well location and sampling depth, indicating geochemical conformity of 64 Zone Sandstone formation waters. Major ion chemistry of these waters is dominated by sodium and chloride, as displayed on a Piper Diagram on **Figure 2.8-1**. These waters contain a calculated average TDS concentration of 30,848 mg/L, which is defined by USGS as brackish and is close to average seawater salinity levels (approximately 35,000 mg/L). The six samples considered in the geochemical modeling inputs fall within a calculated TDS range of 21,060 to 41,000 mg/L. Formation water pH levels are neutral to slightly basic, with an average pH value of 7.1 standard units. High TDS/salinity concentrations result in an average specific gravity value of 1.02 g/cm^3 and an average electrical conductivity value of 43.95 millimhos per centimeter.

While specifics regarding groundwater sample type and collection (e.g., sampling methodology, sample preservation) are not available, laboratory reports do not indicate the presence of data qualifiers or data quality issues (**Appendix 2G**). Although issues associated with sample preservation/holding times/laboratory QA/QC were not identified on laboratory analytical reports; should these issues exist, they have the capability to impact the quality of ionic composition data and generate uncertainty in subsequent geochemical modeling inputs, which may propagate as iterative geochemical calculations are completed. Steps taken to combat the potential impact of such issues include assessment of data quality for each sample using charge-balance calculations (**Table 2.8-2**), and usage of one representative formation water sample for geochemical modeling by averaging values from each available sample to mitigate the potential impact of erroneous results from individual samples.

Calculation of formation water TDS/salinity was also attempted using resistivity and porosity logs (Rwa method) because the 64 Zone W Sandstone is a relatively clean sandstone (low clay content). However, at the 43-27N well location (one of the locations with reported water analysis), residual hydrocarbon saturation appears to result in underestimation of formation water salinity, as compared to direct laboratory analysis. Off-site (outside the AoI) well Gump Trust 30-1, which was logged with an advanced logging suite in a borehole without significant washouts over the 64

Zone W Sandstone interval, displays a clear oil-water contact around 11,575 ft MD (**Figure 2.4-28**). Pickett plot methodology (equivalent to the Rwa method) using log resistivity and porosity data from uncemented portions of the wet sand (water leg) interval (**Figure 2.8-2**) shows that the formation water resistivity at Gump Trust 30-1 is approximately 0.1 ohmmeters. At a reservoir temperature of approximately 250 °F, that resistivity value results in a formation water salinity range between 17,000 and 20,000 mg/L (expressed as NaCl), which is close to the direct measurement TDS value obtained from water analysis in well 43-27N.

Additional formation water samples will be collected to improve geochemical characterization and refine geochemical model inputs. The additional water samples will be collected from monitoring wells screened in the injection zone (U and W Sandstones) and in the permeable formations overlying the confining zone (Agua and Carneros Sandstones) during pre-operational well testing. In addition to the analyses presented in this section, the samples will be analyzed for dissolved metals (including aluminum) using EPA Method 6010B, as well as for bicarbonate and carbonate concentrations. Aera will attempt to collect a sufficient number of samples at specific targeted depths to identify potential aqueous geochemical stratification which may exist within the target injection zone. Aera intends to collect formation fluid samples from the injection zone in new and repurposed injection wells by using a bottom-hole sampler or by swabbing. Where possible, downhole sampling will be used to characterize vertical variability in fluid properties by acquiring samples from approximately five representative depths within the U and W Sandstones at each newly drilled injection well. The sampling depths will be determined using wireline logs to ensure proper vertical coverage while sampling from sufficiently permeable intervals. In addition, sampling of formation water from the monitoring wells following gas injection will be attempted to evaluate the degree of aqueous geochemical change associated with interaction of the system with injectate gas.

2.8.2.3 Injectate Composition

The expected composition of the gas stream for injection will be comprised of a combination of three product streams: Aera's pre-combustion and post-combustion CO_2 streams plus future third-party sources (**Section 7.0**). The average injectate composition is expected to consist of approximately 50% Aera sources, further divided into 17% pre-combustion and 83% post-combustion products, and 50% from third-party sources. Chemical compositions of the products, as well as the combined composition calculated based on expected product fractions, are provided in **Table 2.8-3**. Carbon dioxide is expected to account for 98.7% of the injectate mass. The remaining 1.3% of the injectate mass will consist of a mixture of impurities which are not expected to significantly interact with injection zone minerals at present concentrations (e.g., argon gas has not been documented to impact clastic mineral stabilities). The only notable difference between Aera's pre- and post-combustion CO_2 streams and third-party sources is the possible presence of small amounts of hydrogen (H_2) gas (<1% by volume). This minor amount of H_2, if present in the final CO_2 stream, is not expected to have material implications to geochemical interactions with reservoir minerals and fluids based on academic modeling and observational studies (Kampman et al. 2016; Shi et al. 2020; Heinemann et al. 2021).

2.8.3 Geochemical Modeling Setup

Geochemical modeling was conducted using two approaches: thermodynamic considerations only, and thermodynamic + kinetic considerations, with the purpose of evaluating the reactivity of the system comprised of formation solids, formation water, and injectate gas in the proposed injection zone. Geochemical modeling goals included the following:

- Evaluate mineral-water equilibrium conditions in the system before and after gas stream injection to identify mineral stability changes.
- Identify geochemical reactions thermodynamically favored to occur following gas injection.
- Estimate the potential impact of these geochemical changes on the physical properties of the target injection unit (with regards to total mineral mass and porosity).

Geochemical modeling was conducted using the USGS software package PHREEQC (Parkhurst and Appelo 2013) for the thermodynamic assessment, and GWB (Bethke 1998) for the combined thermodynamic and kinetic assessment.

2.8.3.1 Model Input

As discussed in **Section 2.8.2.1** above, the point-count mineralogy dataset consisting of wells 17-2N, 4 1N, and 43-27N characterizes the target injection zone mineralogy. Mineralogical inputs for geochemical modeling were generated by calculating the mean observed abundances from thin section point-counting analyses, normalized to 100% to remove the contributions of pore space and unspecified lithic fragments. Previous studies have indicated that clay mineralogy is predominantly composed of kaolinite, with some illite and mixed-layer I/S which has been predominantly illitized (transformed to illite) (Taylor and Soule 1993). To estimate the percent contribution of these clays in the model input, the mean kaolinite mineral abundance calculated from point-counting analyses was subtracted from the mean mineral abundance of the entire clay-sized fraction. The remaining clay abundance was assumed to be 85% illite and 15% smectite, following conclusions from Taylor and Soule (1993). The presence of anhydrite was noted in previous studies, but it was not detected in the point-counting analyses; as such, anhydrite was included in the solid phase mineralogy at 0.05%. Normalized mineral abundances were then converted to units of moles per liter using a total bulk density of 2.64 kilograms per liter based on laboratory grain density testing (**Appendix 2G**). The calculated model inputs for solid phase mineralogy are provided in **Table 2.8-4**. Solid phase model input conditions may be updated following acquisition of additional mineralogical data. Subsequent modeling runs will be updated accordingly.

Six formation water samples were collected or documented in academic studies within the target injection unit on different dates and from distinct locations, as described in **Section 2.8.2.2**. The chemical compositions of these samples were averaged to generate a representative formation water composition for the model input. This representative composition contained a calculated charge imbalance error of -7.37%. Variations due to sampling methods and analytical uncertainty associated with standard laboratory methods may result in minor variations in calculated charge balance values. Charge imbalance error within +/- 10% is typically considered to be an acceptable balance, although +/-5% is ideal for brine solutions. While the representative formation water

sample used in modeling exceeds this 5% idealized threshold, no QA/QC issues were reported on laboratory reports.

While compositional variability within individual samples would be expected to alter model results, an aggregate composition approach was selected to define formation water geochemistry due to the general geochemical similarity of the six samples that define the aqueous geochemical model input. The Piper diagram provided as **Figure 2-8.1** demonstrates the ubiquitous classification of the collected formation water samples as sodium-chloride dominant water types. Although absolute concentrations of key constituents do vary between samples, the relative proportion of major ions remains very similar. The concentration variability between samples is reflected in TDS values. TDS concentrations for formation water samples range from 21,060 mg/L to 41,000 mg/L, as discussed in **Section 2.8.2.2** above. While this range is notable, the formation water samples can be classified as brackish water. The general geochemical consistency of formation water samples as sodium-chloride dominant brackish water is the basis for the aggregate composition approach.

Geochemical modeling involving aluminosilicate minerals (feldspars and clays) requires an aqueous aluminum concentration as a model input. None of the formation water samples defining the aqueous model input were analyzed for aluminum. To arrive at a plausible aluminum concentration for the representative formation water composition, an equilibrium model run was generated in PHREEQC with aluminosilicate minerals manually set to equilibrate with the aqueous input solution at the formation pressure and temperature conditions used in the subsequent base case model run. The modeled aluminum component in solution was estimated to be 0.02 mg/L, which is reasonable for a sandstone aquifer at approximately neutral pH (Oehman 1988). This value for aqueous aluminum concentration was then added to the model input. The complete aqueous model inputs defining formation water considered representative in this evaluation based on available data are provided in **Table 2.8-5**. Representative formation water geochemical conditions may be updated following acquisition of additional injection zone formation water samples as discussed in **Section 2.8.2.** Subsequent modeling runs will be updated accordingly.

Model runs were set up using the previously described input for formation water and target injection zone mineralogy. A representative porosity value of 13% (based on the mean log-derived porosity of the U and W Sandstones [**Table 2.4-4**]) was used to define injection zone pore space (effective porosity). For the base case scenario, temperature was set to 112.8 °C (235 °F), as presented in California Oil & Gas Fields, Volume 1 – Central California (CD-1) by DOGGR (1998) for the reservoir temperature of the 64 Zone Sandstones in the North Belridge oil field. For the base case scenario, pressure was set to 47.63 atmospheric units (atm) (700 pounds psi), based on understanding of the current reservoir pressures within the target injection zone (see **Figure 2.3-8**). The number of moles in one liter of gas at 47.63 atm and 112.8 °C, according to the ideal gas law, was calculated to be 1.504 moles. Based on the expected injectate composition including Aera's pre- and post-combustion product and third-party sources (98.7% CO_2 when combined), the model input included 1.484 moles of CO_2, or a CO_2 fugacity of 47.01 atm. This fugacity was supplied as a model input, and CO_2 solubility within formation water was estimated in both

modeling software programs based on temperature, pressure, and compositional inputs using a Henry's Law approach (Bethke 1998; Gundogan et al. 2011; Parkhurst and Appelo 2013).

Following methods proposed in Tremosa et al. (2014) for modeling geochemical compatibility of geologic carbon sequestration, geochemical modeling efforts employed a batch reactor modeling approach where the geochemical system comprised of mineralogy, formation water, and injectate gas is assumed to be a perfectly mixed reactor with homogenous distribution of every chemical compound and reactant.

The target injection zone consists of a multiphase porous system in which pore space is saturated with formation water, oil, and/or gas. Compositional data for oil and gas within the formation are not available and therefore were not incorporated into the geochemical modeling efforts. As a result, geochemical modeling focused on investigating the impact of injectate gas on the mineral-water system which directly influences mineral stability calculations.

Geochemical modeling software packages use databases of laboratory-generated thermodynamic data to calculate mineral solubility relative to aqueous solutions. The Lawrence-Livermore National Laboratory database (LLNL.dat) contains the most robust assemblage of thermodynamic information for the mineral system comprising the target injection unit and was therefore used for this evaluation. This database includes thermodynamic data appropriate for the pressures and temperatures applicable to the target injection zone. However, TDS concentrations in the 64 Zone Sandstone formation waters are categorized as brackish to highly saline. As such, the Pitzer database (pitzer.dat), which utilizes the Pitzer equations as the ion activity model in the calculations (Pitzer 1973), may be a more appropriate database to model waters of high salinity. The Pitzer ion activity model was used in a series of sensitivity analyses to assess the impact of ion activity model selection on geochemical modeling results. A discussion of the implementation and results of the thermodynamic database sensitivity analysis is provided in **Appendix 2G.** Ion activity model sensitivity testing was completed only within the PHREEQC models, as the expanded Pitzer database used in the sensitivity model runs was formatted specifically for PHREEQC and is not compatible with other geochemical modeling software platforms. Comparison of sensitivity results from the LLNL database and the expanded Pitzer database indicates that differences for most parameters are relatively minor, suggesting a limited influence of ion activity model selection. Sensitivity modeling predicted that the geochemical reactions expected to occur would proceed in the same direction regardless of database selection. The primary differences observed between ion activity model selections was associated with the initial saturation states of a small number of relevant minerals. Further discussion is provided in **Appendix 2G**. These observations support the conclusion that both databases provide reasonable predictions of mineral reactivity.

2.8.3.2 Equilibrium Modeling

Geochemical equilibrium calculations were completed to evaluate possible changes in mineral masses and aqueous parameter concentrations resulting from three-phase (injection zone mineralogy, formation water, injectate gas) system equilibrium. Equilibrium modeling was completed by inputting mineral concentrations calculated from analytical data into the model

(**Table 2.8-4**) and manually fixing individual mineral saturation indices (SIs) to a value of zero in the presence of the formation water and injectate gas. A mineral SI is a measure of mineral-water thermodynamic equilibrium specific to a particular mineral. It is calculated using the equation:

$$SI = log_{10}(\frac{IAP}{K_{sp}})$$

where Ksp is the mineral solubility product, which is defined in the thermodynamic database, and IAP is the ion activity product, which is the product of the activity of individual components of a mineral reaction. The activity of an aqueous species is a calculated value which expresses how a particular concentration of that species behaves in a solution of a particular ionic strength. Aqueous activities are conventionally considered to be equivalent to concentration values in dilute to near-dilute solutions. Activities deviate from aqueous concentrations as ionic strength increases.

If a mineral SI is greater than zero, precipitation of the mineral out of solution is thermodynamically favored. If a mineral SI is less than zero, dissolution of the existing mineral into solution is thermodynamically favored. If a mineral SI is approximately zero, then the mineral is in thermodynamic equilibrium with the solution and no precipitation/dissolution reactions are expected to occur. A mineral is functionally considered to be in thermodynamic equilibrium with pore fluid if the mineral SI is within +/- 0.2 of zero. Manually fixing the SI of a mineral to a value of zero forces chemical equilibrium within the model by forcing aqueous activity changes within the formation water, allowing changes in mineral mass and aqueous concentrations resulting from liquid-mineral-gas interactions (e.g., mineral precipitation/dissolution) to be quantified.

2.8.3.3 Reaction Pathway Modeling

Reaction pathway modeling was completed by inputting known system components into the model and calculating the responses of mineralogy and aqueous geochemistry to the presence of the injectate gas. Reaction pathway geochemical modeling was completed using both PHREEQC (thermodynamic considerations only) and GWB (thermodynamic and kinetic considerations). A key difference between equilibrium modeling and reaction pathway modeling is that the SIs of minerals comprising the target injection zone are not manually set to equilibrate; rather, mineral abundances and aqueous concentrations are provided as model inputs and the system's interactions with the injectate gas are calculated either as a function of mineral kinetics over a set time interval (applicable to the GWB approach) or until the system has completely equilibrated independent of kinetic considerations (applicable to the PHREEQC approach). GWB model runs were initially set to calculate interactions over a 50-year time interval to evaluate the impact of mineral kinetic precipitation/dissolution rates on physical properties of the 64 Zone Sandstones following gas injection. It is likely that some mineral reactions will not proceed to completion over the defined 50-year interval. In such instances the equilibrium modeling results provide an assessment of changes after reactions have proceeded to equilibrium. A 50-year time interval was selected for kinetic modeling to provide reasonable predictions in mineral mass and aqueous concentration changes through the immediate future based on mineral-specific reactivity rates and surface areas.

As with equilibrium modeling, reaction pathway modeling assumes a batch reactor approach. Model inputs were entered into PHREEQC and SIs representing the present state of mineral-water

interactions prior to gas injection were calculated. These SIs define the current thermodynamic state of minerals within the target injection zone. The model was then rerun and SIs were recalculated after introducing the injectate gas at the fugacity indicated in the above sections. Mineral SIs before and after the addition of the injectate gas were then compared to evaluate the impact of the injectate on the stability of individual minerals.

Modeling was also completed using the React module of GWB to incorporate mineral kinetic considerations into compatibility calculations. Mineral reaction rate constants from Palandri and Kharaka (2004) and mineral surface area values from Beckingham et al. (2017) were applied to the model to assess reaction progress based on thermodynamics and precipitation/dissolution kinetics. Mineralogy, aqueous geochemistry, and injectate composition were provided as inputs, and the model was set to calculate resulting reactions over a 50-year time interval. Fifty years was selected for the kinetic modeling to assess mineral reactions which are expected to proceed relatively quickly (on a scale of years as opposed to a geologic time scale). Slower reactions will not proceed to completion during the defined time interval and are instead addressed via equilibrium modeling without the inclusion of kinetic considerations. Selecting the 50-year time interval was also deemed adequate in part based on current understanding of the time scale of reaction rates for commonly anticipated carbon sequestration mineral reactions in sandstone reservoirs (Tremosa et al. 2014; Tutolo et al. 2015). Outputs from the GWB model display changes in geochemical components over the defined time interval.

2.8.4 Geochemical Modeling Results and Discussion

2.8.4.1 Equilibrium Modeling

Predicted aqueous concentration changes from equilibrium modeling in PHREEQC are provided in **Table 2.8-6**. These results can be interpreted as the difference (Δ) between the average composition of formation water from laboratory testing (the initial input) and the final composition following forced equilibration of formation minerals and injectate gas. Predicted changes in aqueous concentrations would occur as a result of gas dissolution into formation waters and adjustment of mineral stabilities in response to the subsequent geochemical changes. Predicted solid-phase changes from equilibrium modeling in PHREEQC are shown in **Table 2.8-7**. Like aqueous components, these results can be interpreted as predicted changes in mineral mass in response to injectate gas interaction.

Table 2.8-6 indicates a predicted decrease in pH resulting from dissolution of CO_2 into formation waters. The most significant predicted changes in aqueous concentrations following gas injection were observed for sodium, alkalinity, calcium, iron, potassium, and sulfate. Alkalinity would be expected to significantly increase as CO_2 dissolves into formation water, causing the formation of carbonic acid which would in turn dissociate into bicarbonate while simultaneously lowering pH. A significant increase in sodium concentrations was predicted, likely a result of destabilization and partial dissolution of plagioclase framework grains triggered by pH changes. Notable increases in aqueous iron, potassium, and sulfate concentrations were observed in model results, although not to the same degree as for alkalinity and sodium. Predicted increases in iron and potassium are likely associated with dissolution of clay minerals. Decreases in calcium and magnesium concentrations were predicted. These decreases are likely associated with the formation of

secondary minerals such as re-precipitated carbonates (i.e., dolomite). Aqueous silica concentrations were also predicted to decrease.

Table 2.8-7 indicates minor increases in predicted mineral abundances for quartz, kaolinite, and dolomite, decreases in predicted mineral abundances for calcite, plagioclase, illite, smectite, and anhydrite, and relatively little change in the other minerals present in the target injection zone. Predicted solid-phase changes corresponded with predicted aqueous-phase changes:

- The increase in quartz mass corresponds with the decrease in aqueous silica concentration.
- The increase in kaolinite mass corresponds with the decrease in plagioclase mass, as kaolinite is known to form at the expense of feldspars.
- The decrease in plagioclase mass corresponds with the increase in aqueous sodium concentration.
- The increase in dolomite mass corresponds with the decrease in aqueous magnesium concentrations.
- The decrease in illite and smectite mass may correspond with the increase in aqueous potassium and iron concentrations.

2.8.4.2 Reaction Pathway Modeling

Saturation index results calculated in PHREEQC for individual minerals in the target injection zone before and after interaction with injectate gas are provided in **Table 2.8-8**. Of the existing minerals in the target injection zone, K-feldspar, albite (plagioclase), dolomite, calcite, illite, kaolinite, smectite, and glauconite SIs were predicted to decrease relative to present conditions following the introduction of injectate gas. SIs for quartz and anhydrite remained nearly unaltered following injectate gas interaction. These results are generally in agreement with the predicted mineral mass changes indicated in **Table 2.8-7** for equilibrium modeling, except for kaolinite, which was predicted to increase in mass based on equilibrium modeling despite a slight decrease in SI based on reaction pathway modeling, and dolomite, which was predicted to slightly increase in mass based on equilibrium modeling despite a decrease in SI based on reaction pathway modeling.

Each model run contained additional minerals which were thermodynamically favored to precipitate following gas injection (contained a positive SI). The LLNL calculations primarily indicated the thermodynamic stability of iron-oxyhydroxide minerals, although these minerals contained greater positive SIs prior to injectate interaction, indicating that their stability has been and should continue to be thermodynamically favorable, and their absence from reported mineralogical analyses may be due to very low abundances or kinetic barriers to their formation. The expanded Pitzer database calculations indicated thermodynamic favorability of multiple calcium-aluminosilicate minerals along with iron-oxyhydroxide minerals, although these minerals were also thermodynamically stable prior to injectate gas interaction.

Predicted changes in aqueous concentrations of major ions resulting from the kinetic React model (within the GWB software package) are shown on **Figure 2.8-3**. Kinetic reaction pathway

modeling indicated that aqueous concentrations of calcium, magnesium, and chloride would be expected to decrease following interaction with injectate gas, whereas concentrations of sodium, bicarbonate, and sulfate would be expected to increase. These results agree with the results of equilibrium modeling using PHREEQC, with the exception of chloride which was predicted to increase slightly based on equilibrium modeling. Predicted changes in pH of formation water are shown on **Figure 2.8-4**.

Predicted mass changes for individual injection zone minerals are shown on **Figure 2.8-5**. As with equilibrium modeling using PHREEQC, mineral mass changes were predicted to be minimal (+/- 0.4 mole for each mineral). React modeling using mineral kinetic values predicted dissolution of albite (plagioclase), anhydrite, dolomite, glauconite, illite, kaolinite, K-feldspar, and smectite. React modeling predicted minor increases in mineral mass of quartz and calcite. Calcite was predicted to dissolve initially as pH decreased due to CO_2 dissolution into formation waters but would be expected to reprecipitate as aqueous bicarbonate concentrations increased in formation water. Minor quartz precipitation was predicted (Δ mol of 0.02635 over the 50-year time interval). Total predicted mineral mass change is shown graphically on **Figure 2.8-6**. The kinetic reaction pathway model predicted <5 kilograms per cubic meter of total mineral mass loss. The impact of this predicted mass loss on porosity is shown on **Figure 2.8-7**. The kinetic reaction pathway model predicted a minor porosity increase of approximately 0.0015 (i.e., 0.15% or 0.15 porosity units) to the total porosity value of 0.13 (13% or 13 porosity units) over the 50-year time interval resulting from dissolution of framework grains and clay minerals. This porosity increase contrasts with the predictions from non-kinetic equilibrium modeling, which suggested (but did not quantify) a minor porosity decrease based on a predicted increase in total mineral mass (predominantly a result of quartz precipitation). The effect of this mass increase on porosity cannot be calculated based on inputs provided to the PHREEQC model.

2.8.4.3 General Discussion of Modeling Results

The primary mechanism driving geochemical change in the modeled system is the dissolution of CO_2¬ injectate gas into formation waters. At a pressure of 47.63 atm, a fixed number of 1.484 moles were added as model input representing CO_2. The CO_2 is predicted to dissolve into formation waters, resulting in the formation of carbonic acid based on the following reaction:

$$CO_2(g) + H_2O \rightleftharpoons H_2CO_3$$

which then dissociates into bicarbonate following the reaction below:

$$H_2CO_3 \rightleftharpoons H^+ + HCO_3^-$$

Further dissociation into carbonate may occur following the reaction below:

$$HCO_3^- \rightleftharpoons H^+ + CO_3^{2-}$$

These processes result in a pH decrease in formation waters, which would influence the stability of minerals comprising the injection unit. Carbonate (dolomite and calcite) cements present in the 64 Zone Sandstones are the most sensitive to pH changes and would be expected to function as buffers to pH decreases, initially dissolving into solution as pH drops. Reaction pathway model results of carbonate SI changes reflect this conclusion, as shown on **Table 2.8-8**. Model results

indicate that SIs for dolomite and calcite would change from positive values, indicative of favored precipitation, to negative values, indicative of dissolution resulting from CO_2 injection. Carbonate abundances in the 64 Zone Sandstones are minimal, based on XRD, point-counting, and HCl solubility data (mean of <1%), and thus, porosity changes resulting from dissolution of carbonates are expected to be minimal. Of note, kinetic reaction pathway modeling predicted a slight increase in calcite mass over a 50-year time interval, which is related to a predicted decrease in aqueous calcium concentrations. Calcite was predicted to initially dissolve in response to pH decreases, then reprecipitate out of formation water as alkalinity concentrations increase due to the above reactions. The reprecipitation process constitutes a mineral trapping mechanism, as reprecipitation of carbonate minerals would trap CO_2 chemical components in the solid phase.

The 64 Zone Sandstones are comprised primarily of quartz. Quartz is a geochemically inert mineral that typically does not undergo chemical reactions. Comparison of SIs for quartz before and after the introduction of injectate gas revealed very little change (**Table 2.8-8**). However, equilibrium modeling results indicated that precipitation of quartz cements (1.06 moles per liter [mol/L] based on the expanded Pitzer model and 2.62 mol/L based on the LLNL model) is thermodynamically favorable (**Table 2.8-7**). Kinetic reaction pathway modeling in React also indicated that precipitation of quartz cements should occur (**Figure 2.8-5**). Formation of quartz cements account for the net mineral mass increase predicted in PHREEQC modeling; in contrast, the React model calculated a net decrease in total mineral mass due to quartz cement formation being outpaced by dissolution of other minerals.

Dissolution of plagioclase feldspar is predicted by both model types as a result of pH decreases in this pressure-temperature regime. Equilibrium modeling indicated that K-feldspar should remain stable; however, both reaction pathway models suggested that dissolution of K-feldspar should occur. Dissolution of plagioclase feldspar would result in the contribution of calcium, sodium, aluminum, and silica to formation water. Geochemical modeling efforts assumed an albite (sodium plagioclase endmember) composition for plagioclase, which accounts for the predicted increase in aqueous sodium concentrations following plagioclase dissolution. The presence of anorthite (calcium plagioclase endmember) would result in an increase in aqueous calcium concentrations relative to modeling results presented herein. Dissolution of K-feldspar would result in an increase of aqueous potassium concentrations to formation waters, which was observed in model results (**Table 2.8-6**).

The aqueous components of dissolved plagioclase may precipitate out of solution as the clay mineral kaolinite. Equilibrium modeling results predicted the dissolution of plagioclase feldspars and the subsequent precipitation of kaolinite at the expense of feldspar dissolution (**Table 2.8-7**). SI comparisons from reaction pathway modeling support the dissolution of plagioclase (**Table 2.8-8**), although SIs for kaolinite decrease slightly. Likewise, the kinetic React model also predicted a slight decrease in total kaolinite mass (**Figure 2.8-5**). Dissolution of plagioclase grains would constitute an increase of primary porosity within the target injection zone, but the potential precipitation of kaolinite, should it occur, would offset much of the total mineral mass and associated porosity changes (Δ = +0.826 mol/L kaolinite compared to Δ = -1.25 mol/L

plagioclase). If kaolinite precipitation does not occur, dissolution of feldspar grains would result in minor mineral mass decreases and an increase in porosity.

Formation water was found to be highly supersaturated with respect to glauconite prior to gas injection (SI of 22.68). Reaction pathway modeling results using PHREEQC indicated that the introduction of injectate reduced the SI of glauconite to -3.18, which is indicative of undersaturation. The React model also predicted dissolution of glauconite over a 50-year time interval. Equilibrium modeling predicted no change in glauconite mass. Glauconite does not occur in large abundances within the 64 Zone Sandstone (0.1% [**Table 2.8-1**]), so potential porosity created by dissolution of glauconite is expected to be minimal.

Modeling results indicated that a change in anhydrite stability is not anticipated. Equilibrium modeling predicted no change in anhydrite mass, and reaction pathway modeling indicated that SI changes are minor following interaction with injectate gas. React modeling predicted a minor decrease in anhydrite mass, although such a change would be negligible in relation to total formation solids mass changes, as anhydrite was not observed in petrographic analyses.

Overall, changes to mineral mass and subsequent changes to porosity are predicted to be minimal following the system interaction with injectate gas. PHREEQC modeling incorporating only thermodynamics, and GWB React modeling incorporating thermodynamics and kinetics, predicted different overall porosity trends. Both models predicted quartz precipitation, which would reduce porosity. The discrepancy between these trends is a result of the amount of predicted dissolution of other minerals and the amount of predicted precipitation of quartz. Equilibrium modeling using PHREEQC predicted that quartz precipitation should slightly outpace the dissolution of other minerals, whereas kinetic reaction pathway modeling predicted that other mineral dissolution should outpace quartz precipitation. Despite the slight discrepancy in total mineral mass changes, both model types predict similar solid and aqueous phase geochemical changes brought on by similar mechanisms.

Geochemical modeling results suggest that up to 14 reactions may occur as a result of gas injection. These reactions are as follows:

- CO_2 dissolution into formation water
- Carbonic acid dissociation into bicarbonate
- Bicarbonate dissociation into carbonate
- Dissolution of K-feldspar
- Dissolution of plagioclase feldspar
- Dissolution of illite
- Dissolution of smectite
- Potential dissolution of kaolinite
- Initial dissolution of carbonate cements

- Precipitation of quartz cement
- Potential precipitation of kaolinite
- Reprecipitation of carbonate cements
- Potential precipitation/dissolution of Fe-oxyhydroxides[8]
- Potential precipitation of calcium aluminosilicate[9] minerals

An additional reaction, precipitation of dawsonite, was predicted to occur when the system was subjected to pressure-temperature conditions associated with sensitivity analyses presented in **Appendix 2G**. Full stoichiometry for each of the above listed chemical reactions is provided in **Appendix 2G**. Geochemical modeling efforts identified expected chemical reactions and evaluated the potential impact of these reactions on physical properties of the target injection area via total mineral mass and porosity changes. As part of a sensitivity analysis, additional model runs were performed using different temperature and pressure values because these conditions are expected to change as the injectate accumulation lowers the temperature and increases the pressure in the injection zone (**Appendix 2G**). Modeling using variable sensitivity conditions yielded a maximum absolute porosity increase of <0.02 of the 0.13 total porosity (i.e., an increase of <2% or <2 porosity units, relative to the total porosity of 13% or 13 porosity units) over a 50-year period, compared to a <0.002 (i.e., <0.2% or <0.2 porosity units) increase for the base case model conditions.

The 64 Zone Sandstones were not expected to undergo extensive petrologic modification following the introduction of injectate gas because much of their composition consists of geochemically inert quartz grains. This hypothesis was evaluated via geochemical modeling of mineral stability and aqueous composition changes resulting from interaction with injectate gas. Results indicate that largely offsetting minor mineralogical changes should occur, culminating in a predicted total porosity change of <0.2% under base case conditions over a 50-year time period. Modeling was also completed under variable pressure-temperature conditions to attempt to assess the maximum extent of physical change within the target injection zone under pressure-temperature regimes potentially achieved during the injection process. This sensitivity testing yielded a maximum total porosity increase of <2.0% over a 50-year time period (**Appendix 2G**). Considering that assessments of mean porosity within the target injection zone range from 9.9% to 13% depending upon methodology, the maximum predicted porosity change is not considered significant enough to warrant incorporation of geochemical reactions into the AoR modeling effort.

2.9 Other Information (Including Surface Air and/or Soil Gas Data, if Applicable)

As described in **Attachment E**, surface air and soil gas monitoring are not required for this Project. No additional relevant information under this subsection is being provided.

[8] Calculated SIs suggest that Fe-oxyhydroxides were thermodynamically more stable prior to injectate gas interaction, but still remain stable following gas interaction.
[9] Calculated SIs suggest that calcium aluminosilicate minerals were thermodynamically more stable prior to injectate gas interaction, but still remain stable following gas interaction.

2.10 Site Suitability [40 CFR 146.83]

The detailed geologic characterization provided in previous sections of this application demonstrates that the proposed storage complex meets the suitability requirements set forth at 40 CFR 146.83. This section provides further support for the proposed storage complex injectivity, confinement, and storage capacity with respect to the CO_2 injectate within the AoR.

2.10.1 Injectivity

The AoR has a long history of production, injection, and operating experience providing support of reservoir injectivity. A detailed discussion of the 64 Zone U and W Sandstones of the injection zone (the 64 Zone Sandstones) is provided in **Section 2.4**. Available well data presented below support reservoir injectivity:

- The discovery well 64-27N established production at 61,200 thousand standard cubic feet per day (MSCFD) in gas phase alone through 2.875-inch tubing and native reservoir pressures.
- In 1946, the field reported approximately 36,000 MSCFD (approximately 1,830 equivalent CO_2 metric tons/day) gas injection into 64-27N and 64-35N combined using 2.875-inch tubing, a surface pressure of approximately 1,375 psi gauge, and an estimated reservoir pressure of approximately 1,100 psi gauge.
- Wells 43-16N and 18-35N currently receive 8,600 barrels per day water injection (approximately 1,110 equivalent CO_2 metric tons/day using a wellhead density of 813 kilograms per cubic meter) with no surface pressure with 2.875-inch tubing.

More precise estimates of CO_2 injectivity are derived from a 1950 three-point gas injection test performed in 64-35N. A discretized wellbore PROSPER model was built to match the gas test results and calibrate the model to the reservoir and well conditions before running predictions and sensitivities for CO_2 injection modeling.

Calibration on the 64-35N test was achieved using K*h=3,000 milliDarcy feet (mD.ft) (permeability * height), which is in line with the geological permeability model and a skin=0. A more conservative, 1,000 mD.ft case was also generated. Assuming skin=0 is appropriate at this stage because there is some equivalency in the injectivity behavior between higher skin or lower 'K*h,' and skin can be enhanced by well stimulation techniques (**Section 5.1**). Though somewhat uncertain, 'K*h' is relatively well informed by the reservoir well control fed into the stratigraphic and permeability models and can be biased more favorably towards the higher range during the injection location selection.

Results of the well injectivity sensitivity evaluation are presented in **Figure 2.10-1**. The high case shows up to 5,000 metric tons/day injection capacity, and the more conservative scenario shows closer to 2,000 metric tons/day.

Figure 2.10-1 presents plots of 4.5-inch-tubing CO_2 injectivity versus reservoir pressure from the calibrated PROSPER model with predictions adjusted for fracture pressure limits. Note that the injection pressure constraints (80% of fracture pressure) are the reason why the injectivity profiles

have a plateau area at 5,000 and 2,000 metric tons/day in the early time of the high and low scenarios, respectively, instead of a strictly monotonically decreasing function against reservoir pressure.

The conclusions of this work are as follows:

1. Injectivity in the conservative scenario remains as high as 2,000 metric tons/day or about 40,000 MSCFD of CO_2.
2. Higher quality reservoir areas could accommodate a larger rate with little to no limitation by maintaining bottom-hole pressure below 80% of the fracture pressure.
3. In areas of the reservoir where the characteristics are not as favorable, the injection is manageable at safe rates by reducing the flow rate or the surface pressure while monitoring bottom-hole pressure.

Overall, 64 Zone injectivity is sufficient to support CO_2 injection given proper sizing of the tubing, manageable well skin, sufficient pressure differential with the reservoir, surface control, and pressure monitoring.

2.10.2 Confinement [40 CFR 146.83(a)(2)]

Descriptions of the AoR stratigraphy and structure in **Sections 2.1**, **2.3**, and **2.4** demonstrate that the proposed AoR is characterized by a porous and permeable injection zone overlain by a laterally continuous and impermeable confining zone, both of which are folded to form a broad anticline. These favorable reservoir properties and geometries, which trapped oil and natural gas over geological timescales, are expected to serve to trap buoyant CO_2 and constrain the plume's lateral extents.

The primary confining zone, the Lower Santos Shale, has an average TVT of approximately 275 ft within the AoR and a maximum thickness of approximately 400 ft on the west of the anticline in the northwestern portion of the AoR (**Figure 2.4-10**). The Santos Shale Member (comprised of the Lower Santos Shale, the Agua Sandstone, and the Upper Santos Shale) extends far beyond the AoR and is regionally reported to reach a maximum stratigraphic thickness of 2,000 to 2,300 ft (Adkinson 1973). Detailed discussions of the injection and confining zones and their individual facies, including the depth, areal extent, and thickness, as well as their porosity, permeability, mineralogy, and geochemical characteristics, are presented in **Section 2.4** and **Section 2.8**. Characterization of the Santos Shale Member, as presented in previous sections, demonstrates high suitability for use as the confining zone.

Published literature (Foss and Blaisdell 1968; Carter 1985), as well as the petrologic and petrophysical analyses presented in **Section 2.4**, indicate that the Upper and Lower Santos Shales are clay-rich mudstones with low permeability. Log and core analysis data presented in **Section 2.4.3** display a difference of at least two (and up to six) orders of magnitude in permeability between the 64 Zone Sandstones and the Upper and Lower Santos Shale, indicating that fluids will be confined to the 64 Zone Sandstones. Capillary pressure measurements also report markedly higher entry pressures for the Upper Santos Shale, as compared to the 64 Zone Sandstones,

suggesting that the confining zone can support a thick column of injected CO_2 without leaking. Mercury entry pressures range between 5.14 psia and 49.15 psia (0.039 and 0.339 megapascals) for samples from the 64 Zone Sandstones, while ranging between 2,498 psia and 6,649 psia (17.2 and 45.85 megapascals) for the five Upper Santos Shale samples (**Figure 2.4-26**).

Section 2.3.1 shows that the primary confining zone's fractures are very limited and without detrimental effect on the macroscopic sealing capacity of the zone, while the injection zone is effectively unfractured. Consequently, fractures are expected to have a negligible influence on the sealing capacity of the primary confining zone and the transmissivity of the injection zone.

The mechanical integrity of the primary confining zone was examined using the in-situ stresses calculated from the 3D geomechanical model and presented in **Table 2.5-2**. The stresses predicted in the Lower Santos Shale are calculated to be below the stress level that would indicate failure (1.00), assuming the formation has zero cohesive strength and with a friction angle of 31º (**Table 2.5-1**). A shear or tensile stress level of 1.00 would be required to move the Lower Santos Shale stress state into critically stressed condition from the current static state, as described in **Section 2.5**. The results of the confining zone integrity analysis suggest within the model constraints that the confining zone is stable without risk for shear or tensile failure.

For the faults identified in the AoR (**Section 2.3.2**), 90 years of detailed production records and pressure data (**Section 2.3.3**) indicate that these large-scale faults do not transmit fluids or pressure. The fault stability analyses presented in **Section 2.3.3.2** indicate that the existing non-transmissive faults will not become critically stressed and will not introduce up-fault fluid flow risks under the proposed injection and storage pressures (**Section 2.5**). Proposed injection pressures will be, by design, below the pressure required to initiate and propagate new fractures.

Finally, the geochemical characterization (**Section 2.8**), combined with the lack of driving force for the CO_2 stream to enter the confining zone, suggests the confining zone will not to be affected by the injectate.

The preceding paragraphs, in conjunction with robust well construction and corrective action plans (presented in **Section 5** and **Section 3**, respectively), lead to the conclusion that the AoR is capable of permanently sequestering CO_2.

As discussed in **Section 2.6**, it is unlikely that shaking resulting from an earthquake on the SAF or another known fault would induce slip on the pre-Quaternary inactive faults within the storage complex that could result in a release of CO_2 from the storage complex. Earthquakes that may occur within the storage complex during its operational lifetime are likely to be below magnitude 3.0. Events of magnitude 3.0 produce fault displacements of approximately 1 millimeter to a few centimeters (Zoback and Gorelick 2012). Given that the average thickness of the Lower Santos Shale primary confining unit is approximately 275 ft TVT, and that the Santos Shale Member in its entirety has a maximum stratigraphic thickness of approximately 2,000 to 2,300 feet (see **Section 2.4.1**), the risk of earthquakes within the AoR producing sufficient offset to impact the confinement of the CO_2 injection units is considered to be negligible.

2.10.3 Storage Capacity [40 CFR 146.83(a)(1)]

CO_2 storage capacity in the 64 Zone Sandstones was estimated using the Oil and Natural Gas Reservoirs Production Method, as described in the National Energy Technology Laboratory's Carbon Storage Atlas (United States Department of Energy 2015). This methodology converts surface volumes of produced oil and gas to subsurface CO_2 volumes, on a volume-for-volume basis as detailed in **Table 2.10-1.**

As shown on **Table 2.10-1**, the material balance using cumulative hydrocarbons (oil and gas) produced from the 64 Zone within the AoR resulted in a high estimate of 42.6 MM mt of potential CO_2 storage capacity.

A conservative estimate of storage capacity was generated using material balance of only free gas from the reservoir's gas cap, which constitutes the most accessible storage target. The total volume of original gas in-place is estimated at 545 billion cubic feet (BCF), made up of 333 BCF of free gas in the reservoir's gas cap and 212 BCF of dissolved gas. Records show that 514.5 BCF of the initial 545 BCF has been produced from the 64 Zone (see **Attachment B**). Using a highly conservative assumption (i.e., that 212 BCF of the dissolved gas was produced) would yield 302.5 BCF of gas produced from the free gas cap—more than 90% of the initial gas cap volume, with an estimated 95% of that coming from the 64 Zone within the AoR. A rapid decline in reservoir pressure during the early decades of 64 Zone production further substantiates that the gas cap was depleted and necessitates a high recovery factor. This conservative gas cap recovery factor of 90% yields a similarly conservative CO_2 storage capacity estimate of 22.9 MM mt of CO_2.

A mid-range estimate at 32.7 MM mt of CO2 storage capacity is proposed using an average of the low and high range estimates of 22.9 and 42.6 MM mt, respectively, as summarized in **Table 2.10-2**.

The geochemical analysis presented in **Section 2.8** predicts a low reactivity of the injection formation with the injectate leading to minimal porosity or permeability changes over time. Additional data presented in the well construction (**Section 5**) and the corrective action (**Section 3**) sections demonstrate the limited reactivity of the injectate with legacy or sequestration well materials.

The information presented herein demonstrates that the proposed CarbonFrontier location meets the minimum criteria for siting (40 CFR 146.83).

3. AOR AND CORRECTIVE ACTION

The CarbonFrontier Area of Review and Corrective Action plan pursuant to 40 CFR 146.82(a)(4), 146.82(a)(13), 146.84(b), and 146.84(c) describes the modeling approach and results to establish the AoR, tabulation and evaluation of wells for corrective action, and AoR reevaluation schedule and criteria. The Area of Review and Corrective Action Plan is included as **Attachment B**.

AoR and Corrective Action GSDT Submissions
GSDT Module: AoR and Corrective Action ***Tab(s):*** All applicable tabs Please use the checkbox(es) to verify the following information was submitted to the GSDT: ☒Tabulation of all wells within AoR that penetrate confining zone ***[40 CFR 146.82(a)(4)]*** ☒AoR and Corrective Action Plan ***[40 CFR 146.82(a)(13) and 146.84(b)]*** ☒Computational modeling details ***[40 CFR 146.84(c)]***

4. FINANCIAL RESPONSIBILITY

The CarbonFrontier Financial Responsibility Demonstration pursuant to 40 CFR 146.82(a)(14) and 146.85 describes financial instrument evaluation and describes the cost estimate for corrective action for wells in the AoR, injection well plugging, post-injection site care and closure, and emergency and remedial response. The Financial Responsibility Demonstration is included as **Attachment C**.

Financial Responsibility GSDT Submissions
GSDT Module: Financial Responsibility Demonstration ***Tab(s):*** Cost Estimate tab and all applicable financial instrument tabs Please use the checkbox(es) to verify the following information was submitted to the GSDT: ☒Demonstration of financial responsibility ***[40 CFR 146.82(a)(14) and 146.85]***

5. INJECTION WELL CONSTRUCTION

Aera plans to repurpose five existing wells and construct four new-drill wells for injecting CO_2 at North Belridge Field in the 64 Zone Sandstones. Five additional existing wells will be repurposed for monitoring the injection zone and the dissipation zone above the injection zone.

In compliance with 40 CFR 146.82(a)(11), 146.82(a)(12), and 146.86, **Attachment K** (Construction Details) and **Appendix 5A** contain well specific construction details, procedures, design criteria, current and planned wellbore schematics, and well surveys for the planned Class VI CO_2 injection and monitoring wells. Because well architectures vary, both **Attachment K** and **Appendix 5A** have separate sections for each existing well to be repurposed, as well as a section for the plan that applies to the four proposed new wells. **Table 5-1** provides a summary of the wells included in **Attachment K** and **Appendix 5A**. The four proposed new injection wells are listed in **Table 5-2. Figure 5-1** indicates the structural location for each repurposed and new well in the North Belridge oil field.

5.1 Proposed Stimulation Program [40 CFR 146.82(a)(9)]

Aera believes that the injection zone (64 Zone Sandstones) will require stimulation in the Project injection and monitoring wells, including wells either repurposed to or newly drilled for Class VI service. Details and methods proposed for stimulation are included in **Attachment J**.

5.2 Construction Procedures [40 CFR 146.82(a)(12)]

5.2.1 New Drill Wells for CO_2 Injection

Conductor casing will be set for drilling and taking circulation returns for the surface casing hole and cementing the surface casing.

The surface casing hole will be drilled through the base of potential USDWs to 1,000 ft (40 CFR 146.86[b][2]). Deviation check surveys will be taken while drilling at sufficiently frequent intervals to determine the location of the borehole and to document that vertical avenues for fluid movement in the form of diverging holes are not created (40 CFR 146.87[a][1]). The surface casing will be run and cemented to surface as required by 40 CFR 146.86(b)(2). While there are no USDWs present at the proposed well location, the surface casing will be set and cemented as if an USDW is present. The casing will be pressure tested prior to drilling out the shoe to confirm mechanical integrity.

The intermediate casing hole section will be drilled through the Temblor Sands to a depth of approximately 6,100 ft. Deviation check surveys will be taken while drilling (40 CFR 146.87[a][1]). The intermediate casing will be run and cemented to surface. A two-stage cement job is planned to provide cement to surface. The intermediate casing will isolate oil and gas zones while drilling the injection casing hole section to the base of the primary confining zone (the Lower Santos Shale). Cement to surface will provide an additional barrier to prevent the leakage of CO_2 from the injection zone to surface, into unauthorized zones, and into potential USDW. The casing will be pressure tested prior to drilling out the shoe to confirm mechanical integrity.

The injection casing hole section will be drilled to the top of the injection zone (the 64 Zone Sandstones), which is the same depth as the base of the primary confining layer (the Lower Santos

Shale). Deviation check surveys will be taken while drilling (40 CFR 146.87[a][1]). The injection casing will be run using a sufficient number of centralizers, to the top of the injection zone (the 64 Zone Sandstone) and cemented to surface (40 CFR 146.86[b][3]). More than one cement stage may be necessary (40 CFR 146.86[b][4]). The evaluation logs will confirm that the annulus cement will prevent the movement of fluids between zones and hence prevent movement of CO_2 to unauthorized zones in the well and potential USDW zones as required by 40 CFR 146.86(a)(1). The casing will be pressure tested prior to drilling out the shoe to confirm mechanical integrity.

The long string casing design will consist of materials compatible with exposure to the injected fluids (40 CFR 146.86[b][1]). The cement and additives will be compatible with the injection and formation fluids as required by 40 CFR 146.86(b)(5). Casing centralizers will be used to centralize the casing and liner to 70% standoff or greater as per 40 CFR 146.86(b)(3).

The injection liner hole section will be drilled through the injection zone. Deviation check surveys will be taken while drilling (40 CFR 146.87[a][1]). The injection liner will be run and cemented to the top of the liner. The evaluation logs will confirm the annulus cement will prevent the movement of fluids between zones and prevent movement of CO_2 to upper zones in the well. The liner will be pressure tested after it is cleaned out to confirm mechanical integrity.

The injection well will be completed by perforating the authorized injection zones. Completion equipment consisting of a packer, monitoring equipment, and tubing will be installed. The flow wetted components of the packer, tubing, and wellhead will also use material compatible with the injected fluid. Noncorrosive packer fluid treated with corrosion inhibitors and biocide will be circulated in the tubing-by-casing annulus as per 40 CFR 146.88(c).

Open and cased hole well logging details for both new and repurposed existing wells are included in **Attachment D**.

5.2.2 Repurposed Wells for CO_2 Injection

The completion equipment will be removed, and the well will be cleaned out to the required depth for injecting into the 64 Zone Sandstones injection zones. Casing inspection and annulus evaluation logs will be run to confirm that the annulus seal through the confining layer is sufficient to prevent movement of fluids behind the existing long string casing.

A new inner casing will be run and cemented to surface. The inner casing design will consist of materials compatible with exposure to the injected fluids (40 CFR 146.86[b][1]). The cement and additives will be compatible with the injection and formation fluids as required by 40 CFR 146.86(b)(5). A sufficient number of casing centralizers will be used to centralize the casing and liner to 70% standoff or greater as per 40 CFR 146.86(b)(3). The new long-string inner casing will isolate the existing casing, thereby resulting in a wellbore that meets Class VI requirements. The casing will be pressure tested prior to drilling out the shoe to confirm mechanical integrity.

Aera will install and cement new liners across the injection zone in the five repurposed injection wells. Each liner will be cemented to the top of the liner. The new inner liner and cement will be compatible with the injection stream as per 40 CFR 146.86(b)(5) and will isolate the existing liner

from the injected fluids. The liner will be pressure tested after it is cleaned out to confirm mechanical integrity.

The injection well will be completed by perforating the authorized injection zones. Aera will maintain at least a 20 ft separation between the base of the primary confining zone and the top wellbore opening to the injection zone below to reduce the potential for loss of containment (40 CFR 146.82[a][9]). Completion equipment consisting of a packer, monitoring equipment, and tubing will be installed. The flow wetted components of the packer, tubing, and wellhead will also use material compatible with the injected fluid (40 CFR 146.86[c][1]). As per 40 CFR 146.88(c), the tubing-casing annulus will be circulated and filled with non-corrosive packer fluid.

5.2.3 Repurposed Monitoring Wells

The construction procedures for repurposing the five existing wells to monitoring wells are similar to repurposing wells for injection. The differences include perforation intervals in the appropriate zones to be monitored, and smaller outer diameter tubing will be used as long as the tubing inner diameter is large enough to allow running wireline logging tools and downhole sampler equipment that are planned to meet periodic monitoring requirements as required by 40 CFR 146.86(a)(2).

Repurposed monitoring wells that require an inner liner will have a new inner liner run and cemented to the top of the liner. The new inner liner and cement will be compatible with both the injection stream and reservoir fluids as per 40 CFR 146.86(b)(5). Liners will be pressure tested after clean-out to confirm mechanical integrity.

5.2.4 Mechanical Integrity Assurance during Well Repurposing and Drilling

After each casing and liner are set and cemented, and after the tubing and packer are installed, they will be pressure tested to a pressure equal to or greater than the design pressure for that component to demonstrate mechanical integrity. The simulation design load input pressures for the injection well tubing and tubing by casing annulus are as follows:

- Maximum tubing injection pressure 2,800 psi
- Maximum annulus pressure 2,900 psi
- Maximum shut-in tubing pressure with methane 3,950 psi

The simulation design load input pressure loads on the monitor well tubing and tubing by casing annulus are as follows:

- Maximum shut-in tubing pressure with CO_2 1,850 psi
- Maximum shut-in tubing pressure with methane 3,950 psi

5.2.5 Cement Bond, Temperature, and Inspection Logs

After the long-string inner casing and inner liner have been cemented, a cement bond and variable density log and a temperature log will be run as required by 40 CFR 146.87(a)(3)(ii) to document an annular seal. A baseline wall thickness inspection log will also be run.

5.2.6 Downhole Monitoring Equipment

Injection and Monitoring wells will be equipped with downhole devices and equipment to measure and monitor downhole conditions. The wells will be designed to allow the use of testing and monitoring devices and workover tools as required by 40 CFR 146.86(a)(2). Downhole monitoring equipment includes (1) a downhole pressure internal tubing and/or tubing-casing annulus gauge and (2) distributed temperature sensors (DTS) and/or distributed acoustic sensors (DAS). The pressure line will be strapped to the outside of the tubing for data transmission to surface for data collection and monitoring. The DTS and/or DAS line will be in the cemented B-annulus between the inner (injection) casing and the outer casing. The annuli will be sized to allow for data lines and clamps to be installed for downhole monitoring devices lines.

The DTS and/or DAS will be used to conduct the annual external mechanical integrity test as required by CFR 146.90(e).

The inner diameter of the tubing planned for monitoring wells will be sized to allow running wireline logs such as pulsed neutron, saturation, pressure, and noise. In addition to logs, downhole samplers can be run through the tubing to recover fluid samples from the reservoir. The inner diameter of the tubing planned for injection wells is sized for the planned injection rate.

5.2.7 Alarm and Safety Shut-In System for Injection Wells

The well monitoring system will consist of sensors for measuring temperature, pressure, and flow. Data from the sensors will be collected and stored in a Supervisory Control and Data Acquisition (SCADA) system. Monitored parameters will have high and low alarms that will be activated when a measured parameter is outside its normal operating range. When a critical parameter, such as pressure, alarms, the well will be shut in by a fail-safe actuated gate valve that is a component of the injection tree. Operating personnel will be notified that an alarm was activated. The cause for the alarm will be investigated to determine what actions are necessary to demonstrate that the well is safe. If the well appears to be lacking mechanical integrity, the UIC Program Director will be notified within 24 hours (40 CFR 146.88[f][3]). After needed repairs or maintenance are conducted, and mechanical integrity has been demonstrated to the satisfaction of the UIC Program Director (40 CFR 146.88[f][4]), the well can then be returned to active injection.

A landing nipple profile will be installed near the packer to allow setting a plug or other downhole safety device if required for well maintenance and servicing. **Figure 5.2-1** shows a schematic of the safety system.

In addition to the surface monitoring equipment shown in **Figure 5.2-1**, a processing server may be on selected locations for continually monitoring subsurface injection and tubing-casing annulus pressures above the packer, temperature (DTS), and/or acoustic (DAS) data. The detailed designs, equipment specification, and selection will be completed and submitted to EPA prior to project startup.

5.2.8 Alarm and Safety Shut-in System for Monitoring Wells

The well monitoring system will consist of sensors for measuring temperature and pressure on the tubing and the tubing-casing annulus (40 CFR 146.88[e][1]). Data from the sensors will be collected and stored in a SCADA system. Monitored parameters will have high and low alarms

that will be activated when a measured parameter is outside its accepted normal operating range. When a critical parameter, such as pressure, alarms, the well will be shut in by a fail-safe actuated master valve that is a component of the tree (40 CFR 146.88[e][2]). Operating personnel will be notified that an alarm was activated. The cause for the alarm will be investigated to determine what actions are necessary to demonstrate that the well is safe. If the well appears to be lacking mechanical integrity, the UIC Program Director will be notified within 24 hours (40 CFR 146.88[f][3]). After needed repairs or maintenance are conducted, and mechanical integrity has been demonstrated to the satisfaction of the UIC Program Director (40 CFR 146.88[f][4]), the well can then be returned to service.

A landing nipple profile will be installed near the packer to allow setting a plug or other downhole safety device if required for well maintenance and servicing. **Figure 5.2-2** shows a general schematic of the safety system.

In addition to the surface monitoring equipment shown in **Figure 5.2-2**, a processing server may be on selected locations for continually monitoring subsurface injection and tubing-casing annulus pressures above the packer, temperature (DTS), and/or acoustic (DAS) data. The detailed designs, equipment specification, and selection will be completed and submitted to EPA prior to project startup.

5.2.9 Well Materials Compatibility

Well construction materials were selected that are compatible with the injection stream and reservoir fluids according to 40 CFR 146.86(b)(1) and 40 CFR 146.86(c)(1).

5.2.9.1 Material Selection for Casing, Liners, Tubing, and Packers

The material selected for the flow-wetted well construction components is modified 13Cr (13% Cr, 5% Ni, 2% Mo). The selection was based on modeling using the corrosion analysis program OLI[10] to evaluate the casing, liner, and tubing corrosion rates caused by exposure to the CO_2 injection stream (**Section 2.8.2.3**) and reservoir fluid (**Section 2.8.2.2**), in compliance with 40 CFR 146.86(b)(1)(ix); see the FEED study report included as **Appendix 5B** for additional details on the corrosion modeling and results used to select the modified 13Cr material. Modeling results (**Appendix 5B**) confirmed an acceptable corrosion rate for modified 13Cr material for the life of the Project to meet the well materials compatibility requirement in 40 CFR 146.86(b)(1). The material selection for packers is Alloy 718 or an equivalent material per 40 CFR 146.86(c)(1).

Corrosion is one of the key factors considered in selecting the tubing, liner, and casing material appropriate for CCS well applications. OLI was utilized to quantify the corrosion rates for carbon steel, corrosion-resistant alloy (CRA), and other materials. This was supplemented by research into current literature, especially experimental work on corrosion in CO_2 rich flow streams. First, water solubility in supercritical (dense phase) CO_2 with and without impurities was established and contextualized to existing literature. Impurities decrease the solubility of water in dense phase CO_2, leading to precipitation of water and creation of a corrosive, low pH aqueous solution saturated with CO_2. Next, corrosion analysis was performed for a wide range of materials in wet

[10] https://olisystems.com

CO_2, using OLI and results from the well performance analysis. With dry injectate (containing less than 500 parts per million H_2O), the corrosion rate is expected to be negligible, however, it is important to consider presence of water during upset conditions. Finally, external corrosion due to exposure to reservoir fluid with wet CO_2 was investigated for a range of mixing conditions. Reservoir saturation as a function of time was used in this analysis. Based on this analysis, it was concluded that modified 13Cr is suitable for CCS injection wells and monitoring wells that are exposed to the reservoir fluids.

Upset conditions were also studied, such as reservoir backflow during shut-in period or reservoir mixing with injection gas at the bottom of the well. Corrosion rates were predicted using a thermodynamic model of a case where injected gas mixes with the reservoir fluid. The reservoir fluid was modeled by using the brine composition listed in **Table 5.2-1** and the gas composition listed in **Table 5.2-2**. The brine and the gas were mixed in the saturator function of OLI at temperature of 241°F and pressure of 4,125 psi. The stream has 69% gas saturation and 31% brine. The resulting mixture was used as the reservoir stream input to the thermodynamic model. The reservoir stream was mixed with pre-combustion stream and post-combustion stream at the following ratios:

- 100 parts injection stream
- 1 part injection stream to 100 parts reservoir stream
- 50 parts injection stream to 50 parts reservoir stream
- 100 parts injection stream to 1 part reservoir stream

The corrosion modeling and results are described in full in **Appendix 5B** and the results are summarized as follows:

- The modeled corrosion rate when the well is shut-in was calculated to be 3.73 mils per year and 1.34 mils per year when the well is injecting. The resulting pH was calculated to be 3.0–3.2.
- The modeled corrosion rates while injecting and while the well is shut-in were used to estimate the remaining body wall for the casing, liner, and tubing at the end of the injection period.
- The remaining body wall results were used to confirm the well can be operated safely throughout the life of the injection period.

The results of the tubular designs are included in the individual well documents in **Appendix 5A**.

5.2.9.2 Materials Summary

A summary of the material planned for the main components for injection and monitoring wells is shown in **Table 5.2-3**.

5.2.9.3 Materials and Manufacturing Standards

Casing, liner, and tubing materials will be manufactured to specifications according to American Petroleum Institute (API) Specification 5CT (API 2018) and American National Standards Institute (ANSI)/API Specification 5CRA (ANSI/API 2021).

Cementing materials will be manufactured to specifications according to API Recommended Practice 10B-2 (API 2013). Pressure containing strings including the casing, liner, tubing, and downhole equipment will have connections manufactured and qualified to API Recommended Practice 5C5 (API 2017).

Packers and liner hanger packers will be manufactured and qualified to API Specification 11D1 (API 2022).

5.2.10 Cementing [40 CFR 146.86(a)(1), 146.86(b)(1), and 146.86(b)(5)]

Sections 5.2.1, 5.2.2 and 5.2.3 discuss the details on construction procedures of new drill wells for injection, repurposed wells for injection, and repurposed wells for monitoring respectively. The placement of casings and liners with the requirement of cement behind the pipe is mentioned within those sections. The following sections from 5.2.10.2 to 5.2.10.5 detail the procedures for placing the cement in stages and elaborate the type of cement with the additives included in its design. It should be noted that the cement design mentioned in sections 5.2.10.2 to 5.2.10.5 are applicable to the new drill wells for CO_2 injection. Whereas the cement design for repurposed wells, corresponding to the well construction procedures included in sections 5.2.2 and 5.2.3, are mentioned in sections 5.2.10.4 and 5.2.10.5 below.

5.2.10.1 Geothermal Temperature Profile

Figure 5.2-3 shows the field geothermal temperature profile vs. TVD used in the analyses for flow assurance modeling, corrosion modeling, well design, and cement slurry design.

5.2.10.2 Surface Casing Cement

The surface casing cement will be circulated to surface to isolate potential USDW zones (40 CFR 146.86[b][2]). Top and bottom wiper plugs will be used to minimize contamination.

Casing will be cemented with a light-weight lead and tail slurries with the top of cement at surface.

Lead Slurry: 12.5 parts per gram (ppg) extended Class G + lost circulation material (LCM) and fluid loss additives.

Tail Slurry: 13.5 ppg extended Class G + LCM and fluid loss additives.

General slurry design comments: The need for accelerators or retarders will be determined during pilot testing. Choice of extender and mix water ratio will consider the minimization of free water. The casing will be centralized to provide 70% or greater stand-off.

Excess slurry volume of 50–100% will be pumped to promote circulation of cement to the surface. The excess will depend on hole conditions specific to the well.

5.2.10.3 Intermediate Casing Cement

Casing will be cemented to surface in two stages with the stage collar at 2,000 ft (40 CFR 146.86[b][4]). The lower stage will be followed by an opening plug to open ports in the stage tool. The upper stage will be cemented and followed by a closing wiper plug to close the ports in the stage tool.

The first (bottom) stage will be cemented with a light-weight lead slurry and standard weight tail slurry.

The second (upper) stage will be cemented with a light-weight slurry with the top of cement at surface.

Stage 1 Lead Slurry: 12.5 ppg extended Class G + LCM and fluid loss additives.

Stage 1 Tail Slurry: 15.8 ppg Class G cement system + LCM and fluid loss additives.

Stage 2 Slurry: 12.5 ppg extended Class G + LCM and fluid loss additives.

General slurry comments: The need for accelerators or retarders will be determined during pilot testing. Choice of extender and mix water ratio will consider the minimization of free water. The casing will be centralized to provide 70% or greater stand-off.

Excess slurry volume of 25% will be pumped for the first stage.

Excess slurry volume of 50–100 % will be pumped for the second stage to promote circulation of cement to the surface. Excess volume will be determined based on hole conditions while drilling.

5.2.10.4 Casing and Inner Casing Cement

The casing will be cemented to surface with a light-weight lead slurry and higher weight tail slurry with the top of cement at surface (40 CFR 146.86[b][3]). Top and bottom wiper plugs will be used to minimize cement contamination.

Lead Slurry: 12.5 ppg extended Class G + LCM.

Tail Slurry: 15.0 ppg CO_2-Resistant cement system + LCM for casing cement.

General slurry comments: The need for fluid loss, retarder, and other additives will be determined as part of the slurry design and during pilot testing. Choice of the extender and mix water ratio will be considered to minimize free water. The casing will be centralized to provide 70% or greater stand-off.

CO_2-resistant cement systems considered for the tail slurry include densified 50:50 fly-ash and Portland cement/silica flour, Portland cement with latex, and proprietary CO_2-resistant blends (40 CFR 146.86[b][5]).

In compliance with 40 CFR 146.86(b)(1)(ix), densified 50:50 fly-ash and Portland cement/silica flour is proposed for the following reasons:

- The reactive Portland cement content is reduced by 50%.

- Exposure to CO_2 is limited to the annular cross-section at the casing shoe (vertical attack) under static conditions.
- Experimental studies showed the alteration front in Portland cement samples exposed to CO_2 saturated water decreased with time over the exposure period of three months (Barlet-Gouedard et al. 2006). The alteration process followed a diffusion law according to e = 0.26 sqrt(time) for wet super critical CO_2 fluid and e = 0.22 sqrt(time) for CO_2 dissolved in water. The approximate alteration rate based on the sample observations was five meters per 1,000 years. The conclusion is that internal and external Portland cement barriers that are tens and hundreds of meters in length will most likely remain effective for many thousands of years based on CO_2 exposure to the cross-section. Furthermore, while CO_2 is contained in the injection zone, the CO_2 is subject to immobilization because of contact with the formation and the reservoir fluids, and the pressure will decrease because of dissipation with time. This indicates that the CO_2 will be permanently sequestered in the reservoir.
- A study was conducted to evaluate cement/pozzolan (fly ash) blend integrity with exposure to CO_2 under sequestration conditions (Kutcho et al. 2009). The conclusion was that cements containing fly ash show improved durability to acid attack.
- Silica flour is included in the design for conditions when temperatures are above 230°F to prevent strength retrogression.

Excess slurry volume of 15% will be used to promote cement circulation to surface for the inner casing long string. The pipe-in-pipe annulus volume can be determined accurately, and the excess volume will provide cement to surface (40 CFR 146.86[b][3]).

Excess slurry volume of 25 – 50% will be used to promote cement circulation to surface for casing set in open hole. An open hole caliper log will be used to estimate the annulus volume and the excess volume will provide cement to surface.

After the long-string inner casing has been cemented, a cement bond and variable density log and a temperature log will be run as required by 40 CFR 146.87(a)(3)(ii) to document an annular seal.

5.2.10.5 Liner Cement

A tail (single) slurry will be used to circulate cement to the top of the liner.

Slurry: light-weight CO_2-resistant cement system.

General slurry comments: managed pressure cementing with foamed water pumped ahead of the slurry to reduce the amount of differential pressure across the depleted 64 Zone Sandstones will be considered based on the actual well conditions. UIC Program Director approval for using managed pressure cementing will be requested.

The liner will be centralized to provide 70% or greater stand-off.

CO_2-resistant cement systems considered include proprietary CO_2-resistant blends, calcium aluminate cement, and resin cements.

In compliance with 40 CFR 146.86(b)(1)(ix), resin cement is proposed for liners for the following reasons:

- No reactive species present (very high CO_2 resistance) (40 CFR 146.86[b][5]).
- More ductile than conventional cements, making it more durable under cyclic loading conditions.
- Can be mixed as light as 9.0 ppg, making a good candidate for cementing the depleted 64 Zone Sandstones.

The planned excess volume is 10–15% for a liner cement job in cased hole and 25–50% in open hole to provide cement circulation to the top of the liner.

A liner top packer will be run to promote liner lap isolation.

After the liner has been cemented, a cement bond and variable density log and a temperature log will be run as required by 40 CFR 146.87(a)(3)(ii) to document an annular seal.

5.2.11 Tubing and Packer Completion

The well will be completed with tubing and a packer per 40 CFR 146.86(c)(2). Materials for the tubing and packer were selected to provide compatibility with the injected and reservoir fluids as required by 40 CFR 146.86(c)(1). The packer will be set in the casing opposite a cemented interval to meet 40 CFR 146.86(c)(2) requirements. The setting depth will be selected based on an evaluation of the cement bond log run after the inner casing is run and cemented. The individual well documents in **Appendix 5A** include the packer load envelope that will be used to select a packer designed to exceed the load envelope.

The tubing sizes for injection wells were selected to inject CO_2 at the planned rates and pressures that are reasonable for surface equipment and facilities.

The tubing size for monitoring wells was selected to allow wireline tools to be run through the tubing for monitoring reservoir conditions as required by CFR 146.90.

5.2.12 Injection and Monitoring Well Casing, Liner, and Tubing Structural Strength Design

The new long-string inner casing, liners, and tubing have been designed to withstand expected loads during the life of the well including the maximum surface pressure loads (40 CFR 146.86[b][1]), and materials selected for these items were based on corrosion analyses so that the materials are compatible with the injected and reservoir fluids per 40 CFR 146.86(b)(1)(ix) and 40 CFR 146.86(c)(1) (see **Tables 5.2-1** and **5.2-2)**. The upper casing section will be carbon steel with a CRA lower section for compatibility with the injected and reservoir fluids. The flow-wetted lower part of the inner casing, liners, tubing, and packer will be CRA materials.

The loads were evaluated and compared to the strengths to select an appropriate well design with safety factors.

The individual well documents in **Attachment K** and **Appendix 5A** include the proposed casing, liner, and tubing design results and safety factor details for each well as required by 40 CFR 146.86 (b)(1) and 40 CFR 146.86(c)(1). The results are for two conditions:

- Design results with no corrosion when the well is repurposed and prepared for injection or monitoring service.
- Design results if there is corrosion and wall loss at the end of service life for wells. The design analysis with corrosion provides confidence that mechanical integrity will be maintained for the life of the well per 40 CFR 146.86(b)(1).

Specifically, casing and cement materials and strengths have been designed and selected to be effective for the life of the Project considering the lithology of the injection and confining zone (40 CFR 146.86[b][1][vii]), and characteristics of the CO_2 stream including quantity, chemical content and composition, temperature, corrosiveness, and density, as well as the formation fluids they will be in contact with, as per 40 CFR 146.86(b)(1)(ix)) and 146.86(c)(3)(ii); see **Sections 2.8.2.2** and **2.8.2.3** for additional details.

5.2.13 Contingency Plans

5.2.13.1 Lost Circulation while Drilling

Drilling in depleted oil and gas fields includes the risk of lost circulation when low pressure production zones are penetrated. Drilling fluid loss rates range from minor losses to total losses. Minor losses can be managed by replenishing the supply of drilling fluid as needed and adding LCM to the fluid system to reduce or eliminate losses. Losses greater than minor losses can be mitigated by spotting fluid pills with high concentrations of LCM, waiting without pumping, and allowing the LCM pills to heal the loss zones. Severe losses to total losses can be treated with plugging materials that bridge and prevent losses. Cement plugs are an option and can be used to regain circulation. If these treatments are not effective, techniques such as managed pressure drilling, aerated fluid, and drilling with foam are options that can be applied.

Dealing with lost circulation while drilling is well understood in the industry and materials, equipment, and procedures are readily available if needed.

5.2.13.2 Lost Circulation while Cementing

Cementing where lost circulation is occurring or is likely to occur is a more challenging problem. Methods to deal with lost circulation while cementing include reduced cement slurry density and modeling to determine if a given slurry design is likely to be placed in the well without losing circulation resulting in a low cement top. Managed pressure cementing, foamed cement, and reverse cementing are technologies that can be implemented to reduce the risk of losing returns while cementing.

Other options include changing the well design to provide cement to surface for the long casing string. This method is proposed for the repurposed wells and new drill wells for this CCS Project, as per 40 CFR 146.86(b)(1)(vii). A long casing string set near the base of the primary confining zone (the Lower Santos) where the open hole fracture strength is sufficient, is proposed to cement

the long string to surface. After the cement is set, the injection zone will be drilled. An injection liner will be run and cemented with the top of the liner extending above the casing shoe. The liner top will be pressure tested to demonstrate mechanical integrity and a liner top packer will be run and set as a secondary seal at the liner top. This design results in a Class VI well design with a long casing string cemented to surface and a cemented liner across the injection zone. The liner overlap will have a primary cemented barrier and a secondary liner top packer barrier to contain the CO_2 within the injection zone.

5.2.13.3 Workover Contingencies

The risk of not being able to clean out a well for repurposing exists. Workovers to clean out wells are routine and contingency planning is part of the planning process. If it is not possible to clean out deep enough in a well and the well is deemed unusable as a repurposed well, steps will be taken to properly abandon the well by setting cement plugs in the previous productive zones to prevent flow of CO_2 or hydrocarbons into unauthorized zones (40 CFR 146.86[a][1]). CO_2-resistant cement will be used as appropriate to prevent the leakage of CO_2 to higher zones including potential USDW zones. The plugging and abandonment procedure will be proposed and approved by the appropriate regulators. Regulatory requirements for plugging and abandoning wells in the AoR will be met.

If workover operations result in an unintended loss of a downhole tool in the well, fishing operations will commence to recover the fish. Steps will be taken to minimize the risk of loss of tools including inspection of equipment and connections prior to running the tools. Fishing operations are common in workover operations and the necessary equipment, services, and expertise to conduct fishing operations are readily available.

5.2.13.4 Drilling Contingencies

Deviation surveys will be taken while drilling new wells. Deviation problems in the North Belridge oil field are not common and are unlikely. The surveys and well path will be monitored while drilling to demonstrate that the final bottomhole location is satisfactory for the well's intended purpose. In the unlikely event the surveys show the borehole has unplanned excess deviation, the hole will be plugged back and redrilled.

If the drill string parts and a fish is left in the well, fishing operations will commence to recover the fish. The risks of not recovering fish are low and normal drilling operations will continue after the fish is recovered. In the unlikely event the fish cannot be recovered, appropriate steps will be taken to properly plug the open hole with cement to prevent migration of CO_2 and hydrocarbons to unauthorized zones.

Well control is not likely to be a problem while drilling because of the past production that has depleted the oil and gas zones. Drilling fluid returns will be monitored while drilling to check for fluid gains or losses. If either is observed, the well will be monitored to determine the status and steps will be taken to get the well back into a condition to resume drilling. If a fluid gain was detected, normal well control procedures will be conducted to circulate out the influx and the mud weight will be adjusted as required to resume safe operations. Fluid losses were discussed in a previous section.

6. PRE-OPERATIONAL LOGGING AND TESTING

The CarbonFrontier Pre-Operational Well Testing Plan pursuant to 40 CFR 146.82(a)(8) and 146.87 describes existing data for the North Belridge oil field and supplemental logging and testing to be performed for both new and repurposed injection wells. The Pre-Operational Well Testing Plan is included as **Attachment D**.

Pre-Operational Logging and Testing GSDT Submissions
GSDT Module: Pre-Operational Testing ***Tab(s):*** Welcome tab Please use the checkbox(es) to verify the following information was submitted to the GSDT: ☒Proposed pre-operational testing program ***[40 CFR 146.82(a)(8) and 146.87]***

7. WELL OPERATION

7.1 Operational Procedures [40 CFR 146.82(a)(10)]

Operational procedures were derived from the following reservoir and well characteristics:

- Depth of the injection and confining intervals (**Sections 2.2** and **2.4**)
- Permeability and thickness of the injection zone (**Sections 2.4** and **2.5**)
- Geomechanical properties and fault analysis (**Sections 2.5** and **2.3**)
- Well construction (**Section 5**) for the tubing design and characteristics of the pipe

A 1D wellbore PROSPER model, calibrated to field data and presented in the "site suitability" section (**Section 2.10**)**,** was used to determine the operation procedures proposed in **Table 7.1**. The model is based on a discretized wellbore and considers thermal effects, friction, and multiphase-multi components thermodynamical properties using a Peng-Robinson (1976) equation of state. It can predict CO_2 conditions and rates from surface to bottom-hole for various reservoir characteristics and pressures.

Many of the proposed operating parameters will vary during the life of the Project. The "minimum annulus pressure/tubing differential" can be chosen and potentially kept fixed by design. The depth of the top of the perforations isn't expected to be modified. Localized effects with faults within the AoR (**Table 2.3-2**) will be monitored during injection and operating parameters will be adjusted as needed. Maximum injection rates are expected to be achieved while reservoir pressure is the lowest (on wells with the best injectivity and lowest skin) and will tend to decline afterwards due to reservoir re-pressurization and limitations due to surface constraints. Lower reservoir pressure may require the rates to be constrained due to increased effective stress that can occur at lower pore pressure on wells with the poorest injectivity. In essence, the surface constraints, well head rates, and pressure/temperature will have to be modified to adapt to downhole conditions.

Aera will gather testing and monitoring data prior to (**Attachment D**) and during the injection operations (**Attachment E**) to adapt and update operational parameters and continuously meet requirements of 40 CFR 146.88.

7.1.1 Injection Well Operating Requirements [40 CFR 146.88]

Proposed operational parameters are designed to operate below the 80% fracture pressure of the injection or confining zones and pressure will be monitored continuously to comply with 40 CFR 146.88(a).

Injection will occur through a CO_2-compatible tubing string to comply with 40 CFR 146.88(b).

Other than during periods of well workover (maintenance) approved by the UIC Program Director in which the sealed tubing-casing annulus is disassembled for maintenance or corrective procedures, Aera will maintain mechanical integrity of the injection wells to meet the requirements of 40 CFR 146.88(d).

Aera will install devices to continuously monitor operational parameters, as discussed in **Section 5** and **Attachment E**, to fulfill the requirements of 40 CFR 146.88(e)(1).

Aera will install and use alarms and automatic surface shutoff systems to meet the requirements of 40 CFR 146.88(e)(2), as described in **Section 5**.

7.1.2 Shutdown or Mechanical Integrity Loss [40 CFR 146.88(f)]

If a shutdown is triggered or a loss of mechanical integrity is discovered, Aera will immediately investigate and identify, as expeditiously as possible, the cause of the shutoff. If, upon such investigation, the well appears to be lacking mechanical integrity, or if monitoring required under 40 CFR 146.88(e) otherwise indicates that the well may be lacking mechanical integrity, Aera will perform the following:

1. Notify the UIC Program Director within 24 hours of the event.
2. Initiate shutdown plan, in consultation with the EPA UIC Program Director.
3. Notify Belridge Producing Complex, On Duty Manager of Operations and/or On Duty Supervisor (s), using the Aera Pre-Incident Plan for Emergency Response as applicable.
4. Initiate the Incident Command System and begin staffing an Incident Management Team.
5. Use handheld equipment to measure CO_2 levels, then isolate and restrict access as appropriate to the CarbonFrontier site.
6. Continuously monitor the well site, well pressure, temperature, and annulus fluid level and annulus pressure to assess integrity loss and determine the root cause of failure.
7. Perform appropriate repairs and confirm internal and external mechanical integrity prior to restarting injection upon approval from the UIC Program Director.
8. Monitor CO_2 and indicator parameter levels, as appropriate in groundwater monitoring wells.
9. Based on analytical results and observations, a case-specific work plan may be developed in consultation with the UIC Program Director and may include, but not be limited to, additional groundwater monitoring and evaluation of further actions.
10. Notify the UIC Program Director when injection can be expected to resume.

Additional details on mechanical integrity loss severity, timing, avoidance measures, detection methods, response personnel, and equipment are in the Emergency and Remedial Response Plan (**Attachment I**).

7.2 Proposed Carbon Dioxide Stream [40 CFR 146.82(a)(7)(iii) and (iv)]

The proposed CO_2 stream will be sourced from a mixture of Aera's planned CO_2 capture facilities, located in the adjacent South Belridge oilfield, and, at a time and from a source unknown at this time, from third-party suppliers, received by pipeline or truck. The CO_2 stream's estimated

composition was presented in **Section 2.8.2.3** and **Table 2.8.3** of the geochemical work from the site characterization. Aera plans to construct facilities that will capture CO_2 from produced natural gas (pre-combustion) and from the flu gas of steam boilers and cogeneration units (post-combustion). Pre-combustion CO_2 volumes are estimated to total approximately 0.3 MM mt/yr, while post-combustion sources are expected to yield up to 1.3 MM mt/yr. Construction of these facilities, pending regulatory approvals discussed in **Section 1**, will begin in 2024 or 2025. Therefore, a CO_2 sample cannot yet be obtained. The planned facilities will utilize commercially available amine-based technologies to capture CO_2, which will allow for confident estimates of the CO_2 stream composition based on industry analogs and will be tailored to the input gas stream compositions.

In addition to the pre- and post-combustion sources discussed above, the Project will be designed to receive up to 1.7 MM mt/yr of outside CO_2 sources, delivered by pipeline and truck. The total volume of CO_2 received, including both Aera and third-party sources, will not exceed the total proposed injection volume (**Table 7.1**). Although no third-party CO_2 suppliers are committed at this time, a CO_2 composition specification for future CO_2 sources has been established to fulfill the requirements of 40 CFR 146.82(a)(7)(iii) and (iv). Future sources of CO_2 will meet the composition limits established in this spec. The CO_2 composition specification closely matches the composition of Aera's proposed sources and is not anticipated to have material impacts on the overall CO_2 stream composition (**Table 7.2**).

CO_2 sources, from Aera's facilities or third-party sources received by truck and pipeline, will be tested according to the requirements of 40 CFR 146.90(a) and reported to EPA according to the requirements of 40 CFR 146.82(a)(7)(iv). Third-party sources will enter Aera's CO_2 pipeline sufficiently upstream of sampling, testing, and monitoring locations to allow for representative results to be achieved.

Corrosiveness of the CO_2 stream and estimated impact on the wells materials and cement are presented in **Section 5**.

Reactivity with the injection formation, fluids or confining layer was studied in the geochemical section of the site characterization (**Section 2.8**) and is expected to have minimal effects on the permeability, porosity and injectivity.

The CO_2 stream will behave according to the laws of thermodynamics. Due to the highly compressible nature of CO_2 for various pressures and temperatures, the behavior of the CO_2 stream will vary greatly over the lifetime of the Project. Initial reservoir conditions might require lower downhole pressure and gas phase injection while later life injection will require higher surface and bottom-hole pressure to support injection in super-critical and denser phase. Pressure increase will tend to make the CO_2 stream denser while the downhole heat and reservoir conditions will tend to warm the stream and lower the density. Pressure and temperature of the CO_2 will be monitored closely as sudden density changes can result in rapid bottom-hole pressure changes.

8. TESTING AND MONITORING

The CarbonFrontier Testing and Monitoring Plan pursuant to 40 CFR 146.82(a)(15) and 146.90 describes the strategies for testing and monitoring to demonstrate injection wells are operating as planned, document injection well mechanical integrity, monitor CO_2 plume and pressure front, and demonstrate non-endangerment of USDWs. The Testing and Monitoring Plan is included as **Attachment E**.

Testing and Monitoring GSDT Submissions
GSDT Module: Project Plan Submissions ***Tab(s):*** Testing and Monitoring tab Please use the checkbox(es) to verify the following information was submitted to the GSDT: ☒Testing and Monitoring Plan ***[40 CFR 146.82(a)(15) and 146.90]***

9. INJECTION WELL PLUGGING

The CarbonFrontier Injection Well Plugging Plan pursuant to 40 CFR 146.82(a)(16) and 146.92(b) describes the process, materials, and methodology for injection well plugging. The Injection Well Plugging Plan is included as **Attachment F**.

Injection Well Plugging GSDT Submissions
GSDT Module: Project Plan Submissions ***Tab(s):*** Injection Well Plugging tab Please use the checkbox(es) to verify the following information was submitted to the GSDT: ☒Injection Well Plugging Plan ***[40 CFR 146.82(a)(16) and 146.92(b)]***

10. POST-INJECTION SITE CARE (PISC) AND SITE CLOSURE

The CarbonFrontier Post-Injection Site Care (PISC) and Site Closure plan pursuant to 40 CFR 146.82(a)(17) and 146.93(a) describes activities for post-injection testing and monitoring and site closure following demonstration of non-endangerment of USDWs. The PISC and Site Closure Plan is included as **Attachment G**. An alternative PISC Timeframe is proposed and justified pursuant to 40 CFR 146.8a(a)(18) and 146.93(c). This information is provided in **Attachment H**: Alternative PISC Timeframe.

PISC and Site Closure GSDT Submissions
GSDT Module: Project Plan Submissions ***Tab(s):*** PISC and Site Closure tab Please use the checkbox(es) to verify the following information was submitted to the GSDT: ☒PISC and Site Closure Plan ***[40 CFR 146.82(a)(17) and 146.93(a)]***
GSDT Module: Alternative PISC Timeframe Demonstration ***Tab(s):*** All tabs (only if an alternative PISC timeframe is requested) Please use the checkbox(es) to verify the following information was submitted to the GSDT: ☒Alternative PISC timeframe demonstration ***[40 CFR 146.82(a)(18) and 146.93(c)]***

11. EMERGENCY AND REMEDIAL RESPONSE

The CarbonFrontier Emergency and Remedial Response Plan pursuant to 40 CFR 146.82(a)(19) and 146.94(a) describes the process and response to emergencies to demonstrate protection of USDWs, human health and safety, and the environment. The Emergency and Remedial Response Plan is included as **Attachment I**.

Emergency and Remedial Response GSDT Submissions
GSDT Module: Project Plan Submissions ***Tab(s):*** Emergency and Remedial Response tab Please use the checkbox(es) to verify the following information was submitted to the GSDT: ☒Emergency and Remedial Response Plan ***[40 CFR 146.82(a)(19) and 146.94(a)]***

12. INJECTION DEPTH WAIVER AND AQUIFER EXEMPTION EXPANSION

Aera is not requesting an injection depth waiver or an aquifer exemption expansion.

Injection Depth Waiver and Aquifer Exemption Expansion GSDT Submissions
GSDT Module: Injection Depth Waivers and Aquifer Exemption Expansions ***Tab(s):*** All applicable tabs Please use the checkbox(es) to verify the following information was submitted to the GSDT: ☐ Injection Depth Waiver supplemental report ***[40 CFR 146.82(d) and 146.95(a)]*** ☐ Aquifer exemption expansion request and data ***[40 CFR 146.4(d) and 144.7(d)]***

13. OPTIONAL ADDITIONAL PROJECT INFORMATION [40 CFR 144.4]

Other discretionary permits/approvals required for the proposed Project are outlined in **Section 1.5**.

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Tables

Table 1-1: Proposed Injection and Monitoring Wells

Project Description

Well Name	Well Type	Latitude	Longitude
CI1-64Z-27N	Proposed New Injector	35°33'9.4877"N	119°48'26.3702"W
CI2-64Z-35N	Proposed New Injector	35°32'32.6713"N	119°47'37.0682"W
CI3-64Z-35N	Proposed New Injector	35°32'11.6457"N	119°47'7.5912"W
CI4-64Z-35N	Proposed New Injector	35°31'55.4154"N	119°46'51.7864"W
27R-27N	Proposed Repurposed Injector	35°33'2.4280"N	119°48'28.6103"W
55-26N	Proposed Repurposed Injector	35°32'43.2520"N	119°47'32.7755"W
64-35N	Proposed Repurposed Injector	35°31'44.3600"N	119°46'44.9788"W
9-1N	Proposed Repurposed Injector	35°31'31.6480"N	119°46'37.0154"W
64-27N	Proposed Repurposed Injector	35°32'38.0979"N	119°47'54.6576"W
39-26N	Proposed Monitoring Well	35°32'54.8149"N	119°47'35.1082"W
1-28N	Proposed Monitoring Well	35°33'22.7757"N	119°48'51.4527"W
25-26N	Proposed Monitoring Well	35°33'1.2506"N	119°47'43.8785"W
27-1N	Proposed Monitoring Well	35°31'18.6498"N	119°46'21.0202"W
35X-27N	Proposed Monitoring Well	35°32'59.2890"N	119°48'2.9031"W

Notes:

° - Degrees of Latitude or Longitude

' - Minutes of Latitude or Longitude

" - Seconds of Latitude of Longitude

N - North Latitude

W - West Longitude

Agency/Jurisdiction	Permit(s)/Act/Consultations	Authority	Status*
Federal Consultations			
U.S. Environmental Protection Agency (EPA) – U.S. Fish and Wildlife Service Interagency Consultation	Endangered Species Act (ESA) Section 7 Consultation	16 USC 1513 50 CFR Section 17	A Biological Assessment (BA) was submitted to EPA in December 2023.
EPA – State historic Preservation Officer Interagency Consultation	National Historic Preservation Act (NHPA) Section 106 Consultation with SHPO	National Historic Preservation Act 36 CFR 800	A cultural resources inventory was submitted to EPA in July 2023.
EPA	Hazardous Waste Permit	Resource Conservation and Recovery Act (RCRA)	Aera intends to pursue a RCRA exclusion in compliance with the conditions specified under 40 CFR 261.4(h)
U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA)	CO_2 Pipeline Approval	49 CFR Part 195	Applicability is to be determined.
Caltrans	Right-of-Way Encroachment Permit for Transportation of Oversized Loads	Caltrans Project Development Procedures Manual	Applicability is to be determined.
State and Local Consultations			
Kern County Planning and Natural Resources Department	Conditional Use Permit (CUP) Zone Change (ZC)	County Code/CEQA	CUP/ZC Application Deemed Complete 9/26/2022
Kern County Public Works Department	Building Permit, Grading Permit Encroachment Permit	County Code	Applicability is to be determined
Kern County Fire Department	Approval of Fire Safety Plan	Fire Code	The project applicant plans to consult with the Kern County Fire Department
San Joaquin Valley Air Pollution Control District (SJVAPCD)	Title V Authority to Construct (ATC)/Permit to Operate (PTO)	Clean Air Act Regulation VIII – Fugitive PM10 Prohibitions	The project applicant anticipates submitting an ATC application in 2024
	Approval of Fugitive Dust Control Plan		The project applicant plans to consult with the SJVAPCD
	Clean Air Act - New Source Review (NSR). The project is subject to NSR preconstruction authorization.		The project will be subject to a New Source Review (NSR) and will comply with requirements under Prevention of Significant Deterioration (PSD) program and/or the Nonattainment NSR program. The project applicant is evaluating which of these programs will apply.
California Department of Fish and Wildlife (CDFW)	Incidental Take Permit Application (ITP)	California Fish and Game Code – Section 2081	The project applicant is consulting with CDFW regarding the need for an ITP and anticipates submitting an application in 2024.
Regional Water Quality Control Board (RWQCB)	National Pollutant Discharge Elimination System (NPDES) Construction Permit Storm Water Permit General Waste Discharge Requirements Enrollment for Impacts to Waters of the State	Clean Water Act Porter-Colone State Water Quality Act	Applicability is to be determined.
California Air Resources Board (CARB) – LCFS Permanence Certification	Sequestration Site Certification	17 CCR Sections 95480-95503	The project applicant submitted an application for Sequestration Site Certification in December 2023.
	CCS Project Certification		The project applicant anticipates submitting a CCS Project Certification application in 2025/2026.
California Public Utilities Commission (CPUC)	Permit to Construct	CEQA Public Utilities Code Sections 1001 et seq. CPUC General Order 131-D	Applicability is to be determined.
California Geologic Energy Management Division (CalGEM)	Consultation/approval for CO_2 Pipeline	California Statutes and Regulations for Conservation of Oil, Gas, and Geothermal Resources (January 2022) Senate Bill 1137	Applicability is to be determined.
Office of the State Fire Marshal (OSFM)	Consultation/approval for CO_2 Pipeline	49 CFR Part 195 The Elder California Pipeline Safety Act	Applicability is to be determined.
California Natural Resources Agency	Consultation/approval for CO_2 Pipeline	SB 905	Applicability is to be determined.

*As of [03/06/2023]

Table 1-3: State and Regional Contacts List
Project Description

California Air Resources Board Stationary Resource Division P.O. Box 2815 Sacramento, CA 95812	California Dept of Conservation Geologic Energy Management Division 801 K Street, MS 20-20, Sacramento, CA 95814	California Natural Resources Agency Secretary Wade Crowfoot 715 P Street 20th Floor Sacramento, CA 95814
California Air Resources Board Industrial Strategic Division Matthew Bohill, Chief P.O. Box 2815 Sacramento, CA 95812	Caltrans/Dist 6 Planning/Land Bank Bldg. P.O. Box 12616 Fresno, CA 93778	Caltrans/ Division of Aeronautics, MS #40 P.O. Box 942873 Sacramento, CA 94273-0001
California Dept of Conservation Geologic Energy Management Division 4800 Stockdale Highway, Ste 108 Bakersfield, CA 93309	California Fish & Wildlife 1234 East Shaw Avenue Fresno, CA 93710	California Regional Water Quality Control Board/Central Valley Region 1685 E Street Fresno, CA 93706-2020
California Dept of Conservation Director's Office 801 "K" Street, MS 24-01 Sacramento, CA 95814-3528	California Public Utilities Commission Attn: President Alice Reynolds 505 Van Ness Avenue San Francisco, CA 94102	Center on Race, Poverty & the Environment Attn: Marissa Alexander 1999 Harrison Street Suite 650 San Francisco, CA 94612
San Joaquin Valley Air Pollution Control District 1990 East Gettysburg Avenue Fresno, CA 93726	Native American Heritage Council of Kern County 3401 Aslin Street Bakersfield, CA 93312	Office of the State Fire Marshal 715 P Street Sacramento, CA 95814
Office of Historic Preservation 1725 23rd Street, Suite 100 Sacramento, CA 95816		

Table 2.2-1: Regional 2D Seismic Lines
Site Characterization
Maps and Cross Sections of the AoR

Line Name	Year	Company	Fold
CGG-SJV-108	1981	CGG American Services	24
CGG-SJV-110	1981	CGG American Services	24
W-SJ-001	1979	Western Geophysical	24
W-SJ-007	1982	Western Geophysical	24
W-SJ-024	1983	Western Geophysical	24
W-SJ-029	1983	Western Geophysical	24
W-SJ-074	1985	Western Geophysical	24
W-SJ-075	1985	Western Geophysical	24
W-SJ-123	1988	Western Geophysical	30
W-SJ-124	1988	Western Geophysical	30
W-SJ-126	1988	Western Geophysical	30
W-SJ-129	1988	Western Geophysical	30
W-SJ-144	1987	Western Geophysical	30

Table 2.3-1: Fault Inventory Summary
Site Characterization
Faults and Fractures

Fault Name	Sense of Slip	Strike/Dip (°) and Dip Direction	Length	Vertical Extent	Seismic Vertical Offset in 64 Zone (minimum; maximum)	Geologic Model Vertical Offset in 64 Zone (minimum; maximum)	Transect Injection Zone	Transect Confining Zone	Lateral Confinement
East Bounding Thrust Fault	Listric Thrust; Reverse	130/35 SW	>8 miles	Reef Ridge Member of the Monterey Fm (average depth of 4500 ft TVDss)	~500 ft in central portion of AoI (NE Section 27) to >700 ft in the southern portion of AoI	~300 ft in central portion of AoI (NE Section 27) to >700 ft in the northern and southern portions of AoI	Yes	Yes	Unknown
West Bounding Thrust Fault	Back Thrust; Splay from East Bounding Thrust Fault	330/40-45 NE	>7 miles	Upper Reef Ridge Member of Monterey Fm (average depth 2500 ft TVDss)	~200 ft in central portion of AoI (SW Section 35) to >300 ft in southern most portion of AoI	<100 ft in northern and southern portions of AoI to >400 ft in central portion of AoI (SW Section 35)	Yes	Yes	Possibly; Yes north of Downdip West Flank Cross Fault
MB13	Scissor Fault; Change in apparent vertical offset from normal to reverse from south to north	180/75 W	~3 miles	Etchegoin Fm (average depth of 2000 ft TVDss)	100-150 ft in the northern portion of fault to 200-300 ft in the southern and central portions of the fault	~250 ft in the northern portion of fault to >400 ft in the southern and central portion of the fault	Yes	Yes	Yes (**Figure 2.3-10**)
Downdip West Flank Cross Fault	Reverse	255/80 NW	~1.5 miles	Upper Santos Shale in the Temblor Fm (average depth of 6000 ft TVDss)	0 ft in western extent (Section 29) to 250-300 ft in the eastern and central portion of the fault (Sections 27 and 28)	0 ft in western extent (SW corner Section 28) to 200 ft in the central portion of the fault (SE Section 28)	Yes	Yes	Unknown, outside AoR
Southern Crestal Fault	Reverse	145/80 SW	~1-1.5 miles	Media Shale Member in the Upper Temblor Fm (average depth of 5500 ft TVDss)	50-100 ft in the eastern portion of Section 35 to 150-200 ft in southern and central portions of the fault (Section 36)	<50 ft in the central fault (SW Section 36) to 100-150 ft in southern end of fault (N Section 1)	Yes	Yes	No
West Limb Thrust Fault	Thrust; Subsidiary fault to West Bounding Thrust Fault, Splay from East Bounding Thrust Fault	315/35 NE	~2 miles	Santos Shale Member of the Temblor Fm (average depth of 6800 ft TVDss)	50-100 ft to NE to 200 ft to the SE	50-100 ft to SE to 150 ft to the NW	Yes	Yes	No
Northern Crestal Fault (1)	Reverse; Splays off of West Limb Thrust Fault	130/70 SW	~1 mile	Media Shale Member in the Temblor Fm (average depth of 6000 ft TVDss)	50-100 ft in the NW portion of fault (Section 22) to 100-150 ft in the central portion of the fault (Section 27)	0 ft in the northern portion of fault (Section 22) to ~150 ft in the southern portion of the fault (Section 27)	Yes	Yes	No
Northern Crestal Fault (2)	Normal	240/85 NW	~1 mile	Media Shale Member in the Temblor Fm (average depth of 6000 ft TVDss)	<50 ft towards eastern potion of fault (Section 22) to 100 ft in the southern and central portions of the fault (Section 28)	~50 ft in the central potion of fault (Section 22) to 75-100 ft in the SW and NE portions of the fault	Yes	Yes	Possibly (**Figure 2.3-9**)
MB12	Obilque Right-Lateral Reverse; Subsidiary fault to MB13	200/75 NW	~1 mile	Etchegoin Fm (average depth of 2000 ft TVDss)	<50 ft in the northern extent (terminates in southern half of Section 1) to 50-150 ft in the southern and central portions of the fault	0 ft in the southern extent of the fault to ~250 ft in the central portion of the fault (center Section 12)	Yes	Yes	No
Central Crestal Fault (1)	Reverse	110/85 SW	~0.5 miles	Media Shale Member in the Upper Temblor Fm or Lower Monterey Fm (average depth of 6000 ft TVDss)	~150 ft in southern portion of fault	~50 ft in central portion of fault	Yes	Yes	No
Central Crestal Fault (2)	Normal; Splay off the West Limb Thrust Fault	080/85 SE	~0.5 miles	Media Shale Member in the Upper Temblor Fm or Lower Monterey Fm (average depth of 5000 ft TVDss)	50-100 ft	<50 ft	Yes	Yes	No
Northern Crestal Fault (3)	Normal; Splay off the West Limb Thrust Fault	125/85 SW	~0.5 miles	Upper Santos Shale in the Temblor Fm (average depth of 6000 ft TVDss)	50-100 ft from SW to NW	<50 ft	Yes	Yes	Unknown, outside AoR

Notes:
° - degrees
Strike notation is reported in azimuth convention (degrees) and follows the right-hand rule
Dip is reported as a dip angle (in degrees) and dip direction
ft - feet
TVDss - True Vertical Depth below mean sea level
AoI - Area of Interest
AoR - Area of Review

Table 2.3-2: Distance from Injection Wells to Faults within the AoI
Site Characterization
Faults and Fractures

			Distance from Injection Wells to Faults (feet)								
			CI1-64Z-27N	CI2-64Z-35N	CI3-64Z-35N	CI4-64Z-35N	27R-27N	55-26N	64-35N	9-1N	64-27N
Faults	MB12	U Sandstone	17,770	12,318	9,181	7,098	17,354	12,995	5,850	4,413	13,480
		W Sandstone	17,719	12,268	9,132	7,049	17,303	12,945	5,801	4,363	13,429
	MB13	U Sandstone	14,426	9,139	6,008	4,202	14,279	9,277	3,406	2,720	10,432
		W Sandstone	14,409	9,103	5,966	4,167	14,255	9,256	3,376	2,690	10,396
	East Bounding Thrust Fault	U Sandstone	2,617	3,465	4,068	4,219	3,263	2,361	4,570	3,541	3,545
		W Sandstone	2,516	3,364	3,949	4,100	3,164	2,261	4,442	4,825	3,441
	Southern Crestal Fault	U Sandstone	9,687	4,276	1,465	1,388	9,455	4,550	1,634	1,850	5,571
		W Sandstone	9,666	4,251	1,429	1,370	9,433	4,533	1,623	1,832	5,546
	West Bounding Thrust Fault	U Sandstone	1,978	2,426	3,223	3,189	1,486	3,309	3,146	3,300	1,811
		W Sandstone	1,857	2,260	3,094	3,070	1,357	3,120	3,030	3,190	1,609
	Central Crestal Fault (1)	U Sandstone	3,300	1,270	3,989	6,079	3,155	179	7,321	8,758	1,211
		W Sandstone	3,298	1,261	3,970	6,060	3,149	162	7,302	8,739	1,198
	Central Crestal Fault (2)	U Sandstone	3,621	1,142	4,087	6,180	3,194	275	7,420	8,856	331
		W Sandstone	3,677	1,127	4,078	6,170	3,250	266	7,410	8,846	302
	Downdip West Flank Cross Fault	U Sandstone	2,647	4,556	7,578	9,505	1,917	4,777	10,582	11,872	3,299
		W Sandstone	2,552	4,460	7,505	9,444	1,829	4,657	10,530	11,827	3,195
	West Limb Thrust Fault	U Sandstone	1,344	1,435	4,070	5,993	878	2,339	7,095	8,423	968
		W Sandstone	1,204	1,225	3,944	5,896	708	2,134	7,016	8,358	769
	Northern Crestal Fault (1)	U Sandstone	900	3,596	6,759	8,856	1,626	3,012	10,079	11,500	2,589
		W Sandstone	870	3,530	6,698	8,795	1,594	2,958	10,016	11,436	2,516
	Northern Crestal Fault (2)	U Sandstone	3,344	8,705	11,860	13,954	3,883	8,049	15,191	16,615	7,571
		W Sandstone	3,346	8,717	11,875	13,970	3,885	8,065	15,207	16,631	7,578
	Northern Crestal Fault (3)	U Sandstone	3,347	8,737	11,942	14,035	3,926	8,201	15,247	16,655	7,575
		W Sandstone	3,349	8,738	11,943	14,037	3,928	8,203	15,249	16,657	7,577

Unit	Areal Extent within AoI	Average depth within AoR (TVDss, ft)	Average Thickness within AoR (TVT, ft)
Upper Santos Shale	Across entire AoI and beyond	7,330	30-85
Agua Sandstone	Variable	7,395	80-190
Lower Santos Shale	Across entire AoI and beyond	7,528	230-370
Total Santos Member	Across entire AoI and beyond	7,330	400-660
64 Zone U Sandstone	Across entire AoI and beyond	7,810	60-100
U Shale	Across entire AoI and beyond	7,930	40-115
64 Zone W Sandstone	Across entire AoI and beyond	8,005	260-600

Notes:
AoI: Area of Interest
AoR: Area of Review
ft: feet
TVDss: true vertical depth sub-sea level
TVT: true vertical thickness

Table 2.4-2: Upper Santos Shale XRD Results
Site Characterization
Injection and Confining Zone Details

Well ID		888N-12	888N-12	888N-12	888N-12	888N-12
Depth (ft)		**8685.5**	**8697.5**	**8708.6**	**8715.5**	**8734.5**
Mineral/Compound	**Formula**	(wt. %)	(wt. %)	(wt. %)	(wt. %)	(wt. %)
Quartz	SiO_2	12	19	16	17	16.5
Plagioclase	$(Na,Ca)AlSi_3O_8$	19	23	20	11	15
K-Feldspar	$KAlSi_3O_8$	1	2	2	1	2
Calcite	$CaCO_3$	12	11	11	7	16
Dolomite	$CaMg(CO_3)_2$	7	-	2	1	3
Siderite	$FeCO_3$	-	1	-	-	-
Pyrite	FeS_2	3	3	2.5	1.5	2.5
Subtotal		54	59	53.5	38.5	55
Clay Mineral Component						
Kaolinite	$Al_2Si_2O_5(OH)_4$	1	1	0.5	-	0.5
Chlorite	$(Mg,Al)_6(Si,Al)_4O_{10}(OH)_8$	2	3	2	-	1.5
Illite/Mica	$KAl_2(Si_3AlO_{10})(OH)_2$	2	3	1	0.5	1
Mixed-Layer Illite/Smectite	$K_{0.5}Al_2(Si,Al)_4O_{10}(OH)_2 \cdot 2H_2O$	29	24	31	46	32
Amorphous Clay-Size Material	-	12	10	12	15	10
Subtotal		46	41	46.5	61.5	45
Total		**100**	**100**	**100**	**100**	**100**
% Illite Layers in Mixed-Layer I/S		40	70	20	25	25

Notes:
1. Dashes indicate that the mineral was not identified by the analyst
ft: feet
I/S: illite/smectite
wt. %: weight percentage

Table 2.4-3: Number of Samples for Analyses from Cored Wells
Site Characterization
Injection and Confining Zone Details

Unit	Well Name										
	17-2N	1B-21N	2R-27N	4-1N	4-36N	43-27N	50X-27N	511N-1N ST1	7-1N	888N-12	All
"Temblor" Sands	0	0	0	0	0	106	0	0	0	0	106
Carneros Sandstones	0	0	0	0	0	0	33	0	0	0	33
Agua Sandstone	0	23	20	0	0	31	0	0	0	0	74
Upper Santos Shale	0	0	0	0	0	0	0	0	0	64	64
64 Zone U Sandstone	53	0	0	0	0	19	0	0	0	0	72
64 Zone W Sandstone	266	0	0	25	254	31	0	132	231	0	939
Oceanic Sandstone	0	0	0	0	0	22	0	0	0	0	22
All	319	23	20	25	254	209	33	132	231	64	1310

Notes:
1. Summary of number of samples used for analyses from cored wells within each unit.

Table 2.4-4: Summary Statistics for Mean Porosity of the Injection and Confining Zone
Site Characterization
Injection and Confining Zone Details

Unit	Number of Samples	Mean Porosity (v/v)	SD	Min	10%	50%	90%	Max
Upper Santos Shale	64	0.075	0.041	0.031	0.039	0.059	0.121	0.218
64 Zone U Sandstone	72	0.109	0.024	0.065	0.081	0.105	0.146	0.163
64 Zone W Sandstone	938	0.147	0.023	0.030	0.122	0.148	0.174	0.237

Notes:
Max: maximum
Mean: arithmetic mean
Min: minimum
p.u.: porosity units
SD: standard deviation
v/v: volume per volume

Table 2.4-5: Summary Statistics for Log-Derived Porosity of the Injection and Confining Zone
Site Characterization
Injection and Confining Zone Details

Unit	Number of Measure-ments	Mean Log-Derived Porosity (v/v)	SD	Min	10%	50%	90%	Max
Lower Santos Shale	2,369	0.079	0.042	0.0003	0.032	0.072	0.137	0.266
64 Zone U Sandstone	1,346	0.128	0.043	0.017	0.064	0.137	0.174	0.238
U Shale	675	0.085	0.057	0.0002	0.029	0.075	0.143	0.335
64 Zone W Sandstone	6,222	0.130	0.025	0.022	0.102	0.129	0.160	0.227

Notes:
Mean: arithmetic mean
max: maximum
min: minimum
SD: standard deviation
v/v: volume per volume

Table 2.4-6: Summary Statistics for Intrinsic Permeability to Air of the Injection and Confining Zone

Site Characterization

Injection and Confining Zone Details

Unit	Number of Samples	Mean Intrinsic Permeability (mD)	SD	Min	10%	50%	90%	Max
Santos Shale	64	0.475	1.362	0.003	0.006	0.006	0.900	6.488
64 Zone U Sandstone	72	1.123	1.094	0.038	0.100	1.000	2.280	6.880
64 Zone W Sandstone	930	55.967	63.451	0.049	0.900	28.500	147.100	401.000

Notes:

max: maximum

mD: millidarcy

Mean: arithmetic mean

min: minimum

SD: standard deviation

Table 2.4-7: Summary Statistics for NMR Timur-Coates Permeability of the Injection and Confining Zone

Site Characterization

Injection and Confining Zone Details

Unit	Number of Measure-ments	Mean NMR Timur-Coates Permeability (mD)	SD	Min	10%	50%	90%	Max
Lower Santos Shale	264	0.317	2.075	0.000	0.002	0.025	0.239	23.907
64 Zone U Sandstone	191	1.925	1.583	0.001	0.092	1.493	4.052	6.755
U Shale	110	0.247	0.587	0.000	0.004	0.098	0.371	4.070
64 Zone W Sandstone	656	3.339	5.034	0.000	0.457	1.820	7.751	66.346

Notes:

max: maximum

mD: millidarcy

Mean: arithmetic mean

min: minimum

SD: standard deviation

Table 2.5-1: Summary of Rock Core Geomechanical Analyses
Site Characterization
Geomechanics

Geologic Unit	Well Name	Depth Interval (ft MD)	Sample ID	Core Depth (ft MD)	Orientation	Length (in)	Diameter (in)	Mass (g)	Bulk Density (g/cc)	Test Type	Tensile Strength (psi)	Effective Confining Pressure (psi)	Yield Strength (psi)	Peak Strength (psi)	Residual Strength (psi)	Young's Modulus (psi)	Poisson's Ratio - 1	Poisson's Ratio - 2	Cohesion (psi)	Friction Angle	Confining presures used in deriving cohesion and friction angle (psi)
64 Zone W Sandstone	17-2N	8542.87-8543.55	ARA-3-6	8542.87	load normal to bedding	0.5290	0.9890	15.106	2.271	Brazil	540										
			ARA-3-1	8542.97	horizontal	2.0080	0.9880	57.736	2.289	UCS		0	2833	5654	0	1.256E+06	0.47	0.37	1138	46.14	0, 2900
			ARA-3-2	8543.10	horizontal	2.0080	0.9900	57.900	2.286	TXC; Ultrasonic		2900	17931	23549	13937	2.826E+06	0.23	0.26	2755	38.08	2900, 3800
			ARA-3-3	8543.45	horizontal	2.0100	0.9900	58.338	2.301	TXC; Ultrasonic		3800	22277	27345	17573	2.936E+06	0.27	0.20	4622	29.91	3800, 4700
			ARA-3-4	8543.55	horizontal	2.0090	0.9880	57.925	2.297	TXC; Ultrasonic		4700	24925	30036	19185	2.929E+06	0.23	0.19	1383	43.24	0, 2900, 3800, 4700
		8717.05-8717.45	ARA-5	8717.45	load normal to bedding	0.5720	0.9980	16.473	2.248	Brazil	519										
			ARA-1	8717.05	horizontal	1.9990	0.9960	58.485	2.293	UCS		0	2675	7174	0	1.173E+06	0.43	0.48	1383	47.84	0, 2900
			ARA-2	8717.15	horizontal	2.0000	0.9970	58.510	2.286	TXC; Ultrasonic		2900	19414	26692	11688	3.322E+06	0.38	0.39	3031	40.39	2900, 3800
			ARA-3	8717.35	horizontal	2.0010	0.9970	58.507	2.286	TXC; Ultrasonic		3800	24432	30906	18489	3.472E+06	0.29	0.28	3703	37.75	3800, 4700
			ARA-4	8717.35	horizontal	2.0000	0.9970	58.480	2.288	TXC; Ultrasonic		4700	27179	34648	19260	3.636E+06	0.29	0.29	1603	45.49	0, 2900, 3800, 4700
		8799.43-8799.90	ARA-4-6	8799.90	load normal to bedding	0.6200	0.9930	18.279	2.325	Brazil	744										
			ARA-4-1	8799.43	horizontal	2.0060	0.9920	59.590	2.347	UCS		0	5691	9260	0	2.040E+06	0.46	0.35	1885	45.69	0, 2900
			ARA-4-2	8799.53	horizontal	2.0060	0.9920	59.570	2.345	TXC; Ultrasonic		2900	20075	26754	13472	3.499E+06	0.25	0.26	3379	38.82	2900, 3800
			ARA-4-3	8799.63	horizontal	2.0070	0.9930	59.535	2.340	TXC; Ultrasonic		3800	24528	30677	18501	3.465E+06	0.23	0.26	3718	37.47	3800, 4700
			ARA-4-4	8799.80	horizontal	2.0060	0.9920	60.715	2.390	TXC; Ultrasonic		4700	28881	34374	20650	3.742E+06	0.21	0.24	2096	43.57	0, 2900, 3800, 4700
	4-1N	8514.80	ARA-2-5	8514.80	load normal to bedding	0.9310	0.9950	27.753	2.338	Brazil	458										
Upper Santos Shale	888N-12	8685.30-8685.85	ARA-1-7	8685.85	load normal to bedding	0.5450	0.9980	17.989	2.577	Brazil	2007										
			ARA-1-9	8685.30	vertical	1.9980	0.9960	65.026	2.550	UCS		0	5283	10333	0	2.695E+06	0.23	0.17	2351	41.07	0, 1500
			ARA-1-10	8685.30	vertical	2.0005	0.9975	65.152	2.543	TXC; Ultrasonic		1500	12524	17578	9931	3.176E+06	0.31	0.26	4543	24.07	1500, 4500
			ARA-1-5	8685.35	vertical	2.0020	0.9990	65.293	2.542	TXC; Ultrasonic		4500	20039	24712	16992	3.612E+06	0.37	0.24	3244	30.64	0, 1500, 4500
			ARA-1-1	8685.50	45 degrees	1.9995	0.9963	64.836	2.538	MSC; Ultrasonic		3000	21023	21079	13345	4.379E+06	0.25	0.27			
			ARA-1-2	8685.55	horizontal	2.0000	0.9960	65.399	2.561	MSC; Ultrasonic		3000	17992	21416	14706	4.853E+06	0.24	0.25			
			ARA-1-12	8685.65	vertical	2.0010	0.9977	65.435	2.553	Ultrasonic											
		8734.20-8734.25	ARA-4-5	8734.20	load normal to bedding	0.5130	1.0000	16.240	2.462	Brazil	1313										
			ARA-4-7	8734.25	vertical	1.9980	0.9960	63.259	2.479	UCS		0	3410	8165	0	1.797E+06	0.17	0.18			
			ARA-4-8	8734.25	vertical	2.0010	0.9980	63.316	2.469	UCS		0	10937	10998	0	1.901E+06	0.18	0.14	3087	31.39	0, 1500
			ARA-4-1	8734.25	vertical	2.0010	0.9990	63.428	2.471	TXC; Ultrasonic		1500	14305	15759	7111	2.171E+06	0.23	0.22	4427	20.16	1500, 3000
			ARA-4-3	8734.25	vertical	2.0010	0.9990	63.464	2.469	TXC; Ultrasonic		3000	17539	18837	11515	2.337E+06	0.24	0.25	4694	18.52	3000, 4500
			ARA-4-2	8734.25	vertical	2.0010	0.9990	63.600	2.475	TXC; Ultrasonic		4500	20651	21733	14307	2.456E+06	0.24	0.21	3762	23.79	0, 1500, 3000, 4500
		8734.75-8735.15	ARA-3-6	8735.30	load normal to bedding	0.5330	0.9980	16.444	2.404	Brazil	1001										
			ARA-3-9	8734.95	vertical	1.9980	0.9960	62.175	2.437	UCS		0	4469	5747	0	1.174E+06	0.08	0.22	1319	40.69	0, 1500
			ARA-3-1	8734.75	vertical	2.0050	0.9975	62.628	2.439	TXC; Ultrasonic		1500	12208	12868	6125	1.830E+06	0.20	0.21	3215	22.13	1500, 3000
			ARA-3-5	8735.15	horizontal	1.9975	0.9968	62.052	2.429	TXC; Ultrasonic		3000	11707	16181	10442	2.163E+06	0.26	0.32	4594	12.70	3000, 4500
			ARA-3-2	8734.75	vertical	2.0000	0.9975	62.674	2.447	TXC; Ultrasonic		4500	16156	18526	12302	2.161E+06	0.36	0.30	2125	28.06	0, 1500, 3000, 4500

NOTES

ft MD:	feet measured depth
in:	inch
g:	grams
g/cc:	grams per cubic centimeter
BRAZIL:	Brazilian/Indirect Tensile Strength Test Unconfined Compression Test
MSC:	Multiple Stress-path Compression Test
TXC:	Triaxial Compression Test
UCS:	Unconfined Compression Test
Ultrasonic:	Ultrasonic Velocity Measurement
psi:	pounds per square inch

Scenarios		Fault Stability Analysis		Reservoir Rock Integrity				Confining System Integrity Lower Santos Shale	
				U Sandstone		W Sandstone			
Cases	**Maximum injection pressure (psi)**	**Fault Shear Stress Level (FSSL)**	**Fault Tensile Stress Level (FTSL)**	**Shear Stress Level (SSL)**	**Tensile Stress Level (TSL)**	**Shear Stress Level (SSL)**	**Tensile Stress Level (TSL)**	**Shear Stress Level (SSL)**	**Tensile Stress Level (TSL)**
Base Case: Isothermal	4,750	0.58	0.67	0.50	0.71	0.57	0.72	0.74	0.81
Upper Limit Case: Isothermal	4,940	0.58	0.69	0.50	0.73	0.57	0.73	0.74	0.84
Thermal Case: 180 °F injection temperature	4,750	0.65	0.68	0.57	0.79	0.60	0.79	0.76	0.81

Notes:
psi = pound per square inch
°F = degrees fahrenheit

Table 2.5-3: Rock Properties for Geomechanical Model
Site Characterization
Geomechanics

Well	Geologic Unit	Top MD (ft)	Bottom MD (ft)	Average TVD (ft)	Average Minimum Horizontal Stress (S_{hmin}) (psi/ft)	Average Maximum Horizontal Stress (S_{Hmax}) (psi/ft)	Average Vertical Stress (S_v) (psi/ft)	Average Pore Pressure Gradient (psi/ft)	Average Static Young's Modulus (E) (Mpsi)	Average Static Poisson's Ratio	Average Friction Angle (FANG) (deg)	Average Tensile Strngth (psi)	Average Cohesive Strngth (psi)	Average Dynamic Young's Modulus (E) (Mpsi)	Average Dynamic Poisson's Ratio
888N-12	MEDIA SHALE	7,192.75	7,439.24	7,257.29	0.76	0.979	0.884	0.512	2.644	0.224	27.992	577.496	2469.55	3.569	0.264
888N-12	UPPER CARNEROS	7,439.24	7,890.81	7,598.03	0.768	0.987	0.893	0.511	2.778	0.229	28.811	598.391	2517.41	3.783	0.269
888N-12	CARNEROS SHALE	7,890.81	8,109.60	7,925.79	0.747	0.922	0.9	0.511	2.323	0.236	24.081	526.927	2433.18	3.063	0.277
888N-12	LOWER CARNEROS	8,109.60	8,684.49	8,316.51	0.782	1.002	0.908	0.515	3.058	0.234	28.362	637.974	2686.16	4.257	0.276
888N-12	UPPER SANTOS SHALE	8,684.49	8,768.44	8,642.27	0.778	0.974	0.915	0.526	2.842	0.237	25.594	608.824	2732.6	3.891	0.279
888N-12	AGUA	8,768.44	8,793.82	8,696.36	0.772	0.989	0.916	0.526	3.13	0.219	26.333	649.062	2859.75	4.368	0.258
888N-12	LOWER SANTOS SHALE	8,793.82	8,987.74	8,804.74	0.782	1.007	0.918	0.532	3.278	0.219	28.244	672.494	2859.28	4.587	0.257
888N-12	64 ZONE U SAND	8,987.74	9,117.17	8,964.60	0.809	1.072	0.921	0.536	3.897	0.218	40.225	715.542	2609.34	5.758	0.219
888N-12	64 ZONE U SHALE	9,117.17	9,166.82	9,053.21	0.732	0.869	0.922	0.468	2.127	0.264	27.542	504.12	2081.71	4.157	0.264
888N-12	64 ZONE W SAND	9,166.82	9,507.88	9,246.61	0.681	0.909	0.925	0.427	3.424	0.196	41.634	651.118	2126.74	5.29	0.196
888N-12	SALT CREEK SHALE	9,507.88	9,588.52	9,455.25	0.779	0.946	0.929	0.507	2.699	0.263	26.367	581.493	2492.71	4.612	0.263
888N-12	GIBSON	9,588.52	9,648.17	9,524.74	0.76	0.962	0.93	0.547	3.136	0.198	27.623	654.04	2826.14	4.377	0.232
888N-12	TUMEY SHALE	9,648.17	10,069.99	9,763.73	0.791	0.958	0.933	0.566	2.747	0.235	23.941	593.598	2747	3.733	0.276

NOTES

MD: measured depth
ft: feet
TVD: true vertical depth
psi/ft: pound per square inch per foot
Mpsi: megapounds per square inch
deg: degrees

Well ID	Easting (SPZ5_USft)	Northing (SPZ5_USft)	Well depth (ft bgs)	Top of Casing Elevation (ft msl)	Screened Interval (ft bgs)	Date Measured	Depth to Groundwater (ft btoc)*	Groundwater Elevation (ft msl)	Date Analyzed	TDS (mg/L)
GWMP-2[1]	6037154.177	2377964.186	215	607.2	200-215	5/23/2018	198.78	408.42	5/23/2018	36,000
GWMP-4[1]	6036851.036	2376893.722	228	605.9	208-228	5/22/2018	199.82	406.08	5/22/2018	29,000
GWMP-5[1]	6035370.607	2376618.284	230	626	215-230	5/22/2018	205.42	420.58	5/22/2018	17,000
14R1[2]	6032507.429	2399311.382	270	559.14	220-260	6/15/2021	212.08	347.06	6/15/2021	2,900
19M1[2]	6037984.402	2396257.677	237	521.11	170-200, 220-230	6/15/2021	145.95	375.16	6/15/2021	3,600
25C1[2]	6035076.172	2392561.988	250	553.12	170-240	6/15/2021	152.82	400.3	6/16/2021	33,000
25H1[2,5]	6037560.198	2391204.783	224	538.93	188-218	6/15/2021	149.2	389.73	6/15/2022	6,600
25N1[2]	6033743.199	2388938.948	230	585.78	180-220	6/15/2021	163.69	422.09	6/16/2021	15,000
26A1[2,6]	6032386.147	2393652.614	260	577.62	200-250	6/15/2021	188.3	389.32	8/16/2021	33,000
276(2)-26[2,6]	6031465.157	2390344.618	145	590.4	90-140	6/15/2021	125.42	464.98	6/16/2021	39,000
MW-12G1[3]	6036195.129	2376418.879	285.4	610.78	255.5-285	8/19/2021	202.52	408.26	8/19/2021	22,000
MW-12R1[3]	6037371.768	2373729.838	336.1	627.03	326.3-335.6	8/19/2021	230.16	396.87	8/19/2021	3,300
MW-10[3]	6041626.076	2369628.658	315	581.02	261.5-310	8/18/2021	181.25	399.77	8/18/2021	5,900
MW-11[3]	6038496.539	2370238.089	250	612.81	200-240	8/18/2021	224.41	388.40	8/18/2021	3,900
MW-01[3,4]	6038571.144	2365580.976	195	623.54	155-190	8/18/2021	166.64	456.90	8/30/2021	21,000
MW-04[3,4]	6041407.639	2367099.132	243	585.63	198-238	8/18/2021	167.84	417.79	8/30/2021	12,000
MW-08[3,4]	6040244.219	2364811.062	197.5	604.48	162.5-192.5	8/18/2021	163.55	440.93	8/30/2021	7,600
MW-09[3,4,5]	6039323.810	2367099.185	210	607.54	175-205	8/18/2021	177.7	429.84	8/30/2021	22,000
MW-12[3,4]	6042069.190	2368530.079	205	577.74	145-205	8/18/2021	178	399.74	8/30/2021	7,000

Notes:

1) Breitburn Operating LP., 2018a, Groundwater Monitoring Report for Post Stimulation Treatments and Requests for Exclusion, Dow Chanslor Lease, North and South Belridge Fields, Kern County, California, GeoTracker Site Global ID: GAOG10010818. June 22.
2) Wood Environmental & Infrastructure Solutions, Inc., 2021, 2021 Annual Post Closure Maintenance and Monitoring Report – Former North Surface Impoundments, North Belridge Oil Field, Kern County, California, GeoTracker Site Global ID: SL0602993186. December 16.
3) Wood Environmental & Infrastructure Solutions, Inc., 2022, Revised Second Semiannual 2021 SB4 Groundwater Monitoring Report – Section 12, 13, and 18 Leases, South Belridge Oil Field, Kern County, California, GeoTracker Site Global ID: GAOG10009277. February 28.
4) Groundwater and Environmental Services, Inc., 2022, Third Quarter 2021 SB4 Post Well Stimulation Groundwater Monitoring Report, South Belridge Oil Field, Hill Lease, Kern County, California, GeoTracker Site Global ID: GAOG10011328. June 10.
5) Duplicate result reported if TDS concentrations were higher than original sample.
6) Analytical results for TDS and/or EC were not consistent with historical values. Calculated TDS values for wells 26A1 and 276(2)-26 are 30,000 and 33,000 mg/L, respectively.

Coordinates provided in NAD 1983 State Plane California V FIPS 0405 (US Feet)
ft msl- feet above mean sea level
ft bgs - feet below the ground surface
ft btoc- Depth to groundwater measured in feet below top of casing
TDS - total dissolved solids
mg/L - milligrams per liter
* MW-01, MW-04, MW-08, MW-09, and MW-12 depth to ground water measured in ft bgs

Core ID	Stratigraphic Unit Sampled	Sample Depth (ft)	Methodology	Mineral Abundance (%)												Porosity (%)		
				Quartz (Primary)	Quartz (Cement)	K-Feldspar	Plagioclase	Rock Fragments	Clay-Size Fraction	Dolomite	Calcite	Kaolinite	Glauconite	Other	Primary	Secondary	Total
17-2N	W Sandstone	8485.5	Point-Counting	50.4	8.0	17.5	8.00	5.0	1.6	0.0	0.2	0.2	0.2	0.3	4.4	3.8	8.2
17-2N	W Sandstone	8534.5	Point-Counting	45.6	7.3	17.6	7.0	8.0	2.9	0.0	1.0	1.3	0.0	0.3	5.3	4.6	9.9
17-2N	W Sandstone	8538.5	Point-Counting	40.6	8.6	19.3	8.3	7.0	3.3	0.0	1.3	2.3	0.0	0.0	8.3	3.0	11.3
17-2N	W Sandstone	8542.5	Point-Counting	51.3	6.0	13.6	10.6	5.3	2.9	0.0	0.0	2.8	0.0	0.3	5.0	4.6	9.6
17-2N	W Sandstone	8544.5	Point-Counting	43.3	7.0	20.0	8.3	6.3	3.6	0.0	0.0	1.6	0.0	0.6	6.0	2.6	8.6
17-2N	W Sandstone	8550.5	Point-Counting	40.6	10.0	16.3	10.0	7.3	5.3	0.0	0.3	3.3	0.0	1.3	5.0	3.6	8.6
17-2N	W Sandstone	8560.4	Point-Counting	46.3	7.6	14.3	11.0	4.3	6.0	0.3	0.3	3.0	0.3	1.0	6.6	1.6	8.2
17-2N	W Sandstone	8564.5	Point-Counting	43.6	6.6	17.3	11.6	5.0	5.9	1.6	0.0	4.6	0.0	0.6	6.3	1.0	7.3
17-2N	W Sandstone	8618.5	Point-Counting	50.6	9.3	11.6	9.0	5.3	3.6	0.6	0.0	2.0	0.0	1.3	7.0	1.3	8.3
17-2N	W Sandstone	8621.5	Point-Counting	46.0	8.6	16.6	8.3	6.6	4.6	0.6	0.0	2.0	0.0	0.3	6.3	1.6	7.9
17-2N	W Sandstone	8626.5	Point-Counting	45.0	8.0	18.3	9.3	5.0	2.9	0.0	0.0	1.3	0.0	0.3	7.0	4.0	11
17-2N	W Sandstone	8628.5	Point-Counting	48.3	5.6	17.0	9.6	7.0	2.9	0.0	0.3	2.6	0.0	0.0	5.3	3.8	9.1
17-2N	W Sandstone	8632.5	Point-Counting	45.6	8.6	11.0	10.6	8.0	4.6	0.0	0.0	2.3	0.0	0.0	8.3	3.0	11.3
17-2N	W Sandstone	8639.5	Point-Counting	42.3	5.6	14.6	10.0	8.6	5.9	0.3	0.0	3.3	0.0	1.0	8.0	3.3	11.3
17-2N	W Sandstone	8651.5	Point-Counting	50.3	5.0	14.6	9.0	5.3	2.9	0.6	0.3	2.3	0.0	1.3	5.3	5.0	10.3
17-2N	W Sandstone	8652.5	Point-Counting	35.3	11.0	15.3	12.6	7.6	6.2	0.0	0.0	4.8	0.0	0.6	6.6	4.3	10.9
17-2N	W Sandstone	8658.5	Point-Counting	46.3	5.3	16.3	8.6	9.6	3.6	0.0	0.0	3.0	0.0	0.3	6.0	3.6	9.6
17-2N	W Sandstone	8669.5	Point-Counting	48.3	5.6	14.6	10.3	7.6	2.2	0.6	1.0	1.6	0.0	0.3	6.6	2.3	8.9
17-2N	W Sandstone	8676.5	Point-Counting	50.6	4.3	14.6	9.3	7.0	3.6	0.0	0.3	3.0	0.0	0.3	7.0	2.6	9.6
17-2N	W Sandstone	8679.5	Point-Counting	42.6	3.6	19.0	11.6	3.3	4.0	2.0	0.0	2.0	0.3	0.3	9.0	4.0	13
17-2N	W Sandstone	8683.5	Point-Counting	45.3	4.6	16.3	8.6	7.3	4.6	0.0	2.6	2.6	0.0	0.6	7.3	2.3	9.6
17-2N	W Sandstone	8688.4	Point-Counting	44.3	5.0	16.0	11.0	9.6	1.3	0.0	1.3	0.3	0.0	0.6	8.0	2.6	10.6
17-2N	W Sandstone	8689.5	Point-Counting	36.3	6.0	18.0	14.3	10.0	4.9	0.0	0.0	1.3	0.0	1.3	7.3	1.6	8.9
17-2N	W Sandstone	8701.4	Point-Counting	38.0	6.3	13.6	12.3	7.3	5.2	1.0	0.3	3.6	0.0	1.3	10.6	3.6	14.2
17-2N	W Sandstone	8709.5	Point-Counting	46.0	6.6	15.6	12.3	4.6	5.6	0.0	0.0	3.3	0.0	0.3	5.3	3.3	8.6
17-2N	W Sandstone	8716.5	Point-Counting	46.3	6.0	14.3	9.0	4.3	5.0	0.0	0.0	3.0	0.0	1.0	11.6	2.3	13.9
17-2N	W Sandstone	8718.5	Point-Counting	41.6	5.0	15.0	12.0	8.6	2.2	0.0	0.0	1.6	0.0	0.3	12.0	3.0	15
17-2N	W Sandstone	8727.5	Point-Counting	38.3	7.0	19.0	7.3	6.0	5.6	0.6	0.3	3.6	0.0	0.3	9.6	5.6	15.2
17-2N	W Sandstone	8732.5	Point-Counting	38.3	7.3	17.0	7.6	11.0	3.6	2.0	1.0	1.6	0.0	1.0	7.0	4.0	11
17-2N	W Sandstone	8734.5	Point-Counting	50.3	6.0	16.6	6.3	6.3	2.0	0.0	1.6	1.00	0.0	1.0	8.0	1.6	9.6
17-2N	W Sandstone	8737.5	Point-Counting	36.8	5.2	20.4	10.0	8.8	3.2	2.0	0.8	2.8	0.0	0.4	8.0	4.0	12
17-2N	W Sandstone	8745.4	Point-Counting	39.0	4.3	15.3	10.0	11.6	5.3	0.3	1.0	3.0	0.0	1.3	7.0	4.6	11.6
17-2N	W Sandstone	8746.5	Point-Counting	35.3	8.0	16.6	15.0	8.0	6.2	0.0	0.0	4.6	0.3	1.0	6.3	3.0	9.3
17-2N	W Sandstone	8753.5	Point-Counting	45.0	5.6	16.0	12.3	5.0	4.6	0.0	0.0	3.6	0.0	1.0	8.6	1.6	10.2
17-2N	W Sandstone	8764.5	Point-Counting	40.0	5.0	14.8	12.0	6.6	4.6	0.3	0.3	2.6	0.0	1.6	10.0	4.6	14.6
17-2N	W Sandstone	8773.5	Point-Counting	35.0	5.3	18.3	9.0	6.0	3.2	9.0	5.3	2.8	0.0	2.3	3.6	2.6	6.2
17-2N	W Sandstone	8805.5	Point-Counting	36.0	7.0	15.0	14.3	6.0	3.6	9.0	0.6	2.3	0.3	1.0	5.3	1.6	6.9
17-2N	W Sandstone	8822.5	Point-Counting	29.0	5.3	23.0	13.0	8.6	7.9	0.6	0.3	1.6	1.6	2.7	4.0	3.6	7.6
17-2N	W Sandstone	8825.6	Point-Counting	32.0	7.0	18.8	12.6	7.0	8.2	0.3	0.3	2.6	1.6	2.3	6.6	3.0	9.6
17-2N	W Sandstone	8829.5	Point-Counting	48.0	7.0	19.3	7.3	5.3	4.3	0.3	0.0	0.3	0.3	1.0	6.0	1.0	7
17-2N	W Sandstone	8832.3	Point-Counting	58.0	8.0	11.3	6.3	4.0	2.3	0.3	0.3	0.0	0.6	1.6	6.0	1.0	7
17-2N	W Sandstone	8841.5	Point-Counting	43.6	5.0	11.3	12.0	4.0	13.9	0.0	0.3	0.3	0.8	1.0	6.3	1.6	7.9
17-2N	W Sandstone	8842.5	Point-Counting	41.0	6.6	19.6	9.3	7.3	5.3	0.0	1.6	0.0	0.3	0.8	6.6	1.3	7.9
17-2N	W Sandstone	8843.4	Point-Counting	43.0	1.3	16.0	13.3	5.0	15.3	0.3	0.0	0.3	0.6	1.0	3.3	0.6	3.9
17-2N	W Sandstone	8851.5	Point-Counting	43.0	4.3	16.6	12.3	4.0	16.3	0.0	0.0	0.0	0.0	0.6	2.3	0.3	2.6
4-1N	W Sandstone	8482.0	Point-Counting	54.0	7.0	14.3	5.3	3.3	4.0	0.0	0.0	2.0	0.0	0.2	8.6	1.3	9.9
4-1N	W Sandstone	8483.3	Point-Counting	42.6	6.3	18.3	8.3	4.6	2.0	0.3	0.0	2.0	0.0	0.7	11.6	3.3	14.9
4-1N	W Sandstone	8508.8	Point-Counting	48.0	5.6	18.3	3.6	5.3	3.0	0.0	0.0	3.0	0.0	0.3	11.3	1.6	12.9
4-1N	W Sandstone	8510.5	Point-Counting	44.3	5.3	23.0	6.6	3.0	1.3	0.0	0.0	1.0	0.0	0.2	11.0	4.3	15.3
4-1N	W Sandstone	8513.1	Point-Counting	49.0	7.6	17.6	6.3	4.6	1.0	0.0	0.0	0.6	0.0	1.4	9.3	2.6	11.9
4-1N	W Sandstone	8515.0	Point-Counting	49.0	7.3	21.3	7.3	2.6	1.6	0.0	0.0	1.3	0.0	0.7	6.6	2.3	8.9
4-1N	W Sandstone	8539.5	Point-Counting	48.3	6.3	20.0	8.3	6.0	1.6	0.3	0.0	0.1	0.0	0.4	5.6	1.6	7.2
43-27N	W Sandstone	8829.8	Point-Counting	32.3	4.3	14.3	15.0	7.6	10.0	0.0	0.0	0.0	0.0	5.9	10.3	3.3	13.6
43-27N	W Sandstone	8832.0	Point-Counting	37.0	2.3	12.0	13.3	11.3	13.0	0.0	0.0	0.0	0.0	3.5	6.3	1.3	7.6
43-27N	W Sandstone	9116.1	Point-Counting	35.6	8.0	21.1	11.6	8.3	2.0	0.0	0.0	0.3	0.0	1.3	5.3	3.6	8.9
43-27N	W Sandstone	9119.0	Point-Counting	33.3	5.0	12.3	20.1	9.0	3.6	0.0	1.0	2.0	0.0	2.6	7.6	3.6	11.2
Point-Counting Average Values																	
--	--	--	--	**43.1**	**6.3**	**16.5**	**10.1**	**6.6**	**4.7**	**0.6**	**0.4**	**2.0**	**0.1**	**1.0**	**7.1**	**2.8**	**9.9**
Core ID	**Sample Depth (ft)**			**Quartz (Total)**		**Feldspar (Total)**		**Rock Fragments**	**Clay-Size Fraction**	**Dolomite**	**Calcite**	**Kaolinite**	**Glauconite**	**Other**	--	--	--
43-27N	U Sandstone	8727.0	XRD	50-65		35-45		--	1-4	0.0	0.0	0	--	--	--	--	--
43-27N	W Sandstone	8830.0	XRD	40-50		40-50		--	4.5-12	0.0	0.0	2-5	--	--	--	--	--
43-27N	W Sandstone	9126.0	XRD	35-45		45-55		--	4.5-12	0.0	0.0	2-5	--	--	--	--	--
43-27 XRD Average Values																	
--	--	--	--	**41.6-53.3**		**40-50**		--	**3.3-9.3**	**0.0**	**0**	**1.3-3.3**	--	--	--	--	--

Notes:
Some results from Well 43-27N were obtained via X-ray diffraction (XRD) analysis. Analysis completed in October 1985 by Haliburton Chemical Research and Development Department.
All other results were obtained by point-counting petrographic thin sections. Analysis completed in September 1986 by Petroleum Testing Services.
Point-counting results provided in % of minerals observed
XRD results provided in mineral weight %.
Specifics regarding point-counting methodology and XRD instrumentation settings were not provided in results reports.
ft - feet

Table 2.8-2: 64 Zone Sandstone Formation Water Composition
Site Characterization
Geochemistry

Parameter	Well	25-26N		43-27N	17-2N	3-22N	BN5*
	Date Sampled	9/4/2014	1/16/2017	10/22/1985	11/20/2003	12/21/2021	7/25/2017
	Unit						
Calcium	mg/L	490	680	310	860	388	1,640
Magnesium	mg/L	61.0	82.0	27.0	110	51.4	198
Sodium	mg/L	9,500	11,000	6,540	10,000	7,890	11,000
Potassium	mg/L	160	210	900	43.0	168	-
Iron (Total)	mg/L	< 1.0	22.0	500	43.0	2.83	0.05
Total Alkalinity	mg/L	290	350	620	560	-	450
Chloride	mg/L	17,000	19,000	12,040	25,000	13,890	23,000
Sulfate	mg/L	1,300	940	110	16.0	522.29	< 125
Sulfide	mg/L	1.60	ND	ND	< 2.0	-	-
Boron	mg/L	42.0	54.0	46.0	44.0	-	53.2
Barium	mg/L	< 1.0	0.33	0.60	-	0.43	14.3
Manganese	mg/L	-	0.40	-	-	0.09	-
Silica	mg/L	58.0	67.0	13.0	-	88.42	-
Strontium	mg/L	28.0	36.0	13.0	-	25.2	190
TDS	mg/L	29,000	34,000	21,060	41,000	23,027	37,000
Calculated Hardness	mg/L	1,500	2,000	1,781	2,700	1,211	-
pH	SU	7.42	7.06	7.33	6.60	-	-
Specific Gravity (60°F)	g/cm^3	1.02	1.03	1.02	1.03	1.02	-
Electrical Conductivity (25°C)	mmhos/cm	46.0	47.8	32.5	58.3	35.12	-
Resistivity (25°C)	ohm meters	0.22	0.21	0.31	0.17	-	-
Cation/Anion Charge Balance Error	%	-7.00	-3.20	-1.22	-9.20	-4.06	-6.66

Notes:
Cation/Anion charge balances were calculated in Geochemists Workbench™ based on reported concentrations
< : Concentration did not exceed the indicated method detection limit
ND: Concentration was not detected and no method detection limit was provided
- : Parameter was not analyzed
* : Sample BN5 was collected as part of an academic study and was not collected by Aera Energy LLC
g/cm^3 - grams per cubic centimeter
mg/L - milligrams per liter
mmhos/cm - millimhos per centimeter
SU - standard units

Chemical	Unit	CO_2 Stream Components			Expected Injectate Component
		Aera Pre-Combustion	Aera Post-Combustion	Third-Party	
CO_2	%	95-99.9	98-99.9	>95	98.7
CH_4	%	0.05-2	0	<1	0.34
C_2	%	0.02-1	0	< 1 combined	0.13
C_3	%	0.03-1	0		0.13
C_4	%	0.02-1	0		0.13
C_{5+}	%	0.01-0.5	0		0.10
Lubrication Oils	ppm	5-10	5-10	<20	8.75
N_2	%	0-0.05	0-0.05	<0.05	0.03
O_2	ppm	<50	<50	<50	25.0
CO	ppm	0	<100	<100	45.8
NO_x	ppm	0	<150	<150	68.8
SO_2	ppm	0	<10	<20	9.17
NH_3	ppm	0-10	0-10	<10	5.00
H_2S	ppm	2-10	0	<40	18.8
Sulfur*	ppm	3-30	0	<16	8.71
Ar	ppm	0	0-10	<10	4.58
H_2O	ppm	<258	<258	<100	89.5
H_2	%	0	0	<1	0.26

Notes:
ppm - Parts per million

Injectate composition is expected to consist of roughly 50% Aera Sources (comprised of 17% Pre-Combustion product and 83% Post-Combustion product) and 50% Third-Party sources.

* : The characterization of sulfur is inclusive of a variety of sulfur-containing compounds which are expected to occur in the pre-combustion and Third-Party injectate streams in small quantities.

All concentrations are reported on a volume basis except lubrication oils, sulfur-containing compounds, and H_2O, which are reported in concentrations by mass.

Expected injectate components were calculated using the source fractions mentioned above by averaging minimum and maximum concentrations from ranges. Component percentages may not be exact, as many chemicals are provided as ranges or upper limits only.

Mineral	Idealized Mineral Formula	Molar Mass (g/mol)	Normalized Mineral Abundance (%)	Model Input (mol/L)
Quartz	SiO_2	60.08	60.24	26.57
K-Feldspar	$KAlSi_3O_8$	278.3	20.15	1.92
Plagioclase	$NaAlSi_3O_8$	262.2	12.37	1.25
Dolomite	$CaMg(CO_3)_2$	184.4	0.72	0.104
Calcite	$CaCO_3$	100.1	0.52	0.138
Kaolinite	$Al_2Si_2O_5(OH)_4$	258.2	2.40	0.246
Illite	$K_{0.6}Mg_{0.25}Al_{1.8}Al_{0.5}Si_{3.5}O_{10}(OH)_2$	389.3	2.88	0.196
Smectite	$Ca_{0.02}Na_{0.15}K_{0.2}Fe^{++}_{0.29}Fe^{+++}_{0.16}Mg_{0.9}Al_{1.25}Si_{3.75}H_2O$	549.1	0.51	0.025
Glauconite	$(K,Na)(Fe,Al,Mg)_2(Si,Al)_4O_{10}(OH)_2$	426.9	0.16	0.010
Anhydrite	$CaSO_4$	136.1	0.06	0.012

Notes:
Mineral formulas displayed are idealized formulas and represent the stoichiometry utilized in model calculations
Mineralogy results from point-counting analyses were normalized to 100% to remove the presence of porosity and rock fragments
g/mol - grams per mole
mol/L - moles per liter of specified mineral

Table 2.8-5: 64 Zone Sandstone Aqueous Geochemistry Input for Geochemical Modeling
Site Characterization
Geochemistry

Parameter	Unit	Model Input
Calcium	mg/L	728
Magnesium	mg/L	88.2
Sodium	mg/L	9,322
Potassium	mg/L	296
Iron (Total)	mg/L	114
Chloride	mg/L	18,322
Sulfate	mg/L	490
Sulfide	mg/L	1.60
Aluminum	mg/L	*0.02
Boron	mg/L	47.8
Barium	mg/L	3.91
Manganese	mg/L	0.25
Silica	mg/L	56.6
Strontium	mg/L	58.4
Total Alkalinity	mg/L	454
pH	SU	7.10
Cation/Anion Charge Balance Error	%	7.37

Notes:
Cation/Anion charge balance for the model input was calculated in Geochemists Workbench™
mg/L - milligrams per liter
SU - standard units
* - Formation water was not analyzed for aluminum. Concentrations used as inputs were derived from equilibration of aluminosilicate minerals with formation water

Parameter	Initial Input (mg/L)		Equilibrium Model Output (mg/L)	Delta (mg/L)
Calcium	728	Equilibrium modeling	54.5	-674
Magnesium	88.2		1.18	-87.1
Sodium	9,322		39,888	30,566
Potassium	296		2047	1751
Iron (Total)	114		720	606
Chloride	18,322		19,616	1294
Sulfate	490		1,727	1,238
Sulfide	1.60		0.00	-1.60
Boron	47.8		42.7	-5.13
Barium	3.91		4.19	0.27
Manganese	0.25		0.27	0.02
Silica	56.6		31.1	-25.5
Strontium	58.4		62.5	4.08
Total Alkalinity	454		67,423	66,969
Aluminum	0.02*		0.00	0.01
pH	7.10		5.28	-1.82

Notes:
Equilibrium modeling completed using PHREEQC
* - Formation water was not analyzed for aluminum. Concentrations used as inputs were derived from equilibration of aluminosilicate minerals with formation water
pH values given in Standard Units (SU)
mg/L - milligrams per liter

Mineral	Initial Input (mol/L)		Equilibrium Model Output (mol/L)	Delta (mol/L)
Quartz	26.57	Equilibrium modeling	29.19	2.62
K-Feldspar	1.92		2.00	0.078
Plagioclase	1.25		0.00	-1.25
Dolomite	0.104		0.184	0.080
Calcite	0.138		0.088	-0.050
Kaolinite	0.246		1.07	0.826
Illite	0.196		0.000	-0.196
Smectite	0.025		0.000	-0.025
Glauconite	0.010		0.012	0.003
Anhydrite	0.012		0.000	-0.012
Dawsonite	0.000		0.000	0.000

Notes:
Equilibrium modeling completed using PHREEQC
mol/L - moles per liter of specified mineral

Minerals Present in System	Current State Saturation Index	Saturation Index Following Injectate	Difference in Saturation Index Following Injectate
Quartz	-0.37	-0.34	0.03
K-Feldspar	-0.85	-5.12	-4.27
Albite	-1.04	-5.31	-4.27
Dolomite	3.38	-3.92	-7.3
Calcite	1.3	-2.35	-3.65
Kaolinite	-2.25	-3.2	-0.95
Illite	-1.95	-7.22	-5.27
Smectite	4.19	-11.6	-15.8
Anhydrite	-0.83	-0.88	-0.05
Glauconite	22.7	-3.18	-25.9
Dawsonite	-2.21	-2.42	-0.2
Minerals Thermodynamically Favored to Precipitate			
Hematite	23.27	13.9	-9.4
Goethite	10.91	6.17	-4.7
Magnetite	26.53	9.3	-17.2
Jarosite	14.14	11.5	-2.6
Nontronite	23.81	13	-10.8
Ferrite	18.96	2.1	-16.9

Notes:
PHREEQC used for saturation index calculations
Saturation indices are unitless

			Surface Conditions		Reservoir Conditions		
	Volume Produced	Location	Density @ 14.7 psi, 68F [kg/m³]	Density @4100 psi, 225F [kg/m³]	Volume Produced [bbls]	Volume Produced [m³]	CO_2 Equivalent [metric tons]
CO_2	-	-	-	609.59	-	-	-
Net Produced Methane Total	514.5 BCF		0.6683443550	143.59			
Produced Methane - Free Gas (~300 BCF)	285 BCF	64 Zone within the AoR			236,267,190	37,563,481	22,898,323
	15 BCF	64 Zone outside the Aor			12,435,115	1,977,025	1,205,175
Produced Methane - Dissolved Gas (~214.5 BCF)	203.775 BCF	64 Zone within the AoR			168,931,041	26,857,889	16,372,301
	10.725 BCF	64 Zone outside the Aor			8,891,107	1,413,573	861,700
Produced Oil (~43.8 MM bbl)	37,896,937 bbl	64 Zone within the AoR	727*	800*	34,451,761	5,477,392	3,338,964
	5,900,376 bbl	64 Zone outside the Aor			5,363,978	852,804	519,861
Total		**Total**			**466,340,192**		**45,196,324**
		64 Zone within AoR			**439,649,992**		**42,609,588**

Notes:
CO_2 - Carbon Dioxide
psi - pounds per square inch
F - Degrees Fahrenheit
kg/m³ - kilograms per cubic meter
metric ton - 1000 kg
bbls - barrels
BCF - Billion Cubic Feet
MM bbl - Million barrels
*Bo-1.1 (assumed)

Parameters	Low	Medium	High
CO_2 storage capacity [million metric tons]	22.9	32.7	42.6

Notes:
CO_2 - Carbon Dioxide

Table 5-1: Well Summary of Appendix 5A
Injection Well Construction
Construction Procedures

Existing Well Name	API Number	Repurpose Plan:	Completion Formation	Surface Location Latitude	Surface Location Longitude
27R-27N	402929616	Injection	64 Zone Sandstones	35°33'2.4280"N	119°48'28.6103"W
64-27N	402935068	Injection	64 Zone Sandstones	35°32'38.0979"N	119°47'54.6576"W
55-26N	402935057	Injection	64 Zone Sandstones	35°32'43.2520"N	119°47'32.7755"W
64-35N	402935091	Injection	64 Zone Sandstones	35°31'44.3600"N	119°46'44.9788"W
9-1N	402935107	Injection	64 Zone Sandstones	35°31'31.6480"N	119°46'37.0154"W
1-28N	402935069	Monitoring	Agua and 64 Zone Sandstones	35°33'22.7757"N	119°48'51.4527"W
25-26N	402935053	Monitoring	Agua	35°33'1.2506"N	119°47'43.8785"W
39-26N	402935054	Monitoring	64 Zone Sandstones	35°32'54.8149"N	119°47'35.1082"W
27-1N	402935115	Monitoring	64 Zone Sandstones	35°31'18.6498"N	119°46'21.0202"W
35X-27N	402958271	Monitoring	64 Zone Sandstones	35°32'59.2890"N	119°48'2.9031"W
New-Drill Well Plan	TBD(1)	Injection	64 Zone Sandstones	*See Table 5-2*	*See Table 5-2*

Notes:
API - American Petroleum Institute
TBD - To Be Determined
° - Degrees of Latitude or Longitude
' - Minutes of Latitude or Longitude
" - Seconds of Latitude of Longitude
N - North Latitude
W - West Longitude
1) API Number not yet allocated as the new-drill wells have not been constructed.

Well Name	New Well Plan	Completion Formation	Surface Location Latitude	Surface Location Longitude
CI1-64Z-27N	Injection	64 Zone Sandstones	35°33'9.4877"N	119°48'26.3702"W
CI2-64Z-35N	Injection	64 Zone Sandstones	35°32'32.6713"N	119°47'37.0682"W
CI3-64Z-35N	Injection	64 Zone Sandstones	35°32'11.6457"N	119°47'7.5912"W
CI4-64Z-35N	Injection	64 Zone Sandstones	35°31'55.4154"N	119°46'51.7864"W

Notes:
° - Degrees of Latitude or Longitude
' - Minutes of Latitude or Longitude
" - Seconds of Latitude of Longitude
N - North Latitude
W - West Longitude

Cations (mg/L)	
Na^{+1}	11,000
K^{+1}	210
Ca^{+2}	660
Mg^{+2}	82
Sr^{+2}	36
Ba^{+2}	0.33
Fe^{+2}	22
Mn^{+2}	0.4
Anions (mg/L)	
Cl^{-1}	19,000
HCO_3^{-1}	420
SO_4^{-2}	940
Others (mg/L)	
SiO_2	67
B as $B(OH)_3$	54

Notes:

mg/L = milligrams per liter
Na = Sodium
K = Potassium
Ca = Calcium
Mg = Magnesium
Sr = Strontium
Ba = Barium
Fe = Iron
H = Hydrogen
C = Carbon
O = Oxygen
S = Sulfur
Si = Silicon
B = Boron
Cl = Chlorine
Mn = Manganese

Component	Reconciled Gas (Mole %)
N^2	1.73
CO_2	2.25
H_2S	0.007
CH_4	96.013

Notes:

% = milligrams per liter
N = Nitrogen
O = Oxygen
H = Hydrogen
C = Carbon
S = Sulfur

Table 5.2-3: Summary of Materials for Injection and Monitoring Wells
Injection Well Construction
Construction Procedures

Well Type	Components	Recommended Material
Injection	Flow wetted wellhead components (tree valves, flow cross, tubing hanger, etc.)	F6NM-Grade Stainless Steel
Injection	CRA material for tubing, casing, and liners	Modified 13Cr
Injection	Packer and downhole components	Alloy 718
Monitoring	Flow wetted wellhead components (tree valves, flow cross, tubing hanger, etc.)	F22 with Alloy 625 Clad
Monitoring	CRA material for tubing, casing, and liners	Modified 13Cr
Monitoring	Packer and downhole components	Alloy 718 or equivalent
Injection and Monitoring	Elastomer for tubing hanger seals(1)	HNBR/Teflon/PEEK
Injection and Monitoring	Elastomer for packer element(1)	EPDM
Injection and Monitoring	Elastomer for other downhole seals(1)	HNBR/Teflon/PEEK

Notes:
CRA - Corrossion-resistant alloy
13Cr - 13Cr-grade stainless steel
F22 - F22-grade stainless steel
HNBR - Hydrogenated nitrile butadiene rubber
PEEK - Polyether ether ketone
EPDM - Ethylene propylene diene monomer rubber
1) All seals should be evaluated for rapid gas decompression (RGD) capability.
No chemical reaction is expected for this type of material with dense phase CO2.

Table 7.1: Proposed Operation Procedures
Well Operation

Parameters/Conditions	Unit	Limit or Permitted Value								
		27R-27N	55-26N	64-35N	9-1N	64-27N	CI1-64Z-27N	CI2-64Z-35N	CI3-64Z-35N	CI4-64Z-35N
Maximum anticipated surface injection pressure (pump pressure)	psia	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800
Maximum injection pressure (top of perforated interval)	psia	4,368	4,340	4,340	4,468	4,279	4,401	4,296	4,295	4,322
Maximum Injection Rate	tonnes/day	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Average Injection Rate	tonnes/day	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Total anticipated injected mass	MMt	3.49	3.48	3.52	3.64	3.45	3.53	3.52	3.52	3.52
Total anticipated volume (at reservoir conditions)	Bcf	66.53	66.30	67.11	69.36	65.74	67.34	67.11	67.11	67.11
Annulus Pressure (maximum)*	psia	4,468	4,440	4,440	4,568	4,379	4,501	4,396	4,395	4,422
Minimum Annulus Pressure/Tubing Differential	psi	100	100	100	100	100	100	100	100	100

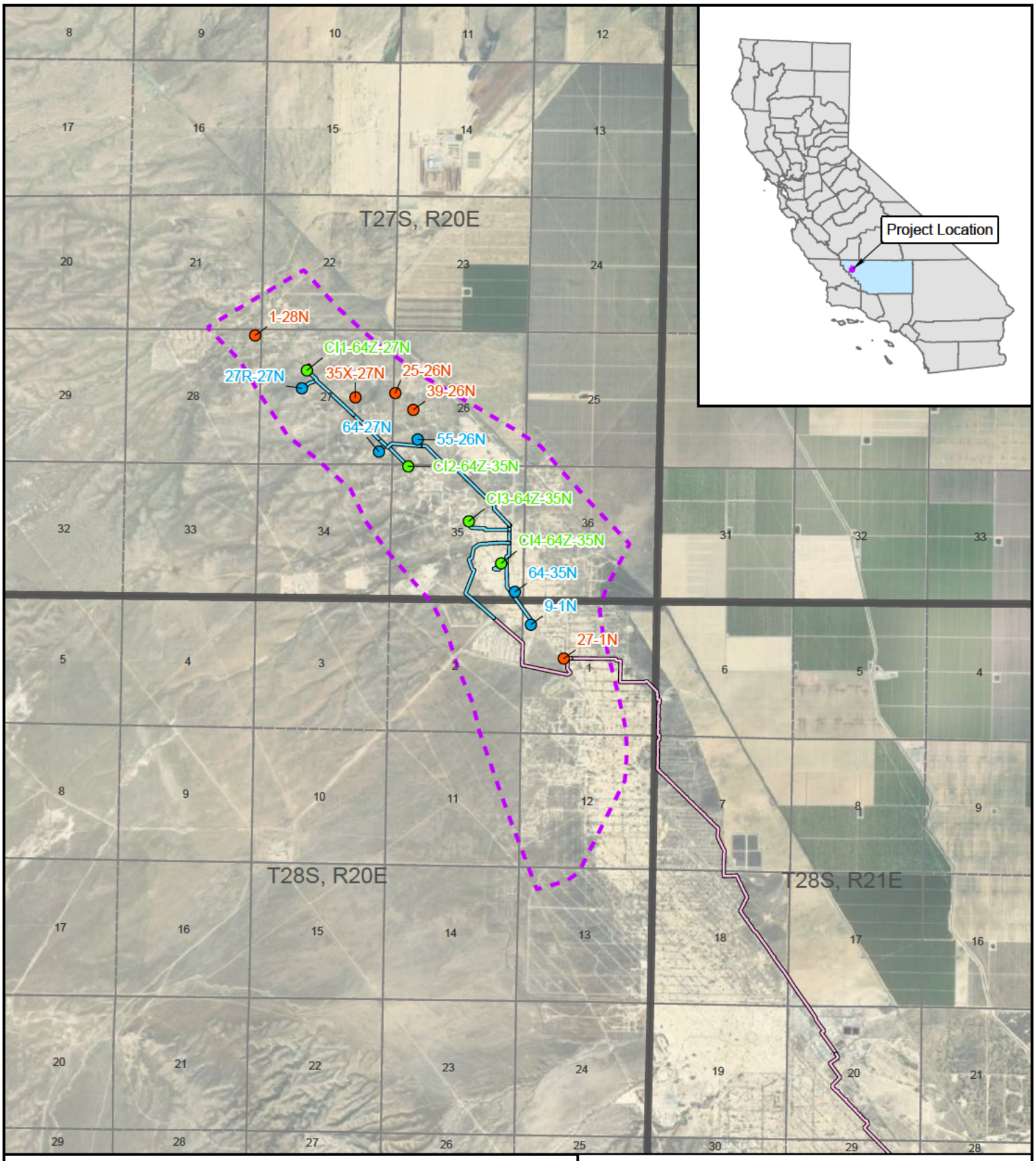
* variable, maintained at the largest of hydrostatic pressure and (tubing bottom hole pressure + 100 psi)
psi: pounds per square inch
psia: pounds per square inch absolute
MMt: million metric tons
Bcf: billion cubic feet

Table 7.2: Estimated CO_2 Composition of Aera's Planned Pre- and Post-Combustion CO_2 Capture Facilities
Well Operation

Chemical	Unit	CO_2 Stream Components		
		Aera Pre-Combustion	Aera Post-Combustion	Third-Party Spec
CO_2	%	95-99.9	98-99.9	>95
CH_4	%	0.05-2	0	<1
C_2	%	0.02-1	0	<1 combined
C_3	%	0.03-1	0	
C_4	%	0.02-1	0	
C_5+	%	0.01-0.5	0	
Lubrication Oils	ppm	5-10	5-10	<20
N_2	%	0-0.05	0-0.05	<0.05
O_2	ppm	<50	<50	<50
CO	ppm	0	<100	<100
NO_x	ppm	0	<150	<150
SO_2	ppm	0	<10	<20
NH_3	ppm	0-10	0-10	<10
H_2S	ppm	2-10	0	<40
Sulfur*	ppm	3-30	0	<16
Ar	ppm	0	0-10	<10
H_2O	ppm	<258	<258	<100
H_2	%	0	0	<1

Notes:
ppm - Parts per million
Values calculated using industry analogs with representative input gas streams.
A third-party spec was established to restrict the composition of all future CO_2 sources and closely aligns with the composition of Aera sources. All concentrations are reported on a volume basis except lubrication oils, sulfur, and H_2O, which are reported in concentrations by mass .
Injectate composition is expected to consist of roughly 50% Aera Sources (17% Pre-Combustion and 83% Post-Combustion) and 50% Third-Party.
* : The characterization of sulfur is inclusive of a variety of sulfur-containing compounds which are expected to occur in the Pre-Combustion injectate stream at small quantities.

Figures



Legend

- Proposed New Injection Well
- Proposed Repurposed Injection Well
- Proposed Monitoring Well
- Pipeline to Wells
- Main Carbon Dioxide (CO_2) Pipeline
- Area of Review
- Township/Range
- Section

N

0 1 Miles

Site Vicinity Map

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 1.1-1

CarbonFrontier | December 2023

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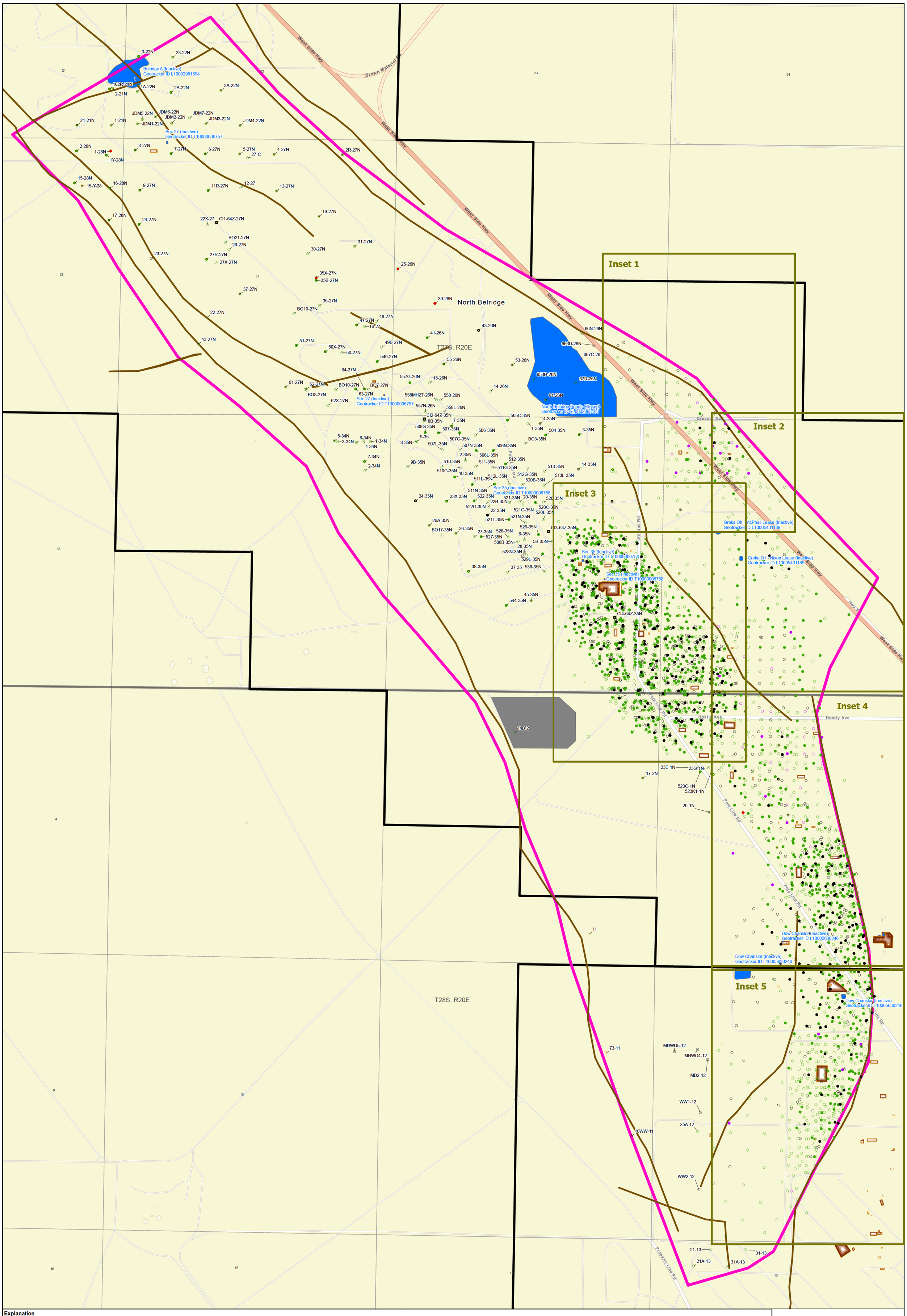


Explanation

- Monitoring Well
- Injector Well, Proposed
- Injector Well, Operational
- Observation Well, Operational
- Producer Well, Operational
- Injector Well, Plugged and Abandoned
- Observation Well, Plugged and Abandoned
- Producer Well, Plugged and Abandoned
- Dry Hole, Plugged and Abandoned
- Well Penetrates Confining Layer
- Area of Review
- North/South Belridge Admin. Boundary
- Facilities/Building Infrastructure
- State-Approved Cleanup Sites, Former Disposal Ponds
- North Belridge Landfill (closed)
- Township
- Section
- Fault Trace Projected from Top U Sandstone

Note:
There are no deep stratigraphic boreholes; EPA-approved subsurface cleanup sites; surface bodies of water; springs; mines (surface and subsurface); quarries; water wells; or state, territorial, or tribal boundaries in the AoR.

N

0 750 Feet

Map of the Area
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier | December 2023

Figure 1.1-2
Sheet 1 of 6

SantaBarbara-01\P \GIS\Aera Belridge CCUS\Projects\EPA Response\Section 1.0 Project Description\Project_Description.aprx; Fig1.1-2 Map of the Area; 12/1/2023 10:28 AM (Author MBradford)

North Belridge Ponds (Closed)
Geotracker ID SL0602993186

T27S, R20E

West Side Hwy

Dresser Ave

Pole Line Rd

26 25 35 36 1

676D-26N 676S-26N 686A-26N 77E-26N 77G-26N 77H-26N 87F-26N 87G-26N 677L-26N 677P-26N 87M-26N 687N-26N 17L-25 617M-25N 677D-26N 417S-25N 77S-26N 77D-26N 87A-26N 87S-26N 17R-25N 17A-25N 17S-25N 88K-26N 618J-25N 18C-25N 618K-25N 28J-25N 28C-25N 418P-25N 88N-26N 18L-25 18M-25N 18N-25N 28L-25N 28M-25N 28R-25N 628R-25N 628A-25N 28A-25N 28D-25N 81H-35N RR611F-36N RR11G-36N RR21X-36N RR621H-36N 671C-35N RR31X-36N RR11C-36N 11KR-36N 621J-36N 21C1-36N RR3X-36N 621-36N RK19-36N RK18-36N RK17-36N 31F-36N RR11J-36N RR11CR-36N RK11K-36N RK21J-36N RK21C-36N RR21-36N RR31J-36N 81N-35N 21J1-36N RK44-36N RR31M-36N RK12L-36N RK15-36N RK14-36N 621MR-36N 621M-36N RK16-36N RK20-36N RK43-36N 21L-36N 21P-36N RR11A-36N RK611S-36N RK21R-36N RK621A-36N RK21D-36N RR631R-36N RR2-36N RR31A-36N RK46-36N RK42-36N RK32-36N RK36-36N 21A-36N RR412E-36N RK45I-36N RK37-36N RK5-36N RK8-36N RK13-36N RR9X-36N 32F-1-36N 72H-35N RR12E-36N RR12F-36N 12G1-36N 12G1R-36N RK47-36N RK12G-36N 622E-36N RK41-36N RK33-36N 22F1-36N RK35-36N RK22H-36N RK22F-36N 622HR-36N 622HR2-36N 622H-36N RK39-36N RK32E-36N RR32F-36N RR32H-36N 82K-35N RK51-36N 22K-36N 22J-36N RK6-36N RK7-36N RK12-36N 15-35N 915A-35N 72N-35N 16-35 RK30-36N RKB1-36N RK50-36N RK49-36N 22L-36N 22LR-36N 622C-36N RK22M-36N RK38-36N RK25-36N RK34-36N 22P-36N RK27-36N RK40-36N RK612M-36N RK48-36N RK622L-36N RK622P-36N RK32L-36N RK632M-36N RR32P-36N RR42L-36N RK1-36N RK4-36N RK2-36N RK10-36N RK11-36N 22A1-36N RK29-36N RK24-36N RK22-36N RK23-36N RK26-36N RK28-36N RR1-36N RK12R-36N RK12A-36N RK12S-36N RK22R-36N RK22A-36N RK22D-36N RK32R-36N RK32A-36N RR32D-36N RR42R-36N RR42S-36N 673C-35N 683K-35 37-H 6-4 4-5 5-5 7-5-36N 18-35N 1-5 3-5 6-5R 17-35N 83M-35N 1A-36N 6-5 1-6-36N 5-6R 4-6R 4-6 5-6 6-6 7-6-36N 518L-35N 531C4-35N 532E1-35N 531C3-35N 531G1-35N 931G-35N 525CHZL-36N 5-7R

Explanation

- Monitoring Well
- Injector Well, Proposed
- Injector Well, Operational
- Observation Well, Operational
- Producer Well, Operational
- Injector Well, Plugged and Abandoned
- Observation Well, Plugged and Abandoned
- Producer Well, Plugged and Abandoned
- Dry Hole, Plugged and Abandoned
- Well Penetrates Confining Layer
- Area of Review
- North/South Belridge Admin. Boundary
- Facilities/Building Infrastructure
- State-Approved Cleanup Sites, Former Disposal Ponds
- North Belridge Landfill (closed)
- Township
- Section
- Fault Trace Projected from Top U Sandstone

Note:
There are no deep stratigraphic boreholes; EPA-approved subsurface cleanup sites; surface bodies of water; springs; mines (surface and subsurface); quarries; water wells; or state, territorial, or tribal boundaries in the AoR.

N

0 160 Feet

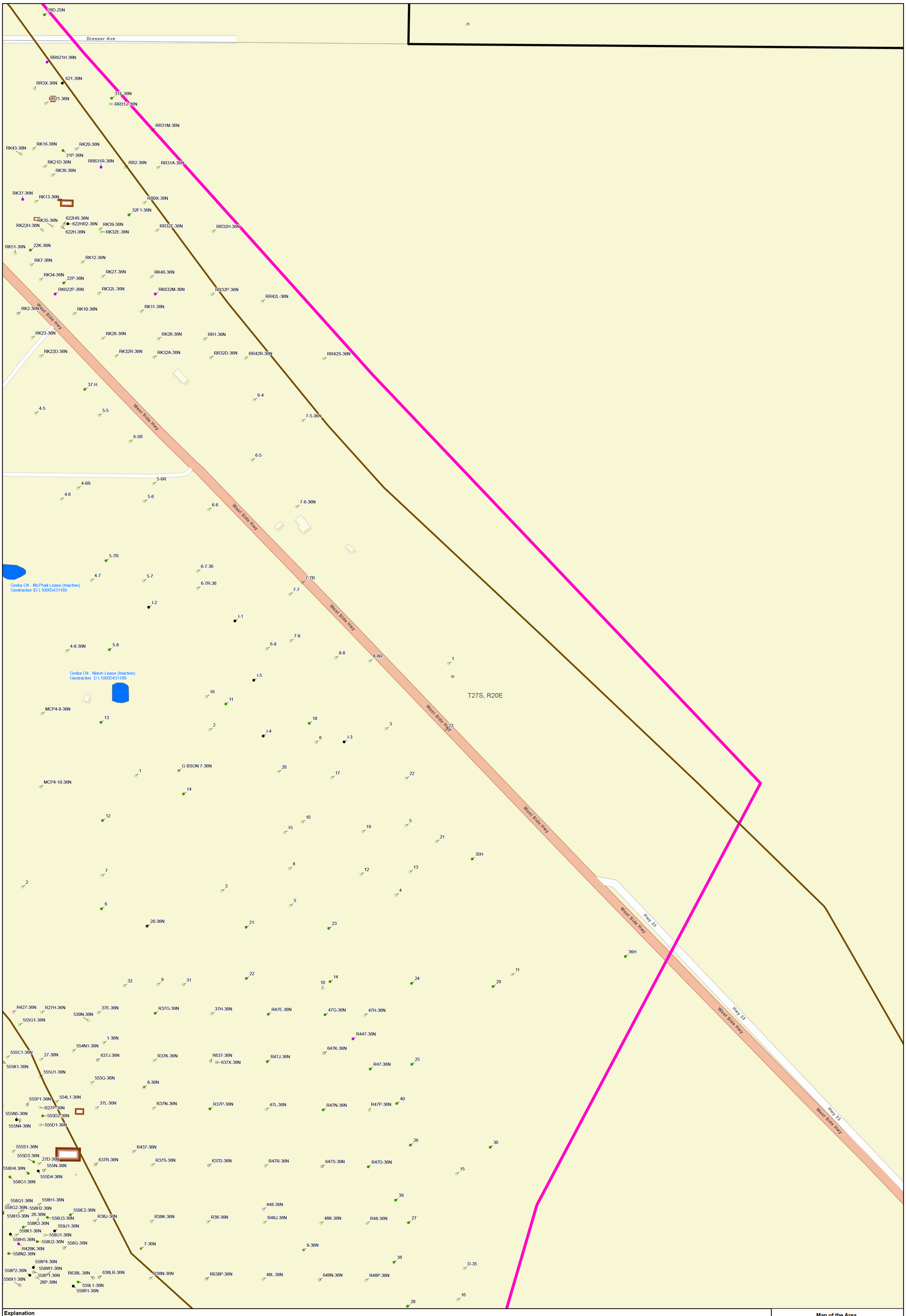
Map of the Area
Inset 1
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 1.1-2
Sheet 2 of 6

CarbonFrontier | December 2023

SantaBarbara-01\P:\GIS\Aera Belridge CCUS\Projects\EPA Response\Section 1.0 Project Description\Project_Description.aprx; Fig1.1-2 Map of the Area_Insets; 12/1/2023 10:28 AM (Author: MBradford)



Explanation

- Monitoring Well
- Injector Well, Proposed
- Injector Well, Operational
- Observation Well, Operational
- Producer Well, Operational
- Injector Well, Plugged and Abandoned
- Observation Well, Plugged and Abandoned
- Producer Well, Plugged and Abandoned
- Dry Hole, Plugged and Abandoned
- Well Penetrates Confining Layer
- Area of Review
- North/South Belridge Admin. Boundary
- Facilities/Building Infrastructure
- State-Approved Cleanup Sites, Former Disposal Ponds
- North Belridge Landfill (closed)
- Township
- Section
- Fault Trace Projected from Top U Sandstone

Note:
There are no deep stratigraphic boreholes; EPA-approved subsurface cleanup sites; surface bodies of water; springs; mines (surface and subsurface); quarries; water wells; or state, territorial, or tribal boundaries in the AoR.

N

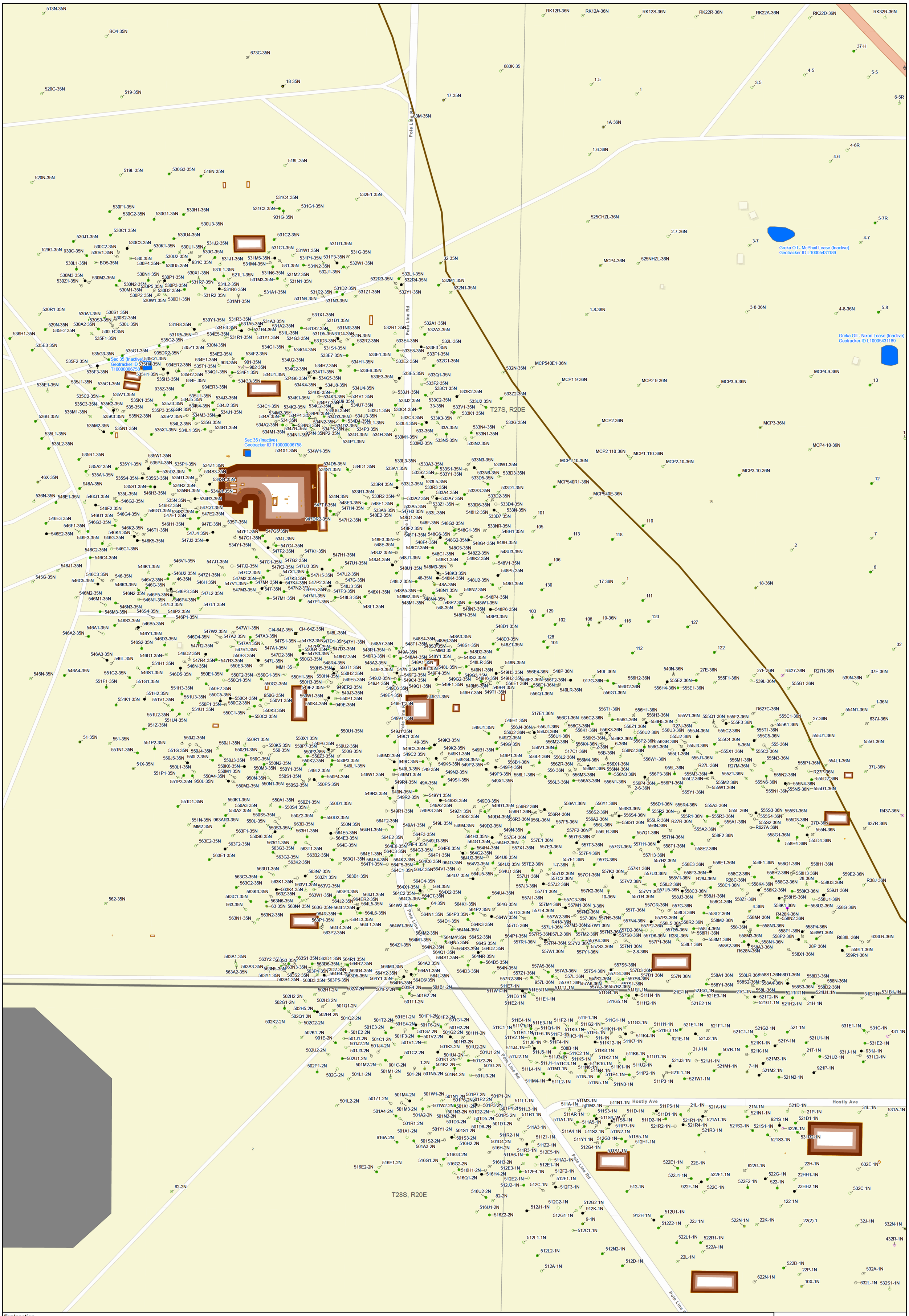
0 160 Feet

Map of the Area
Inset 2
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 1.1-2
Sheet 3 of 6

CarbonFrontier | December 2023


Pole Line Rd
Greka O I - McPhail Lease (Inactive)
Geotracker ID L10005431189
Greka OII - Nixon Lease (Inactive)
Geotracker ID L10005431189
Sec 35 (Inactive)
Geotracker ID T10000006758
Sec 35 (Inactive)
Geotracker ID T10000006758
T27S, R20E
T28S, R20E
Hostly Ave
Explanation
Monitoring Well
Injector Well, Proposed
Injector Well, Operational
Observation Well, Operational
Producer Well, Operational
Injector Well, Plugged and Abandoned
Observation Well, Plugged and Abandoned
Producer Well, Plugged and Abandoned
Dry Hole, Plugged and Abandoned
Well Penetrates Confining Layer
Area of Review
North/South Belridge Admin. Boundary
Facilities/Building Infrastructure
State-Approved Cleanup Sites, Former Disposal Ponds
North Belridge Landfill (closed)
Township
Section
Fault Trace Projected from Top U Sandstone
Note:
There are no deep stratigraphic boreholes; EPA-approved subsurface cleanup sites; surface bodies of water; springs; mines (surface and subsurface); quarries; water wells; or state, territorial, or tribal boundaries in the AoR.
N
0
160
Feet
Map of the Area
Inset 3
North Belridge Oil Field
Western Kern County
California
CarbonFrontier
Figure 1.1-2
Sheet 4 of 6
CarbonFrontier
December 2023
SantaBarbara-01\P \GIS\Aera Belridge CCUS\Projects\EPA Response\Section 1.0 Project Description\Project_Description.aprx; Fig1.1-2 Map of the Area_Insets; 12/1/2023 10 28 AM (Author MBradford)

T27S, R20E

T28S, R20E

Hostly Ave

Pole Line Rd

Dow Chanslor (Inactive)
Geotracker ID L10005630246

Explanation

- Monitoring Well
- Injector Well, Proposed
- Injector Well, Operational
- Observation Well, Operational
- Producer Well, Operational
- Injector Well, Plugged and Abandoned
- Observation Well, Plugged and Abandoned
- Producer Well, Plugged and Abandoned
- Dry Hole, Plugged and Abandoned
- Well Penetrates Confining Layer
- Area of Review
- North/South Belridge Admin. Boundary
- Facilities/Building Infrastructure
- State-Approved Cleanup Sites, Former Disposal Ponds
- North Belridge Landfill (closed)
- Township
- Section
- Fault Trace Projected from Top U Sandstone

Note:
There are no deep stratigraphic boreholes; EPA-approved subsurface cleanup sites; surface bodies of water; springs; mines (surface and subsurface); quarries; water wells; or state, territorial, or tribal boundaries in the AoR.

N

0 160 Feet

Map of the Area
Inset 4
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 1.1-2
Sheet 5 of 6

CarbonFrontier | December 2023

Dow Chanslor (Inactive)
Geotracker ID L10005630246

Dow Chanslor (Inactive)
Geotracker ID L10005630246

Pole Line Rd

Pole Line Rd

Pole Line Rd

T28S, R20E

Explanation

- Monitoring Well
- Injector Well, Proposed
- Injector Well, Operational
- Observation Well, Operational
- Producer Well, Operational
- Injector Well, Plugged and Abandoned
- Observation Well, Plugged and Abandoned
- Producer Well, Plugged and Abandoned
- Dry Hole, Plugged and Abandoned
- Well Penetrates Confining Layer
- Area of Review
- North/South Belridge Admin. Boundary
- Facilities/Building Infrastructure
- State-Approved Cleanup Sites, Former Disposal Ponds
- North Belridge Landfill (closed)
- Township
- Section
- Fault Trace Projected from Top U Sandstone

Note:
There are no deep stratigraphic boreholes; EPA-approved subsurface cleanup sites; surface bodies of water; springs; mines (surface and subsurface); quarries; water wells; or state, territorial, or tribal boundaries in the AoR.

N

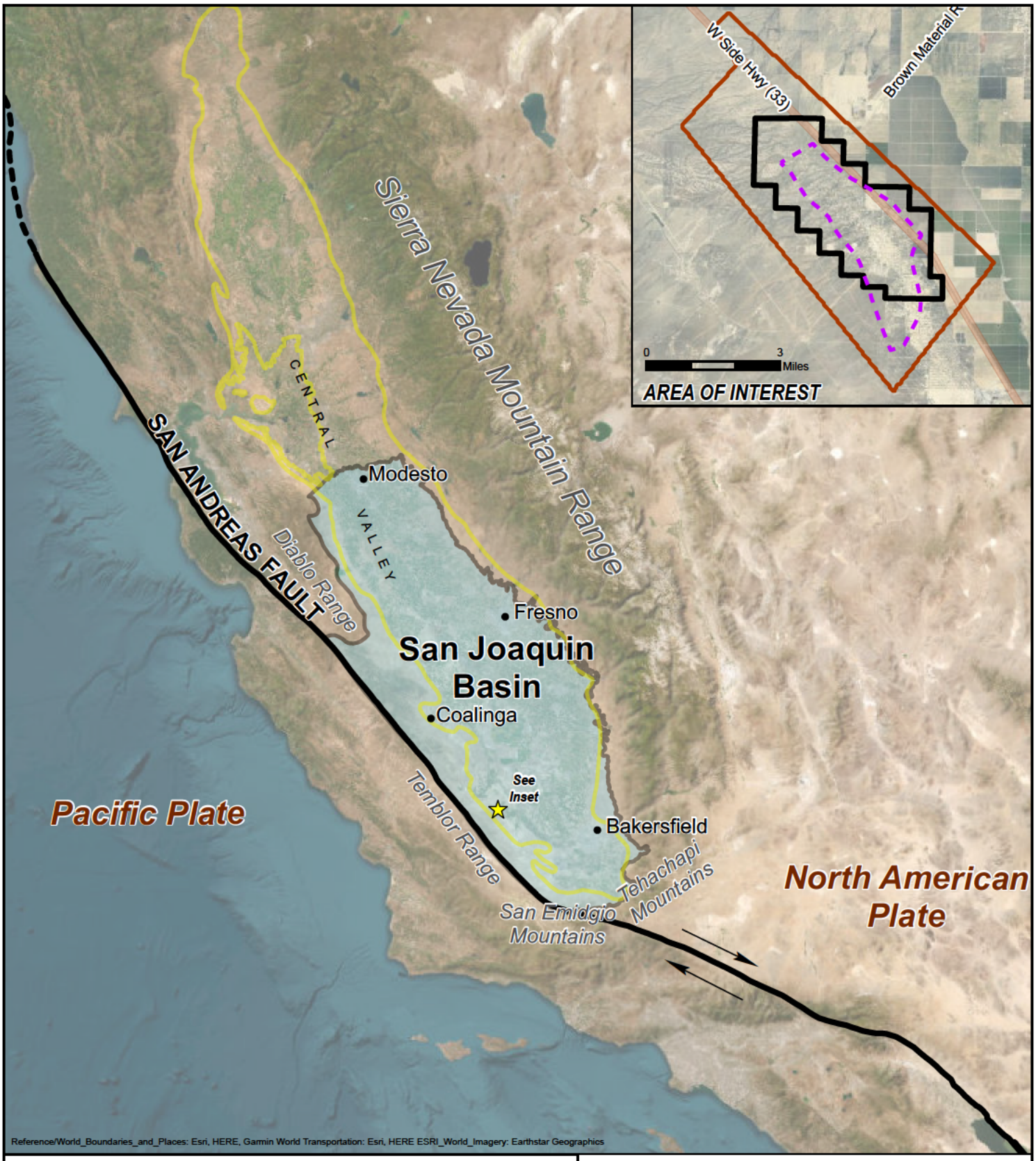
0 160 Feet

Map of the Area
Inset 5
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier | December 2023

Figure 1.1-2
Sheet 6 of 6



Legend

- Project Location
- San Andreas Fault (dashed offshore)
- San Joaquin Basin
- Great Valley Geomorphic Complex
- Area of Interest
- Area of Review
- North Belridge Administration Boundary

N

0 60 Miles

Project Area Index Map

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.1-1

CarbonFrontier | December 2023

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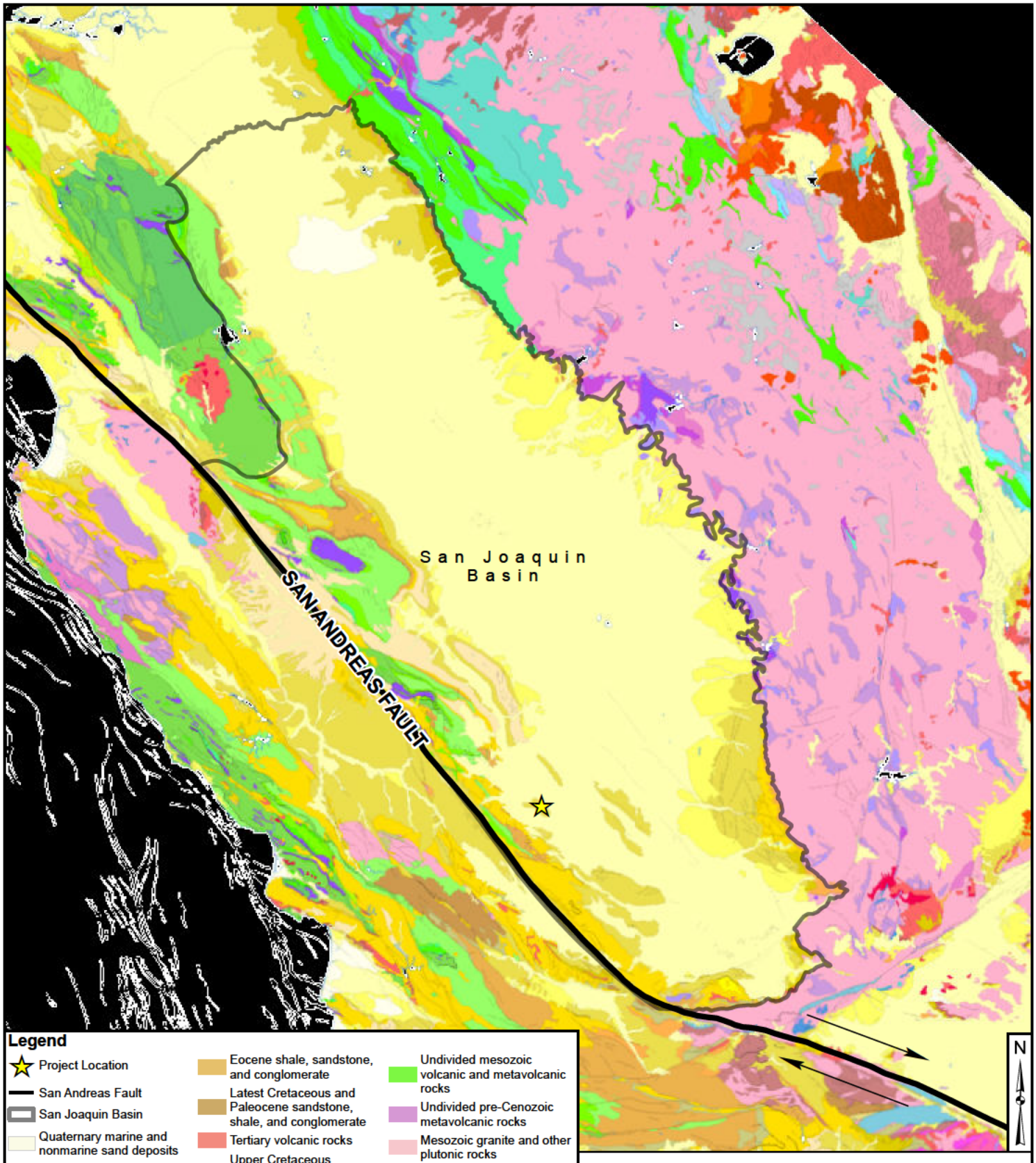

Legend

- Project Location
- San Andreas Fault
- San Joaquin Basin
- Quaternary marine and nonmarine sand deposits
- Quaternary alluvium, lake, playa, and terrace deposits
- Pliocene and/or Pleistocene sandstone, shale, and gravel deposits
- Pliocene sandstone, siltstone, shale, and conglomerate
- Miocene sandstone, shale, siltstone, conglomerate, and breccia
- Eocene shale, sandstone, and conglomerate
- Latest Cretaceous and Paleocene sandstone, shale, and conglomerate
- Tertiary volcanic rocks
- Upper Cretaceous sandstone, shale, and conglomerate
- Lower Cretaceous sandstone, shale, and conglomerate
- Franciscan Complex
- Jurassic shale, sandstone, and other rocks
- Mesozoic to Precambrian granitic and metamorphic rocks
- Undivided mesozoic volcanic and metavolcanic rocks
- Undivided pre-Cenozoic metavolcanic rocks
- Mesozoic granite and other plutonic rocks
- Ultramafic rocks, mostly serpentine, chiefly Mesozoic
- Gabbro and dark dioritic rocks, chiefly Mesozoic
- Undivided Paleozoic metasedimentary rocks
- Undivided pre-Cenozoic metasedimentary and metavolcanic rocks

0 30 Miles

Source: CGS Geologic Map of California, Accessed 2022-03-23.

Geologic Map of San Joaquin Basin

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier	December 2023	Figure 2.1-2

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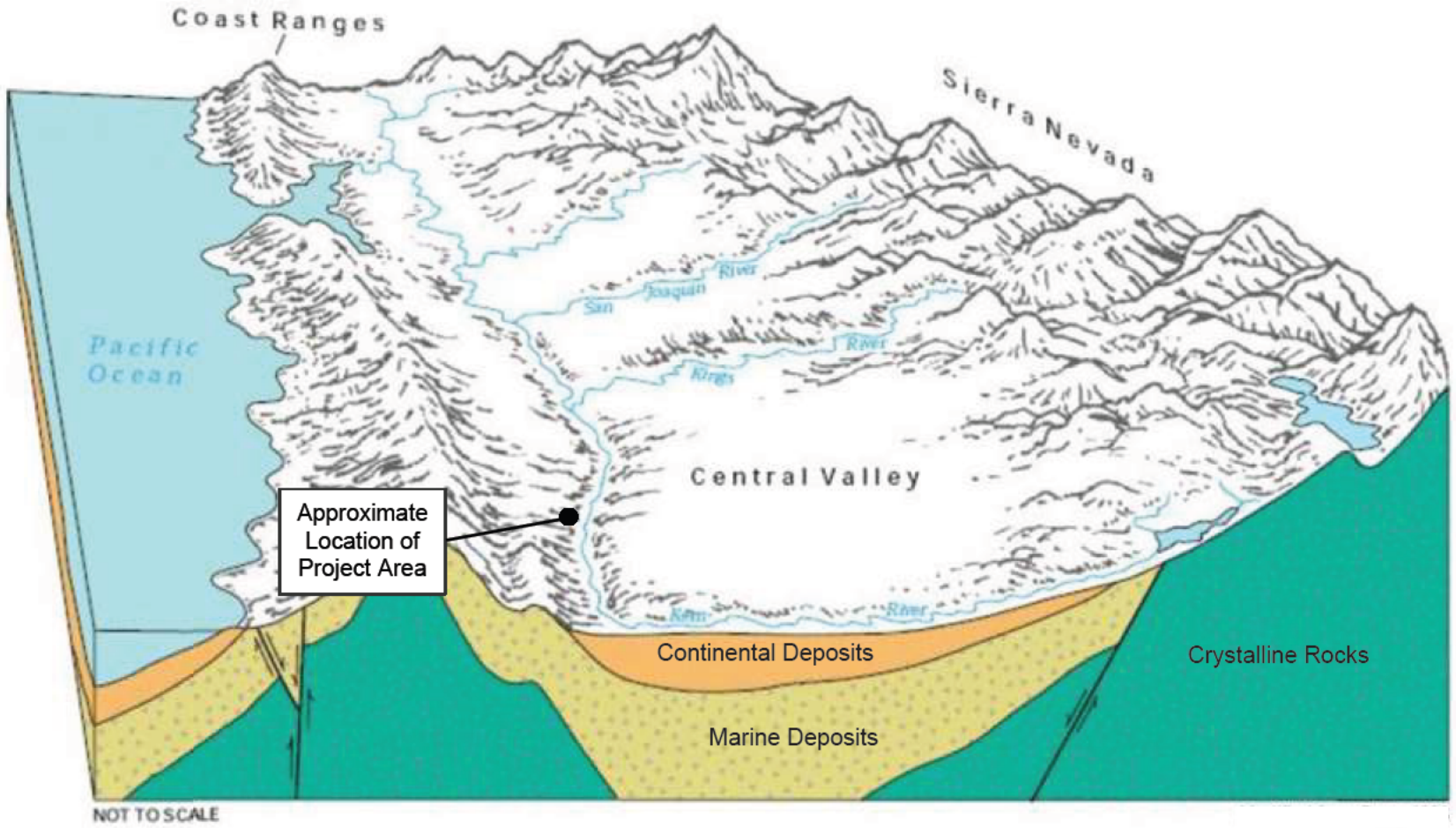


Block Diagram of Central Valley

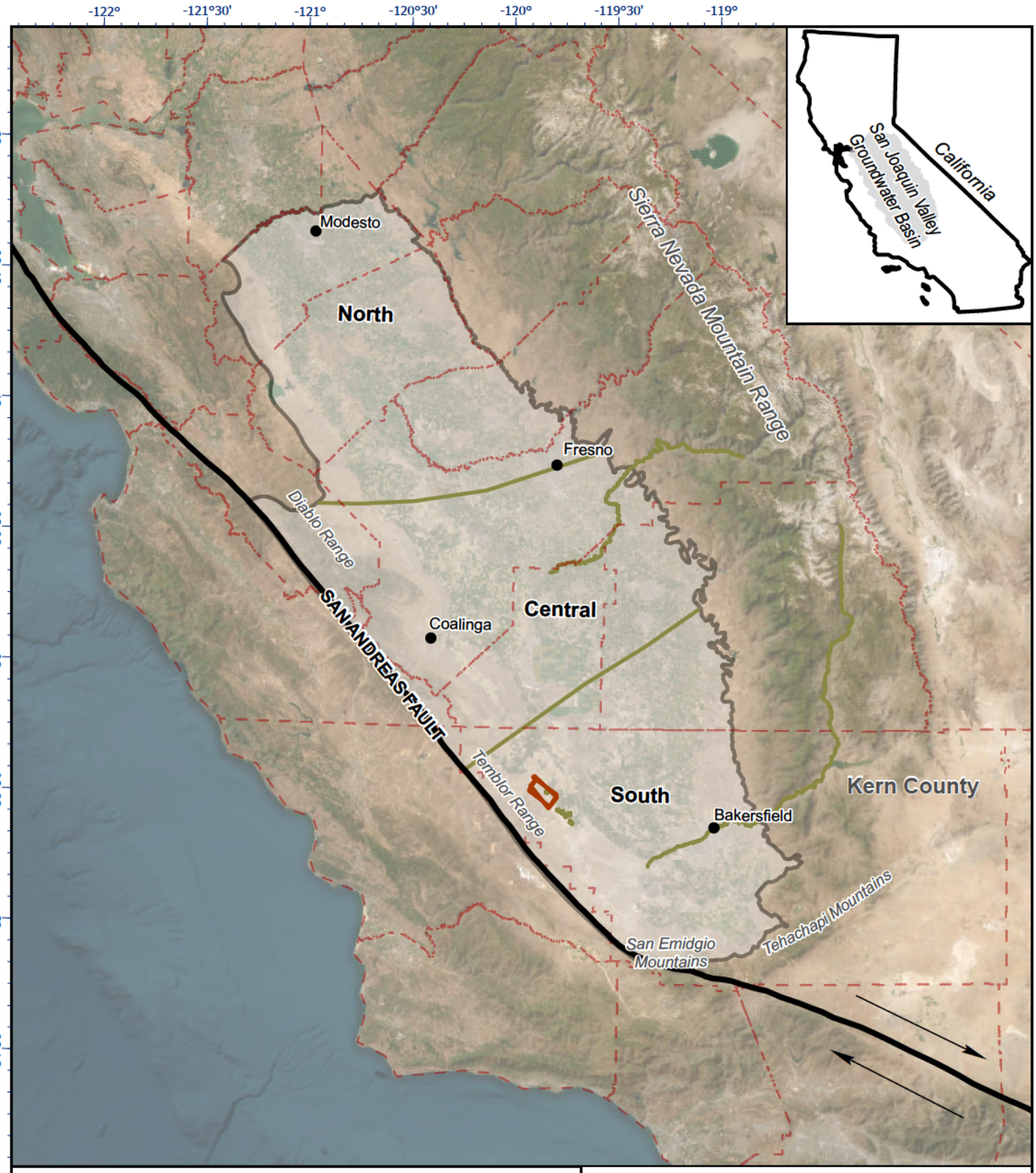
North Belridge Basin
Western Kern County
California

Image reference: Quinn, N.W.T., Wainwright, H.M., and Zhou, Q., 2013, Final Project Report to the California Energy Commission: Potential Impacts of Future Geological Storage of CO2 on the Groundwater Resources in California's Central Valley - Simulations of Deep Basin Pressure Changes and Effects on Shallow Water Resources. October.

CarbonFrontier

CarbonFrontier	December 2023

Figure 2.1-3



Legend

- San Andreas Fault
- Regional Subdivisions
- Area of Interest
- San Joaquin Basin
- County Line

N

0 35 Miles

Source: ESRI_World_Imagery: Earthstar Geographics

San Joaquin Basin and Geographic Zones

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.1-4

CarbonFrontier | December 2023

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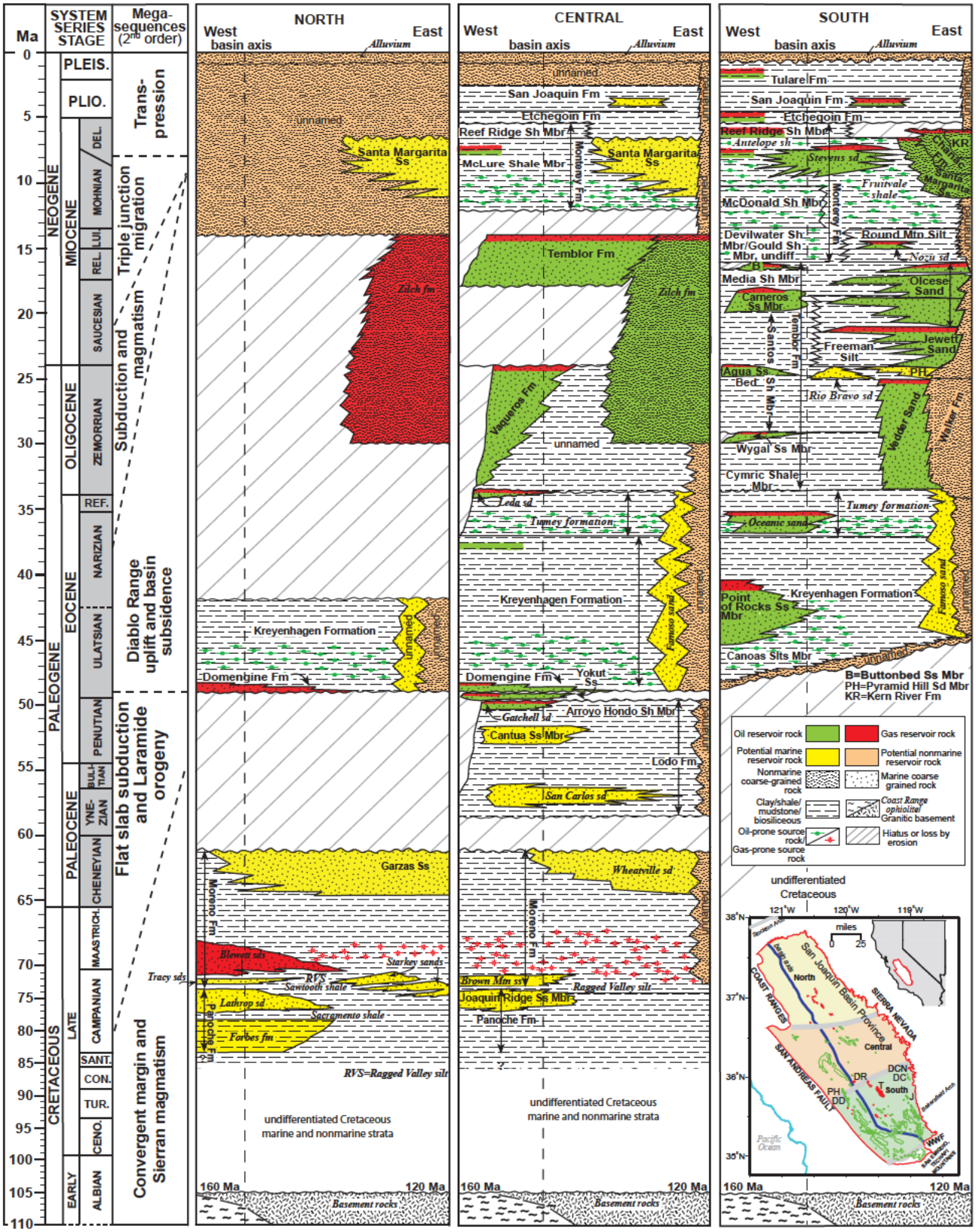
A

SAN JOAQUIN BASIN PROVINCE



Stratigraphic Columns for the San Joaquin Basin

North Beldridge Basin
Western Kern County
California

Image source: Hosford Scheirer and Magoon, 2007

CarbonFrontier

CarbonFrontier | December 2023

Figure 2.1-5

Oligocene Paleogeography of San Joaquin Basin

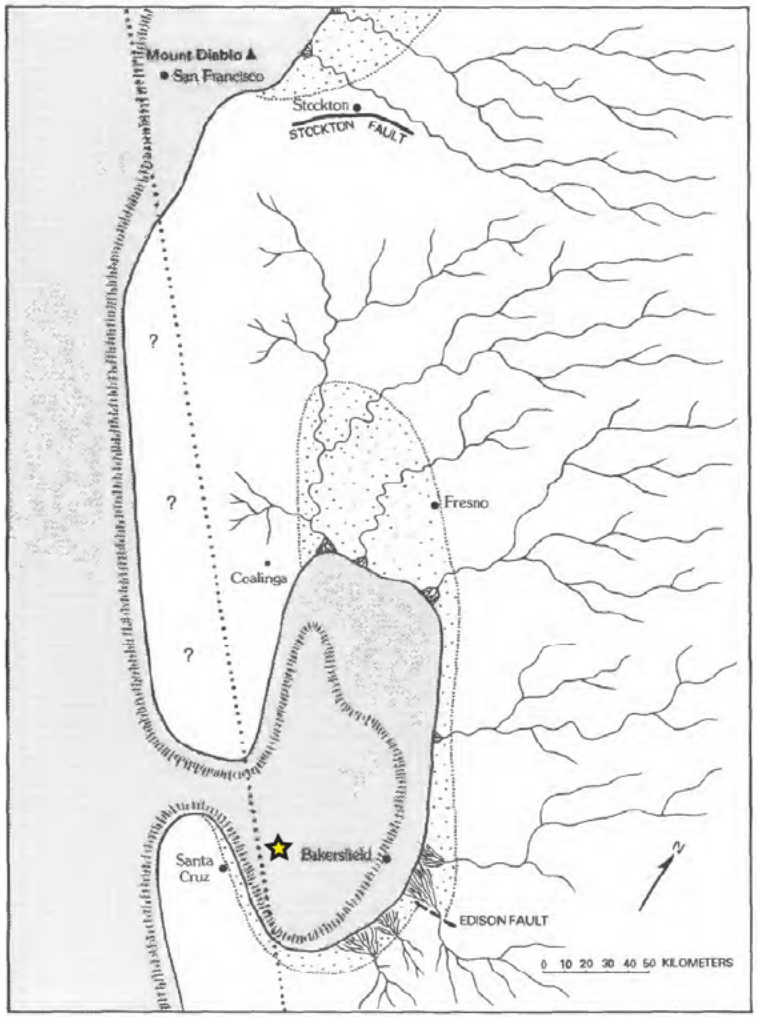
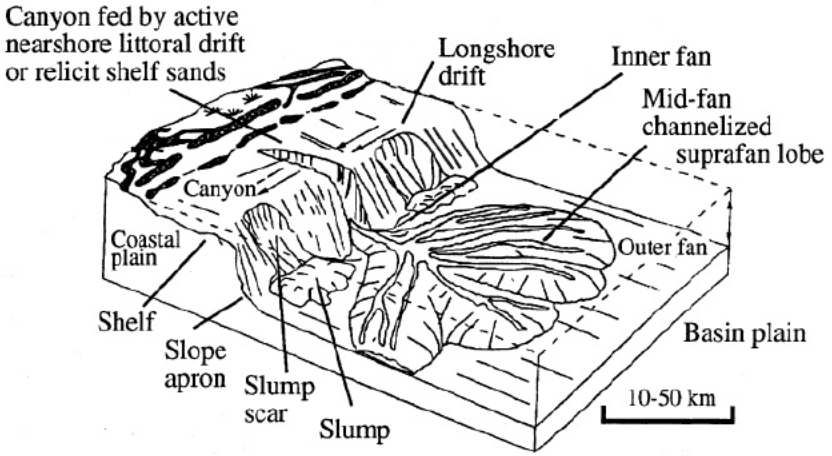


Image source: Bartow, 1991

Generalized Submarine Fan Depositional Environment
Temblor Formation



Modified from: Stow, D., and Mayall, M., 2000,
Deep-water sedimentary systems: New models for the 21st century:
Marine and Petroleum Geology, v. 17, no. 2, p. 125-135.

Legend

- Approximate Project Location
- Future trace of Neogene San Andreas Fault
- Marine Deposits
- Nonmarine Deposition
- Emergent area - Queried where uncertain

Paleogeography and Depositional Environment of San Joaquin Basin

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.1-6

CarbonFrontier	December 2023

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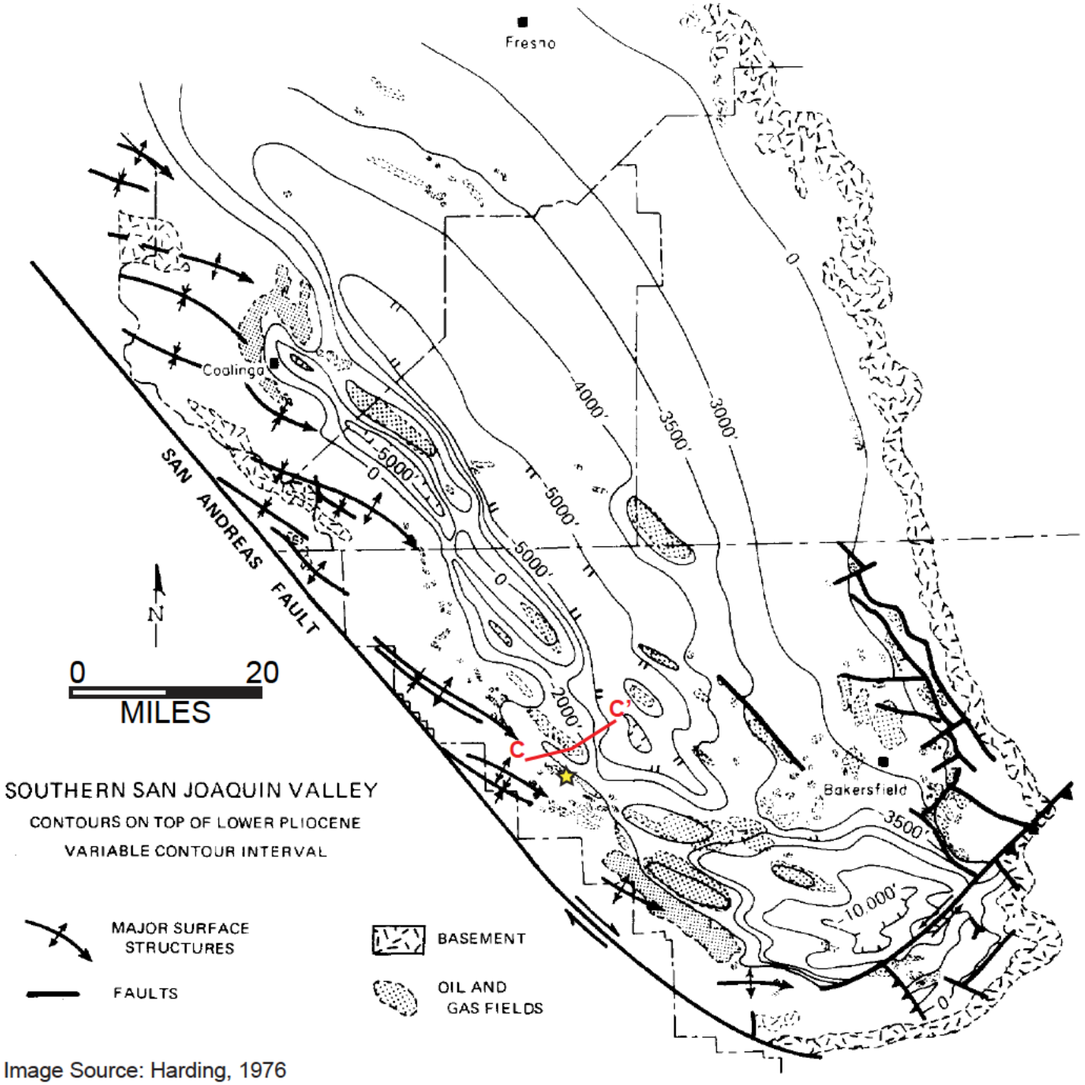
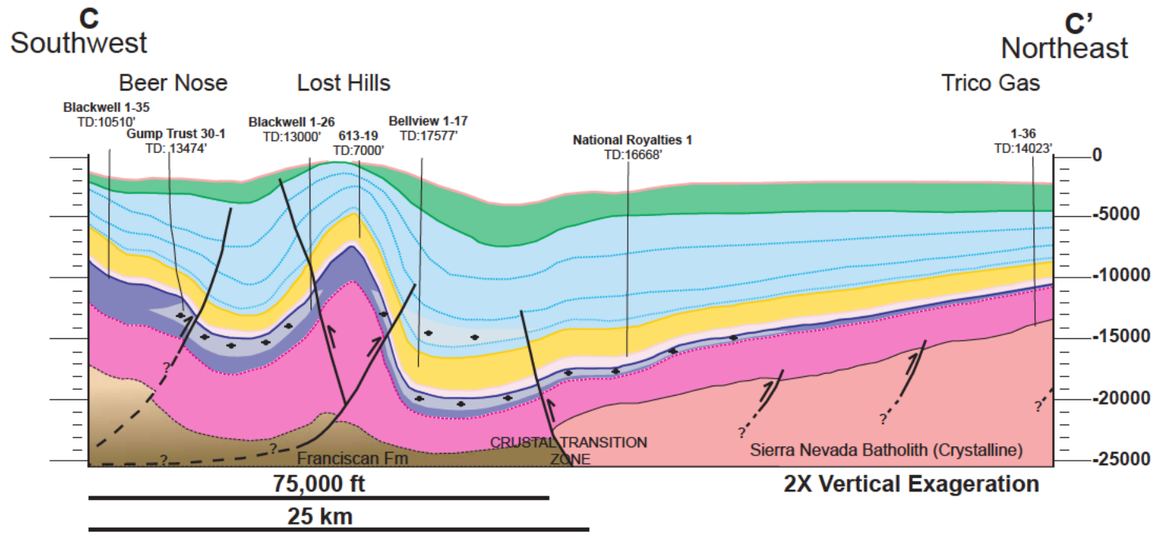
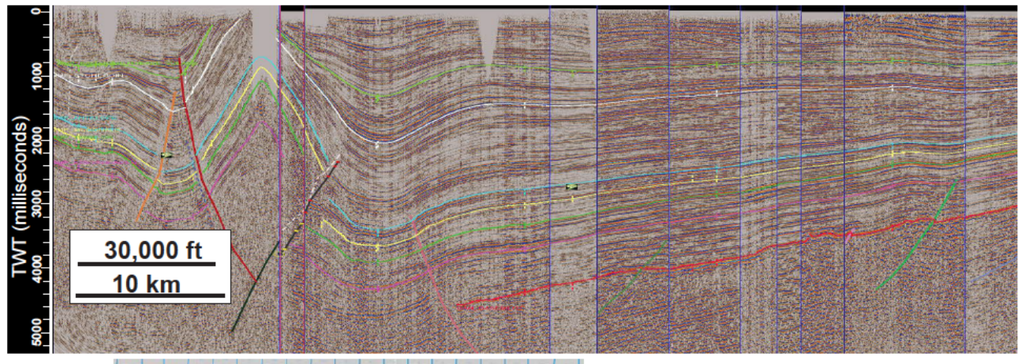
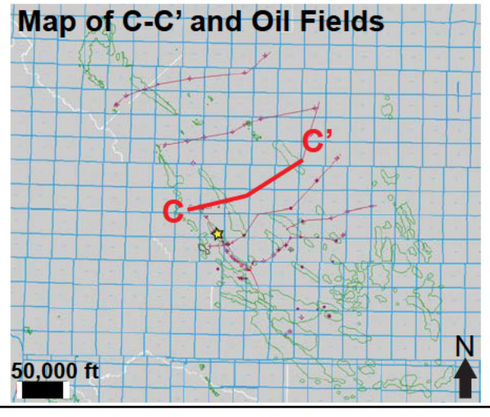


Image Source: Harding, 1976







Well Name	API Number
Blackwell 1-35	04 030 21880
Gump Trust 30-1	04 030 44015
Blackwell 1-26	04 030 19737
613-19	04 029 67687
Bellview 1-17	04 030 10961
National Royalties 1	04 029 25826
1-36	04 107 20246

Legend

- North Belridge Oil Field
- Base of Tulare Fm
- Etchegoin Fm
- Monterey Fm
  - Reef Ridge
  - Antelope
  - Devilwater
- Temblor Fm
- Tumey Fm
- Kreyenhagen Fm
- Cretaceous Sediments
- Thrust Fault
- Mature Oil Zone

Explanation

ft - feet
km - kilometer
TD - total depth
TWT - two way travel time
Fm - Formation
AoI - Area of Interest

Notes:

Ground surface not shown on cross section C-C'.
Legend does not apply to seismic line.
Cross section and seismic line are from outside of the AoI.

Southwestern San Joaquin Fold Belt

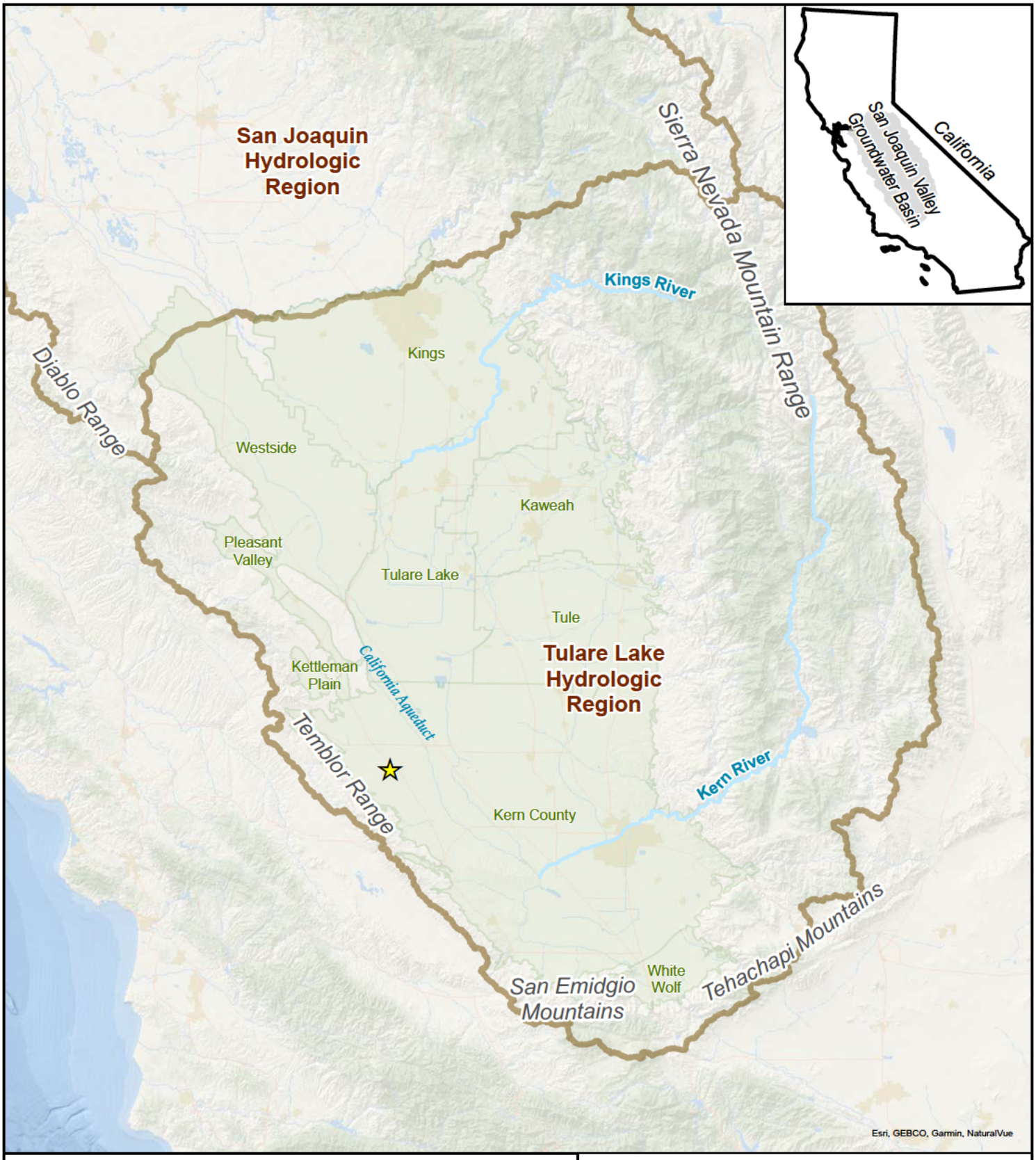
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier | December 2023

Figure 2.1-7

\\santabarbara-01\data\GIS\Aera Belridge CCUS\Projects\Section 2.1 Regional Geology\Illustrator\Fig2.1-7 Southwest SJ Fold Belt.ai



Legend

- Project Location
- Subbasins of the San Joaquin Groundwater Valley Basin
- Hydrologic Region Boundary

N

Source: CAGroundwaterBasins, Bulletin 118, https://services.arcgis.com/aa38u6OgfNoCkTJ6/arcgis/rest/services/CAGroundwaterBasins/FeatureServer. Accessed 04/18/2022.

0 25 Miles

Regional Hydrology

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.1-8

CarbonFrontier | December 2023

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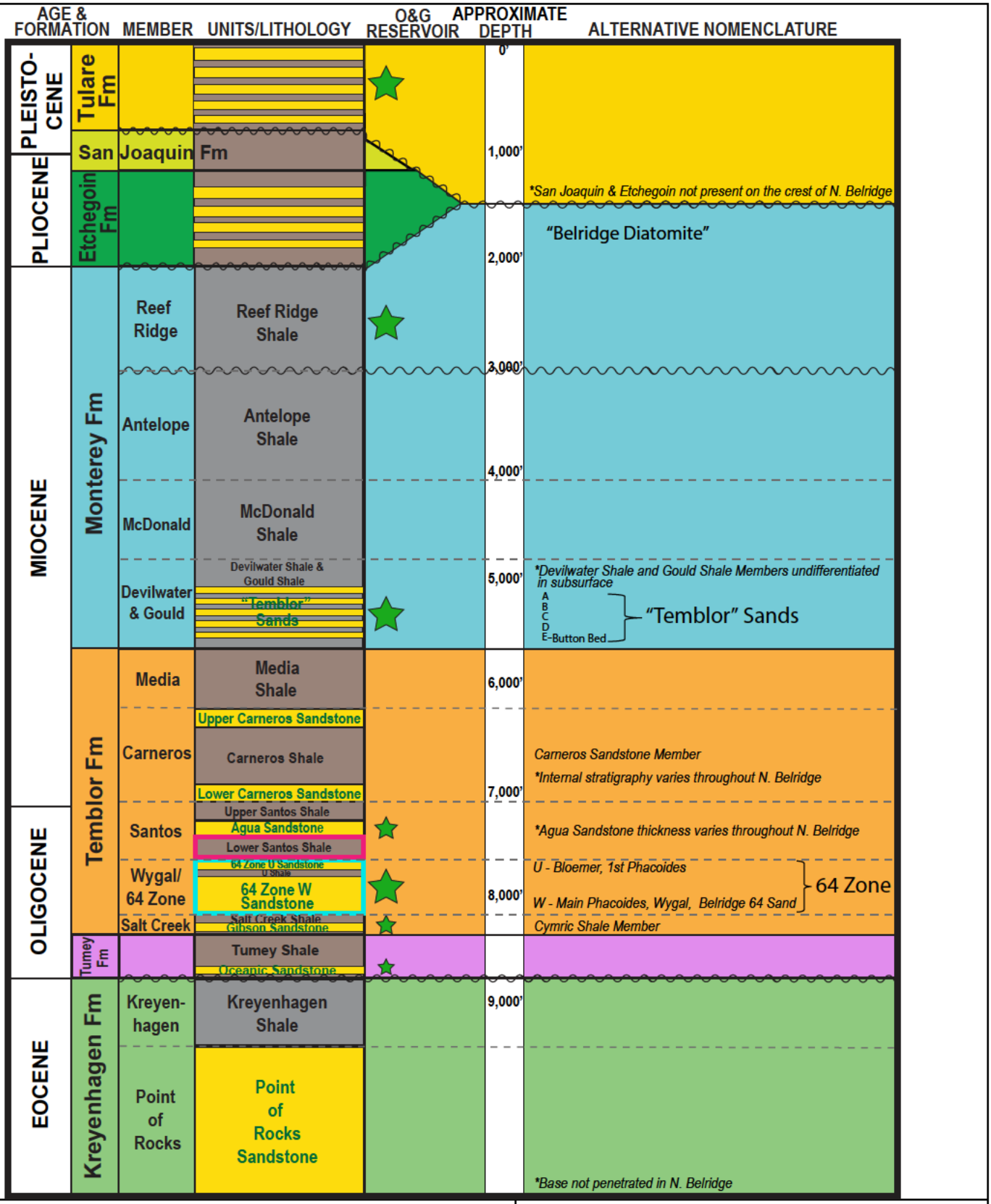


Legend

- Significant Oil and Gas Producing Unit
- Injection Zone
- Primary Confining Zone
- Unconformity
- Formation Boundary
- Member Boundary

Lithology

- Mudstone
- Sandstone
- Siliceous Mudstone

Explanation

O&G - Oil and Gas
Fm - Formation
N. - North

North Belridge Stratigraphic Column

North Belridge Oil Field
Western Kern County
California

Geosyntec consultants

CarbonFrontier | December 2023

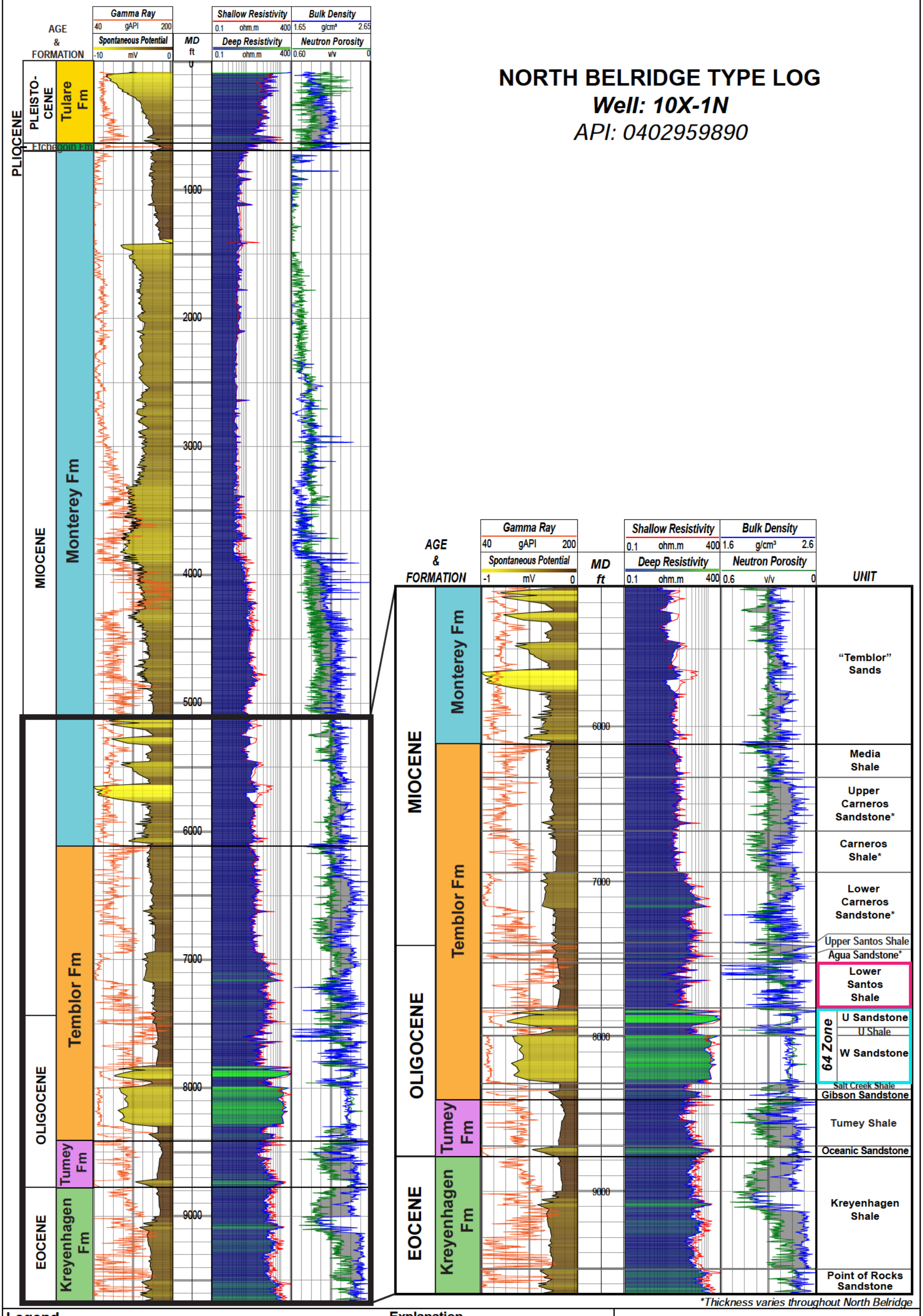
Figure 2.1-9

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.1-9 North Belridge Strat Column.ai

NORTH BELRIDGE TYPE LOG

Well: 10X-1N

API: 0402959890



*Thickness varies throughout North Belridge

Legend

- Gamma Ray
- Spontaneous Potential
- Shallow Resistivity
- Deep Resistivity
- Bulk Density
- Neutron Porosity
- Injection Zone
- Primary Confining Zone

Explanation

gAPI- American Petroleum Institute Gamma Ray Unit
mV - milliVolts
ohm.m - ohm-meters
g/cm³ - grams per cubic centimeter
v/v- volume by volume (ft^3/ft^3)
MD - Measured Depth
ft - Feet

North Belridge Type Log

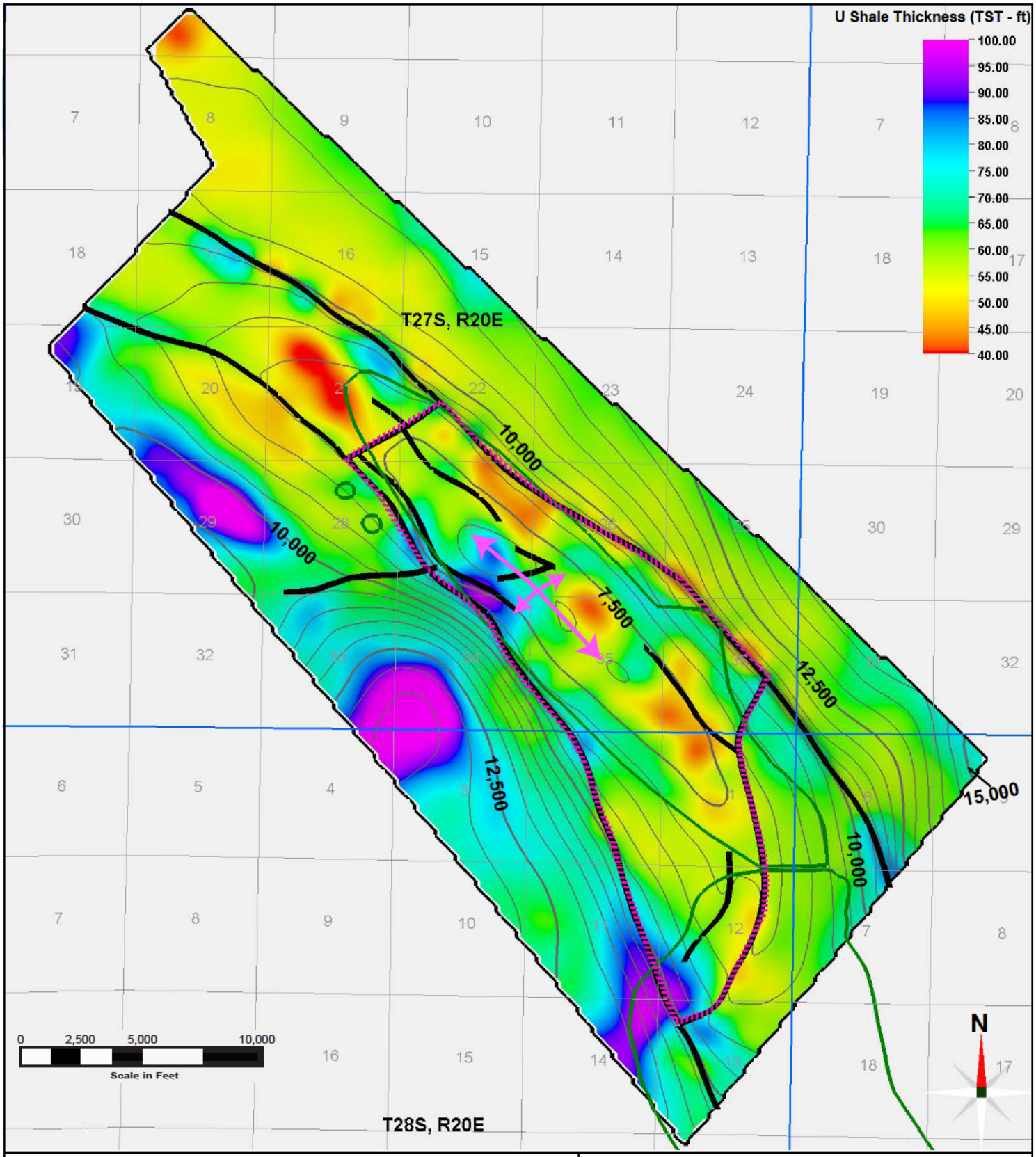
North Belridge Oil Field
Western Kern County
California

Geosyntec consultants

CarbonFrontier | December 2023

Figure 2.1-10

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig1.3-2 North Belridge Type Log.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:
ft - feet
TST - true stratigraphic thickness
CI - contour interval

Notes:
Thickness maps derived from well and seismic data.
Surface artifacts due to interpolation across faults and structural model grid.

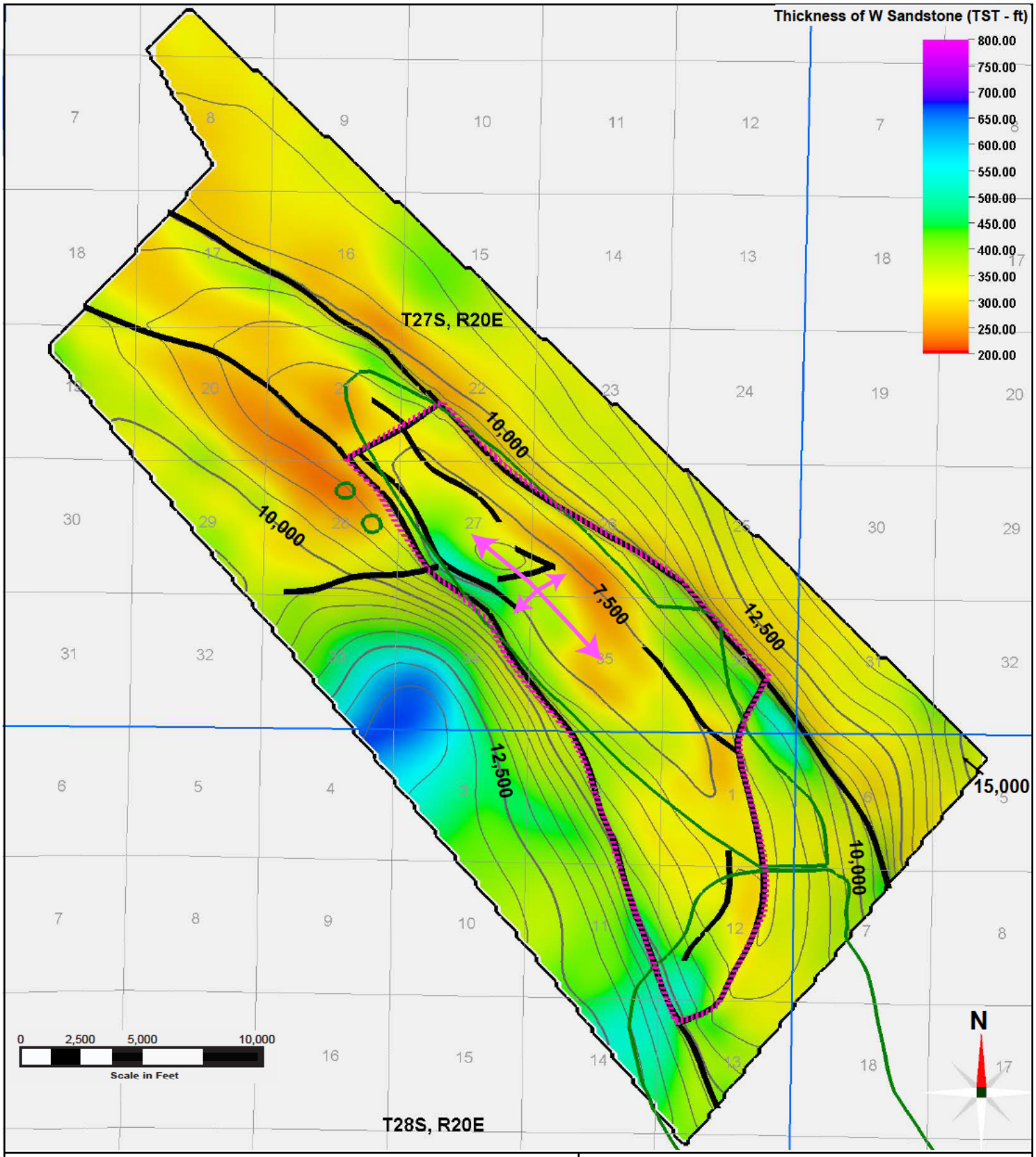
True Stratigraphic Thickness of U Shale
North Belridge Oil Field
Western Kern County
California

Geosyntec consultants

CarbonFrontier | December 2023

Figure 2.1-11

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.1-11 TST of U Shale.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:
ft - feet
TST - true stratigraphic thickness
CI - contour interval

Notes:
Thickness maps derived from well and seismic data.
Surface artifacts due to interpolation across faults and structural model grid.

True Stratigraphic Thickness of W Sandstone
North Belridge Oil Field
Western Kern County
California

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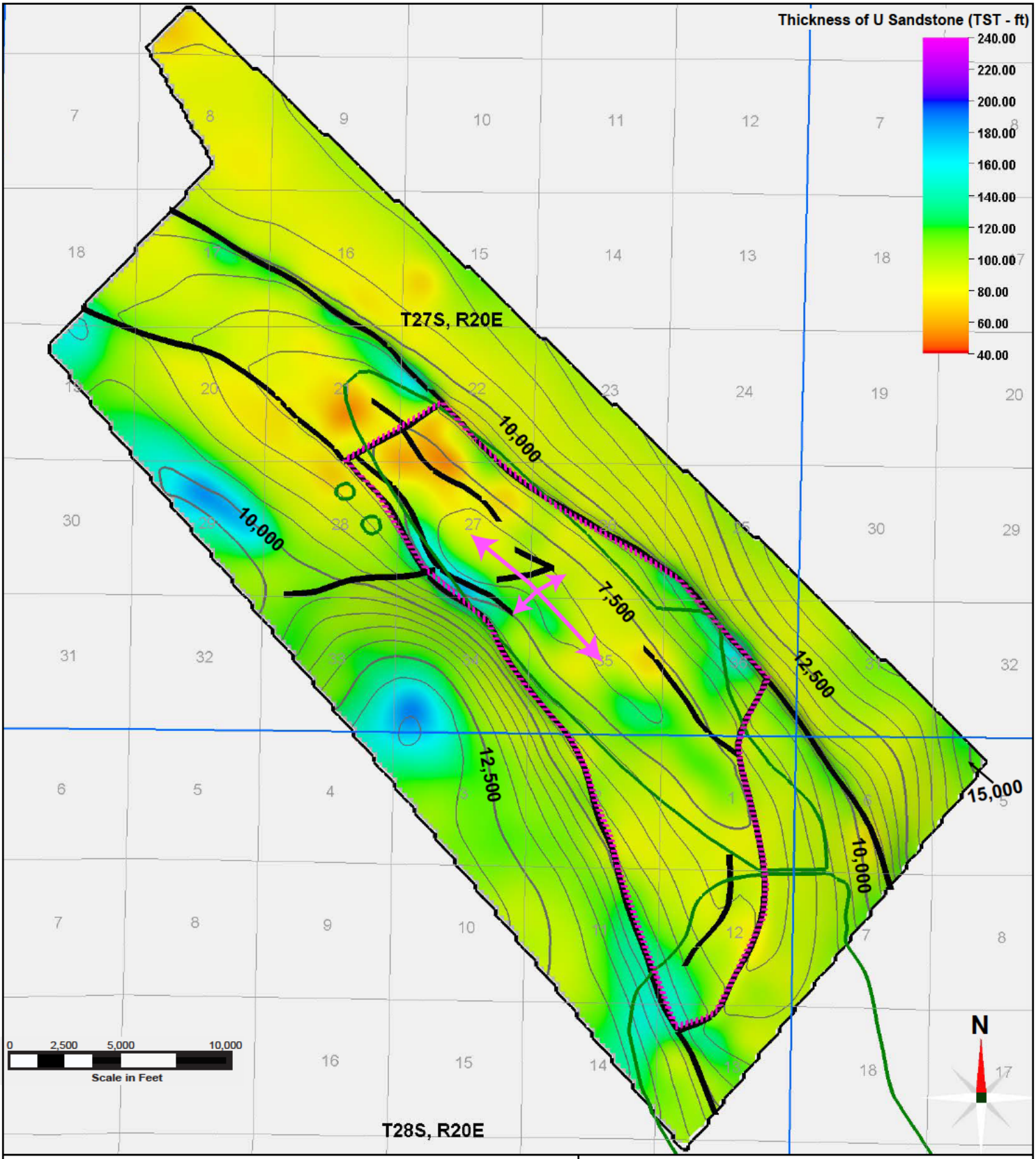
Figure 2.1-12

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.1-12 TST of W Sandstone.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:
ft - feet
TST - true stratigraphic thickness
CI - contour interval

Notes:
Thickness maps derived from well and seismic data.
Surface artifacts due to interpolation across faults and structural model grid.

True Stratigraphic Thickness of U Sandstone

North Belridge Oil Field
Western Kern County
California

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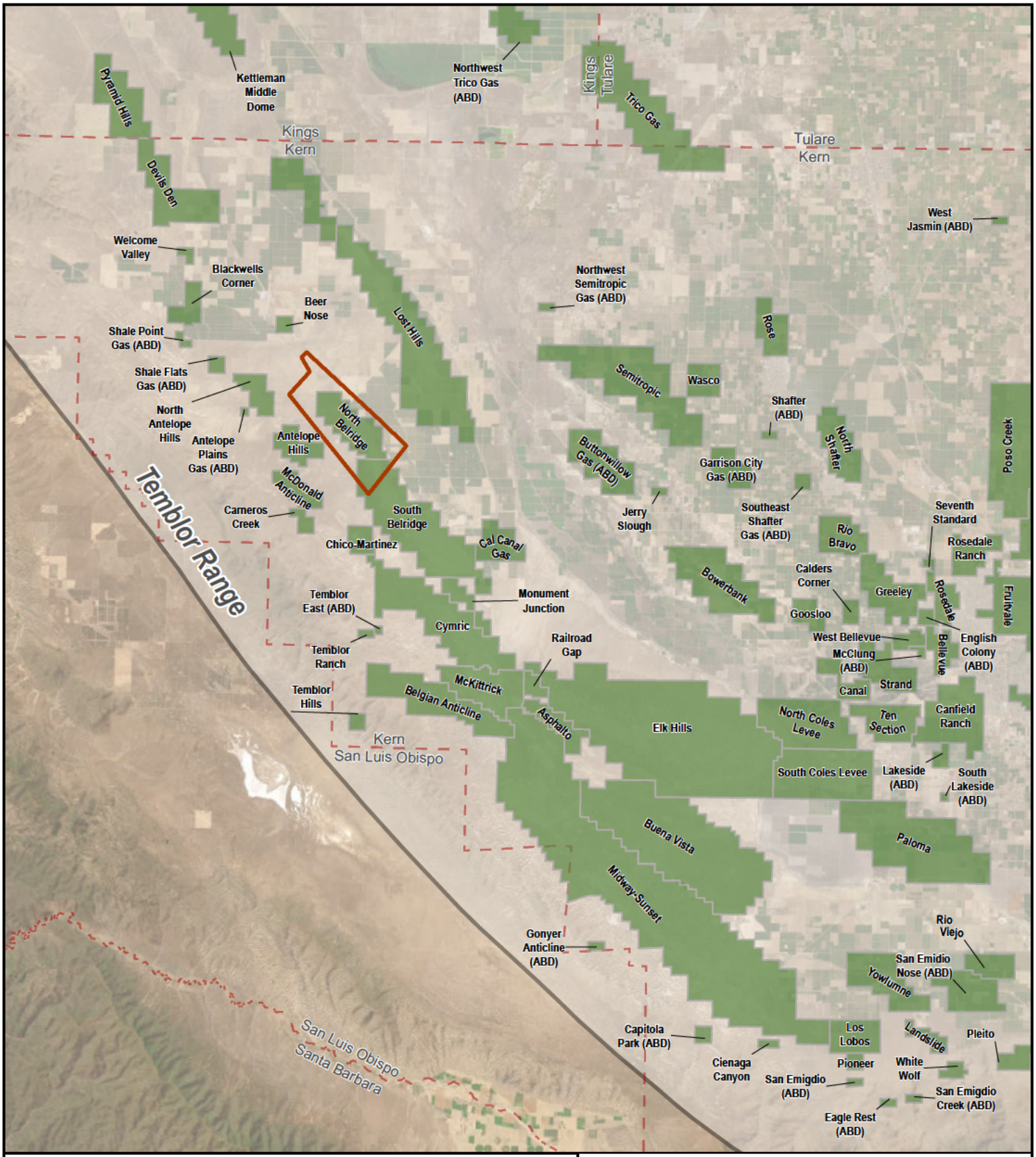
Figure 2.1-13

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.1-13 TST of U Sandstone.ai



Legend

- Area of Interest
- San Joaquin Basin
- North/South Belridge Administrative Boundary
- County Line

N

Source: San Joaquin Basin Data Downloads 1995 National Oil and Gas Archive - https://certmapper.cr.usgs.gov/data/apps/noga-data/?provcode=5010, Accessed 03-23-2022.

0 8 Miles

Southwestern San Joaquin Basin Oil Fields

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.1-14

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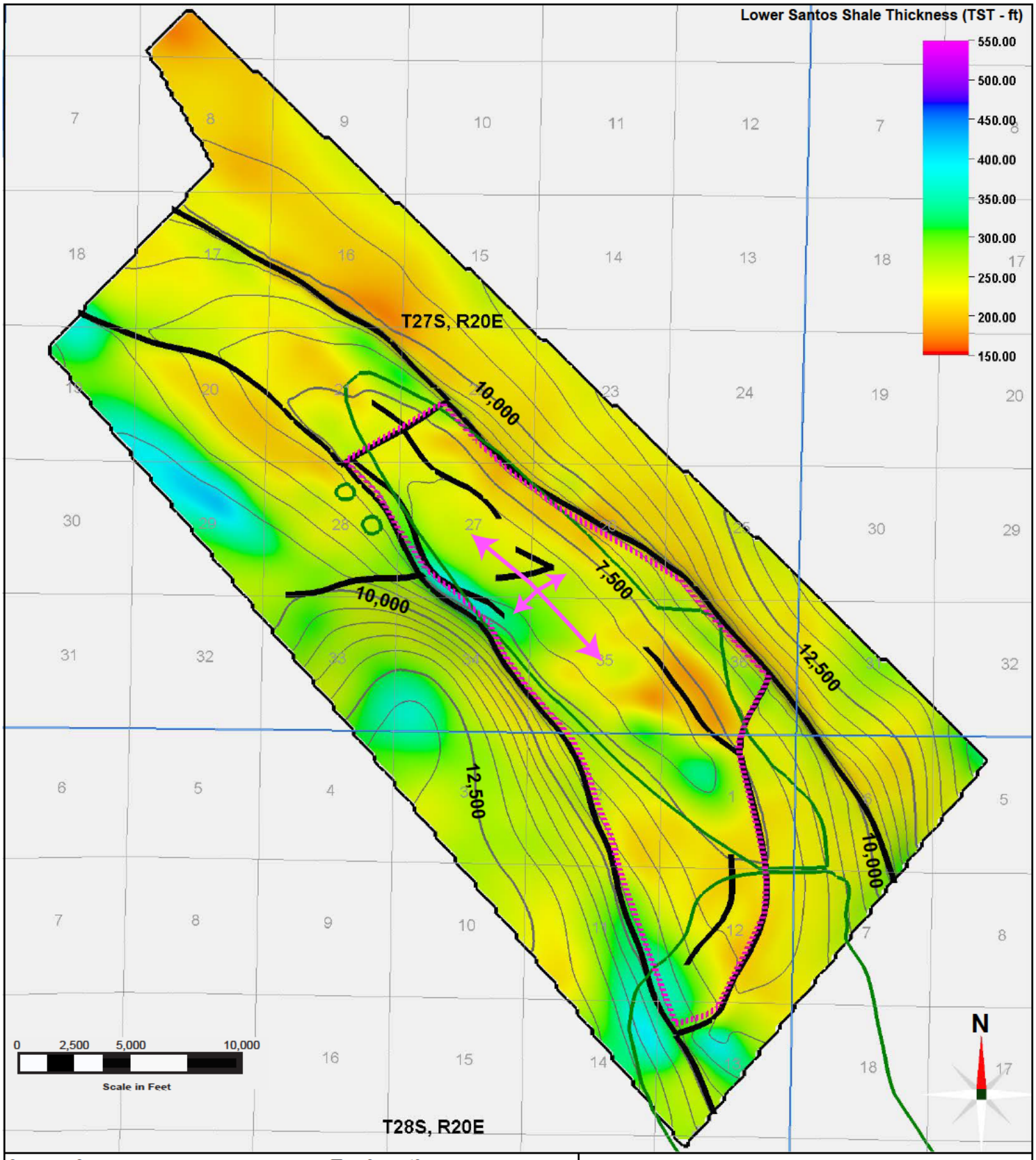
SantaBarbara-01\P:\GIS\Aera Belridge CCUS\Projects\EPA Response\Section 2.1 Regional Geology\Section 2.1 Regional Geology.aprx 12/15/2023 (Author: MBradford) 11:32 AM



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:
ft - feet
TST - true stratigraphic thickness
CI - contour interval

Notes:
Thickness maps derived from well and seismic data. Surface artifacts due to interpolation across faults and structural model grid.

True Stratigraphic Thickness of Lower Santos Shale
North Belridge Oil Field
Western Kern County
California

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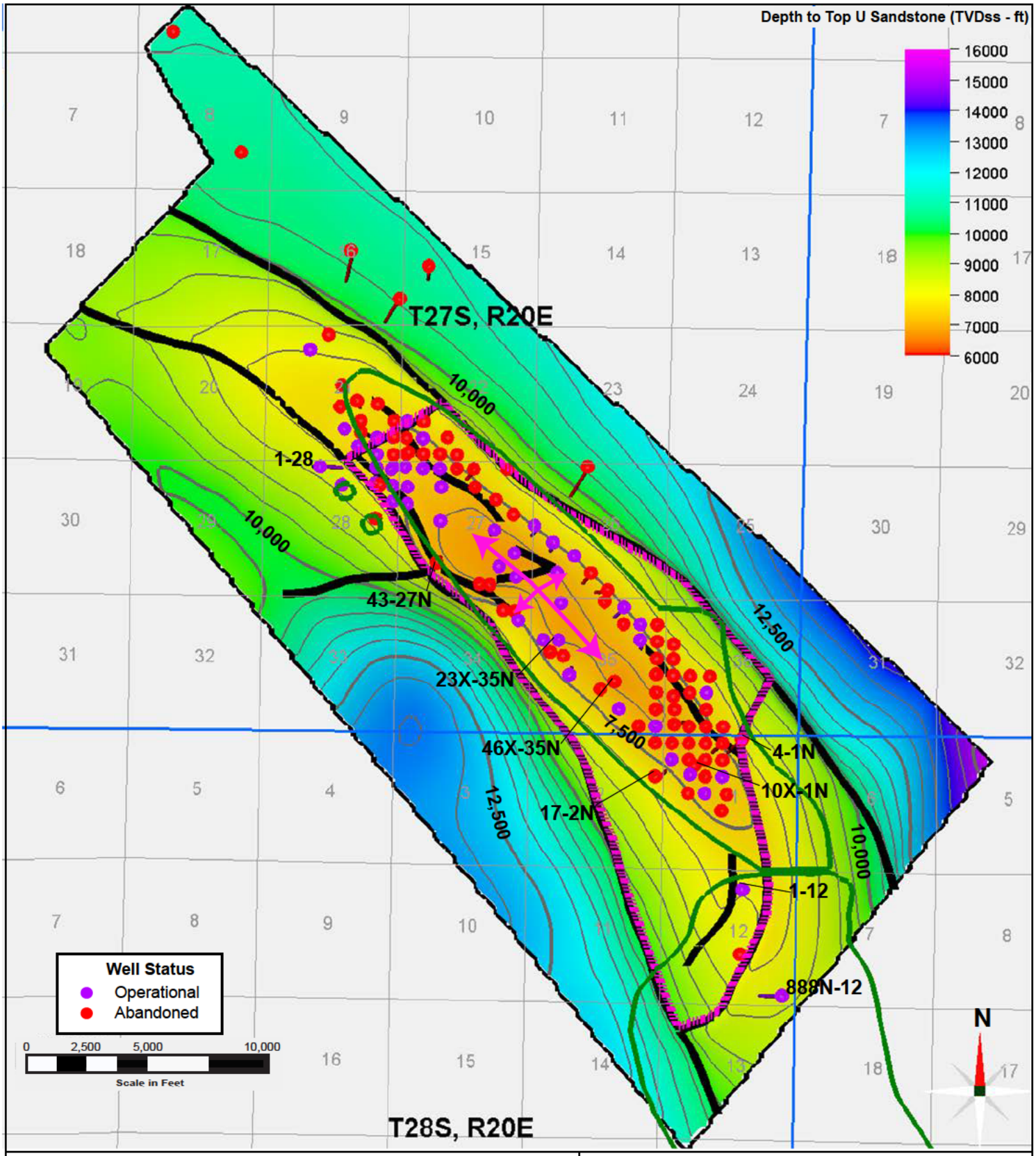
Figure 2.1-15

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.1-15 TST of Lower Santos Shale.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:
ft - feet
TVDss - true vertical depth sub sea (ft)
CI - contour interval

Notes:
Surface artifacts due to interpolation across faults and structural model grid. Complete well list in Appendix 2B.

64 Zone Well Penetrations within the Area of Interest
North Belridge Oil Field
Western Kern County
California

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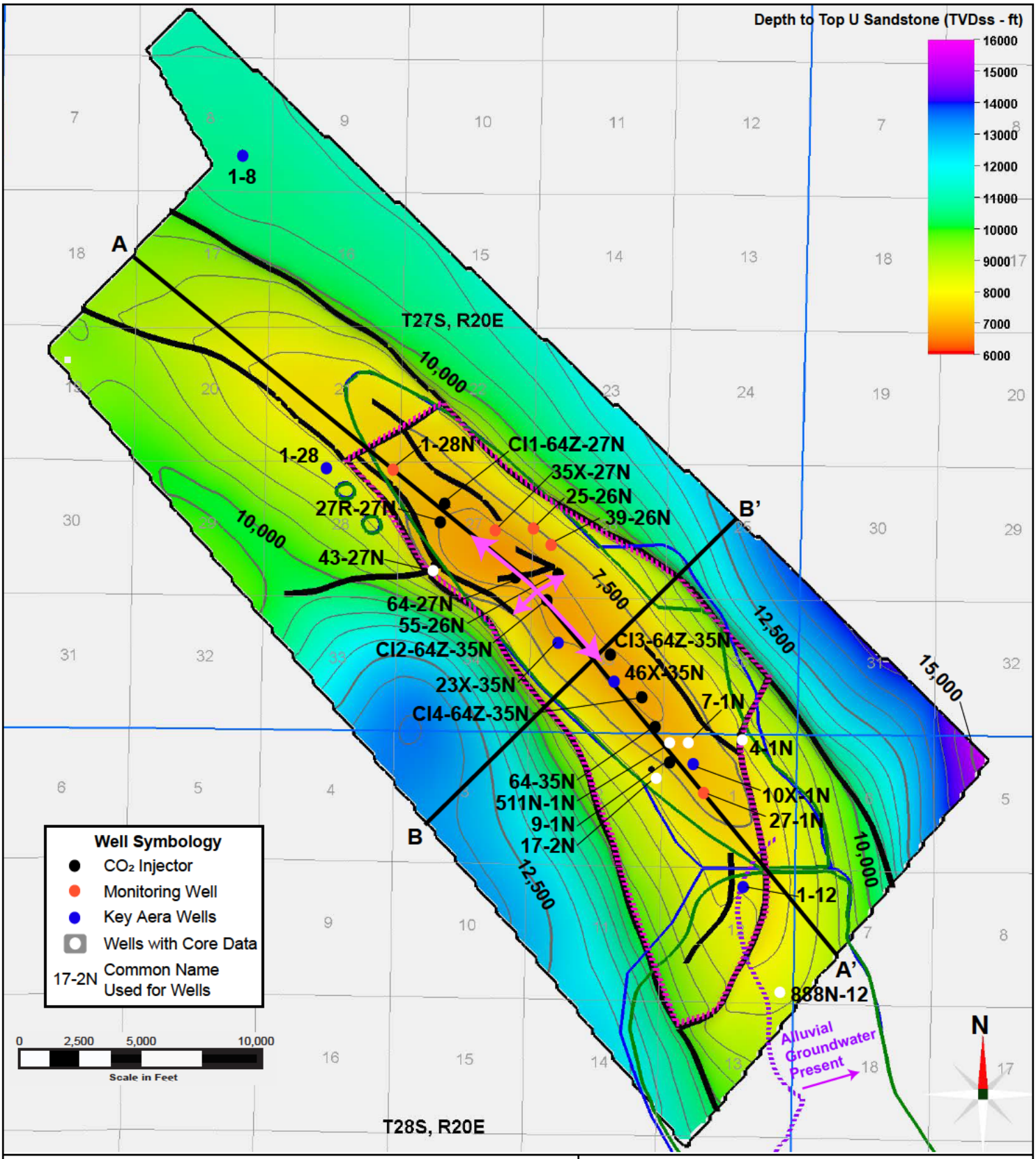
Figure 2.2-1

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.2-1 64 Zone Wells in AoI.ai



Legend

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- Area of Review
- 1973/74 Oil Field Boundaries and Aquifer Exempt Areas
- Fault Traces
- Elevation Contours (500 ft CI)
- Tulare Aquifer Exempt Areas
- Alluvial Groundwater Extent
- Anticline Axis

Explanation:
ft - feet
TVDss - true vertical depth sub sea (ft)
CI - contour interval

Notes:
Surface artifacts due to interpolation across faults and structural model

64 Zone Structure Map

North Belridge Oil Field
Western Kern County
California

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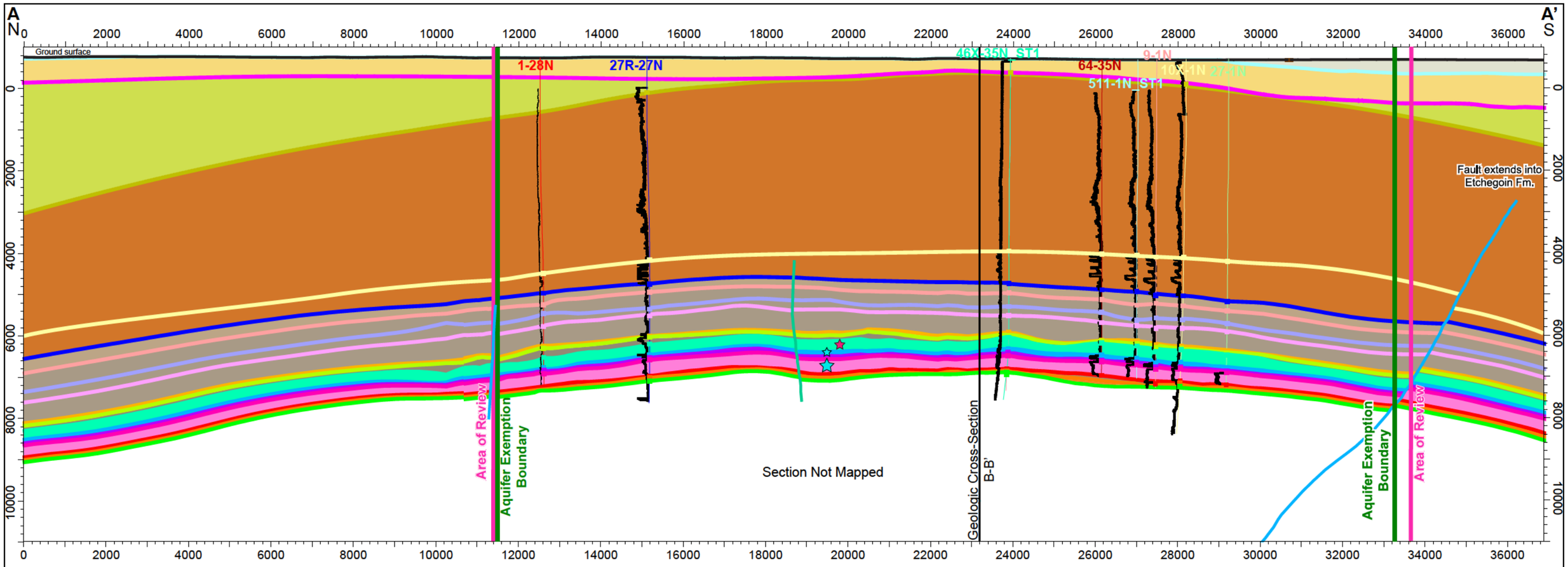
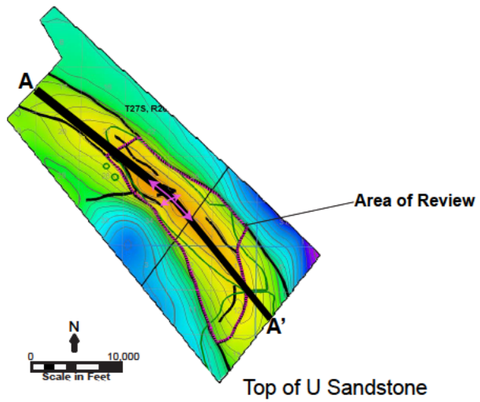
Figure 2.2-2

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.2-2 64 Zone Structural Map.ai





Top of U Sandstone

Legend

- Injection Unit
- Primary Confining Unit
- Northern Crestal Fault (2)
- Central Crestal Fault (2)
- MB13
- Alluvium
- Tulare Fm
- San Joaquin Fm
- Etchegoin Fm
- Monterey Fm

Temblor Fm

- Media Shale Member
- Carneros Member
- Santos Shale Member
- *Upper Santos Shale*
- *Agua Sandstone*
- *Lower Santos Shale*

64 Zone

- *U Sandstone*
- *U Shale*
- *W Sandstone*
- Salt Creek Shale
- Gibson Sandstone

Interpreted Seismic Surfaces

- Base of Alluvium
- Base of Tulare Fm
- Base of San Joaquin Fm
- Base of Etchegoin Fm
- Top of Temblor Sands
- Top of Media Shale
- Top of Upper Carneros
- Top of Carneros Shale
- Top of Lower Carneros
- Top of Upper Santos Shale
- Top of Agua Sandstone
- Top of Lower Santos Shale
- Top of U Sandstone
- Top of U Shale
- Top of W Sandstone
- Top of Salt Creek Shale
- Top of Gibson Sandstone
- Top of Tumey Fm

Explanation:
Fm - Formation
ft TVDSS - feet True Vertical Depth sub-sea level

Geologic Cross-Section of North Belridge Anticline Axis (A-A')
North Belridge Oil Field
Western Kern County
California

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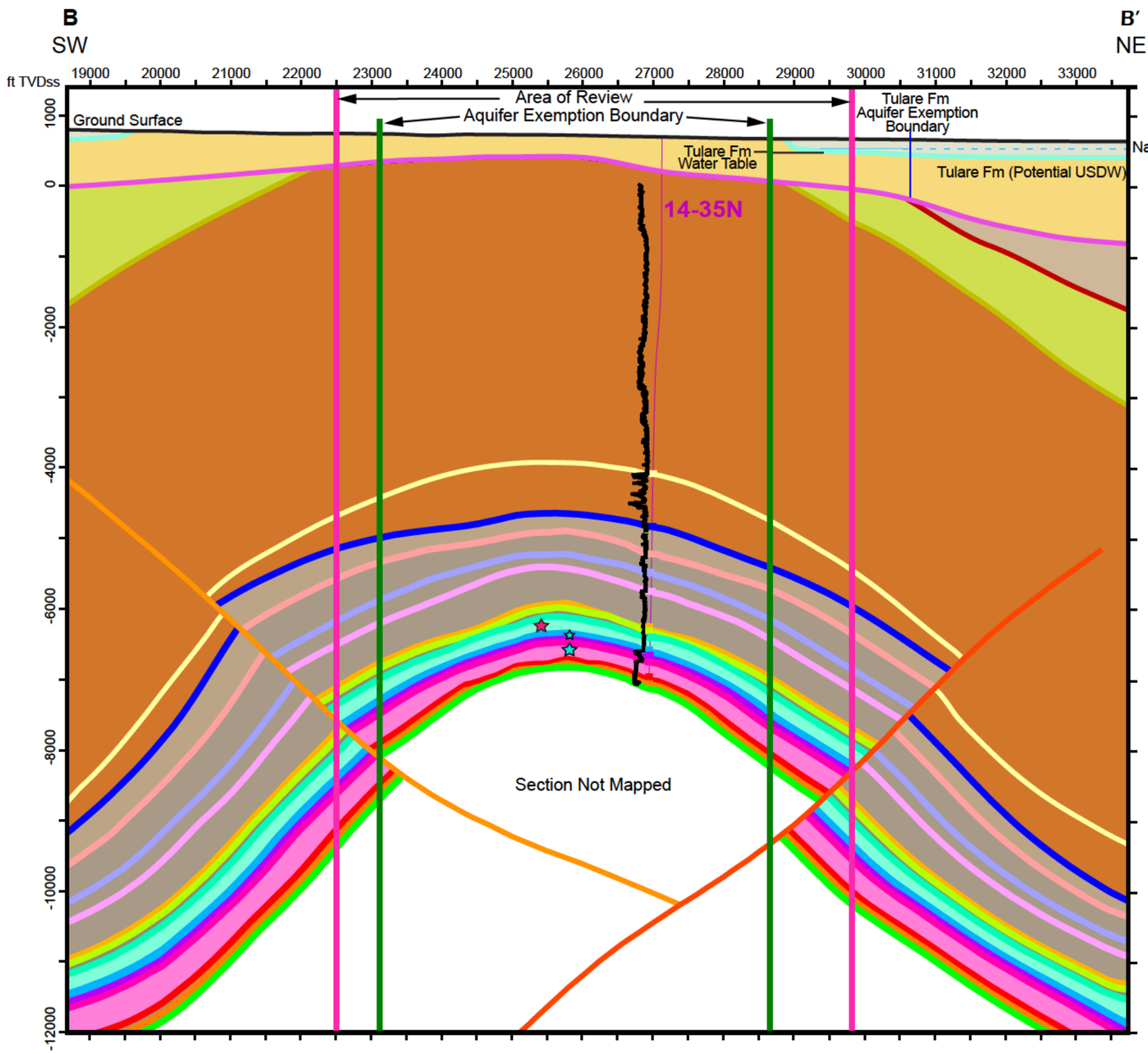
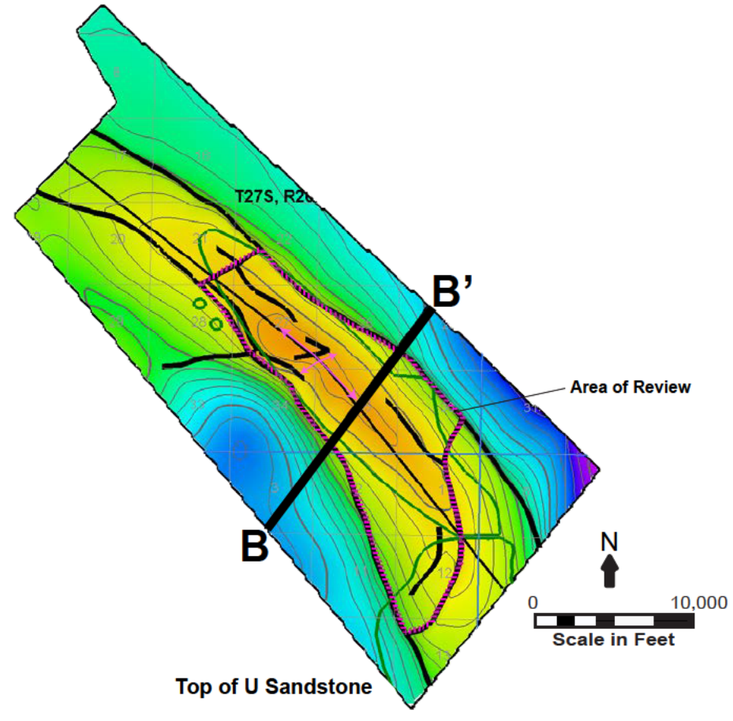
Figure 2.2-3

C:\Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\Illustrator\Narrative_Fig2.2-3 Cross-Section A-A'.ai





Legend

- Injection Unit
- Primary Confining Unit
- West Bounding Thrust Fault
- East Bounding Thrust Fault

Temblor Fm

- Alluvium
- Tulare Fm
- San Joaquin Fm
- Etchegoin Fm
- Monterey Fm
- Media Shale Member
- Carneros Member
- Santos Shale Member
- *Upper Santos Shale*
- *Agua Sandstone*
- *Lower Santos Shale*
- 64 Zone
- *U Sandstone*
- *U Shale*
- *W Sandstone*
- Salt Creek Shale
- Gibson Sandstone

Interpreted Seismic Surfaces

- Base of Alluvium
- Base of Tulare Fm
- Base of San Joaquin Fm
- Base of Etchegoin Fm
- Top of Temblor Sands
- Top of Media Shale
- Top of Upper Carneros
- Top of Carneros Shale
- Top of Lower Carneros
- Top of Upper Santos Shale
- Top of Agua Sandstone
- Top of Lower Santos Shale
- Top of U Sandstone
- Top of U Shale
- Top of W Sandstone
- Top of Salt Creek Shale
- Top of Gibson Sandstone
- Top of Tumey Fm

Notes:
SP logs shown for key wells.

Explanation:
Fm - Formation
ft TVDSS - feet True Vertical Depth sub-sea level

Geologic Cross-Section B-B’

North Belridge Oil Field
Western Kern County
California

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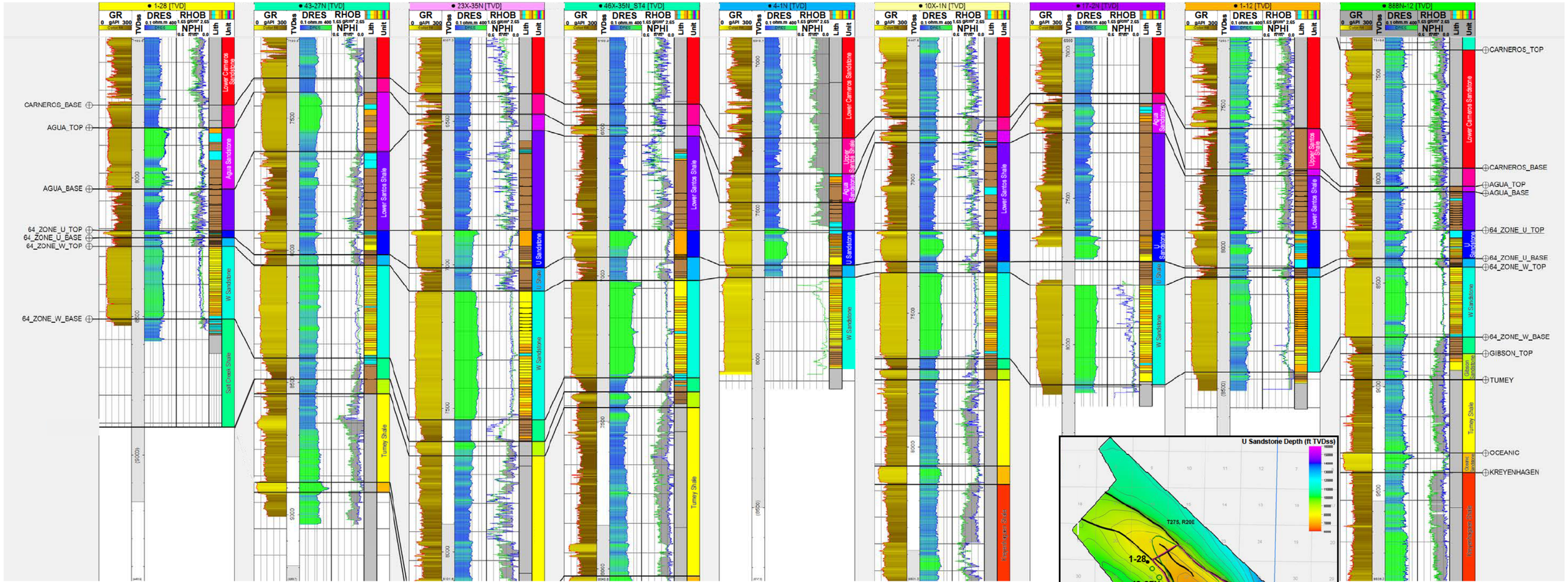
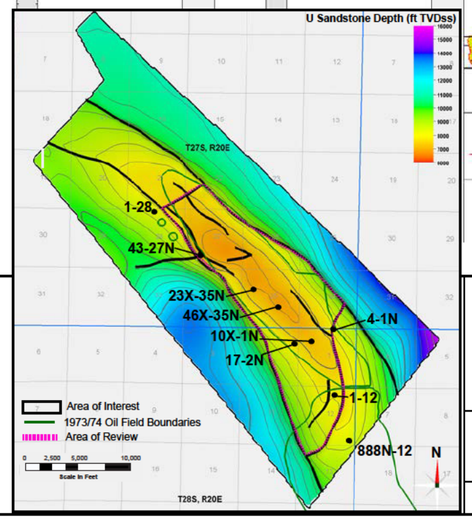
Figure 2.2-4

C:\Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\Illustrator\Narrative_Fig2.2-4 Cross-Section B-B'.ai





Legend

- Gamma Ray
- Deep Resistivity
- Bulk Density
- Neutron Porosity

Predicted Lithofacies

- Mudstone
- Silty Sand
- Sand
- Cemented Interval
- Undifferentiated

Unit

- Carneros Shale
- Lower Carneros Sandstone
- Upper Santos Shale
- Agua Sandstone
- Lower Santos Shale
- U Sandstone
- U Shale
- W Sandstone
- Salt Creek Shale
- Gibson Sandstone
- Tumey Shale
- Oceanic Sandstone
- Kreyenhagen Shale

Explanation

TVD = True Vertical Depth
GR = Gamma Ray Log
gAPI = API gamma ray unit
TVDss = True vertical depth sub sea (ft)
ft = feet
DRES = Deep Resitivity
ohm.m = ohm-meter
RHOB = Bulk Density
g/cm³ = grams per cubic centimeter
NPHI = Neutron Porosity
ft³/ft³ = cubic ft per cubic ft
Lith = Lithofacies prediction from well log modeling

Petrophysical Logs from Key Wells

North Belridge Oil Field
Western Kern County
California

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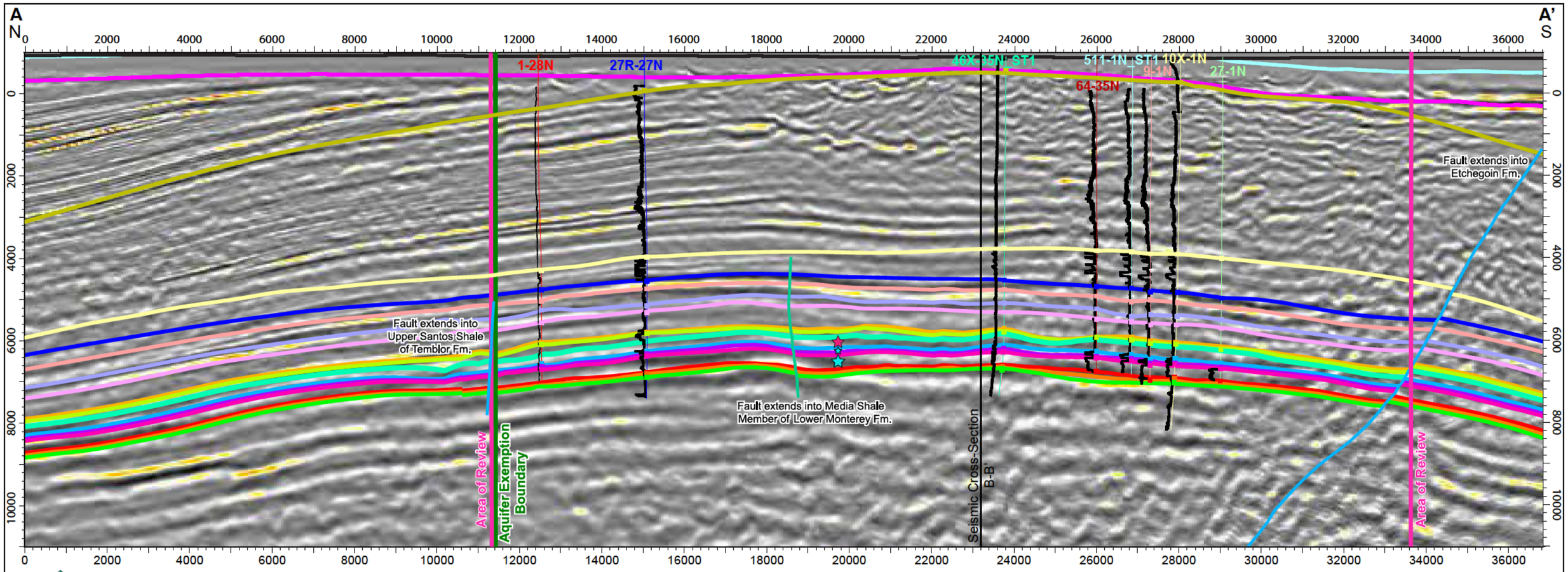
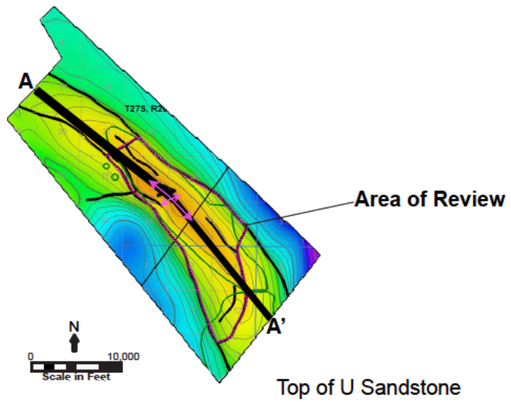
Figure 2.2-5





Top of U Sandstone

Legend

- Injection Unit
- Primary Confining Unit
- Northern Crestal Fault (2)
- Central Crestal Fault (2)
- MB13

- Base of Alluvium
- Base of Tulare Fm
- Base of San Joaquin Fm
- Base of Etchegoin Fm
- Top of Temblor Sands
- Top of Media Shale

Interpreted Seismic Surfaces

- Top of Upper Carneros
- Top of Carneros Shale
- Top of Lower Carneros
- Top of Upper Santos Shale
- Top of Agua Sandstone
- Top of Lower Santos Shale
- Top of U Sandstone
- Top of U Shale
- Top of W Sandstone
- Top of Salt Creek Shale
- Top of Gibson Sandstone
- Top of Tumey Fm

Notes:
Vertical axis in feet True Vertical Depth sub-sea level.
SP logs shown for key wells.

Explanation:
Fm - Formation

Seismic Cross-Section of North Belridge Anticline Axis (A-A')

North Belridge Oil Field
Western Kern County
California

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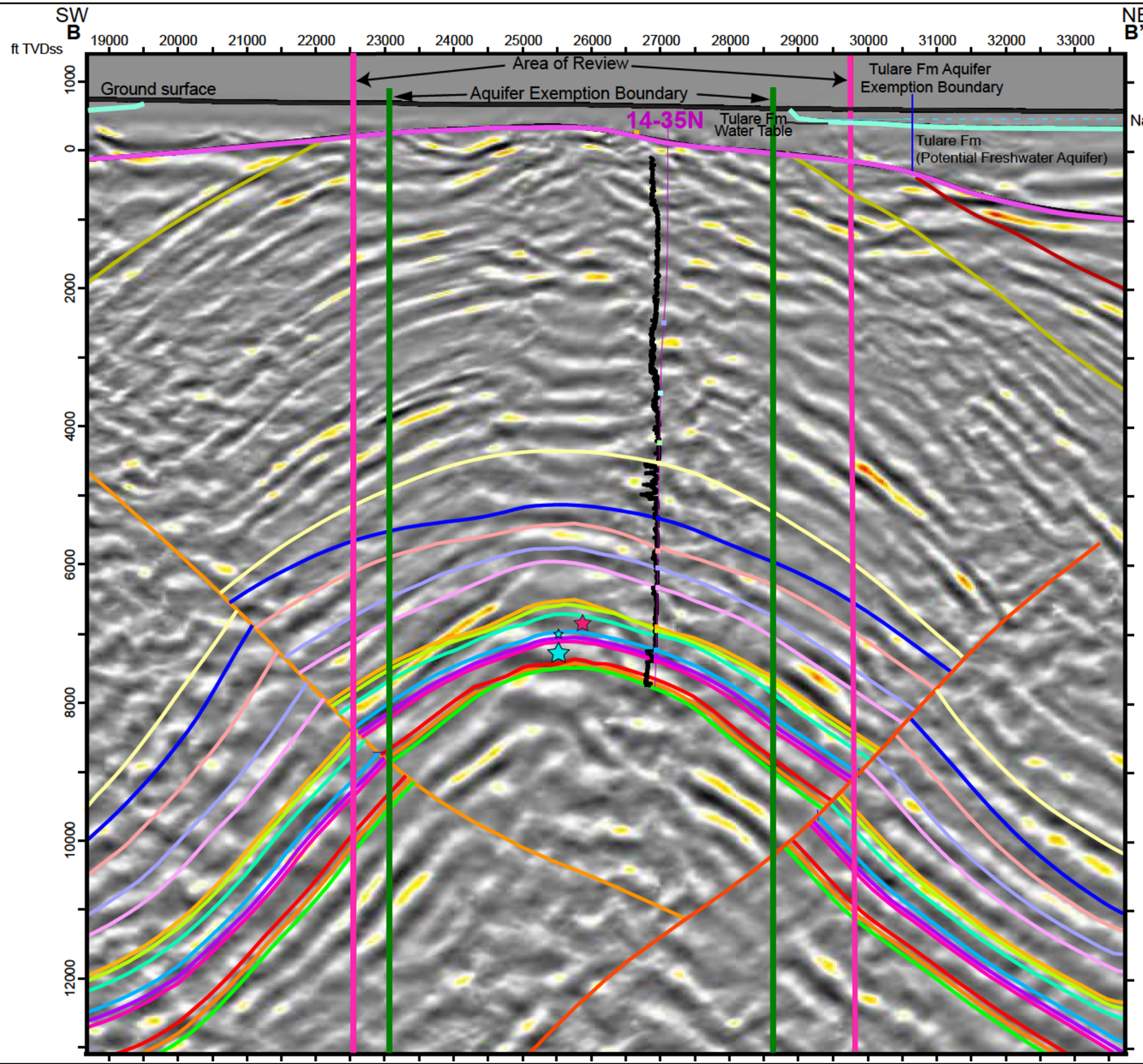
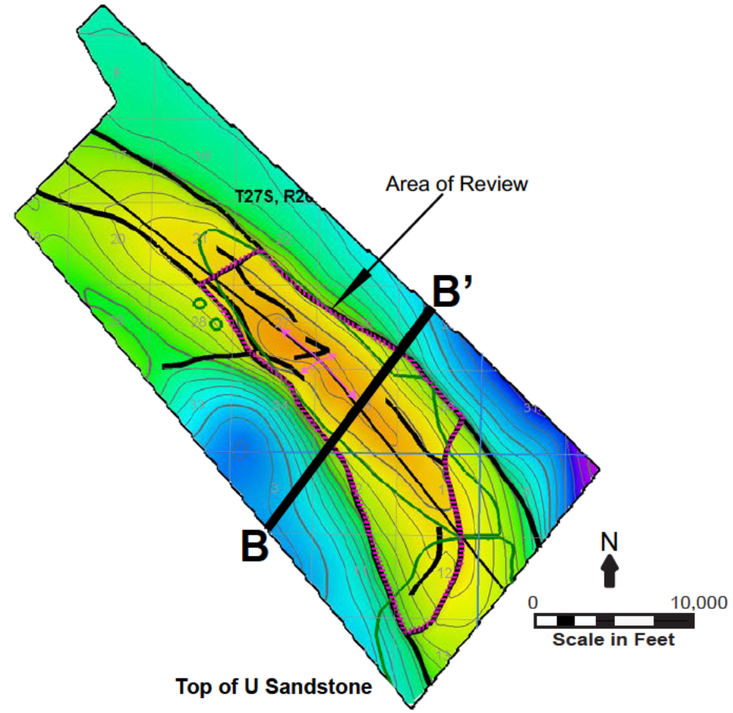
Figure 2.2-6

C:\Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\Illustrator\Narrative_Fig2.2-6 Seismic Cross-Section A-A'.ai





Legend

- Injection Unit
- Primary Confining Unit
- West Bounding Thrust Fault
- East Bounding Thrust Fault

Interpreted Seismic Surfaces

- Base of Alluvium
- Base of Tulare Fm
- Base of San Joaquin Fm
- Base of Etchegoin Fm
- Top of Temblor Sands
- Top of Media Shale
- Top of Upper Carneros
- Top of Carneros Shale
- Top of Lower Carneros
- Top of Upper Santos Shale
- Top of Agua Sandstone
- Top of Lower Santos Shale
- Top of U Sandstone
- Top of U Shale
- Top of W Sandstone
- Top of Salt Creek Shale
- Top of Gibson Sandstone
- Top of Tumey Fm

Notes:
Vertical axis in feet True Vertical Depth sub-sea level.
SP logs shown for key wells.

Explanation:
Fm - Formation

Seismic Cross-Section B-B'

North Belridge Oil Field
Western Kern County
California

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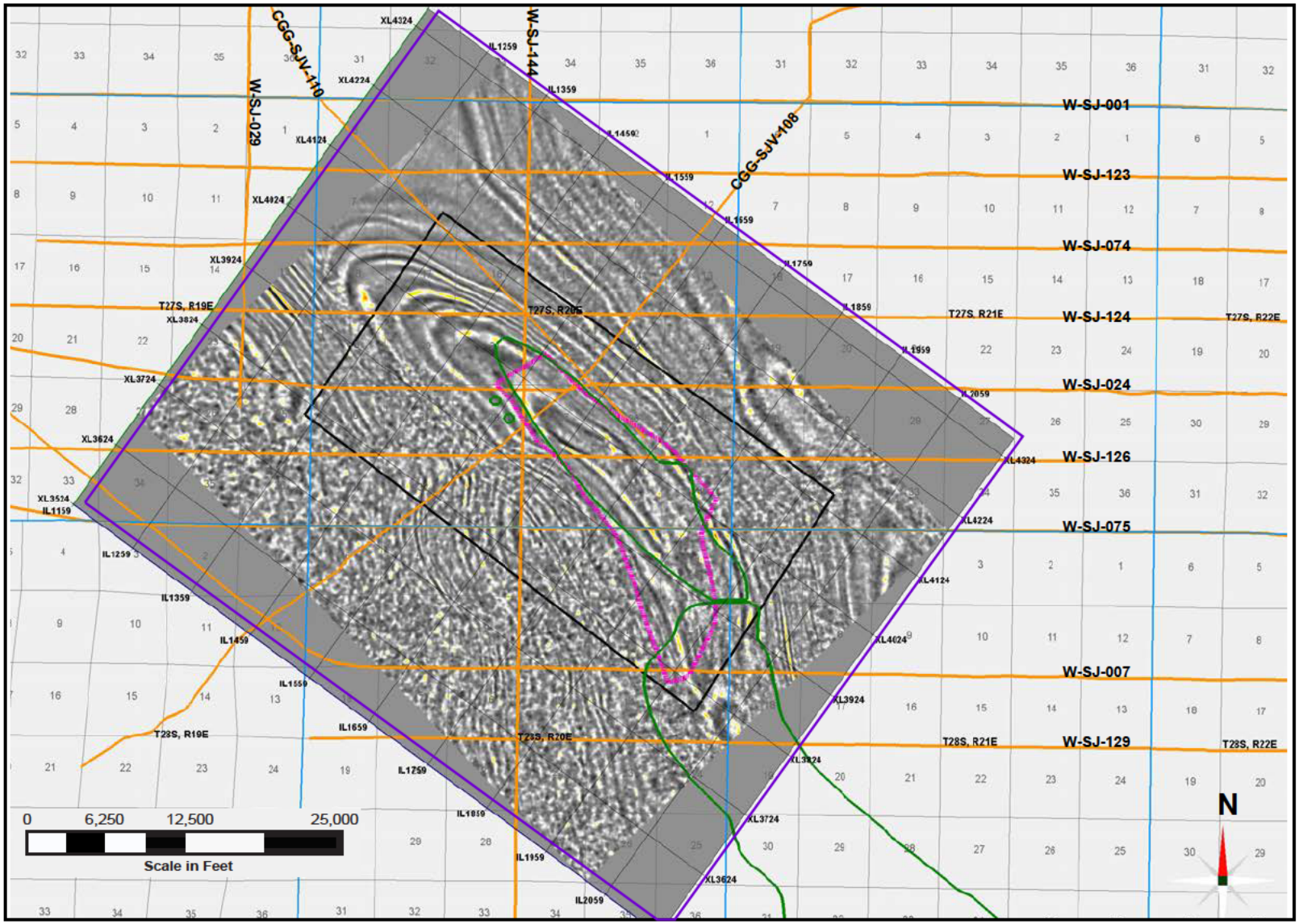
Figure 2.2-7

C:\Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\Illustrator\Narrative_Fig2.2-7 Seismic Cross-Section B-B'.ai



Legend

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Area of Review
- 3D Seismic Data Boundary
- 2D Seismic Data Lines

Explanation:
2D - 2-dimensional
3D - 3-dimensional

2D/3D Seismic Data Map

North Belridge Oil Field
Western Kern County
California

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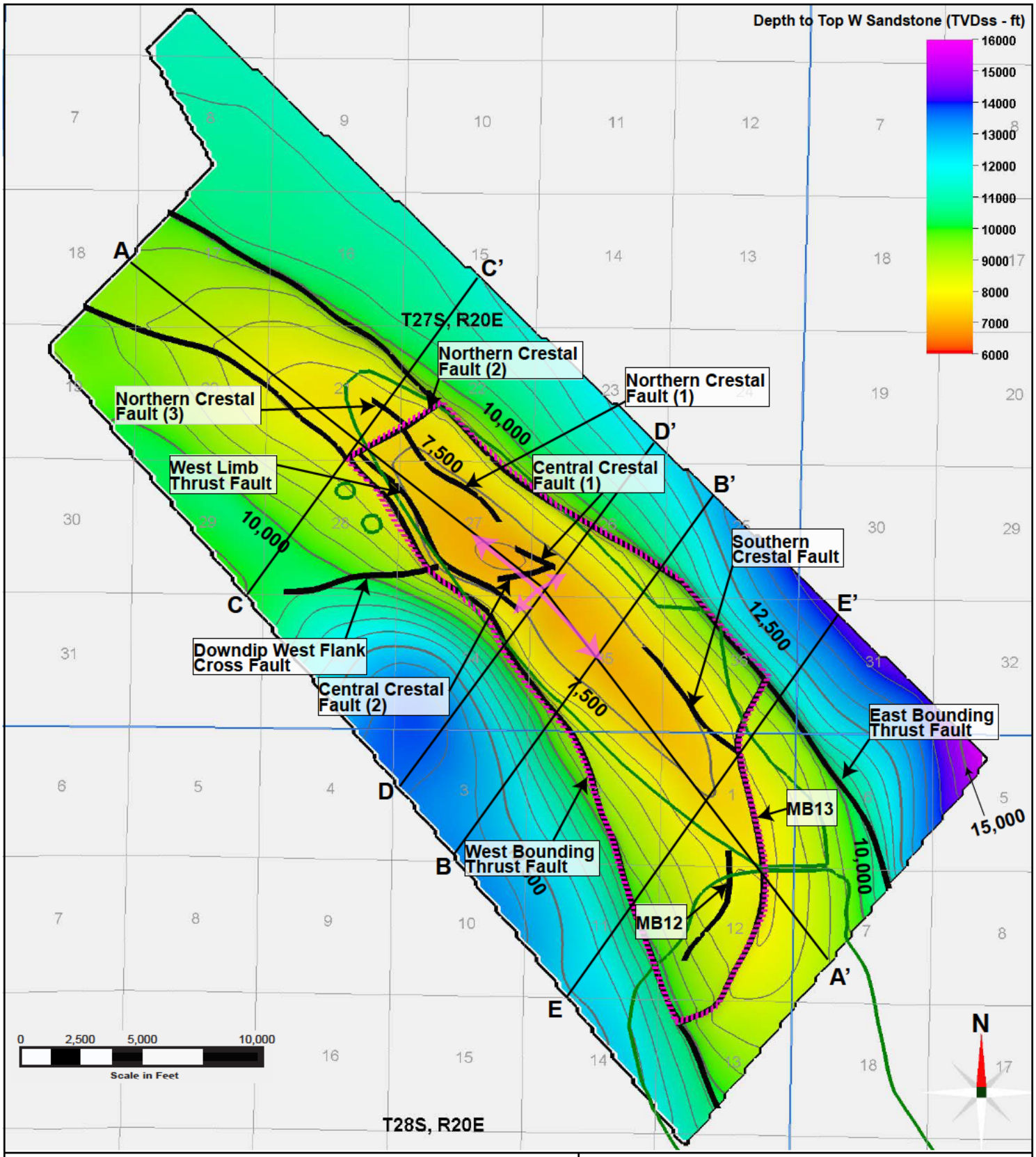
Figure 2.2-8

Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.2-8 2D/3D Seismic Data Map.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:

ft - feet
TVDss - true vertical depth sub sea (ft)
CI - contour interval

Notes:

Surface artifacts due to interpolation across faults and structural model grid.

Fault Map within Area of Interest

North Belridge Oil Field
Western Kern County
California

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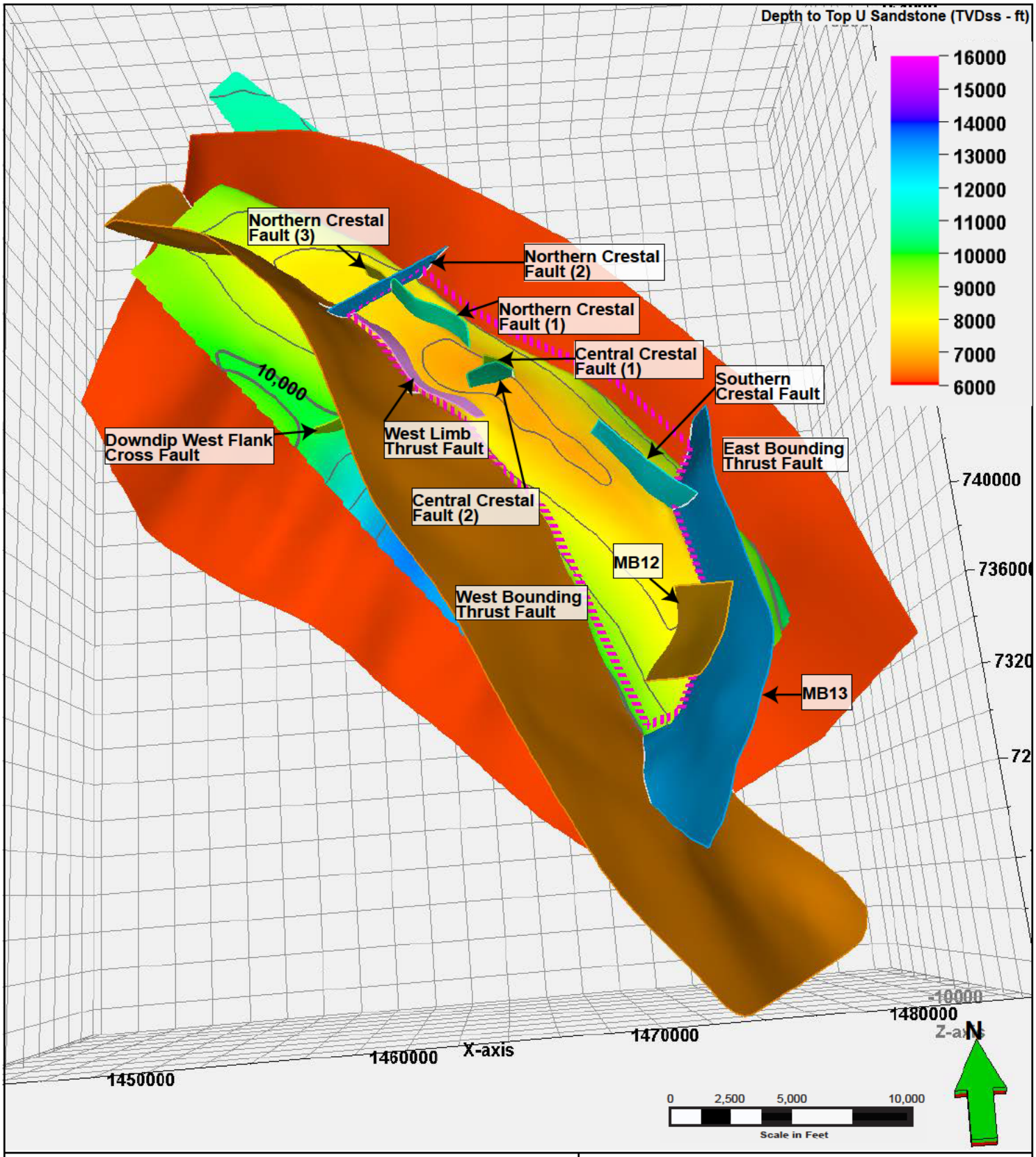
Figure 2.3-1

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.3-1 Fault Map within AoI.ai



Legend

- Elevation Contours (500 ft CI)
- Area of Review

Fault Confidence

- High
- Moderate-High
- Moderate
- Low-Moderate

Explanation:

ft - feet
TVDss - true vertical depth sub sea (ft)
CI - contour interval

Notes:

Surface artifacts due to interpolation across faults and structural model grid.

3D Fault Map

North Belridge Oil Field
Western Kern County
California

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Figure 2.3-2

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.3-2 3D Fault Map.ai

A
N

Seismic Line C-C'

Seismic Line D-D'

Seismic Line E-E'

A'
S

ft TVDss

0 2000 4000 6000 8000 10000 12000 14000 16000 18000 20000 22000 24000 26000 28000 30000 32000 34000 36000

4000 5000 6000 7000 8000 9000 10000

43-21N
21-21N
1-28N
27R-27N
7-35N
46X-35N_ST4
64-35N
511N-1N_ST1
27-1N
10X-1N
31-21N
1Y-28N
9-1N

Fault extends into Upper Santos Shale of Temblor Fm.

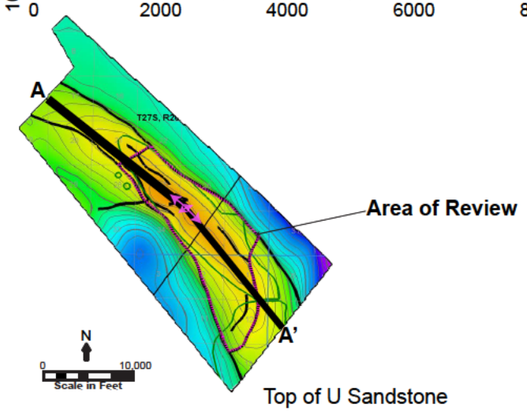
Projection of Area of Review

Aquifer Exemption Boundary

Fault extends into Media Shale Member of Upper Temblor Fm. or Lower Monterey Fm.

Fault extends into Etchegoin Fm.

Projection of Area of Review



Top of U Sandstone

Legend

- Injection Unit
- Primary Confining Unit
- Northern Crestal Fault (2)
- Central Crestal Fault (2)
- MB13

Interpreted Seismic Surfaces

- Top of Temblor Sands
- Top of Media Shale
- Top of Upper Carneros
- Top of Carneros Shale
- Top of Lower Carneros
- Top of Upper Santos Shale
- Top of Agua Sandstone
- Top of Lower Santos Shale
- Top of U Sandstone
- Top of U Shale
- Top of W Sandstone
- Top of Salt Creek Shale
- Top of Gibson Sandstone
- Top of Tumey Fm

Notes:
SP Logs shown for key wells.

Explanation:
Fm - Formation
ft TVDSS - feet True Vertical Depth sub-sea level

Vertical Exaggeration = 2x

0 1,000 feet

Seismic Cross-Section of Temblor Formation (A-A')

North Belridge Oil Field
Western Kern County
California

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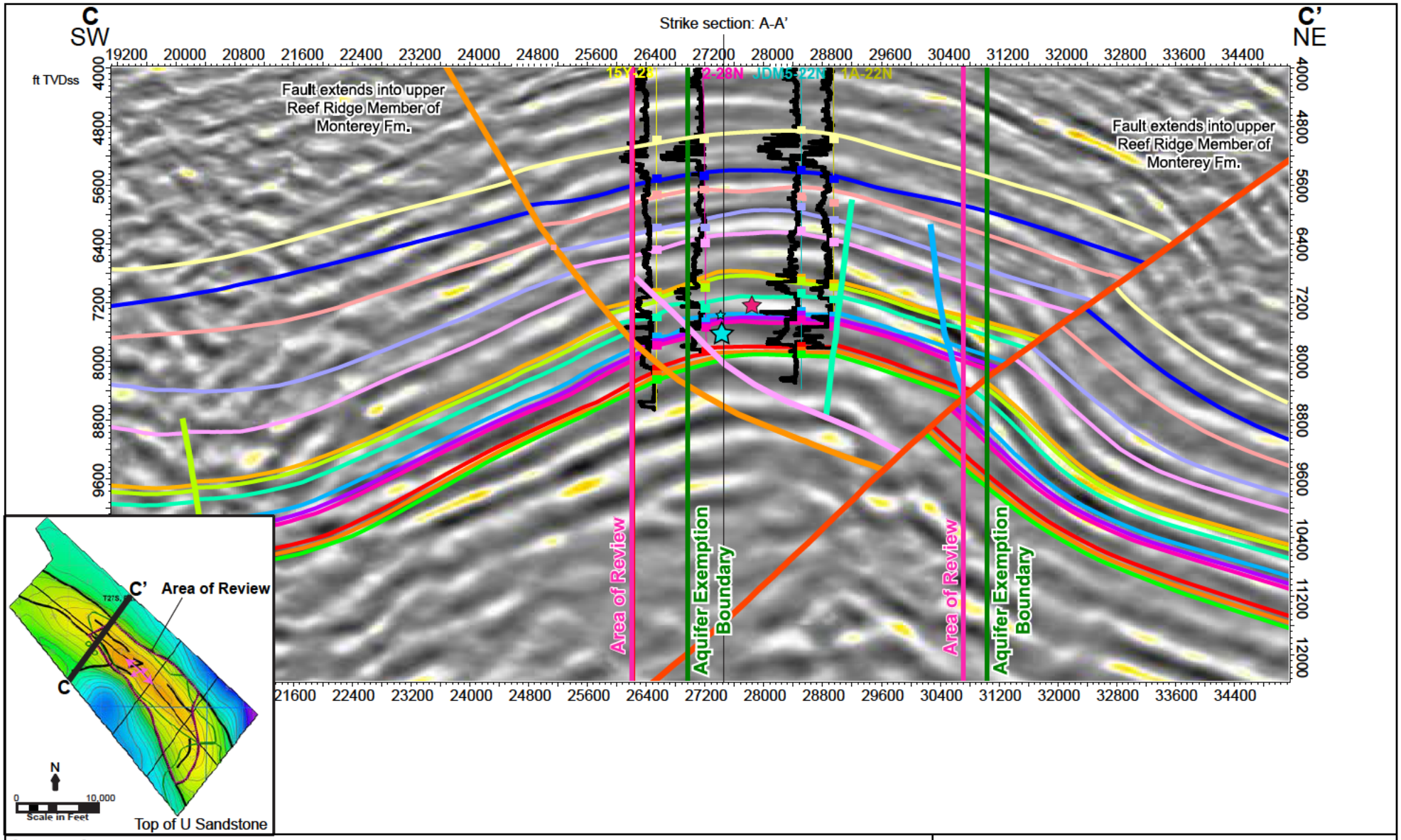
Figure 2.3-3

C:\Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\Illustrator\Narrative_Fig2.3-3 Seismic Cross-Section of Temblor Fm A-A'.ai



Legend

- Injection Unit
- Primary Confining Unit
- West Bounding Thrust Fault
- East Bounding Thrust Fault
- Northern Crestal Fault (1)
- Northern Crestal Fault (2)
- West Limb Thrust Fault
- Downdip West Flank Cross Fault

Interpreted Seismic Surfaces

- Top of Temblor Sands
- Top of Media Shale
- Top of Upper Carneros
- Top of Carneros Shale
- Top of Lower Carneros
- Top of Upper Santos Shale
- Top of Agua Sandstone
- Top of Lower Santos Shale
- Top of U Sandstone
- Top of U Shale
- Top of W Sandstone
- Top of Salt Creek Shale
- Top of Gibson Sandstone
- Top of Tumey Fm

Explanation:

Fm - Formation
ft TVDSS - feet True Vertical Depth sub-sea level

Notes:

SP logs shown for key wells.

Seismic Cross-Section of Temblor Formation (C-C')

North Belridge Oil Field
Western Kern County
California

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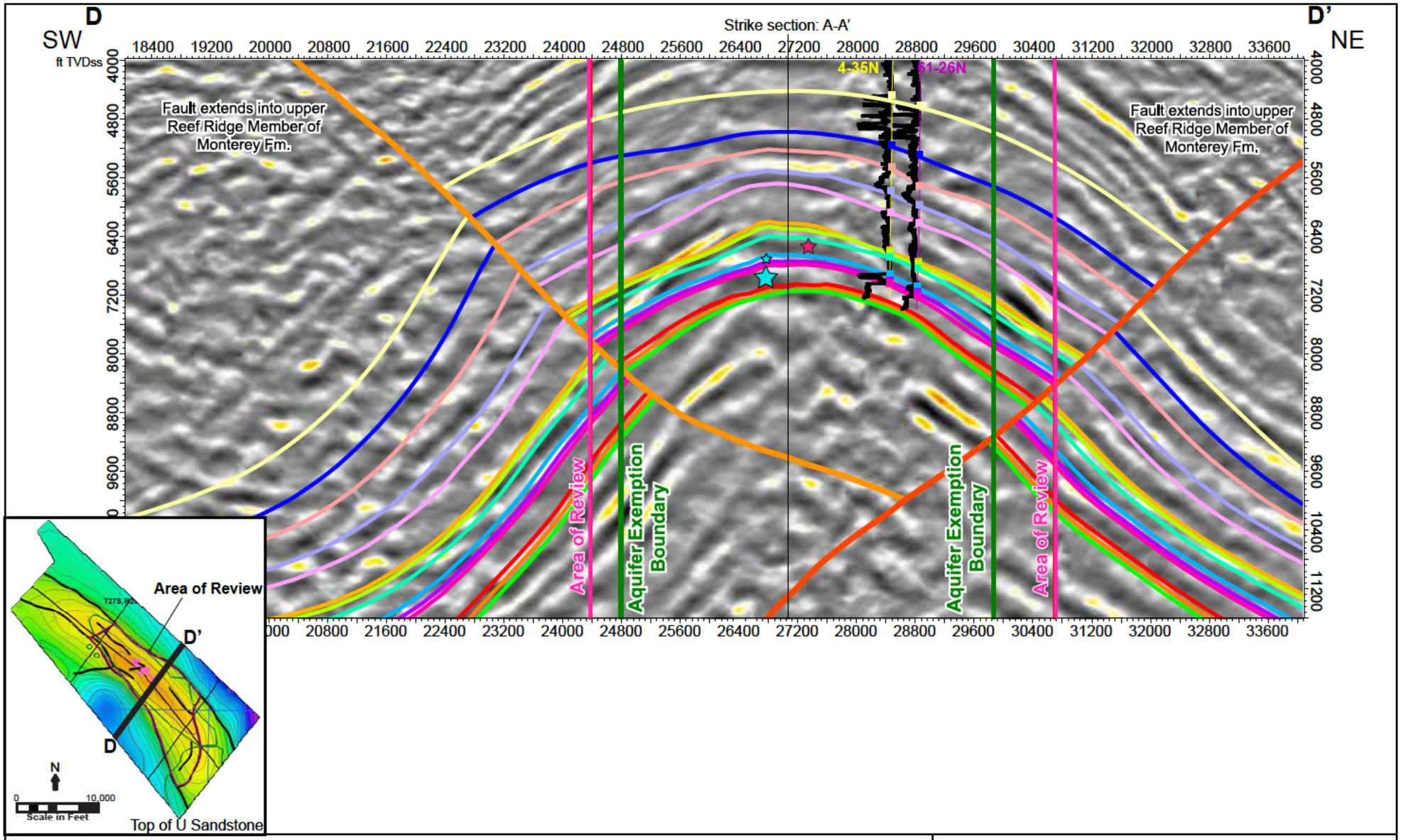
Figure 2.3-4

C:\Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\Illustrator\Narrative_Fig2.3-4 Seismic Cross-Section of Temblor Fm C-C'.ai



Legend

- Injection Unit
- Primary Confining Unit
- West Bounding Thrust Fault
- East Bounding Thrust Fault

Interpreted Seismic Surfaces

- Top of Temblor Sands
- Top of Media Shale
- Top of Upper Carneros
- Top of Carneros Shale
- Top of Lower Carneros
- Top of Upper Santos Shale
- Top of Agua Sandstone
- Top of Lower Santos Shale
- Top of U Sandstone
- Top of U Shale
- Top of W Sandstone
- Top of Salt Creek Shale
- Top of Gibson Sandstone
- Top of Tumey Fm

Explanation:

Fm - Formation
ft TVDSS - feet True Vertical Depth sub-sea level

Notes:

SP logs shown for key wells.

Seismic Cross-Section of Temblor Formation (D-D')

North Belridge Oil Field
Western Kern County
California

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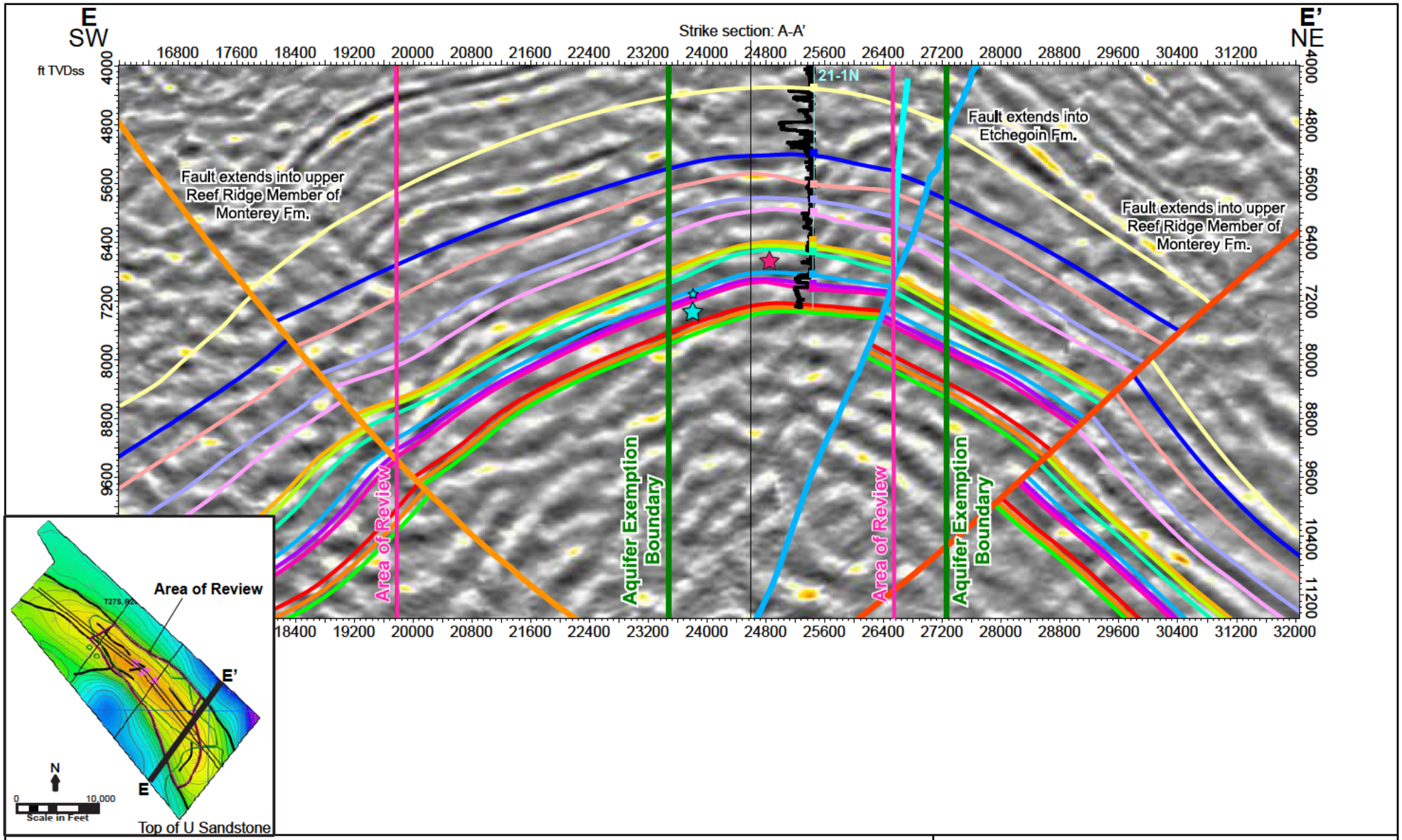
Figure 2.3-5

C:\Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\Illustrator\Narrative_Fig2.3-5 Seismic Cross-Section of Temblor Fm D-D'.ai



Legend

- Injection Unit
- Primary Confining Unit
- West Bounding Thrust Fault
- East Bounding Thrust Fault
- MB13 Fault
- Southern Crestal Fault

Interpreted Seismic Surfaces

- Top of Temblor Sands
- Top of Media Shale
- Top of Upper Carneros
- Top of Carneros Shale
- Top of Lower Carneros
- Top of Upper Santos Shale
- Top of Agua Sandstone
- Top of Lower Santos Shale
- Top of U Sandstone
- Top of U Shale
- Top of W Sandstone
- Top of Salt Creek Shale
- Top of Gibson Sandstone
- Top of Tumey Fm

Explanation:

Fm - Formation
ft TVDSS - feet True Vertical Depth sub-sea level

Notes:

SP logs shown for key wells.

Seismic Cross-Section of Temblor Formation (E-E')

North Belridge Oil Field
Western Kern County
California

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Figure 2.3-6

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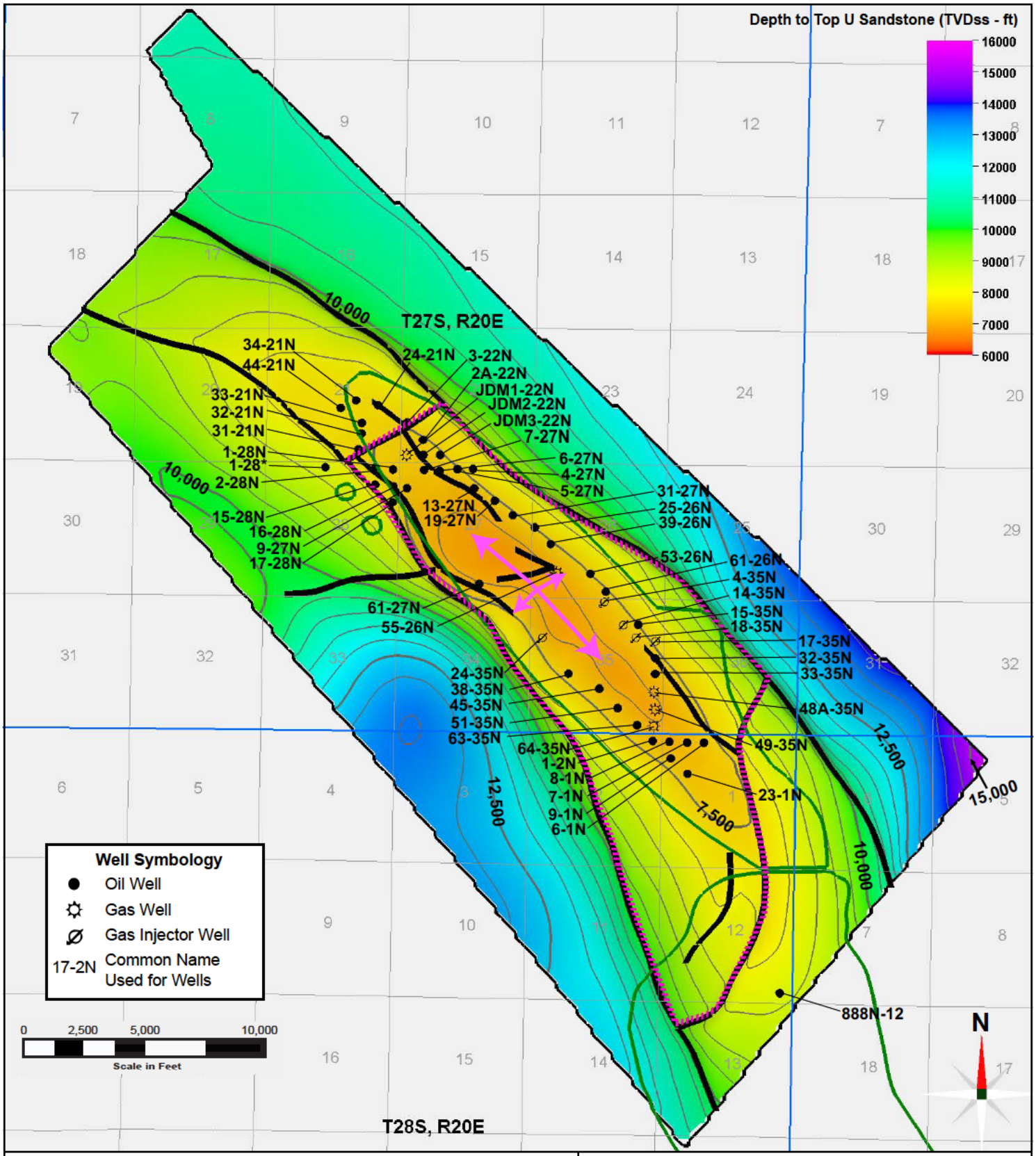

Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:

ft - feet
TVDss - true vertical depth sub sea (ft)
CI - contour interval

Notes:

Surface artifacts due to interpolation across faults and structural model grid.
*Quantitative pressure data not collected.

Wells with Pressure Data from 64 Zone Depth to Top U Sandstone

North Belridge Oil Field
Western Kern County
California

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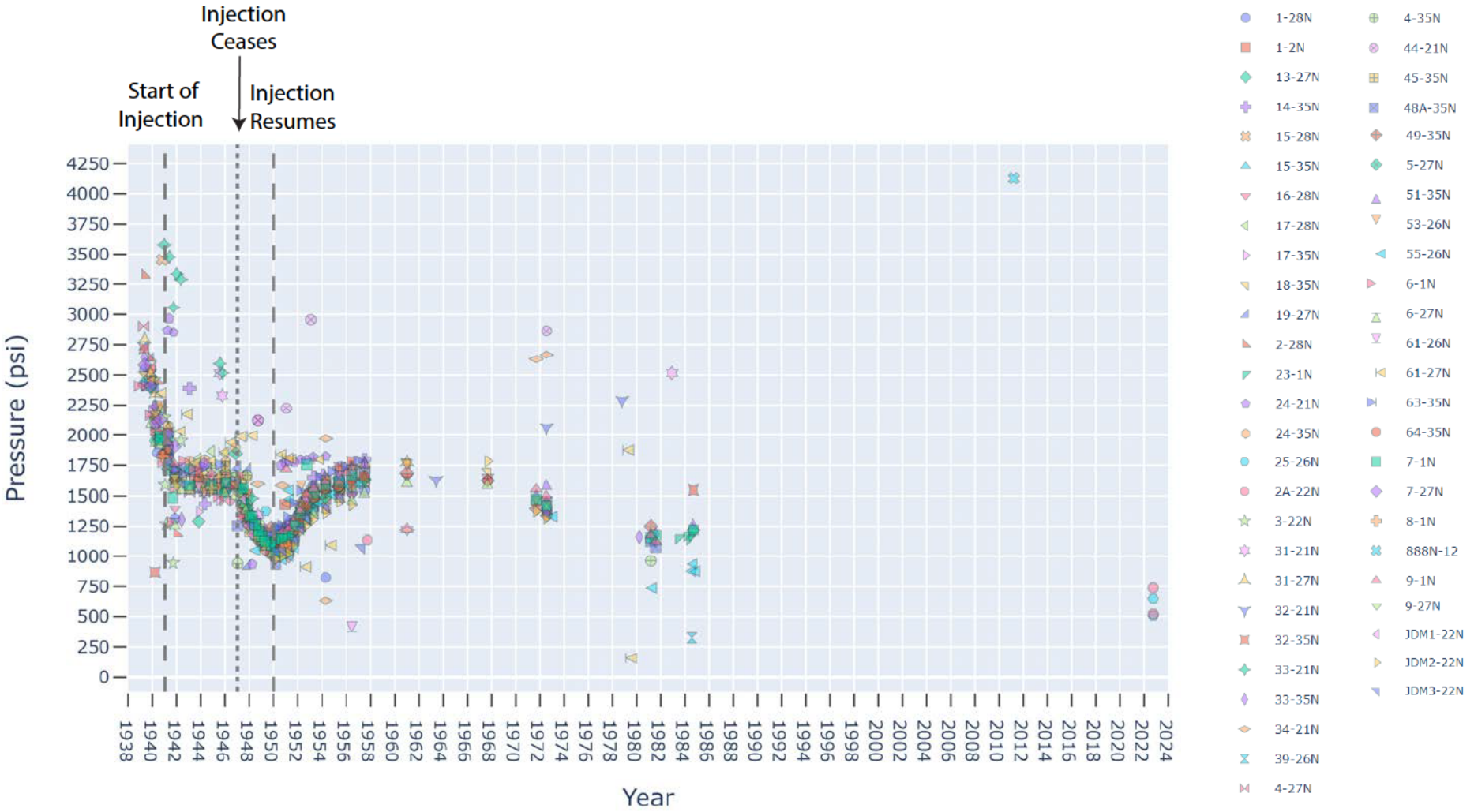
Figure 2.3-7

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.3-7 Wells with 64 Zone Pressure Data - Top of U.ai



Notes:

- 64 Zone pressure data was normalized to a reference depth of 7,700 ft TVDss and an oil gradient of 0.312 psi/ft, after Kaczorowski et al. (1986).
- Historic pressure data from all wells from throughout the proposed injection zone are shown, irrespective of position within Area of Review or fault block.
- Gas injection into the main fault block (Area of Review) began in 1941, ceased in the late 1940's and resumed in 1950.

Explanation:

-psi - pounds per square inch

64 Zone Pressure Data

North Belridge Oil Field
Western Kern County
California

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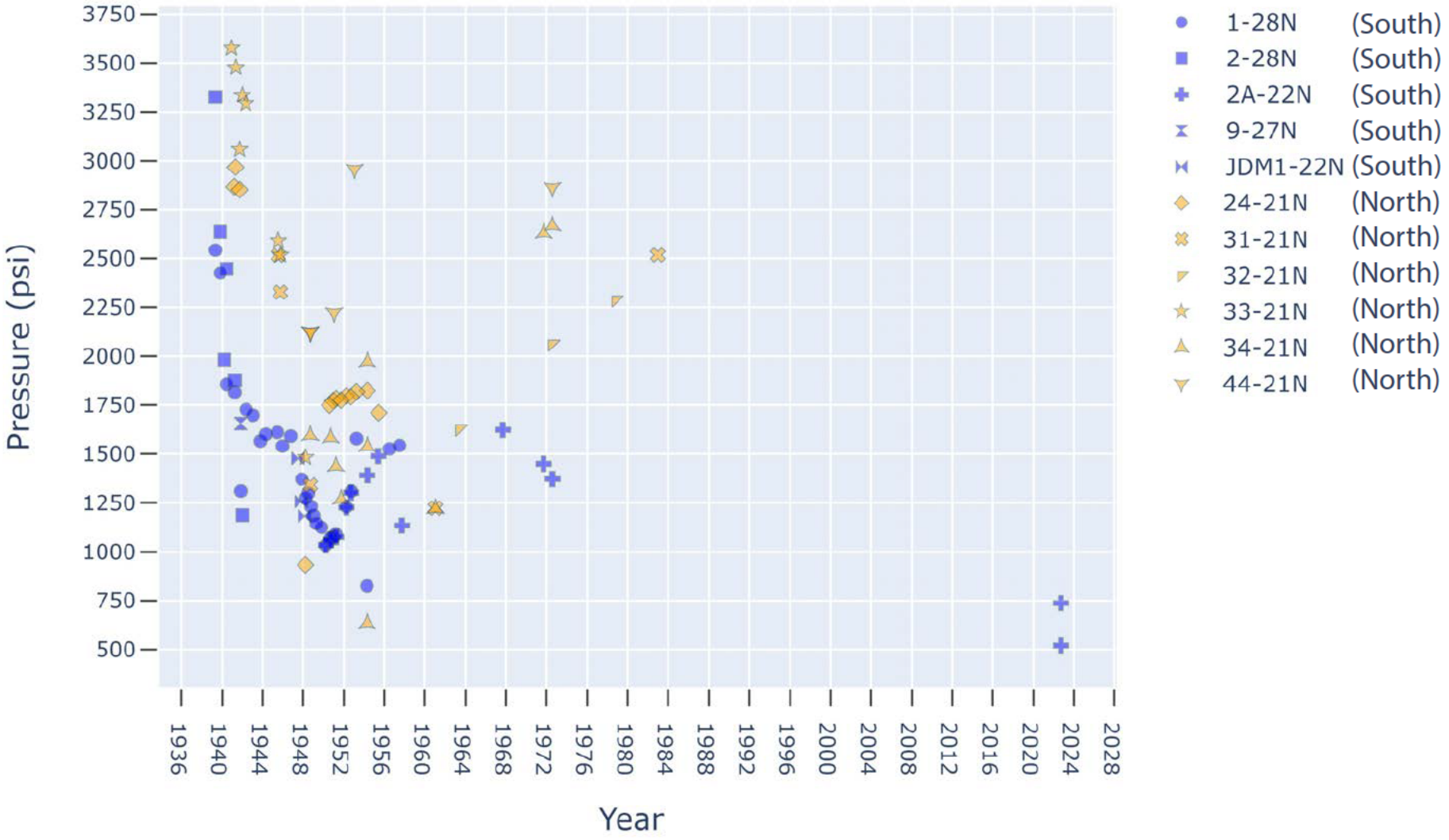
Figure 2.3-8

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.3-8 64 Zone Pressure Data.ai



Notes:

- 64 Zone pressure data was normalized to a reference depth of 7,700 ft TVDss and an oil gradient of 0.312 psi/ft, after Kaczorowski et al. (1986).
- Gas injection south of the Northern Crestal Fault (2) into the 64 Zone began in 1941,ceased in the late 1940's and resumed in 1950. No injection activities occurred in the northern fault block (i.e., north of Northern Crestal Fault (2)).
- Wells with yellow symbols are located to the north of Northern Crestal Fault (2), whereas wells with blue symbols are located to the south of the fault within the Area of Review.

Explanation:

-psi - pounds per square inch

Pressure Differentials Across Northern Crestal Fault (2)

North Belridge Oil Field
Western Kern County
California

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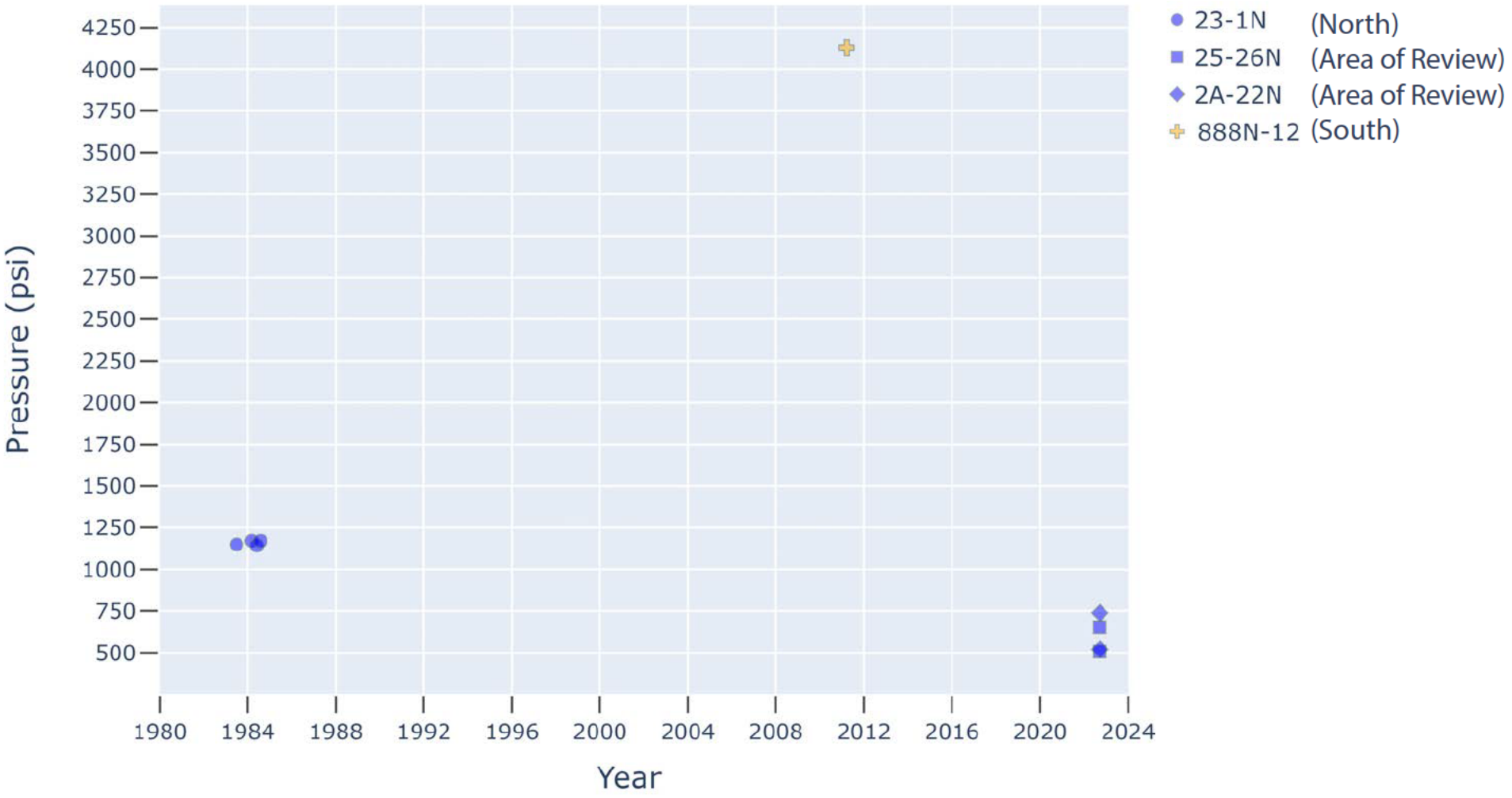
Figure 2.3-9

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.3-9 Pressure Differentials North Crestal Fault (2).ai



Notes:

- 64 Zone pressure data was normalized to a reference depth of 7,700 ft TVDss and an oil gradient of 0.312 psi/ft, after Kaczorowski et al. (1986).
- Wells 23-1N and 888N-12 are located directly adjacent to the MB13 Fault, whereas 2A-22 and 25-26N are in the northern portion of the Area of Review.
- Pressure measurements collected in 2022 from wells 2A-22N and 25-26N are inferred to be representative of current pressure conditions throughout the Area of Review.

Explanation:

-psi - pounds per square inch

Pressure Differentials Across MB13 Fault

North Belridge Oil Field
Western Kern County
California

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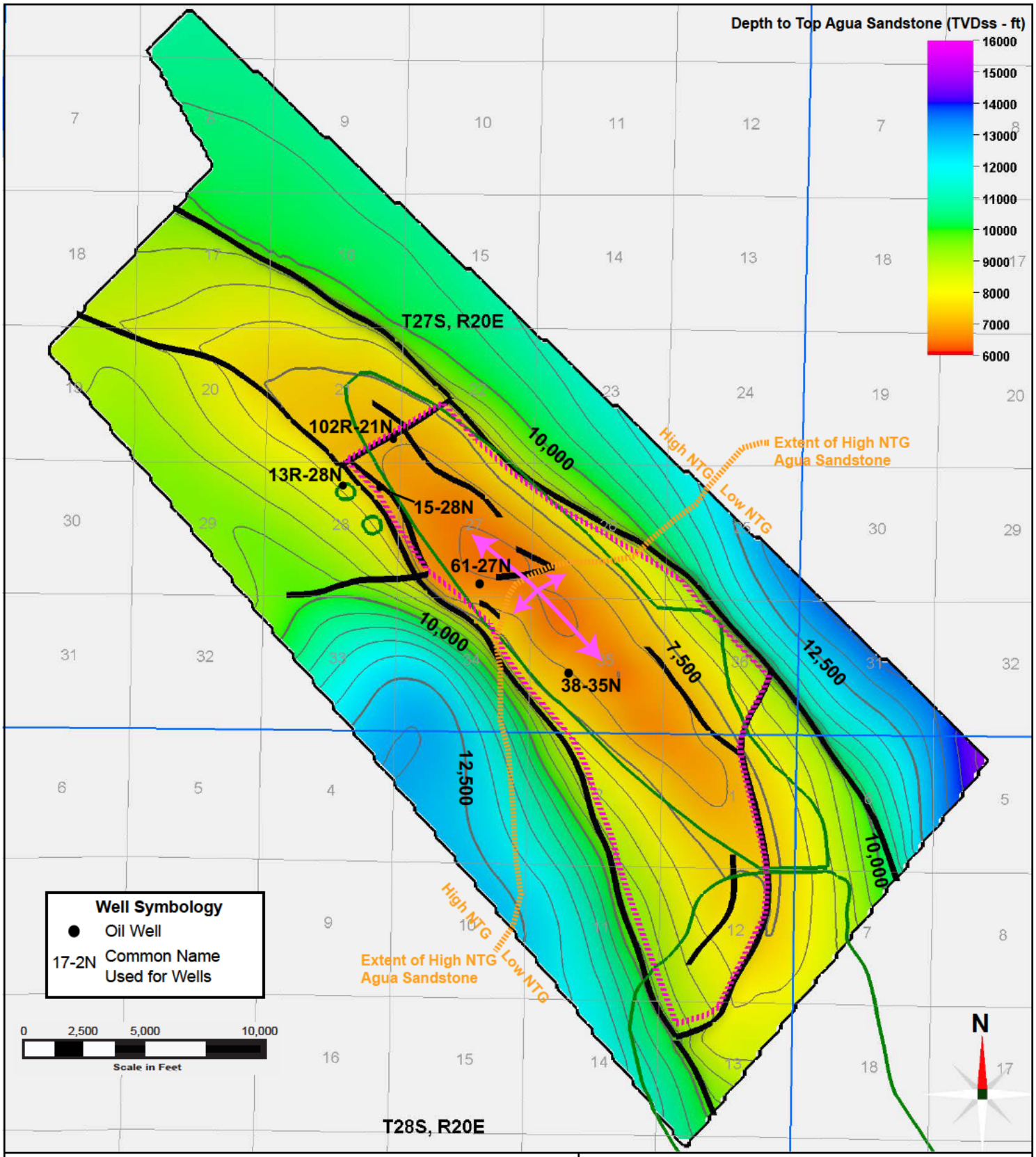
Figure 2.3-10

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.3-10 Pressure Differentials MB13 Fault.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:

ft - feet
TVDss - true vertical depth sub sea (ft)
CI - contour interval
NTG - net-to-gross

Notes:

Surface artifacts due to interpolation across faults and structural model grid.

Wells with Pressure Data from Agua Sandstone - Depth to Top Agua Sandstone

North Belridge Oil Field
Western Kern County
California

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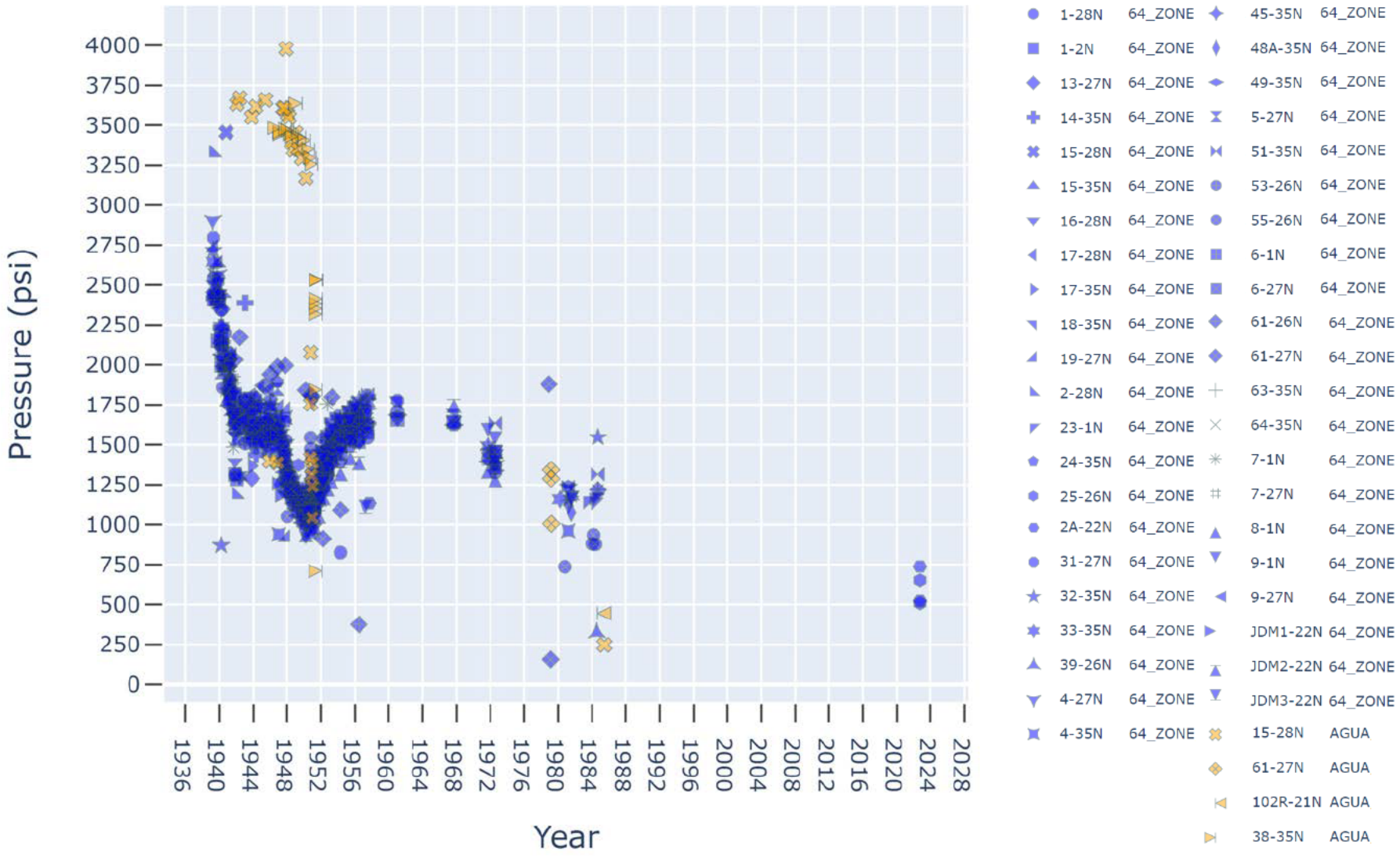
Figure 2.3-11

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.3-11 Wells with Agua Pressure Data - Top of Agua.ai



Notes:

- 64 Zone pressure data was normalized to a reference depth of 7,700 ft TVDss and an oil gradient of 0.312 psi/ft, after Kaczorowski et al. (1986).
- Agua Sandstone pressure data has not been normalized.
- Gas injection into the 64 Zone began in 1941, ceased in the late 1940's and resumed in 1950.

Explanation:

-psi - pounds per square inch

Pressure Differentials between 64 Zone and Agua Sandstone for Area of Review

North Belridge Oil Field
Western Kern County
California

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Figure 2.3-12

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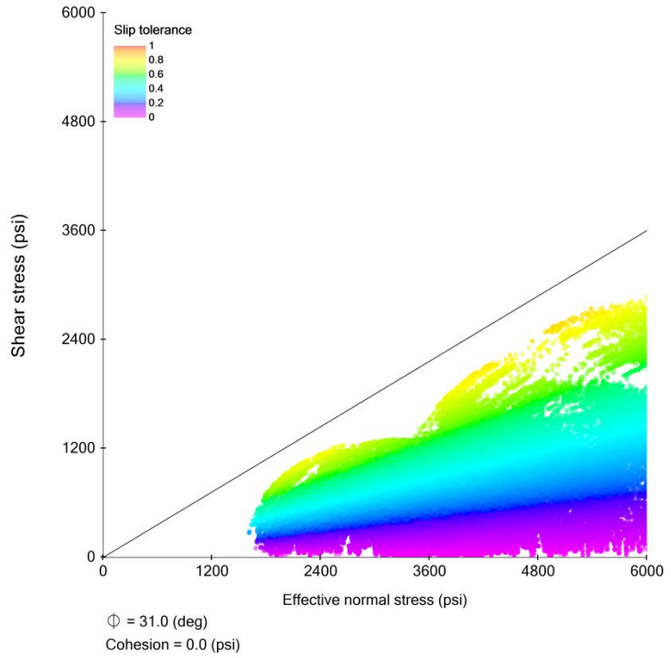
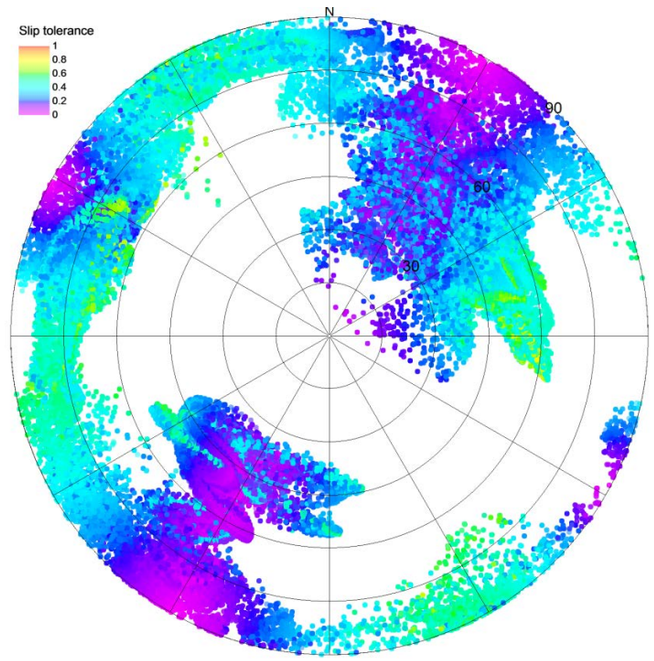
Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.3-12 Pressure Differentials - 64 Zone and Agua.ai

Pre-Injection Condition

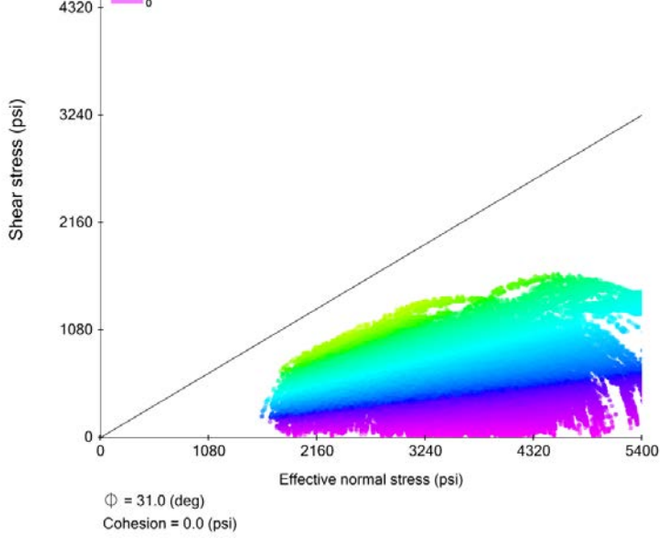


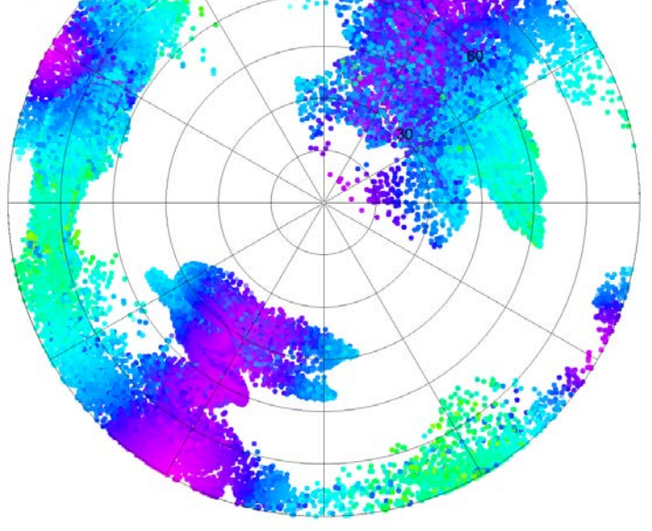
Mohr-Coulomb Failure Envelope



Fault Orientation per Modeled Fault Element

Post-Injection Condition





Explanation:
Friction Angle (Φ) = 31°
Cohesion = 0.0 psi
psi = pounds per square inch

Notes:
Fault surfaces color-coded with values indicating critical pore pressure change.

Fault Stability Analysis Results
Slip Tolerance
North Belridge Oil Field
Western Kern County
California

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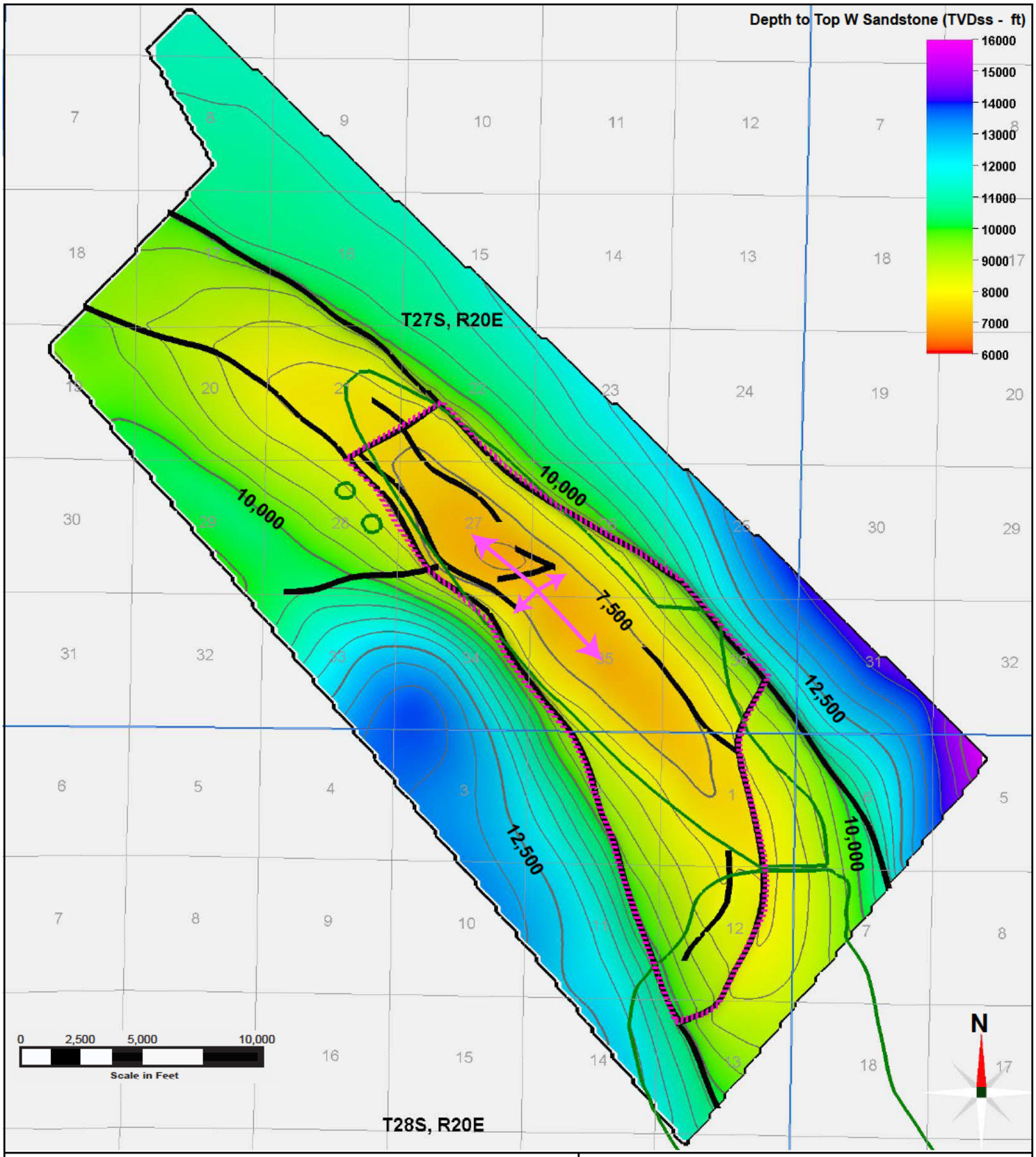
Figure 2.3-13



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:

ft - feet
TVDss - true vertical depth sub sea(ft)
CI - contour interval

Depth to Top 64 Zone W Sandstone

North Belridge Oil Field
Western Kern County
California

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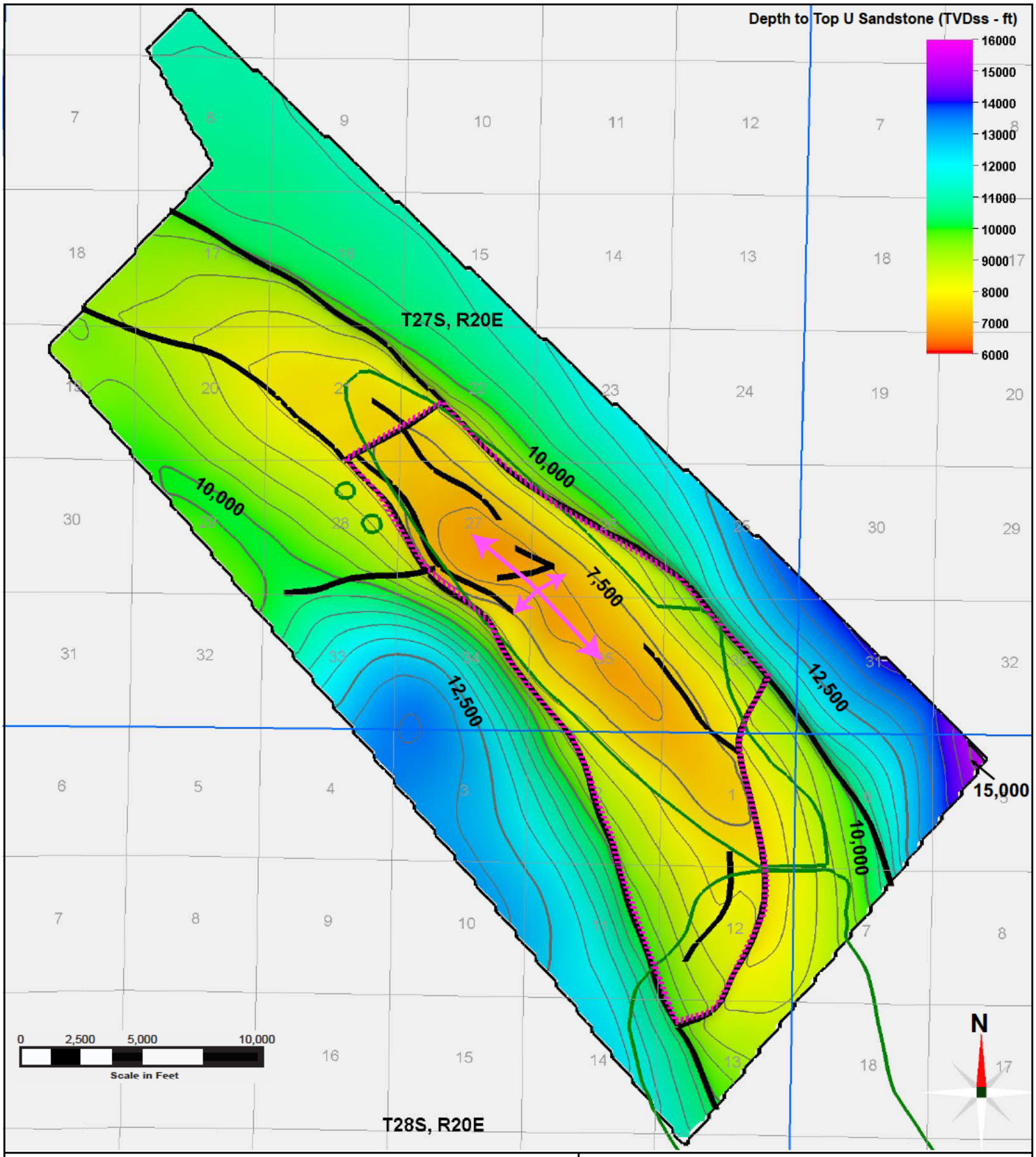
Figure 2.4-1

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.4-1 Depth to Top 64 Zone W Sand.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:

ft - feet
TVDss - true vertical depth sub sea(ft)
CI - contour interval

Depth to Top 64 Zone U Sandstone
North Belridge Oil Field
Western Kern County
California

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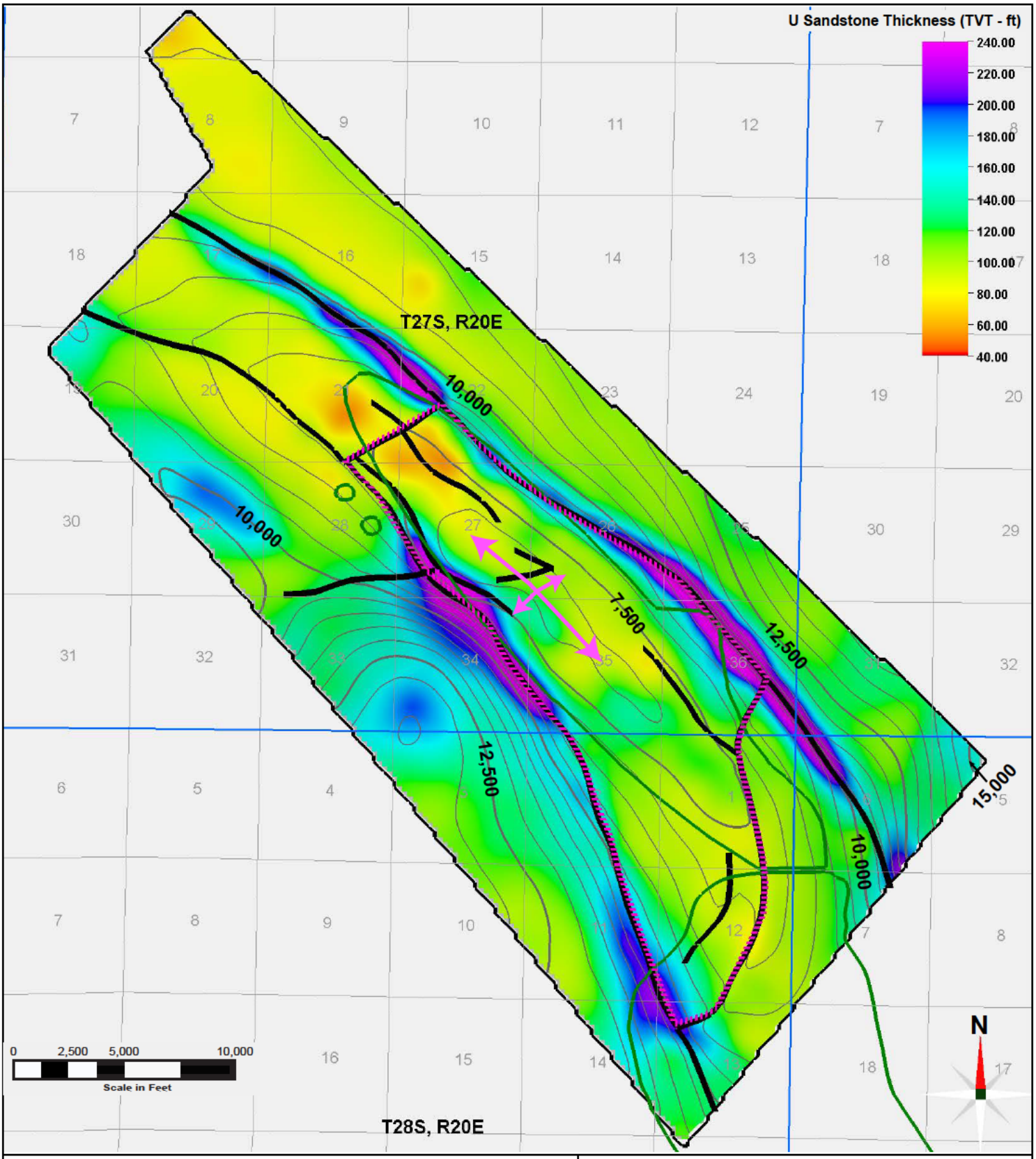
Figure 2.4-2

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_Fig2.4-2 Depth to Top 64 Zone U Sand.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:
ft - feet
TVT - true vertical thickness
CI - contour interval

Notes:
Thickness maps derived from well and seismic data.
Surface artifacts due to interpolation across faults and structural model grid.

True Vertical Thickness of 64 Zone U Sandstone

North Belridge Oil Field
Western Kern County
California

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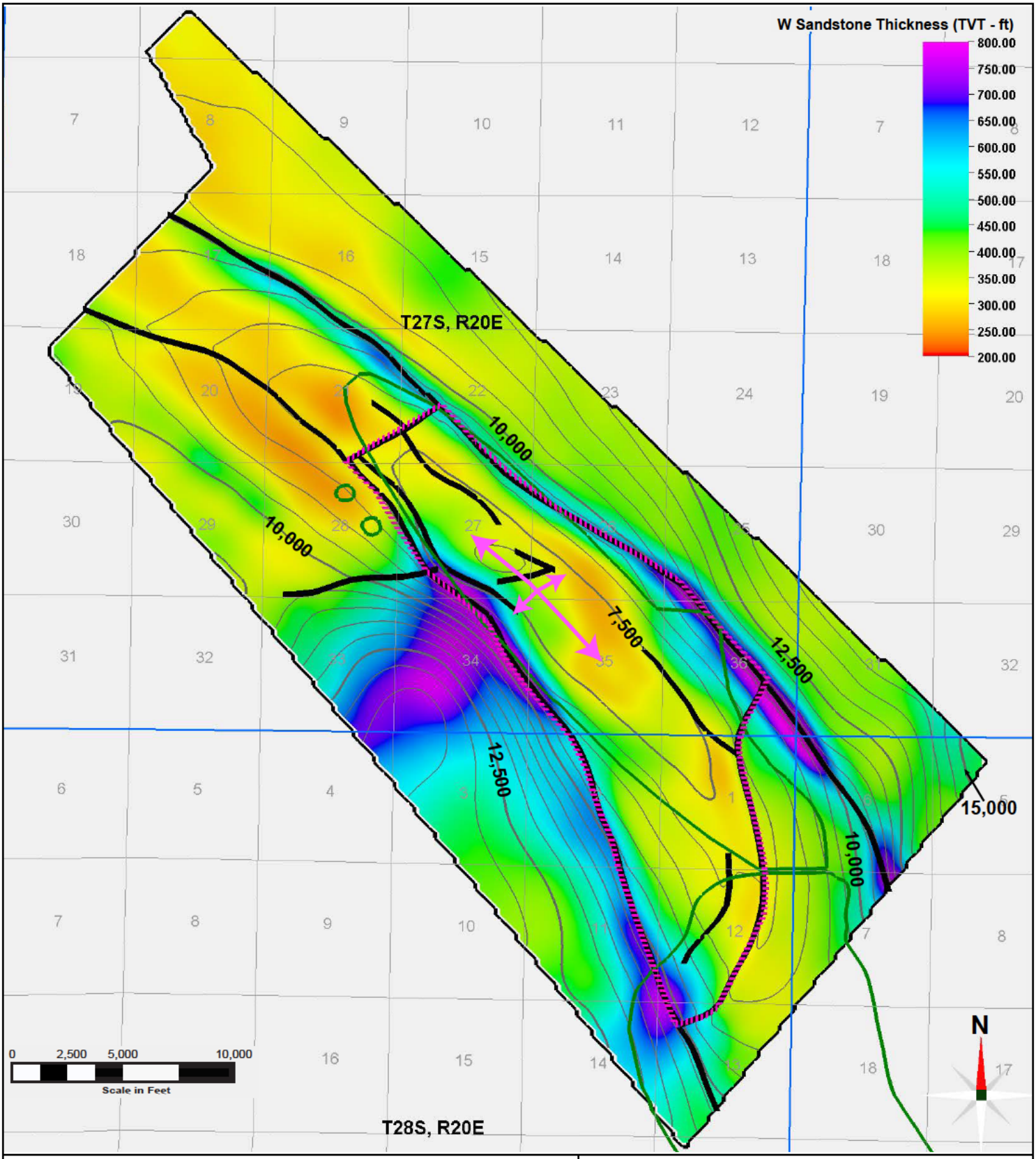
Figure 2.4-3

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.4-3 TVT of 64 Zone U Sand.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:
ft - feet
TVT - true vertical thickness
CI - contour interval

Notes:
Thickness maps derived from well and seismic data.
Surface artifacts due to interpolation across faults and structural model grid.

True Vertical Thickness of 64 Zone W Sandstone
North Belridge Oil Field
Western Kern County
California

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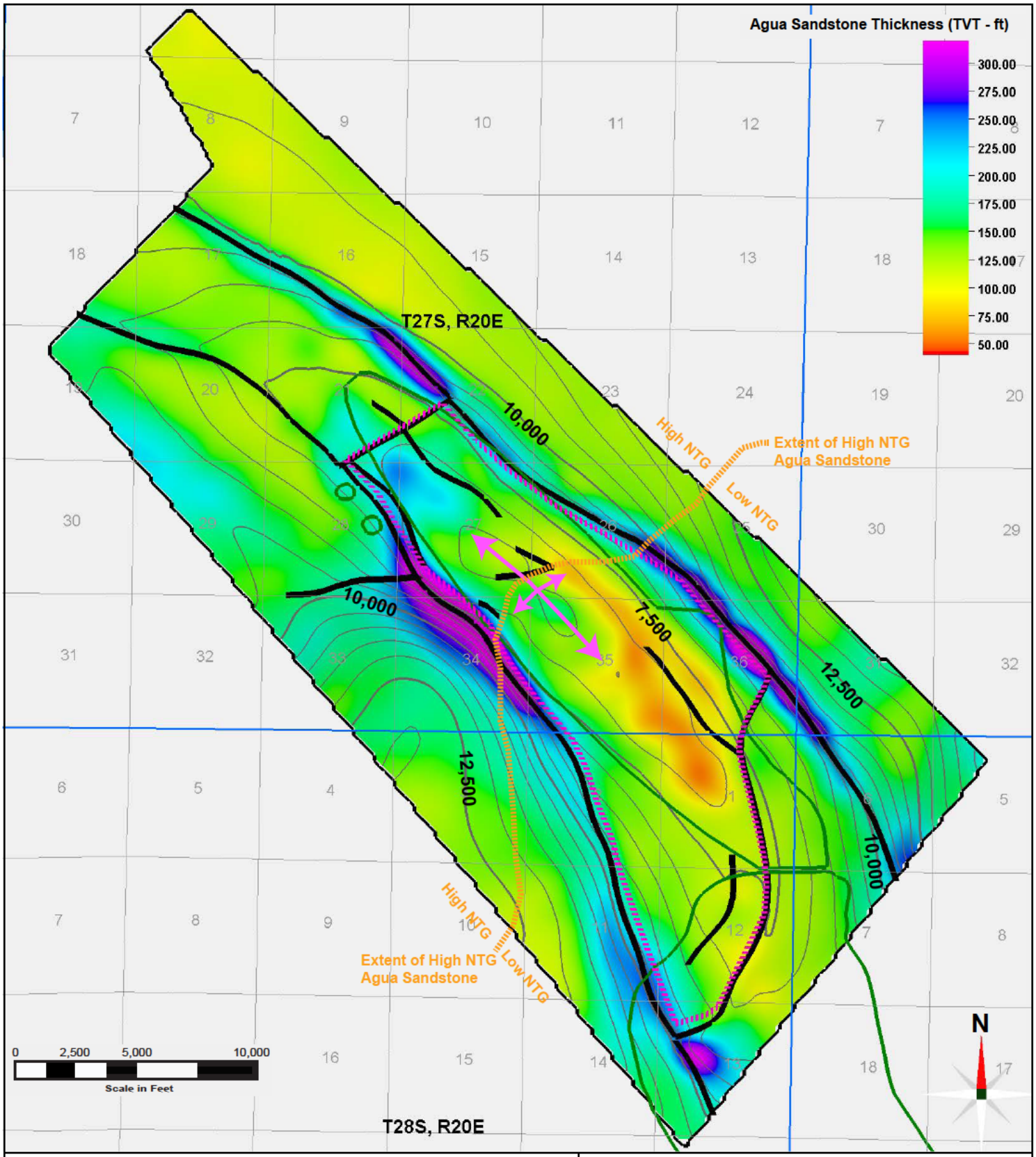
Figure 2.4-4

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.4-4 TVT of 64 Zone W Sand.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:

ft - feet
TVT - true vertical thickness
CI - contour interval
NTG - net-to-gross

Notes:

Thickness maps derived from well and seismic data. Surface artifacts due to interpolation across faults and structural model grid.

True Vertical Thickness of Agua Sandstone

North Belridge Oil Field
Western Kern County
California

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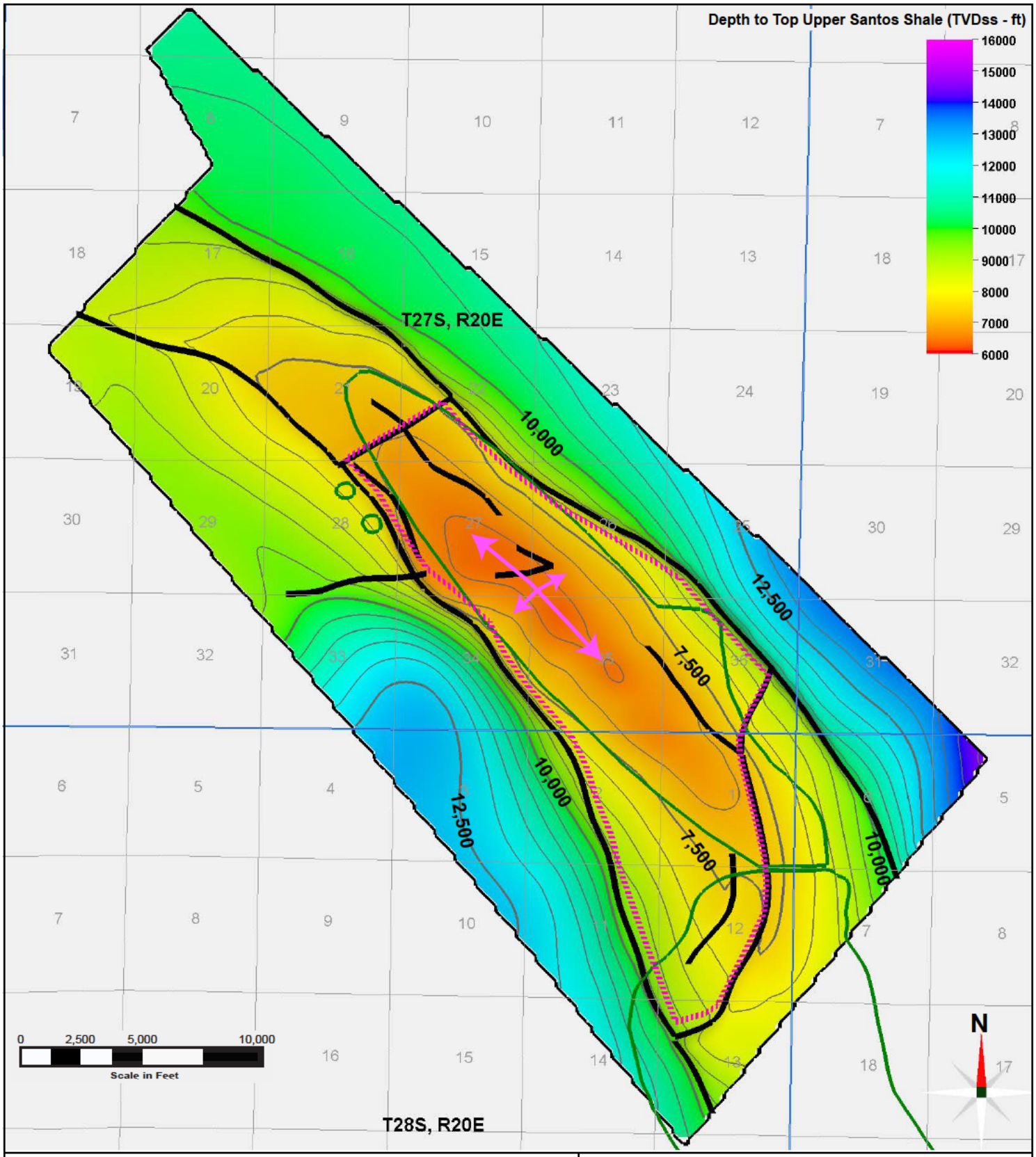
Figure 2.4-5

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.4-5 TVT of Agua Sandstone.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:

ft - feet
TVDss - true vertical depth sub sea(ft)
CI - contour interval

Depth to Top Upper Santos Shale

North Belridge Oil Field
Western Kern County
California

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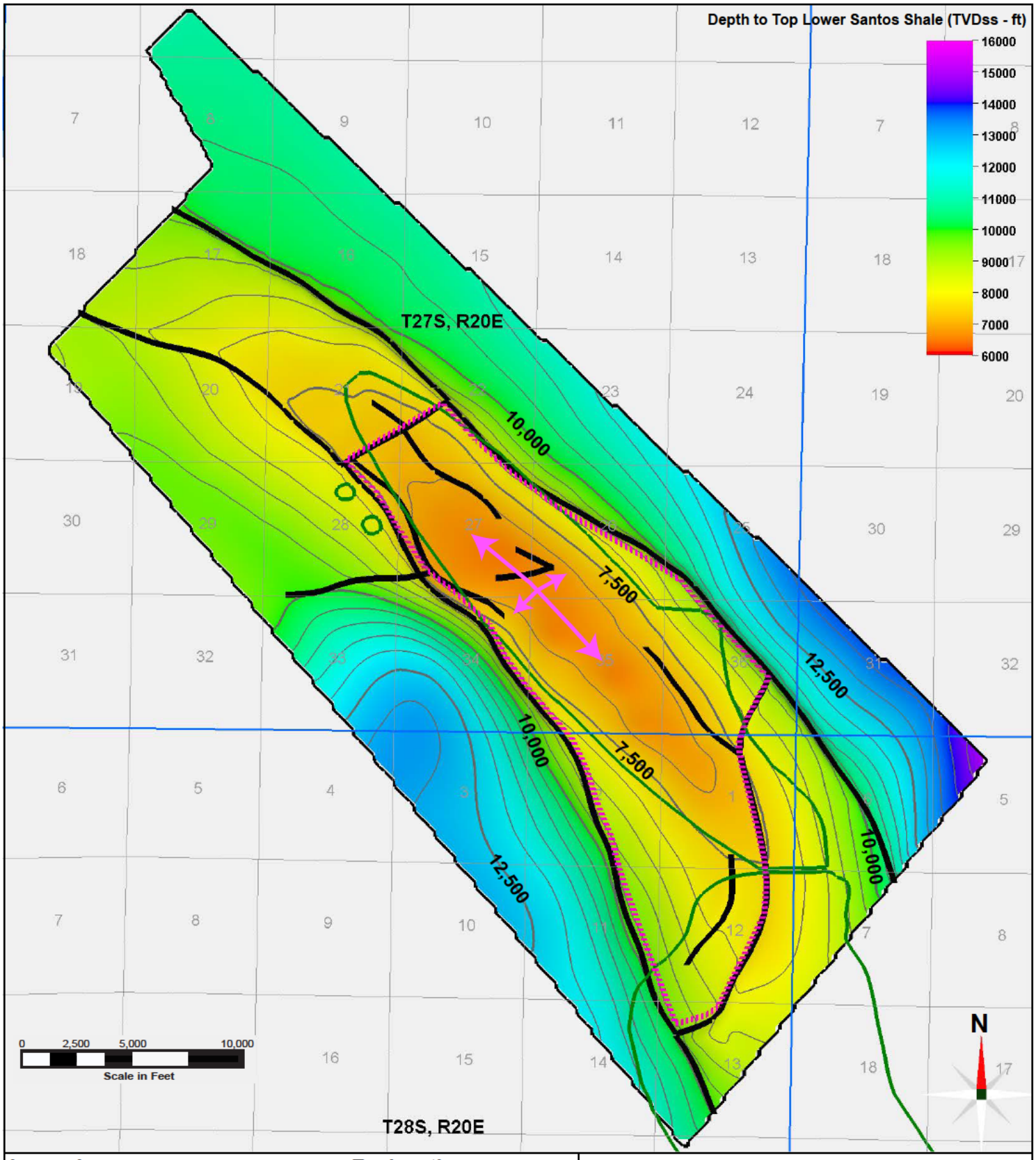
Figure 2.4-6

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_Fig2.4-6 Depth to Top Upper Santos Shale.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:

ft - feet
TVDss - true vertical depth sub sea(ft)
CI - contour interval

Depth to Top Lower Santos Shale

North Belridge Oil Field
Western Kern County
California

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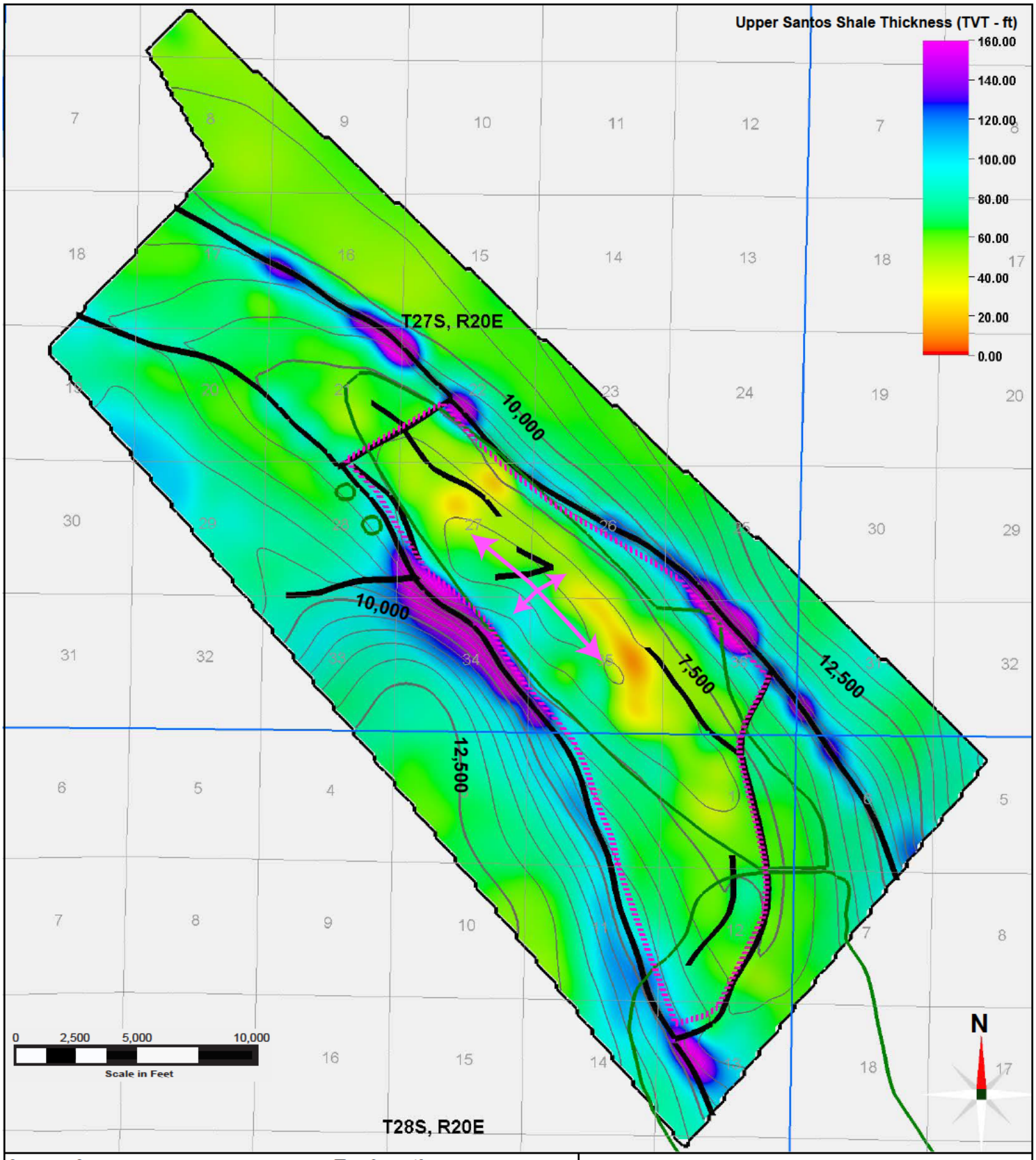
Figure 2.4-7

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_Fig2.4-7 Depth to Top Lower Santos Shale.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:

ft - feet
TVT - true vertical thickness
CI - contour interval

Notes:

Thickness maps derived from well and seismic data. Surface artifacts due to interpolation across faults and structural model grid.

True Vertical Thickness of Upper Santos Shale

North Belridge Oil Field
Western Kern County
California

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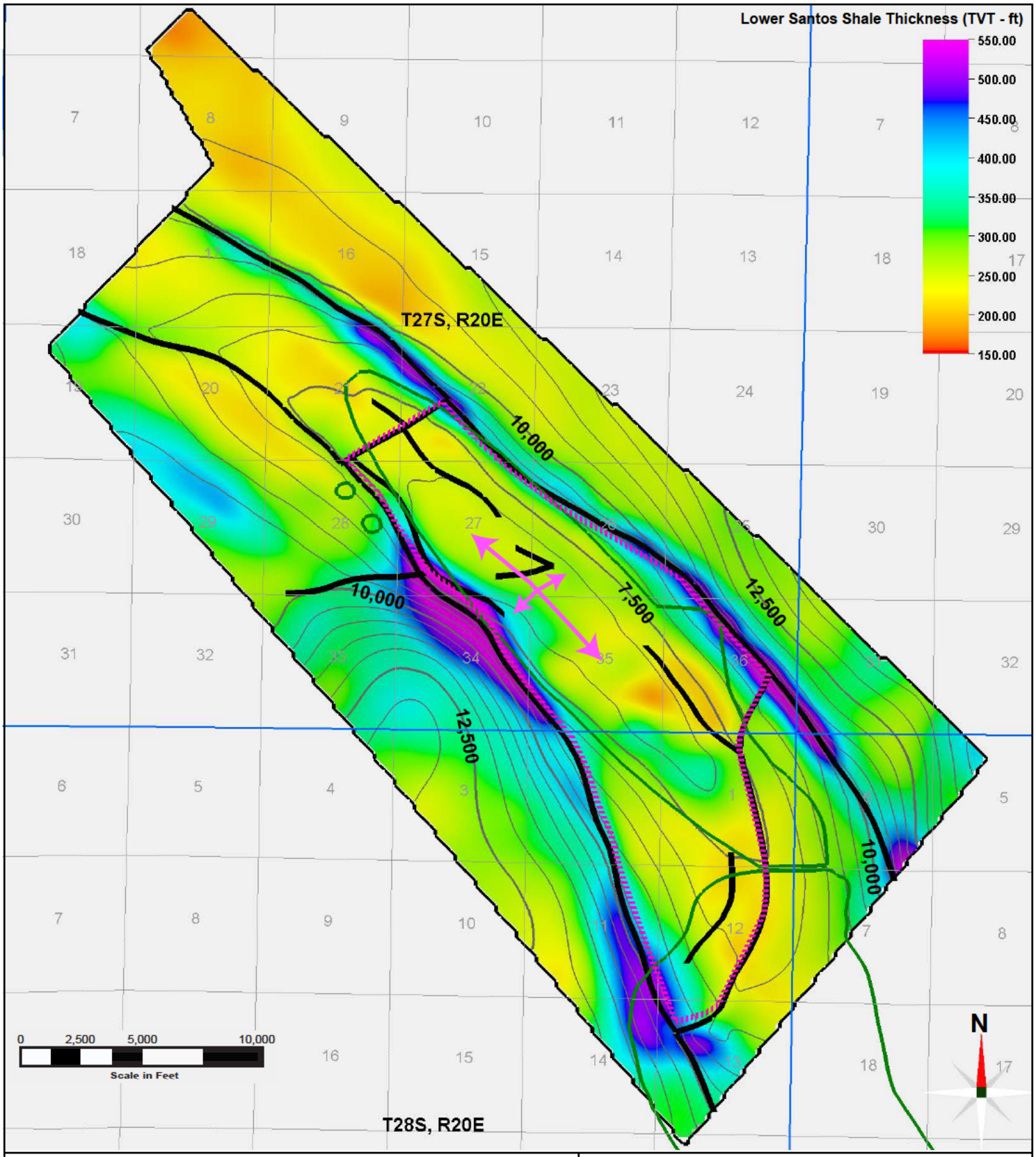
Figure 2.4-8

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.4-8 TVT of Upper Santos Shale.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:
ft - feet
TVT - true vertical thickness
CI - contour interval

Notes:
Thickness maps derived from well and seismic data.
Surface artifacts due to interpolation across faults and structural model grid.

True Vertical Thickness of Lower Santos Shale
North Belridge Oil Field
Western Kern County
California

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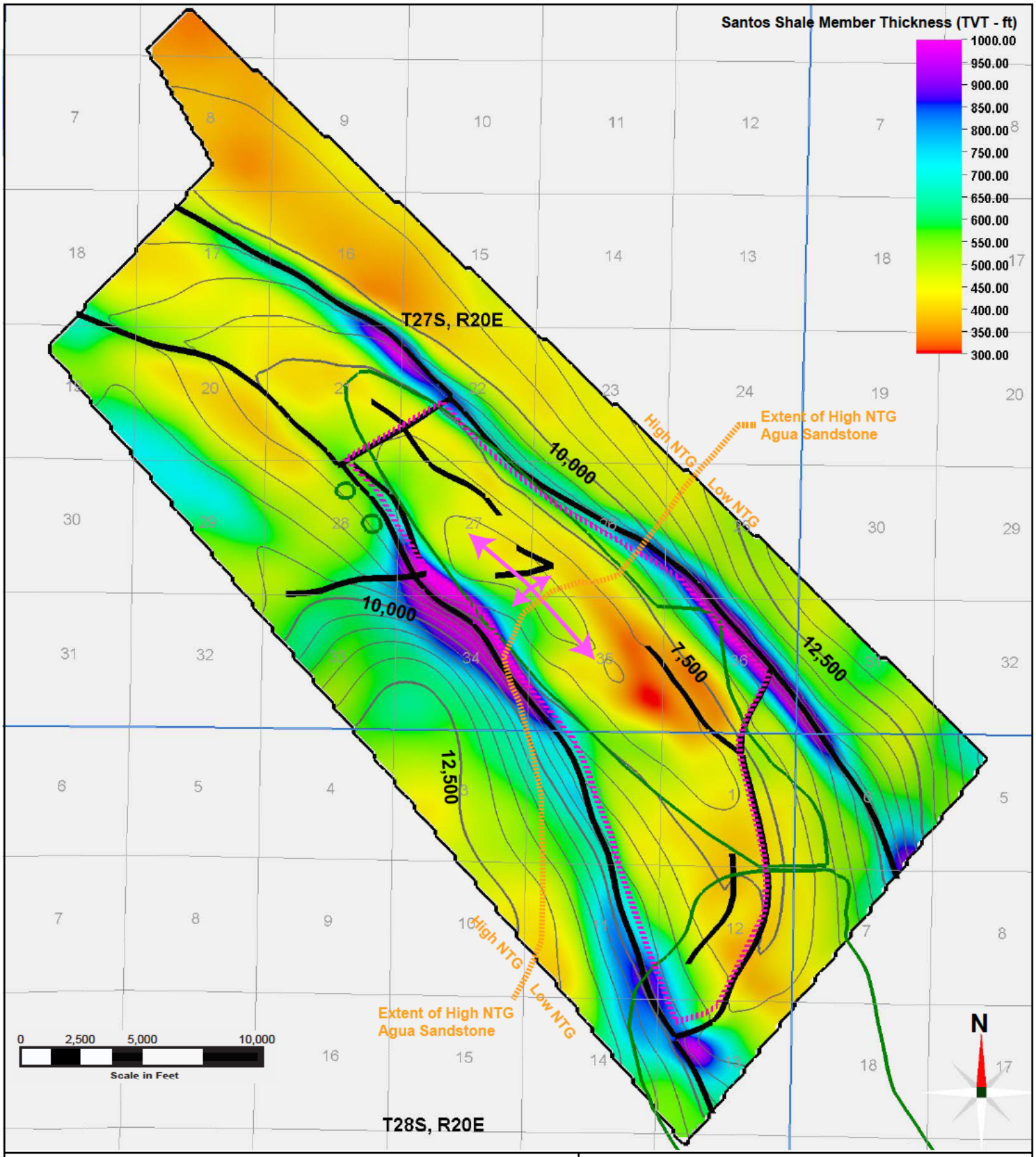
Figure 2.4-9

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.4-9 TVT of Lower Santos Shale.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:

ft - feet
TVT - true vertical thickness
CI - contour interval
NTG - net-to-gross

Notes:

Thickness maps derived from well and seismic data. Surface artifacts due to interpolation across faults and structural model grid.

True Vertical Thickness of Santos Shale Member Includes Upper Santos Shale, Agua Sandstone, and Lower Santos Shale

North Belridge Oil Field
Western Kern County
California

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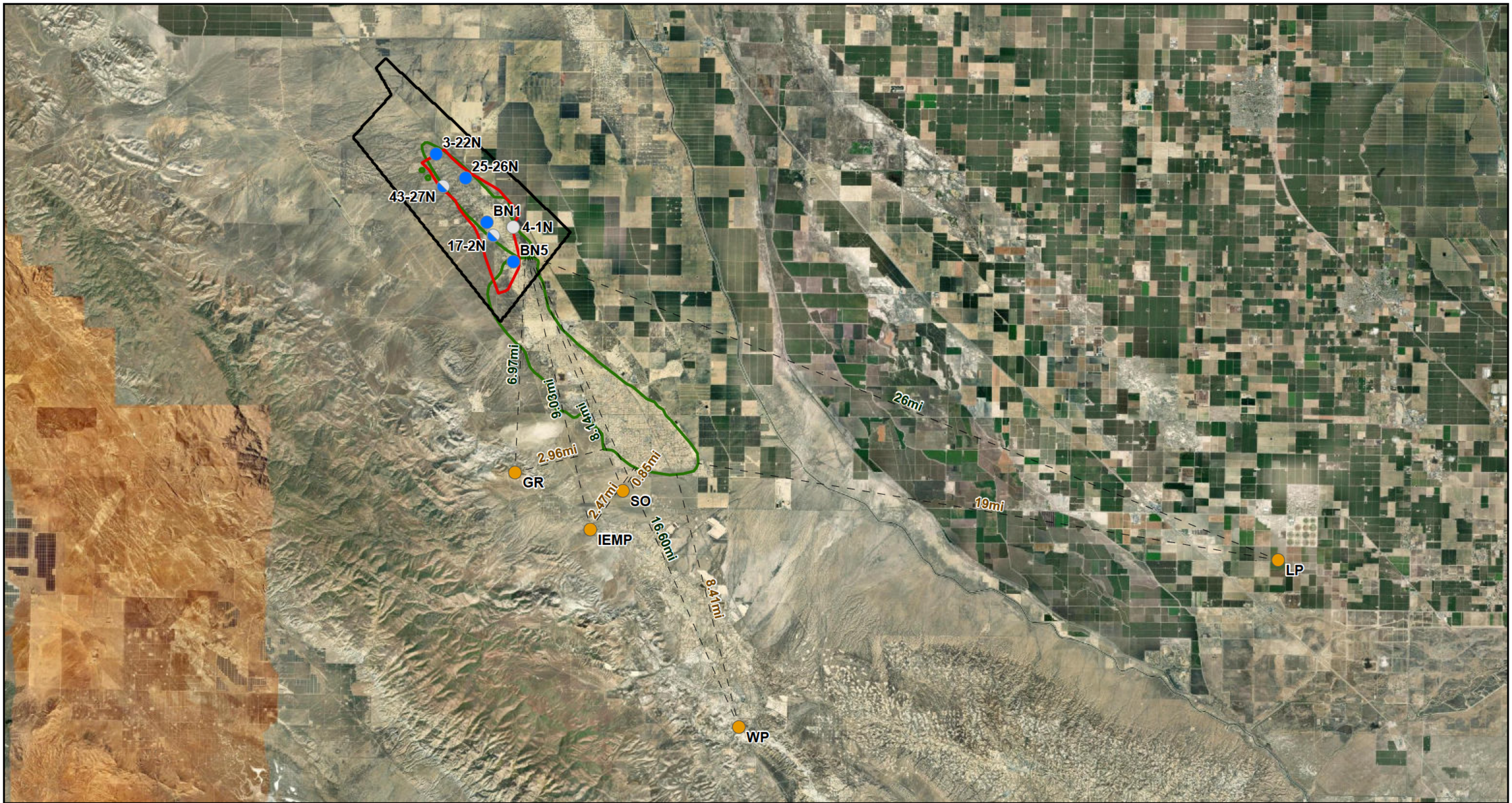
Figure 2.4-10

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.4-10 TVT of Santos Shale Mem.ai



Legend

- 64 Zone Sandstone Mineralogical Sample Location
- Formation Water Geochemical Sample Location
- Santos Shale Mineralogical Sample Location
- Area of Review
- Area of Interest
- 1973/74 Oil Field Boundary and Aquifer Exempt Areas

Notes:
Locations BN1 and BN5 are approximate.

N

0 3 Miles

Geochemical Characterization Sampling Locations
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

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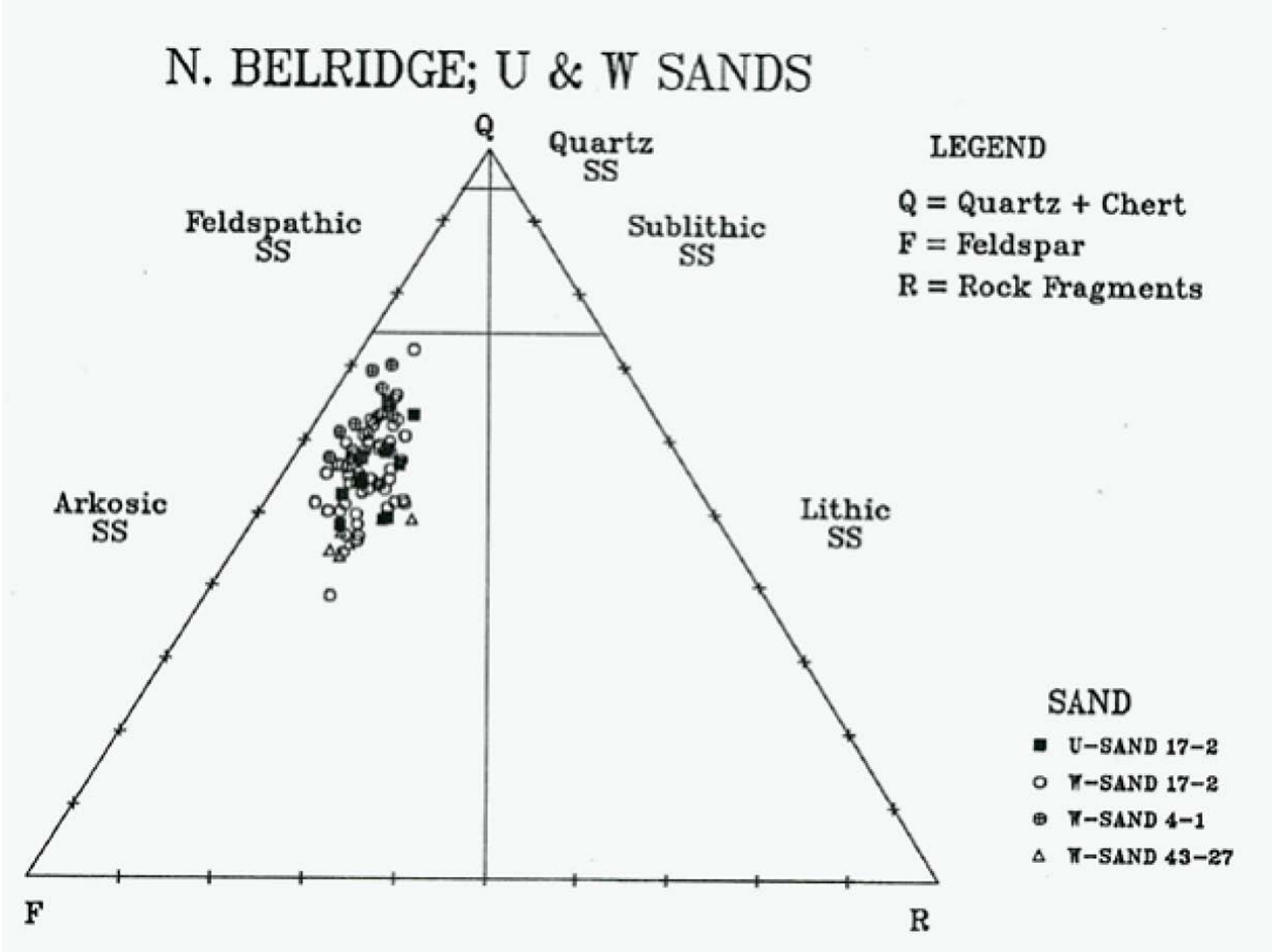
Figure 2.4-11

P:\GIS\Aera Belridge CCUS\Projects\EPA Response\Section 2.4 Injection and Confining Zone\ArcGIS Pro\Section 2.4 Injection and Confining Zone.aprx\Fig2.4-11 Geochemical Sampling Locations 11/30/2023 4:07 PM (MBradford)



Notes:
Quartz, feldspar, and rock fragment results were normalized from pertrographic thin section point-counting results.
From Kaczorowski et al. [1986].

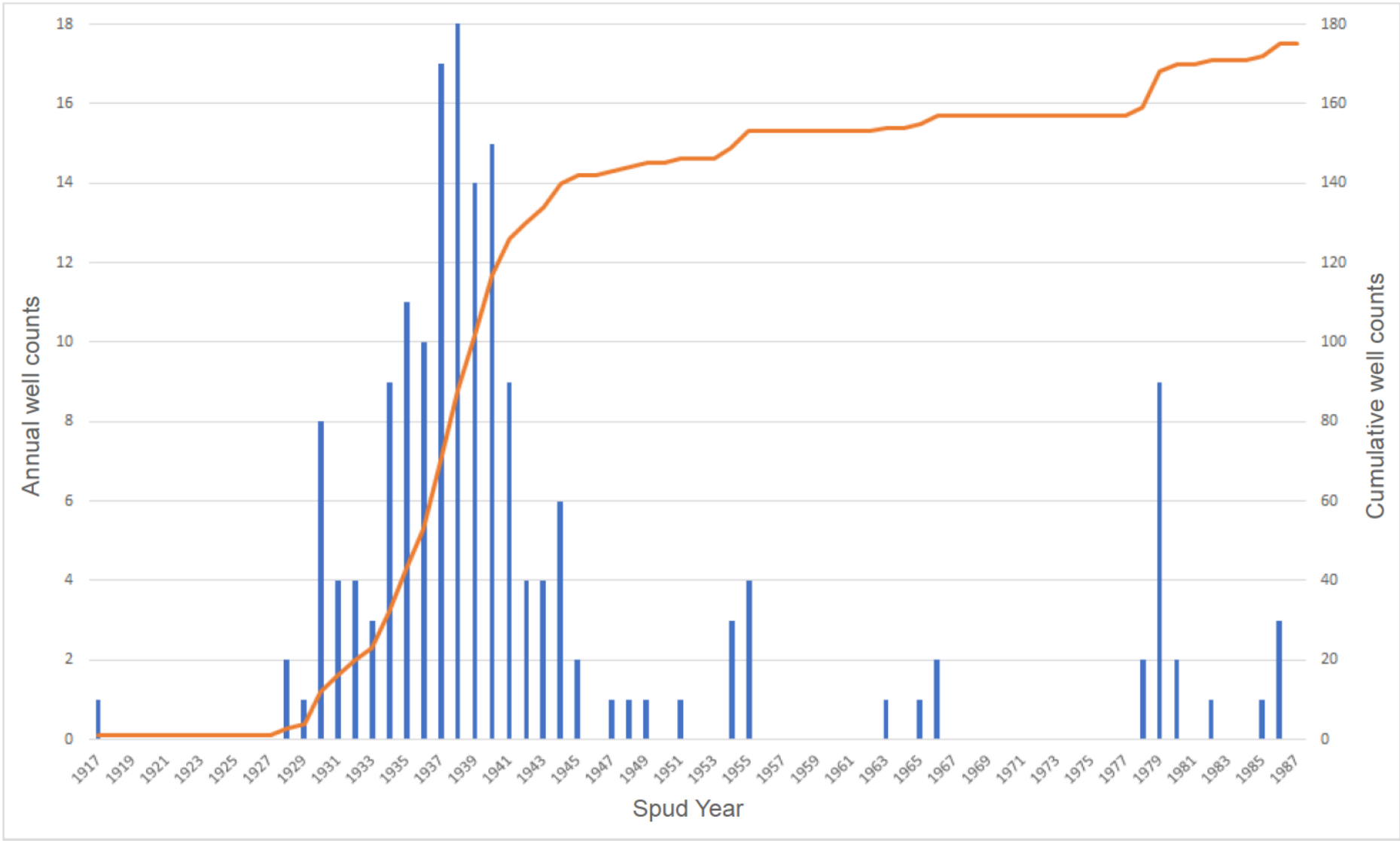
Injection Zone QFR Diagram
North Belridge Oil Field
Western Kern County
California

Geosyntec consultants

CarbonFrontier | December 2023

Figure 2.4-12

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.4-12 Injection Zone QFR Diagram.ai



North Belridge Development History

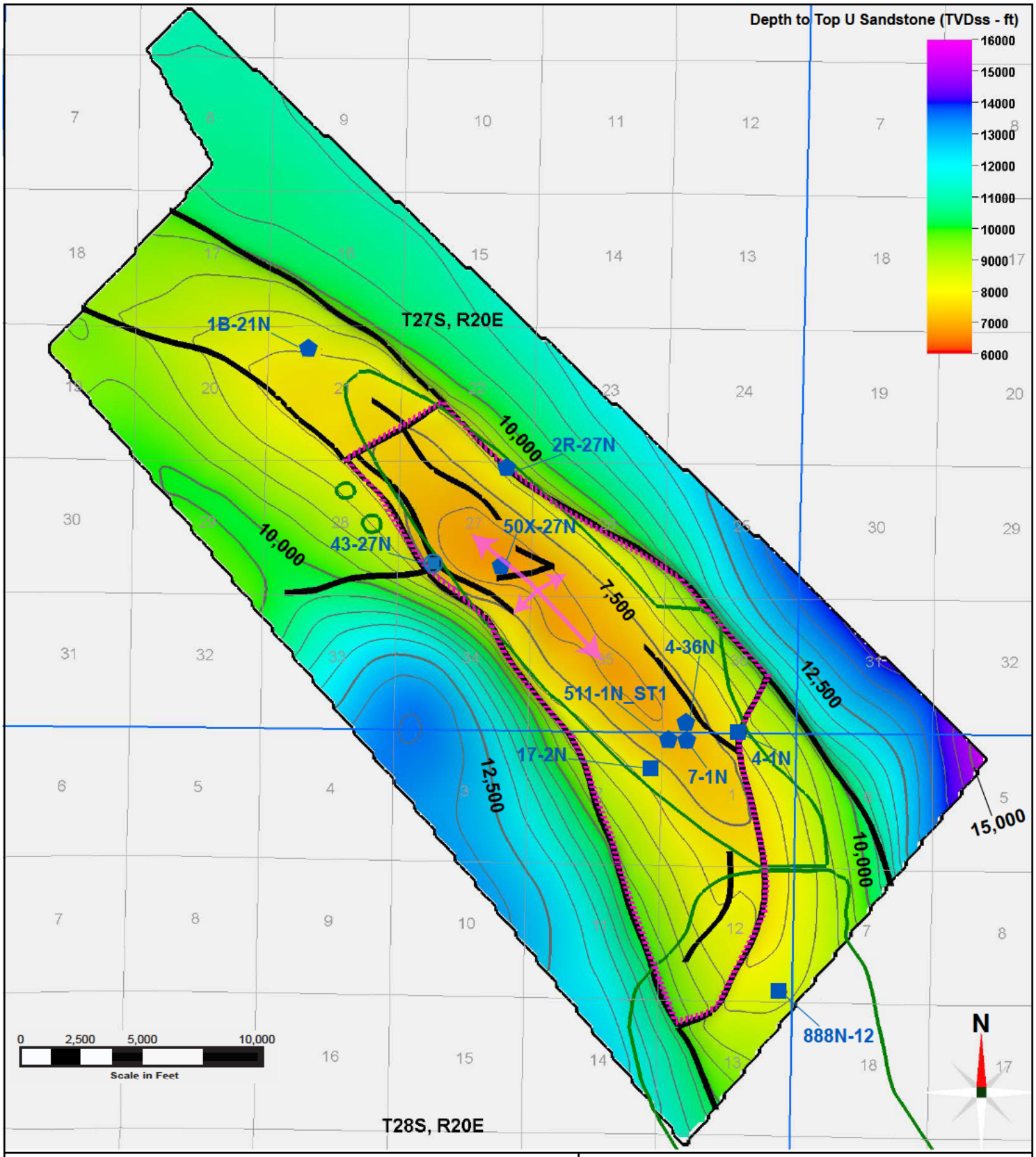
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.4-13

CarbonFrontier	December 2023

Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.4-13 NBel Dev History.ai



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review Boundary
- Anticline Axis
- Wells with Usable, Modern Density Logs
- Wells with Pre-1975 Conventional Core Data
- Wells with Post-1975 Conventional Core Data

Explanation:
ft - feet
TVDss - true vertical depth sub sea(ft)
CI - contour interval

Wells with Petrophysical Data

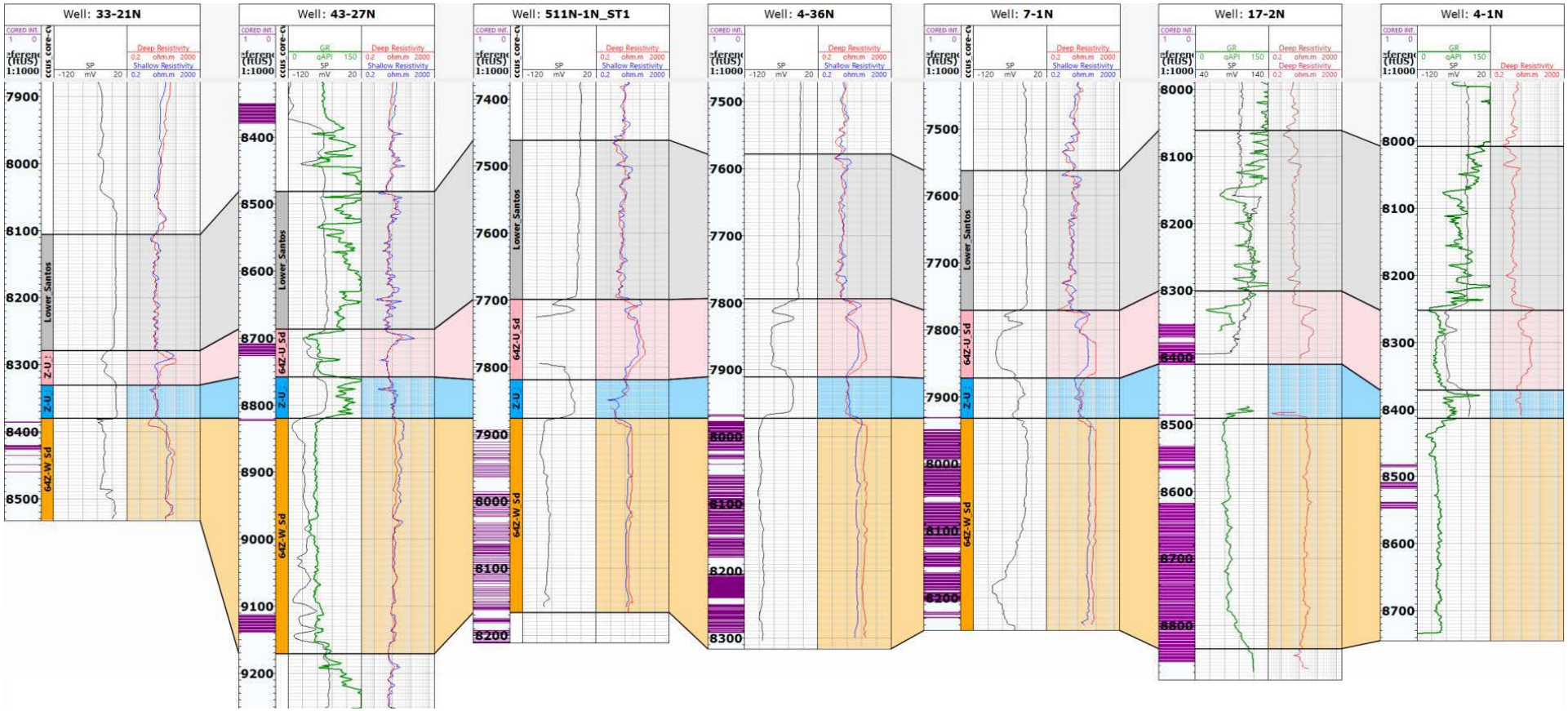
North Belridge Oil Field
Western Kern County
California

Geosyntec consultants

CarbonFrontier | December 2023

Figure 2.4-14

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.4-14 Wells with Petrophysical Data.ai



Explanation:

GR = Gamma Ray Log
gAPI = API gamma ray unit
ftUS = feet
ohm.m = ohm-meter
Cored Int. = Cored interval
SP = Spontaneous Potential
mV = millivolts

Lower_Santos = Lower Santos Shale
64Z-U_Sd = 64 Zone U Sandtone
Z-U = 64 Zone U Shale
64Z-W_Sd = 64 Zone W Sandstone

Petrophysical Well Logs

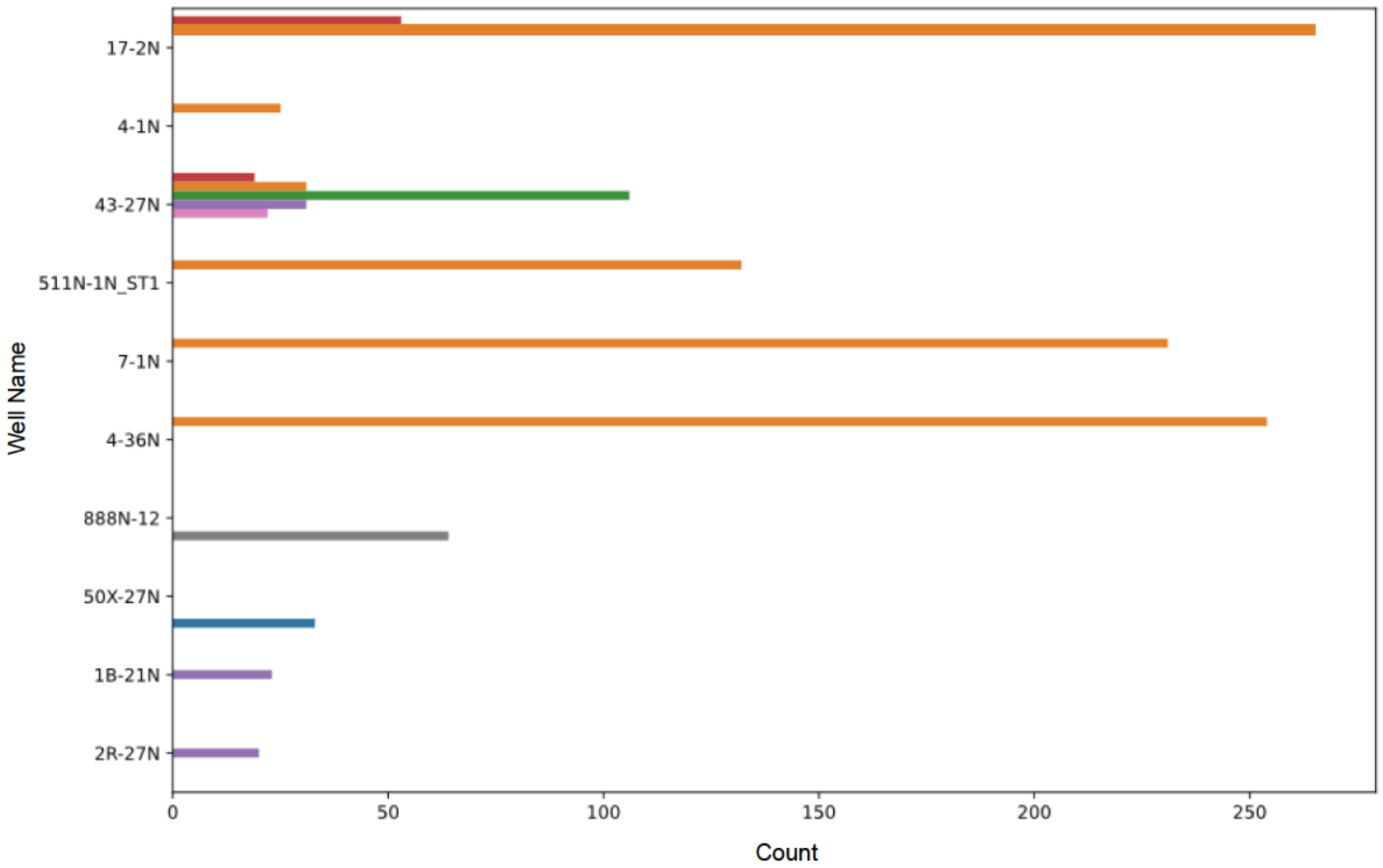
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier	December 2023

Figure 2.4-15

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.4-15 Petrophys Well Logs.ai



Legend

- Temblor Sands
- Carneros Sandstone
- Upper Santos Shale
- Agua Sandstone
- U Sandstone
- W Sandstone
- Oceanic Sandstone

64 Zone

Distribution of Core Samples

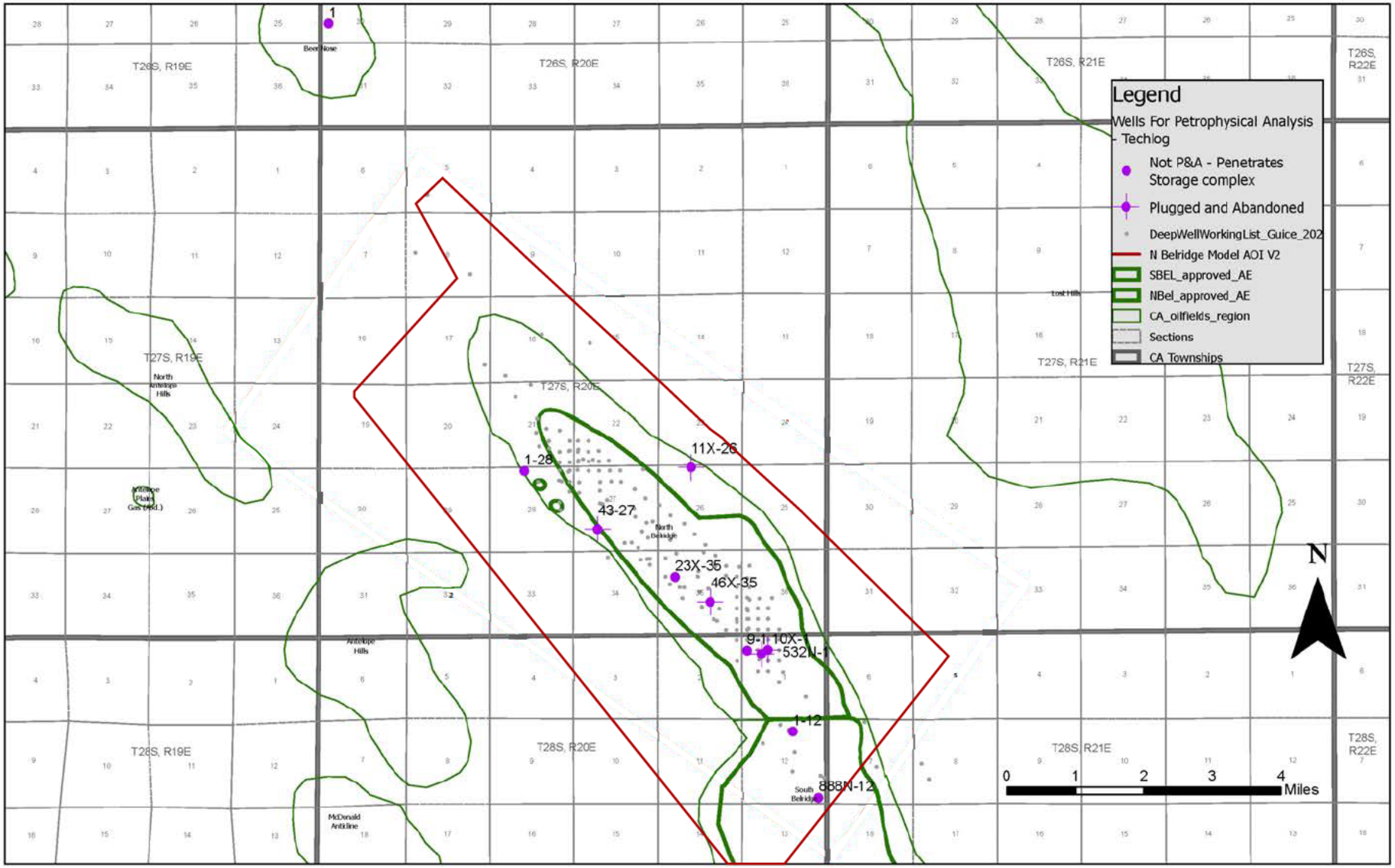
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier | December 2023

Figure 2.4-16

Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.4-16 Distribution of Core Samples.ai



Explanation:
AOI = Area of Interest
P&A = Plugged and Abandoned

Petrophysical Wells for Analysis

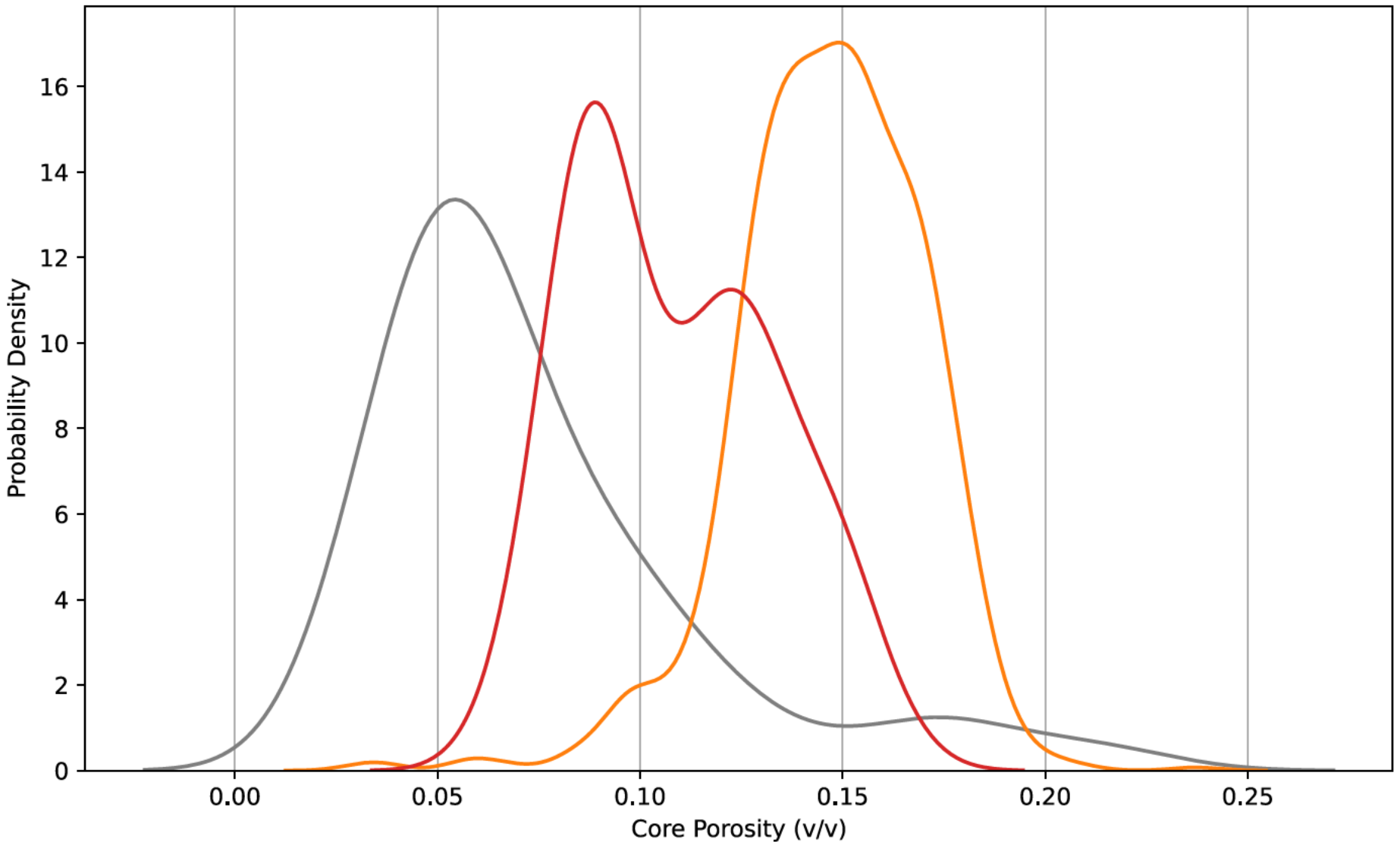
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier	December 2023

Figure 2.4-17

Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.4-17 Petrophysical Wells.ai



Legend:

- Santos Shale
- U Sandstone
- W Sandstone

64 Zone

Explanation:

v/v = pore volume/total volume

Core Porosity Distribution

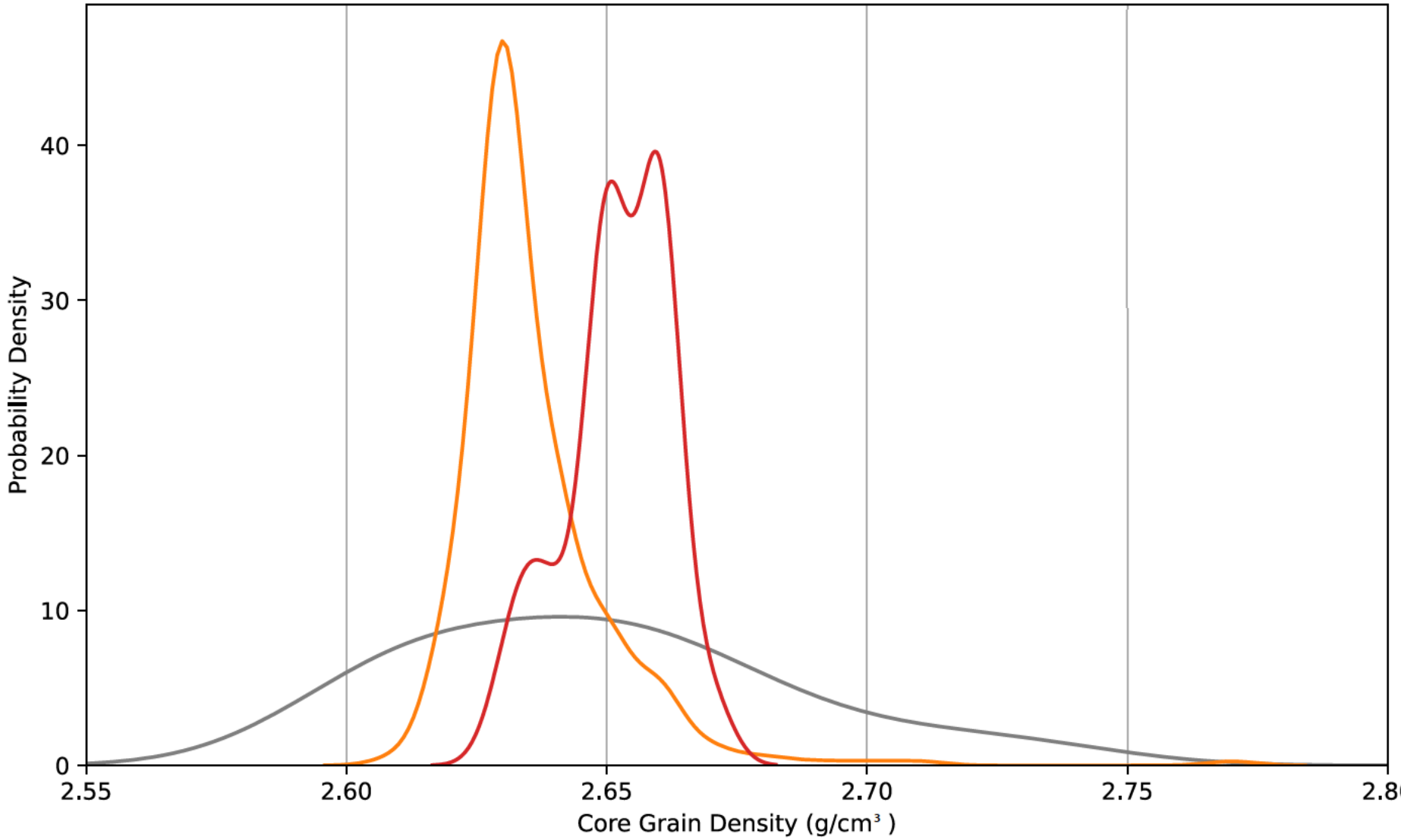
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier | December 2023

Figure 2.4-18

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.4-18 Core Effective Porosity Distribution.ai



Legend:

- Santos Shale
- U Sandstone
- W Sandstone

64 Zone

Explanation:

g = grams
cm³ = cubic centimeters

Core Grain Density Distribution

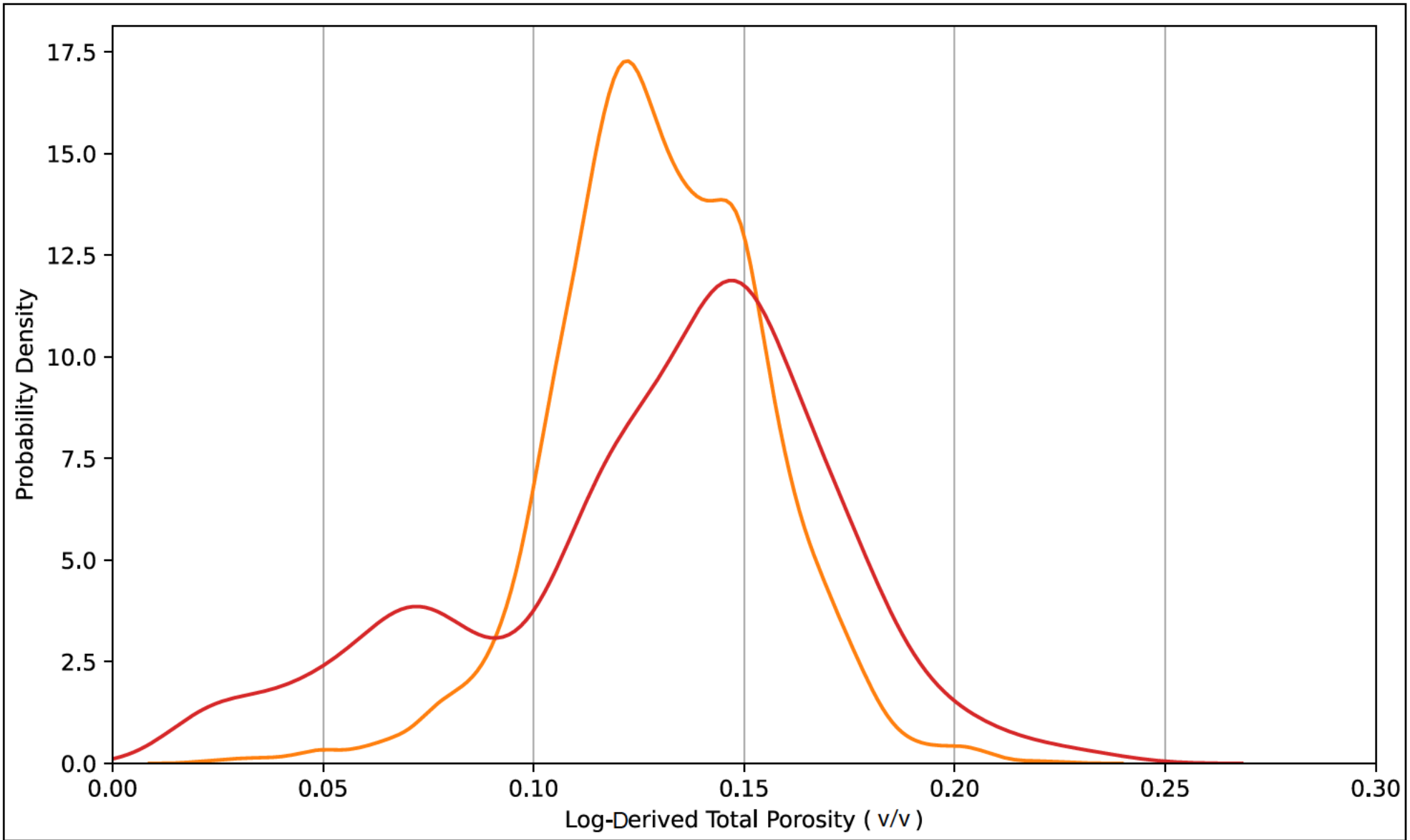
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier | December 2023

Figure 2.4-19

Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.4-19 Core Grain Density Dist.ai



Legend:

U Sandstone
W Sandstone
64 Zone

Explanation:

v/v = pore volume/total volume

Total Porosity Estimated from Logs – Sandstones

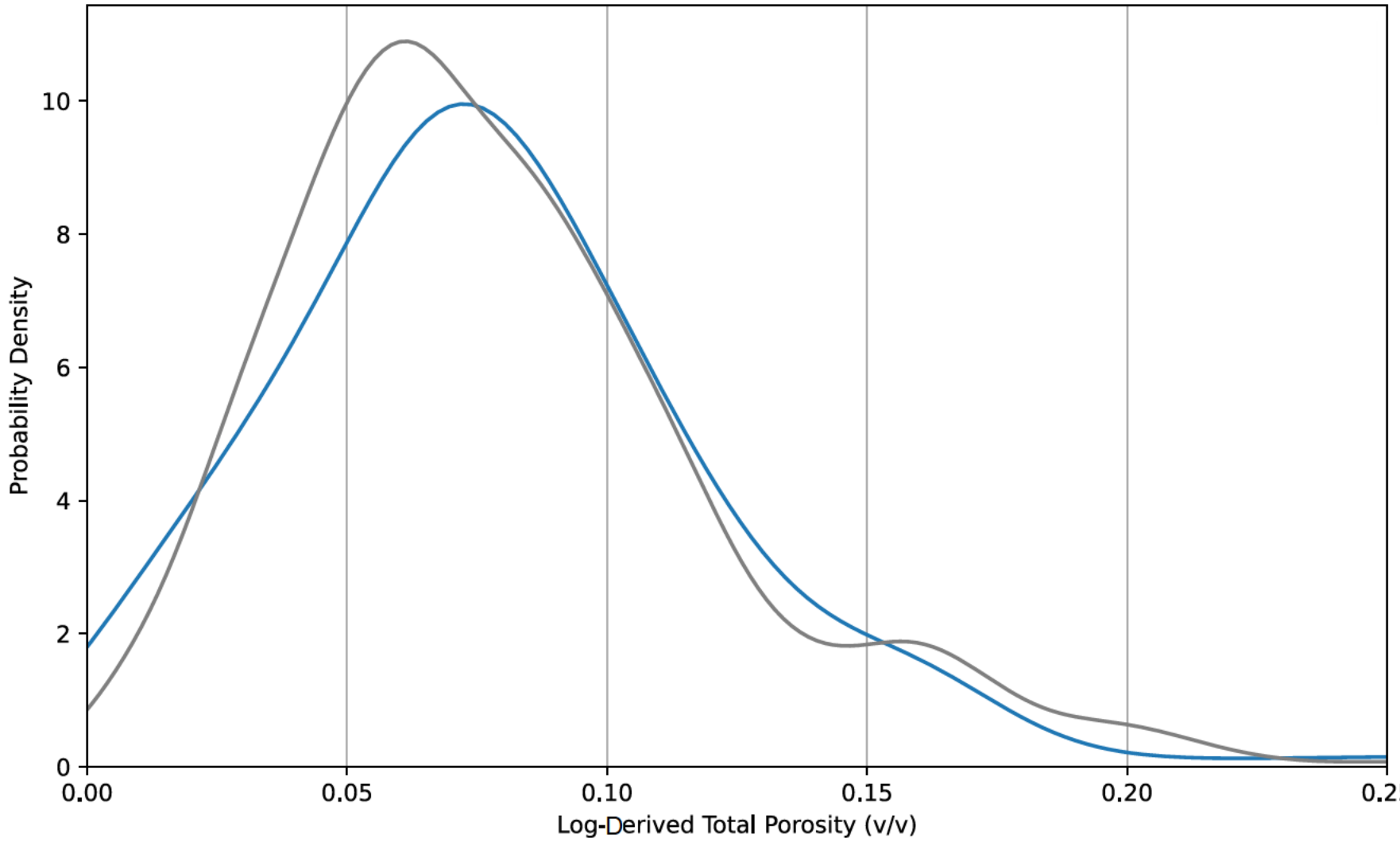
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier | December 2023

Figure 2.4-20a

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.4-20a Sandstone Estimated Total Porosity.ai



Legend:

- U Shale
- Lower Santos Shale

Explanation:

v/v = pore volume/total volume

Total Porosity Estimated from Logs – Shales

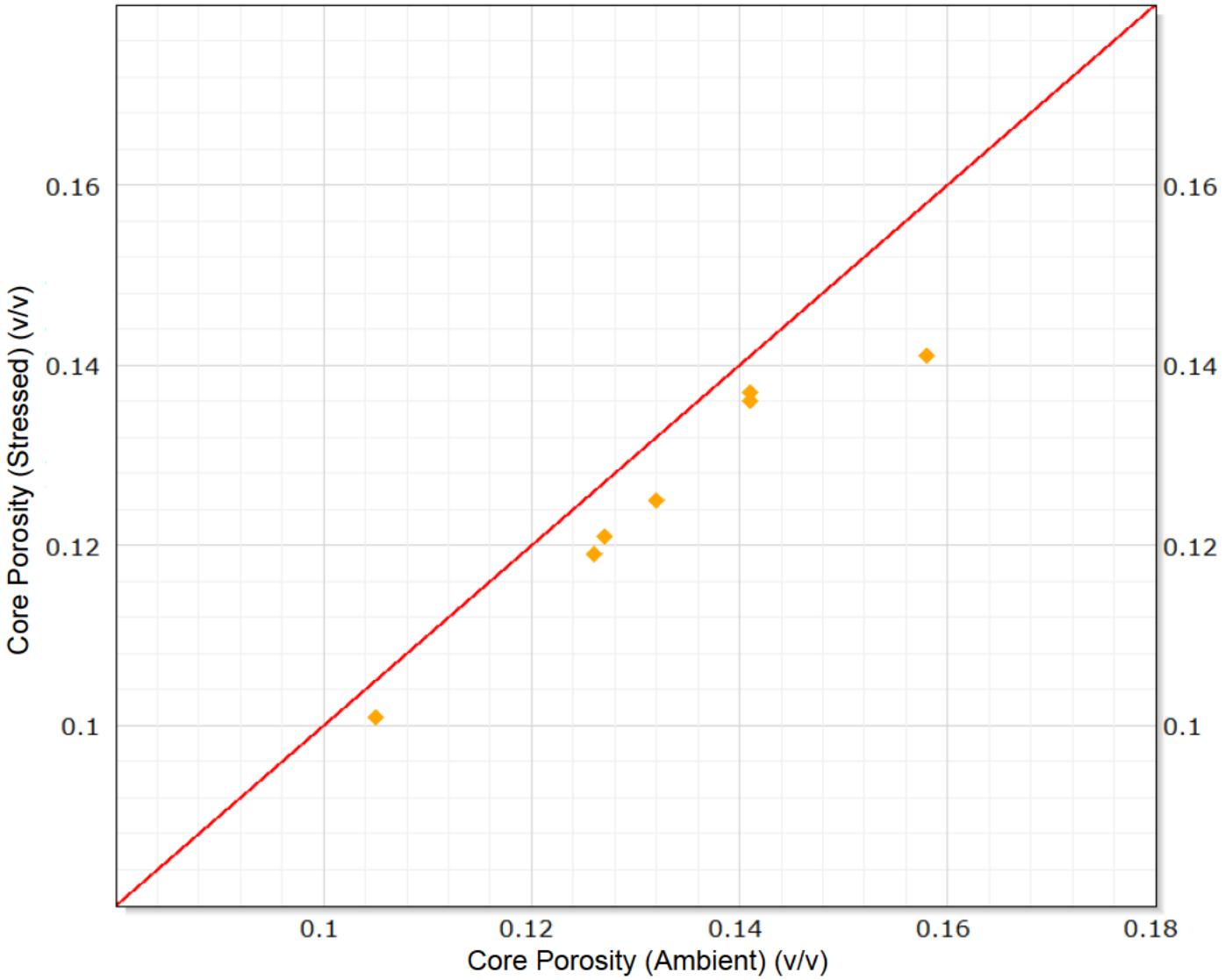
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier	December 2023

Figure 2.4-20b

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.4-20b Estimated Total Porosity - Shales.ai



Notes:
Reference depth (feet): 8,542.5 - 8,841.4
v/v = pore volume / total volume
Function: y=x

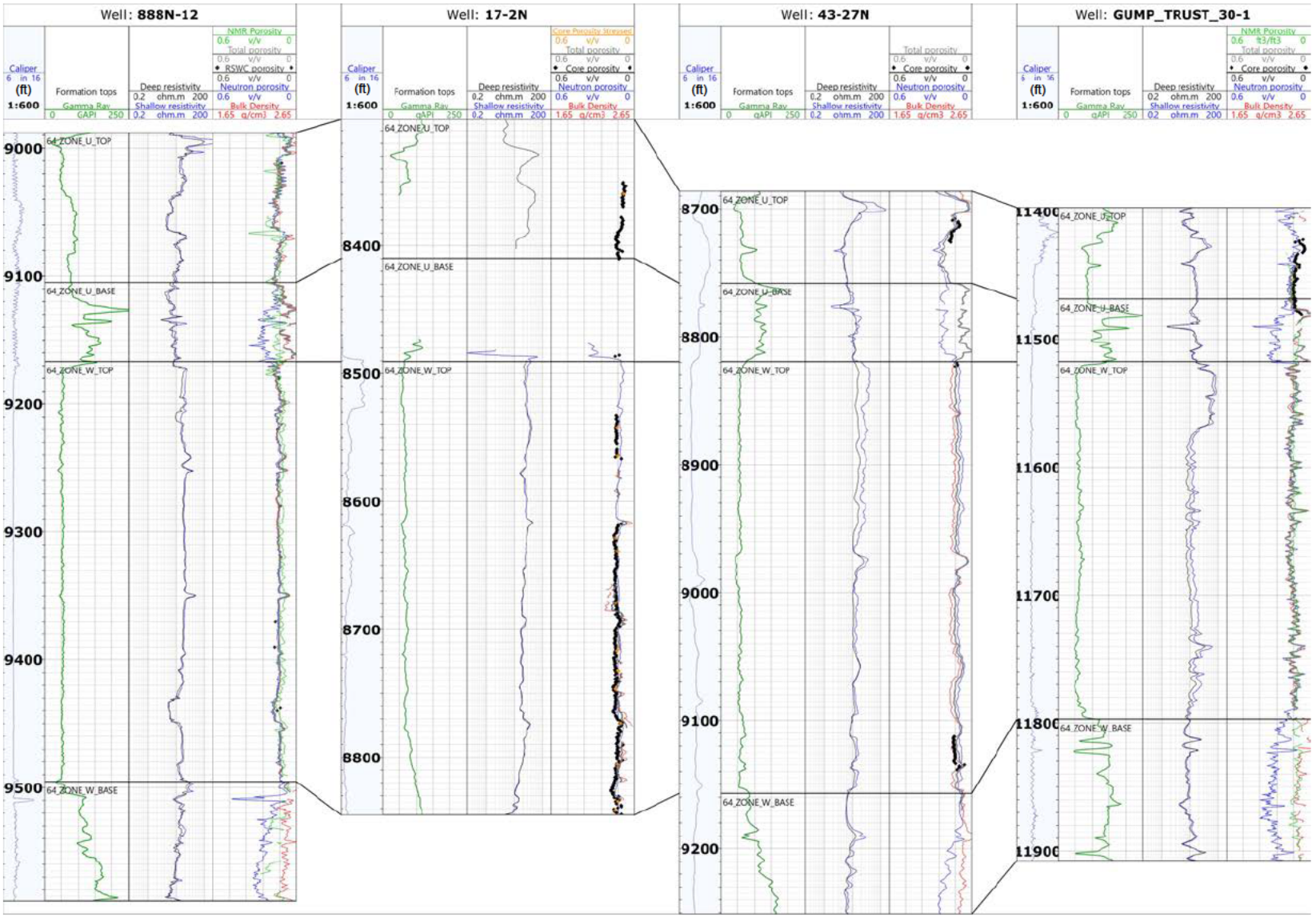
Unstressed and Stressed Porosity Correlation
17-2N Core
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.4-21

CarbonFrontier	December 2023

Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.4-21 Unstress&Stressed Porosity.ai



Explanation:

gAPI or GAPI = API gamma ray unit
ohm.m = ohm-meter
NMR = nuclear magnetic resonance
v/v = pore volume/total volume
RSWC = rotary sidewall core
g/cm³ = grams per cubic centemeter

64_ZONE_U_TOP = Top 64 Zone U Sandstone
64_ZONE_U_BASE = Base 64 Zone U Sandstone
64_ZONE_W_TOP = Top 64 Zone W Sandstone
64_ZONE_W_BASE = Base 64 Zone W Sandstone

Well to Core Porosity Calibration

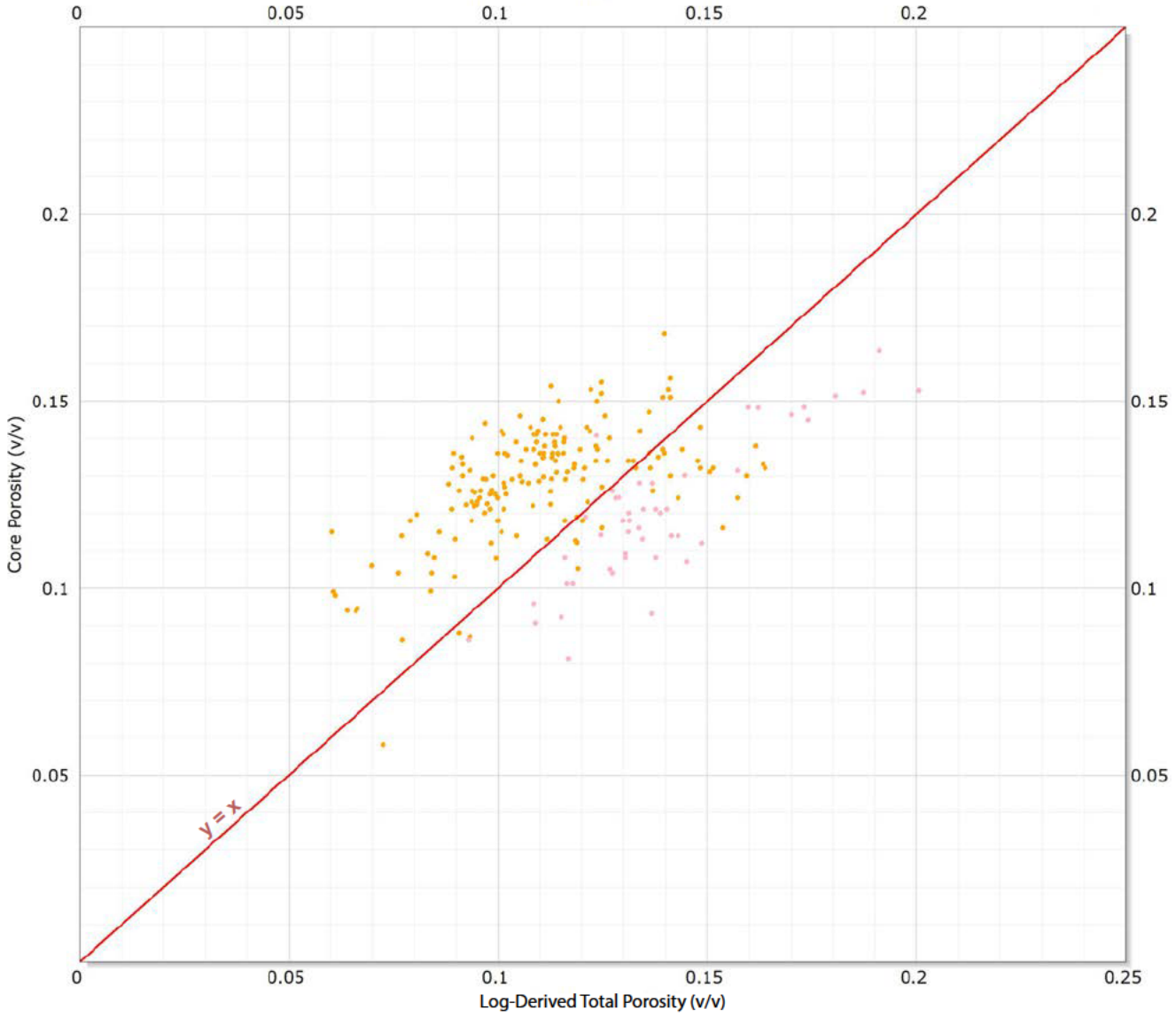
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.4-22

CarbonFrontier	December 2023

Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.4-22 Well to Core Porosity Calibration.ai



Legend:

- 64 Zone U Sandstone
- 64 Zone W Sandstone

Explanation:

v/v = pore volume/total volume

Core Porosity versus Log-Derived Total Porosity

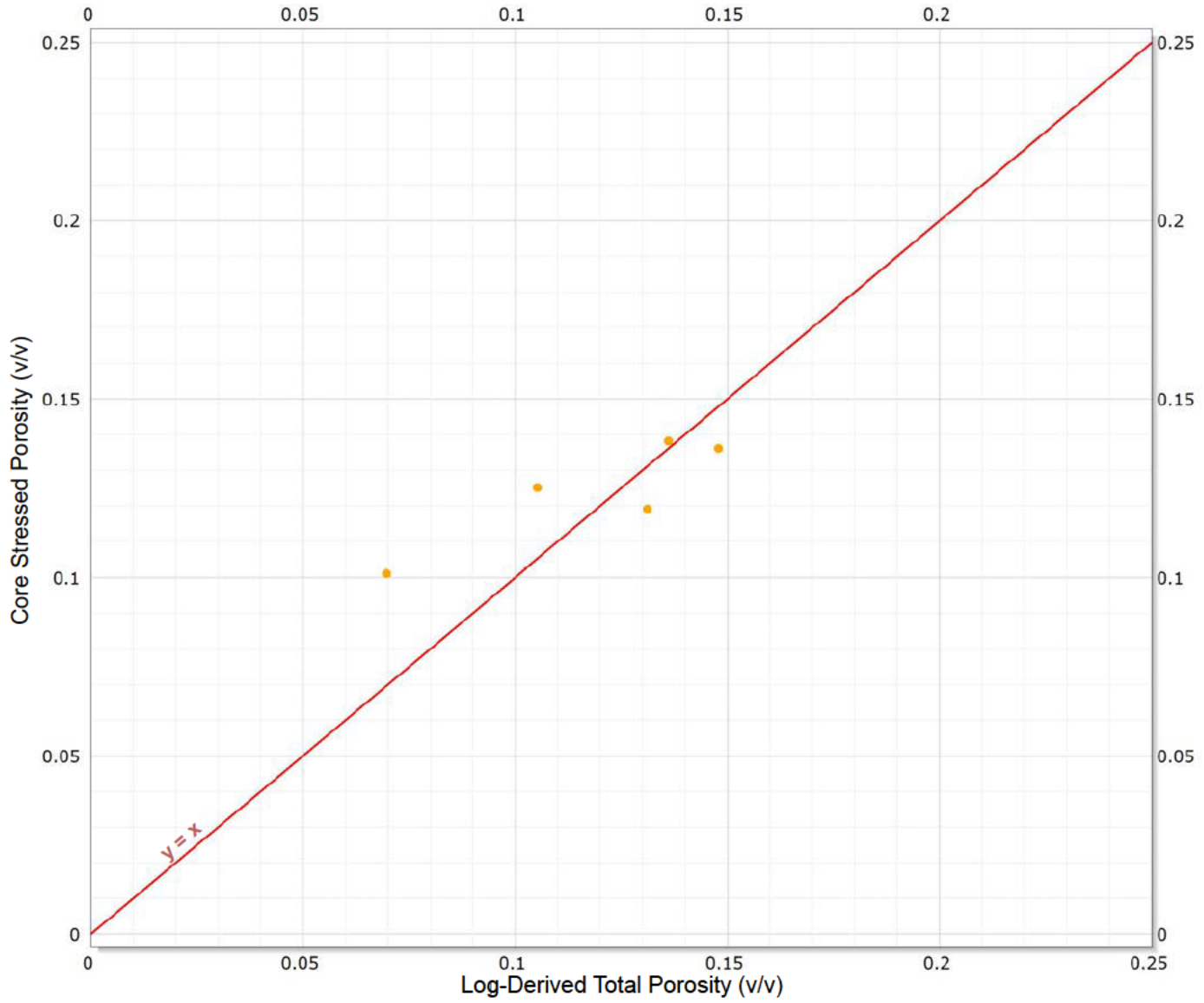
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.4-23

CarbonFrontier	December 2023

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.4-23 Core Porosity versus Log-derived total porosity.ai



Legend:
64 Zone W Sandstone

Explanation:
v/v = pore volume/total volume

Core Stressed Porosity (17-2N) versus Log-Derived Total Porosity

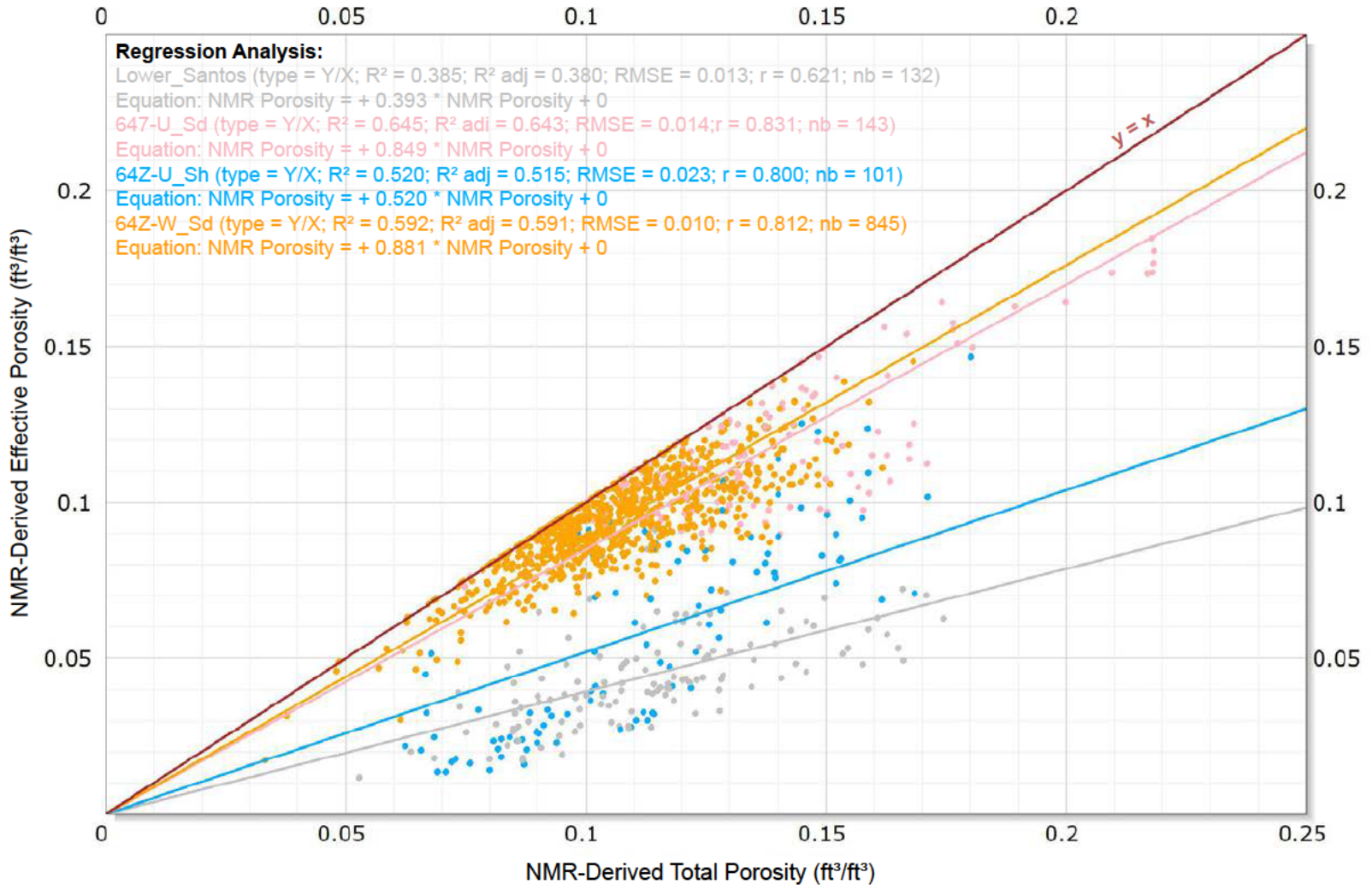
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.4-24

CarbonFrontier	December 2023

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.4-24 Core Stressed Porosity (17-2N) versus Log-derived total porosity.ai



Legend:

- Lower Santos Shale
- 64 Zone
  - U Sandstone
  - U Shale
  - W Sandstone

Explanation:

NMR = nuclear magnetic resonance
ms = milliseconds
gAPI = API gamma ray unit
ft³/ft³ = cubic feet per cubic feet
R² = coefficient of determination
adj = adjustment
RMSE = root mean square error
r = correlation coefficient
nb = negative binomial
Lower_Santos = Lower Santos Shale
64Z-U_Sd = 64 Zone U Sandstone
64Z-U_Sh = 64 Zone U Shale
64Z-W_Sd = 64 Zone W Sandstone

NMR-Derived Effective versus Total Porosity - 888N-12 and Gump Trust 30-1

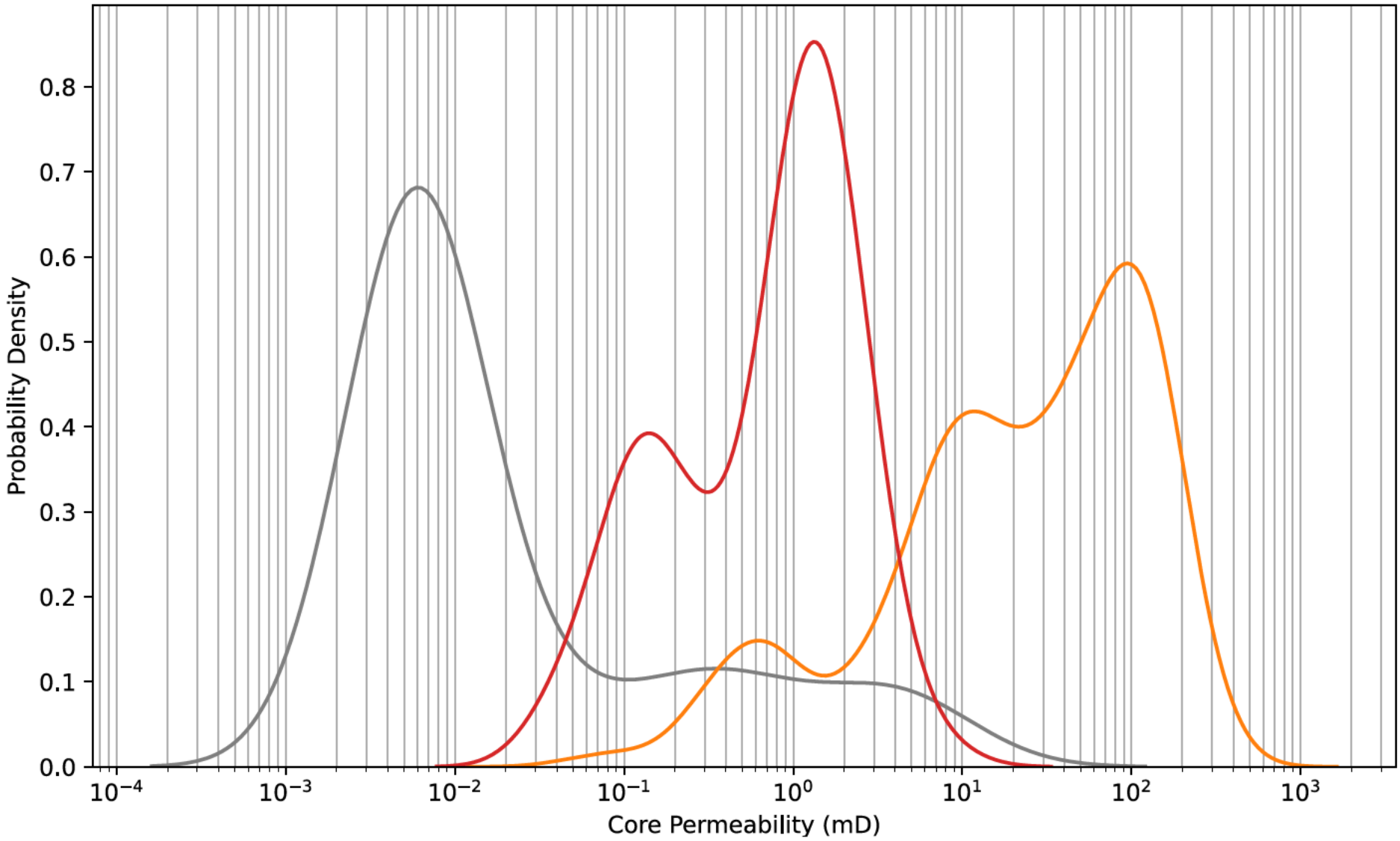
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.4-25

CarbonFrontier | December 2023

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.4-25 NMR Total versus Effective Porosity.ai



Legend:

Santos Shale
U Sandstone
W Sandstone
64 Zone

Explanation:

mD = millidarcies

Core Permeability Distribution

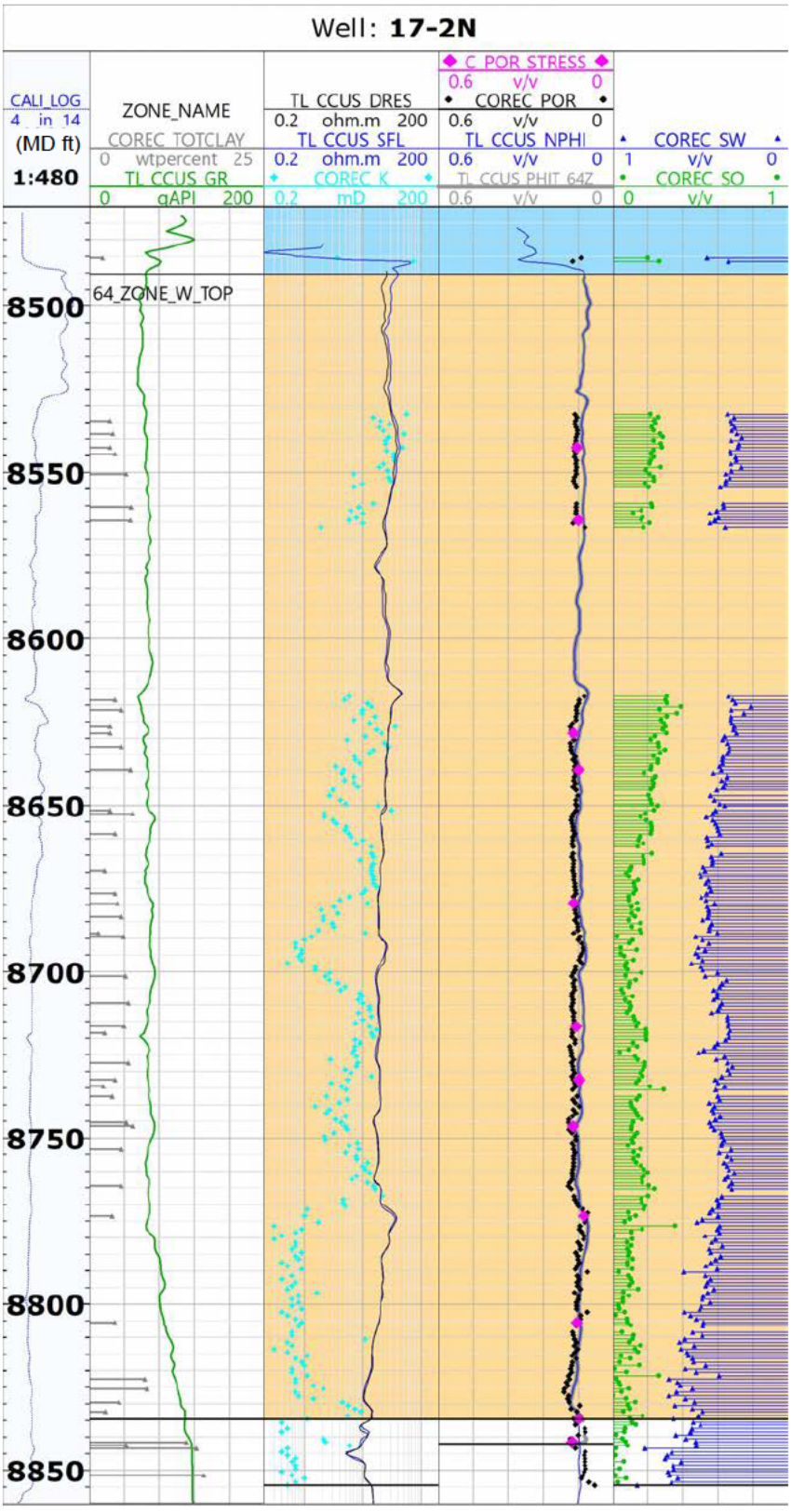
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier | December 2023

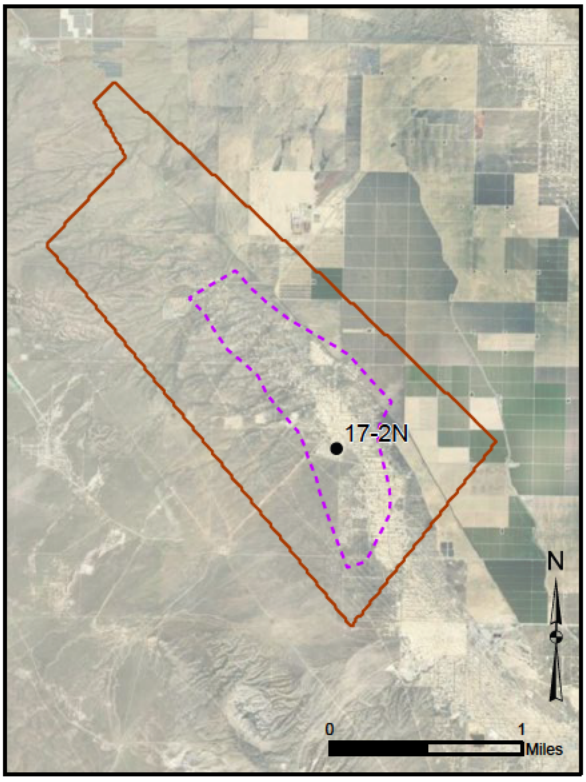
Figure 2.4-26

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.4-26 Core Permeability Distribution.ai



Explanation:

gAPI = API gamma ray unit
ohm.m = ohm-meter
mD = millidarcies
v/v = pore volume/total volume
64_ZONE_W_TOP = 64 Zone W Sandstone Top
MD ft = measured depth feet
COREC K = core-derived permeability to air
COREC POR = core-derived porosity
COREC SW = core-derived water saturation
COREC SO = core-derived oil saturation
TL CCUS GR = gamma ray log
TL CCUS DRES = deep resistivity log
TL CCUS SFL = shallow resistivity log
TL CCUS NPHI = neutron porosity log
C POR STRESS = core-derived stressed porosity



Legend:

Area of Interest
Area of Review Boundary

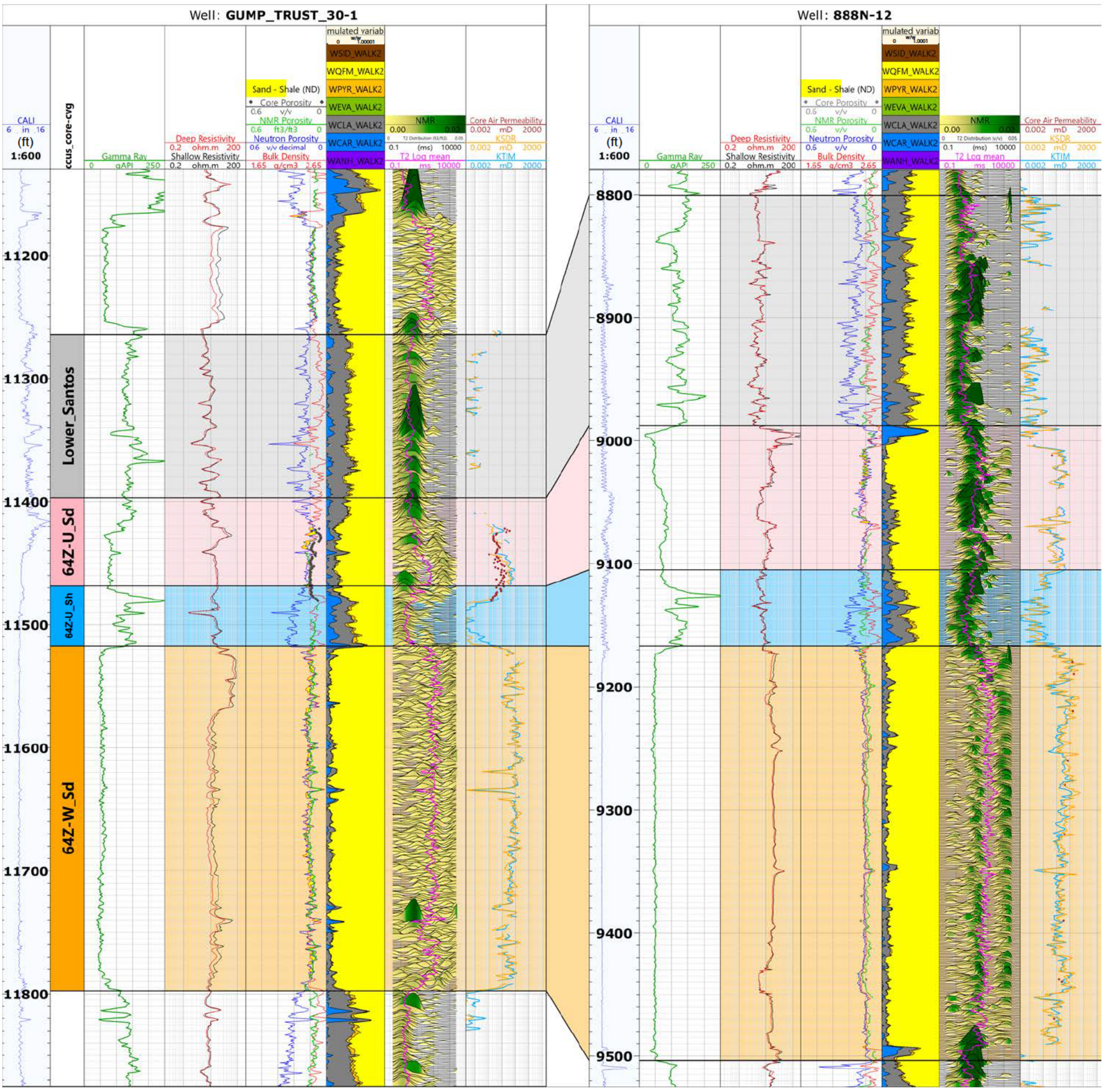
Rock Property Analysis for Well 17-2N

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.4-27

CarbonFrontier | December 2023



Explanation:

NMR = nuclear magnetic resonance
ms = milliseconds
gAPI = API gamma ray unit
ohm.m = ohm-meter
mD = millidarcies
v/v = pore volume/total volume
g/cm³ = grams per cubic centimeter
ft³/ft³ = cubic feet per cubic feet

KSDR = Schlumberger-Doll Research Model Permeability
KTIM = Timur-Coates Model Permeability
Lower_Santos = Lower Santos Shale
64Z-U_Sd = 64 Zone U Sandstone
64Z-U_Sh = 64 Zone U Shale
64Z-W_Sd = 64 Zone W Sandstone

Nuclear Magnetic Resonance Logs for Injection and Confining Zone - 888N-12 and Gump Trust 30-1

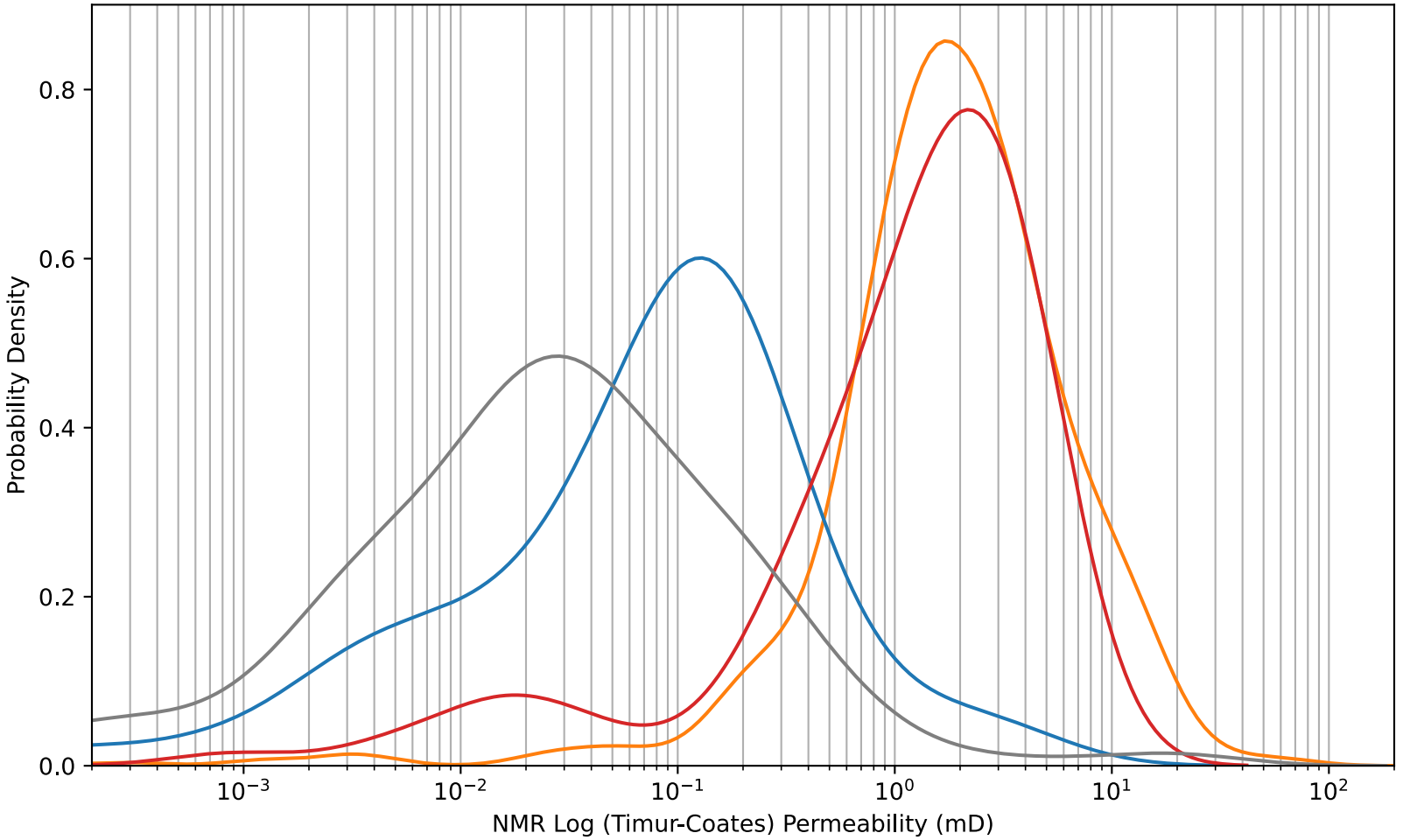
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.4-28

CarbonFrontier | December 2023

Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.4-28 NMR Logs 888N-12 and 30-1.ai



Legend:

- Lower Santos Shale
- U Sandstone
- U Shale
- W Sandstone

64 Zone

Explanation:

mD - millidarcy

Nuclear Magnetic Resonance (Timur-Coates) Permeability Distribution

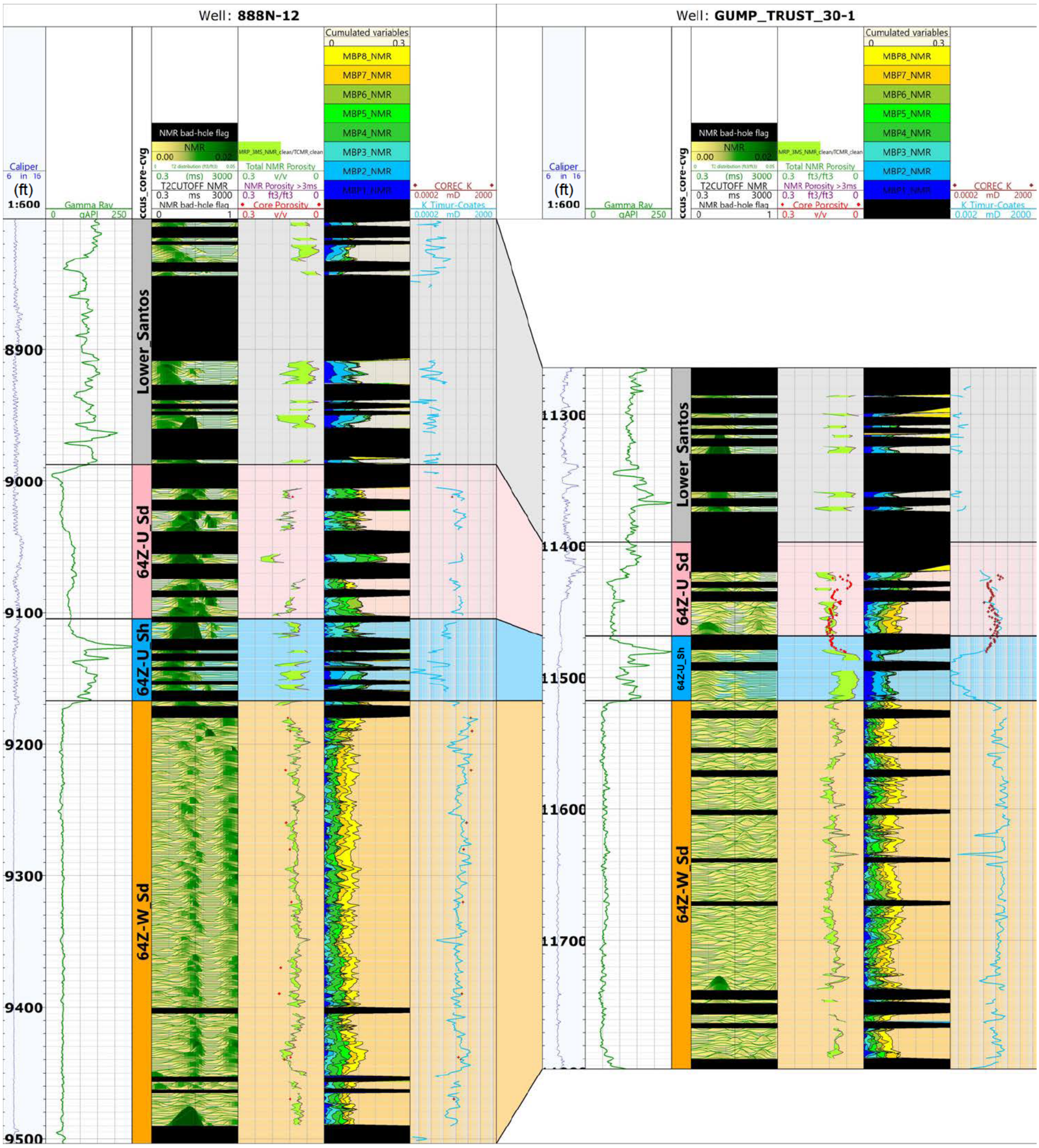
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier	December 2023

Figure 2.4-29

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.4-29 NMR Permeability Dist.ai



Explanation:

NMR = nuclear magnetic resonance
ms = milliseconds
gAPI = API gamma ray unit
ohm.m = ohm-meter
mD = millidarcies
v/v = pore volume/total volume
COREC K = core-derived permeability to air
ft^3/ft^3 = cubic feet per cubic feet
K Timur-Coates = Timur-Coates Model Permeability

Lower_Santos = Lower Santos Shale
64Z-U_Sd = 64 Zone U Sandstone
64Z-U_Sh = 64 Zone U Shale
64Z-W_Sd = 64 Zone W Sandstone

Data Quality NMR Logs with Core Data - 888N-12 and Gump Trust 30-1

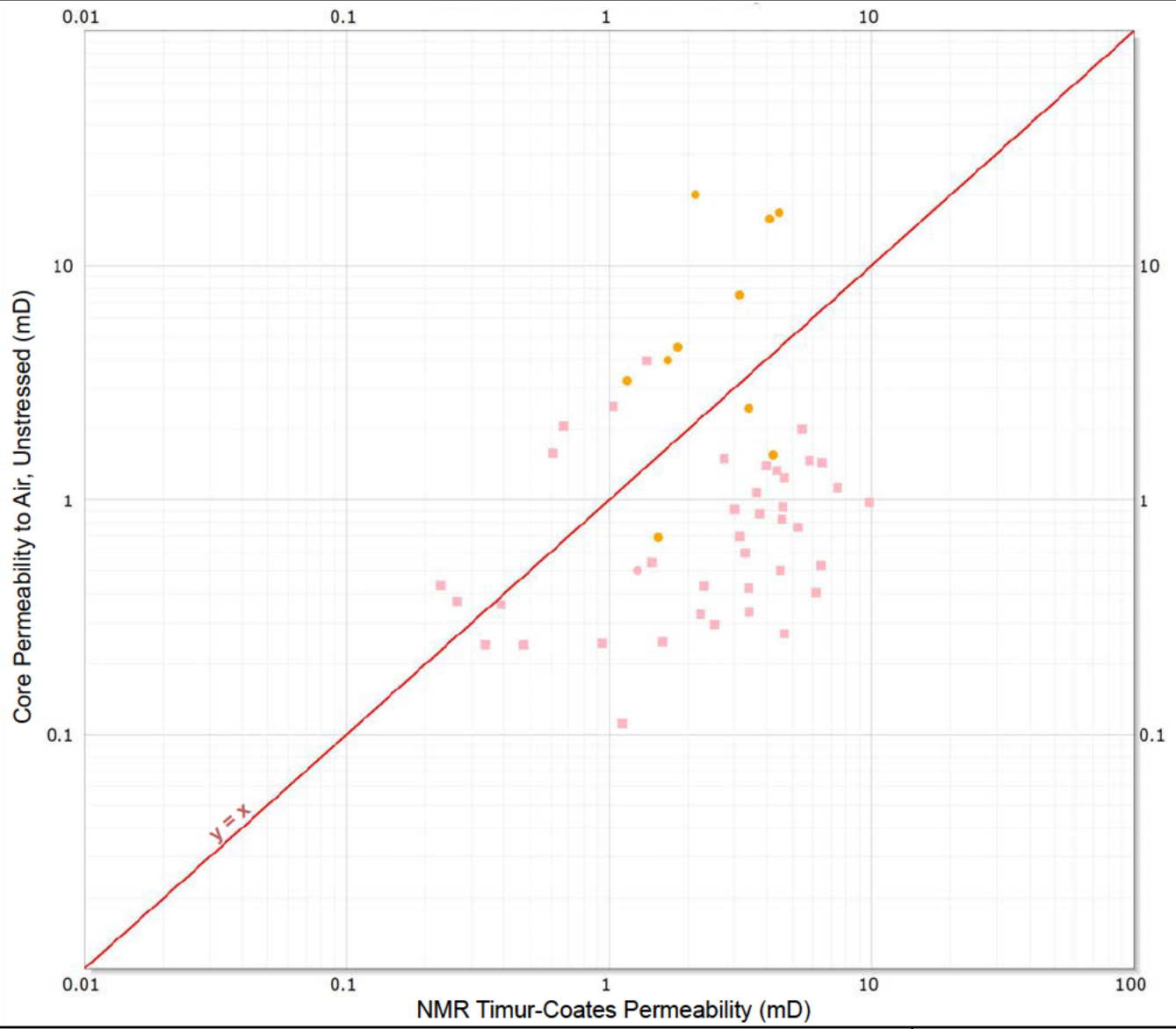
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.4-30

CarbonFrontier | December 2023

Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.4-30 Data Quality NMR Logs.ai



Legend:

- 64 Zone U Sandstone
- 64 Zone W Sandstone

Explanation:

NMR = nuclear magnetic resonance

mD = millidarcies

Core Permeability versus NMR Timur-Coates Permeability

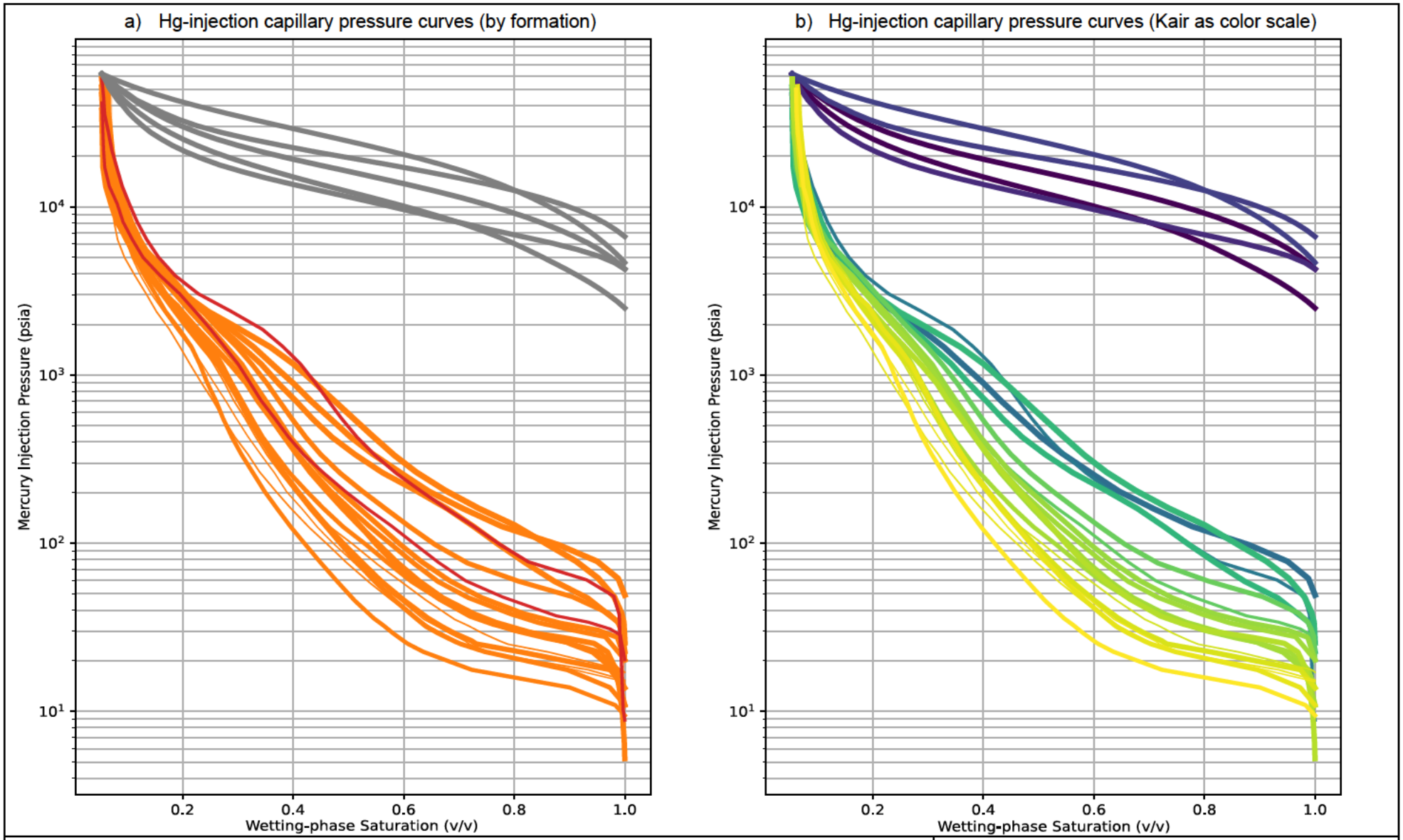
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.4-31

CarbonFrontier	December 2023

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.4-31 Core Permeability vs Timur-Coates Permeability.ai



Mercury/Air Capillary Pressure Curves

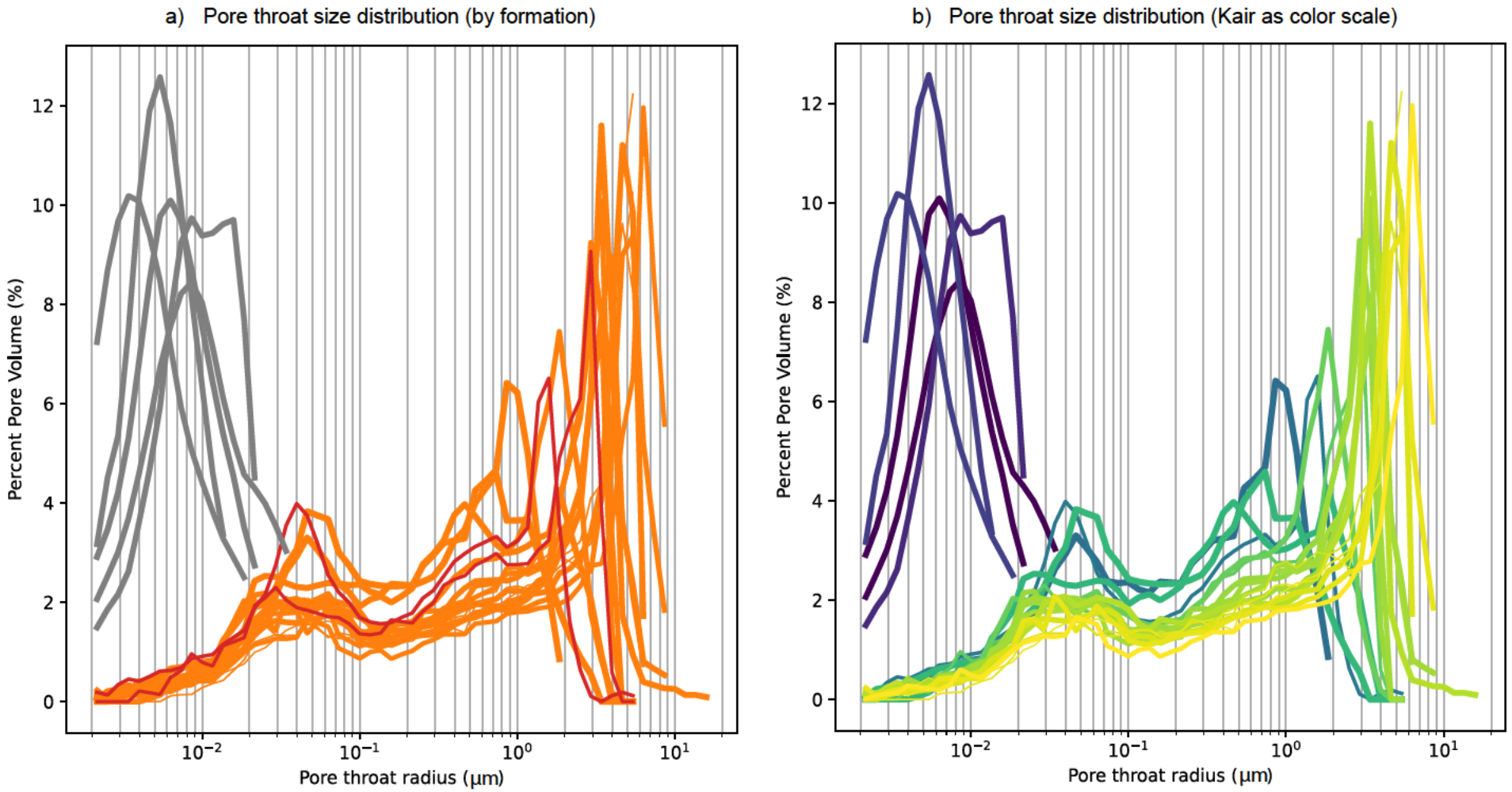
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.4-32

CarbonFrontier | December 2023

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.4-32 Mercury&Air Cap Pressure.ai



Legend:

- Santos Shale
- U Sandstone
- W Sandstone

64 Zone

Core Depth (ft)
- 8250
- 8400
- 8550
- 8700

Log Kair
- -6
- -4
- -2
- 0
- 2

Explanation:
Kair - Klinkenberg porosity
µm - micrometer

Pore Throat Size Distributions

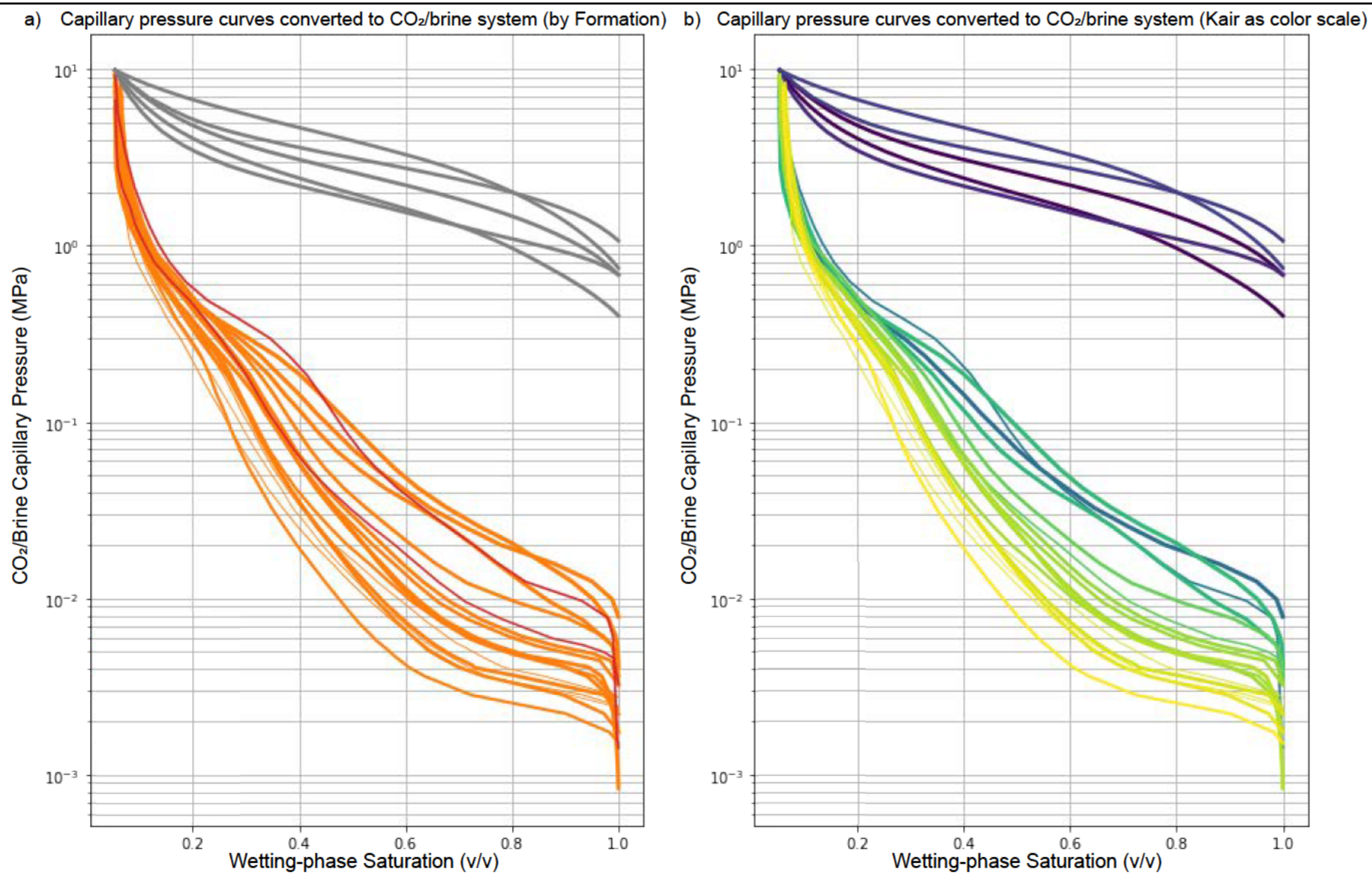
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier | December 2023

Figure 2.4-33

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.4-33 Pore Throat Size Distributions.ai



Legend:

- Santos Shale
- U Sandstone
- W Sandstone

64 Zone

Core Depth (ft)
- 8250
- 8400
- 8550
- 8700

Log Kair
- -6
- -4
- -2
- 0
- 2

Explanation:

MPa - megapascal
Kair - Klinkenberg permeability
ft - feet

v/v - pore volume / total volume
CO_2 - carbon dioxide

Converted CO_2/Brine Capillary Pressure Curves

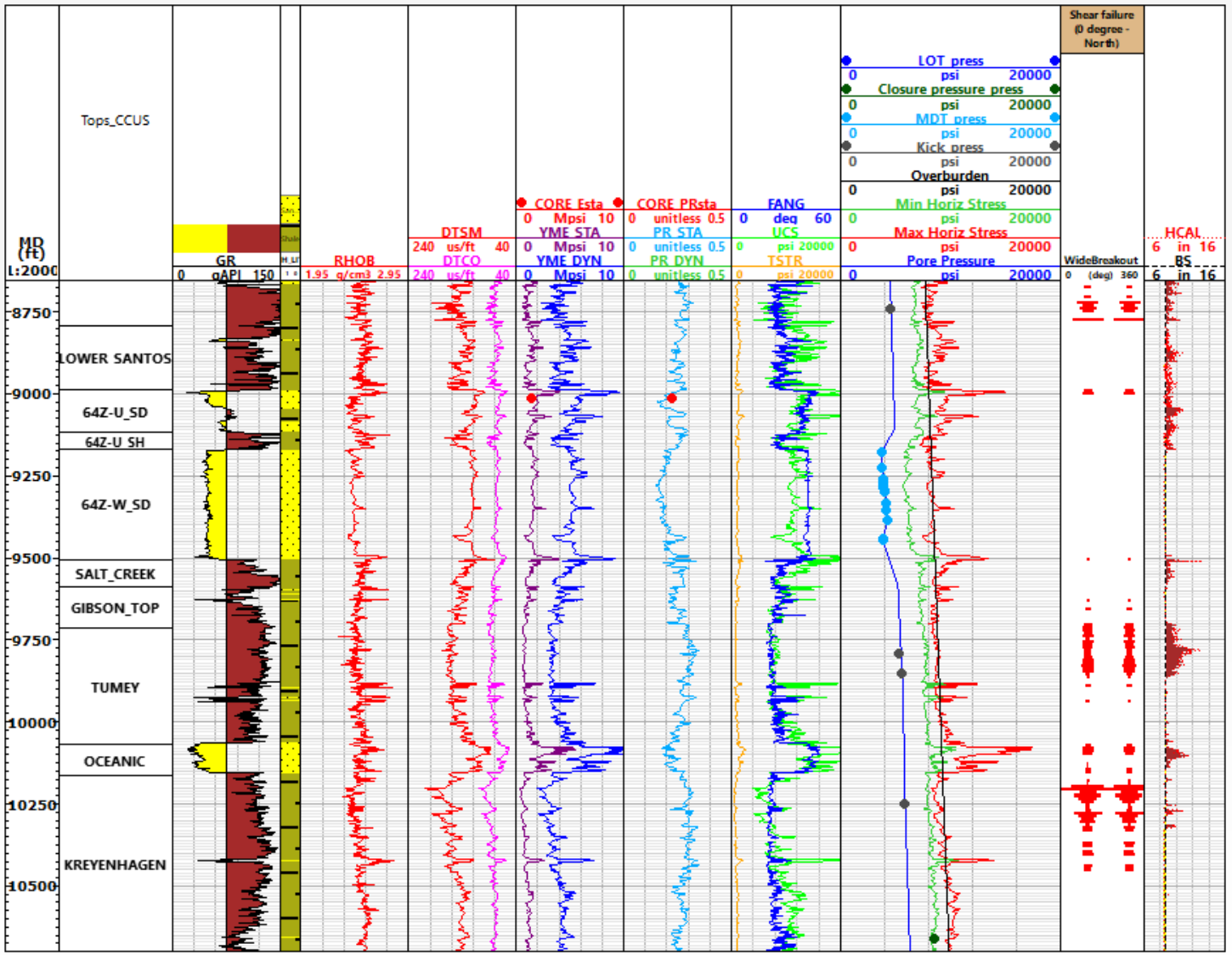
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.4-34

CarbonFrontier | December 2023

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.4-34 CO2Brine Cap Pressure.ai



Notes:

Track 1: measured depth; Track 2: Formation top;
Track 3: Gamma Ray (0-150);
Track 4: Lithology;
Track 5: RHOB (1.95-2.95 g/cc);
Track 6: Compressional and shear slowness (240-40 µs/ft);
Track 7: Dynamic and static Young's Modulus (YME, 0-10 Mpsi), static YME from offset well 43-27N in red dot;
Track 8: Dynamic and static Poisson's Ratio (PR, 0-0.5), static PR from offset well 43-27N in red dot ;
Track 9: unconfined compressive strength (UCS, 0-20,000 psi), tensile strength (TSTR, 0-20,000 psi), and friction angle (FANG, 0-60°);
Track 10: Pore pressure, min and max horizontal stresses, and overburden (0-20,000 psi). MDT pore pressure in blue, kick events in grey, leak-off test in blue, and DFIT closure in green dots;
Track 11: predicted borehole breakout;
Track 12: borehole caliper log

Explanation:

psi = pounds per square inch
Mpis = megapound per square inch
ft = feet; µs = microsecond
in = inch; deg = degree

Geomechanical Properties and In-situ Stress 888N-12

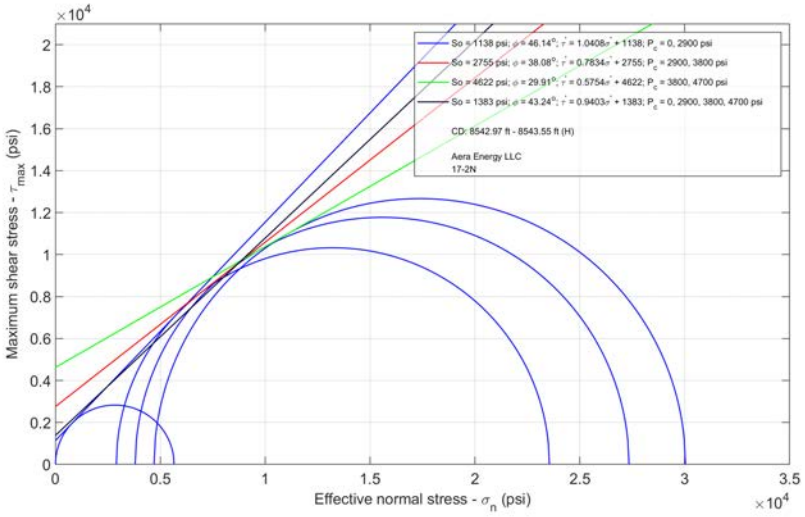
North Belridge Oil Field
Western Kern County
California

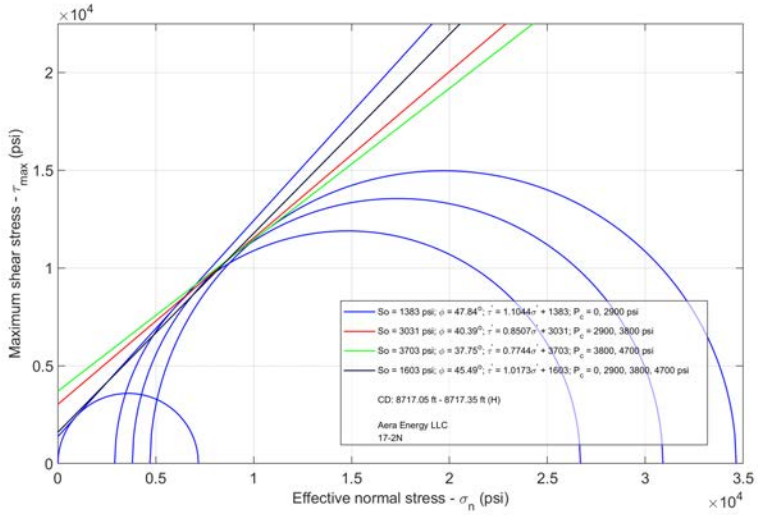
CarbonFrontier

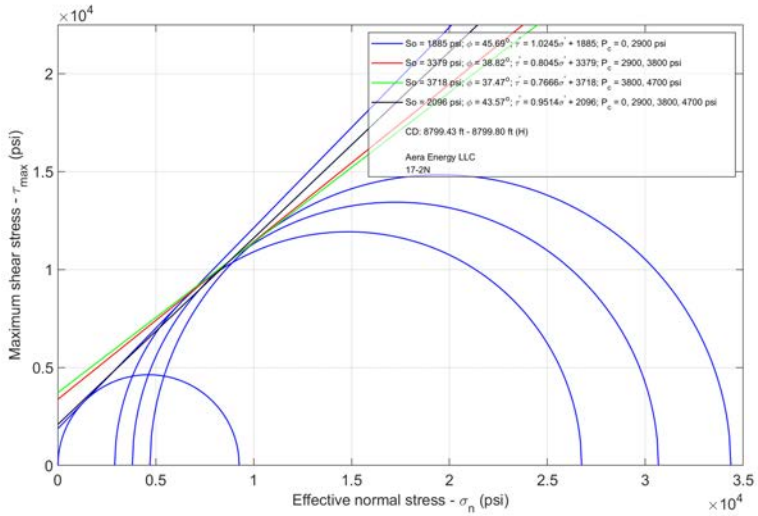
CarbonFrontier | December 2023

Figure 2.5-1

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_Fig2.5-1 Geomech properties 888N-12.ai







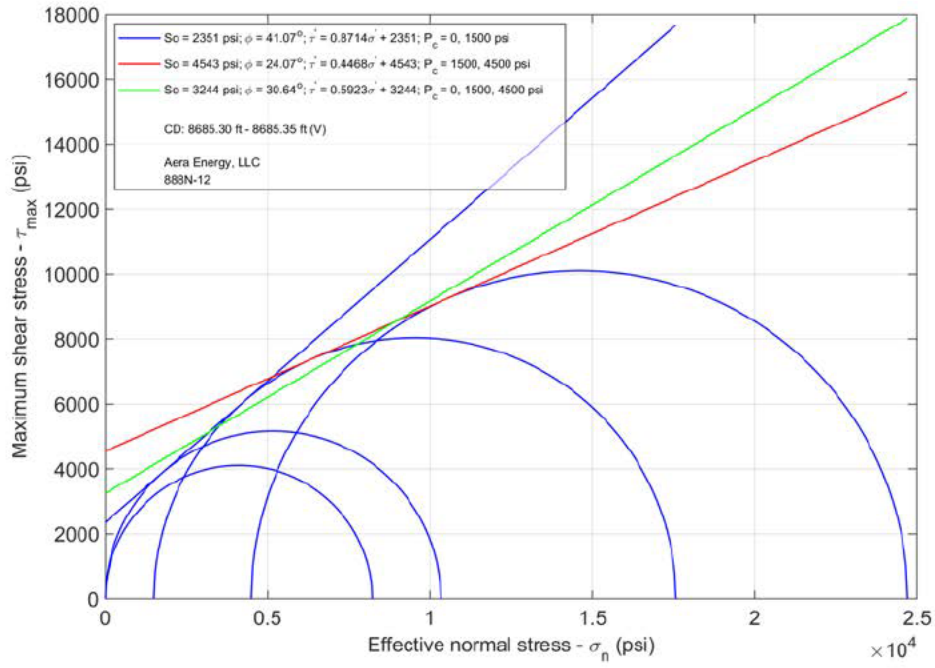
Explanation:

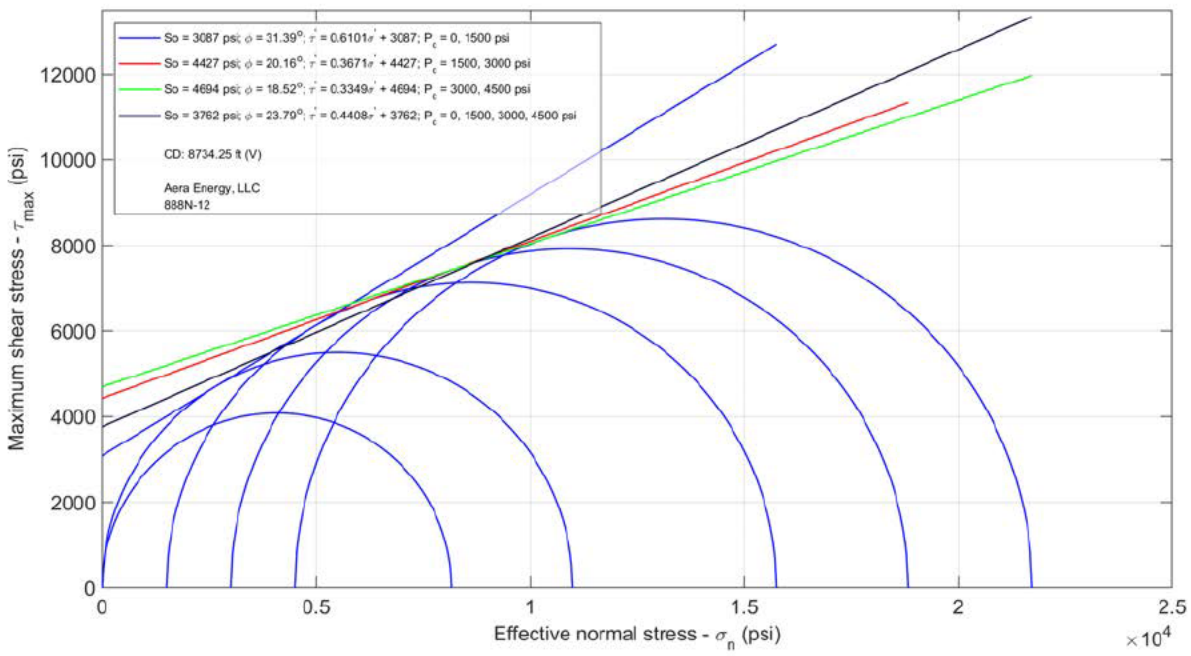
So: cohesion (psi)
σ: normal stress (psi)
τ: shear stress (psi)
P_C: confining pressure (psi)
φ: friction angle (degrees)
psi: pounds per square inch
CD: Core Depth
H: Measured Depth
ft: feet

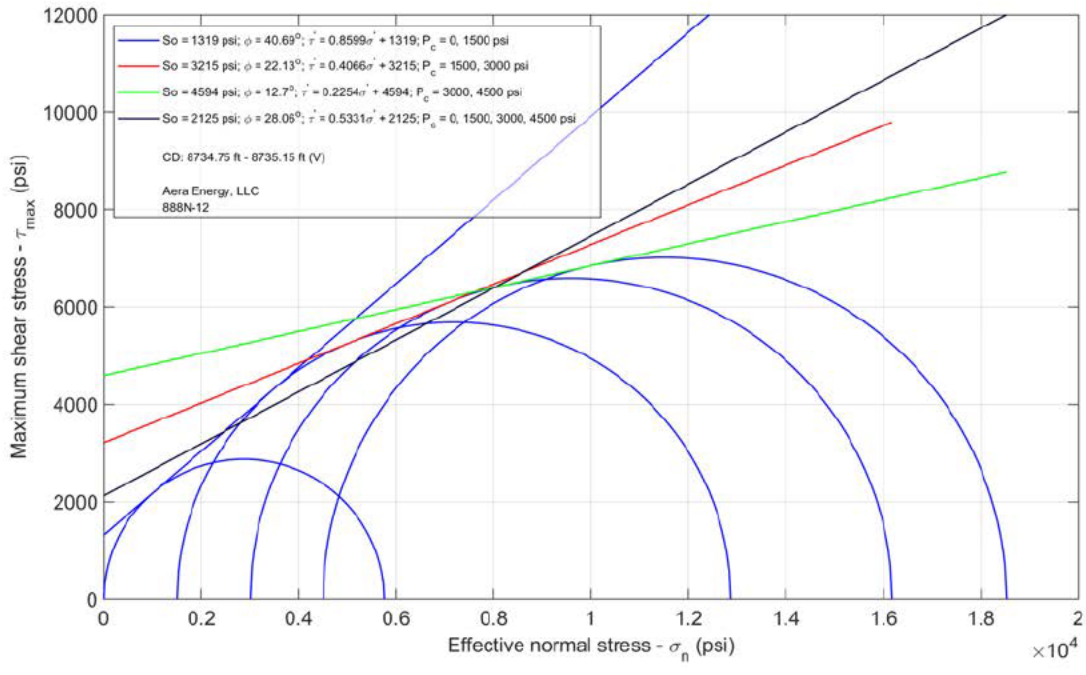
Triaxial Compression Test Results
64 Zone W Sandstone
North Belridge Oil Field
Western Kern County
California

CarbonFrontier | December 2023

Figure 2.5-2







Explanation:

So: cohesion (psi)
σ: normal stress (psi)
τ: shear stress (psi)
P_C: confining pressure (psi)
φ: friction angle (degrees)
CD: Core Depth
V: Measured Depth
ft: feet

Triaxial Compression Test Results
Upper Santos Shale

North Belridge Oil Field
Western Kern County
California

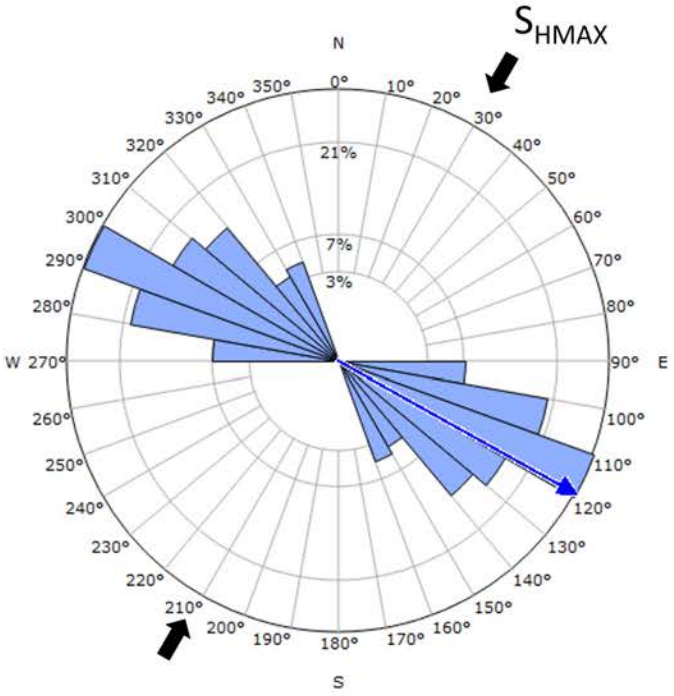
slb

CarbonFrontier | December 2023

Figure 2.5-3

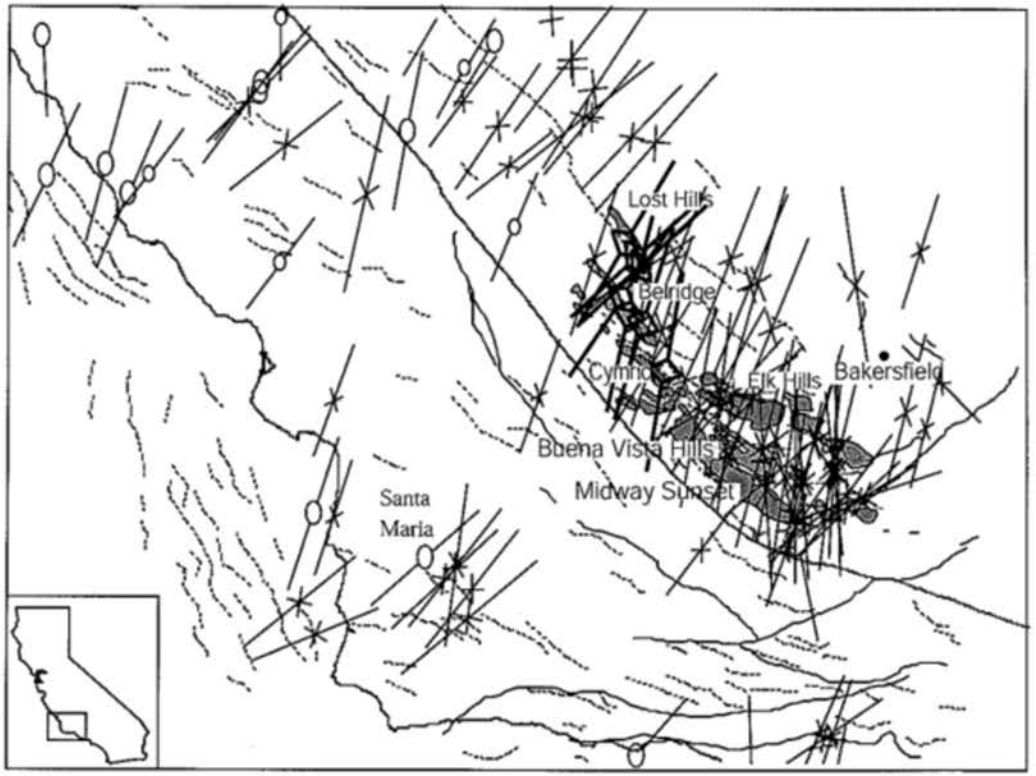
Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_Fig2.5-3 Triaxial Results Upper Santos.ai

a)



Maximum Horizontal Stress from 888N-12 Image Log

b)



Published Maximum Horizontal Stress (Chanchani et al., 2013)

Notes:

Earthquake Focal Mechanism

Well Bore Breakout

Hydraulic Fracture

S_{HMAX} = maximum horizontal stress

Maximum Horizontal Stress Direction

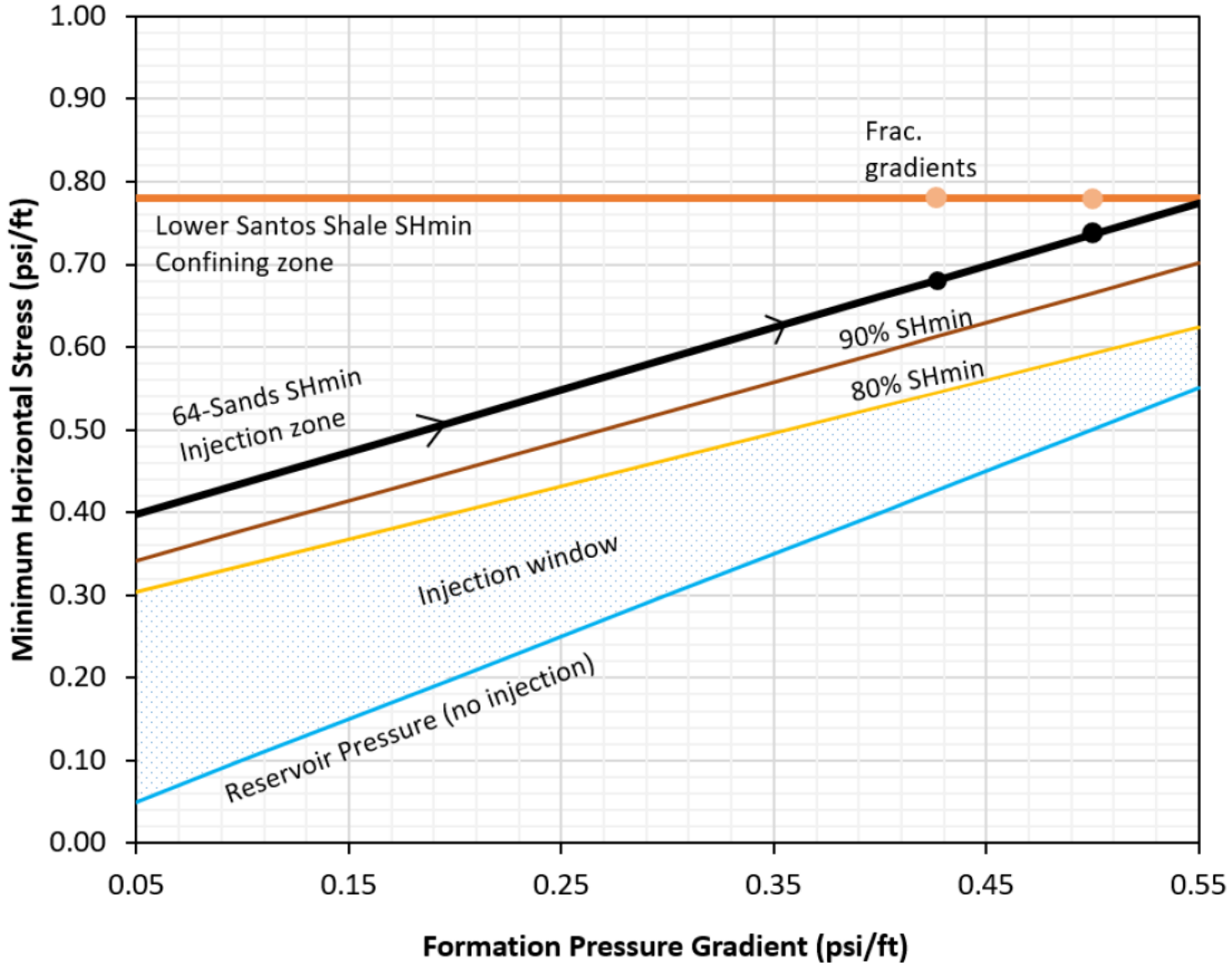
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier | December 2023

Figure 2.5-4

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.5-4 Max Horizontal Stress Direction.ai



Explanation:

psi = pounds per square inch
ft = feet

Stress Path Alternatives

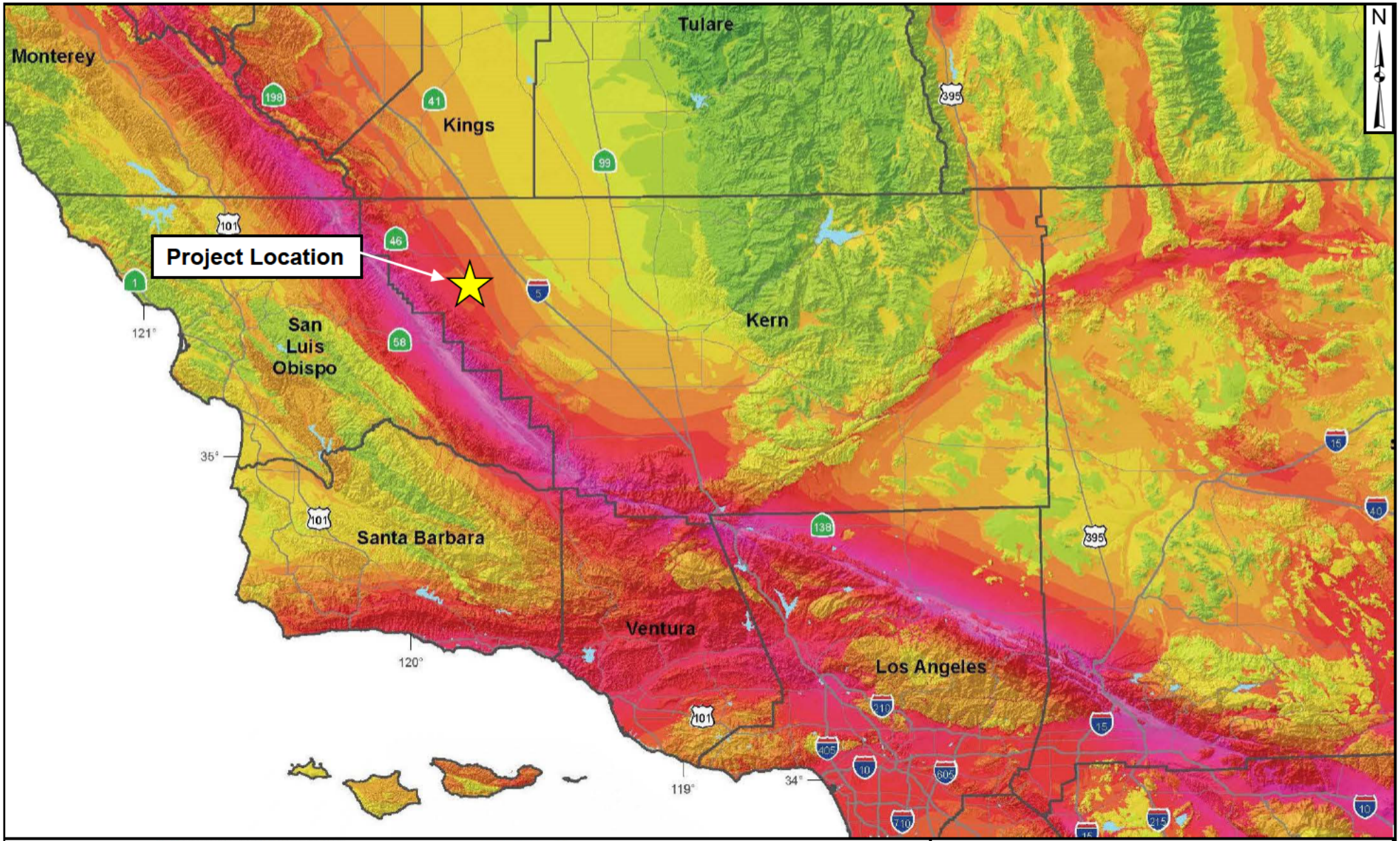
North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.5-5

CarbonFrontier	December 2023

Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.5-5 Stress Path Alternatives.ai



Map Sheet 48 (2016). USGS and CGS, "Earthquake Shaking Potential for California."

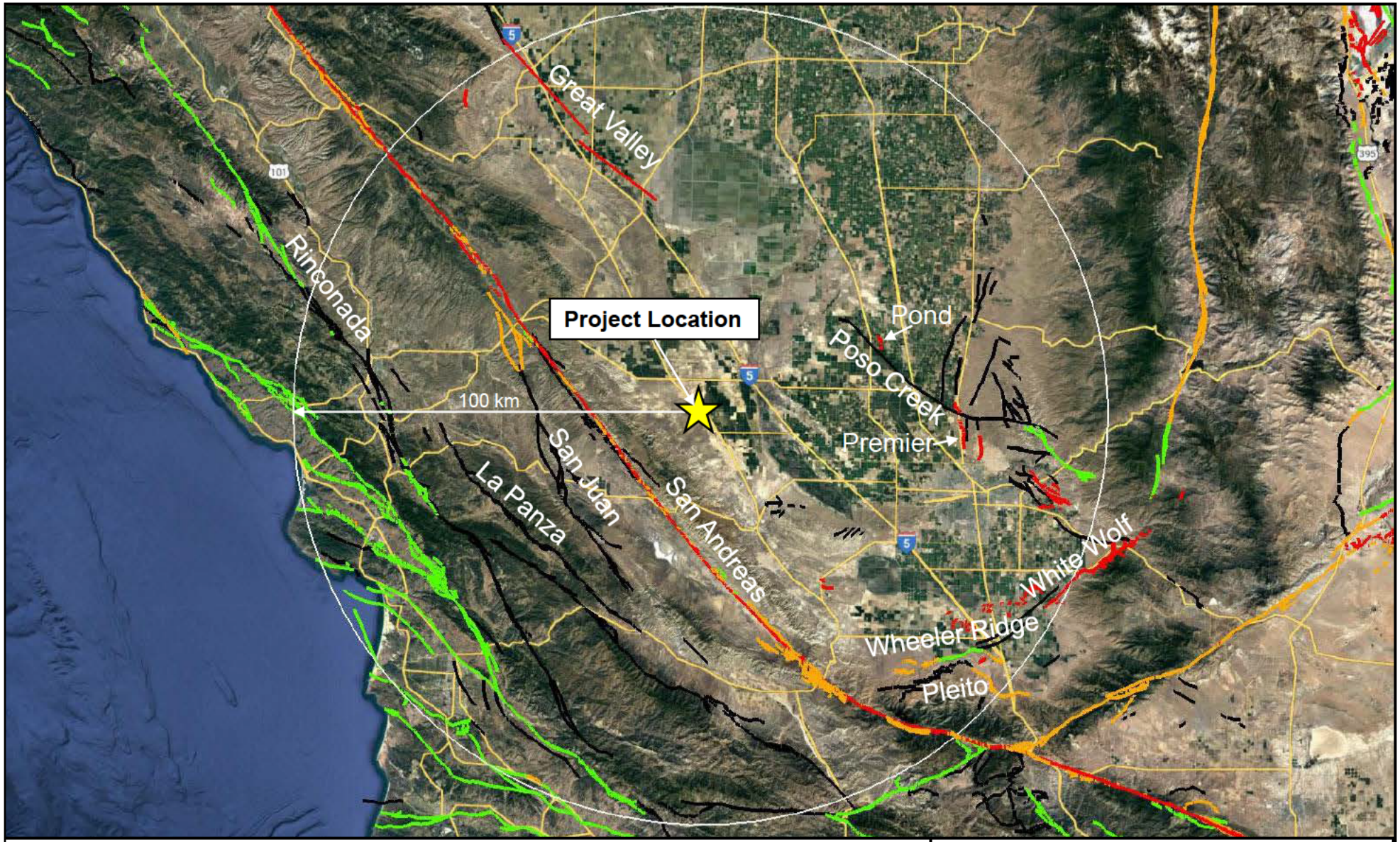
Earthquake Shaking Potential Map

North Belridge Field
Western Kern County
California

Geosyntec consultants

CarbonFrontier	December 2023	Figure 2.6-1

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_Fig2.6-1 Earthquake Potential Map.ai



Legend

- Fault with Historic (<150 years) Motion
- Fault with Latest Quaternary (<15,000 years) Motion
- Fault with Late Quaternary (<130,000 years) Motion
- Fault with Quaternary (<1.6 million years) Motion (Undifferentiated)

N

20 mi

40 km

Base Map: Google Earth (2022). Data Sources: USGS and CGS (2020), "Quaternary Fault and Fold Database of the United States."

Fault Activity Map
North Belridge Field
Western Kern County
California

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CarbonFrontier | December 2023

Figure 2.6-2

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.6-2 Fault Activity Map.ai



Legend

30 Year M≥6.7 Probability

0.01% 0.1% 1% 10% 100%

NOTE: Fault locations are uncertain by up to several km
For more information, see www.wgcep.org/UCERF3

20 mi
40 km

Base Map: Google Earth (2022).
Field, E.H., and 2014 Working Group on California Earthquake Probabilities, 2015, UCERF3: A new earthquake forecast for California's complex fault system: U.S. Geological Survey 2015–3009, 6 p., https://dx.doi.org/10.3133/fs20153009.

Fault Rupture Probability Map
North Belridge Field
Western Kern County
California

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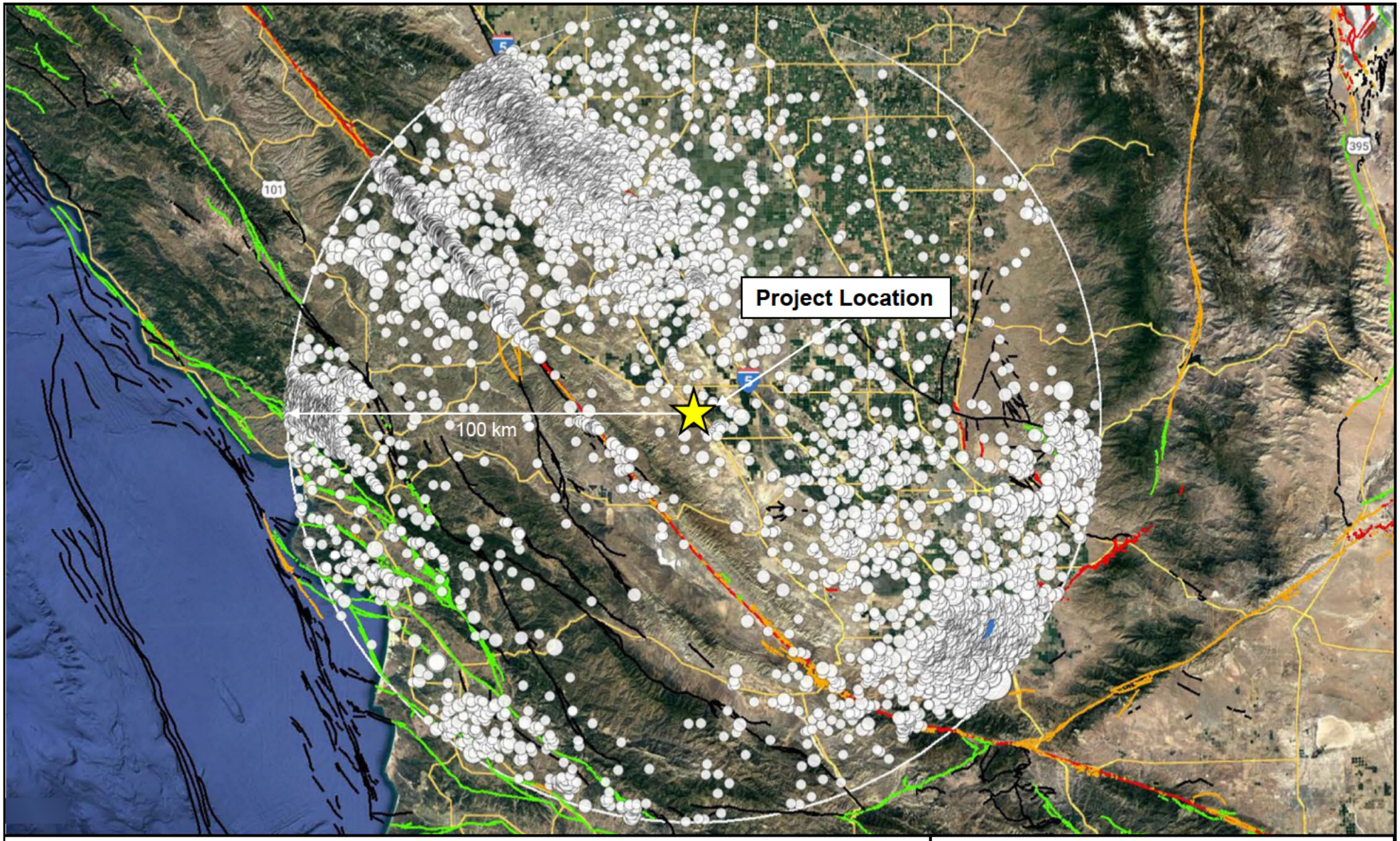
CarbonFrontier | December 2023

Figure 2.6-3

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.6-3 Rupture Probability Map.ai



Legend

- Historic Earthquake Epicenter (1900-2022)
- Fault with Historic (<150 years) Motion
- Fault with Latest Quaternary (<15,000 years) Motion
- Fault with Late Quaternary (<130,000 years) Motion
- Fault with Quaternary (<1.6 million years) Motion (Undifferentiated)

Base Map: Google Earth (2022). Data Sources: USGS and CGS (2020), "Quaternary Fault and Fold Database of the United States."
USGS (2022), "ANSS Comprehensive Earthquake Catalog."

Magnitude

Age
- Past hour
- Past day
- Past week
- Older

20 mi
40 km

N

Map of Historic Earthquakes ≥ M 2.0

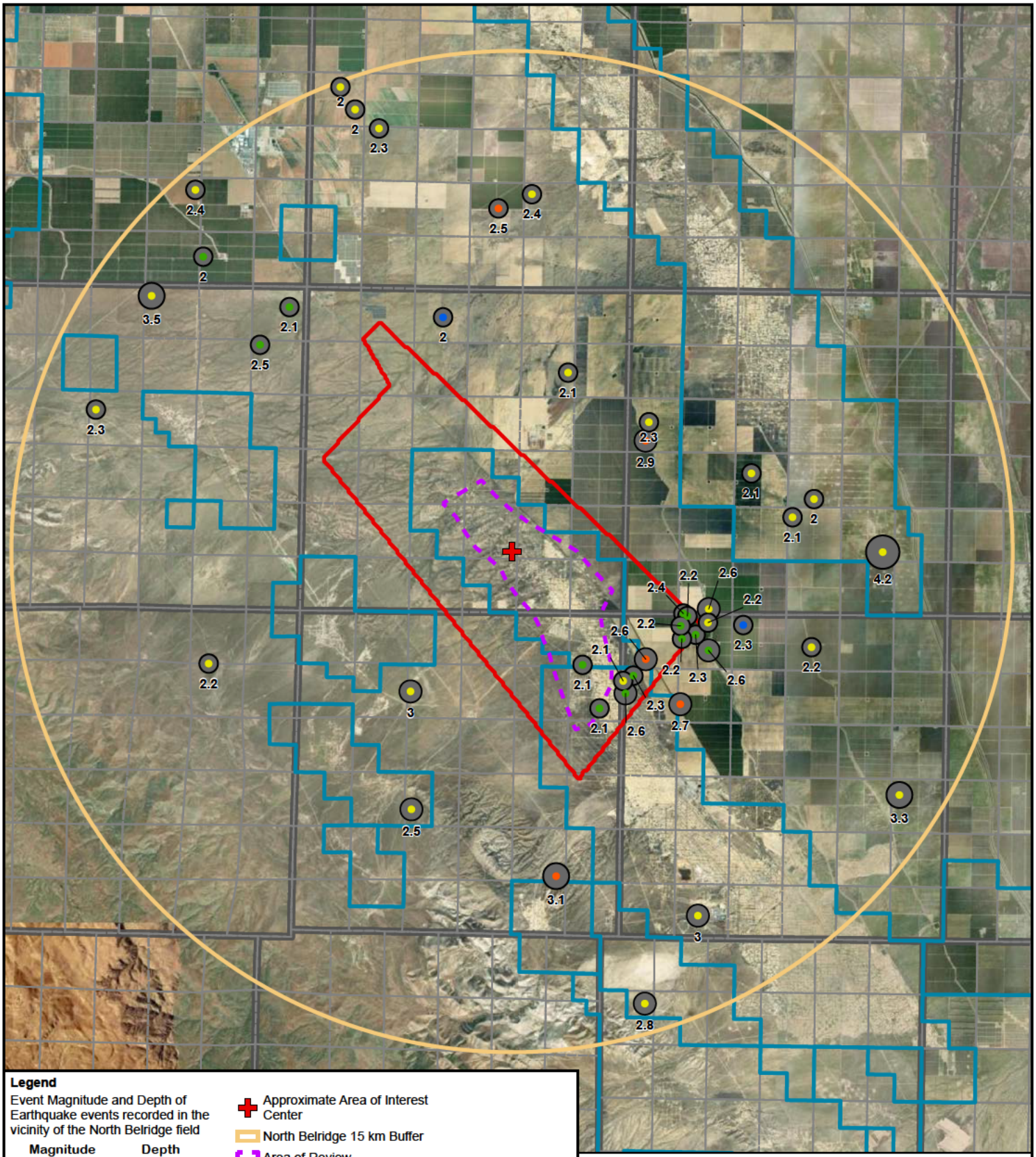
North Belridge Field
Western Kern County
California

Geosyntec consultants

CarbonFrontier | December 2023

Figure 2.6-4

Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_Fig2.6-4 Map of Historic Earthquakes.ai



Legend

Event Magnitude and Depth of Earthquake events recorded in the vicinity of the North Belridge field

Magnitude	Depth
2.0 - 2.5	<4 km
2.5 - 3.0	4-9 km
3.0 - 3.5	9-20 km
3.5 - 4.0	20-31 km
4.0 - 4.5	

- Approximate Area of Interest Center
- North Belridge 15 km Buffer
- Area of Review
- Area of Interest
- California Administrative Boundary
- Section
- Township

N

Source:
United States Geological Survey (USGS)

0 4 Kilometers

USGS Catalogue of Verified Earthquake Events 1950 – Present

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier	December 2023	Figure 2.6-5

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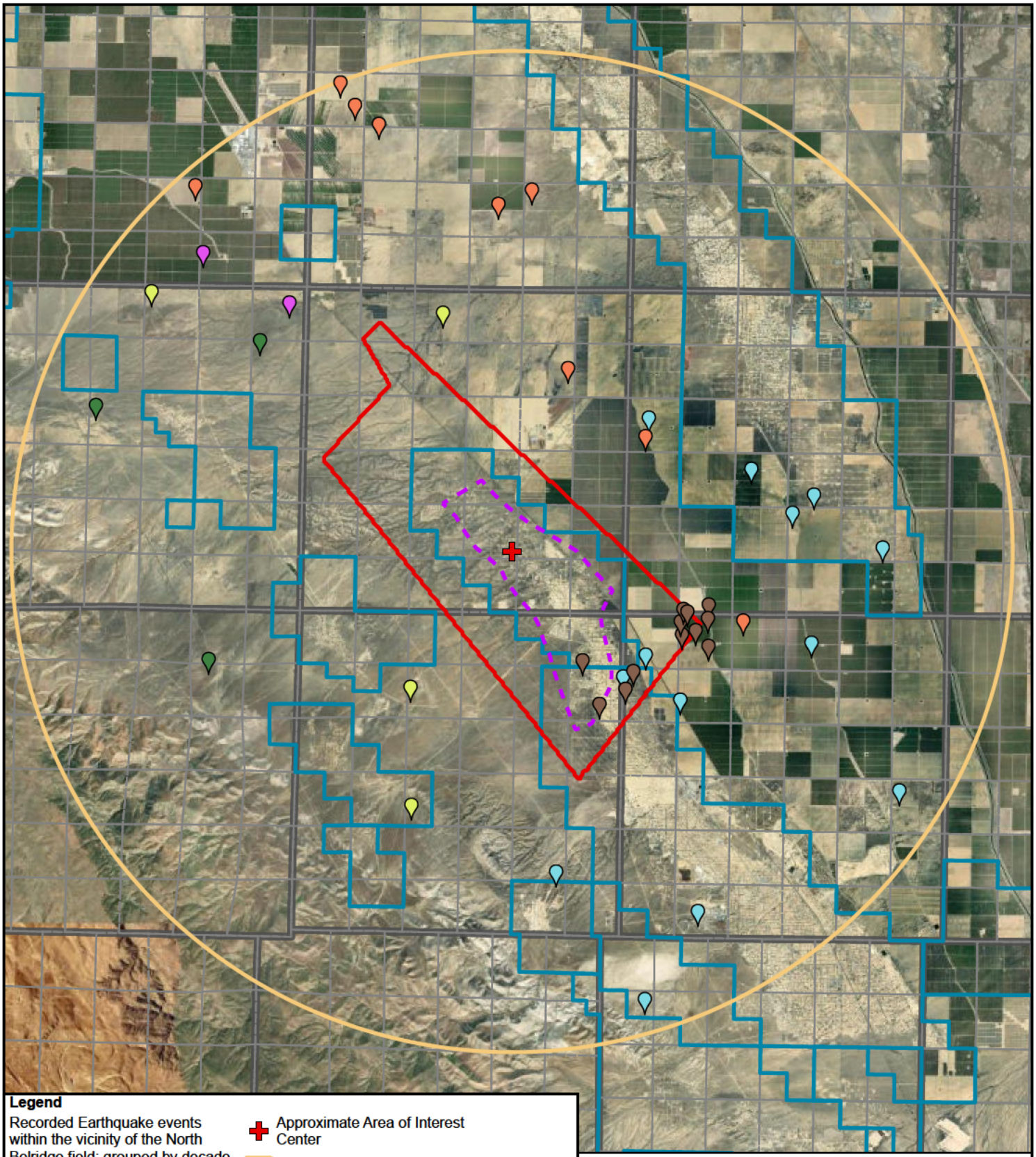

USGS Catalogue of Verified Earthquake Events 1950 – Present

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier	December 2023	**Figure 2.6-6**

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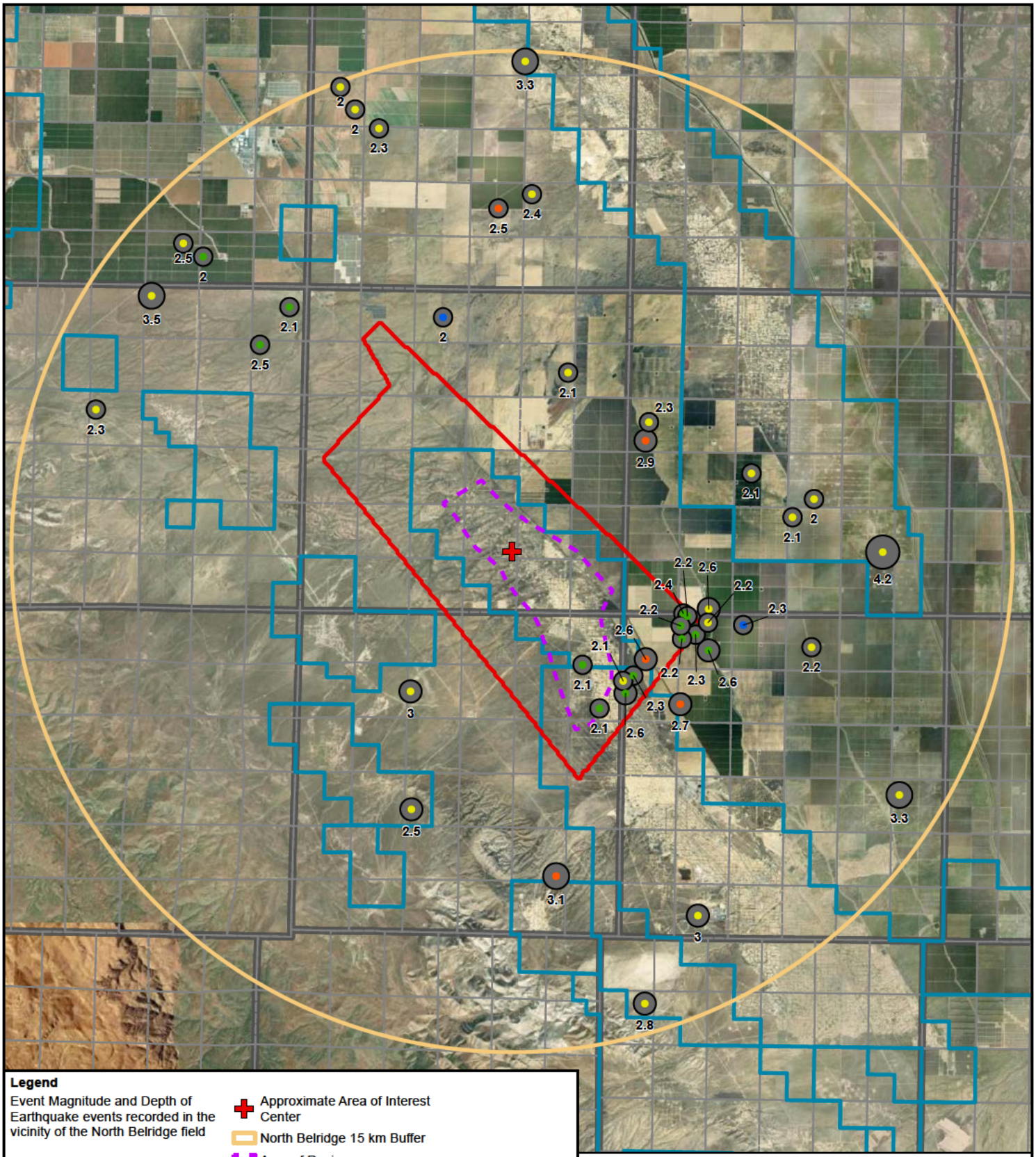

Legend

Event Magnitude and Depth of Earthquake events recorded in the vicinity of the North Belridge field

- 2.0 - 2.5
- 2.5 - 3.0
- 3.0 - 3.5
- 3.5 - 4.0
- 4.0 - 4.5

- <4 km
- 4-9 km
- 9-20 km
- 20-31 km

- Approximate Area of Interest Center
- North Belridge 15 km Buffer
- Area of Review
- Area of Interest
- California Administrative Boundary
- Section
- Township

N

Source:
Southern California Earthquake Data Center (SCEDC)

0 4 Kilometers

SCEDC Catalogue of Verified Earthquake Events 1950 – Present

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure

2.6-7

CarbonFrontier	December 2023

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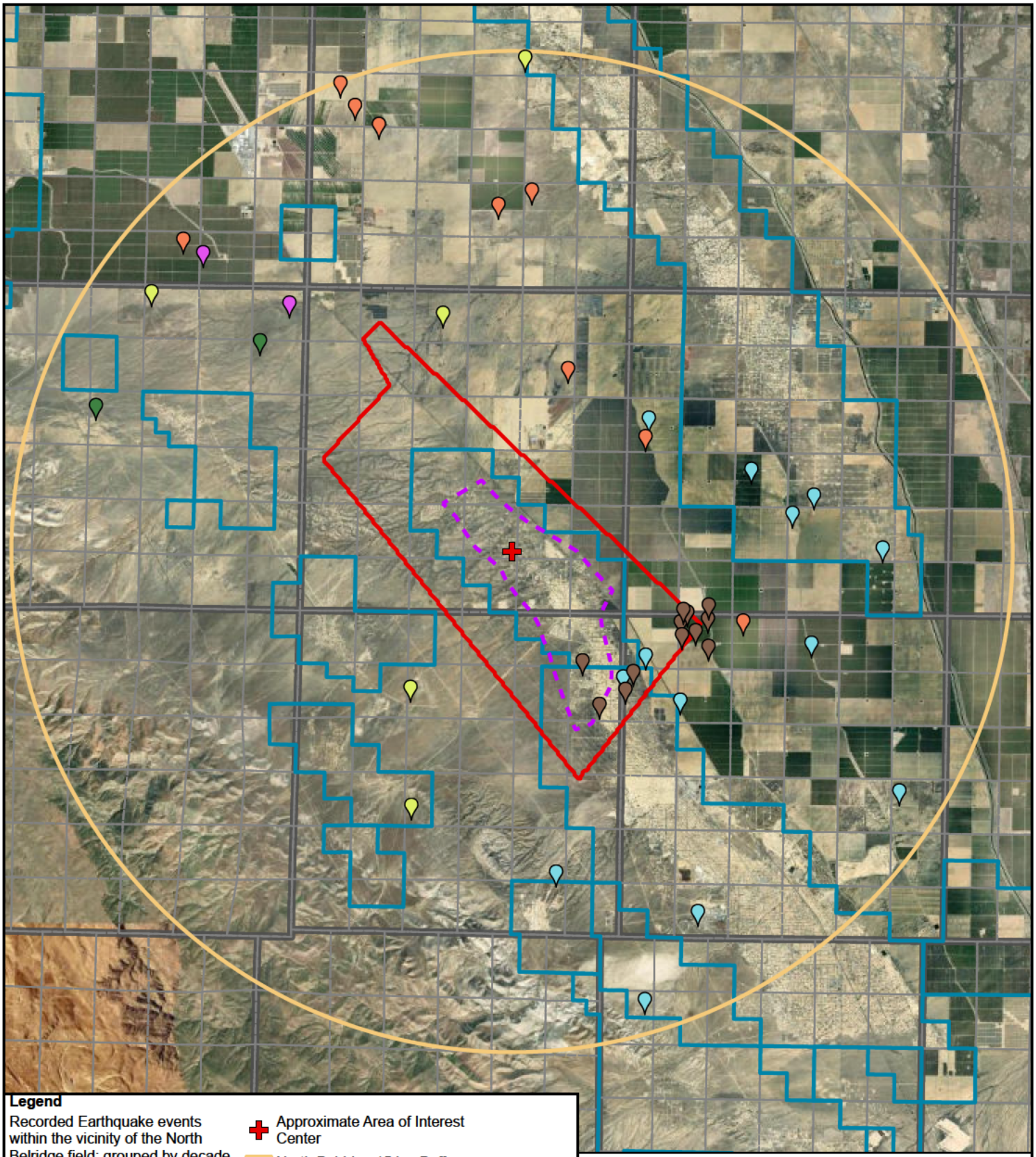

SCEDC Catalogue of Verified Earthquake Events 1950 – Present

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.6-8

CarbonFrontier	December 2023

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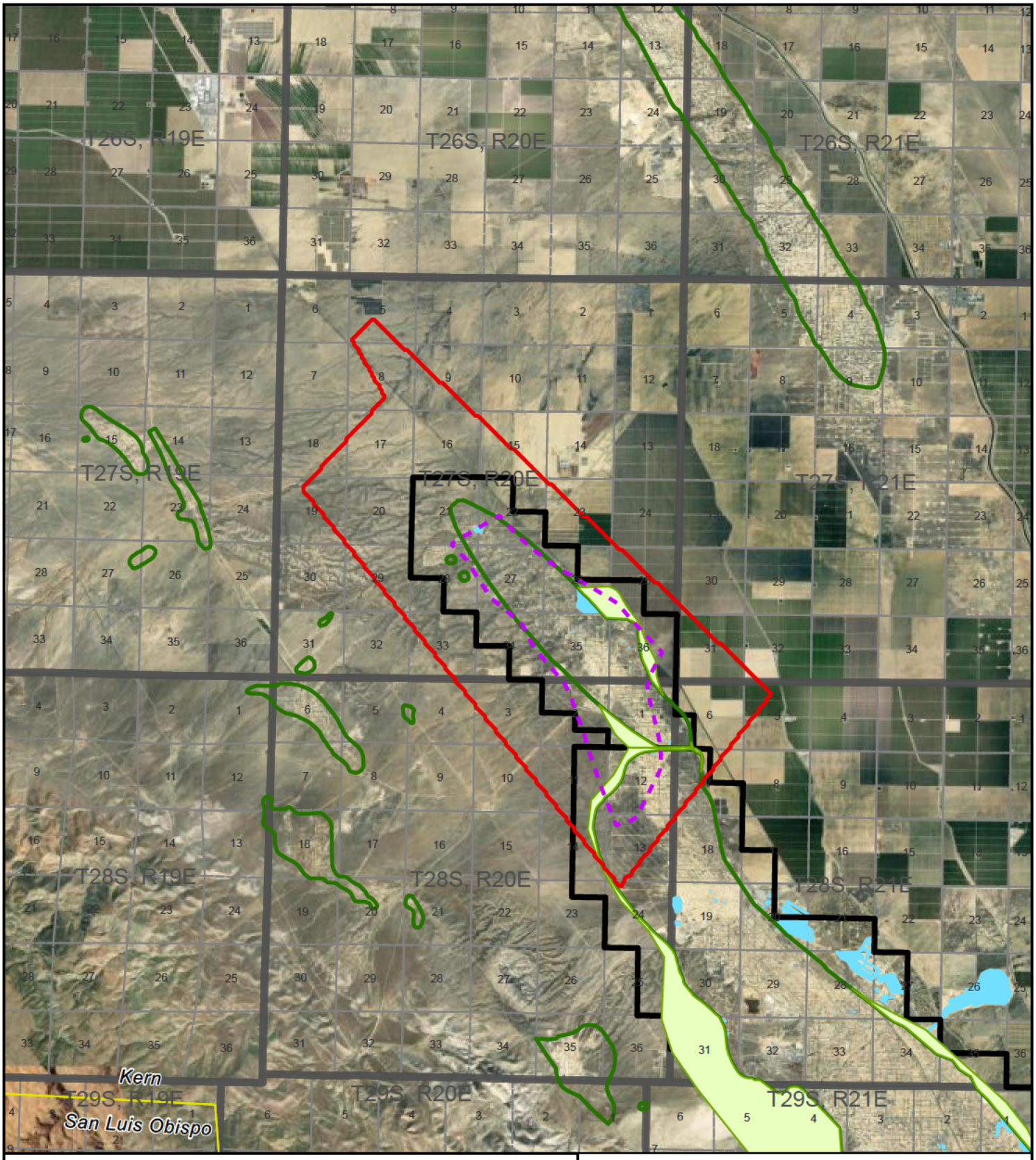

Legend

- Area of Review
- Area of Interest
- 1973/74 Oil Field Boundary and Aquifer Exempt Areas
- Tulare Formation Aquifer Exemption Area
- North/South Belridge Administrative Boundary
- Former Disposal Pond
- Township
- Section
- County Line

N

0 2 Miles

Aquifer Exempt Areas

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier	December 2023

Figure 2.7-1

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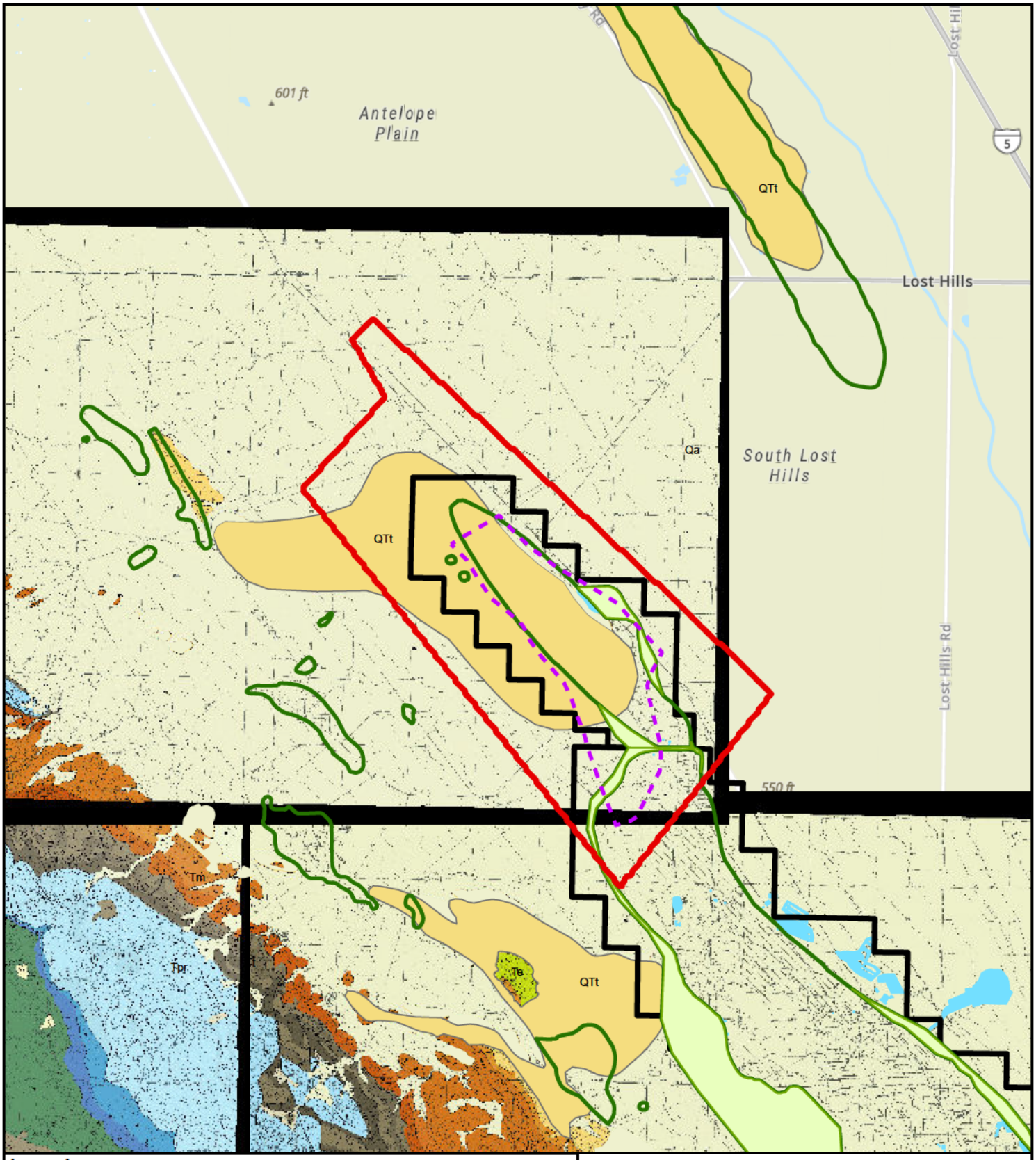

Legend

- Area of Review
- Area of Interest
- North/South Belridge Administrative Boundary
- 1973/74 Oil Field Boundary and Aquifer Exempt Areas
- Tulare Formation Aquifer Exemption Area
- Former Disposal Pond
- Qa = Alluvium
- QTt = Tulare Formation
- Te = Etchegoin Formation
- Tt = Temblor Formation (undifferentiated)
- Tm = Monterey Formation (undifferentiated)
- Tpr = Kreyenhagan Formation

N

0 2 Miles

Source: Dibblee Geologic Maps, Accessed 5/23/2022.

Surface Geologic Map

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.7-2

CarbonFrontier	December 2023

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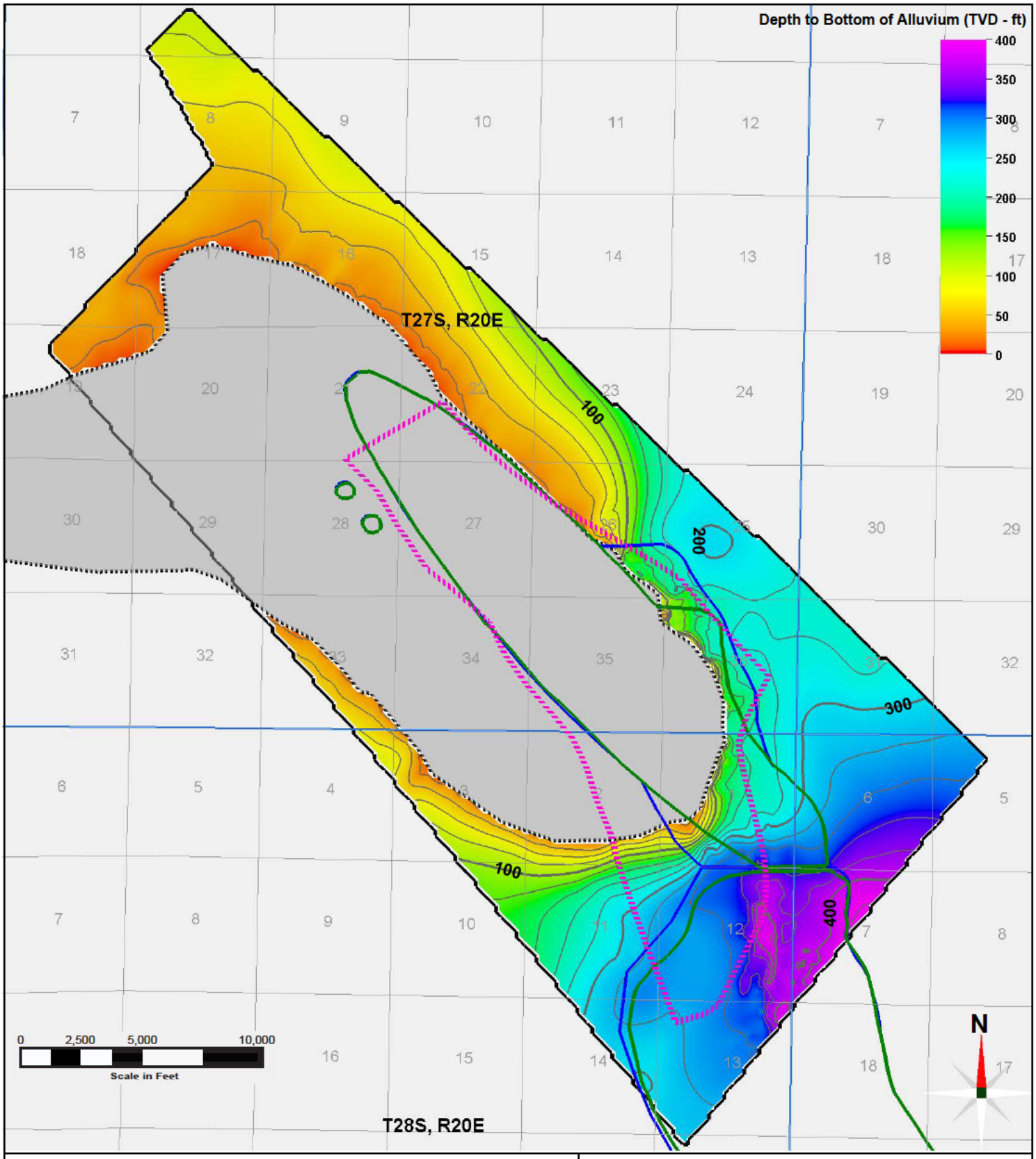


Legend

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries and Aquifer Exempt Areas
- Tulare Fm Aquifer Exempt Area
- Elevation Contours (25 ft CI)
- Area of Review
- Tulare Fm Surface Outcrop Boundary

Explanation:
ft - feet
TVD - true vertical depth
CI - contour interval
Fm - Formation

Notes:
Depth equivalent to isopach measured from digital elevation model (ground surface) to the top of the Tulare Fm.

Depth to Base of Alluvium for the Area of Interest

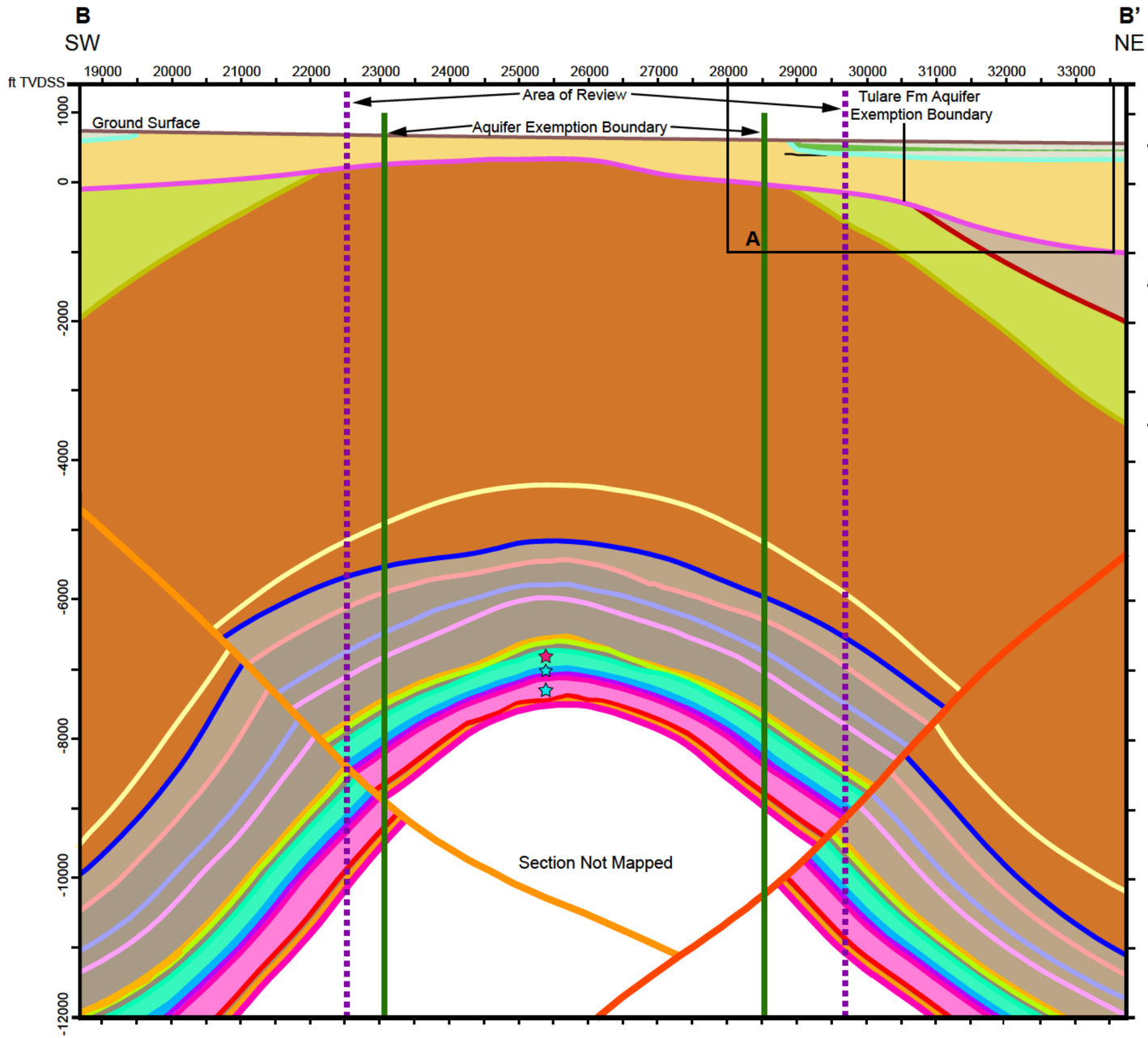
North Belridge Oil Field
Western Kern County
California

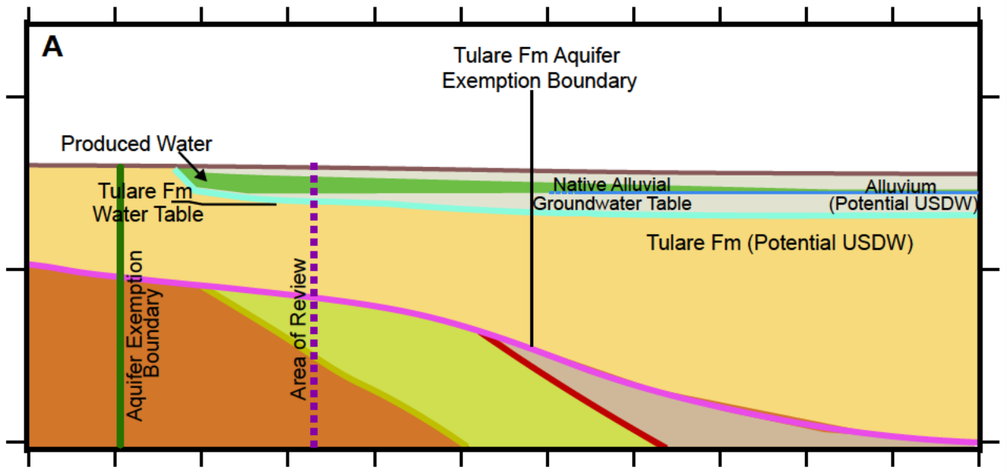
Geosyntec consultants

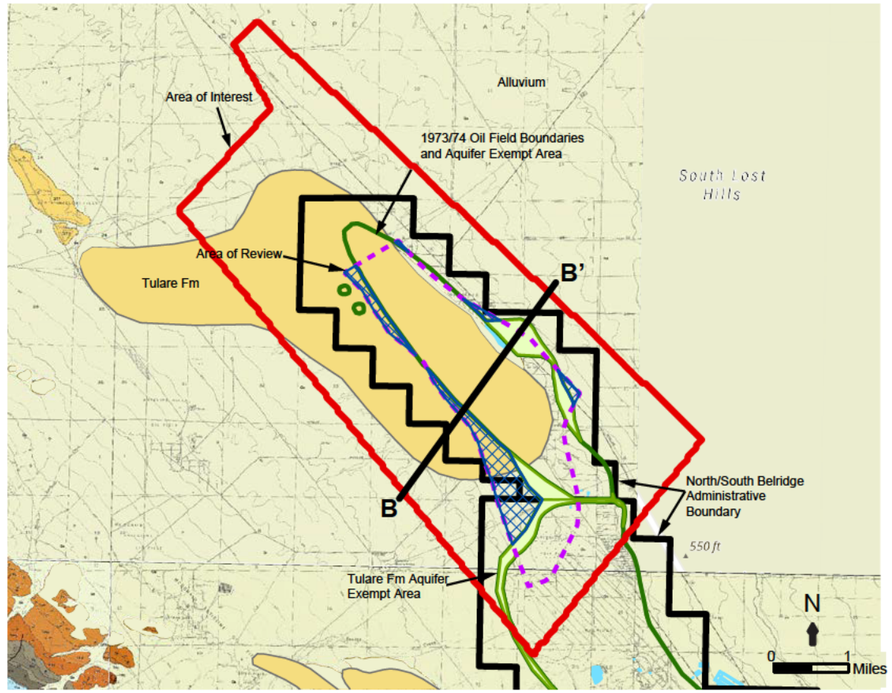
CarbonFrontier	December 2023

Figure 2.7-3

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.7-3 Depth to Base of Alluvium for AoI.ai







Legend

- Injection Zone
- Primary Confining Zone
- East Bounding Thrust Fault
- West Bounding Thrust Fault
- Alluvium
- Tulare Fm
- San Joaquin Fm
- Etchegoin Fm
- Monterey Fm

Temblor Fm

- Media Shale Member
- Carneros Member
- Santos Shale Member
- *Upper Santos Shale*
- *Agua Sandstone*
- *Lower Santos Shale*

64 Zone

- *U Sandstone*
- *U Shale*
- *W Sandstone*
- Salt Creek Shale
- Gibson Sandstone

Interpreted Seismic Surfaces

- Base of Alluvium
- Base of Tulare Fm
- Base of San Joaquin Fm
- Base of Etchegoin Fm
- Top of Temblor Sands
- Top of Media Shale
- Top of Upper Carneros
- Top of Carneros Shale
- Top of Lower Carneros
- Top of Upper Santos Shale
- Top of Agua Sandstone
- Top of Lower Santos Shale
- Top of U Sandstone
- Top of U Shale
- Top of W Sandstone
- Top of Salt Creek Shale
- Top of Gibson Sandstone
- Top of Tumey Fm

Explanation:
Fm - Formation
ft TVDSS - feet True Vertical Depth sub-sea level

Geologic - Hydrogeologic Cross Section B-B'

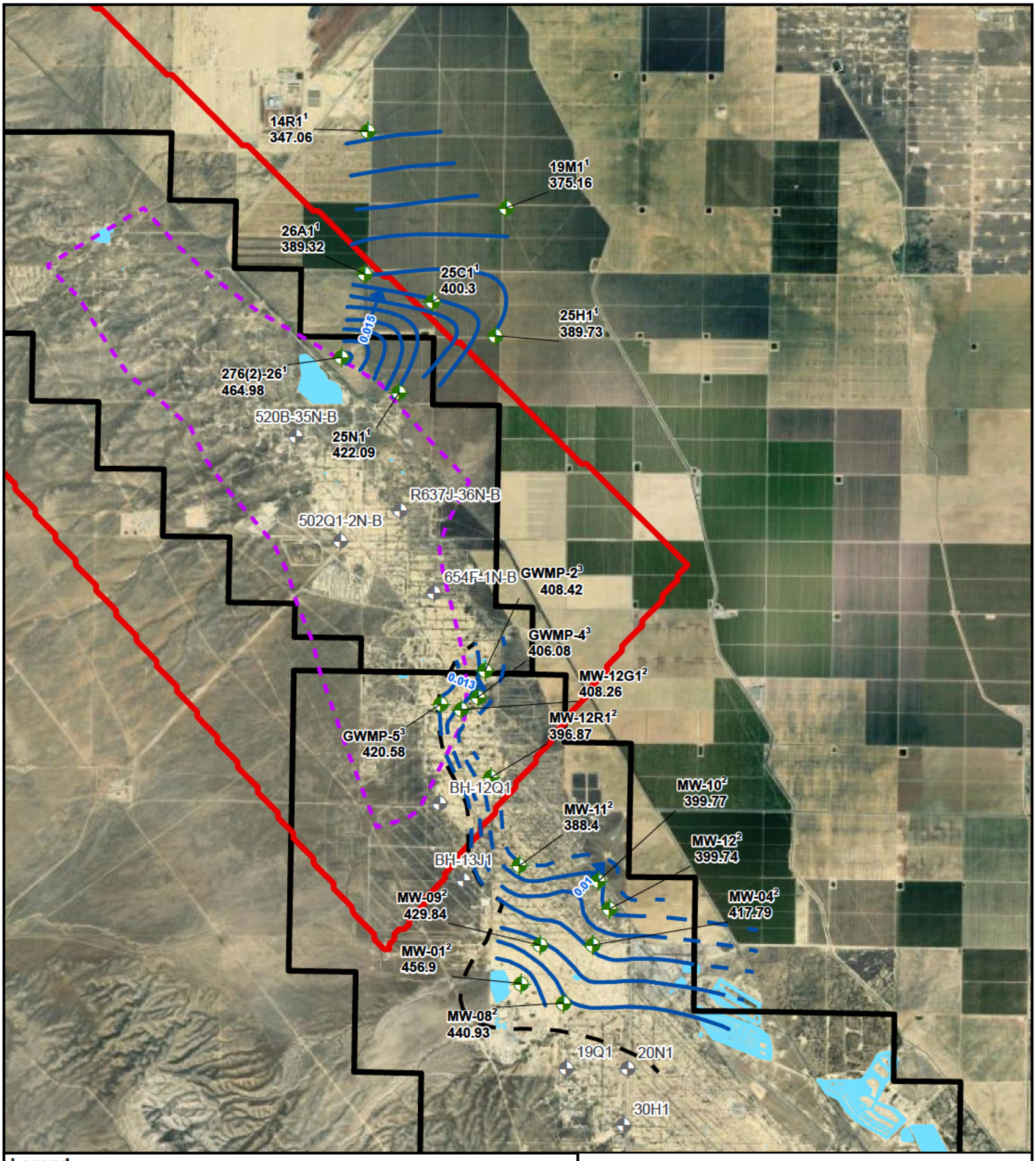
North Belridge Oil Field
Western Kern County
California

Geosyntec consultants

CarbonFrontier | December 2023

Figure 2.7-4

C:\Geosyntec\Aera Belridge CCUS Project - General\EPA VIA. Technical\01_Figures_EPAResponse202312\Illustrator\Narrative_Fig2.7-4 Hydrogeologic Cross-Section B-B'.ai



Legend

- Monitoring Well
- Dry Monitoring Well
- Groundwater Elevation in ft AMSL (dashed where inferred)
- Hydraulic Gradient Direction and Magnitude (ft/ft)
- Extent of Alluvial Groundwater*
- Area of Review
- Area of Interest
- North/South Belridge Administrative Boundary
- Former Disposal Pond

N

0 1 Miles

Notes:
Groundwater elevation in feet above mean sea level (ft AMSL).
*Groundwater delineated via historic well logs.
1) Groundwater elevation measured June 15, 2021
2) Groundwater elevation measured August 18 and 19, 2021
3) Groundwater elevations measured May 22 and 23, 2018

Alluvium Groundwater Elevation Map

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.7-5

CarbonFrontier	December 2023

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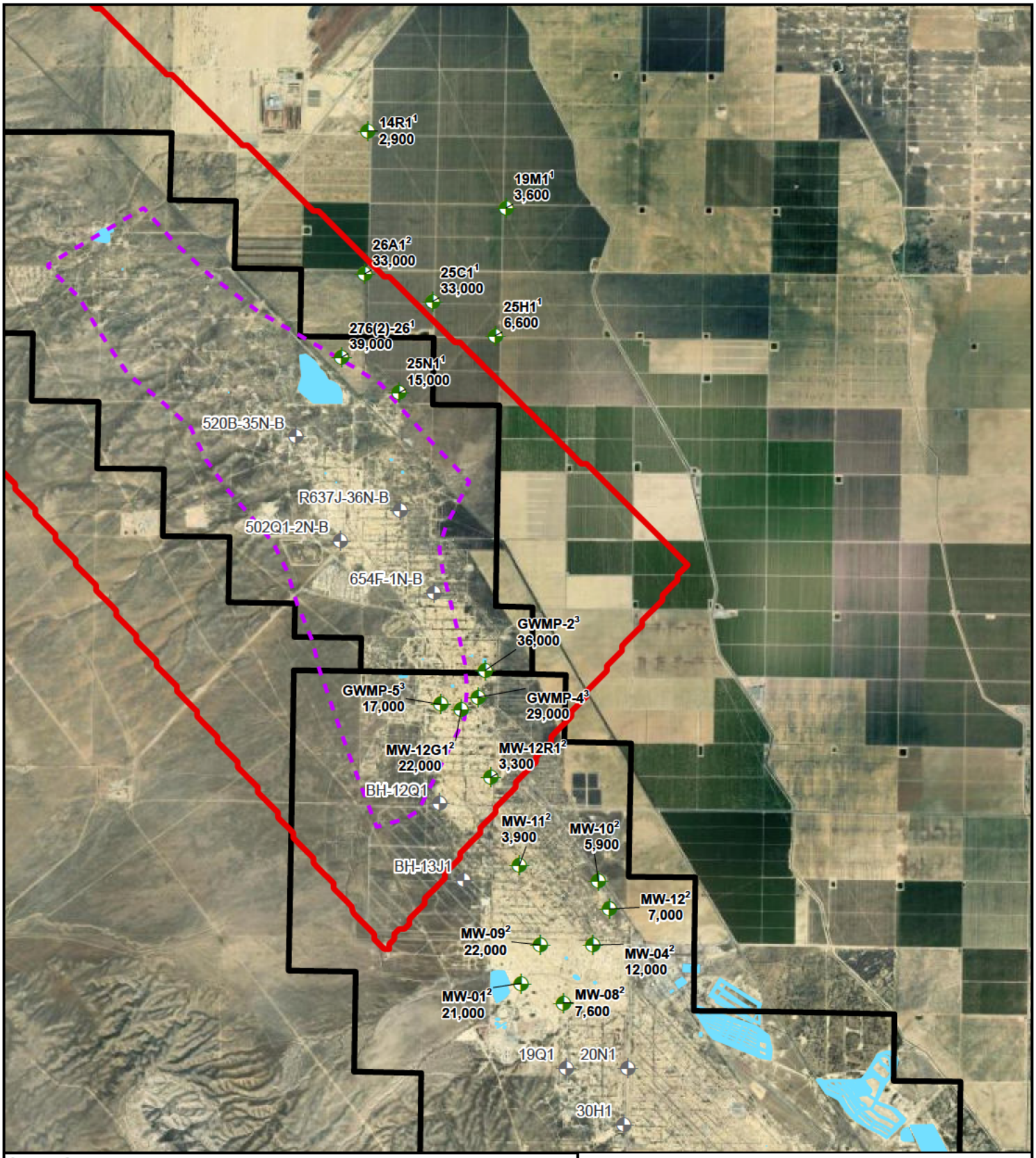

Legend

- Monitoring Well
- Dry Monitoring Well
- Area of Review
- Area of Interest
- North/South Belridge Administrative Boundary
- Former Disposal Pond

N

Notes:
Total dissolved solids (TDS) concentrations in milligrams per liter (mg/L).
1) TDS measured June 15, 2021
2) TDS measured August 18 and 19, 2021
3) TDS concentrations are an average of three measurements

0 1 Miles

Total Dissolved Solids Concentrations in Alluvium

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

CarbonFrontier | December 2023

Figure 2.7-6

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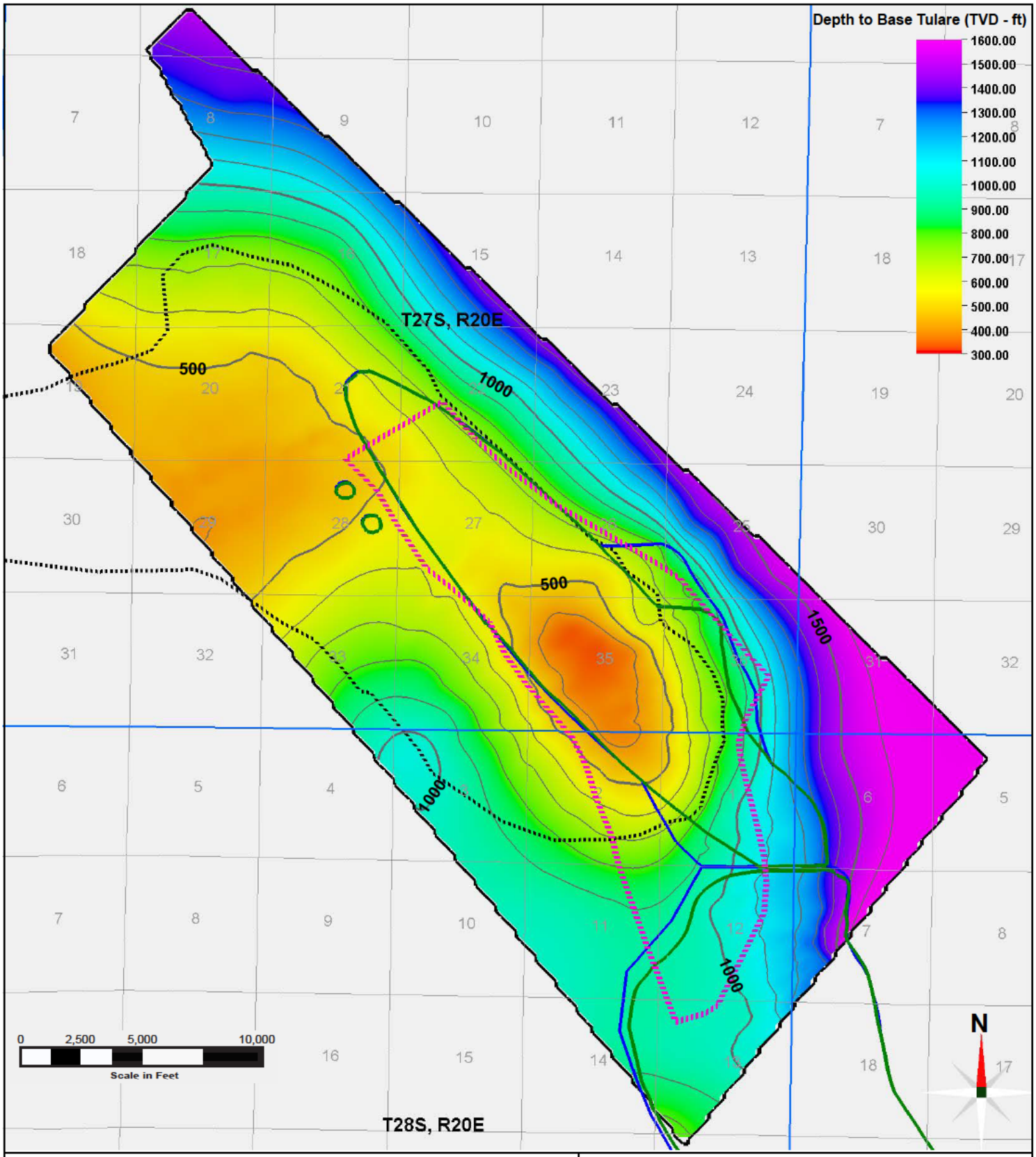


Legend

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries and Aquifer Exempt Areas
- Tulare Fm Aquifer Exempt Area
- Elevation Contours (100 ft CI)
- Area of Review
- Tulare Fm Surface Outcrop Boundary

Explanation:
ft - feet
TVD - true vertical depth
CI - contour interval
Fm - Formation

Notes:
Depth measured from digital elevation model to base Tulare Fm.

Depth to Base of Tulare Formation for the Area of Interest

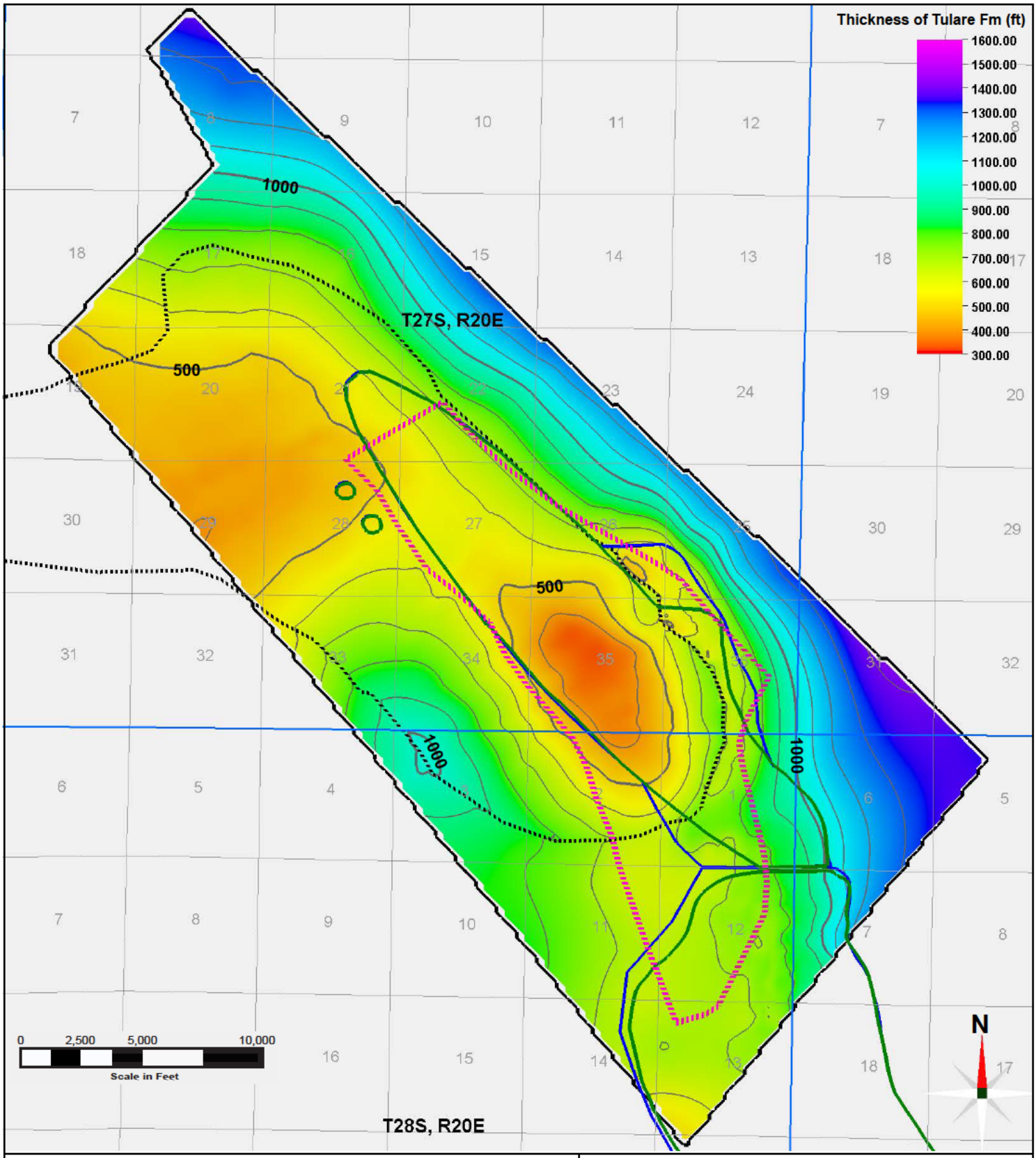
North Belridge Oil Field
Western Kern County
California

Geosyntec consultants

CarbonFrontier | December 2023

Figure 2.7-7

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.7-7 Depth to Base of Tulare Fm for AoI.ai



Legend

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries and Aquifer Exempt Areas
- Tulare Fm Aquifer Exempt Area
- Elevation Contours (100 ft CI)
- Area of Review
- Tulare Fm Surface Outcrop Boundary

Explanation:
ft - feet
CI - contour interval
Fm - Formation

Notes:
Thickness measured from top Tulare Fm merged with digital elevation model to base Tulare Fm.

Tulare Formation Isopach for the Area of Interest

North Belridge Oil Field
Western Kern County
California

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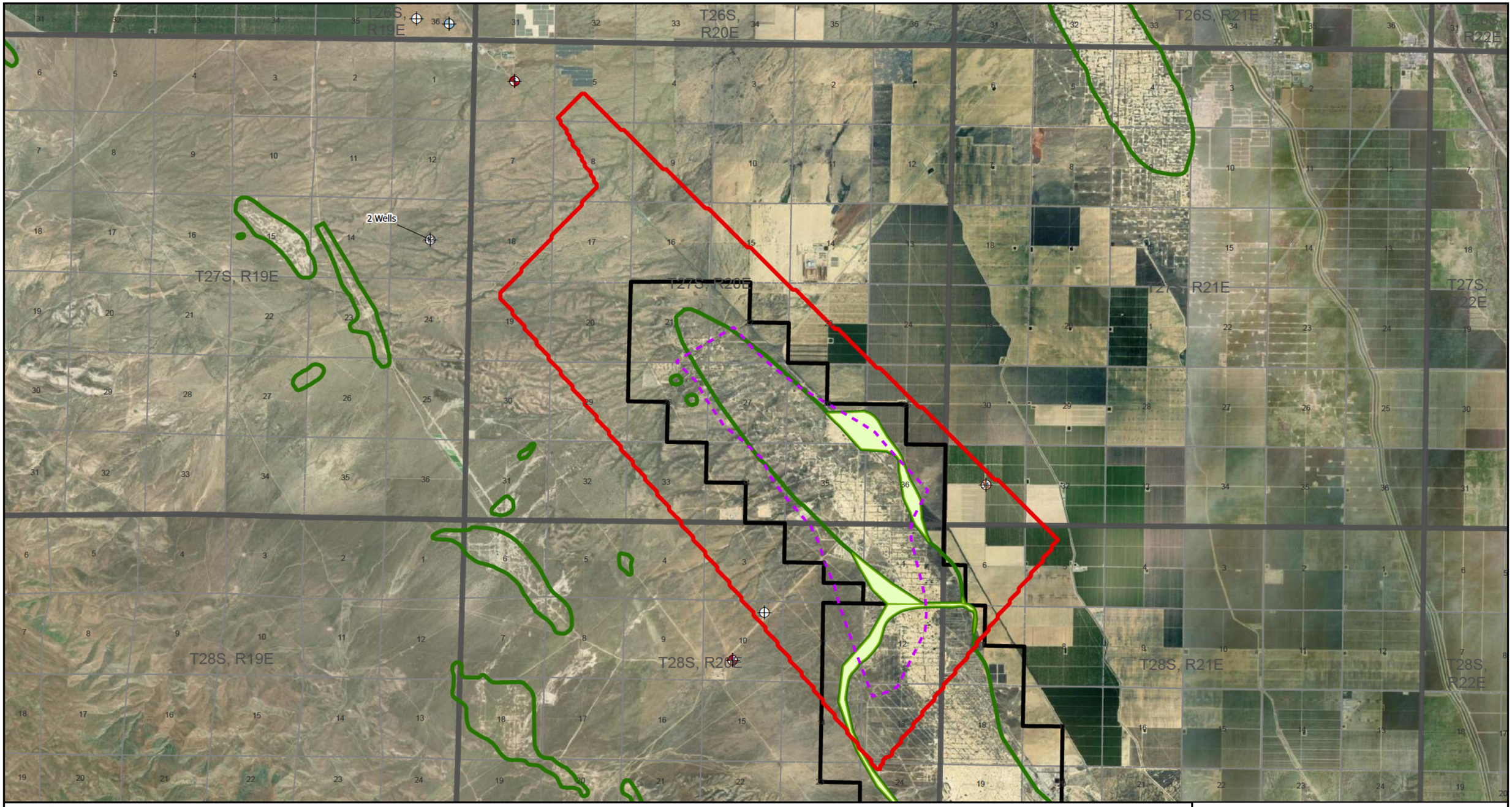
Figure 2.7-8

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.7-8 Tulare Fm Isopach for AoI.ai



Legend

Water Supply Wells
- Agricultural
- Domestic
- Public
- Other, Unknown, Not Specified

- Area of Review
- Area of Interest
- North/South Belridge Administrative Boundary
- 1973/74 Oil Field Boundary and Aquifer Exempt Areas
- Tulare Formation Aquifer Exemption Area
- Section
- Township

N

0 1.5 Miles

Water Well Locations Within 1.5 miles of Area of Interest

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.7-9

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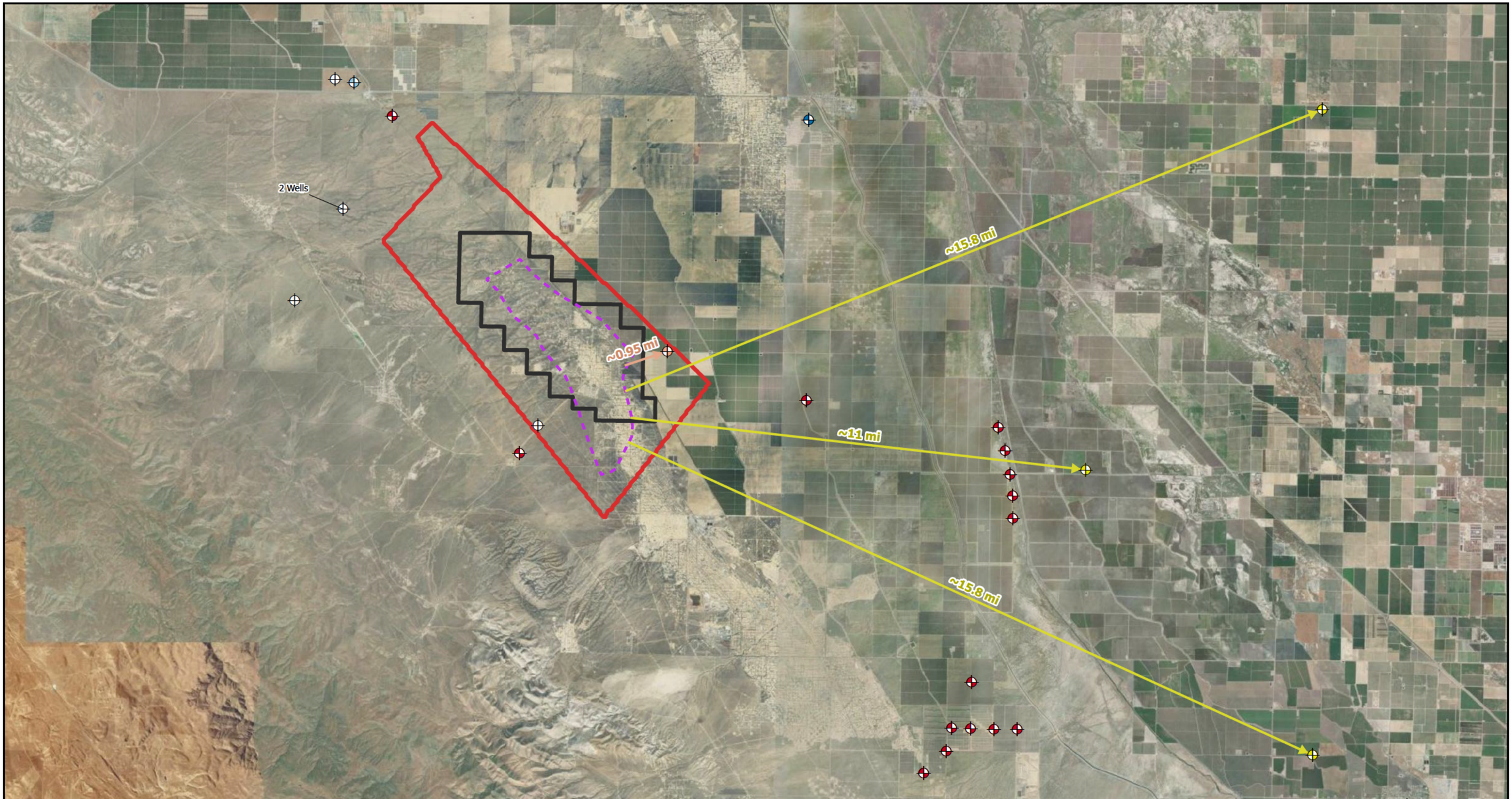
P:\GIS\Aera Belridge CCUS\Projects\EPA Response\Section 2.7 Hydrology and Hydrogeology\Section 2.7 Hydrology and Hydrogeology.aprx\Fig2.7-9 Water Supply Wells within 1.5 mi of AoI 12/18/2023 11:25 AM (MBradford)



Legend

Water Supply Wells

- Agricultural
- Domestic
- Municipal
- Industrial
- Public
- Other, Unknown, Not Specified

- Area of Review
- Area of Interest
- North Belridge Administrative Boundary

N

0 2 Miles

Nearest Municipal Water Supply Wells

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2.7-10

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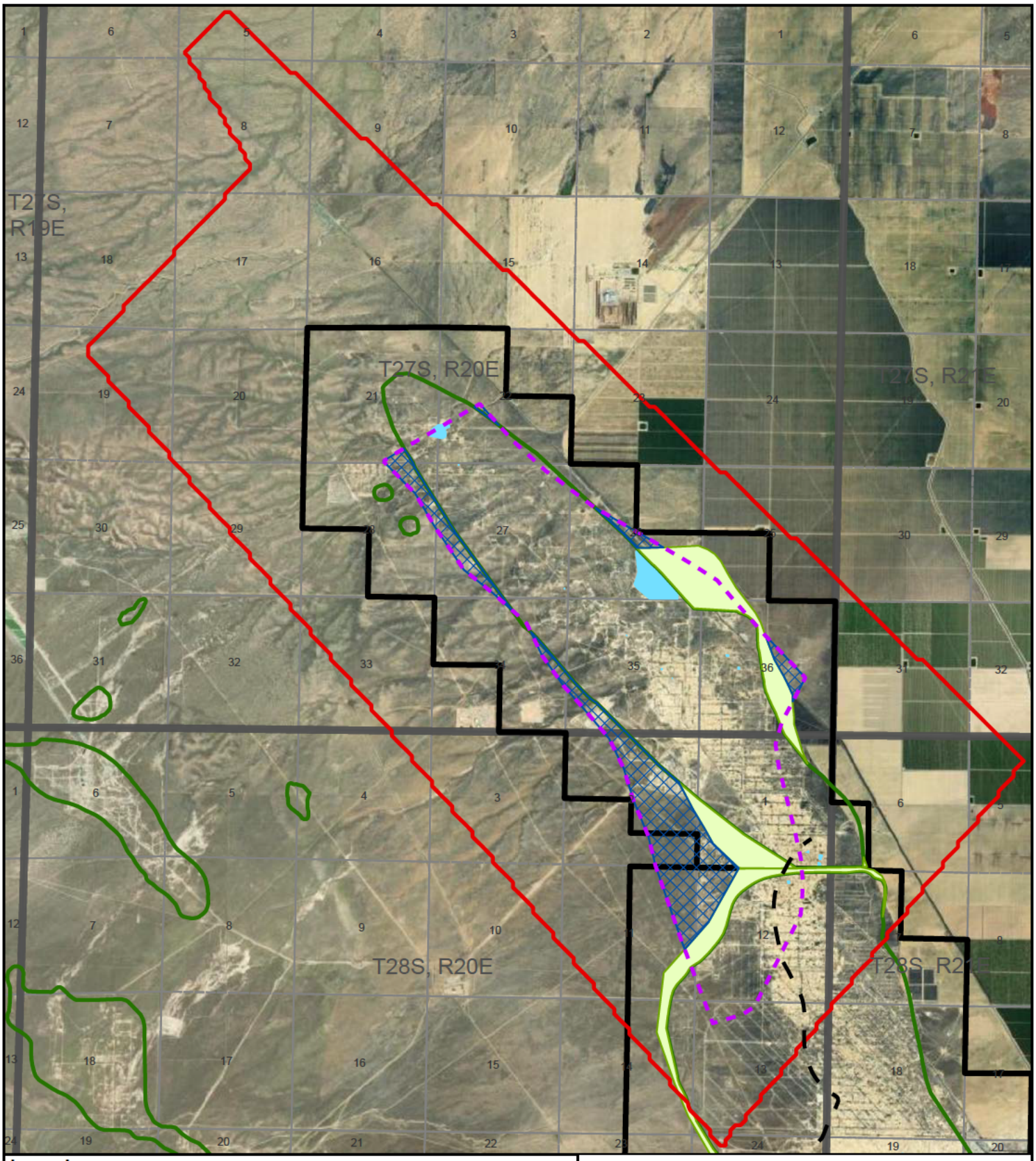
P:\GIS\Aera Belridge CCUS\Projects\EPA Response\Section 2.7 Hydrology and Hydrogeology\Section 2.7 Hydrology and Hydrogeology.aprx\Fig2.7-10 Nearest Municipal Water Supply Wells 12/15/2023 2:55 PM (MBradford)



Legend

- Extent of Alluvial Groundwater*
- Area of Review
- Area of Interest
- 1973/74 Oil Field Boundary and Aquifer Exempt Areas
- Tulare Formation Aquifer Exemption Area
- Potential USDWs within the AOR
- North/South Belridge Administrative Boundary
- Former Disposal Pond
- Township
- Section

N

0 1 Miles

*Groundwater delineated via historic well logs.

Aquifer Exempt Areas and Potential USDWs within the AOR

North Belridge Oil Field
Western Kern County
California

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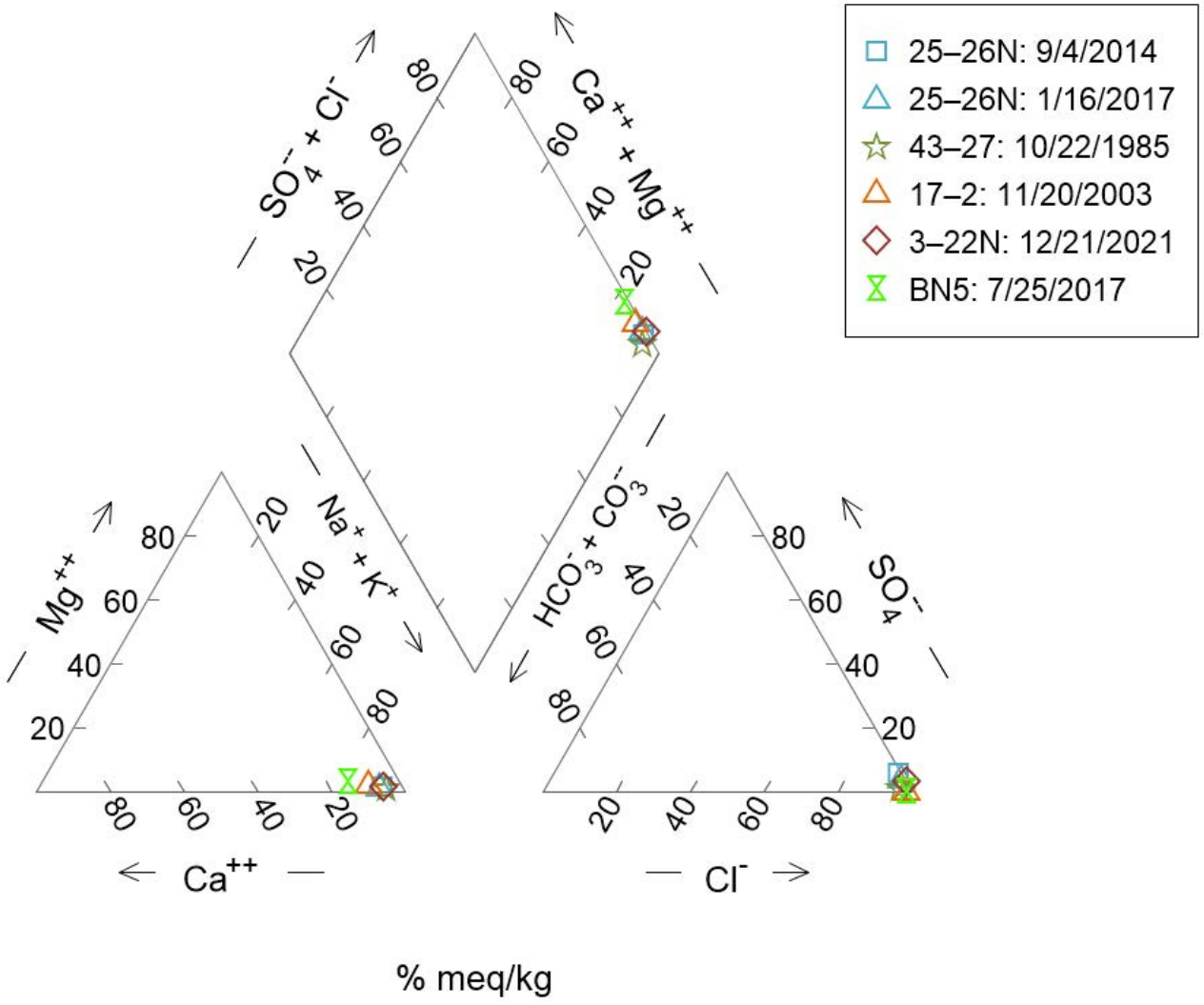
Figure 2.7-11

P:\GIS\Aera Belridge CCUS\Projects\EPA Response\Section 2.7 Hydrology and Hydrogeology\Section 2.7 Hydrology and Hydrogeology.aprx 12/18/2023 (Author: MBradford) 11:25 AM



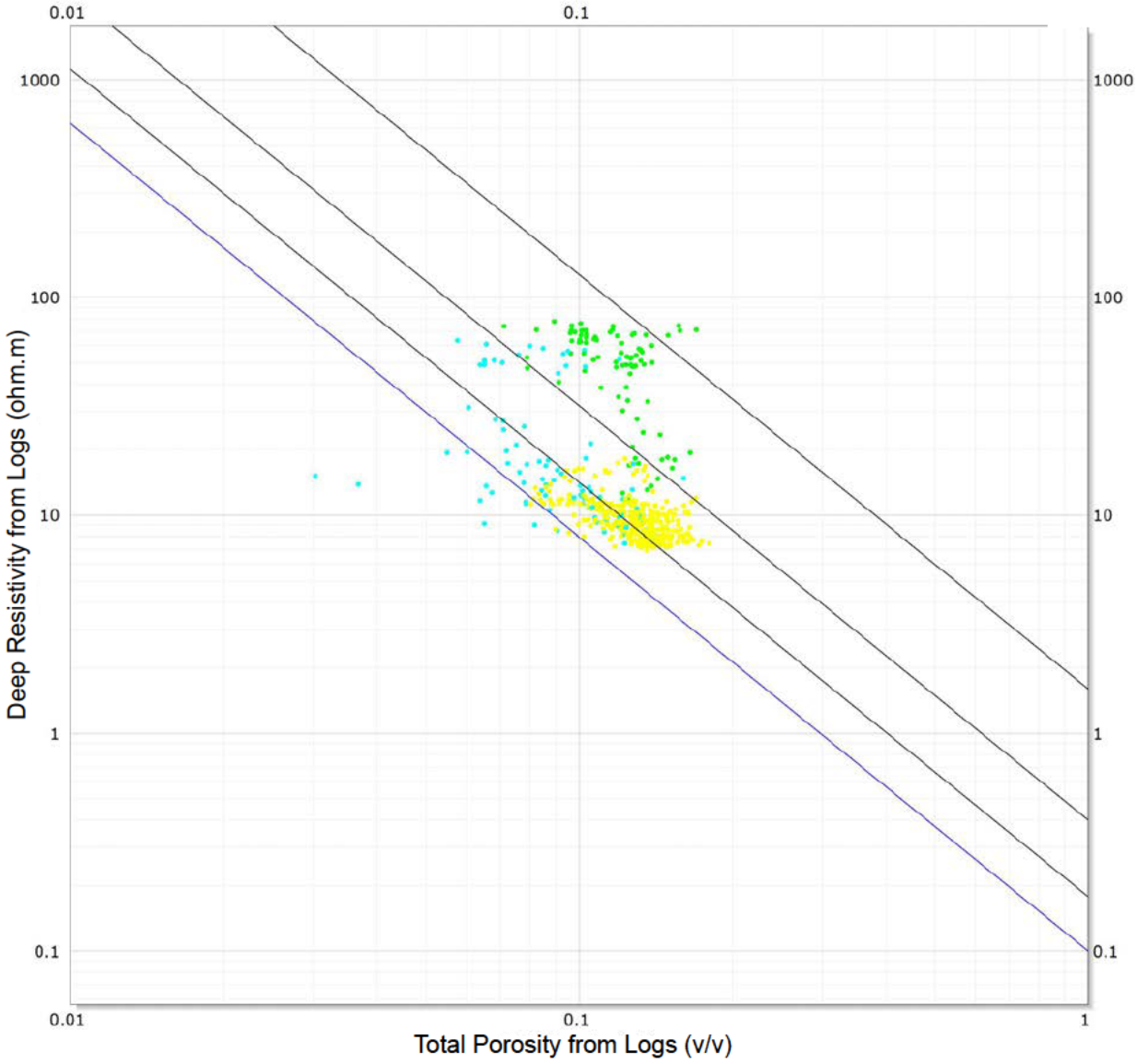
Notes:
Formational water major ion chemistry is displayed as relative percentage of milliequivalents per kilogram of water (meq/kg).

64 Zone Sandstone Formation
Water Piper Diagram
North Belridge Oil Field
Western Kern County
California

Geosyntec consultants

Figure
2.8-1

CarbonFrontier | December 2023



Legend:

1 2 3

1 = uncemented wet sand
2 = sand with residual oil
3 = cemented sand

Explanation:

v/v = pore volume/total volume
ohm.m = ohm-meter

Notes:

1. The cementation exponent value used to construct the Pickett plot (slope of the line) was 1.9, which is the mean value of measurements on seven samples from well 17-2N.
2. The formation water resistivity at Gump Trust 30-1 was estimated at approximately 0.1 ohm-meters by extrapolating the blue line to a porosity of 1 (all fluid).

Pickett Plot for Salinity Estimate from 64 Zone W Sandstone - Well Gump Trust 30-1

North Belridge Oil Field
Western Kern County
California

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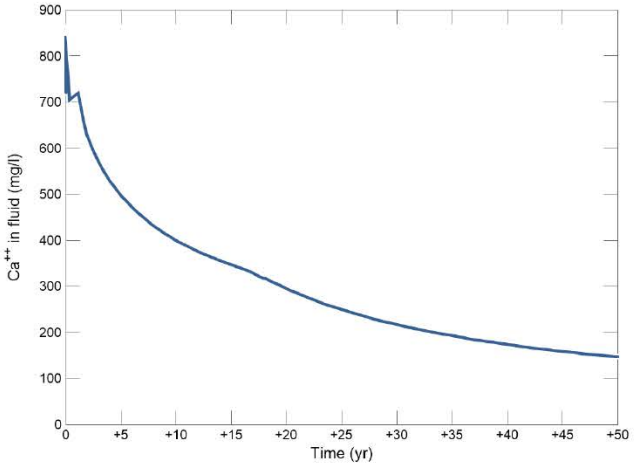
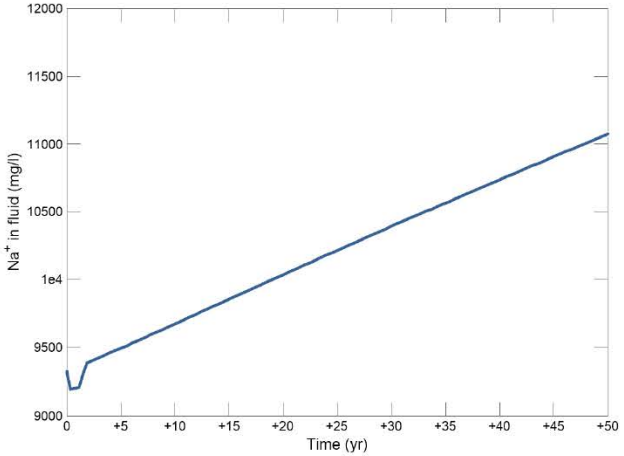
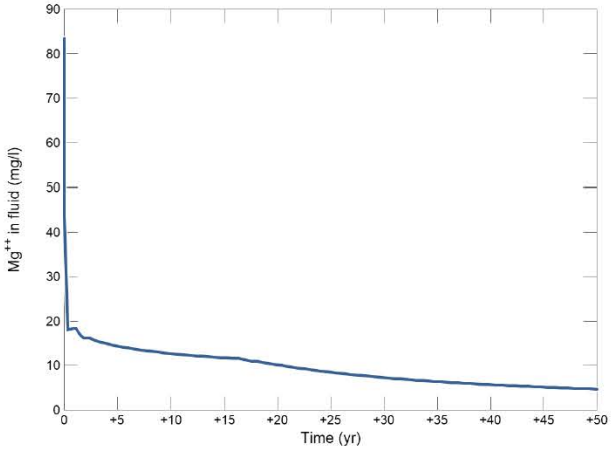
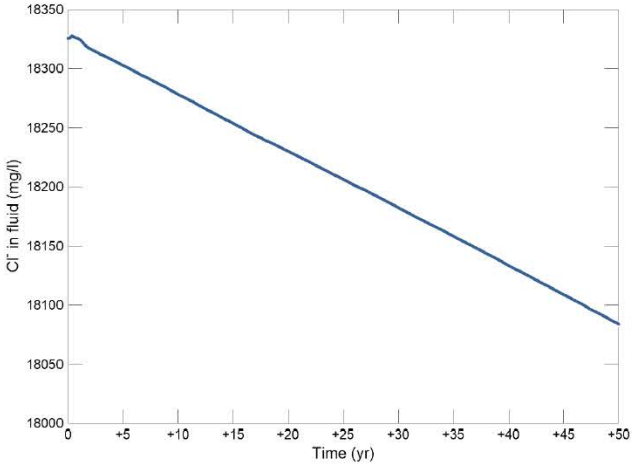
Figure 2.8-2

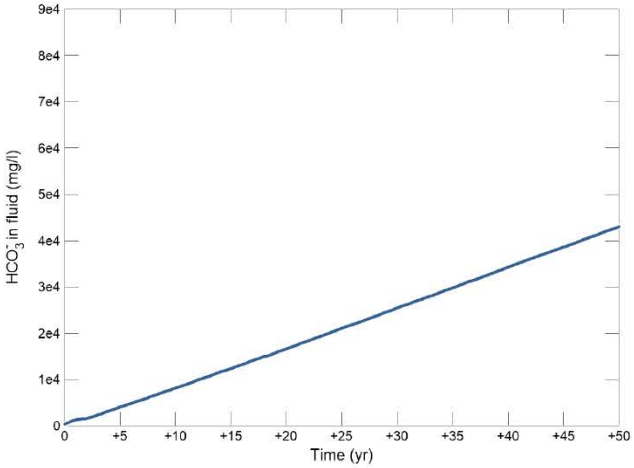
Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig2.8-2 64 Zone Pickett Plot.ai

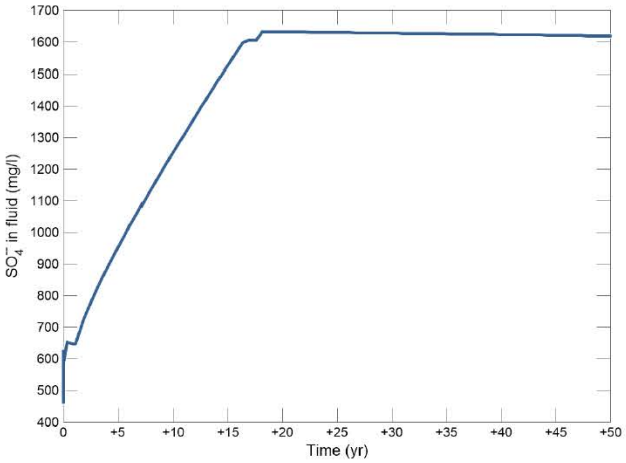












Notes:
Aqueous concentrations displayed over the defined 50-year model interval. Modeling completed using the React module of Geochemists Workbench™.

Explanation:
yr - years
mg/l - milligrams per liter

React Model Outputs - Major Ion Changes

North Belridge Oil Field
Western Kern County
California

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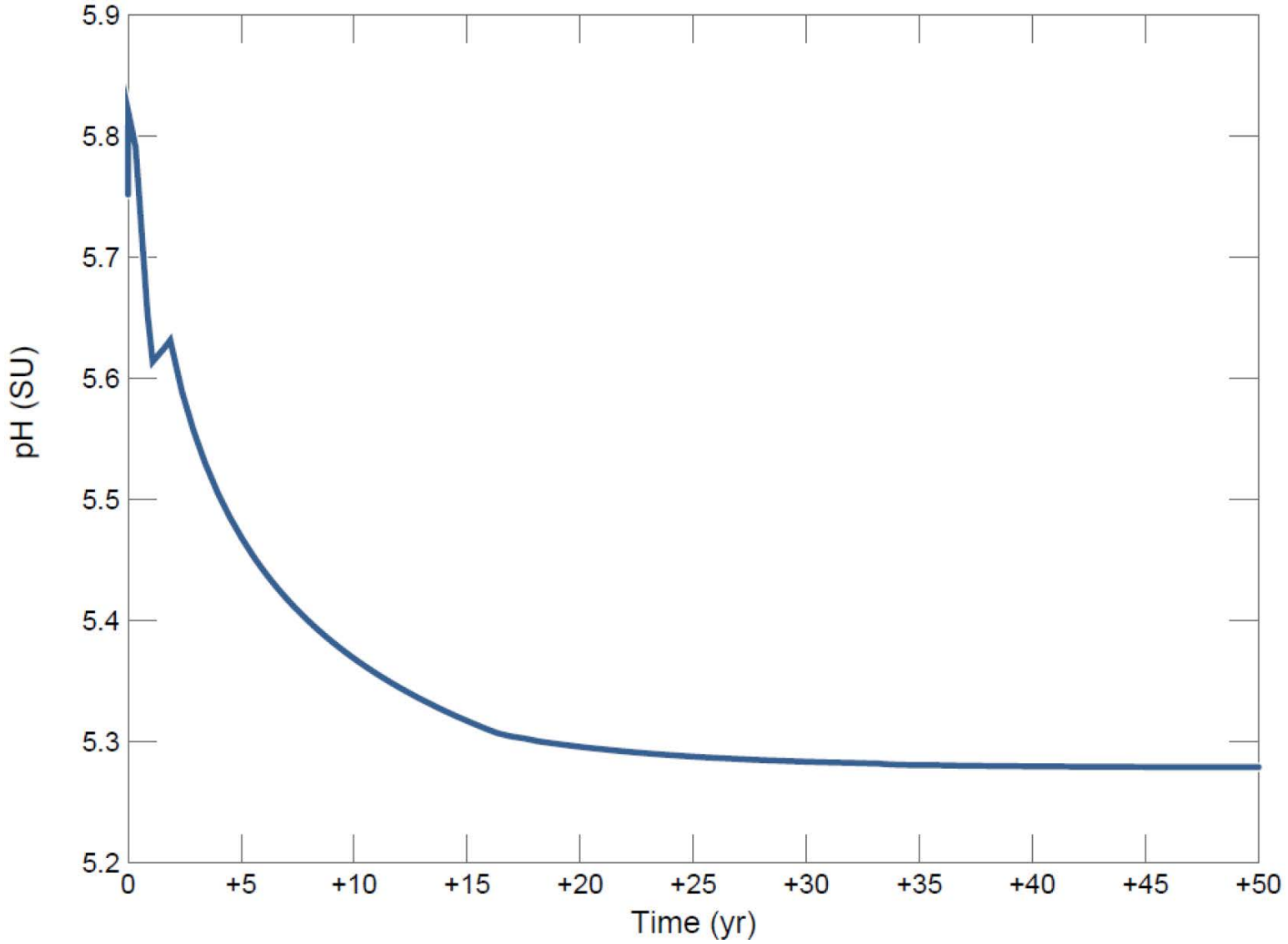
Figure 2.8-3

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.8-3 React Model Outputs - Major Ion Changes.ai



Notes:
pH of formation water displayed over the defined 50-year model interval. Modeling completed using the React module of Geochemists Workbench™.

Explanation:
yr - years
SU - Standard Units

React Model Outputs - pH Changes

North Belridge Oil Field
Western Kern County
California

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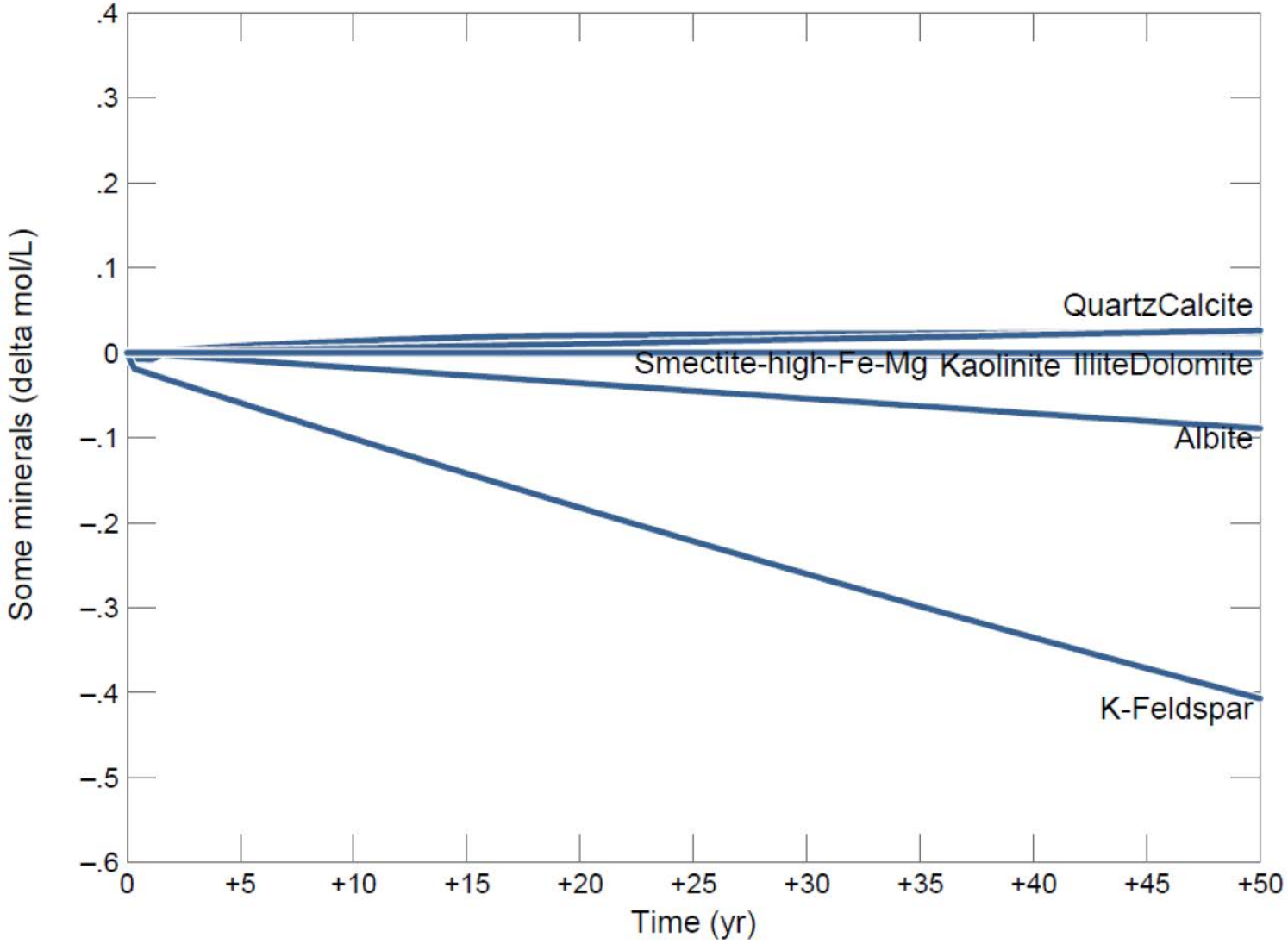
Figure 2.8-4

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.8-4 React Model Outputs - pH Changes.ai



Notes:
Mineral changes displayed over the defined 50-year model interval. Modeling completed using the React module of Geochemists Workbench™.

Explanation:
yr - years
mol/L - moles per liter

React Model Outputs - Mineral Changes

North Belridge Oil Field
Western Kern County
California

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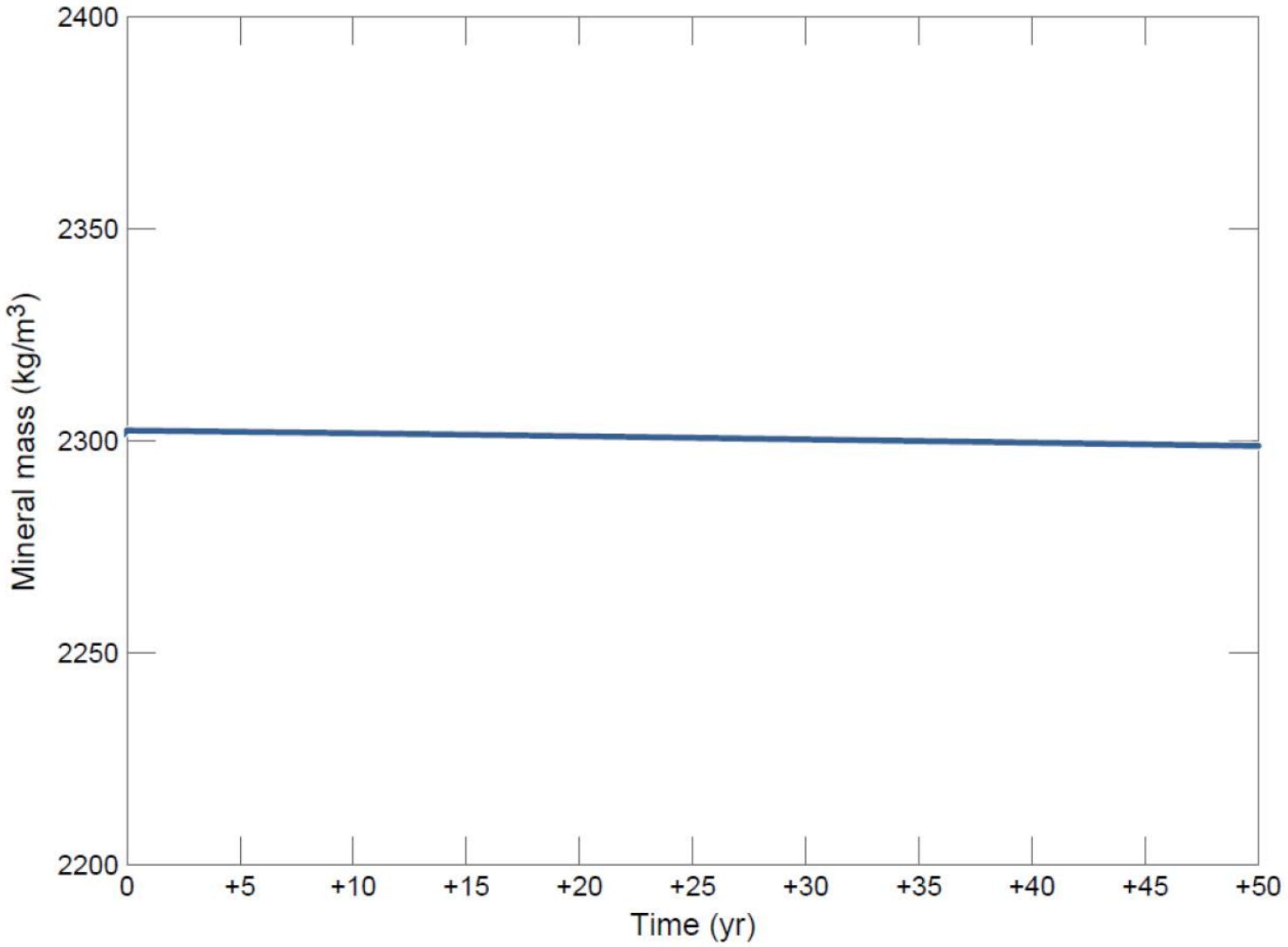
Figure 2.8-5

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_Fig2.8-5 React Model Output - Mineral Changes.ai



Notes:
Total Mineral Mass displayed over the defined 50-year model interval. Modeling completed using the React module of Geochemists Workbench™.

Explanation:
yr - years
kg/m³ - kilograms per cubic meters

React Model Outputs - Total Mineral Mass

North Belridge Oil Field
Western Kern County
California

Geosyntec consultants

Figure 2.8-6

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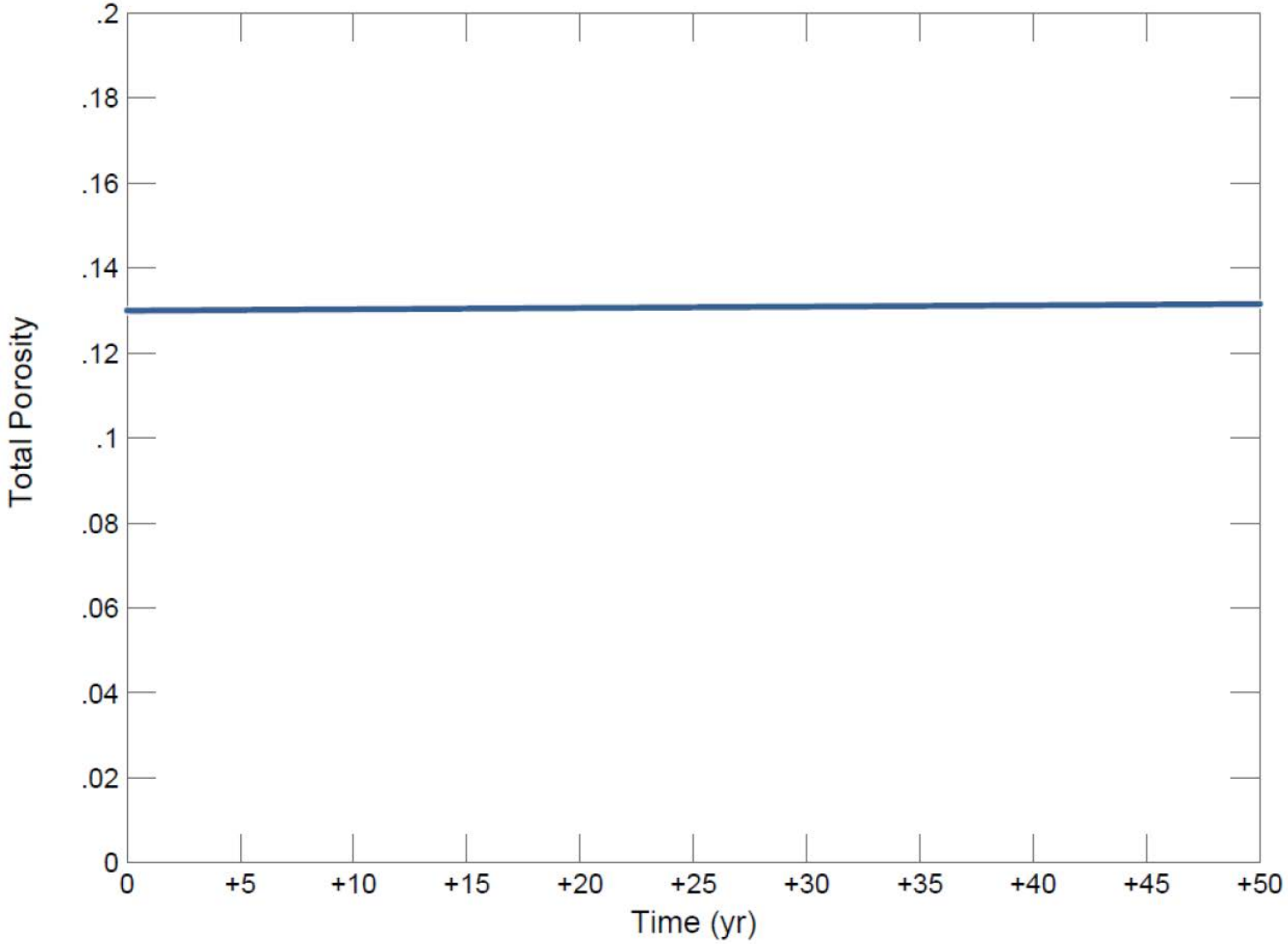
Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.8-6 React Model Output - Total Mineral Mass.ai



Notes:
Total porosity changes displayed over the defined 50-year model interval. Modeling completed using the React module of Geochemists Workbench™.

Explanation:
yr - years

React Model Outputs - Porosity

North Belridge Oil Field
Western Kern County
California

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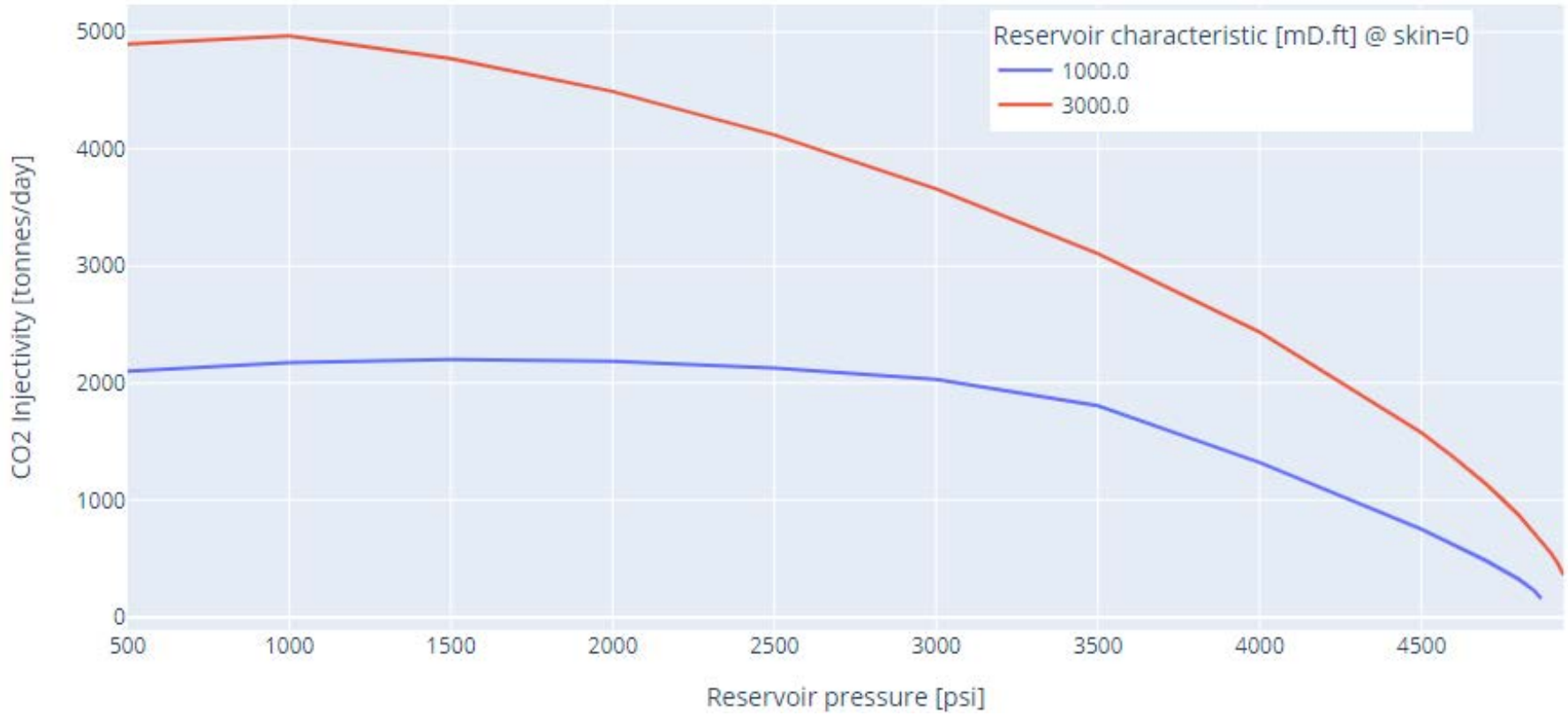
Figure 2.8-7

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator_ Fig2.8-7 React Model Outputs - Porosity.ai



Explanation:

mD.ft - millidarcy-foot
CO_2 - Carbon Dioxide
psi - pounds per square inch

Modeled CO_2 Injectivity Sensitivity Plot

North Belridge Oil Field
Western Kern County
California

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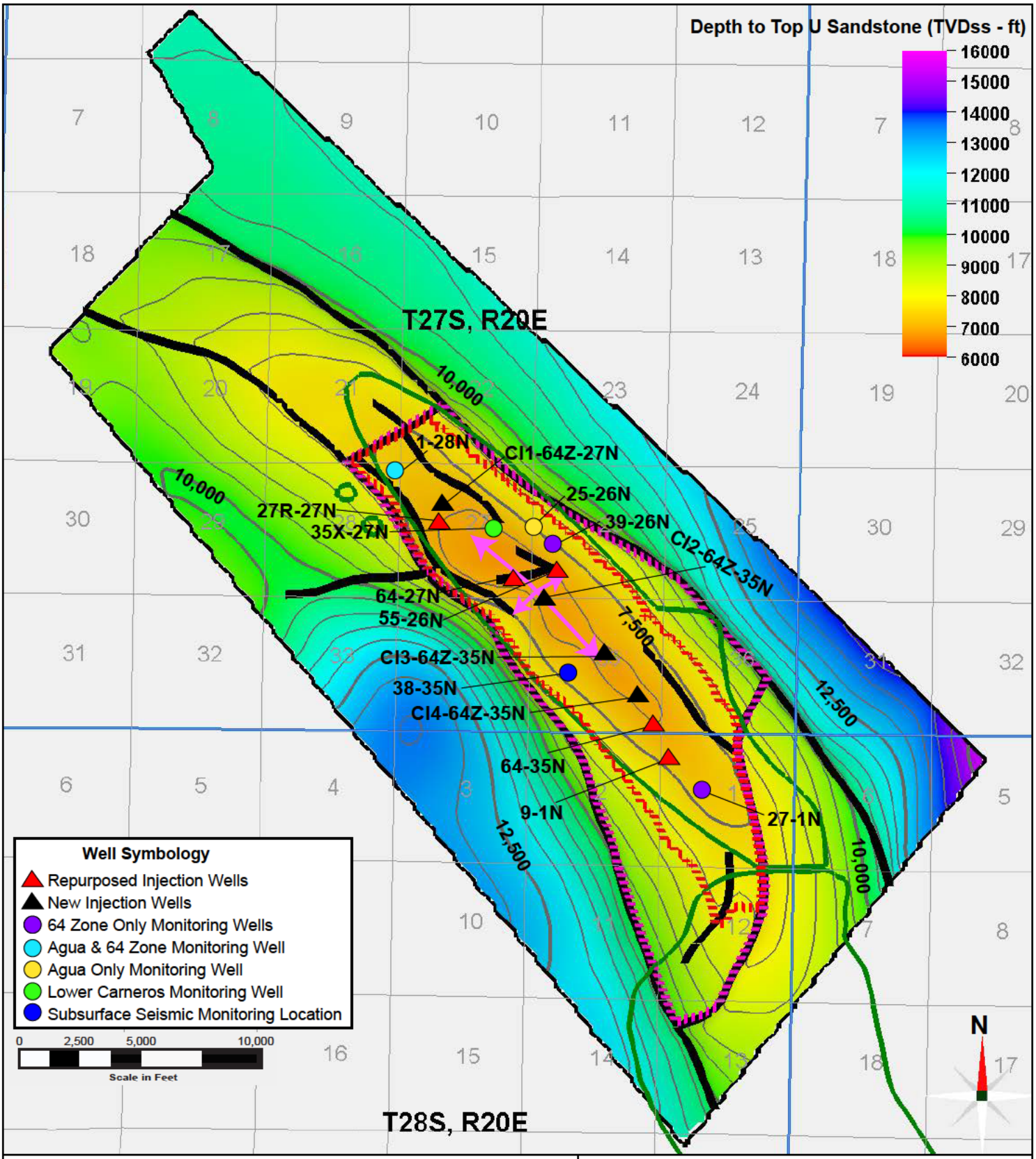
Figure 2.10-1



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Modeled CO_2 Plume Extent
- Anticline Axis

Explanation:

ft - feet
TVDss - true vertical depth sub sea (ft)
CI - contour interval
CO_2 - carbon dioxide

Notes:

Surface artifacts due to interpolation across faults and structural model grid.

Location of Project Wells

North Belridge Oil Field
Western Kern County
California

Geosyntec consultants

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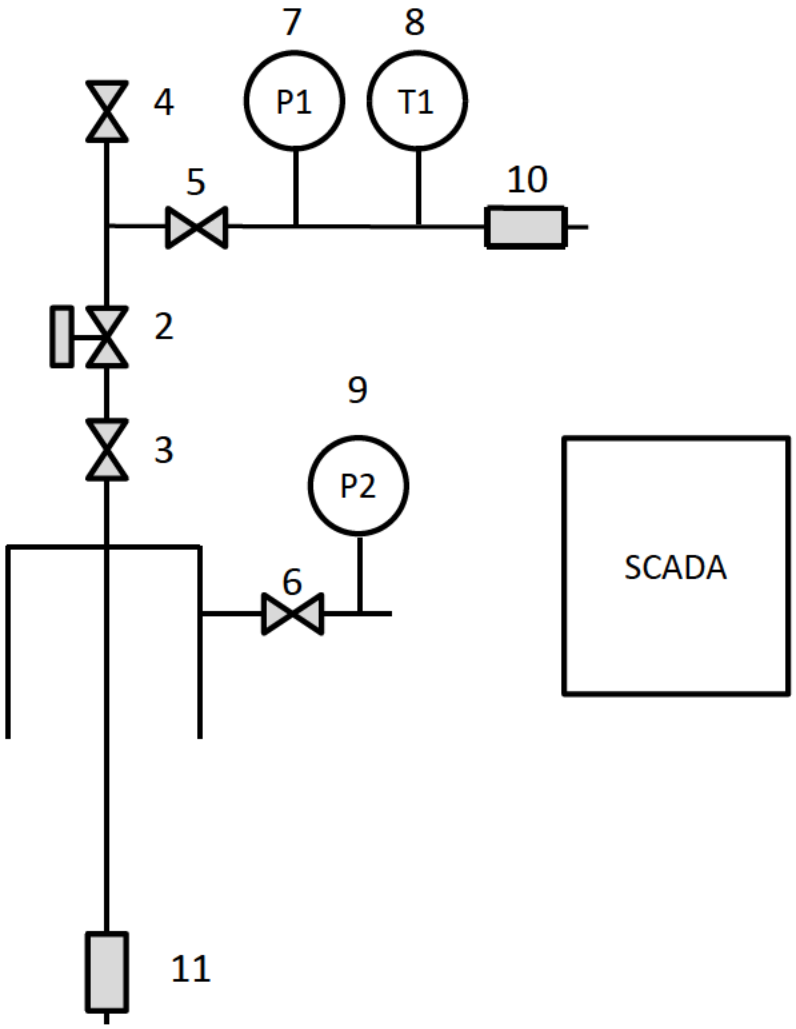
Figure 5-1

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig5-1 Location of Project Wells.ai



Components

1. SCADA
2. Actuated master valve
3. Master valve
4. Crown valve
5. Wing valve
6. Annulus valve
7. Wellhead pressure sensor P1
8. Wellhead temperature sensor T1
9. Annulus pressure sensor P2
10. Flow measurement device
11. Landing nipple near the packer

Explanation:
SCADA - Supervisory Control and Data Acquisition

Safety Systems Schematic
Injection Well
North Belridge Oil Field
Western Kern County
California

BLADE ENERGY PARTNERS

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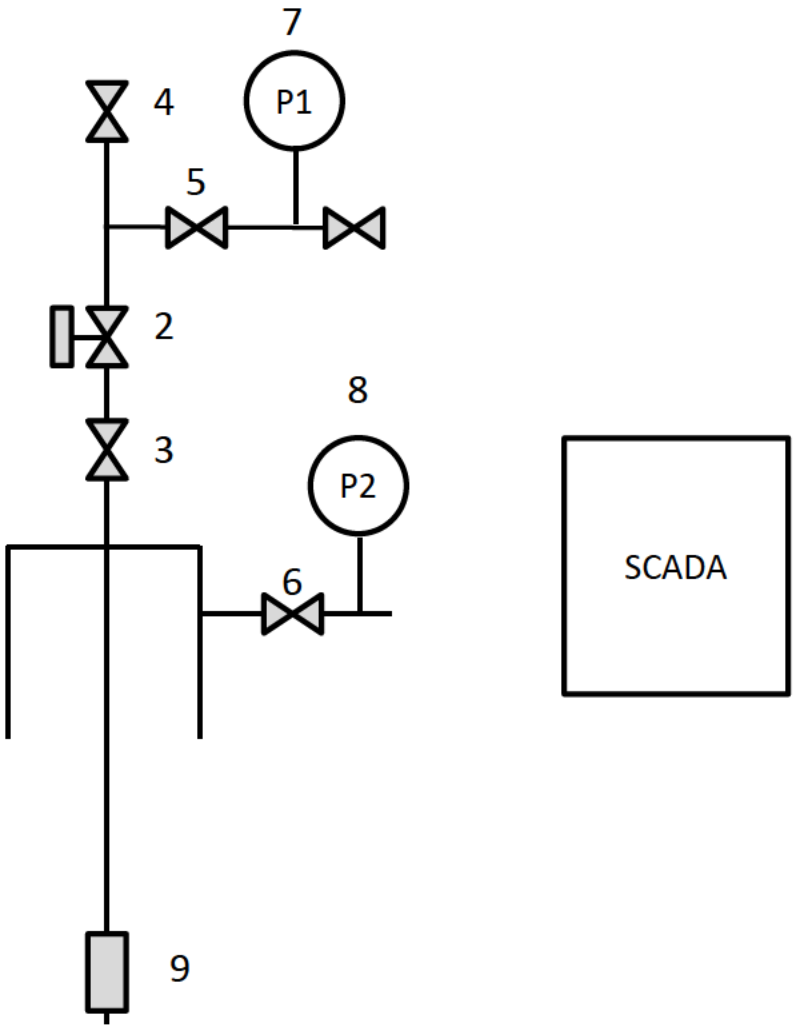
Figure 5.2-1

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig5.2-1 SSS Injection Well.ai



Components

1. SCADA
2. Actuated master valve
3. Master valve
4. Crown valve
5. Wing valve
6. Annulus valve
7. Wellhead pressure sensor P1
8. Annulus pressure sensor P2
9. Landing nipple near the packer

Explanation:
SCADA - Supervisory Control and Data Acquisition

Safety Systems Schematic
Observation Well
North Belridge Oil Field
Western Kern County
California

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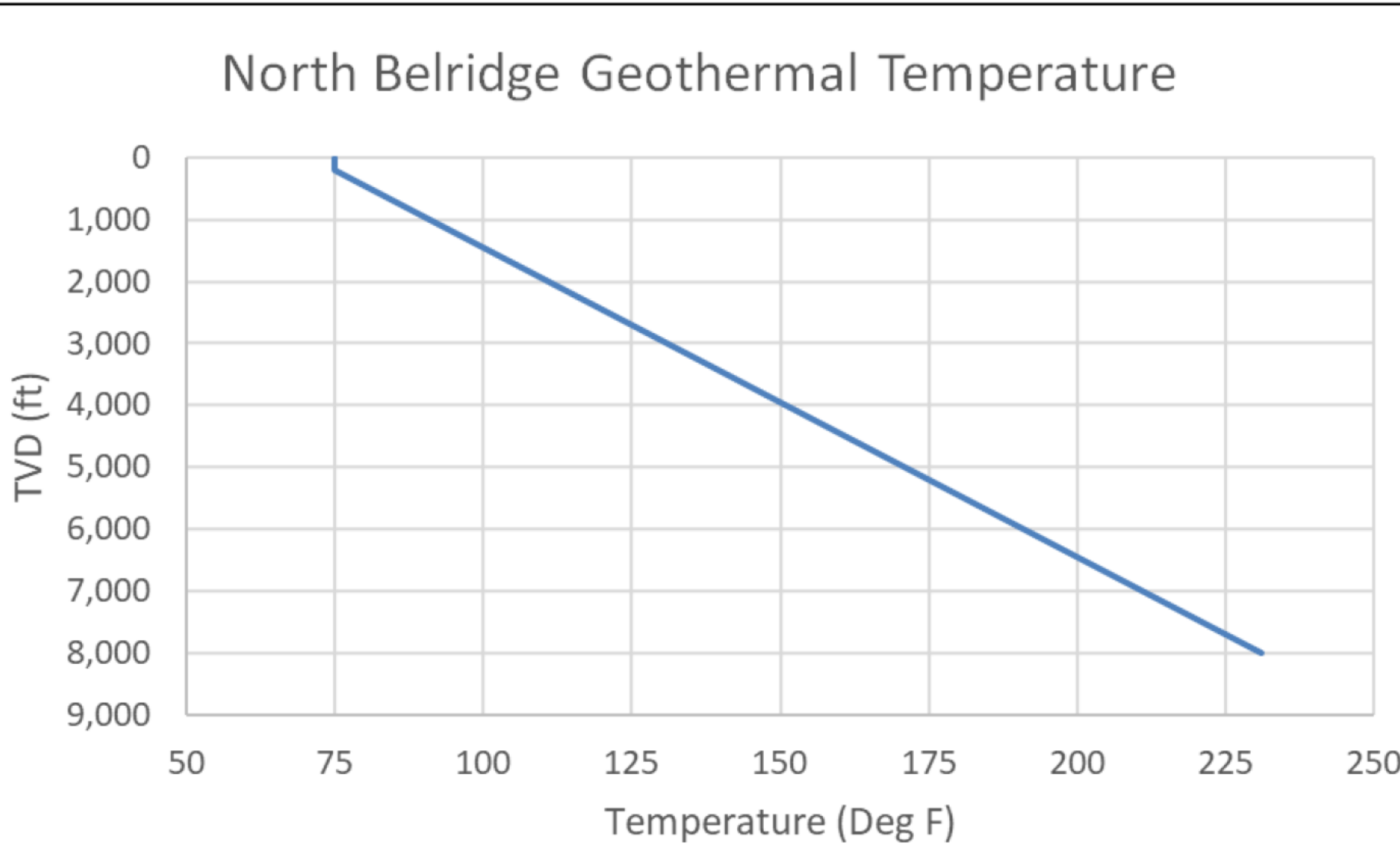
Figure 5.2-2

Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig5.2-2 SSS Monitoring Well.ai



Explanation:
TVD - True Vertical Depth
Deg F - Degrees Fahrenheit

North Belridge Geothermal Temperature Profile
North Belridge Oil Field
Western Kern County
California

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Figure 5.2-3

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Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\i_Illustrator\Narrative_ Fig5.2-3 North Belridge Geothermal Temperature Profile.ai

Appendices

Appendix 2A
Regional Geology, Hydrogeology, and Local Structural Geology Supporting Data

Contents

Wells and Geologic Model Thicknesses

Well Name	UWI	Surface	X	Y	Z	MD	Interval	Delta Z	Delta MD	TVT Model	TST Model
1-12	40303889800	CARNEROS_TOP	1474032.31	736693.33	-7,044	7,680.77	Carneros Sandstone	575	578.27	550	553
1-12	40303889800	CARNEROS_BASE	1474083.76	736718.51	-7,619	8,259.04	Upper Santos Shale	105	106.11	91	91
1-12	40303889800	AGUA_TOP	1474098.07	736728.89	-7,724	8,365.15	Agua Sandstone	24	24.48	71	73
1-12	40303889800	AGUA_BASE	1474101.45	736731.43	-7,748	8,389.63	Lower Santos Shale	192	194.94	203	206
1-12	40303889800	64_ZONE_U_TOP	1474127.55	736752.39	-7,940	8,584.57	U Sandstone	122	124.04	104	105
1-12	40303889800	64_ZONE_U_BASE	1474143.59	736766.71	-8,062	8,708.61	U Shale	53	53.2	53	54
1-12	40303889800	64_ZONE_W_TOP	1474150.47	736772.42	-8,115	8,761.81	W Sandstone	326	329.94	305	310
1-12	40303889800	64_ZONE_W_BASE	1474191.17	736804.6	-8,441	9,091.75	Salt Creek Shale	--	--	60	60
1-15	40294188400	CARNEROS_TOP	1461682.46	760614.71	-10,013	10,657.47	Carneros Sandstone	402	402.26	405	405
1-15	40294188400	CARNEROS_BASE	1461680.64	760607.54	-10,415	11,059.73	Upper Santos Shale	47	47.07	49	49
1-15	40294188400	AGUA_TOP	1461680.29	760606.68	-10,462	11,106.80	Agua Sandstone	128	128.46	121	121
1-15	40294188400	AGUA_BASE	1461679.32	760604.33	-10,590	11,235.26	Lower Santos Shale	212	211.48	213	213
1-15	40294188400	64_ZONE_U_TOP	1461677.74	760600.46	-10,802	11,446.74	U Sandstone	24	24.26	51	51
1-15	40294188400	64_ZONE_U_BASE	1461677.55	760600.02	-10,826	11,471.00	U Shale	83	82.99	--	--
1-15	40294188400	64_ZONE_W_TOP	1461676.93	760598.5	-10,909	11,553.99	W Sandstone	--	--	--	--
1-16	40298759700	64_ZONE_W_TOP	1458476.41	760520.91	-10,503	11,235.78	W Sandstone	313	322.02	292	299
1-16	40298759700	64_ZONE_W_BASE	1458453.21	760451.86	-10,816	11,557.80	Salt Creek Shale	65	66.98	75	78
1-16	40298759700	GIBSON_TOP	1458447.24	760435.1	-10,881	11,624.78	Gibson Sandstone	--	--	20	21
1-21N	40293503500	CARNEROS_BASE	1460337.32	753735.5	-6,842	7,532.21	Upper Santos Shale	51	51	58	58
1-21N	40293503500	AGUA_TOP	1460337.32	753735.5	-6,893	7,583.21	Agua Sandstone	302	302.04	249	249
1-21N	40293503500	AGUA_BASE	1460337.32	753735.5	-7,195	7,885.25	Lower Santos Shale	218	218.03	238	238
1-21N	40293503500	64_ZONE_U_TOP	1460337.32	753735.5	-7,413	8,103.28	U Sandstone	50	50.04	49	49
1-21N	40293503500	64_ZONE_U_BASE	1460337.32	753735.5	-7,463	8,153.32	U Shale	61	60.81	61	60
1-21N	40293503500	64_ZONE_W_TOP	1460337.32	753735.5	-7,524	8,214.13	W Sandstone	329	328.47	331	331
1-21N	40293503500	64_ZONE_W_BASE	1460337.32	753735.5	-7,853	8,542.60	Salt Creek Shale	--	--	67	67
1-28	40306710100	CARNEROS_TOP	1457688.29	753275.95	-7,402	8,240.48	Carneros Sandstone	336	401.91	463	550
1-28	40306710100	CARNEROS_BASE	1457908.74	753264.65	-7,738	8,642.39	Upper Santos Shale	81	97.94	61	73
1-28	40306710100	AGUA_TOP	1457963.42	753261.9	-7,819	8,740.33	Agua Sandstone	221	266.24	150	181
1-28	40306710100	AGUA_BASE	1458112.08	753254.43	-8,040	9,006.57	Lower Santos Shale	114	137.38	200	242
1-28	40306710100	64_ZONE_U_TOP	1458188.78	753250.58	-8,154	9,143.95	U Sandstone	62	74.94	66	79
1-28	40306710100	64_ZONE_U_BASE	1458230.62	753248.47	-8,216	9,218.89	U Shale	31	37.04	42	51
1-28	40306710100	64_ZONE_W_TOP	1458251.3	753247.43	-8,247	9,255.93	W Sandstone	262	316.75	239	289
1-28	40306710100	64_ZONE_W_BASE	1458429.23	753241.72	-8,509	9,572.68	Salt Creek Shale	--	--	43	53
1-28N	40293506900	CARNEROS_TOP	1460451.36	753251.24	-6,259	6,943.72	Carneros Sandstone	502	502.09	538	538
1-28N	40293506900	CARNEROS_BASE	1460455.27	753256.38	-6,761	7,445.81	Upper Santos Shale	59	59.1	60	60
1-28N	40293506900	AGUA_TOP	1460455.68	753256.37	-6,820	7,504.91	Agua Sandstone	273	272.25	273	272
1-28N	40293506900	AGUA_BASE	1460459.68	753254.7	-7,093	7,777.16	Lower Santos Shale	231	231.38	255	256
1-28N	40293506900	64_ZONE_U_TOP	1460464.19	753253.16	-7,324	8,008.54	U Sandstone	60	60.4	51	50
1-28N	40293506900	64_ZONE_U_BASE	1460465.21	753252.9	-7,384	8,068.94	U Shale	90	89.45	58	58
1-28N	40293506900	64_ZONE_W_TOP	1460466.72	753252.51	-7,474	8,158.39	W Sandstone	--	--	--	--
1-2N	40293511800	CARNEROS_TOP	1470606.94	742545.79	-6,247	6,888.15	Carneros Sandstone	394	393.87	408	408
1-2N	40293511800	CARNEROS_BASE	1470599.75	742551.25	-6,641	7,282.02	Upper Santos Shale	94	93.92	71	71
1-2N	40293511800	AGUA_TOP	1470599.13	742552.9	-6,735	7,375.94	Agua Sandstone	66	66.49	92	92
1-2N	40293511800	AGUA_BASE	1470598.94	742554.23	-6,801	7,442.43	Lower Santos Shale	371	370.59	352	352
1-2N	40293511800	64_ZONE_U_TOP	1470601.06	742561.26	-7,172	7,813.02	U Sandstone	120	120.73	113	113
1-2N	40293511800	64_ZONE_U_BASE	1470603.43	742564.33	-7,292	7,933.75	U Shale	54	53.8	64	64
1-2N	40293511800	64_ZONE_W_TOP	1470604.47	742565.89	-7,346	7,987.55	W Sandstone	--	--	--	--
10-36N	40293510200	CARNEROS_TOP	1471702.22	743248.81	-6,291	6,958.81	Carneros Sandstone	560	560.17	530	530
10-36N	40293510200	CARNEROS_BASE	1471688.74	743255.34	-6,851	7,518.98	Upper Santos Shale	40	39.26	45	45
10-36N	40293510200	AGUA_TOP	1471687.44	743255.74	-6,891	7,558.24	Agua Sandstone	22	22.77	46	47
10-36N	40293510200	AGUA_BASE	1471686.69	743255.98	-6,913	7,581.01	Lower Santos Shale	234	233.66	227	227
10-36N	40293510200	64_ZONE_U_TOP	1471679	743258.41	-7,147	7,814.67	U Sandstone	134	134.07	124	124
10-36N	40293510200	64_ZONE_U_BASE	1471674.58	743259.8	-7,281	7,948.74	U Shale	40	39.94	43	43
10-36N	40293510200	64_ZONE_W_TOP	1471673.26	743260.22	-7,321	7,988.68	W Sandstone	343	343.19	340	341
10-36N	40293510200	64_ZONE_W_BASE	1471660.77	743260.03	-7,664	8,331.87	Salt Creek Shale	--	--	--	--
102R-21N	40292958900	CARNEROS_TOP	1460237.2	754468.16	-6,373	7,050.67	Carneros Sandstone	511	510.66	609	609
102R-21N	40292958900	CARNEROS_BASE	1460235.41	754465.74	-6,884	7,561.33	Upper Santos Shale	186	185.74	63	63
102R-21N	40292958900	AGUA_TOP	1460235.38	754464.89	-7,070	7,747.07	Agua Sandstone	181	180.76	161	161
102R-21N	40292958900	AGUA_BASE	1460234.71	754463.55	-7,251	7,927.83	Lower Santos Shale	250	250.75	249	249
102R-21N	40292958900	64_ZONE_U_TOP	1460233.51	754461.72	-7,501	8,178.58	U Sandstone	68	67.86	77	77
102R-21N	40292958900	64_ZONE_U_BASE	1460233.18	754461.23	-7,569	8,246.44	U Shale	24	23.73	52	53
102R-21N	40292958900	64_ZONE_W_TOP	1460233.07	754461.05	-7,593	8,270.17	W Sandstone	293	292.84	292	291
102R-21N	40292958900	64_ZONE_W_BASE	1460231.66	754458.92	-7,886	8,563.01	Salt Creek Shale	76	76.09	64	65
102R-21N	40292958900	GIBSON_TOP	1460231.3	754458.37	-7,962	8,639.10	Gibson Sandstone	--	--	56	56
10X-1N	40295989000	CARNEROS_TOP	1471978.16	741550.7	-6,307	6,947.92	Carneros Sandstone	458	458.36	468	469
10X-1N	40295989000	CARNEROS_BASE	1471972.25	741570.15	-6,765	7,406.28	Upper Santos Shale	50	50.47	54	54
10X-1N	40295989000	AGUA_TOP	1471972.2	741573.12	-6,815	7,456.75	Agua Sandstone	45	45.4	52	52
10X-1N	40295989000	AGUA_BASE	1471972.16	741575.8	-6,860	7,502.15	Lower Santos Shale	329	328.82	333	333
10X-1N	40295989000	64_ZONE_U_TOP	1471972.08	741595.29	-7,189	7,830.97	U Sandstone	114	114.79	121	121
10X-1N	40295989000	64_ZONE_U_BASE	1471971.72	741600.38	-7,303	7,945.76	U Shale	34	34.18	40	41
10X-1N	40295989000	64_ZONE_W_TOP	1471971.62	741601.81	-7,337	7,979.94	W Sandstone	332	332.05	336	336
10X-1N	40295989000	64_ZONE_W_BASE	1471969.46	741617.12	-7,669	8,311.99	Salt Creek Shale	40	39.54	52	52
10X-1N	40295989000	GIBSON_TOP	1471969.36	741618.84	-7,709	8,351.53	Gibson Sandstone	--	--	74	74
11R-27N	40292961500	CARNEROS_TOP	1462206.6	752473.27	-6,089	6,784.83	Carneros Sandstone	606	606.46	610	611
11R-27N	40292961500	CARNEROS_BASE	1462206.6	752473.27	-6,695	7,391.29	Upper Santos Shale	42	42.03	47	46
11R-27N	40292961500	AGUA_TOP	1462206.6	752473.27	-6,737	7,433.32	Agua Sandstone	264	264.07	229	229
11R-27N	40292961500	AGUA_BASE	1462206.6	752473.27	-7,001	7,697.39	Lower Santos Shale	238	237.15	241	241
11R-27N	40292961500	64_ZONE_U_TOP	1462206.6	752473.27	-7,239	7,934.54	U Sandstone	39	39.39	63	63
11R-27N	40292961500	64_ZONE_U_BASE	1462206.6	752473.27	-7,278	7,973.93	U Shale	59	58.79	58	58
11R-27N	40292961500	64_ZONE_W_TOP	1462206.6	752473.27	-7,337	8,032.72	W Sandstone	367	366.87	351	351
11R-27N	40292961500	64_ZONE_W_BASE	1462206.6	752473.27	-7,704	8,399.59	Salt Creek Shale	--	--	64	64
11X-26N	40297845200	CARNEROS_TOP	1467379.96	752284.11	-8,729	9,460.99	Carneros Sandstone	375	383.02	565	575
11X-26N	40297845200	CARNEROS_BASE	1467348.03	752216.57	-9,104	9,844.01	Upper Santos Shale	116	118.2	121	124
11X-26N	40297845200	AGUA_TOP	1467335.04	752194.93	-9,220	9,962.21	Agua Sandstone	142	145.68	80	82
11X-26N	40297845200	AGUA_BASE	1467318.53	752168.64	-9,362	10,107.89	Lower Santos Shale	302	307.89	338	345
11X-26N	40297845200	64_ZONE_U_TOP	1467281.18	752121.06	-9,664	10,415.78	U Sandstone	142	143.91	110	111
11X-26N	40297845200	64_ZONE_U_BASE	1467263.32	752106.85	-9,806	10,559.69	U Shale	47	47.62	67	68
11X-26N	40297845200	64_ZONE_W_TOP	1467257.41	752102.16	-9,853	10,607.31	W Sandstone	396	403.66	385	392
11X-26N	40297845200	64_ZONE_W_BASE	1467198.65	752055.12	-10,249	11,010.97	Salt Creek Shale	68	69.57	85	87
11X-26N	40297845200	GIBSON_TOP	1467186.03	752044.92	-10,317	11,080.54	Gibson Sandstone	--	--	60	62
12-1N	40293511000	CARNEROS_TOP	1473164.62	741759.6	-6,491	7,120.26	Carneros Sandstone	435	435.08	389	389
12-1N	40293511000	CARNEROS_BASE	1473161.52	741750.77	-6,926	7,555.34	Upper Santos Shale	53	53.17	44	44

Well Name	UWI	Surface	X	Y	Z	MD	Interval	Delta Z	Delta MD	TVT Model	TST Model
12-1N	40293511000	AGUA_TOP	1473160.8	741750.17	-6,979	7,608.51	Agua Sandstone	70	69.63	77	77
12-1N	40293511000	AGUA_BASE	1473159.69	741749.38	-7,049	7,678.14	Lower Santos Shale	371	370.9	337	337
12-1N	40293511000	64_ZONE_U_TOP	1473154.13	741745.57	-7,420	8,049.04	U Sandstone	126	126.13	122	122
12-1N	40293511000	64_ZONE_U_BASE	1473152.31	741744.33	-7,546	8,175.17	U Shale	45	44.7	51	52
12-1N	40293511000	64_ZONE_W_TOP	1473151.66	741743.9	-7,591	8,219.87	W Sandstone	--	--	242	242
12-27	40292960300	CARNEROS_TOP	1462839.8	752525.44	-6,101	6,794.87	Carneros Sandstone	620	620.14	616	616
12-27	40292960300	AGUA_TOP	1462839.8	752525.44	-6,721	7,415.01	Agua Sandstone	--	--	--	--
13-27N	40293506300	CARNEROS_TOP	1463547.47	752343.84	-6,282	6,949.22	Carneros Sandstone	602	601.47	555	555
13-27N	40293506300	CARNEROS_BASE	1463548.46	752338.12	-6,884	7,550.69	Upper Santos Shale	38	38.11	51	51
13-27N	40293506300	AGUA_TOP	1463548.03	752338	-6,922	7,588.80	Agua Sandstone	159	159.74	160	160
13-27N	40293506300	AGUA_BASE	1463544.28	752336.89	-7,081	7,748.54	Lower Santos Shale	279	278.21	267	267
13-27N	40293506300	64_ZONE_U_TOP	1463537.92	752333.13	-7,360	8,026.75	U Sandstone	99	99.27	114	114
13-27N	40293506300	64_ZONE_U_BASE	1463537.54	752331.47	-7,459	8,126.02	U Shale	60	60.38	58	58
13-27N	40293506300	64_ZONE_W_TOP	1463537.49	752330.42	-7,519	8,186.40	W Sandstone	--	--	327	327
13R-28N	40292962000	CARNEROS_TOP	1458310.35	752564.18	-7,305	8,008.74	Carneros Sandstone	506	506.45	581	581
13R-28N	40292962000	CARNEROS_BASE	1458310.35	752564.18	-7,811	8,515.19	Upper Santos Shale	59	59.15	65	64
13R-28N	40292962000	AGUA_TOP	1458310.35	752564.18	-7,870	8,574.34	Agua Sandstone	274	273.43	216	216
13R-28N	40292962000	AGUA_BASE	1458310.35	752564.18	-8,144	8,847.77	Lower Santos Shale	394	394.25	--	--
13R-28N	40292962000	64_ZONE_W_TOP	1458310.35	752564.18	-8,538	9,242.02	W Sandstone	--	--	--	--
14-35N	40293507700	CARNEROS_TOP	1469284.16	746957.61	-6,322	6,968.60	Carneros Sandstone	567	567.37	590	590
14-35N	40293507700	CARNEROS_BASE	1469282.88	746944.38	-6,889	7,535.97	Upper Santos Shale	63	62.48	30	30
14-35N	40293507700	AGUA_TOP	1469282.28	746943.15	-6,952	7,598.45	Agua Sandstone	277	277.62	75	75
14-35N	40293507700	64_ZONE_U_TOP	1469279.83	746937.73	-7,229	7,876.07	U Sandstone	100	99.99	97	97
14-35N	40293507700	64_ZONE_U_BASE	1469279	746934.87	-7,329	7,976.06	U Shale	61	60.14	59	60
14-35N	40293507700	64_ZONE_W_TOP	1469278.38	746932.79	-7,390	8,036.20	W Sandstone	--	--	269	270
15-28N	40292961900	CARNEROS_TOP	1459761.47	752722.12	-6,487	7,178.74	Carneros Sandstone	600	600.83	587	587
15-28N	40292961900	CARNEROS_BASE	1459765.15	752726.76	-7,087	7,779.57	Upper Santos Shale	56	55.85	77	78
15-28N	40292961900	AGUA_TOP	1459765.77	752727.49	-7,143	7,835.42	Agua Sandstone	200	200.86	191	191
15-28N	40292961900	AGUA_BASE	1459775.14	752739.68	-7,343	8,036.28	Lower Santos Shale	352	353.51	294	295
15-28N	40292961900	64_ZONE_U_TOP	1459788.32	752757.03	-7,695	8,389.79	U Sandstone	--	--	77	77
15-35N	40293507800	AGUA_BASE	1470074.13	746988.29	-7,280	7,906.31	Lower Santos Shale	216	215.31	230	230
15-35N	40293507800	64_ZONE_U_TOP	1470075.06	746983.38	-7,496	8,121.62	U Sandstone	111	111.48	103	103
15-35N	40293507800	64_ZONE_U_BASE	1470075.81	746979.65	-7,607	8,233.10	U Shale	62	61.83	71	71
15-35N	40293507800	64_ZONE_W_TOP	1470076.23	746977.48	-7,669	8,294.93	W Sandstone	--	--	--	--
15-35N_ST1	40293507801	CARNEROS_TOP	1470063.52	747001.4	-6,497	7,122.99	Carneros Sandstone	--	--	581	581
15Y-28	40292962300	CARNEROS_TOP	1459802.9	752572.86	-6,510	7,198.65	Carneros Sandstone	580	580.59	600	600
15Y-28	40292962300	CARNEROS_BASE	1459802.9	752572.86	-7,090	7,779.24	Upper Santos Shale	52	51.31	85	85
15Y-28	40292962300	AGUA_TOP	1459802.9	752572.86	-7,142	7,830.55	Agua Sandstone	294	294.73	203	203
15Y-28	40292962300	AGUA_BASE	1459802.9	752572.86	-7,436	8,125.28	Lower Santos Shale	267	267.1	307	307
15Y-28	40292962300	64_ZONE_U_TOP	1459802.9	752572.86	-7,703	8,392.38	U Sandstone	66	65.7	79	79
15Y-28	40292962300	64_ZONE_U_BASE	1459802.9	752572.86	-7,769	8,458.08	U Shale	50	49.68	77	77
15Y-28	40292962300	64_ZONE_W_TOP	1459802.9	752572.86	-7,819	8,507.76	W Sandstone	322	321.9	320	319
15Y-28	40292962300	64_ZONE_W_BASE	1459802.9	752572.86	-8,141	8,829.66	Salt Creek Shale	74	74.82	85	86
15Y-28	40292962300	GIBSON_TOP	1459802.9	752572.86	-8,215	8,904.48	Gibson Sandstone	--	--	54	54
16-28N	40293507100	CARNEROS_TOP	1460435.97	752592.13	-6,242	6,934.54	Carneros Sandstone	560	560.25	571	571
16-28N	40293507100	CARNEROS_BASE	1460444.52	752594.82	-6,802	7,494.79	Upper Santos Shale	52	51.96	55	55
16-28N	40293507100	AGUA_TOP	1460445.45	752595.22	-6,854	7,546.75	Agua Sandstone	304	304.57	245	244
16-28N	40293507100	AGUA_BASE	1460451.96	752599.34	-7,158	7,851.32	Lower Santos Shale	236	236.17	267	267
16-28N	40293507100	64_ZONE_U_TOP	1460457.83	752605.25	-7,394	8,087.49	U Sandstone	99	98.61	120	121
16-28N	40293507100	64_ZONE_U_BASE	1460459.52	752608.01	-7,493	8,186.10	U Shale	30	29.96	49	49
16-28N	40293507100	64_ZONE_W_TOP	1460460.09	752608.98	-7,523	8,216.06	W Sandstone	368	368.96	--	--
16-28N	40293507100	64_ZONE_W_BASE	1460467.74	752621.66	-7,891	8,585.02	Salt Creek Shale	--	--	--	--
16-35	40292964100	CARNEROS_TOP	1470622.5	746960.4	-6,963	7,590.81	Carneros Sandstone	440	440.25	493	493
16-35	40292964100	CARNEROS_BASE	1470615.28	746949.55	-7,403	8,031.06	Upper Santos Shale	49	48.79	52	52
16-35	40292964100	AGUA_TOP	1470614.56	746949.01	-7,452	8,079.85	Agua Sandstone	48	48.33	77	77
16-35	40292964100	AGUA_BASE	1470613.87	746948.47	-7,500	8,128.18	Lower Santos Shale	269	268.46	260	260
16-35	40292964100	64_ZONE_U_TOP	1470608.92	746943.72	-7,769	8,396.64	U Sandstone	103	103.5	110	110
16-35	40292964100	64_ZONE_U_BASE	1470606.21	746941.33	-7,872	8,500.14	U Shale	77	76.64	79	79
16-35	40292964100	64_ZONE_W_TOP	1470604.21	746939.56	-7,949	8,576.78	W Sandstone	--	--	--	--
17-28N	40293507200	CARNEROS_TOP	1460447.59	752031.38	-6,331	7,062.13	Carneros Sandstone	679	678.62	619	618
17-28N	40293507200	CARNEROS_BASE	1460458.48	752038.19	-7,010	7,740.75	Upper Santos Shale	54	54.5	53	54
17-28N	40293507200	AGUA_TOP	1460459.4	752038.6	-7,064	7,795.25	Agua Sandstone	320	319.74	240	240
17-28N	40293507200	AGUA_BASE	1460466.37	752042.1	-7,384	8,114.99	Lower Santos Shale	250	250.4	323	323
17-28N	40293507200	64_ZONE_U_TOP	1460471.23	752044.73	-7,634	8,365.39	U Sandstone	64	64.09	102	102
17-28N	40293507200	64_ZONE_U_BASE	1460472.38	752045.41	-7,698	8,429.48	U Shale	43	42.93	67	68
17-28N	40293507200	64_ZONE_W_TOP	1460473.17	752045.88	-7,741	8,472.41	W Sandstone	--	--	--	--
17-2N	40297793000	CARNEROS_TOP	1470905.91	741237.02	-6,631	7,313.15	Carneros Sandstone	506	511.35	495	500
17-2N	40297793000	CARNEROS_BASE	1470949.43	741292.71	-7,137	7,824.50	Upper Santos Shale	87	87.17	79	80
17-2N	40297793000	AGUA_TOP	1470957.17	741302.62	-7,224	7,911.67	Agua Sandstone	48	49.3	86	87
17-2N	40297793000	AGUA_BASE	1470961.66	741308.36	-7,272	7,960.97	Lower Santos Shale	354	357.89	318	321
17-2N	40297793000	64_ZONE_U_TOP	1470993.96	741348.93	-7,626	8,318.86	U Sandstone	90	90.98	91	92
17-2N	40297793000	64_ZONE_U_BASE	1471001.63	741359.49	-7,716	8,409.84	U Shale	53	53.5	60	61
17-2N	40297793000	64_ZONE_W_TOP	1471006.14	741365.7	-7,769	8,463.34	W Sandstone	380	383.2	355	359
17-2N	40297793000	64_ZONE_W_BASE	1471038.47	741410.18	-8,149	8,846.54	Salt Creek Shale	62	63.46	--	--
17-2N	40297793000	GIBSON_TOP	1471043.83	741417.54	-8,211	8,910.00	Gibson Sandstone	--	--	--	--
17-35N	40293507900	CARNEROS_TOP	1470662.64	746419.33	-6,675	7,304.26	Carneros Sandstone	508	507.95	526	527
17-35N	40293507900	CARNEROS_BASE	1470662.64	746419.33	-7,183	7,812.21	Upper Santos Shale	40	39.38	49	48
17-35N	40293507900	AGUA_TOP	1470662.64	746419.33	-7,223	7,851.59	Agua Sandstone	52	52.2	80	80
17-35N	40293507900	AGUA_BASE	1470662.64	746419.33	-7,275	7,903.79	Lower Santos Shale	258	258.34	244	244
17-35N	40293507900	64_ZONE_U_TOP	1470662.64	746419.33	-7,533	8,162.13	U Sandstone	81	80.52	87	87
17-35N	40293507900	64_ZONE_U_BASE	1470662.64	746419.33	-7,614	8,242.65	U Shale	--	--	90	89
18-35N	40293508000	CARNEROS_TOP	1469962.34	746415.11	-6,418	7,050.41	Carneros Sandstone	572	572.19	599	600
18-35N	40293508000	CARNEROS_BASE	1469965.89	746394.95	-6,990	7,622.60	Upper Santos Shale	39	38.86	25	26
18-35N	40293508000	AGUA_TOP	1469965.6	746393.8	-7,029	7,661.46	Agua Sandstone	28	28.67	44	44
18-35N	40293508000	AGUA_BASE	1469965.38	746393.05	-7,057	7,690.13	Lower Santos Shale	266	265.6	242	241
18-35N	40293508000	64_ZONE_U_TOP	1469963.33	746387.07	-7,323	7,955.73	U Sandstone	89	89.06	88	88
18-35N	40293508000	64_ZONE_U_BASE	1469962.63	746385.12	-7,412	8,044.79	U Shale	82	81.72	72	72
18-35N	40293508000	64_ZONE_W_TOP	1469961.99	746383.34	-7,494	8,126.51	W Sandstone	--	--	305	305
18-35N_ST1	40293508001	CARNEROS_TOP	1469977.78	746279.42	-6,381	7,027.87	Carneros Sandstone	586	597.76	602	614
18-35N_ST1	40293508001	CARNEROS_BASE	1470027.23	746180.98	-6,967	7,625.63	Upper Santos Shale	11	10.6	16	16
18-35N_ST1	40293508001	AGUA_TOP	1470028.11	746179.76	-6,978	7,636.23	Agua Sandstone	29	29.82	40	41
18-35N_ST1	40293508001	AGUA_BASE	1470029.76	746176.15	-7,007	7,666.05	Lower Santos Shale	253	254.48	235	237

Well Name	UWI	Surface	X	Y	Z	MD	Interval	Delta Z	Delta MD	TVT Model	TST Model
18-35N_ST1	40293508001	64_ZONE_U_TOP	1470026.85	746141.9	-7,260	7,920.53	U Sandstone	77	78.28	80	80
18-35N_ST1	40293508001	64_ZONE_U_BASE	1470025.24	746133.25	-7,337	7,998.81	U Shale	79	79	67	68
18-35N_ST1	40293508001	64_ZONE_W_TOP	1470022.99	746125.69	-7,416	8,077.81	W Sandstone	--	--	--	--
18-36N	40293509200	CARNEROS_TOP	1471917.99	744285.81	-6,546	7,154.46	Carneros Sandstone	526	526.2	500	500
18-36N	40293509200	CARNEROS_BASE	1471913.8	744277.2	-7,072	7,680.66	Upper Santos Shale	28	27.73	52	52
18-36N	40293509200	AGUA_TOP	1471913.57	744276.82	-7,100	7,708.39	Agua Sandstone	75	74.92	107	107
18-36N	40293509200	AGUA_BASE	1471913.1	744275.99	-7,175	7,783.31	Lower Santos Shale	241	240.56	230	230
18-36N	40293509200	64_ZONE_U_TOP	1471910.52	744271.94	-7,416	8,023.87	U Sandstone	107	107.39	102	102
18-36N	40293509200	64_ZONE_U_BASE	1471909.01	744269.68	-7,523	8,131.26	U Shale	53	52.79	54	54
18-36N	40293509200	64_ZONE_W_TOP	1471908.26	744268.57	-7,576	8,184.05	W Sandstone	--	--	--	--
19-27N	40293506400	CARNEROS_TOP	1464366.68	751837.92	-6,396	7,058.21	Carneros Sandstone	534	534.23	574	574
19-27N	40293506400	CARNEROS_BASE	1464363.02	751828.58	-6,930	7,592.44	Upper Santos Shale	38	38.74	49	49
19-27N	40293506400	AGUA_TOP	1464362.13	751827.87	-6,968	7,631.18	Agua Sandstone	162	161.5	145	146
19-27N	40293506400	AGUA_BASE	1464358.37	751824.76	-7,130	7,792.68	Lower Santos Shale	267	267.38	271	271
19-27N	40293506400	64_ZONE_U_TOP	1464353.11	751818.21	-7,397	8,060.06	U Sandstone	58	57.78	77	77
19-27N	40293506400	64_ZONE_U_BASE	1464352.19	751817.11	-7,455	8,117.84	U Shale	56	55.9	54	54
19-27N	40293506400	64_ZONE_W_TOP	1464351.26	751815.98	-7,511	8,173.74	W Sandstone	--	--	--	--
19-36N	40293509300	CARNEROS_TOP	1471255.72	744184.91	-6,346	6,979.84	Carneros Sandstone	588	588.66	519	520
19-36N	40293509300	CARNEROS_BASE	1471251.34	744177.1	-6,934	7,568.50	Upper Santos Shale	38	37.24	54	53
19-36N	40293509300	AGUA_TOP	1471250.98	744176.61	-6,972	7,605.74	Agua Sandstone	64	64.36	78	78
19-36N	40293509300	AGUA_BASE	1471250.71	744175.85	-7,036	7,670.10	Lower Santos Shale	170	170.13	207	207
19-36N	40293509300	64_ZONE_U_TOP	1471250.15	744174.85	-7,206	7,840.23	U Sandstone	125	125.25	122	122
19-36N	40293509300	64_ZONE_U_BASE	1471249.71	744174.36	-7,331	7,965.48	U Shale	37	36.29	51	51
19-36N	40293509300	64_ZONE_W_TOP	1471249.59	744174.22	-7,368	8,001.77	W Sandstone	350	350.03	348	348
19-36N	40293509300	64_ZONE_W_BASE	1471248.37	744172.85	-7,718	8,351.80	Salt Creek Shale	66	66.13	87	87
19-36N	40293509300	GIBSON_TOP	1471248.14	744172.59	-7,784	8,417.93	Gibson Sandstone	--	--	49	49
19-36N-RD	40293509301	CARNEROS_TOP	1471301.46	744271.95	-6,393	7,013.04	Carneros Sandstone	521	520.92	512	512
19-36N-RD	40293509301	CARNEROS_BASE	1471301.46	744271.95	-6,914	7,533.96	Upper Santos Shale	50	50.16	55	55
19-36N-RD	40293509301	AGUA_TOP	1471301.46	744271.95	-6,964	7,584.12	Agua Sandstone	39	38.54	88	87
19-36N-RD	40293509301	AGUA_BASE	1471301.46	744271.95	-7,003	7,622.66	Lower Santos Shale	197	197.78	213	213
19-36N-RD	40293509301	64_ZONE_U_TOP	1471301.46	744271.95	-7,200	7,820.44	U Sandstone	136	135.52	114	114
19-36N-RD	40293509301	64_ZONE_U_BASE	1471301.46	744271.95	-7,336	7,955.96	U Shale	45	45.54	52	52
19-36N-RD	40293509301	64_ZONE_W_TOP	1471301.46	744271.95	-7,381	8,001.50	W Sandstone	357	356.61	348	348
19-36N-RD	40293509301	64_ZONE_W_BASE	1471301.46	744271.95	-7,738	8,358.11	Salt Creek Shale	60	60.2	78	77
19-36N-RD	40293509301	GIBSON_TOP	1471301.46	744271.95	-7,798	8,418.31	Gibson Sandstone	--	--	52	52
1A-22N	40293504800	CARNEROS_TOP	1460840.76	754386.28	-6,408	7,085.11	Carneros Sandstone	558	557.88	587	587
1A-22N	40293504800	CARNEROS_BASE	1460840.76	754386.28	-6,966	7,642.99	Upper Santos Shale	56	55.81	56	56
1A-22N	40293504800	AGUA_TOP	1460840.76	754386.28	-7,022	7,698.80	Agua Sandstone	168	168.37	152	152
1A-22N	40293504800	AGUA_BASE	1460840.76	754386.28	-7,190	7,867.17	Lower Santos Shale	219	219.27	234	234
1A-22N	40293504800	64_ZONE_U_TOP	1460840.76	754386.28	-7,409	8,086.44	U Sandstone	69	68.08	78	78
1A-22N	40293504800	64_ZONE_U_BASE	1460840.76	754386.28	-7,478	8,154.52	U Shale	81	81.05	58	58
1A-22N	40293504800	64_ZONE_W_TOP	1460840.76	754386.28	-7,559	8,235.57	W Sandstone	--	--	--	--
1A-36N	40290153600	CARNEROS_TOP	1471318.62	746308.69	-6,852	7,467.53	Carneros Sandstone	659	659.91	601	601
1A-36N	40290153600	CARNEROS_BASE	1471318.62	746308.69	-7,511	8,127.44	Upper Santos Shale	44	43.63	45	46
1A-36N	40290153600	AGUA_TOP	1471318.62	746308.69	-7,555	8,171.07	Agua Sandstone	39	39.15	67	66
1A-36N	40290153600	AGUA_BASE	1471318.62	746308.69	-7,594	8,210.22	Lower Santos Shale	196	195.74	232	233
1A-36N	40290153600	64_ZONE_U_TOP	1471318.62	746308.69	-7,790	8,405.96	U Sandstone	129	128.74	125	125
1A-36N	40290153600	64_ZONE_U_BASE	1471318.62	746308.69	-7,919	8,534.70	U Shale	62	62.32	--	--
1A-36N	40290153600	64_ZONE_W_TOP	1471318.62	746308.69	-7,981	8,597.02	W Sandstone	--	--	--	--
1B-21N	40291502800	CARNEROS_TOP	1457075.4	757861.24	-7,047	7,711.37	Carneros Sandstone	551	551.03	555	554
1B-21N	40291502800	CARNEROS_BASE	1457075.4	757861.24	-7,598	8,262.40	Upper Santos Shale	61	60.19	59	59
1B-21N	40291502800	AGUA_TOP	1457075.4	757861.24	-7,659	8,322.59	Agua Sandstone	189	189.2	170	170
1B-21N	40291502800	AGUA_BASE	1457075.4	757861.24	-7,848	8,511.79	Lower Santos Shale	177	177.03	197	197
1B-21N	40291502800	64_ZONE_U_TOP	1457075.4	757861.24	-8,025	8,688.82	U Sandstone	64	64.35	73	73
1B-21N	40291502800	64_ZONE_U_BASE	1457075.4	757861.24	-8,089	8,753.17	U Shale	35	34.51	35	35
1B-21N	40291502800	64_ZONE_W_TOP	1457075.4	757861.24	-8,124	8,787.68	W Sandstone	328	328.14	336	335
1B-21N	40291502800	64_ZONE_W_BASE	1457075.4	757861.24	-8,452	9,115.82	Salt Creek Shale	86	86.03	76	76
1B-21N	40291502800	GIBSON_TOP	1457075.4	757861.24	-8,538	9,201.85	Gibson Sandstone	--	--	69	69
1Y-28N	40292962200	CARNEROS_TOP	1460308.03	753194.87	-6,260	6,953.43	Carneros Sandstone	564	564.05	527	527
1Y-28N	40292962200	AGUA_TOP	1460311.74	753197.98	-6,824	7,517.48	Agua Sandstone	307	307.45	278	278
1Y-28N	40292962200	AGUA_BASE	1460312.81	753200.28	-7,131	7,824.93	Lower Santos Shale	225	225.26	239	238
1Y-28N	40292962200	64_ZONE_U_TOP	1460312.99	753201.34	-7,356	8,050.19	U Sandstone	65	64.32	62	62
1Y-28N	40292962200	64_ZONE_U_BASE	1460312.99	753201.34	-7,421	8,114.51	U Shale	42	42.79	55	55
1Y-28N	40292962200	64_ZONE_W_TOP	1460312.99	753201.34	-7,463	8,157.30	W Sandstone	359	358.94	343	344
1Y-28N	40292962200	64_ZONE_W_BASE	1460311.1	753201.15	-7,822	8,516.24	Salt Creek Shale	74	73.84	80	80
1Y-28N	40292962200	GIBSON_TOP	1460310.3	753200.87	-7,896	8,590.08	Gibson Sandstone	--	--	50	50
2-17N	40291139600	CARNEROS_TOP	1455095.5	759775.29	-7,607	8,303.00	Carneros Sandstone	626	626.16	605	605
2-17N	40291139600	CARNEROS_BASE	1455095.5	759775.29	-8,233	8,929.16	Upper Santos Shale	29	29.09	48	48
2-17N	40291139600	AGUA_TOP	1455095.5	759775.29	-8,262	8,958.25	Agua Sandstone	--	--	133	133
2-21N	40293503600	CARNEROS_TOP	1460368.29	754443.46	-6,377	7,058.50	Carneros Sandstone	653	652.62	612	612
2-21N	40293503600	CARNEROS_BASE	1460368.29	754443.46	-7,030	7,711.12	Upper Santos Shale	32	32.2	58	58
2-21N	40293503600	AGUA_TOP	1460368.29	754443.46	-7,062	7,743.32	Agua Sandstone	177	177.05	162	162
2-21N	40293503600	AGUA_BASE	1460368.29	754443.46	-7,239	7,920.37	Lower Santos Shale	263	262.59	248	248
2-21N	40293503600	64_ZONE_U_TOP	1460368.29	754443.46	-7,502	8,182.96	U Sandstone	61	61.44	74	74
2-21N	40293503600	64_ZONE_U_BASE	1460368.29	754443.46	-7,563	8,244.40	U Shale	32	31.57	52	52
2-21N	40293503600	64_ZONE_W_TOP	1460368.29	754443.46	-7,595	8,275.97	W Sandstone	296	296.2	295	295
2-21N	40293503600	64_ZONE_W_BASE	1460368.29	754443.46	-7,891	8,572.17	Salt Creek Shale	--	--	63	63
2-28N	40293507000	CARNEROS_TOP	1459760.86	753308.29	-6,420	7,108.39	Carneros Sandstone	568	567.58	562	562
2-28N	40293507000	CARNEROS_BASE	1459760.91	753309.3	-6,988	7,675.97	Upper Santos Shale	42	42.13	59	59
2-28N	40293507000	AGUA_TOP	1459760.79	753309.39	-7,030	7,718.10	Agua Sandstone	284	284.17	233	233
2-28N	40293507000	AGUA_BASE	1459760.98	753309.3	-7,314	8,002.27	Lower Santos Shale	180	179.55	207	207
2-28N	40293507000	64_ZONE_U_TOP	1459763.7	753310.11	-7,494	8,181.82	U Sandstone	63	62.78	79	79
2-28N	40293507000	64_ZONE_U_BASE	1459764.77	753310.65	-7,557	8,244.60	U Shale	21	21.41	42	42
2-28N	40293507000	64_ZONE_W_TOP	1459765.14	753310.84	-7,578	8,266.01	W Sandstone	317	317.03	--	--
2-28N	40293507000	64_ZONE_W_BASE	1459770.57	753313.59	-7,895	8,583.04	Salt Creek Shale	--	--	--	--
2-5	40297691300	CARNEROS_TOP	1451702.38	770312.37	-10,432	11,066.78	Carneros Sandstone	252	252.63	318	318
2-5	40297691300	CARNEROS_BASE	1451702.38	770312.37	-10,684	11,319.41	Upper Santos Shale	102	101.72	76	76
2-5	40297691300	AGUA_TOP	1451702.38	770312.37	-10,786	11,421.13	Agua Sandstone	131	131.32	116	116
2-5	40297691300	AGUA_BASE	1451702.38	770312.37	-10,917	11,552.45	Lower Santos Shale	134	133.39	157	157
2-5	40297691300	64_ZONE_U_TOP	1451702.38	770312.37	-11,051	11,685.84	U Sandstone	39	38.83	56	56
2-5	40297691300	64_ZONE_U_BASE	1451702.38	770312.37	-11,090	11,724.67	U Shale	33	33.42	38	38
2-5	40297691300	64_ZONE_W_TOP	1451702.38	770312.37	-11,123	11,758.09	W Sandstone	363	362.78	333	334

Well Name	UWI	Surface	X	Y	Z	MD	Interval	Delta Z	Delta MD	TVT Model	TST Model
2-5	40297691300	64_ZONE_W_BASE	1451702.38	770312.37	-11,486	12,120.87	Salt Creek Shale	80	80.18	80	79
2-5	40297691300	GIBSON_TOP	1451702.38	770312.37	-11,566	12,201.05	Gibson Sandstone	--	--	50	51
20-36N	40293509400	CARNEROS_TOP	1472604.28	744409.48	-6,854	7,452.84	Carneros Sandstone	581	580.83	567	567
20-36N	40293509400	CARNEROS_BASE	1472604.28	744409.48	-7,435	8,033.67	Upper Santos Shale	47	47.45	50	49
20-36N	40293509400	AGUA_TOP	1472604.28	744409.48	-7,482	8,081.12	Agua Sandstone	33	32.56	55	55
20-36N	40293509400	AGUA_BASE	1472604.28	744409.48	-7,515	8,113.68	Lower Santos Shale	179	179.14	185	185
20-36N	40293509400	64_ZONE_U_TOP	1472604.28	744409.48	-7,694	8,292.82	U Sandstone	137	137.26	141	141
20-36N	40293509400	64_ZONE_U_BASE	1472604.28	744409.48	-7,831	8,430.08	U Shale	--	--	--	--
21-1N	40293511100	CARNEROS_TOP	1473133.84	741116.88	-6,437	7,061.13	Carneros Sandstone	416	415.76	466	466
21-1N	40293511100	CARNEROS_BASE	1473135.13	741108.41	-6,853	7,476.89	Upper Santos Shale	85	85.39	38	38
21-1N	40293511100	AGUA_TOP	1473134.29	741107.98	-6,938	7,562.28	Agua Sandstone	82	81.36	73	73
21-1N	40293511100	AGUA_BASE	1473133.35	741108.1	-7,020	7,643.64	Lower Santos Shale	338	338.15	339	339
21-1N	40293511100	64_ZONE_U_TOP	1473128.98	741110.71	-7,358	7,981.79	U Sandstone	132	132.17	124	124
21-1N	40293511100	64_ZONE_U_BASE	1473127.36	741111.57	-7,490	8,113.96	U Shale	75	75.12	68	68
21-1N	40293511100	64_ZONE_W_TOP	1473126.43	741112.06	-7,565	8,189.08	W Sandstone	--	--	247	247
21-21N	40293503800	AGUA_BASE	1459677.32	753737.27	-7,236	7,931.56	Lower Santos Shale	238	238.57	229	229
21-21N	40293503800	64_ZONE_U_TOP	1459677.32	753737.27	-7,474	8,170.13	U Sandstone	61	61.25	68	68
21-21N	40293503800	64_ZONE_U_BASE	1459677.32	753737.27	-7,535	8,231.38	U Shale	29	29.05	44	44
21-21N	40293503800	64_ZONE_W_TOP	1459677.32	753737.27	-7,564	8,260.43	W Sandstone	358	357.23	338	339
21-21N	40293503800	64_ZONE_W_BASE	1459677.32	753737.27	-7,922	8,617.66	Salt Creek Shale	--	--	69	69
22-21N	40293503900	CARNEROS_TOP	1459692.34	754397.1	-6,381	7,060.66	Carneros Sandstone	595	594.88	603	603
22-21N	40293503900	CARNEROS_BASE	1459692.34	754397.1	-6,976	7,655.54	Upper Santos Shale	41	40.97	57	57
22-21N	40293503900	AGUA_TOP	1459692.34	754397.1	-7,017	7,696.51	Agua Sandstone	284	284.92	200	200
22-21N	40293503900	AGUA_BASE	1459692.34	754397.1	-7,301	7,981.43	Lower Santos Shale	203	202.56	250	250
22-21N	40293503900	64_ZONE_U_TOP	1459692.34	754397.1	-7,504	8,183.99	U Sandstone	76	75.7	80	80
22-21N	40293503900	64_ZONE_U_BASE	1459692.34	754397.1	-7,580	8,259.69	U Shale	61	61.75	54	53
22-21N	40293503900	64_ZONE_W_TOP	1459692.34	754397.1	-7,641	8,321.44	W Sandstone	285	284.65	--	--
22-21N	40293503900	64_ZONE_W_BASE	1459692.34	754397.1	-7,926	8,606.09	Salt Creek Shale	--	--	--	--
23-1N	40293511300	CARNEROS_TOP	1471919.6	741237.3	-6,302	6,944.55	Carneros Sandstone	491	490.79	497	498
23-1N	40293511300	CARNEROS_BASE	1471915.49	741246.26	-6,793	7,435.34	Upper Santos Shale	61	61.56	64	63
23-1N	40293511300	AGUA_TOP	1471915.25	741247.8	-6,854	7,496.90	Agua Sandstone	55	54.72	50	50
23-1N	40293511300	AGUA_BASE	1471914.61	741249.33	-6,909	7,551.62	Lower Santos Shale	333	333.19	341	341
23-1N	40293511300	64_ZONE_U_TOP	1471907.77	741258.77	-7,242	7,884.81	U Sandstone	112	112.53	114	115
23-1N	40293511300	64_ZONE_U_BASE	1471905.83	741261.04	-7,354	7,997.34	U Shale	67	66.82	56	55
23-1N	40293511300	64_ZONE_W_TOP	1471905.09	741262.43	-7,421	8,064.16	W Sandstone	306	305.99	336	336
23-1N	40293511300	64_ZONE_W_BASE	1471902.22	741269.04	-7,727	8,370.15	Salt Creek Shale	--	--	--	--
23-22N	40292959000	CARNEROS_TOP	1461568.9	754993.34	-6,724	7,402.34	Carneros Sandstone	542	541.36	530	530
23-22N	40292959000	CARNEROS_BASE	1461570.99	754986.33	-7,266	7,943.70	Upper Santos Shale	45	45.18	56	56
23-22N	40292959000	AGUA_TOP	1461571.25	754985.41	-7,311	7,988.88	Agua Sandstone	149	149.28	138	138
23-22N	40292959000	AGUA_BASE	1461570.51	754984.79	-7,460	8,138.16	Lower Santos Shale	237	237.3	242	241
23-22N	40292959000	64_ZONE_U_TOP	1461571.6	754984.59	-7,697	8,375.46	U Sandstone	30	29.48	61	61
23-22N	40292959000	64_ZONE_U_BASE	1461571.82	754984.52	-7,727	8,404.94	U Shale	60	59.62	62	62
23-22N	40292959000	64_ZONE_W_TOP	1461572.27	754984.38	-7,787	8,464.56	W Sandstone	--	--	--	--
23X-35N	40295960000	CARNEROS_TOP	1466909.61	746600.58	-5,943	6,615.50	Carneros Sandstone	476	475.92	503	503
23X-35N	40295960000	CARNEROS_BASE	1466913.44	746609.19	-6,419	7,091.42	Upper Santos Shale	71	71.38	71	71
23X-35N	40295960000	AGUA_TOP	1466913.32	746610.79	-6,490	7,162.80	Agua Sandstone	50	50.14	92	92
23X-35N	40295960000	AGUA_BASE	1466913.22	746612.16	-6,540	7,212.94	Lower Santos Shale	345	345.5	322	322
23X-35N	40295960000	64_ZONE_U_TOP	1466913.52	746627.55	-6,885	7,558.44	U Sandstone	125	125.08	124	124
23X-35N	40295960000	64_ZONE_U_BASE	1466915.35	746633.91	-7,010	7,683.52	U Shale	97	96.75	81	81
23X-35N	40295960000	64_ZONE_W_TOP	1466917.17	746638.98	-7,107	7,780.27	W Sandstone	433	434.13	411	412
23X-35N	40295960000	64_ZONE_W_BASE	1466931.9	746664.23	-7,540	8,214.40	Salt Creek Shale	72	72.41	77	77
23X-35N	40295960000	GIBSON_TOP	1466934.23	746670.43	-7,612	8,286.81	Gibson Sandstone	--	--	52	52
24-21N	40292958800	CARNEROS_TOP	1459778.16	755657.43	-6,627	7,316.97	Carneros Sandstone	575	574.92	583	583
24-21N	40292958800	CARNEROS_BASE	1459779.87	755652.48	-7,202	7,891.89	Upper Santos Shale	50	49.63	66	66
24-21N	40292958800	AGUA_TOP	1459780.13	755652.48	-7,252	7,941.52	Agua Sandstone	204	204.3	130	130
24-21N	40292958800	AGUA_BASE	1459781.2	755652.5	-7,456	8,145.82	Lower Santos Shale	170	170.43	237	237
24-21N	40292958800	64_ZONE_U_TOP	1459782.09	755652.51	-7,626	8,316.25	U Sandstone	57	57.05	80	80
24-21N	40292958800	64_ZONE_U_BASE	1459782.39	755652.52	-7,683	8,373.30	U Shale	58	57.74	60	61
24-21N	40292958800	64_ZONE_W_TOP	1459782.69	755652.52	-7,741	8,431.04	W Sandstone	--	--	--	--
24-27N	40292960400	CARNEROS_TOP	1460982.26	751840.09	-6,191	6,913.62	Carneros Sandstone	536	535.86	548	547
24-27N	40292960400	CARNEROS_BASE	1460983.6	751842.36	-6,727	7,449.48	Upper Santos Shale	61	60.87	52	52
24-27N	40292960400	AGUA_TOP	1460983.88	751842.6	-6,788	7,510.35	Agua Sandstone	254	253.74	210	210
24-27N	40292960400	AGUA_BASE	1460984.86	751843.84	-7,042	7,764.09	Lower Santos Shale	381	381.4	281	281
24-27N	40292960400	64_ZONE_U_TOP	1460986.26	751851.62	-7,423	8,145.49	U Sandstone	61	61.11	121	121
24-27N	40292960400	64_ZONE_U_BASE	1460986.65	751853.86	-7,484	8,206.60	U Shale	48	47.85	85	85
24-27N	40292960400	64_ZONE_W_TOP	1460987.03	751855.62	-7,532	8,254.45	W Sandstone	--	--	--	--
24-35N	40293508100	CARNEROS_TOP	1466244.36	746563.7	-6,072	6,755.43	Carneros Sandstone	843	843.22	543	543
24-35N	40293508100	CARNEROS_BASE	1466243.41	746575.46	-6,915	7,598.65	Upper Santos Shale	55	55.65	87	87
24-35N	40293508100	AGUA_TOP	1466243.6	746576.22	-6,970	7,654.30	Agua Sandstone	35	34.93	136	136
24-35N	40293508100	AGUA_BASE	1466243.78	746576.81	-7,005	7,689.23	Lower Santos Shale	388	387.92	345	345
24-35N	40293508100	64_ZONE_U_TOP	1466247.28	746583.21	-7,393	8,077.15	U Sandstone	127	127.19	146	145
24-35N	40293508100	64_ZONE_U_BASE	1466248.56	746585.29	-7,520	8,204.34	U Shale	91	90.59	73	74
24-35N	40293508100	64_ZONE_W_TOP	1466249.47	746586.77	-7,611	8,294.93	W Sandstone	--	--	416	416
25-26N	40293505300	CARNEROS_TOP	1465865.18	750747.56	-6,457	7,119.87	Carneros Sandstone	514	514.77	536	536
25-26N	40293505300	CARNEROS_BASE	1465867.45	750741.96	-6,971	7,634.64	Upper Santos Shale	34	33.4	43	43
25-26N	40293505300	AGUA_TOP	1465866.85	750741.4	-7,005	7,668.04	Agua Sandstone	102	102.19	117	117
25-26N	40293505300	AGUA_BASE	1465864.37	750738.66	-7,107	7,770.23	Lower Santos Shale	290	290	279	279
25-26N	40293505300	64_ZONE_U_TOP	1465858.13	750730.75	-7,397	8,060.23	U Sandstone	147	146.89	138	138
25-26N	40293505300	64_ZONE_U_BASE	1465855.56	750728.86	-7,544	8,207.12	U Shale	57	57.02	49	49
25-26N	40293505300	64_ZONE_W_TOP	1465854.82	750728.19	-7,601	8,264.14	W Sandstone	--	--	--	--
25-26N_ST1	40293505301	CARNEROS_TOP	1465825.85	750668	-6,414	7,083.84	Carneros Sandstone	462	467.58	481	487
25-26N_ST1	40293505301	CARNEROS_BASE	1465779.82	750609.96	-6,876	7,551.42	Upper Santos Shale	36	37.2	41	41
25-26N_ST1	40293505301	AGUA_TOP	1465775.82	750605.82	-6,912	7,588.62	Agua Sandstone	103	103.73	107	108
25-26N_ST1	40293505301	AGUA_BASE	1465764.17	750595.56	-7,015	7,692.35	Lower Santos Shale	289	291.18	265	267
25-26N_ST1	40293505301	64_ZONE_U_TOP	1465736.49	750573.45	-7,304	7,983.53	U Sandstone	183	183.67	141	142
25-26N_ST1	40293505301	64_ZONE_U_BASE	1465732.94	750570.02	-7,487	8,167.20	U Shale	56	55.77	52	52
25-26N_ST1	40293505301	64_ZONE_W_TOP	1465732.94	750570.02	-7,543	8,222.97	W Sandstone	--	--	--	--
26-1N	40293511400	CARNEROS_TOP	1471851.91	740539.59	-6,456	7,097.25	Carneros Sandstone	635	634.75	583	584
26-1N	40293511400	AGUA_TOP	1471841.47	740552.39	-7,091	7,732.00	Agua Sandstone	66	65.74	79	78
26-1N	40293511400	AGUA_BASE	1471840.51	740553.49	-7,157	7,797.74	Lower Santos Shale	381	381.38	346	346
26-1N	40293511400	64_ZONE_U_TOP	1471834.38	740558.43	-7,538	8,179.12	U Sandstone	90	90.59	90	91
26-1N	40293511400	64_ZONE_U_BASE	1471832.7	740559.32	-7,628	8,269.71	U Shale	56	55.72	64	63

Well Name	UWI	Surface	X	Y	Z	MD	Interval	Delta Z	Delta MD	TVT Model	TST Model
26-1N	40293511400	64_ZONE_W_TOP	1471831.67	740559.86	-7,684	8,325.43	W Sandstone	--	--	--	--
26-27N	40292960500	CARNEROS_TOP	1462669.78	751250.75	-5,932	6,637.39	Carneros Sandstone	--	--	--	--
26-35N	40293508200	CARNEROS_TOP	1466987.59	745856.79	-6,073	6,756.34	Carneros Sandstone	705	704.6	654	654
26-35N	40293508200	CARNEROS_BASE	1466987.59	745856.79	-6,778	7,460.94	Upper Santos Shale	81	81.23	69	70
26-35N	40293508200	AGUA_TOP	1466987.59	745856.79	-6,859	7,542.17	Agua Sandstone	42	41.86	128	127
26-35N	40293508200	AGUA_BASE	1466987.59	745856.79	-6,901	7,584.03	Lower Santos Shale	379	379.39	257	257
26-35N	40293508200	64_ZONE_U_TOP	1466987.59	745856.79	-7,280	7,963.42	U Sandstone	94	93.15	93	94
26-35N	40293508200	64_ZONE_U_BASE	1466987.59	745856.79	-7,374	8,056.57	U Shale	103	103.59	62	61
26-35N	40293508200	64_ZONE_W_TOP	1466987.59	745856.79	-7,477	8,160.16	W Sandstone	489	489.28	339	340
26-35N	40293508200	64_ZONE_W_BASE	1466987.59	745856.79	-7,966	8,649.44	Salt Creek Shale	--	--	83	83
26A-35N	40293508300	CARNEROS_TOP	1466470.74	746167.64	-6,161	6,834.55	Carneros Sandstone	879	878.9	552	552
26A-35N	40293508300	CARNEROS_BASE	1466466.15	746177.05	-7,040	7,713.45	Upper Santos Shale	61	61.11	81	82
26A-35N	40293508300	AGUA_TOP	1466465.42	746177.72	-7,101	7,774.56	Agua Sandstone	44	43.65	145	145
26A-35N	40293508300	AGUA_BASE	1466464.91	746178.27	-7,145	7,818.21	Lower Santos Shale	433	433.27	319	319
26A-35N	40293508300	64_ZONE_U_TOP	1466462.52	746186.19	-7,578	8,251.48	U Sandstone	87	87.79	116	116
26A-35N	40293508300	64_ZONE_U_BASE	1466463.11	746188.03	-7,665	8,339.27	U Shale	74	73.74	71	71
26A-35N	40293508300	64_ZONE_W_TOP	1466463.94	746189.26	-7,739	8,413.01	W Sandstone	--	--	391	391
27-1N	40293511500	CARNEROS_TOP	1472485.84	740480.16	-6,397	7,042.94	Carneros Sandstone	483	483.18	499	499
27-1N	40293511500	CARNEROS_BASE	1472481.69	740487.17	-6,880	7,526.12	Upper Santos Shale	62	62.08	56	56
27-1N	40293511500	AGUA_TOP	1472481.13	740487.82	-6,942	7,588.20	Agua Sandstone	52	52.08	54	55
27-1N	40293511500	AGUA_BASE	1472480.91	740488.52	-6,994	7,640.28	Lower Santos Shale	319	319.09	330	330
27-1N	40293511500	64_ZONE_U_TOP	1472480.56	740494.15	-7,313	7,959.37	U Sandstone	90	89.99	92	92
27-1N	40293511500	64_ZONE_U_BASE	1472480.78	740495.95	-7,403	8,049.36	U Shale	52	52.45	50	50
27-1N	40293511500	64_ZONE_W_TOP	1472480.82	740497.12	-7,455	8,101.81	W Sandstone	312	311.86	--	--
27-1N	40293511500	64_ZONE_W_BASE	1472480.95	740504.18	-7,767	8,413.67	Salt Creek Shale	--	--	--	--
27R-27N	40292961600	CARNEROS_TOP	1462299.13	751186.61	-5,987	6,696.48	Carneros Sandstone	514	514.42	512	512
27R-27N	40292961600	CARNEROS_BASE	1462302.1	751188.05	-6,501	7,210.90	Upper Santos Shale	35	34.75	39	38
27R-27N	40292961600	AGUA_TOP	1462302.32	751188.09	-6,536	7,245.65	Agua Sandstone	177	177.29	180	181
27R-27N	40292961600	AGUA_BASE	1462302.89	751188.19	-6,713	7,422.94	Lower Santos Shale	271	270.19	263	263
27R-27N	40292961600	64_ZONE_U_TOP	1462302.89	751188.19	-6,984	7,693.13	U Sandstone	82	81.94	86	86
27R-27N	40292961600	64_ZONE_U_BASE	1462302.89	751188.19	-7,066	7,775.07	U Shale	50	50.27	54	54
27R-27N	40292961600	64_ZONE_W_TOP	1462302.83	751188.21	-7,116	7,825.34	W Sandstone	428	427.94	415	415
27R-27N	40292961600	64_ZONE_W_BASE	1462299.04	751190.33	-7,544	8,253.28	Salt Creek Shale	36	36.07	53	53
27R-27N	40292961600	GIBSON_TOP	1462298.51	751190.67	-7,580	8,289.35	Gibson Sandstone	--	--	85	85
28-1N	40293511600	CARNEROS_TOP	1473354.26	740396.7	-6,468	7,101.55	Carneros Sandstone	504	503.88	441	441
28-1N	40293511600	AGUA_TOP	1473349.51	740389.84	-6,972	7,605.43	Agua Sandstone	54	54.16	69	69
28-1N	40293511600	AGUA_BASE	1473348.91	740389.59	-7,026	7,659.59	Lower Santos Shale	347	346.74	314	314
28-1N	40293511600	64_ZONE_U_TOP	1473347.03	740389.02	-7,373	8,006.33	U Sandstone	119	119.54	118	119
28-1N	40293511600	64_ZONE_U_BASE	1473346.72	740388.98	-7,492	8,125.87	U Shale	54	54.01	54	53
28-1N	40293511600	64_ZONE_W_TOP	1473346.58	740388.97	-7,546	8,179.88	W Sandstone	--	--	273	273
28-1N_ST1	40293511601	CARNEROS_TOP	1473357.66	740396.65	-6,517	7,150.18	Carneros Sandstone	405	407.96	440	443
28-1N_ST1	40293511601	CARNEROS_BASE	1473362.19	740432.63	-6,922	7,558.14	Upper Santos Shale	74	74.23	58	58
28-1N_ST1	40293511601	AGUA_TOP	1473359.07	740443.12	-6,996	7,632.37	Agua Sandstone	64	64.82	69	70
28-1N_ST1	40293511601	AGUA_BASE	1473359.08	740450.41	-7,060	7,697.19	Lower Santos Shale	296	297.95	313	315
28-1N_ST1	40293511601	64_ZONE_U_TOP	1473371.48	740485.19	-7,356	7,995.14	U Sandstone	--	--	121	122
2A-22N	40293504900	CARNEROS_TOP	1461489.44	754366.88	-6,510	7,182.26	Carneros Sandstone	500	499.72	527	528
2A-22N	40293504900	CARNEROS_BASE	1461489.44	754366.88	-7,010	7,681.98	Upper Santos Shale	51	50.68	57	56
2A-22N	40293504900	AGUA_TOP	1461489.44	754366.88	-7,061	7,732.66	Agua Sandstone	159	159.69	155	156
2A-22N	40293504900	AGUA_BASE	1461489.44	754366.88	-7,220	7,892.35	Lower Santos Shale	235	234.42	232	231
2A-22N	40293504900	64_ZONE_U_TOP	1461489.44	754366.88	-7,455	8,126.77	U Sandstone	51	51.41	61	61
2A-22N	40293504900	64_ZONE_U_BASE	1461489.44	754366.88	-7,506	8,178.18	U Shale	73	72.5	62	63
2A-22N	40293504900	64_ZONE_W_TOP	1461489.44	754366.88	-7,579	8,250.68	W Sandstone	--	--	--	--
2R-27N	40292961400	CARNEROS_TOP	1464752.86	753059.64	-7,106	7,750.02	Carneros Sandstone	517	516.58	553	553
2R-27N	40292961400	CARNEROS_BASE	1464754.03	753055.25	-7,623	8,266.60	Upper Santos Shale	45	44.53	30	31
2R-27N	40292961400	AGUA_TOP	1464753.91	753055.09	-7,668	8,311.13	Agua Sandstone	229	229.34	209	209
2R-27N	40292961400	AGUA_BASE	1464753.3	753054.3	-7,897	8,540.47	Lower Santos Shale	--	--	--	--
3-21N	40293503700	CARNEROS_TOP	1460367.63	755067.16	-6,540	7,227.68	Carneros Sandstone	557	557.18	555	555
3-21N	40293503700	CARNEROS_BASE	1460367.63	755067.16	-7,097	7,784.86	Upper Santos Shale	41	41.02	64	63
3-21N	40293503700	AGUA_TOP	1460367.63	755067.16	-7,138	7,825.88	Agua Sandstone	184	183.99	143	144
3-21N	40293503700	AGUA_BASE	1460367.63	755067.16	-7,322	8,009.87	Lower Santos Shale	217	216.7	239	238
3-21N	40293503700	64_ZONE_U_TOP	1460367.63	755067.16	-7,539	8,226.57	U Sandstone	46	46.1	77	78
3-21N	40293503700	64_ZONE_U_BASE	1460367.63	755067.16	-7,585	8,272.67	U Shale	58	58.55	57	57
3-21N	40293503700	64_ZONE_W_TOP	1460367.63	755067.16	-7,643	8,331.22	W Sandstone	--	--	--	--
3-22N	40293504700	CARNEROS_TOP	1460906.67	755008.16	-6,641	7,317.19	Carneros Sandstone	484	484.01	526	526
3-22N	40293504700	CARNEROS_BASE	1460909.99	755004.88	-7,125	7,801.20	Upper Santos Shale	61	60.31	65	64
3-22N	40293504700	AGUA_TOP	1460909.92	755003.27	-7,186	7,861.51	Agua Sandstone	213	213.57	132	132
3-22N	40293504700	AGUA_BASE	1460909.9	754999.81	-7,399	8,075.08	Lower Santos Shale	177	177.22	224	224
3-22N	40293504700	64_ZONE_U_TOP	1460909.76	754999.91	-7,576	8,252.30	U Sandstone	51	50.35	82	82
3-22N	40293504700	64_ZONE_U_BASE	1460910.14	754999.78	-7,627	8,302.65	U Shale	38	38.05	57	57
3-22N	40293504700	64_ZONE_W_TOP	1460910.42	754999.69	-7,665	8,340.70	W Sandstone	--	--	--	--
3-35N	40293507500	CARNEROS_TOP	1469333.09	747615.47	-6,511	7,150.15	Carneros Sandstone	517	518.27	559	559
3-35N	40293507500	CARNEROS_BASE	1469328.83	747594.26	-7,028	7,668.42	Upper Santos Shale	55	54.86	55	56
3-35N	40293507500	AGUA_TOP	1469327.65	747593.25	-7,083	7,723.28	Agua Sandstone	32	32.28	46	45
3-35N	40293507500	AGUA_BASE	1469326.96	747592.68	-7,115	7,755.56	Lower Santos Shale	304	303.42	281	282
3-35N	40293507500	64_ZONE_U_TOP	1469320.38	747588.07	-7,419	8,058.98	U Sandstone	80	80.72	95	95
3-35N	40293507500	64_ZONE_U_BASE	1469318.55	747587	-7,499	8,139.70	U Shale	77	76.44	66	66
3-35N	40293507500	64_ZONE_W_TOP	1469316.83	747585.99	-7,576	8,216.14	W Sandstone	--	--	--	--
3-35N_ST1	40293507501	CARNEROS_TOP	1469159.73	747526.95	-6,391	7,054.79	Carneros Sandstone	553	569.1	548	564
3-35N_ST1	40293507501	CARNEROS_BASE	1469063.03	747435.44	-6,944	7,623.89	Upper Santos Shale	19	19.31	24	25
3-35N_ST1	40293507501	AGUA_TOP	1469060.2	747432.61	-6,963	7,643.20	Agua Sandstone	33	33.26	46	47
3-35N_ST1	40293507501	AGUA_BASE	1469055.33	747427.73	-6,996	7,676.46	Lower Santos Shale	264	270.43	247	253
3-35N_ST1	40293507501	64_ZONE_U_TOP	1469015.49	747386.15	-7,260	7,946.89	U Sandstone	94	96.09	91	93
3-35N_ST1	40293507501	64_ZONE_U_BASE	1469001.23	747370.38	-7,354	8,042.98	U Shale	38	39.43	44	46
3-35N_ST1	40293507501	64_ZONE_W_TOP	1468995.4	747363.82	-7,392	8,082.41	W Sandstone	--	--	--	--
3-35N_ST2	40293507502	CARNEROS_TOP	1469222.53	747612.48	-6,410	7,057.47	Carneros Sandstone	673	675.66	584	587
3-35N_ST2	40293507502	AGUA_TOP	1469238.61	747646.3	-7,083	7,733.13	Agua Sandstone	340	341.68	46	46
3-35N_ST2	40293507502	64_ZONE_U_TOP	1469266.19	747665.49	-7,423	8,074.81	U Sandstone	105	105.78	101	101
3-35N_ST2	40293507502	64_ZONE_U_BASE	1469276.7	747670.42	-7,528	8,180.59	U Shale	72	72.08	71	71
3-35N_ST2	40293507502	64_ZONE_W_TOP	1469284.31	747673.29	-7,600	8,252.67	W Sandstone	--	--	309	311
31-21N	40293504000	CARNEROS_TOP	1459081.86	754135.25	-6,497	7,190.36	Carneros Sandstone	492	491.82	549	549
31-21N	40293504000	CARNEROS_BASE	1459087.91	754139.12	-6,989	7,682.18	Upper Santos Shale	54	53.6	69	69
31-21N	40293504000	AGUA_TOP	1459088.56	754139.64	-7,043	7,735.78	Agua Sandstone	309	309.13	210	210

Well Name	UWI	Surface	X	Y	Z	MD	Interval	Delta Z	Delta MD	TVT Model	TST Model
31-21N	40293504000	AGUA_BASE	1459092.21	754142.22	-7,352	8,044.91	Lower Santos Shale	202	202.04	253	253
31-21N	40293504000	64_ZONE_U_TOP	1459094.42	754144.39	-7,554	8,246.95	U Sandstone	86	85.79	86	86
31-21N	40293504000	64_ZONE_U_BASE	1459095.26	754145.59	-7,640	8,332.74	U Shale	32	32.08	47	47
31-21N	40293504000	64_ZONE_W_TOP	1459095.58	754146.04	-7,672	8,364.82	W Sandstone	--	--	--	--
31-27N	40293506500	CARNEROS_TOP	1465039.68	751244.59	-6,357	7,014.45	Carneros Sandstone	554	553.28	542	542
31-27N	40293506500	CARNEROS_BASE	1465039.6	751232.72	-6,911	7,567.73	Upper Santos Shale	30	30.14	43	43
31-27N	40293506500	AGUA_TOP	1465039.43	751232.17	-6,941	7,597.87	Agua Sandstone	129	129.42	135	135
31-27N	40293506500	AGUA_BASE	1465037.3	751228.71	-7,070	7,727.29	Lower Santos Shale	273	273.62	266	266
31-27N	40293506500	64_ZONE_U_TOP	1465031.68	751221.3	-7,343	8,000.91	U Sandstone	89	88.12	95	95
31-27N	40293506500	64_ZONE_U_BASE	1465031.26	751220.24	-7,432	8,089.03	U Shale	47	46.91	48	48
31-27N	40293506500	64_ZONE_W_TOP	1465030.82	751219.37	-7,479	8,135.94	W Sandstone	--	--	--	--
31R-28N	40292962100	CARNEROS_TOP	1459813.77	751319.85	-7,145	7,865.92	Carneros Sandstone	592	592.42	930	930
31R-28N	40292962100	CARNEROS_BASE	1459812.21	751335.81	-7,737	8,458.34	Upper Santos Shale	49	49.01	92	93
31R-28N	40292962100	AGUA_TOP	1459812.41	751336.91	-7,786	8,507.35	Agua Sandstone	274	274.34	199	199
31R-28N	40292962100	AGUA_BASE	1459813.55	751343.03	-8,060	8,781.69	Lower Santos Shale	207	207.29	310	310
31R-28N	40292962100	64_ZONE_U_TOP	1459814.41	751347.65	-8,267	8,988.98	U Sandstone	--	--	110	111
32-21N	40293504600	CARNEROS_TOP	1459375.13	754493.58	-6,433	7,156.24	Carneros Sandstone	579	579.68	590	592
32-21N	40293504600	CARNEROS_BASE	1459406.35	754477	-7,012	7,735.92	Upper Santos Shale	28	28.07	55	55
32-21N	40293504600	AGUA_TOP	1459407.54	754476.41	-7,040	7,763.99	Agua Sandstone	180	180.67	204	204
32-21N	40293504600	AGUA_BASE	1459413.63	754472.61	-7,220	7,944.66	Lower Santos Shale	341	340.63	266	266
32-21N	40293504600	64_ZONE_U_TOP	1459424.4	754466.03	-7,561	8,285.29	U Sandstone	68	68.81	80	81
32-21N	40293504600	64_ZONE_U_BASE	1459426.66	754464.78	-7,629	8,354.10	U Shale	30	29.96	48	48
32-21N	40293504600	64_ZONE_W_TOP	1459427.64	754464.23	-7,659	8,384.06	W Sandstone	--	--	--	--
32-35N	40293508400	CARNEROS_TOP	1470649.77	745749.56	-6,422	7,050.85	Carneros Sandstone	588	588.39	540	540
32-35N	40293508400	CARNEROS_BASE	1470649.77	745749.56	-7,010	7,639.24	Upper Santos Shale	21	20.35	46	47
32-35N	40293508400	AGUA_TOP	1470649.77	745749.56	-7,031	7,659.59	Agua Sandstone	50	50.44	103	103
32-35N	40293508400	AGUA_BASE	1470649.77	745749.56	-7,081	7,710.03	Lower Santos Shale	256	255.76	238	238
32-35N	40293508400	64_ZONE_U_TOP	1470649.77	745749.56	-7,337	7,965.79	U Sandstone	104	104.41	73	74
32-35N	40293508400	64_ZONE_U_BASE	1470649.77	745749.56	-7,441	8,070.20	U Shale	86	85.44	66	66
32-35N	40293508400	64_ZONE_W_TOP	1470649.77	745749.56	-7,527	8,155.64	W Sandstone	--	--	--	--
33-21N	40293504100	CARNEROS_TOP	1459121.72	755027.14	-6,479	7,175.78	Carneros Sandstone	505	505.29	640	640
33-21N	40293504100	CARNEROS_BASE	1459120.65	755022.92	-6,984	7,681.07	Upper Santos Shale	134	133.78	34	34
33-21N	40293504100	AGUA_TOP	1459120.33	755021.84	-7,118	7,814.85	Agua Sandstone	243	243.03	203	203
33-21N	40293504100	AGUA_BASE	1459120.16	755020.18	-7,361	8,057.88	Lower Santos Shale	217	217.27	231	231
33-21N	40293504100	64_ZONE_U_TOP	1459120.55	755018.17	-7,578	8,275.15	U Sandstone	64	63.61	63	62
33-21N	40293504100	64_ZONE_U_BASE	1459120.67	755017.41	-7,642	8,338.76	U Shale	40	40.07	47	48
33-21N	40293504100	64_ZONE_W_TOP	1459120.77	755016.89	-7,682	8,378.83	W Sandstone	--	--	--	--
33-35N	40293508500	CARNEROS_TOP	1470581.88	745064.8	-6,312	6,940.52	Carneros Sandstone	525	525.12	538	538
33-35N	40293508500	CARNEROS_BASE	1470572.55	745051.26	-6,837	7,465.64	Upper Santos Shale	24	24.57	26	27
33-35N	40293508500	AGUA_TOP	1470572.07	745050.63	-6,861	7,490.21	Agua Sandstone	53	53.07	68	68
33-35N	40293508500	AGUA_BASE	1470571.17	745049.33	-6,914	7,543.28	Lower Santos Shale	256	255.71	238	238
33-35N	40293508500	64_ZONE_U_TOP	1470567.58	745042.85	-7,170	7,798.99	U Sandstone	164	163.9	74	74
33-35N	40293508500	64_ZONE_W_TOP	1470565.7	745039.28	-7,334	7,962.89	W Sandstone	--	--	289	290
34-21N	40293504200	AGUA_TOP	1458989.84	755837.1	-7,306	7,981.26	Agua Sandstone	174	173.58	162	163
34-21N	40293504200	AGUA_BASE	1458990.52	755836.98	-7,480	8,154.84	Lower Santos Shale	196	195.71	205	204
34-21N	40293504200	64_ZONE_U_TOP	1458990.52	755836.98	-7,676	8,350.55	U Sandstone	50	50.85	51	51
34-21N	40293504200	64_ZONE_U_BASE	1458990.52	755836.98	-7,726	8,401.40	U Shale	37	36.14	42	43
34-21N	40293504200	64_ZONE_W_TOP	1458990.52	755836.98	-7,763	8,437.54	W Sandstone	--	--	--	--
34-21N_ST1	40293504201	CARNEROS_TOP	1458983.48	755833.04	-6,635	7,309.99	Carneros Sandstone	605	612.92	607	614
34-21N_ST1	40293504201	CARNEROS_BASE	1458977.65	755741.53	-7,240	7,922.91	Upper Santos Shale	69	70.87	59	61
34-21N_ST1	40293504201	AGUA_TOP	1458980.72	755724.66	-7,309	7,993.78	Agua Sandstone	154	161.64	162	169
34-21N_ST1	40293504201	AGUA_BASE	1458994.06	755679.12	-7,463	8,155.42	Lower Santos Shale	189	198.29	201	213
34-21N_ST1	40293504201	64_ZONE_U_TOP	1459013.82	755619.61	-7,652	8,353.71	U Sandstone	45	47.17	46	48
34-21N_ST1	40293504201	64_ZONE_U_BASE	1459017.93	755606.15	-7,697	8,400.88	U Shale	44	46.53	45	47
34-21N_ST1	40293504201	64_ZONE_W_TOP	1459021.98	755592.88	-7,741	8,447.41	W Sandstone	--	--	--	--
35-21N	40293504300	CARNEROS_TOP	1458317.68	756473.09	-6,708	7,392.30	Carneros Sandstone	618	617.28	611	611
35-21N	40293504300	CARNEROS_BASE	1458317.68	756473.09	-7,326	8,009.58	Upper Santos Shale	44	44.26	50	51
35-21N	40293504300	AGUA_TOP	1458317.68	756473.09	-7,370	8,053.84	Agua Sandstone	180	180.52	164	163
35-21N	40293504300	AGUA_BASE	1458317.68	756473.09	-7,550	8,234.36	Lower Santos Shale	182	181.87	193	193
35-21N	40293504300	64_ZONE_U_TOP	1458317.68	756473.09	-7,732	8,416.23	U Sandstone	58	57.4	62	62
35-21N	40293504300	64_ZONE_U_BASE	1458317.68	756473.09	-7,790	8,473.63	U Shale	34	34.79	38	39
35-21N	40293504300	64_ZONE_W_TOP	1458317.68	756473.09	-7,824	8,508.42	W Sandstone	--	--	--	--
35X-27N	40295827100	CARNEROS_TOP	1464170.35	750645.27	-5,888	6,567.44	Carneros Sandstone	559	559.23	564	564
35X-27N	40295827100	CARNEROS_BASE	1464156.69	750621.81	-6,447	7,126.67	Upper Santos Shale	42	41.99	45	45
35X-27N	40295827100	AGUA_TOP	1464155.68	750619.87	-6,489	7,168.66	Agua Sandstone	130	130.38	131	132
35X-27N	40295827100	AGUA_BASE	1464151.93	750613.61	-6,619	7,299.04	Lower Santos Shale	264	264.65	257	257
35X-27N	40295827100	64_ZONE_U_TOP	1464146.49	750600.32	-6,883	7,563.69	U Sandstone	85	84.45	82	83
35X-27N	40295827100	64_ZONE_U_BASE	1464144.78	750595.56	-6,968	7,648.14	U Shale	88	88.87	83	83
35X-27N	40295827100	64_ZONE_W_TOP	1464143.29	750590.68	-7,056	7,737.01	W Sandstone	--	--	--	--
37-1N	40293511700	CARNEROS_TOP	1473097.05	739778.06	-6,501	7,141.29	Carneros Sandstone	211	211.25	446	446
37-1N	40293511700	CARNEROS_BASE	1473093.95	739781.13	-6,712	7,352.54	Upper Santos Shale	281	280.7	25	25
37-1N	40293511700	AGUA_TOP	1473091.06	739785.55	-6,993	7,633.24	Agua Sandstone	100	99.73	101	101
37-1N	40293511700	AGUA_BASE	1473090.28	739787.58	-7,093	7,732.97	Lower Santos Shale	301	301.25	294	294
37-1N	40293511700	64_ZONE_U_TOP	1473087.92	739793.72	-7,394	8,034.22	U Sandstone	107	107.69	97	97
37-1N	40293511700	64_ZONE_U_BASE	1473087.08	739795.91	-7,501	8,141.91	U Shale	47	46.92	47	47
37-1N	40293511700	64_ZONE_W_TOP	1473086.71	739796.87	-7,548	8,188.83	W Sandstone	--	--	--	--
37-27N	40296064400	CARNEROS_TOP	1462821.5	750776.59	-5,856	6,574.48	Carneros Sandstone	636	637.05	525	526
37-27N	40296064400	AGUA_TOP	1462821.5	750817.21	-6,492	7,211.53	Agua Sandstone	205	205.51	158	158
37-27N	40296064400	AGUA_BASE	1462821.5	750830.66	-6,697	7,417.04	Lower Santos Shale	--	--	--	--
38-35N	40292964700	CARNEROS_TOP	1467306.17	745352.66	-6,242	6,931.15	Carneros Sandstone	701	701.69	674	675
38-35N	40292964700	CARNEROS_BASE	1467300.11	745372.79	-6,943	7,632.84	Upper Santos Shale	20	19.75	46	46
38-35N	40292964700	AGUA_TOP	1467300.31	745373.21	-6,963	7,652.59	Agua Sandstone	124	124.31	126	126
38-35N	40292964700	AGUA_BASE	1467301.23	745375.93	-7,087	7,776.90	Lower Santos Shale	466	466.4	215	215
38-35N	40292964700	64_ZONE_U_TOP	1467303.43	745386.28	-7,553	8,243.30	U Sandstone	138	138.16	80	80
38-35N	40292964700	64_ZONE_U_BASE	1467303.76	745389.27	-7,691	8,381.46	U Shale	66	65.2	52	52
38-35N	40292964700	64_ZONE_W_TOP	1467303.92	745390.68	-7,757	8,446.66	W Sandstone	--	--	301	301
39-26N	40293505400	CARNEROS_TOP	1466621.13	750130.53	-6,385	7,043.47	Carneros Sandstone	641	641.15	599	599
39-26N	40293505400	AGUA_TOP	1466618.75	750126.89	-7,026	7,684.62	Agua Sandstone	63	63.06	80	80
39-26N	40293505400	AGUA_BASE	1466617.12	750125.68	-7,089	7,747.68	Lower Santos Shale	313	313.32	287	287
39-26N	40293505400	64_ZONE_U_TOP	1466610.04	750116.29	-7,402	8,061.00	U Sandstone	103	102.81	101	101
39-26N	40293505400	64_ZONE_U_BASE	1466608.06	750114.04	-7,505	8,163.81	U Shale	68	67.39	70	70
39-26N	40293505400	64_ZONE_W_TOP	1466606.29	750112.66	-7,573	8,231.20	W Sandstone	--	--	--	--

Well Name	UWI	Surface	X	Y	Z	MD	Interval	Delta Z	Delta MD	TVT Model	TST Model
39-26N_ST1	40293505401	CARNEROS_TOP	1466536.14	750056.22	-6,354	7,019.37	Carneros Sandstone	572	575.41	547	551
39-26N_ST1	40293505401	CARNEROS_BASE	1466498.55	750004.36	-6,926	7,594.78	Upper Santos Shale	23	23.78	41	42
39-26N_ST1	40293505401	AGUA_TOP	1466497.15	750003.2	-6,949	7,618.56	Agua Sandstone	41	40.86	78	78
39-26N_ST1	40293505401	AGUA_BASE	1466494.75	750001.22	-6,990	7,659.42	Lower Santos Shale	295	296.04	274	275
39-26N_ST1	40293505401	64_ZONE_U_TOP	1466474.42	749981.33	-7,285	7,955.46	U Sandstone	82	82.98	91	92
39-26N_ST1	40293505401	64_ZONE_U_BASE	1466469.18	749973.21	-7,367	8,038.44	U Shale	--	--	67	68
4-1N	40297825900	CARNEROS_TOP	1473520.62	742156.23	-6,775	7,449.76	Carneros Sandstone	295	298.76	381	386
4-1N	40297825900	CARNEROS_BASE	1473482.84	742124.54	-7,070	7,748.52	Upper Santos Shale	85	86.15	66	67
4-1N	40297825900	AGUA_TOP	1473471.95	742115.4	-7,155	7,834.67	Agua Sandstone	85	86.8	100	101
4-1N	40297825900	AGUA_BASE	1473460.97	742106.19	-7,240	7,921.47	Lower Santos Shale	327	330.81	241	244
4-1N	40297825900	64_ZONE_U_TOP	1473419.14	742071.11	-7,567	8,252.28	U Sandstone	117	119.15	98	99
4-1N	40297825900	64_ZONE_U_BASE	1473404.07	742058.47	-7,684	8,371.43	U Shale	41	41.56	51	52
4-1N	40297825900	64_ZONE_W_TOP	1473398.82	742054.06	-7,725	8,412.99	W Sandstone	--	--	245	248
4-27N	40293505900	CARNEROS_TOP	1463534.41	753038.32	-6,603	7,268.54	Carneros Sandstone	549	549.12	579	579
4-27N	40293505900	CARNEROS_BASE	1463524.94	753031.62	-7,152	7,817.66	Upper Santos Shale	449	448.89	32	32
4-27N	40293505900	64_ZONE_U_TOP	1463520.74	753029.64	-7,601	8,266.55	U Sandstone	72	72.49	77	78
4-27N	40293505900	64_ZONE_U_BASE	1463520	753029.04	-7,673	8,339.04	U Shale	38	37.92	50	50
4-27N	40293505900	64_ZONE_W_TOP	1463519.67	753028.77	-7,711	8,376.96	W Sandstone	--	--	--	--
4-27N_ST1	40293505901	CARNEROS_TOP	1463380.05	752961.39	-6,488	7,172.44	Carneros Sandstone	516	535.26	523	542
4-27N_ST1	40293505901	CARNEROS_BASE	1463289.92	752854.38	-7,004	7,707.70	Upper Santos Shale	36	37.09	44	45
4-27N_ST1	40293505901	AGUA_TOP	1463283.66	752846.71	-7,040	7,744.79	Agua Sandstone	140	145.55	131	136
4-27N_ST1	40293505901	AGUA_BASE	1463257.66	752819.67	-7,180	7,890.34	Lower Santos Shale	237	241.99	242	247
4-27N_ST1	40293505901	64_ZONE_U_TOP	1463217.64	752791.36	-7,417	8,132.33	U Sandstone	62	63.36	65	67
4-27N_ST1	40293505901	64_ZONE_U_BASE	1463207.11	752783.16	-7,479	8,195.69	U Shale	90	91.65	65	66
4-27N_ST1	40293505901	64_ZONE_W_TOP	1463191.51	752771.42	-7,569	8,287.34	W Sandstone	--	--	--	--
4-35N	40293507600	CARNEROS_TOP	1468510.92	747917.54	-6,309	6,951.95	Carneros Sandstone	574	573.75	595	595
4-35N	40293507600	CARNEROS_BASE	1468507.82	747909.56	-6,883	7,525.70	Upper Santos Shale	28	28.22	18	18
4-35N	40293507600	AGUA_TOP	1468507.82	747909.42	-6,911	7,553.92	Agua Sandstone	65	65.09	67	67
4-35N	40293507600	AGUA_BASE	1468507.89	747909.12	-6,976	7,619.01	Lower Santos Shale	251	251.34	261	260
4-35N	40293507600	64_ZONE_U_TOP	1468508.38	747907.41	-7,227	7,870.35	U Sandstone	103	102.74	98	99
4-35N	40293507600	64_ZONE_U_BASE	1468508.38	747906.52	-7,330	7,973.09	U Shale	47	46.79	44	44
4-35N	40293507600	64_ZONE_W_TOP	1468508.29	747906.16	-7,377	8,019.88	W Sandstone	--	--	--	--
4-36N	40293509600	CARNEROS_TOP	1471874.26	743080.3	-6,366	6,988.11	Carneros Sandstone	312	311.93	513	513
4-36N	40293509600	CARNEROS_BASE	1471874.26	743080.3	-6,678	7,300.04	Upper Santos Shale	108	107.62	51	50
4-36N	40293509600	AGUA_TOP	1471874.26	743080.3	-6,786	7,407.66	Agua Sandstone	53	52.72	47	47
4-36N	40293509600	AGUA_BASE	1471874.26	743080.3	-6,839	7,460.38	Lower Santos Shale	333	333.44	226	227
4-36N	40293509600	64_ZONE_U_TOP	1471874.26	743080.3	-7,172	7,793.82	U Sandstone	124	123.89	119	119
4-36N	40293509600	64_ZONE_U_BASE	1471874.26	743080.3	-7,296	7,917.71	U Shale	48	48.18	47	46
4-36N	40293509600	64_ZONE_W_TOP	1471874.26	743080.3	-7,344	7,965.89	W Sandstone	--	--	--	--
43-21N	40293504400	CARNEROS_TOP	1458501.79	754808.64	-6,573	7,265.27	Carneros Sandstone	528	527.95	597	597
43-21N	40293504400	CARNEROS_BASE	1458500.57	754807.19	-7,101	7,793.22	Upper Santos Shale	106	106.19	54	54
43-21N	40293504400	AGUA_TOP	1458500.63	754807.44	-7,207	7,899.41	Agua Sandstone	300	299.56	233	234
43-21N	40293504400	AGUA_BASE	1458500.42	754808.31	-7,507	8,198.97	Lower Santos Shale	202	201.92	235	235
43-21N	40293504400	64_ZONE_U_TOP	1458500.46	754808.72	-7,709	8,400.89	U Sandstone	60	60.35	58	58
43-21N	40293504400	64_ZONE_U_BASE	1458500.48	754808.85	-7,769	8,461.24	U Shale	41	41.62	41	41
43-21N	40293504400	64_ZONE_W_TOP	1458500.49	754808.93	-7,810	8,502.86	W Sandstone	--	--	--	--
43-26N	40293505500	CARNEROS_TOP	1467396.3	749617.61	-6,441	7,091.20	Carneros Sandstone	632	632.88	594	594
43-26N	40293505500	CARNEROS_BASE	1467398.36	749609.96	-7,073	7,724.08	Upper Santos Shale	43	42.59	49	49
43-26N	40293505500	AGUA_TOP	1467397.94	749609.36	-7,116	7,766.67	Agua Sandstone	49	48.51	74	73
43-26N	40293505500	AGUA_BASE	1467397.45	749608.64	-7,165	7,815.18	Lower Santos Shale	271	271.57	275	275
43-26N	40293505500	64_ZONE_U_TOP	1467394.22	749604.26	-7,436	8,086.75	U Sandstone	125	125.31	108	108
43-26N	40293505500	64_ZONE_U_BASE	1467392.92	749602.36	-7,561	8,212.06	U Shale	99	98.57	84	84
43-26N	40293505500	64_ZONE_W_TOP	1467391.89	749600.88	-7,660	8,310.63	W Sandstone	--	--	--	--
43-27N	40297512600	CARNEROS_TOP	1462162.11	749679.19	-6,450	7,209.95	Carneros Sandstone	896	898.22	505	509
43-27N	40297512600	CARNEROS_BASE	1462175.59	749723.13	-7,346	8,108.17	Upper Santos Shale	54	54.07	62	62
43-27N	40297512600	AGUA_TOP	1462176.15	749724.3	-7,400	8,162.24	Agua Sandstone	217	216.43	137	137
43-27N	40297512600	AGUA_BASE	1462178.38	749728.99	-7,617	8,378.67	Lower Santos Shale	307	307.68	273	274
43-27N	40297512600	64_ZONE_U_TOP	1462182.46	749736.99	-7,924	8,686.35	U Sandstone	77	76.7	133	134
43-27N	40297512600	64_ZONE_U_BASE	1462184.67	749740.72	-8,001	8,763.05	U Shale	51	51.85	84	83
43-27N	40297512600	64_ZONE_W_TOP	1462186.16	749743.24	-8,052	8,814.90	W Sandstone	399	399.31	651	652
43-27N	40297512600	64_ZONE_W_BASE	1462201.56	749767.37	-8,451	9,214.21	Salt Creek Shale	37	37.51	85	84
43-27N	40297512600	GIBSON_TOP	1462203.7	749770.46	-8,488	9,251.72	Gibson Sandstone	--	--	135	136
44-21N	40293504500	CARNEROS_TOP	1458245.16	755622.73	-6,620	7,308.59	Carneros Sandstone	577	576.99	580	581
44-21N	40293504500	CARNEROS_BASE	1458245.16	755622.73	-7,197	7,885.58	Upper Santos Shale	48	48.76	49	49
44-21N	40293504500	AGUA_TOP	1458245.16	755622.73	-7,245	7,934.34	Agua Sandstone	186	185.73	186	186
44-21N	40293504500	AGUA_BASE	1458245.16	755622.73	-7,431	8,120.07	Lower Santos Shale	222	222.17	232	232
44-21N	40293504500	64_ZONE_U_TOP	1458245.16	755622.73	-7,653	8,342.24	U Sandstone	73	73.14	62	62
44-21N	40293504500	64_ZONE_U_BASE	1458245.16	755622.73	-7,726	8,415.38	U Shale	38	38.11	36	36
44-21N	40293504500	64_ZONE_W_TOP	1458245.16	755622.73	-7,764	8,453.49	W Sandstone	--	--	--	--
45-35N	40293508600	CARNEROS_TOP	1468487.59	744668.37	-6,053	6,709.41	Carneros Sandstone	632	632.71	646	647
45-35N	40293508600	CARNEROS_BASE	1468489.31	744684.91	-6,685	7,342.12	Upper Santos Shale	193	192.9	100	100
45-35N	40293508600	AGUA_TOP	1468491.51	744689.4	-6,878	7,535.02	Agua Sandstone	49	48.6	76	76
45-35N	40293508600	AGUA_BASE	1468492.05	744690.51	-6,927	7,583.62	Lower Santos Shale	240	240.65	249	249
45-35N	40293508600	64_ZONE_U_TOP	1468494.49	744696.16	-7,167	7,824.27	U Sandstone	125	124.31	112	111
45-35N	40293508600	64_ZONE_U_BASE	1468495.67	744699.1	-7,292	7,948.58	U Shale	53	53.61	57	57
45-35N	40293508600	64_ZONE_W_TOP	1468496.28	744700.35	-7,345	8,002.19	W Sandstone	--	--	262	262
46X-35N	40295918900	CARNEROS_TOP	1469024.82	744927.75	-5,980	6,638.34	Carneros Sandstone	430	429.73	483	483
46X-35N	40295918900	CARNEROS_BASE	1469023.32	744928.69	-6,410	7,068.07	Upper Santos Shale	81	81.52	57	57
46X-35N	40295918900	AGUA_TOP	1469022.61	744930.67	-6,491	7,149.59	Agua Sandstone	49	48.72	86	86
46X-35N	40295918900	AGUA_BASE	1469022.18	744931.84	-6,540	7,198.31	Lower Santos Shale	299	299.04	274	275
46X-35N	40295918900	64_ZONE_U_TOP	1469019.56	744942.19	-6,839	7,497.35	U Sandstone	79	79.23	114	115
46X-35N	40295918900	64_ZONE_U_BASE	1469021.73	744947.93	-6,918	7,576.58	U Shale	85	85.53	64	64
46X-35N	40295918900	64_ZONE_W_TOP	1469027.81	744956.9	-7,003	7,662.11	W Sandstone	380	388.93	320	329
46X-35N	40295918900	64_ZONE_W_BASE	1469072.17	745025.41	-7,383	8,051.04	Salt Creek Shale	60	60.97	54	55
46X-35N	40295918900	GIBSON_TOP	1469074.59	745035.02	-7,443	8,112.01	Gibson Sandstone	--	--	25	25
46X-35N_ST1	40295918901	CARNEROS_TOP	1469024.82	744927.75	-5,979	6,637.18	Carneros Sandstone	430	429.69	483	483
46X-35N_ST1	40295918901	CARNEROS_BASE	1469023.33	744928.67	-6,409	7,066.87	Upper Santos Shale	81	81.52	57	57
46X-35N_ST1	40295918901	AGUA_TOP	1469022.62	744930.64	-6,490	7,148.39	Agua Sandstone	47	47.19	86	86
46X-35N_ST1	40295918901	AGUA_BASE	1469022.2	744931.78	-6,537	7,195.58	Lower Santos Shale	300	299.53	274	275
46X-35N_ST1	40295918901	64_ZONE_U_TOP	1469019.58	744942.11	-6,837	7,495.11	U Sandstone	82	82.47	114	115
46X-35N_ST1	40295918901	64_ZONE_U_BASE	1469021.76	744948	-6,919	7,577.58	U Shale	86	86.8	64	64
46X-35N_ST1	40295918901	64_ZONE_W_TOP	1469028.03	744957.18	-7,005	7,664.38	W Sandstone	375	383.92	320	329

Well Name	UWI	Surface	X	Y	Z	MD	Interval	Delta Z	Delta MD	TVT Model	TST Model
46X-35N_ST1	40295918901	64_ZONE_W_BASE	1469071.94	745024.78	-7,380	8,048.30	Salt Creek Shale	62	64.72	53	56
46X-35N_ST1	40295918901	GIBSON_TOP	1469079.47	745042.92	-7,442	8,113.02	Gibson Sandstone	--	--	25	26
46X-35N_ST2	40295918902	CARNEROS_TOP	1469024.82	744927.75	-5,980	6,638.32	Carneros Sandstone	431	431.14	483	483
46X-35N_ST2	40295918902	CARNEROS_BASE	1469023.31	744928.73	-6,411	7,069.46	Upper Santos Shale	80	80.07	57	57
46X-35N_ST2	40295918902	AGUA_TOP	1469022.61	744930.66	-6,491	7,149.53	Agua Sandstone	47	46.99	86	86
46X-35N_ST2	40295918902	AGUA_BASE	1469022.19	744931.8	-6,538	7,196.52	Lower Santos Shale	--	--	273	273
46X-35N_ST3	40295918903	CARNEROS_TOP	1469024.82	744927.75	-5,981	6,638.94	Carneros Sandstone	429	429.69	483	483
46X-35N_ST3	40295918903	CARNEROS_BASE	1469023.32	744928.71	-6,410	7,068.63	Upper Santos Shale	79	78.62	57	57
46X-35N_ST3	40295918903	AGUA_TOP	1469022.63	744930.61	-6,489	7,147.25	Agua Sandstone	53	53.08	86	86
46X-35N_ST3	40295918903	AGUA_BASE	1469022.16	744931.89	-6,542	7,200.33	Lower Santos Shale	289	289.68	273	273
46X-35N_ST3	40295918903	64_ZONE_U_TOP	1469021.94	744944.55	-6,831	7,490.01	U Sandstone	--	--	113	114
46X-35N_ST4	40295918904	CARNEROS_TOP	1469024.82	744927.75	-5,981	6,638.68	Carneros Sandstone	431	431.81	483	483
46X-35N_ST4	40295918904	CARNEROS_BASE	1469023.3	744928.75	-6,412	7,070.49	Upper Santos Shale	75	74.28	57	57
46X-35N_ST4	40295918904	AGUA_TOP	1469022.65	744930.55	-6,487	7,144.77	Agua Sandstone	54	54.36	86	86
46X-35N_ST4	40295918904	AGUA_BASE	1469022.17	744931.86	-6,541	7,199.13	Lower Santos Shale	299	299.37	273	273
46X-35N_ST4	40295918904	64_ZONE_U_TOP	1469022.29	744945.33	-6,840	7,498.50	U Sandstone	109	109.9	113	114
46X-35N_ST4	40295918904	64_ZONE_U_BASE	1469028.47	744956.66	-6,949	7,608.40	U Shale	67	67.29	64	65
46X-35N_ST4	40295918904	64_ZONE_W_TOP	1469034.5	744964.39	-7,016	7,675.69	W Sandstone	337	345.87	321	330
46X-35N_ST4	40295918904	64_ZONE_W_BASE	1469074.91	745026.86	-7,353	8,021.56	Salt Creek Shale	46	47.74	53	56
46X-35N_ST4	40295918904	GIBSON_TOP	1469081.89	745039.28	-7,399	8,069.30	Gibson Sandstone	--	--	25	27
47-27N	40292960800	CARNEROS_TOP	1465075.43	749782.55	-5,862	6,541.48	Carneros Sandstone	533	533.18	549	550
47-27N	40292960800	CARNEROS_BASE	1465074.26	749777.61	-6,395	7,074.66	Upper Santos Shale	39	39.27	49	49
47-27N	40292960800	AGUA_TOP	1465074.26	749777.29	-6,434	7,113.93	Agua Sandstone	86	85.99	102	101
47-27N	40292960800	AGUA_BASE	1465073.94	749776.28	-6,520	7,199.92	Lower Santos Shale	271	270.7	251	251
47-27N	40292960800	64_ZONE_U_TOP	1465073.79	749774.43	-6,791	7,470.62	U Sandstone	93	93.29	92	92
47-27N	40292960800	64_ZONE_U_BASE	1465073.93	749774.32	-6,884	7,563.91	U Shale	38	38.05	60	60
47-27N	40292960800	64_ZONE_W_TOP	1465073.97	749774.31	-6,922	7,601.96	W Sandstone	392	391.95	377	377
47-27N	40292960800	64_ZONE_W_BASE	1465066.5	749763.49	-7,314	7,993.91	Salt Creek Shale	42	42.02	52	52
47-27N	40292960800	GIBSON_TOP	1465066.06	749761.37	-7,356	8,035.93	Gibson Sandstone	--	--	62	62
48A-35N	40293508700	CARNEROS_TOP	1470614.72	744405.87	-6,217	6,860.29	Carneros Sandstone	541	540.71	552	552
48A-35N	40293508700	CARNEROS_BASE	1470611.09	744395.86	-6,758	7,401.00	Upper Santos Shale	46	46.55	42	42
48A-35N	40293508700	AGUA_TOP	1470610.44	744395.02	-6,804	7,447.55	Agua Sandstone	54	53.46	62	62
48A-35N	40293508700	AGUA_BASE	1470609.71	744394.08	-6,858	7,501.01	Lower Santos Shale	153	153.77	166	167
48A-35N	40293508700	64_ZONE_U_TOP	1470607.8	744391.62	-7,011	7,654.78	U Sandstone	113	112.89	112	112
48A-35N	40293508700	64_ZONE_U_BASE	1470606.5	744389.78	-7,124	7,767.67	U Shale	51	51.02	52	52
48A-35N	40293508700	64_ZONE_W_TOP	1470605.83	744389.01	-7,175	7,818.69	W Sandstone	359	358.6	351	351
48A-35N	40293508700	64_ZONE_W_BASE	1470600.91	744383.76	-7,534	8,177.29	Salt Creek Shale	--	--	--	--
49-35N	40293508800	CARNEROS_TOP	1470525.61	743747.69	-6,080	6,714.01	Carneros Sandstone	621	620.95	595	595
49-35N	40293508800	CARNEROS_BASE	1470514.94	743748.53	-6,701	7,334.96	Upper Santos Shale	34	34.48	39	39
49-35N	40293508800	AGUA_TOP	1470514.3	743748.46	-6,735	7,369.44	Agua Sandstone	66	65.52	57	57
49-35N	40293508800	AGUA_BASE	1470513.13	743748.23	-6,801	7,434.96	Lower Santos Shale	124	124.67	157	156
49-35N	40293508800	64_ZONE_U_TOP	1470511.63	743747.75	-6,925	7,559.63	U Sandstone	112	112.05	123	124
49-35N	40293508800	64_ZONE_U_BASE	1470510.8	743747.14	-7,037	7,671.68	U Shale	50	49.72	49	49
49-35N	40293508800	64_ZONE_W_TOP	1470510.36	743746.58	-7,087	7,721.40	W Sandstone	349	348.68	--	--
49-35N	40293508800	64_ZONE_W_BASE	1470506.83	743741.63	-7,436	8,070.08	Salt Creek Shale	--	--	--	--
5-1N	40293510300	64_ZONE_U_TOP	1473140.47	742283.21	-7,490	8,106.48	U Sandstone	124	123.99	102	102
5-1N	40293510300	64_ZONE_U_BASE	1473138.25	742279.7	-7,614	8,230.47	U Shale	59	59.39	52	52
5-1N	40293510300	64_ZONE_W_TOP	1473137.19	742278.01	-7,673	8,289.86	W Sandstone	--	--	--	--
5-1N_ST1	40293510301	CARNEROS_TOP	1472955.21	742163.46	-6,584	7,221.47	Carneros Sandstone	336	340.58	376	381
5-1N_ST1	40293510301	CARNEROS_BASE	1472911.92	742125.93	-6,920	7,562.05	Upper Santos Shale	102	103.34	77	79
5-1N_ST1	40293510301	AGUA_TOP	1472899.31	742115.31	-7,022	7,665.39	Agua Sandstone	46	46.01	65	66
5-1N_ST1	40293510301	AGUA_BASE	1472893.57	742110.59	-7,068	7,711.40	Lower Santos Shale	306	309.73	282	285
5-1N_ST1	40293510301	64_ZONE_U_TOP	1472856.24	742082.44	-7,374	8,021.13	U Sandstone	150	152.48	111	113
5-1N_ST1	40293510301	64_ZONE_W_TOP	1472837.1	742069.07	-7,524	8,173.61	W Sandstone	--	--	--	--
5-27N	40293506000	CARNEROS_TOP	1462859.52	753094.86	-6,396	7,071.13	Carneros Sandstone	563	563.35	602	602
5-27N	40293506000	CARNEROS_BASE	1462863.07	753090.51	-6,959	7,634.48	Upper Santos Shale	51	50.73	54	54
5-27N	40293506000	AGUA_TOP	1462862.55	753090.47	-7,010	7,685.21	Agua Sandstone	163	163.22	157	157
5-27N	40293506000	AGUA_BASE	1462858.62	753089.88	-7,173	7,848.43	Lower Santos Shale	248	248.44	257	257
5-27N	40293506000	64_ZONE_U_TOP	1462851.16	753087.41	-7,421	8,096.87	U Sandstone	55	54.56	55	54
5-27N	40293506000	64_ZONE_U_BASE	1462850.15	753086.72	-7,476	8,151.43	U Shale	95	95.52	80	81
5-27N	40293506000	64_ZONE_W_TOP	1462848.49	753085.28	-7,571	8,246.95	W Sandstone	--	--	--	--
5-34N	40292963000	CARNEROS_TOP	1464642.62	747643.44	-6,270	6,969.82	Carneros Sandstone	814	814.54	660	660
5-34N	40292963000	CARNEROS_BASE	1464642.62	747643.44	-7,084	7,784.36	Upper Santos Shale	91	90.5	77	77
5-34N	40292963000	AGUA_TOP	1464642.62	747643.44	-7,175	7,874.86	Agua Sandstone	81	80.65	159	159
5-34N	40292963000	AGUA_BASE	1464642.62	747643.44	-7,256	7,955.51	Lower Santos Shale	389	389.41	407	407
5-34N	40292963000	64_ZONE_U_TOP	1464642.62	747643.44	-7,645	8,344.92	U Sandstone	106	106.03	153	153
5-34N	40292963000	64_ZONE_U_BASE	1464642.62	747643.44	-7,751	8,450.95	U Shale	97	96.88	110	110
5-34N	40292963000	64_ZONE_W_TOP	1464642.62	747643.44	-7,848	8,547.83	W Sandstone	--	--	--	--
50X-27N	40295894600	CARNEROS_TOP	1464523.21	749372.67	-5,745	6,448.67	Carneros Sandstone	547	547.35	605	606
50X-27N	40295894600	CARNEROS_BASE	1464516.97	749371.55	-6,292	6,996.02	Upper Santos Shale	59	58.55	67	66
50X-27N	40295894600	AGUA_TOP	1464517.2	749371.23	-6,351	7,054.57	Agua Sandstone	174	174.64	120	120
50X-27N	40295894600	AGUA_BASE	1464522.89	749372.24	-6,525	7,229.21	Lower Santos Shale	236	235.6	244	245
50X-27N	40295894600	64_ZONE_U_TOP	1464532.34	749375.68	-6,761	7,464.81	U Sandstone	74	74.43	87	86
50X-27N	40295894600	64_ZONE_U_BASE	1464534.85	749376.89	-6,835	7,539.24	U Shale	--	--	--	--
51-35N	40293508900	CARNEROS_TOP	1469217.96	743901.05	-6,139	6,808.66	Carneros Sandstone	454	454.76	671	671
51-35N	40293508900	CARNEROS_BASE	1469218.23	743913.76	-6,593	7,263.42	Upper Santos Shale	297	296.64	38	38
51-35N	40293508900	AGUA_TOP	1469218.78	743923.88	-6,890	7,560.06	Agua Sandstone	76	76.37	104	104
51-35N	40293508900	AGUA_BASE	1469218.88	743925.81	-6,966	7,636.43	Lower Santos Shale	192	191.93	210	210
51-35N	40293508900	64_ZONE_U_TOP	1469219.7	743931.41	-7,158	7,828.36	U Sandstone	161	160.71	143	143
51-35N	40293508900	64_ZONE_U_BASE	1469220.17	743935.58	-7,319	7,989.07	U Shale	38	38.59	46	46
51-35N	40293508900	64_ZONE_W_TOP	1469220.35	743936.57	-7,357	8,027.66	W Sandstone	--	--	285	285
511N-1N_ST1	40293510601	CARNEROS_TOP	1471226.31	742456.12	-6,232	6,859.59	Carneros Sandstone	389	388.98	406	406
511N-1N_ST1	40293510601	CARNEROS_BASE	1471230.57	742454.47	-6,621	7,248.57	Upper Santos Shale	78	78.06	66	66
511N-1N_ST1	40293510601	AGUA_TOP	1471230.03	742453.78	-6,699	7,326.63	Agua Sandstone	60	60.1	74	75
511N-1N_ST1	40293510601	AGUA_BASE	1471229.78	742453.68	-6,759	7,386.73	Lower Santos Shale	312	311.29	303	303
511N-1N_ST1	40293510601	64_ZONE_U_TOP	1471228.28	742454.33	-7,071	7,698.02	U Sandstone	105	105.04	105	105
511N-1N_ST1	40293510601	64_ZONE_U_BASE	1471227.54	742454.58	-7,176	7,803.06	U Shale	73	72.96	69	69
511N-1N_ST1	40293510601	64_ZONE_W_TOP	1471227.05	742454.71	-7,249	7,876.02	W Sandstone	--	--	--	--
51X-35N	40292965300	CARNEROS_TOP	1469478.12	743772.79	-6,092	6,760.04	Carneros Sandstone	678	681.34	658	661
51X-35N	40292965300	AGUA_TOP	1469466.63	743836.85	-6,770	7,441.38	Agua Sandstone	--	--	102	102
522N-1N	40293510800	CARNEROS_TOP	1471856.06	741806.86	-6,275	6,902.91	Carneros Sandstone	489	488.68	461	461
522N-1N	40293510800	CARNEROS_BASE	1471848.73	741816.58	-6,764	7,391.59	Upper Santos Shale	29	29.43	46	45

Well Name	UWI	Surface	X	Y	Z	MD	Interval	Delta Z	Delta MD	TVT Model	TST Model
522N-1N	40293510800	AGUA_TOP	1471848.26	741817	-6,793	7,421.02	Agua Sandstone	39	38.71	58	59
522N-1N	40293510800	AGUA_BASE	1471847.64	741817.54	-6,832	7,459.73	Lower Santos Shale	338	338.36	329	329
522N-1N	40293510800	64_ZONE_U_TOP	1471842.7	741820.16	-7,170	7,798.09	U Sandstone	131	131.16	119	119
522N-1N	40293510800	64_ZONE_U_BASE	1471841.66	741820.85	-7,301	7,929.25	U Shale	24	23.91	39	39
522N-1N	40293510800	64_ZONE_W_TOP	1471841.53	741821.17	-7,325	7,953.16	W Sandstone	--	--	--	--
53-26N	40293505600	CARNEROS_TOP	1468083.4	748961.17	-6,443	7,076.85	Carneros Sandstone	625	625.59	603	604
53-26N	40293505600	CARNEROS_BASE	1468088.45	748937.28	-7,068	7,702.44	Upper Santos Shale	49	48.22	54	54
53-26N	40293505600	AGUA_TOP	1468088.1	748936.31	-7,117	7,750.66	Agua Sandstone	335	335.71	65	65
53-26N	40293505600	64_ZONE_U_TOP	1468086.64	748930.97	-7,452	8,086.37	U Sandstone	101	100.39	99	99
53-26N	40293505600	64_ZONE_U_BASE	1468086.44	748929.23	-7,553	8,186.76	U Shale	61	61.75	66	66
53-26N	40293505600	64_ZONE_W_TOP	1468086.32	748928.16	-7,614	8,248.51	W Sandstone	--	--	--	--
53-26N_ST1	40293505601	CARNEROS_TOP	1467941.47	748912.57	-6,386	7,035.32	Carneros Sandstone	567	590.36	535	557
53-26N_ST1	40293505601	CARNEROS_BASE	1467843.02	748780.57	-6,953	7,625.68	Upper Santos Shale	20	20.51	38	40
53-26N_ST1	40293505601	AGUA_TOP	1467839.65	748776.2	-6,973	7,646.19	Agua Sandstone	27	28.1	49	50
53-26N_ST1	40293505601	AGUA_BASE	1467835.05	748770.28	-7,000	7,674.29	Lower Santos Shale	255	264.18	252	261
53-26N_ST1	40293505601	64_ZONE_U_TOP	1467795.43	748714.93	-7,255	7,938.47	U Sandstone	82	84.7	85	87
53-26N_ST1	40293505601	64_ZONE_U_BASE	1467783.2	748697.18	-7,337	8,023.17	U Shale	70	72.57	56	58
53-26N_ST1	40293505601	64_ZONE_W_TOP	1467772.88	748681.62	-7,407	8,095.74	W Sandstone	--	--	--	--
532N-1N	40293510900	CARNEROS_TOP	1472508.73	741705.97	-6,325	6,959.76	Carneros Sandstone	459	458.94	451	451
532N-1N	40293510900	CARNEROS_BASE	1472515.64	741697.23	-6,784	7,418.70	Upper Santos Shale	50	49.7	50	51
532N-1N	40293510900	AGUA_TOP	1472515.89	741696.58	-6,834	7,468.40	Agua Sandstone	44	43.68	52	52
532N-1N	40293510900	AGUA_BASE	1472516.09	741696.08	-6,878	7,512.08	Lower Santos Shale	342	342.75	345	344
532N-1N	40293510900	64_ZONE_U_TOP	1472517.02	741693.81	-7,220	7,854.83	U Sandstone	-1	-1.18	123	123
532N-1N	40293510900	64_ZONE_U_TOP	1472517.02	741693.81	-7,219	7,853.65	U Sandstone	122	121.54	123	123
532N-1N	40293510900	64_ZONE_U_BASE	1472516.4	741693.39	-7,341	7,975.19	U Shale	38	38.08	38	38
532N-1N	40293510900	64_ZONE_W_TOP	1472516.11	741693.31	-7,379	8,013.27	W Sandstone	362	361.73	330	330
532N-1N	40293510900	64_ZONE_W_BASE	1472511.38	741695.39	-7,741	8,375.00	Salt Creek Shale	--	--	65	65
533N-1N	40293511200	64_ZONE_W_TOP	1472442.97	741140.87	-7,410	8,040.02	W Sandstone	319	318.89	325	325
533N-1N	40293511200	64_ZONE_W_BASE	1472442.66	741142.23	-7,729	8,358.91	Salt Creek Shale	--	--	67	67
55-26N	40293505700	CARNEROS_TOP	1466754.8	749123.35	-6,125	6,783.03	Carneros Sandstone	509	509.45	495	496
55-26N	40293505700	CARNEROS_BASE	1466754.8	749123.35	-6,634	7,292.48	Upper Santos Shale	19	18.26	61	61
55-26N	40293505700	AGUA_TOP	1466754.8	749123.35	-6,653	7,310.74	Agua Sandstone	35	35.57	70	70
55-26N	40293505700	AGUA_BASE	1466754.8	749123.35	-6,688	7,346.31	Lower Santos Shale	273	272.25	278	278
55-26N	40293505700	64_ZONE_U_TOP	1466754.8	749123.35	-6,961	7,618.56	U Sandstone	97	97.83	99	99
55-26N	40293505700	64_ZONE_U_BASE	1466754.8	749123.35	-7,058	7,716.39	U Shale	69	68.76	64	64
55-26N	40293505700	64_ZONE_W_TOP	1466754.8	749123.35	-7,127	7,785.15	W Sandstone	376	376.2	348	348
55-26N	40293505700	64_ZONE_W_BASE	1466754.8	749123.35	-7,503	8,161.35	Salt Creek Shale	69	68.95	70	70
55-26N	40293505700	GIBSON_TOP	1466754.8	749123.35	-7,572	8,230.30	Gibson Sandstone	--	--	50	50
6-1N	40293510400	CARNEROS_TOP	1472570.13	742420.82	-6,464	7,090.96	Carneros Sandstone	485	485.37	466	466
6-1N	40293510400	CARNEROS_BASE	1472570.13	742420.82	-6,949	7,576.33	Upper Santos Shale	115	114.19	93	93
6-1N	40293510400	AGUA_TOP	1472570.13	742420.82	-7,064	7,690.52	Agua Sandstone	66	66.67	70	70
6-1N	40293510400	AGUA_BASE	1472570.13	742420.82	-7,130	7,757.19	Lower Santos Shale	160	159.78	217	217
6-1N	40293510400	64_ZONE_U_TOP	1472570.13	742420.82	-7,290	7,916.97	U Sandstone	117	116.62	106	106
6-1N	40293510400	64_ZONE_U_BASE	1472570.13	742420.82	-7,407	8,033.59	U Shale	54	54.6	46	46
6-1N	40293510400	64_ZONE_W_TOP	1472570.13	742420.82	-7,461	8,088.19	W Sandstone	--	--	309	309
6-27N	40293506100	CARNEROS_TOP	1462244.67	753072.66	-6,248	6,931.17	Carneros Sandstone	598	598.05	605	605
6-27N	40293506100	CARNEROS_BASE	1462242.98	753061.49	-6,846	7,529.22	Upper Santos Shale	39	38.75	67	67
6-27N	40293506100	AGUA_TOP	1462242.74	753061.16	-6,885	7,567.97	Agua Sandstone	151	151.29	156	155
6-27N	40293506100	AGUA_BASE	1462240.31	753058.73	-7,036	7,719.26	Lower Santos Shale	310	309.37	274	274
6-27N	40293506100	64_ZONE_U_TOP	1462236.93	753054.25	-7,346	8,028.63	U Sandstone	38	38.78	62	62
6-27N	40293506100	64_ZONE_U_BASE	1462236.91	753054.04	-7,384	8,067.41	U Shale	91	90.71	70	70
6-27N	40293506100	64_ZONE_W_TOP	1462236.86	753053.57	-7,475	8,158.12	W Sandstone	--	--	--	--
6-34N	40293507300	64_ZONE_U_TOP	1465069.89	747609.15	-7,397	8,095.06	U Sandstone	86	86	142	142
6-34N	40293507300	64_ZONE_U_BASE	1465069.89	747609.15	-7,483	8,181.06	U Shale	78	77.62	96	96
6-34N	40293507300	64_ZONE_W_TOP	1465069.89	747609.15	-7,561	8,258.68	W Sandstone	--	--	--	--
61-26N	40293505800	CARNEROS_TOP	1468706.52	748301.8	-6,468	7,100.73	Carneros Sandstone	582	582.54	584	584
61-26N	40293505800	CARNEROS_BASE	1468710.25	748278.87	-7,050	7,683.27	Upper Santos Shale	31	31.5	43	43
61-26N	40293505800	AGUA_TOP	1468710.41	748277.67	-7,081	7,714.77	Agua Sandstone	62	61.45	64	64
61-26N	40293505800	AGUA_BASE	1468710.61	748275.53	-7,143	7,776.22	Lower Santos Shale	270	271.12	271	271
61-26N	40293505800	64_ZONE_U_TOP	1468710.48	748266.68	-7,413	8,047.34	U Sandstone	85	84.41	91	90
61-26N	40293505800	64_ZONE_U_BASE	1468710.61	748263.86	-7,498	8,131.75	U Shale	66	66.26	61	62
61-26N	40293505800	64_ZONE_W_TOP	1468710.72	748261.64	-7,564	8,198.01	W Sandstone	--	--	--	--
61-26N_ST1	40293505801	CARNEROS_TOP	1468454.11	748351.06	-6,373	7,030.52	Carneros Sandstone	571	581.64	573	584
61-26N_ST1	40293505801	CARNEROS_BASE	1468343.89	748343.85	-6,944	7,612.16	Upper Santos Shale	50	50.62	34	34
61-26N_ST1	40293505801	AGUA_TOP	1468333.82	748345.05	-6,994	7,662.78	Agua Sandstone	40	40.83	53	54
61-26N_ST1	40293505801	AGUA_BASE	1468325.72	748346.02	-7,034	7,703.61	Lower Santos Shale	273	278.48	260	265
61-26N_ST1	40293505801	64_ZONE_U_TOP	1468272.74	748347.37	-7,307	7,982.09	U Sandstone	102	104.34	93	94
61-26N_ST1	40293505801	64_ZONE_U_BASE	1468253.36	748346.5	-7,409	8,086.43	U Shale	21	21.19	40	40
61-26N_ST1	40293505801	64_ZONE_W_TOP	1468249.39	748346.22	-7,430	8,107.62	W Sandstone	--	--	--	--
61-27N	40293506600	CARNEROS_TOP	1463764.74	748799.42	-6,099	6,805.00	Carneros Sandstone	916	916.1	643	644
61-27N	40293506600	CARNEROS_BASE	1463757.82	748810.97	-7,015	7,721.10	Upper Santos Shale	47	46.99	73	73
61-27N	40293506600	AGUA_TOP	1463757.74	748811.56	-7,062	7,768.09	Agua Sandstone	61	61.21	153	153
61-27N	40293506600	AGUA_BASE	1463757.69	748812.36	-7,123	7,829.30	Lower Santos Shale	372	371.8	271	272
61-27N	40293506600	64_ZONE_U_TOP	1463759.52	748817.8	-7,495	8,201.10	U Sandstone	60	60.58	138	138
61-27N	40293506600	64_ZONE_U_BASE	1463759.9	748818.85	-7,555	8,261.68	U Shale	--	--	115	115
62-27N	40293506700	CARNEROS_TOP	1464152.68	748710.54	-5,985	6,689.85	Carneros Sandstone	882	881.8	630	631
62-27N	40293506700	CARNEROS_BASE	1464155.48	748724.98	-6,867	7,571.65	Upper Santos Shale	30	30.11	70	70
62-27N	40293506700	AGUA_TOP	1464155.78	748725.33	-6,897	7,601.76	Agua Sandstone	49	49.49	148	147
62-27N	40293506700	AGUA_BASE	1464156.29	748725.89	-6,946	7,651.25	Lower Santos Shale	348	347.72	273	273
62-27N	40293506700	64_ZONE_U_TOP	1464161.85	748731.06	-7,294	7,998.97	U Sandstone	57	56.61	107	108
62-27N	40293506700	64_ZONE_U_BASE	1464162.82	748732.07	-7,351	8,055.58	U Shale	82	82.63	95	94
62-27N	40293506700	64_ZONE_W_TOP	1464164.23	748733.55	-7,433	8,138.21	W Sandstone	421	420.46	608	608
62-27N	40293506700	64_ZONE_W_BASE	1464171.44	748741.08	-7,854	8,558.67	Salt Creek Shale	--	--	--	--
63-35N	40293509000	CARNEROS_TOP	1469970.17	743163.27	-6,170	6,827.04	Carneros Sandstone	503	504.35	516	517
63-35N	40293509000	CARNEROS_BASE	1469963.47	743189.24	-6,673	7,331.39	Upper Santos Shale	16	15.88	24	24
63-35N	40293509000	AGUA_TOP	1469963.1	743190	-6,689	7,347.27	Agua Sandstone	50	50.25	63	63
63-35N	40293509000	AGUA_BASE	1469961.91	743192.39	-6,739	7,397.52	Lower Santos Shale	398	397.53	365	365
63-35N	40293509000	64_ZONE_U_TOP	1469957.09	743208.23	-7,137	7,795.05	U Sandstone	162	162.05	143	144
63-35N	40293509000	64_ZONE_U_BASE	1469956.64	743212.21	-7,299	7,957.10	U Shale	67	67.29	63	62
63-35N	40293509000	64_ZONE_W_TOP	1469956.48	743213.5	-7,366	8,024.39	W Sandstone	--	--	338	339
64-35N	40293509100	CARNEROS_TOP	1470592.51	743109.2	-6,160	6,789.76	Carneros Sandstone	460	460.22	486	486
64-35N	40293509100	CARNEROS_BASE	1470592.3	743109.65	-6,620	7,249.98	Upper Santos Shale	14	14.37	27	27

Well Name	UWI	Surface	X	Y	Z	MD	Interval	Delta Z	Delta MD	TVT Model	TST Model
64-35N	40293509100	AGUA_TOP	1470592.31	743109.69	-6,634	7,264.35	Agua Sandstone	51	51.08	55	55
64-35N	40293509100	AGUA_BASE	1470592.35	743109.88	-6,685	7,315.43	Lower Santos Shale	315	314.59	306	306
64-35N	40293509100	64_ZONE_U_TOP	1470592.64	743111.68	-7,000	7,630.02	U Sandstone	127	126.73	128	128
64-35N	40293509100	64_ZONE_U_BASE	1470593.45	743113.53	-7,127	7,756.75	U Shale	41	41.27	45	45
64-35N	40293509100	64_ZONE_W_TOP	1470593.82	743114.25	-7,168	7,798.02	W Sandstone	352	352.52	--	--
64-35N	40293509100	64_ZONE_W_BASE	1470597.15	743120.49	-7,520	8,150.54	Salt Creek Shale	--	--	--	--
7-1N	40293510500	CARNEROS_TOP	1471825.34	742442.04	-6,319	6,941.70	Carneros Sandstone	422	421.95	438	438
7-1N	40293510500	CARNEROS_BASE	1471822.46	742439.1	-6,741	7,363.65	Upper Santos Shale	38	37.45	47	47
7-1N	40293510500	AGUA_TOP	1471822.35	742439.07	-6,779	7,401.10	Agua Sandstone	47	47.36	52	53
7-1N	40293510500	AGUA_BASE	1471822.22	742439.03	-6,826	7,448.46	Lower Santos Shale	303	302.68	285	285
7-1N	40293510500	64_ZONE_U_TOP	1471821.21	742438.47	-7,129	7,751.14	U Sandstone	134	133.92	127	127
7-1N	40293510500	64_ZONE_U_BASE	1471820.66	742438.03	-7,263	7,885.06	U Shale	46	46.43	46	46
7-1N	40293510500	64_ZONE_W_TOP	1471820.47	742437.88	-7,309	7,931.49	W Sandstone	--	--	--	--
7-27N	40292960100	AGUA_TOP	1461397.48	753229.66	-6,859	7,551.33	Agua Sandstone	243	242.44	230	229
7-27N	40292960100	AGUA_BASE	1461400.69	753232.02	-7,102	7,793.77	Lower Santos Shale	208	208.53	222	222
7-27N	40292960100	64_ZONE_U_TOP	1461402.29	753233.73	-7,310	8,002.30	U Sandstone	53	52.99	64	65
7-27N	40292960100	64_ZONE_U_BASE	1461402.41	753233.89	-7,363	8,055.29	U Shale	57	56.2	61	61
7-27N	40292960100	64_ZONE_W_TOP	1461402.52	753234.05	-7,420	8,111.49	W Sandstone	365	365.34	321	320
7-27N	40292960100	64_ZONE_W_BASE	1461403.26	753235.09	-7,785	8,476.83	Salt Creek Shale	48	48.38	70	71
7-27N	40292960100	GIBSON_TOP	1461403.36	753235.22	-7,833	8,525.21	Gibson Sandstone	--	--	64	64
7-34N	40293507400	CARNEROS_TOP	1465225.1	747241.71	-6,161	6,870.41	Carneros Sandstone	892	891.84	755	755
7-34N	40293507400	CARNEROS_BASE	1465225.1	747241.71	-7,053	7,762.25	Upper Santos Shale	63	63.08	113	112
7-34N	40293507400	AGUA_TOP	1465225.1	747241.71	-7,116	7,825.33	Agua Sandstone	46	45.63	107	108
7-34N	40293507400	AGUA_BASE	1465225.1	747241.71	-7,162	7,870.96	Lower Santos Shale	415	415.3	385	385
7-34N	40293507400	64_ZONE_U_TOP	1465225.1	747241.71	-7,577	8,286.26	U Sandstone	92	91.87	119	119
7-34N	40293507400	64_ZONE_U_BASE	1465225.1	747241.71	-7,669	8,378.13	U Shale	90	90.11	89	89
7-34N	40293507400	64_ZONE_W_TOP	1465225.1	747241.71	-7,759	8,468.24	W Sandstone	--	--	397	397
7-35N	40295794500	CARNEROS_TOP	1466868.26	747827.56	-5,893	6,561.37	Carneros Sandstone	441	441.25	480	481
7-35N	40295794500	CARNEROS_BASE	1466855.34	747812.85	-6,334	7,002.62	Upper Santos Shale	54	54.55	54	54
7-35N	40295794500	AGUA_TOP	1466853.82	747810.91	-6,388	7,057.17	Agua Sandstone	112	111.5	189	189
7-35N	40295794500	AGUA_BASE	1466850.64	747807.02	-6,500	7,168.67	Lower Santos Shale	--	--	281	281
7-36N	40293509900	CARNEROS_TOP	1472586.29	743024.05	-6,579	7,187.32	Carneros Sandstone	505	504.68	515	516
7-36N	40293509900	CARNEROS_BASE	1472583.46	743012.76	-7,084	7,692.00	Upper Santos Shale	90	90.3	76	76
7-36N	40293509900	AGUA_TOP	1472582.93	743010.74	-7,174	7,782.30	Agua Sandstone	82	81.44	98	98
7-36N	40293509900	AGUA_BASE	1472582.35	743009.13	-7,256	7,863.74	Lower Santos Shale	--	--	202	202
8-27N	40293506200	CARNEROS_TOP	1460909.42	753211.85	-6,143	6,835.08	Carneros Sandstone	629	628.33	617	618
8-27N	40293506200	CARNEROS_BASE	1460918.95	753215.5	-6,772	7,463.41	Upper Santos Shale	42	42.35	42	42
8-27N	40293506200	AGUA_TOP	1460918.99	753215.29	-6,814	7,505.76	Agua Sandstone	314	314.08	268	267
8-27N	40293506200	AGUA_BASE	1460919.6	753214.56	-7,128	7,819.84	Lower Santos Shale	225	224.74	246	246
8-27N	40293506200	64_ZONE_U_TOP	1460922.19	753211.98	-7,353	8,044.58	U Sandstone	29	29.3	42	42
8-27N	40293506200	64_ZONE_U_BASE	1460922.63	753211.56	-7,382	8,073.88	U Shale	46	46.47	56	56
8-27N	40293506200	64_ZONE_W_TOP	1460923.33	753210.89	-7,428	8,120.35	W Sandstone	316	315.71	328	328
8-27N	40293506200	64_ZONE_W_BASE	1460928.1	753206.31	-7,744	8,436.06	Salt Creek Shale	--	--	--	--
8-36N	40293510000	64_ZONE_U_TOP	1472564.83	743655.06	-7,517	8,116.55	U Sandstone	115	114.57	109	110
8-36N	40293510000	64_ZONE_U_BASE	1472564.81	743653.96	-7,632	8,231.12	U Shale	55	54.6	56	56
8-36N	40293510000	64_ZONE_W_TOP	1472564.81	743653.43	-7,687	8,285.72	W Sandstone	--	--	--	--
8-36N_ST1	40293510001	64_ZONE_U_TOP	1472564.46	743633.64	-7,510	8,110.57	U Sandstone	116	116.78	106	107
8-36N_ST1	40293510001	64_ZONE_U_BASE	1472564.21	743619.41	-7,626	8,227.35	U Shale	57	57.29	54	54
8-36N_ST1	40293510001	64_ZONE_W_TOP	1472564.09	743612.43	-7,683	8,284.64	W Sandstone	333	335.99	333	336
8-36N_ST1	40293510001	64_ZONE_W_BASE	1472563.26	743565.77	-8,016	8,620.63	Salt Creek Shale	--	--	--	--
888N-12	40304263000	CARNEROS_TOP	1474841.42	732530.5	-7,380	8,109.60	Carneros Sandstone	567	574.89	549	556
888N-12	40304263000	CARNEROS_BASE	1474750.65	732538.74	-7,947	8,684.49	Upper Santos Shale	83	83.95	59	60
888N-12	40304263000	AGUA_TOP	1474738.99	732540.72	-8,030	8,768.44	Agua Sandstone	25	25.38	65	65
888N-12	40304263000	AGUA_BASE	1474735.27	732541.3	-8,055	8,793.82	Lower Santos Shale	192	193.92	205	208
888N-12	40304263000	64_ZONE_U_TOP	1474706.11	732545.95	-8,247	8,987.74	U Sandstone	128	129.43	115	116
888N-12	40304263000	64_ZONE_U_BASE	1474687.49	732548.84	-8,375	9,117.17	U Shale	49	49.65	53	54
888N-12	40304263000	64_ZONE_W_TOP	1474680.6	732549.75	-8,424	9,166.82	W Sandstone	338	341.06	337	340
888N-12	40304263000	64_ZONE_W_BASE	1474632.94	732559.29	-8,762	9,507.88	Salt Creek Shale	80	80.64	79	81
888N-12	40304263000	GIBSON_TOP	1474622.09	732562.95	-8,842	9,588.52	Gibson Sandstone	--	--	62	62
9-1N	40293510700	CARNEROS_TOP	1471254.02	741840.25	-6,308	6,942.72	Carneros Sandstone	431	431.47	442	442
9-1N	40293510700	CARNEROS_BASE	1471263.44	741853.86	-6,739	7,374.19	Upper Santos Shale	54	53.59	61	61
9-1N	40293510700	AGUA_TOP	1471264.74	741856.1	-6,793	7,427.78	Agua Sandstone	112	112.35	104	104
9-1N	40293510700	AGUA_BASE	1471267.3	741860.9	-6,905	7,540.13	Lower Santos Shale	288	288.49	306	306
9-1N	40293510700	64_ZONE_U_TOP	1471271.56	741870.2	-7,193	7,828.62	U Sandstone	104	103.71	106	106
9-1N	40293510700	64_ZONE_U_BASE	1471272.65	741872.46	-7,297	7,932.33	U Shale	68	68.29	65	65
9-1N	40293510700	64_ZONE_W_TOP	1471273.64	741873.88	-7,365	8,000.62	W Sandstone	374	373.56	385	385
9-1N	40293510700	64_ZONE_W_BASE	1471279.07	741881.62	-7,739	8,374.18	Salt Creek Shale	--	--	--	--
9-27N	40292960200	CARNEROS_TOP	1461002.99	752455.42	-6,140	6,852.28	Carneros Sandstone	561	561.67	572	572
9-27N	40292960200	CARNEROS_BASE	1461004.66	752457.89	-6,701	7,413.95	Upper Santos Shale	58	58.04	50	50
9-27N	40292960200	AGUA_TOP	1461004.56	752458.17	-6,759	7,471.99	Agua Sandstone	171	170.34	205	205
9-27N	40292960200	AGUA_BASE	1461004.24	752458.86	-6,930	7,642.33	Lower Santos Shale	264	263.92	257	257
9-27N	40292960200	64_ZONE_U_TOP	1461003.8	752459.67	-7,194	7,906.25	U Sandstone	101	101.65	100	100
9-27N	40292960200	64_ZONE_U_BASE	1461003.66	752459.82	-7,295	8,007.90	U Shale	57	56.95	57	57
9-27N	40292960200	64_ZONE_W_TOP	1461003.65	752459.84	-7,352	8,064.85	W Sandstone	333	332.38	366	366
9-27N	40292960200	64_ZONE_W_BASE	1461003.65	752459.84	-7,685	8,397.23	Salt Creek Shale	107	106.96	99	99
9-27N	40292960200	GIBSON_TOP	1461003.65	752459.84	-7,792	8,504.19	Gibson Sandstone	--	--	65	65
9-36N	40293510100	CARNEROS_TOP	1473231.53	743083.06	-6,754	7,358.83	Carneros Sandstone	625	624.34	597	596
9-36N	40293510100	CARNEROS_BASE	1473229.06	743083.92	-7,379	7,983.17	Upper Santos Shale	22	22.37	46	47
9-36N	40293510100	AGUA_TOP	1473228.91	743083.87	-7,401	8,005.54	Agua Sandstone	64	64.24	90	90
9-36N	40293510100	AGUA_BASE	1473228.49	743083.72	-7,465	8,069.78	Lower Santos Shale	169	169.1	186	186
9-36N	40293510100	64_ZONE_U_TOP	1473227.37	743083.34	-7,634	8,238.88	U Sandstone	136	135.38	120	120
9-36N	40293510100	64_ZONE_U_BASE	1473226.48	743083.03	-7,770	8,374.26	U Shale	46	45.93	51	51
9-36N	40293510100	64_ZONE_W_TOP	1473226.17	743082.92	-7,816	8,420.19	W Sandstone	--	--	--	--
B2-21N	40291502900	CARNEROS_TOP	1457795.12	758451.55	-7,342	8,003.69	Carneros Sandstone	616	616.68	587	587
B2-21N	40291502900	CARNEROS_BASE	1457795.12	758451.55	-7,958	8,620.37	Upper Santos Shale	69	69.07	67	67
B2-21N	40291502900	AGUA_TOP	1457795.12	758451.55	-8,027	8,689.44	Agua Sandstone	--	--	116	116
BP55-12	40290116900	CARNEROS_TOP	1473911.5	734162.74	-7,268	7,923.19	Carneros Sandstone	568	568.58	544	544
BP55-12	40290116900	CARNEROS_BASE	1473911.5	734162.74	-7,836	8,491.77	Upper Santos Shale	66	65.56	65	65
BP55-12	40290116900	AGUA_TOP	1473911.5	734162.74	-7,902	8,557.33	Agua Sandstone	62	62.7	90	90
BP55-12	40290116900	AGUA_BASE	1473911.5	734162.74	-7,964	8,620.03	Lower Santos Shale	181	180.71	193	194
BP55-12	40290116900	64_ZONE_U_TOP	1473911.5	734162.74	-8,145	8,800.74	U Sandstone	130	129.42	102	102
BP55-12	40290116900	64_ZONE_U_BASE	1473911.5	734162.74	-8,275	8,930.16	U Shale	48	48.03	52	52

Well Name	UWI	Surface	X	Y	Z	MD	Interval	Delta Z	Delta MD	TVT Model	TST Model
BP55-12	40290116900	64_ZONE_W_TOP	1473911.5	734162.74	-8,323	8,978.19	W Sandstone	371	371.59	315	315
BP55-12	40290116900	64_ZONE_W_BASE	1473911.5	734162.74	-8,694	9,349.78	Salt Creek Shale	57	56.98	68	68
BP55-12	40290116900	GIBSON_TOP	1473911.5	734162.74	-8,751	9,406.76	Gibson Sandstone	--	--	76	76
GIBSON 7-36N	40292373800	CARNEROS_TOP	1472734.62	745049.81	-7,103	7,705.05	Carneros Sandstone	516	515.97	505	506
GIBSON 7-36N	40292373800	CARNEROS_BASE	1472734.62	745049.81	-7,619	8,221.02	Upper Santos Shale	91	90.84	75	75
GIBSON 7-36N	40292373800	AGUA_TOP	1472734.62	745049.81	-7,710	8,311.86	Agua Sandstone	43	42.98	69	69
GIBSON 7-36N	40292373800	AGUA_BASE	1472734.62	745049.81	-7,753	8,354.84	Lower Santos Shale	215	215.18	212	212
GIBSON 7-36N	40292373800	64_ZONE_U_TOP	1472734.62	745049.81	-7,968	8,570.02	U Sandstone	137	137.26	161	160
GIBSON 7-36N	40292373800	64_ZONE_U_BASE	1472734.62	745049.81	-8,105	8,707.28	U Shale	67	66.74	79	80
GIBSON 7-36N	40292373800	64_ZONE_W_TOP	1472734.62	745049.81	-8,172	8,774.02	W Sandstone	--	--	576	576
JDM1-22N	40293505000	CARNEROS_TOP	1460928.86	753757.75	-6,249	6,925.85	Carneros Sandstone	659	659.39	628	629
JDM1-22N	40293505000	CARNEROS_BASE	1460943.54	753763.03	-6,908	7,585.24	Upper Santos Shale	36	35.74	41	41
JDM1-22N	40293505000	AGUA_TOP	1460944.11	753763.36	-6,944	7,620.98	Agua Sandstone	171	170.98	198	199
JDM1-22N	40293505000	AGUA_BASE	1460946.16	753763.59	-7,115	7,791.96	Lower Santos Shale	248	248.29	243	242
JDM1-22N	40293505000	64_ZONE_U_TOP	1460948.01	753761.95	-7,363	8,040.25	U Sandstone	51	50.79	58	58
JDM1-22N	40293505000	64_ZONE_U_BASE	1460948.39	753761.61	-7,414	8,091.04	U Shale	70	69.73	62	62
JDM1-22N	40293505000	64_ZONE_W_TOP	1460948.9	753761.15	-7,484	8,160.77	W Sandstone	--	--	--	--
JDM2-22N	40293505100	CARNEROS_TOP	1461503.47	753770.82	-6,365	7,034.54	Carneros Sandstone	542	542.68	591	592
JDM2-22N	40293505100	CARNEROS_BASE	1461503.47	753770.82	-6,907	7,577.22	Upper Santos Shale	37	36.87	61	61
JDM2-22N	40293505100	AGUA_TOP	1461503.47	753770.82	-6,944	7,614.09	Agua Sandstone	175	175.32	167	167
JDM2-22N	40293505100	AGUA_BASE	1461503.47	753770.82	-7,119	7,789.41	Lower Santos Shale	260	259.62	239	239
JDM2-22N	40293505100	64_ZONE_U_TOP	1461503.47	753770.82	-7,379	8,049.03	U Sandstone	42	42.39	66	67
JDM2-22N	40293505100	64_ZONE_U_BASE	1461503.47	753770.82	-7,421	8,091.42	U Shale	67	66.12	58	58
JDM2-22N	40293505100	64_ZONE_W_TOP	1461503.47	753770.82	-7,488	8,157.54	W Sandstone	--	--	300	300
JDM3-22N	40293505200	64_ZONE_W_TOP	1462163.46	753766.42	-7,695	8,363.86	W Sandstone	--	--	--	--
JDM4-22N	40291973900	64_ZONE_U_TOP	1462824	753733	-7,606	8,264.84	U Sandstone	65	65.39	46	46
JDM4-22N	40291973900	64_ZONE_U_BASE	1462824	753733	-7,671	8,330.23	U Shale	38	37.92	54	54
JDM4-22N	40291973900	64_ZONE_W_TOP	1462824	753733	-7,709	8,368.15	W Sandstone	--	--	--	--
JDM5-22N	40291974000	CARNEROS_TOP	1460938.59	753844.82	-6,248	6,938.61	Carneros Sandstone	651	651.11	625	625
JDM5-22N	40291974000	CARNEROS_BASE	1460938.59	753844.82	-6,899	7,589.72	Upper Santos Shale	40	40.28	43	43
JDM5-22N	40291974000	AGUA_TOP	1460938.59	753844.82	-6,939	7,630.00	Agua Sandstone	167	167.5	188	188
JDM5-22N	40291974000	AGUA_BASE	1460938.59	753844.82	-7,106	7,797.50	Lower Santos Shale	240	239.05	241	241
JDM5-22N	40291974000	64_ZONE_U_TOP	1460938.59	753844.82	-7,346	8,036.55	U Sandstone	60	60.53	61	61
JDM5-22N	40291974000	64_ZONE_U_BASE	1460938.59	753844.82	-7,406	8,097.08	U Shale	55	54.81	62	61
JDM5-22N	40291974000	64_ZONE_W_TOP	1460938.59	753844.82	-7,461	8,151.89	W Sandstone	364	364.32	325	325
JDM5-22N	40291974000	64_ZONE_W_BASE	1460938.59	753844.82	-7,825	8,516.21	Salt Creek Shale	69	68.33	72	72
JDM5-22N	40291974000	GIBSON_TOP	1460938.59	753844.82	-7,894	8,584.54	Gibson Sandstone	--	--	50	50
JDM6-22N	40291974100	CARNEROS_TOP	1461189.47	753898.54	-6,310	7,000.39	Carneros Sandstone	559	559.07	603	604
JDM6-22N	40291974100	CARNEROS_BASE	1461189.47	753898.54	-6,869	7,559.46	Upper Santos Shale	55	54.47	57	56
JDM6-22N	40291974100	AGUA_TOP	1461189.47	753898.54	-6,924	7,613.93	Agua Sandstone	207	206.97	166	167
JDM6-22N	40291974100	AGUA_BASE	1461189.47	753898.54	-7,131	7,820.90	Lower Santos Shale	--	--	--	--
JDM7-22N	40291974200	CARNEROS_TOP	1461849.54	753875.73	-6,443	7,125.61	Carneros Sandstone	524	524.29	552	552
JDM7-22N	40291974200	CARNEROS_BASE	1461849.54	753875.73	-6,967	7,649.90	Upper Santos Shale	49	49.02	52	52
JDM7-22N	40291974200	AGUA_TOP	1461849.54	753875.73	-7,016	7,698.92	Agua Sandstone	--	--	175	175
MCP3-36N	40290153700	CARNEROS_TOP	1471963	745073.75	-6,795	7,401.88	Carneros Sandstone	613	612.37	579	578
MCP3-36N	40290153700	CARNEROS_BASE	1471963	745073.75	-7,408	8,014.25	Upper Santos Shale	28	28.4	41	41
MCP3-36N	40290153700	AGUA_TOP	1471963	745073.75	-7,436	8,042.65	Agua Sandstone	42	41.49	66	67
MCP3-36N	40290153700	AGUA_BASE	1471963	745073.75	-7,478	8,084.14	Lower Santos Shale	178	178.74	188	187
MCP3-36N	40290153700	64_ZONE_U_TOP	1471963	745073.75	-7,656	8,262.88	U Sandstone	--	--	105	105
MCP4-36N	40290153800	CARNEROS_TOP	1471306.75	745739.81	-6,676	7,297.01	Carneros Sandstone	676	675.3	599	599
MCP4-36N	40290153800	CARNEROS_BASE	1471306.75	745739.81	-7,352	7,972.31	Upper Santos Shale	39	39.04	52	52
MCP4-36N	40290153800	AGUA_TOP	1471306.75	745739.81	-7,391	8,011.35	Agua Sandstone	37	37.13	77	77
MCP4-36N	40290153800	AGUA_BASE	1471306.75	745739.81	-7,428	8,048.48	Lower Santos Shale	203	202.8	203	203
MCP4-36N	40290153800	64_ZONE_U_TOP	1471306.75	745739.81	-7,631	8,251.28	U Sandstone	99	99.8	89	89
MCP4-36N	40290153800	64_ZONE_U_BASE	1471306.75	745739.81	-7,730	8,351.08	U Shale	--	--	56	56
NORRIS_BP-1	40294514100	CARNEROS_TOP	1460018.43	758977.32	-9,453	10,164.78	Carneros Sandstone	405	405.94	1249	1252
NORRIS_BP-1	40294514100	CARNEROS_BASE	1460001.93	758951.91	-9,858	10,570.72	Upper Santos Shale	58	58.11	58	58
NORRIS_BP-1	40294514100	AGUA_TOP	1459999.44	758948.09	-9,916	10,628.83	Agua Sandstone	144	144.51	208	209
NORRIS_BP-1	40294514100	AGUA_BASE	1459993.27	758938.58	-10,060	10,773.34	Lower Santos Shale	145	145.68	--	--
NORRIS_BP-1	40294514100	64_ZONE_U_TOP	1459987.04	758928.99	-10,205	10,919.02	U Sandstone	93	93.54	--	--
NORRIS_BP-1	40294514100	64_ZONE_U_BASE	1459983.05	758922.84	-10,298	11,012.56	U Shale	51	50.65	--	--
NORRIS_BP-1	40294514100	64_ZONE_W_TOP	1459980.88	758919.5	-10,349	11,063.21	W Sandstone	--	--	--	--

Notes:
1. Coordinates provided in NAD 1927 State Plane California V
--: data not available
Delta MD: Difference in MD from top well pick to base well pick (well based)
Delta Z: Difference in TVDss (Z) from top well pick to base well pick (well based)
MD: measured depth
NAD 1927: North American Datum of 1927
TST Model: True stratigraphic thickness from the model is calculated by projecting a right angle of a point on surface 1 to the underlying surface 2.
The surfaces are generated from well picks and seismic data prior to thickness calculations.
TVDss: true vertical depth subsea
TVT Model: True vertical thickness calculated from the model using the Z location of surface 1 minus the Z location of surface 2.
The surfaces are generated from well picks and seismic data prior to thickness calculations.
UWI: Unique Well Identifier
X: Easting
Y: Northing
Z: True vertical depth subsea level (feet)

Appendix 2B

Maps and Cross Sections of the AoR Supporting Data

Contents

64 Zone Penetrations within the AoR

Well Tops for Geologic Model and Map

North Belridge Structural Model and Property Modeling

Seismic Data Processing

Key Well Logs

Key Well Cores

Appendix 2B
Maps and Cross Sections of the AoR Supporting Data

64 Zone Penetrations within the AoR

Well Name	UWI	API	API Well Status	Well symbol	Surface X	Surface Y	Latitude	Longitude	Well Datum Value	TD (TVDss)	TD (MD)	Bottom Hole X	Bottom Hole Y	Spud date	Operator
1-15	40294188400	0402941884	ABND	Dry, plugged and abandoned	1461720.16	761127.38	35°34'41.0587"N	119°48'36.3018"W	617	10875.2	11520	1461677.19	760599.12		ARCO
1-16	40298759700	0402987597	ABND	Dry, plugged and abandoned	1458668.12	761747.99	35°34'46.6504"N	119°49'13.3772"W	628	11420.1	12184	1458397.43	760295.2		AMOCO
1-21N	40293503500	0402935035	ABND	Gas	1460337.32	753735.5	35°33'27.7197"N	119°48'51.4236"W	690	7950	8640	1460337.32	753735.5	Oct 08 1937	AERA
1-28	40306710100	0403067101	OPNL	Oil	1457466.25	753273.01	35°33'22.6326"N	119°49'26.0623"W	717	8593.1	9675	1458486.89	753240.38	Nov 18 2019	VALLEY RESOURCES LLC
1-2N	40293511800	0402935118	ABND	Oil	1470585.8	742439.6	35°31'37.8337"N	119°46'44.9950"W	639	7620.5	8262	1470609.61	742573.97	Oct 20 1940	AERA
1-8	40303057600	0403030576	ABND	Abandoned oil and gas	1454366.85	765599.4	35°35'23.9600"N	119°50'6.2880"W	631.5	11868.5	12500	1454366.85	765599.4	Aug 29 2006	NATL RES INC
10-36N	40293510200	0402935102	ABND	Oil	1471340.32	743171.63	35°31'45.2043"N	119°46'36.0250"W	634	7669.8	8338	1471660.55	743260.02	Nov 14 1940	AERA
10X-1N	40295989000	0402959890	ABND	Oil	1472133	741545.7	35°31'29.2648"N	119°46'26.0896"W	637	9023.4	9670	1471946.01	741711.23	Oct 31 1979	AERA
11X-26N	40297845200	0402978452	ABND	Oil	1467945.79	753268.15	35°33'24.4469"N	119°47'19.2588"W	623	10990.6	11783	1467038.91	751917.81	Jul 25 1986	AERA
12-1N	40293511000	0402935110	ABND	Oil	1473222.84	741768.09	35°31'31.6539"N	119°46'12.9549"W	628	7880.7	8510	1473147.47	741741.06	Sep 11 1936	AERA
13-27N	40293506300	0402935063	ABND	Oil	1463524.32	752465.44	35°33'15.7282"N	119°48'12.5845"W	665	7797.7	8465	1463537.36	752325.56	Jul 20 1938	AERA
13R-28N	40292962000	0402929620	OPNL	Oil	1458310.35	752564.18	35°33'15.7749"N	119°49'15.6934"W	704	8161	8865	1458310.35	752564.18	Jul 29 1942	AERA
14-35N	40293507700	0402935077	ABND	Injection gas	1469354.39	747094.11	35°32'23.6435"N	119°47'0.8889"W	643	7753.1	8400	1469274.46	746920.05	Nov 16 1936	AERA
15-28N	40292961900	0402929619	OPNL	Oil	1459628.2	752619.73	35°33'16.5600"N	119°48'59.7600"W	688	7927.3	8622	1459790.92	752763.26	Sep 04 1939	AERA
15-35N	40293507800	0402935078	OPNL	Oil	1470014.33	747085.22	35°32'23.6713"N	119°46'52.9033"W	624	7774	8400	1470076.96	746973.8	Sep 22 1936	AERA
15-35N_ST1	40293507801	0402935078	OPNL	Oil	1470014.33	747085.22	35°32'23.6713"N	119°46'52.9033"W	624	7704	8330	1470076.47	746976.25	Sep 22 1936	AERA
15Y-28	40292962300	0402929623	ABND	Temporarily abandoned	1459802.9	752572.86	35°33'16.1278"N	119°48'57.6360"W	689	8692	9381	1459802.9	752572.86		BELRIDGE OIL
16-35	40292964100	0402929641	ABND	Oil	1470674.21	747075.74	35°32'23.6932"N	119°46'44.9183"W	626	8276.6	8905	1470595.62	746931.98	Mar 21 1934	AERA
17-2N	40297793000	0402977930	ABND	Oil	1470594	741130	35°31'24.8852"N	119°46'44.6154"W	656	8170.9	8869	1471040.37	741412.79	Mar 19 1986	AERA
17-35N	40293507900	0402935079	ABND	Injection water	1470662.64	746419.33	35°32'17.2003"N	119°46'44.9177"W	629	7762	8391	1470662.64	746419.33	Feb 15 1936	AERA
18-35N_ST1	40293508001	0402935080	OPNL	Injection water	1470002.63	746476.33	35°32'17.6483"N	119°46'52.9143"W	631	7615.4	8278	1470016.05	746109.37	Dec 09 1935	AERA
18-36N	40293509200	0402935092	ABND	Oil	1471944.3	744415.3	35°31'57.6077"N	119°46'28.9849"W	606	7914.5	8523	1471903.5	744261.44	Jan 05 1934	AERA
19-27N	40293506400	0402935064	ABND	Oil	1464346.75	751975.99	35°33'11.0342"N	119°48'2.5273"W	660	7816.8	8480	1464345.99	751809.58	Aug 11 1938	AERA
19-36N	40293509300	0402935093	ABND	Oil	1471301.46	744271.95	35°31'56.0779"N	119°46'36.7304"W	633	8269.8	8904	1471246.46	744170.68	May 26 1935	AERA
19-36N-RD	40293509301	0402935093	ABND	Dry, plugged and abandoned	1471301.46	744271.95	35°31'56.0779"N	119°46'36.7304"W	620	8283	8903	1471301.46	744271.95	May 26 1935	AERA
1A-22N	40293504800	0402935048	ABND	Oil	1460840.76	754386.28	35°33'34.2446"N	119°48'45.4739"W	677	7861	8538	1460840.76	754386.28	Nov 03 1937	AERA
1A-36N	40290153600	0402901536	ABND	Injection water	1471318.62	746308.69	35°32'16.2210"N	119°46'36.9584"W	616	8002	8618	1471318.62	746308.69	Sep 27 1934	AERA
1B-21N	40291502800	0402915028	OPNL	Abandoned oil minor gas	1457075.4	757861.24	35°34'7.9319"N	119°49'31.8000"W	664	9024	9688	1457075.4	757861.24	Jun 07 1943	CATHER-HERLEY
2-21N	40293503600	0402935036	ABND	Oil	1460368.29	754443.46	35°33'34.7257"N	119°48'51.2035"W	681	8030	8711	1460368.29	754443.46	Nov 13 1937	AERA
21-1N	40293511100	0402935111	OPNL	Injection water	1473209.61	741110.95	35°31'25.1535"N	119°46'12.9749"W	622.7	7848.8	8473	1473122.91	741113.92	Jan 29 1937	AERA
23-22N	40292959000	0402929590	ABND	Gas	1461522.76	755045.57	35°33'40.8854"N	119°48'37.3651"W	677.2	7832	8510	1461572.61	754984.27	Dec 03 1938	AERA
23X-35N	40295960000	0402959600	OPNL	Oil	1466808.8	746475.5	35°32'17.0787"N	119°47'31.5509"W	669	8329.2	9008	1466967.34	746739.92	Jul 12 1979	AERA
24-21N	40292958800	0402929588	ABND	Oil	1459722.65	755728.75	35°33'47.3196"N	119°48'59.2971"W	689	8030	8720	1459784.21	755652.55	Jul 27 1939	AERA
24-27N	40292960400	0402929604	OPNL	Oil	1460873.38	751818.23	35°33'8.8569"N	119°48'44.5188"W	720	7777.5	8500	1460989	751864.62	Aug 21 1941	AERA
25-26N_ST1	40293505301	0402935053	OPNL	Oil	1465869.87	750959.33	35°33'1.2506"N	119°47'43.8785"W	658	7620.1	8300	1465732.94	750570.02	Nov 02 1938	AERA
26-1N	40293511400	0402935114	ABND	Oil	1471874.12	740472.97	35°31'18.6120"N	119°46'28.9917"W	640	7858.6	8500	1471828.44	740561.56	Nov 13 1939	AERA
26-35N	40293508200	0402935082	ABND	Oil	1466987.59	745856.79	35°32'10.9922"N	119°47'29.2546"W	683	7988	8671	1466987.59	745856.79	Feb 23 1938	AERA
26A-35N	40293508300	0402935083	ABND	Oil	1466473.15	746011.95	35°32'12.4358"N	119°47'35.5114"W	670	8076.1	8750	1466468.42	746193.52	Nov 19 1938	AERA
28-1N	40293511600	0402935116	ABND	Oil	1473399.37	740418.87	35°31'18.3430"N	119°46'10.5324"W	633	7856.6	8490	1473345.77	740388.87	Feb 27 1965	AERA
28-1N_ST1	40293511601	0402935116	ABND	Oil	1473399.37	740418.87	35°31'18.3430"N	119°46'10.5324"W	633	7847.1	8490	1473392.11	740541.86	Feb 27 1965	AERA
2A-22N	40293504900	0402935049	OPNL	Oil	1461489.44	754366.88	35°33'34.1684"N	119°48'37.6204"W	672	7703	8375	1461489.44	754366.88	Oct 25 1937	AERA
2R-27N	40292961400	0402929614	ABND	Oil	1464795.75	753163.06	35°33'22.8518"N	119°47'57.3517"W	642	7910.5	8554	1464753.26	753054.25	Apr 26 1947	AERA

Well Name	UWI	API	API Well Status	Well symbol	Surface X	Surface Y	Latitude	Longitude	Well Datum Value	TD (TVDss)	TD (MD)	Bottom Hole X	Bottom Hole Y	Spud date	Operator
3-21N	40293503700	0402935037	ABND	Oil	1460367.63	755067.16	35°33'40.8929"N	119°48'51.3477"W	688	7790	8478	1460367.63	755067.16	Mar 15 1938	AERA
3-35N_ST1	40293507501	0402935075	OPNL	Oil	1469368.21	747760.98	35°32'30.2402"N	119°47'0.8649"W	636	7594.4	8290	1468964.75	747328.58	Oct 17 1955	AERA
3-35N_ST2	40293507502	0402935075	OPNL	Oil	1469368.21	747760.98	35°32'30.2402"N	119°47'0.8649"W	636	7932.2	8587	1469320.1	747685.6	Oct 17 1955	AERA
31-27N	40293506500	0402935065	ABND	Oil	1465033.38	751395.46	35°33'5.4153"N	119°47'54.0937"W	654	7792.5	8450	1465027.55	751213.36	Aug 12 1938	AERA
31R-28N	40292962100	0402929621	ABND	Oil	1459621.18	751247.98	35°33'2.9946"N	119°49'0.0000"W	715	8411.3	9133	1459815.01	751350.86	Feb 04 1942	AERA
32-21N	40293504600	0402935046	ABND	Oil	1459056.31	754616.76	35°33'36.2049"N	119°49'7.1169"W	709.8	7743.1	8468	1459430.39	754462.7	Apr 23 1963	AERA
32-35N	40293508400	0402935084	ABND	Oil	1470649.77	745749.56	35°32'10.5751"N	119°46'44.9299"W	629	7858.7	8487.7	1470649.77	745749.56	Mar 22 1935	AERA
33-21N	40293504100	0402935041	ABND	Oil	1459047.64	755070.69	35°33'40.6919"N	119°49'7.3213"W	696	7828	8525	1459121.14	755015.01	Apr 29 1940	AERA
33-35N	40293508500	0402935085	ABND	Oil	1470636.39	745137.81	35°32'4.5235"N	119°46'44.9608"W	627.7	7690.7	8320	1470561.59	745031.51	Apr 05 1935	AERA
34-21N	40293504200	0402935042	ABND	Oil	1458905.57	755858.92	35°33'48.4607"N	119°49'9.2130"W	674	7872.1	8547	1458990.52	755836.98	Nov 12 1943	AERA
34-21N_ST1	40293504201	0402935042	ABND	Oil	1458905.57	755858.92	35°33'48.4607"N	119°49'9.2130"W	674	7982	8699	1459041.91	755523.16	Nov 12 1943	AERA
35-21N	40293504300	0402935043	ABND	Oil	1458317.68	756473.09	35°33'54.4284"N	119°49'16.4618"W	684	7886	8570	1458317.68	756473.09	Apr 19 1942	AERA
35X-27N	40295827100	0402958271	OPNL	Gas	1464294.42	750789.14	35°32'59.2890"N	119°48'2.9031"W	675	7154.2	7835	1464141.67	750585.31	Oct 18 1978	AERA
37-1N	40293511700	0402935117	ABND	Oil	1473186.45	739789.46	35°31'12.0820"N	119°46'12.9735"W	638	7853.4	8494	1473084.33	739803.08	Sep 01 1943	AERA
39-26N	40293505400	0402935054	OPNL	Oil	1466582.9	750295.76	35°32'54.8149"N	119°47'35.1082"W	654	7616.4	8275	1466605.11	750111.78	Dec 19 1938	AERA
39-26N_ST1	40293505401	0402935054	OPNL	Oil	1466582.9	750295.76	35°32'54.8149"N	119°47'35.1082"W	654	7570	8243	1466466.09	749948.48	Dec 19 1938	AERA
3A-22N	40291503100	0402915031	ABND	Oil	1462453.68	754409.08	35°33'34.7573"N	119°48'25.9618"W	667	4400.9	5069	1462421.62	754359.39	Dec 21 1938	AERA
4-1N	40297825900	0402978259	ABND	Oil	1473990	742598	35°31'39.9940"N	119°46'3.8523"W	627	8061.5	8754	1473355.69	742017.89	May 06 1986	AERA
4-27N	40293505900	0402935059	ABND	Oil	1463479.28	753173.69	35°33'22.7236"N	119°48'13.2833"W	663	7849.3	8515	1463518.7	753028.05	Sep 12 1938	AERA
4-27N_ST1	40293505901	0402935059	ABND	Oil	1463479.28	753173.69	35°33'22.7236"N	119°48'13.2833"W	663	7771.8	8495	1463156.17	752744.81	Sep 12 1938	AERA
4-35N	40293507600	0402935076	ABND	Injection gas	1468611.22	747976.2	35°32'32.2354"N	119°47'10.0691"W	641	7587	8230	1468507.78	747904.59	Feb 22 1941	AERA
4-36N	40293509600	0402935096	ABND	Oil	1471918.75	743086.54	35°31'44.4639"N	119°46'29.0101"W	621	7672.3	8294	1471874.26	743080.3	Apr 18 1933	AERA
43-21N	40293504400	0402935044	OPNL	Oil	1458418.52	754759.44	35°33'37.5016"N	119°49'14.8658"W	691	7882.6	8575	1458500.51	754809.08	Jul 28 1945	AERA
43-27N	40297512600	0402975126	ABND	Oil	1462017.33	749510.05	35°32'46.2367"N	119°48'30.1752"W	746	9038.2	9807	1462245.59	749830.49	May 01 1985	AERA
44-21N	40293504500	0402935045	ABND	Oil	1458245.16	755622.73	35°33'46.0069"N	119°49'17.1529"W	689	7861	8550	1458245.16	755622.73	Nov 21 1944	AERA
45-35N	40293508600	0402935086	ABND	Oil	1468441.44	744554.47	35°31'58.3702"N	119°47'11.3873"W	654	7643	8300	1468499.86	744707.27	Mar 23 1941	AERA
46X-35N	40295918900	0402959189	ABND	Oil	1468997	744850	35°32'1.3902"N	119°47'4.7304"W	657	7908.9	8580	1469077.61	745060.47	Apr 13 1979	AERA
46X-35N_ST1	40295918901	0402959189	ABND	Oil	1468997	744850	35°32'1.3902"N	119°47'4.7304"W	657	8086.1	8790	1469184.82	745220.82	Apr 13 1979	AERA
46X-35N_ST2	40295918902	0402959189	ABND	Oil	1468997	744850	35°32'1.3902"N	119°47'4.7304"W	657	7241.6	7910	1469067	745018.47	Apr 13 1979	AERA
46X-35N_ST3	40295918903	0402959189	ABND	Oil	1468997	744850	35°32'1.3902"N	119°47'4.7304"W	657	7052.4	7713	1469038.14	744969.23	Apr 13 1979	AERA
46X-35N_ST4	40295918904	0402959189	ABND	Oil	1468997	744850	35°32'1.3902"N	119°47'4.7304"W	657	8141.6	8850	1469203.66	745245.32	Apr 13 1979	AERA
48A-35N	40293508700	0402935087	ABND	Gas	1470625.95	744428.1	35°31'57.5038"N	119°46'44.9351"W	643	7550.5	8194	1470600.68	744383.51	Oct 06 1935	AERA
49-35N	40293508800	0402935088	ABND	Gas	1470611.51	743759.25	35°31'50.8874"N	119°46'44.9666"W	632.7	7445.7	8080	1470506.73	743741.48	Mar 09 1931	AERA
5-1N	40293510300	0402935103	ABND	Oil	1473233.11	742414.99	35°31'38.0526"N	119°46'12.9685"W	613	7873.5	8490	1473133.61	742272.34	Jul 10 1936	AERA
5-1N_ST1	40293510301	0402935103	ABND	Oil	1473233.11	742414.99	35°31'38.0526"N	119°46'12.9685"W	613	7772.9	8425	1472804.66	742048.23	Jul 10 1936	AERA
5-27N	40293506000	0402935060	ABND	Oil	1462816.87	753178.12	35°33'22.6498"N	119°48'21.2994"W	674	7794.5	8470	1462844.74	753081.6	Mar 16 1938	AERA
5-34N	40292963000	0402929630	ABND	Oil	1464642.62	747643.44	35°32'28.2450"N	119°47'58.0088"W	700	8327	9027	1464642.62	747643.44	Jun 23 1934	AERA
50X-27N	40295894600	0402958946	OPNL	Oil	1464468.1	749362.8	35°32'45.2157"N	119°48'0.4927"W	702	6875.7	7580	1464536.19	749377.54	Feb 04 1979	AERA
51-35N	40293508900	0402935089	OPNL	Oil	1469169.71	743782.31	35°31'50.8627"N	119°47'2.4119"W	667	7811.4	8482	1469222.45	743948.28	Jan 10 1941	AERA
511N-1N_ST1	40293510601	0402935106	ABND	Oil	1471246.18	742432.47	35°31'37.8787"N	119°46'37.0057"W	627	7589.5	8217	1471224.75	742455.31	Jun 21 1940	AERA
522N-1N	40293510800	0402935108	ABND	Oil	1471898.14	741792.74	35°31'31.6667"N	119°46'28.9831"W	627	7622	8250	1471840.03	741825.2	Apr 22 1940	AERA
53-26N	40293505600	0402935056	ABND	Oil	1468073.68	749105.53	35°32'43.3081"N	119°47'16.8153"W	631	7776	8410	1468086	748925.36	Jun 15 1937	AERA
53-26N_ST1	40293505601	0402935056	ABND	Oil	1468073.68	749105.53	35°32'43.3081"N	119°47'16.8153"W	631	7580.2	8275	1467747.59	748642.72	Jun 15 1937	AERA
532N-1N	40293510900	0402935109	ABND	Oil	1472558.02	741781.94	35°31'31.6750"N	119°46'20.9992"W	633	7815.5	8450	1472509.99	741695.97	Feb 03 1940	AERA
533N-1N	40293511200	0402935112	ABND	Oil	1472547.42	741121.58	35°31'25.1432"N	119°46'20.9866"W	628	7835	8465	1472442.55	741142.68	Nov 27 1939	AERA
6-1N	40293510400	0402935104	ABND	Oil	1472570.13	742420.82	35°31'37.9947"N	119°46'20.9890"W	627	7803	8430	1472570.13	742420.82	Dec 13 1935	AERA
6-34N	40293507300	0402935073	ABND	Oil	1465069.89	747609.15	35°32'27.9815"N	119°47'52.8324"W	698	8040	8738	1465069.89	747609.15	Mar 17 1937	AERA
61-26N	40293505800	0402935058	ABND	Oil	1468720.82	748429.74	35°32'36.7395"N	119°47'8.8407"W	630	7766	8400	1468711.06	748254.88	May 29 1937	AERA
61-26N_ST1	40293505801	0402935058	ABND	Oil	1468720.82	748429.74	35°32'36.7395"N	119°47'8.8407"W	630	7638.6	8320	1468208.11	748342.62	May 29 1937	AERA
61-27N	40293506600	0402935066	ABND	Oil	1463703.25	748679.5	35°32'38.3234"N	119°48'9.5979"W	703	8043.5	8750	1463762.96	748827.25	Oct 14 1937	AERA

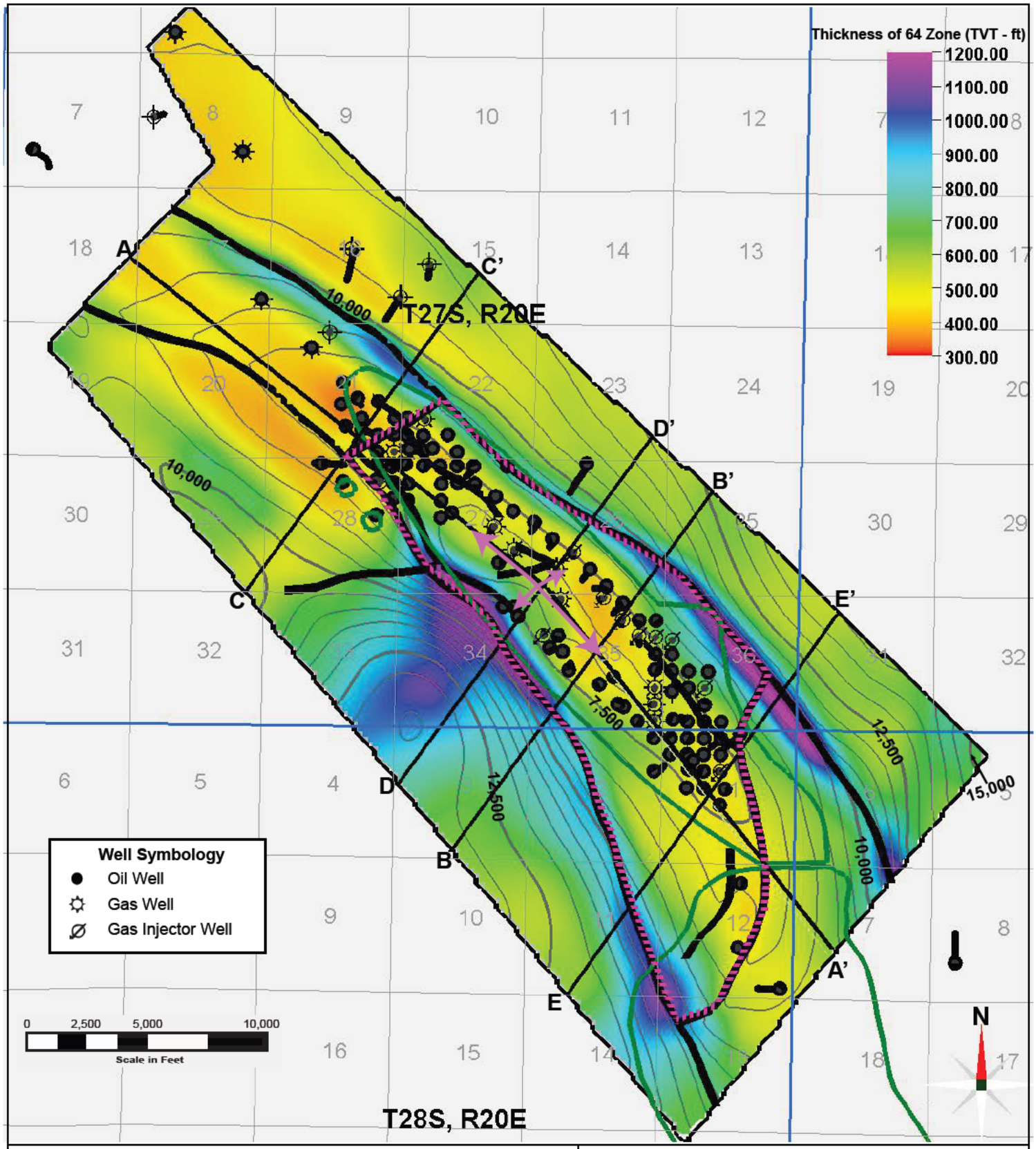
Well Name	UWI	API	API Well Status	Well symbol	Surface X	Surface Y	Latitude	Longitude	Well Datum Value	TD (TVDss)	TD (MD)	Bottom Hole X	Bottom Hole Y	Spud date	Operator
62-27N	40293506700	0402935067	ABND	Oil	1464103.09	748645.03	35°32'38.0535"N	119°48'4.7531"W	703	7882	8587	1464171.92	748741.59	Dec 28 1936	AERA
63-35N	40293509000	0402935090	ABND	Oil	1469936.87	743107.66	35°31'44.3261"N	119°46'52.9875"W	656	7788.5	8447	1469955.43	743221.54	Nov 01 1940	AERA
7-1N	40293510500	0402935105	ABND	Oil	1471909.16	742426.63	35°31'37.9368"N	119°46'28.9852"W	621	7626.7	8249	1471819.18	742436.83	Apr 30 1940	AERA
7-35N	40295794500	0402957945	OPNL	Gas	1466904.7	747927.3	35°32'31.4515"N	119°47'30.7039"W	667	7015.3	7685	1466833.48	747791.07	Aug 20 1978	AERA
7-36N	40293509900	0402935099	ABND	Oil	1472578.73	743080.74	35°31'44.5217"N	119°46'21.0258"W	605	7911.8	8520	1472576.7	742999.11	Feb 01 1936	AERA
8-36N	40293510000	0402935100	ABND	Oil	1472591.51	743745.61	35°31'51.0985"N	119°46'21.0130"W	598	7900.9	8500	1472564.77	743651.38	Jul 14 1936	AERA
8-36N_ST1	40293510001	0402935100	ABND	Oil	1472591.51	743745.61	35°31'51.0985"N	119°46'21.0130"W	598	8033	8638	1472563.22	743563.35	Jul 14 1936	AERA
888N-12	40304263000	0403042630	OPNL	Oil	1475560.47	732536.79	35°30'0.7763"N	119°45'42.7227"W	653.8	11769.8	12542	1474675.4	732867.48	Jan 26 2011	AERA
9-36N	40293510100	0402935101	ABND	Oil	1473248.7	743074.84	35°31'44.5802"N	119°46'12.9205"W	603	7860.5	8465	1473225.88	743082.82	May 01 1937	AERA
B2-21N	40291502900	0402915029	ABND	Dry, plugged and abandoned	1457795.12	758451.55	35°34'13.8982"N	119°49'23.2197"W	662	8234	8896	1457795.12	758451.55		ARCO
BP55-12	40290116900	0402901169	ABND	Oil	1473911.5	734162.75	35°30'16.5684"N	119°46'3.0075"W	655.6	9241.4	9897	1473911.5	734162.74	Oct 18 1966	AERA
GIBSON 7-36N	40292373800	0402923738	ABND	Oil	1472734.62	745049.81	35°32'4.0199"N	119°46'19.5601"W	602	9082	9684	1472734.62	745049.81	May 30 1935	AERA
JDM1-22N	40293505000	0402935050	ABND	Gas	1460844.23	753762.22	35°33'28.0744"N	119°48'45.2957"W	676	7772.7	8450	1460951.05	753759.24	Oct 30 1930	AERA
JDM2-22N	40293505100	0402935051	ABND	Oil	1461503.47	753770.82	35°33'28.2769"N	119°48'37.3207"W	670	7810	8480	1461503.47	753770.82	Oct 25 1937	AERA
JDM3-22N	40293505200	0402935052	ABND	Oil	1462163.46	753766.42	35°33'28.3509"N	119°48'29.3337"W	669	7766	8435	1462163.46	753766.42	Dec 31 1937	AERA
JDM4-22N	40291973900	0402919739	ABND	Oil	1462824	753733	35°33'28.1378"N	119°48'21.3338"W	659	7854	8513	1462824	753733	Mar 26 1938	AERA
JDM5-22N	40291974000	0402919740	ABND	Oil	1460938.59	753844.82	35°33'28.9080"N	119°48'44.1720"W	691	8418	9109	1460938.59	753844.82	Dec 02 1944	AERA
MCP2-36N	40293509502	0402935095	ABND	Oil	1471299.05	745082.96	35°32'4.0971"N	119°46'36.9330"W	614.8	-604.8	10	1471299.05	745082.96	Dec 06 1930	AERA
MCP3-36N	40290153700	0402901537	ABND	Oil	1471963	745073.75	35°32'4.1220"N	119°46'28.8993"W	606.4	7771.6	8378	1471963	745073.75	Jul 04 1935	AERA
MCP4-36N	40290153800	0402901538	ABND	Oil	1471306.75	745739.81	35°32'10.5936"N	119°46'36.9803"W	620.6	7844.4	8465	1471306.75	745739.81	Feb 07 1936	AERA
NORRIS_BP-1	40294514100	0402945141	ABND	and abandoned	1460585.83	759851.05	35°34'28.2359"N	119°48'49.7520"W	627	10043.4	10757	1459993.97	758939.65		NORRIS
30-1	40304401500	0403044015	OPNL	Oil	1445417.81	781004.16	35°37'54.6523"N	119°51'58.0768"W	653.9	12486.2	13474	1447632.54	781580.87	Nov 11 2011	CENTURY EXPL RESOURCES
1-28N	40293506900	0402935069	OPNL	Oil	1460325.89	753235.72	35°33'22.7757"N	119°48'51.4527"W	682	7765.4	8450	1460471.65	753251.23	Oct 07 1937	AERA
102R-21N	40292958900	0402929589	OPNL	Oil	1460303.25	754435.46	35°33'34.6350"N	119°48'51.9887"W	676	9364.7	10042	1460224.55	754448.15	Oct 25 1944	AERA
16-28N	40293507100	0402935071	OPNL	Oil	1460309.47	752520.91	35°33'15.7046"N	119°48'51.4953"W	690	7891.4	8585	1460467.74	752621.66	Mar 08 1939	AERA
1Y-28N	40292962200	0402929622	OPNL	Oil	1460244.05	753155.95	35°33'21.9723"N	119°48'52.4256"W	693	8404.1	9098	1460312.35	753192.6	Sep 16 1944	AERA
2-28N	40293507000	0402935070	OPNL	Oil	1459665.89	753237.46	35°33'22.6750"N	119°48'59.4391"W	686	7899.9	8588	1459770.65	753313.64	Nov 21 1938	AERA
22-21N	40293503900	0402935039	OPNL	Oil	1459692.34	754397.1	35°33'34.1466"N	119°48'59.3726"W	680	7930	8610	1459692.34	754397.1	Aug 22 1938	AERA
23-1N	40293511300	0402935113	OPNL	Oil	1471956.94	741201.23	35°31'25.8278"N	119°46'28.1456"W	642	7822.9	8466	1471901.31	741271.11	Feb 13 1940	AERA
27-1N	40293511500	0402935115	OPNL	Oil	1472533.06	740465.17	35°31'18.6498"N	119°46'21.0202"W	645	7803.5	8450	1472480.96	740505	Aug 25 1939	AERA
55-26N	40293505700	0402935057	OPNL	Gas	1466754.8	749123.35	35°32'43.2520"N	119°47'32.7755"W	658	10142	10800	1466754.8	749123.35	Mar 20 1941	AERA
6-27N	40293506100	0402935061	OPNL	Oil	1462151.87	753181.55	35°33'22.5655"N	119°48'29.3466"W	680	7716.9	8400	1462236.72	753052.31	Feb 14 1938	AERA
64-27N	40293506800	0402935068	OPNL	Gas	1465140	748941.71	35°32'41.1707"N	119°47'52.2726"W	701	7361	8062	1465140	748941.71	Feb 12 1931	AERA
64-35N	40293509100	0402935091	OPNL	Gas	1470598.82	743099.37	35°31'44.3600"N	119°46'44.9788"W	630	7525.8	8156	1470597.21	743120.59	Aug 08 1940	AERA
7-27N	40292960100	0402929601	OPNL	Oil	1461491.88	753185.95	35°33'22.4915"N	119°48'37.3334"W	690	8313.1	9005	1461404.33	753236.59	Nov 24 1937	AERA
9-1N	40293510700	0402935107	OPNL	Oil	1471234.24	741802.58	35°31'31.6480"N	119°46'37.0154"W	634	7834.5	8470	1471280.46	741883.61	Dec 21 1940	AERA
11R-27N	40292961500	0402929615	OPNL	Oil	1462206.6	752473.27	35°33'15.5715"N	119°48'28.5302"W	696	8482	9178	1462206.6	752473.27	Mar 06 1943	AERA
27R-27N	40292961600	0402929616	OPNL	Oil	1462176.08	751144.62	35°33'2.4280"N	119°48'28.6103"W	707	8230.4	8940	1462289.33	751197.35	Jul 28 1942	AERA
9-27N	40292960200	0402929602	OPNL	Oil	1460888.59	752480.05	35°33'15.4038"N	119°48'44.4792"W	710	8371.5	9084	1461003.65	752459.84	May 01 1941	AERA
47-27N	40292960800	0402929608	OPNL	Gas	1465072.45	749876.8	35°32'50.4053"N	119°47'53.2922"W	678	8952.7	9637	1465082.26	749647.36	Nov 30 1941	AERA
8-27N	40293506200	0402935062	OPNL	Oil	1460800	753253.89	35°33'23.0400"N	119°48'45.7200"W	689	7846	8538	1460929.65	753204.83	Dec 10 1930	AERA
1-12	40303889800	0403038898	OPNL	Oil	1474012	736697	35°30'41.6459"N	119°46'2.3311"W	632.7	8483.3	9135	1474196.32	736808.76	Jun 09 2009	AMERICAN
25-26N	40293505300	0402935053	OPNL	Oil	1465869.87	750959.33	35°33'1.2506"N	119°47'43.8785"W	658	7841.4	8505	1465851.77	750725.3	Nov 02 1938	AERA
3-35N	40293507500	0402935075	OPNL	Oil	1469368.21	747760.98	35°32'30.2402"N	119°47'0.8649"W	636	7759.7	8400	1469312.68	747583.56	Oct 17 1955	AERA
31-21N	40293504000	0402935040	OPNL	Oil	1458955.06	754079.14	35°33'30.8707"N	119°49'8.2244"W	691	7832	8525	1459097.15	754148.28	Mar 19 1945	AERA
3-22N	40293504700	0402935047	OPNL	Oil	1460862.94	755061.44	35°33'40.9247"N	119°48'45.3528"W	675	7824.2	8500	1460911.61	754999.28	Jul 19 1938	AERA
17-28N	40293507200	0402935072	OPNL	Oil	1460295.25	751902.07	35°33'9.5828"N	119°48'51.5322"W	726	7938.6	8670	1460476.8	752048.01	May 28 1939	AERA

Well Name	UWI	API	API Well Status	Well symbol	Surface X	Surface Y	Latitude	Longitude	Well Datum Value	TD (TVDss)	TD (MD)	Bottom Hole X	Bottom Hole Y	Spud date	Operator
38-35N	40292964700	0402929647	OPNL	Oil	1467231	745121	35°32'3.7593"N	119°47'26.1515"W	681	8159.8	8850	1467304.9	745399.43	Apr 04 1939	AERA
7-34N	40293507400	0402935074	OPNL	Oil	1465225.1	747241.71	35°32'24.3756"N	119°47'50.8752"W	709	8182	8891	1465225.1	747241.71	Sep 29 1937	AERA
20-36N	40293509400	0402935094	OPNL	Injection water	1472604.28	744409.49	35°31'57.6654"N	119°46'21.0002"W	599	7911	8510	1472604.28	744409.48	Mar 08 1936	AERA
24-35N	40293508100	0402935081	OPNL	Injection water	1466209.12	746483.55	35°32'17.0525"N	119°47'38.8072"W	682	8005.8	8690	1466253.43	746593.24	Feb 14 1937	AERA
21-21N	40293503800	0402935038	OPNL	Oil	1459677.32	753737.27	35°33'27.6193"N	119°48'59.4101"W	696	8004	8700	1459677.32	753737.27	Apr 26 1939	AERA
43-26N	40293505500	0402935055	OPNL	Injection water	1467426.76	749774.32	35°32'49.8075"N	119°47'24.7861"W	647	7764.3	8415	1467390.81	749599.3	Aug 03 1937	AERA
18-35N	40293508000	0402935080	OPNL	Injection water	1470002.63	746476.33	35°32'17.6483"N	119°46'52.9143"W	631	7843	8476	1469959.25	746375.7	Dec 09 1935	AERA
34	40293504202	0402935042	ABND	Oil	1458905.57	755858.92	35°33'48.4607"N	119°49'9.2130"W	674	8024.5	8699	1458897.18	755956.9	Nov 12 1943	AERA
11R-27N_ST1	40292961501	0402929615	OPNL	Oil	1462206.6	752473.27	35°33'15.5715"N	119°48'28.5302"W	696	8482	9178	1462206.6	752473.27	Mar 06 1943	AERA
24-21N-ST	40292958801	0402929588	ABND	Gas	1459722.65	755728.75	35°33'47.3196"N	119°48'59.2971"W	689	8031	8720	1459722.65	755728.75	Jul 27 1939	AERA
26-1N_ST1	40293511401	0402935114	ABND	Oil	1471874.12	740472.97	35°31'18.6120"N	119°46'28.9917"W	640	8006	8646	1471874.12	740472.97	Nov 13 1939	AERA
31R-28N (ST1)	40292962101	0402929621	ABND	Oil	1459621.18	751247.98	35°33'2.9946"N	119°49'0.0000"W	715	8417.6	9133	1459634.72	751334.43	Feb 04 1942	AERA
3A-22N_ST1	40291503101	0402915031	ABND	Oil	1462453.68	754409.08	35°33'34.7573"N	119°48'25.9618"W	667	7823	8490	1462453.68	754409.08	Dec 21 1938	AERA
3A-22N_ST2	40291503102	0402915031	ABND	Oil	1462453.68	754409.08	35°33'34.7573"N	119°48'25.9618"W	667	8600	9267	1462453.68	754409.08	Dec 21 1938	AERA
50X-27N_ST1	40295894601	0402958946	OPNL	Oil	1464468.1	749362.8	35°32'45.2157"N	119°48'0.4927"W	702	6878	7580	1464468.1	749362.8	Feb 04 1979	AERA
6-36N	40293509800	0402935098	ABND	Gas	1471353.56	743756.5	35°31'50.9900"N	119°46'35.9899"W	621	7614	8235	1471353.56	743756.5	Jul 21 1935	AERA
BL20-36N (ST1)	40293509401	0402935094	OPNL	Oil	1472604.28	744409.49	35°31'57.6654"N	119°46'21.0002"W	599	7911	8510	1472604.28	744409.49	Mar 08 1936	AERA
MCP2-36N_ST1	40293509501	0402935095	ABND	Oil	1471299.05	745082.96	35°32'4.0971"N	119°46'36.9330"W	614.8	7886.2	8501	1471299.05	745082.96	Dec 06 1930	AERA
R4-36N (ST)	40293509601	0402935096	ABND	Oil	1471918.75	743086.54	35°31'44.4639"N	119°46'29.0101"W	610	7682.5	8294	1471812.7	743079.51	Apr 18 1933	AERA
R9-36N (ST1)	40293510101	0402935101	ABND	Abandoned oil minor gas	1473248.7	743074.84	35°31'44.5802"N	119°46'12.9205"W	603	7862	8465	1473248.7	743074.84	May 01 1937	AERA
R9-36N (ST2)	40293510102	0402935101	ABND	Oil	1473248.7	743074.84	35°31'44.5802"N	119°46'12.9205"W	603	7862	8465	1473248.7	743074.84	May 01 1937	AERA

Notes:
1. Surface and bottom-hole coordinates provided in NAD 1927 State Plane California V
MD: measured depth (feet)
TD: Total depth
TVDss: True Vertical Depth sub sea level (feet)

Appendix 2B
Maps and Cross Sections of the AoR Supporting Data

Wells Tops for Geologic Model and Map



Legend:

- Area of Interest
- Township/Range Boundaries
- Section Boundaries
- 1973/74 Oil Field Boundaries
- Fault Traces
- Elevation Contours (500 ft CI)
- Area of Review
- Anticline Axis

Explanation:

ft - feet
TVT - true vertical thickness
CI - contour interval

Notes:

Surface artifacts due to interpolation across faults and structural model grid.

True Vertical Thickness of 64 Zone and Wells for Geologic model

North Belridge Oil Field
Western Kern County
California

Geosyntec consultants

CarbonFrontier | December 2023

Figure 2B-1

C:\Geosyntec\Aera Belridge CCUS Project - General\EPA VI\A. Technical\01_Figures_EPAResponse202312\Illustrator\Narrative_Fig2B-1 True Vertical Thickness of 64 Zone and Wells for Geologic Model.ai

Well Name	UWI	Surface	X	Y	Z	MD
1-12	40303889800	TEMBLOR SANDS_TOP	1473967	736696	-5179	5812.87
1-12	40303889800	MEDIA_TOP	1474015	736681.4	-6263	6898.39
1-12	40303889800	CARNEROS_TOP	1474032	736693.3	-7044	7680.77
1-12	40303889800	CARNEROS_BASE	1474079	736715.1	-7580	8219.31
1-12	40303889800	AGUA_TOP	1474098	736728.9	-7724	8365.15
1-12	40303889800	AGUA_BASE	1474101	736731.4	-7748	8389.63
1-12	40303889800	64_ZONE_U_TOP	1474128	736752.4	-7940	8584.57
1-12	40303889800	64_ZONE_U_BASE	1474144	736766.7	-8062	8708.61
1-12	40303889800	64_ZONE_W_TOP	1474150	736772.4	-8115	8761.81
1-12	40303889800	64_ZONE_W_BASE	1474191	736804.6	-8441	9091.75
1-15	40294188400	TEMBLOR SANDS_TOP	1461692	760664.8	-8558	9201.31
1-15	40294188400	MEDIA_TOP	1461689	760642.3	-8984	9628.68
1-15	40294188400	CARNEROS_TOP	1461682	760614.7	-10013	10657.5
1-15	40294188400	CARNEROS_BASE	1461681	760607.5	-10415	11059.7
1-15	40294188400	AGUA_TOP	1461680	760606.7	-10462	11106.8
1-15	40294188400	AGUA_BASE	1461679	760603.6	-10632	11277.2
1-15	40294188400	64_ZONE_U_TOP	1461678	760600.5	-10802	11446.7
1-15	40294188400	64_ZONE_U_BASE	1461678	760600	-10826	11471
1-15	40294188400	64_ZONE_W_TOP	1461677	760598.5	-10909	11554
1-16	40298759700	64_ZONE_W_TOP	1458476	760520.9	-10503	11235.8
1-16	40298759700	64_ZONE_W_BASE	1458453	760451.9	-10816	11557.8
1-21N	40293503500	CARNEROS_BASE	1460337	753735.5	-6842	7532.21
1-21N	40293503500	AGUA_TOP	1460337	753735.5	-6893	7583.21
1-21N	40293503500	AGUA_BASE	1460337	753735.5	-7195	7885.25
1-21N	40293503500	64_ZONE_U_TOP	1460337	753735.5	-7431	8120.52
1-21N	40293503500	64_ZONE_W_TOP	1460337	753735.5	-7524	8214.13
1-21N	40293503500	64_ZONE_W_BASE	1460337	753735.5	-7853	8542.6
1-28	40306710100	TEMBLOR SANDS_TOP	1457231	753292.1	-6153	6894.35
1-28	40306710100	MEDIA_TOP	1457333	753290	-6542	7299.46
1-28	40306710100	CARNEROS_BASE	1457909	753264.7	-7738	8642.39
1-28	40306710100	AGUA_TOP	1457963	753261.9	-7819	8740.33
1-28	40306710100	AGUA_BASE	1458112	753254.4	-8040	9006.57
1-28	40306710100	64_ZONE_U_TOP	1458212	753249.4	-8189	9186.1
1-28	40306710100	64_ZONE_U_BASE	1458231	753248.5	-8216	9218.89
1-28	40306710100	64_ZONE_W_TOP	1458251	753247.4	-8247	9255.93
1-28	40306710100	64_ZONE_W_BASE	1458429	753241.7	-8509	9572.68
1-28N	40293506900	TEMBLOR SANDS_TOP	1460438	753242.4	-4892	5576.62
1-28N	40293506900	MEDIA_TOP	1460444	753243.6	-5402	6085.87
1-28N	40293506900	CARNEROS_TOP	1460451	753251.2	-6259	6943.72
1-28N	40293506900	CARNEROS_BASE	1460455	753256.4	-6761	7445.81
1-28N	40293506900	AGUA_TOP	1460456	753256.4	-6820	7504.91
1-28N	40293506900	AGUA_BASE	1460460	753254.6	-7106	7790.19
1-28N	40293506900	64_ZONE_W_TOP	1460467	753252.5	-7474	8158.39
1-2N	40293511800	TEMBLOR SANDS_TOP	1470607	742519.9	-4441	5081.42
1-2N	40293511800	MEDIA_TOP	1470611	742525.9	-5400	6040.85
1-2N	40293511800	CARNEROS_TOP	1470607	742545.8	-6247	6888.15
1-2N	40293511800	CARNEROS_BASE	1470600	742551.3	-6641	7282.02
1-2N	40293511800	AGUA_TOP	1470599	742552.9	-6735	7375.94
1-2N	40293511800	AGUA_BASE	1470599	742554.2	-6801	7442.43
1-2N	40293511800	64_ZONE_U_TOP	1470601	742561.3	-7172	7813.02
1-2N	40293511800	64_ZONE_U_BASE	1470603	742564.3	-7292	7933.75
1-2N	40293511800	64_ZONE_W_TOP	1470604	742565.9	-7346	7987.55
1-8	40303057600	TEMBLOR SANDS_TOP	1454367	765599.4	-8934	9565.56
1-8	40303057600	MEDIA_TOP	1454367	765599.4	-9139	9770.98
1-8	40303057600	CARNEROS_TOP	1454367	765599.4	-9937	10568.7
1-8	40303057600	AGUA_TOP	1454367	765599.4	-10494	11125.9
1-8	40303057600	AGUA_BASE	1454367	765599.4	-10620	11251.3
1-8	40303057600	64_ZONE_U_TOP	1454367	765599.4	-10798	11429
1-8	40303057600	64_ZONE_U_BASE	1454367	765599.4	-10830	11461.7
1-8	40303057600	64_ZONE_W_TOP	1454367	765599.4	-10869	11500.7
1-8	40303057600	64_ZONE_W_BASE	1454367	765599.4	-11230	11861.7
1-8	40303057600	TUMEY	1454367	765599.4	-11349	11980.3
1-8	40291988000	TEMBLOR SANDS_TOP	1451157	767054.6	-9146	9790
1-8	40291988000	MEDIA_TOP	1451162	767056.1	-9303	9947.05
1-8	40291988000	CARNEROS_TOP	1451187	767063.6	-10117	10762
1-8	40291988000	AGUA_TOP	1451206	767069	-10695	11340.5
1-8	40291988000	AGUA_BASE	1451209	767070.1	-10815	11459.7
1-8	40291988000	64_ZONE_U_TOP	1451214	767071.6	-10980	11625
1-8	40291988000	64_ZONE_U_BASE	1451215	767071.8	-10999	11643.9
1-8	40291988000	64_ZONE_W_TOP	1451216	767072.1	-11029	11674.6
1-8	40291988000	64_ZONE_W_BASE	1451226	767074.9	-11330	11975.6
1-8	40291988000	TUMEY	1451232	767076.8	-11535	12180.9
10-36N	40293510200	TEMBLOR SANDS_TOP	1471703	743232.9	-4484	5151.36

Well Name	UWI	Surface	X	Y	Z	MD
10-36N	40293510200	MEDIA_TOP	1471715	743237.6	-5398	6064.68
10-36N	40293510200	CARNEROS_TOP	1471702	743248.8	-6291	6958.81
10-36N	40293510200	CARNEROS_BASE	1471689	743255.3	-6851	7518.98
10-36N	40293510200	AGUA_TOP	1471687	743255.7	-6891	7558.24
10-36N	40293510200	AGUA_BASE	1471687	743256	-6913	7581.01
10-36N	40293510200	64_ZONE_U_TOP	1471679	743258.4	-7147	7814.67
10-36N	40293510200	64_ZONE_U_BASE	1471675	743259.8	-7281	7948.74
10-36N	40293510200	64_ZONE_W_TOP	1471673	743260.2	-7321	7988.68
10-36N	40293510200	64_ZONE_W_BASE	1471661	743260	-7664	8331.87
102R-21N	40292958900	TUMEY	1460231	754457.9	-8027	8704.33
10X-1N	40295989000	TEMBLOR SANDS_TOP	1472016	741534.2	-4473	5113.44
10X-1N	40295989000	MEDIA_TOP	1471993	741528.8	-5465	6105.96
10X-1N	40295989000	CARNEROS_TOP	1471978	741550.7	-6307	6947.92
10X-1N	40295989000	CARNEROS_BASE	1471972	741570.2	-6765	7406.28
10X-1N	40295989000	AGUA_TOP	1471972	741573.1	-6815	7456.75
10X-1N	40295989000	AGUA_BASE	1471972	741575.8	-6860	7502.15
10X-1N	40295989000	64_ZONE_U_TOP	1471972	741595.3	-7189	7830.97
10X-1N	40295989000	64_ZONE_U_BASE	1471972	741600.4	-7303	7945.76
10X-1N	40295989000	64_ZONE_W_TOP	1471972	741602.3	-7348	7990.68
10X-1N	40295989000	64_ZONE_W_BASE	1471969	741617.1	-7669	8311.99
10X-1N	40295989000	TUMEY	1471969	741620.6	-7749	8392.38
11R-27N	40292961500	TEMBLOR SANDS_TOP	1462207	752473.3	-4605	5300.76
11R-27N	40292961500	MEDIA_TOP	1462207	752473.3	-5244	5939.76
11R-27N	40292961500	CARNEROS_TOP	1462207	752473.3	-6089	6784.83
11R-27N	40292961500	CARNEROS_BASE	1462207	752473.3	-6695	7391.29
11R-27N	40292961500	AGUA_TOP	1462207	752473.3	-6737	7433.32
11R-27N	40292961500	AGUA_BASE	1462207	752473.3	-7001	7697.39
11R-27N	40292961500	64_ZONE_U_TOP	1462207	752473.3	-7239	7934.54
11R-27N	40292961500	64_ZONE_U_BASE	1462207	752473.3	-7278	7973.93
11R-27N	40292961500	64_ZONE_W_TOP	1462207	752473.3	-7337	8032.72
11R-27N	40292961500	64_ZONE_W_BASE	1462207	752473.3	-7704	8399.59
11X-26N	40297845200	TEMBLOR SANDS_TOP	1467564	752591.6	-6543	7245.7
11X-26N	40297845200	MEDIA_TOP	1467511	752501.9	-7199	7909.64
11X-26N	40297845200	CARNEROS_TOP	1467380	752284.1	-8729	9460.99
11X-26N	40297845200	CARNEROS_BASE	1467348	752216.6	-9104	9844.01
11X-26N	40297845200	AGUA_TOP	1467335	752194.9	-9220	9962.21
11X-26N	40297845200	AGUA_BASE	1467320	752171.1	-9348	10093.9
11X-26N	40297845200	64_ZONE_U_TOP	1467281	752121.1	-9664	10415.8
11X-26N	40297845200	64_ZONE_U_BASE	1467263	752106.9	-9806	10559.7
11X-26N	40297845200	64_ZONE_W_TOP	1467257	752102.2	-9853	10607.3
11X-26N	40297845200	64_ZONE_W_BASE	1467199	752055.1	-10249	11011
11X-26N	40297845200	TUMEY	1467176	752036.7	-10372	11136.9
12-1N	40293511000	TEMBLOR SANDS_TOP	1473171	741779.5	-4668	5296.66
12-1N	40293511000	MEDIA_TOP	1473170	741774.3	-5656	6285.15
12-1N	40293511000	AGUA_TOP	1473161	741750.2	-6979	7608.51
12-1N	40293511000	AGUA_BASE	1473159	741749.2	-7064	7693.28
12-1N	40293511000	64_ZONE_U_TOP	1473154	741745.7	-7403	8031.9
12-1N	40293511000	64_ZONE_U_BASE	1473152	741744.3	-7546	8175.17
12-1N	40293511000	64_ZONE_W_TOP	1473151	741743.8	-7604	8233.42
12-27	40292960300	MEDIA_TOP	1462840	752525.4	-5257	5951.47
12-27	40292960300	CARNEROS_TOP	1462840	752525.4	-6101	6794.87
12-27	40292960300	AGUA_TOP	1462840	752525.4	-6721	7415.01
13-27N	40293506300	TEMBLOR SANDS_TOP	1463539	752372.3	-4761	5427.27
13-27N	40293506300	MEDIA_TOP	1463540	752359.9	-5339	6005.84
13-27N	40293506300	CARNEROS_TOP	1463547	752343.8	-6282	6949.22
13-27N	40293506300	CARNEROS_BASE	1463548	752338.1	-6884	7550.69
13-27N	40293506300	AGUA_TOP	1463548	752338	-6922	7588.8
13-27N	40293506300	AGUA_BASE	1463542	752336.3	-7133	7799.76
13-27N	40293506300	64_ZONE_U_TOP	1463538	752333.1	-7360	8026.75
13-27N	40293506300	64_ZONE_U_BASE	1463538	752331.5	-7459	8126.02
13-27N	40293506300	64_ZONE_W_TOP	1463537	752330.4	-7519	8186.4
13R-28N	40292962000	MEDIA_TOP	1458310	752564.2	-6234	6938.12
13R-28N	40292962000	CARNEROS_TOP	1458310	752564.2	-7305	8008.74
13R-28N	40292962000	CARNEROS_BASE	1458310	752564.2	-7811	8515.19
13R-28N	40292962000	AGUA_TOP	1458310	752564.2	-7870	8574.34
13R-28N	40292962000	AGUA_BASE	1458310	752564.2	-8144	8847.77
13R-28N	40292962000	64_ZONE_W_TOP	1458310	752564.2	-8538	9242.02
14-35N	40293507700	TEMBLOR SANDS_TOP	1469289	746983	-4527	5172.83
14-35N	40293507700	MEDIA_TOP	1469288	746970.4	-5324	5970.54
14-35N	40293507700	CARNEROS_TOP	1469284	746957.6	-6322	6968.6
14-35N	40293507700	CARNEROS_BASE	1469283	746944.4	-6889	7535.97
14-35N	40293507700	AGUA_TOP	1469282	746943.2	-6952	7598.45
14-35N	40293507700	64_ZONE_U_TOP	1469280	746937.7	-7229	7876.07

Well Name	UWI	Surface	X	Y	Z	MD
14-35N	40293507700	64_ZONE_U_BASE	1469279	746934.9	-7329	7976.06
14-35N	40293507700	64_ZONE_W_TOP	1469278	746932.8	-7390	8036.2
15-28N	40292961900	TEMBLOR SANDS_TOP	1459758	752714.9	-5030	5722.56
15-28N	40292961900	MEDIA_TOP	1459758	752716.5	-5548	6240.01
15-28N	40292961900	CARNEROS_TOP	1459761	752722.1	-6487	7178.74
15-28N	40292961900	CARNEROS_BASE	1459765	752726.8	-7087	7779.57
15-28N	40292961900	AGUA_TOP	1459766	752727.5	-7143	7835.42
15-28N	40292961900	AGUA_BASE	1459784	752750.3	-7475	8169.73
15-28N	40292961900	64_ZONE_U_TOP	1459788	752757	-7695	8389.79
15-35N	40293507800	TEMBLOR SANDS_TOP	1470041	747004.1	-4667	5291.97
15-35N	40293507800	MEDIA_TOP	1470048	747006.1	-5522	6147.72
15-35N	40293507800	CARNEROS_TOP	1470066	747000.1	-6609	7235.08
15-35N	40293507800	AGUA_TOP	1470074	746988.9	-7250	7876.03
15-35N	40293507800	AGUA_BASE	1470074	746988.3	-7280	7906.31
15-35N	40293507800	64_ZONE_U_TOP	1470075	746983.4	-7496	8121.88
15-35N	40293507800	64_ZONE_U_BASE	1470076	746979.7	-7607	8233.1
15-35N	40293507800	64_ZONE_W_TOP	1470076	746977.5	-7669	8294.93
15-35N_ST1	40293507801	MEDIA_TOP	1470048	747006	-5527	6152.49
15-35N_ST1	40293507801	CARNEROS_TOP	1470064	747001.4	-6497	7122.99
15-35N_ST1	40293507801	AGUA_TOP	1470074	746992.7	-7052	7677.36
15Y-28	40292962300	TEMBLOR SANDS_TOP	1459803	752572.9	-4999	5687.85
15Y-28	40292962300	MEDIA_TOP	1459803	752572.9	-5539	6227.81
15Y-28	40292962300	CARNEROS_TOP	1459803	752572.9	-6510	7198.65
15Y-28	40292962300	CARNEROS_BASE	1459803	752572.9	-7090	7779.24
15Y-28	40292962300	AGUA_TOP	1459803	752572.9	-7142	7830.55
15Y-28	40292962300	AGUA_BASE	1459803	752572.9	-7436	8125.28
15Y-28	40292962300	64_ZONE_U_TOP	1459803	752572.9	-7703	8392.38
15Y-28	40292962300	64_ZONE_U_BASE	1459803	752572.9	-7769	8458.08
15Y-28	40292962300	64_ZONE_W_TOP	1459803	752572.9	-7819	8507.76
15Y-28	40292962300	64_ZONE_W_BASE	1459803	752572.9	-8141	8829.66
15Y-28	40292962300	TUMEY	1459803	752572.9	-8282	8970.81
16-28N	40293507100	TEMBLOR SANDS_TOP	1460420	752585.9	-4868	5560.63
16-28N	40293507100	MEDIA_TOP	1460429	752588.4	-5400	6092.64
16-28N	40293507100	CARNEROS_TOP	1460436	752592.1	-6242	6934.54
16-28N	40293507100	CARNEROS_BASE	1460445	752594.8	-6802	7494.79
16-28N	40293507100	AGUA_TOP	1460445	752595.2	-6854	7546.75
16-28N	40293507100	AGUA_BASE	1460452	752599.3	-7158	7851.32
16-28N	40293507100	64_ZONE_U_TOP	1460459	752606.3	-7436	8128.76
16-28N	40293507100	64_ZONE_U_BASE	1460460	752608	-7493	8186.1
16-28N	40293507100	64_ZONE_W_TOP	1460460	752609	-7523	8216.06
16-28N	40293507100	64_ZONE_W_BASE	1460468	752621.7	-7891	8585.02
16-35	40292964100	MEDIA_TOP	1470628	746980.5	-5744	6371.93
16-35	40292964100	CARNEROS_TOP	1470623	746960.4	-6963	7590.81
16-35	40292964100	CARNEROS_BASE	1470615	746949.6	-7403	8031.06
16-35	40292964100	AGUA_TOP	1470615	746949	-7452	8079.85
16-35	40292964100	AGUA_BASE	1470614	746948.5	-7500	8128.18
16-35	40292964100	64_ZONE_U_TOP	1470609	746943.7	-7768	8396.64
16-35	40292964100	64_ZONE_U_BASE	1470606	746941.3	-7872	8500.14
16-35	40292964100	64_ZONE_W_TOP	1470604	746939.6	-7949	8576.78
17-28N	40293507200	TEMBLOR SANDS_TOP	1460429	752020.3	-4900	5630.66
17-28N	40293507200	MEDIA_TOP	1460435	752025.1	-5441	6172.31
17-28N	40293507200	CARNEROS_TOP	1460448	752031.4	-6331	7062.13
17-28N	40293507200	CARNEROS_BASE	1460458	752038.2	-7010	7740.75
17-28N	40293507200	AGUA_TOP	1460459	752038.6	-7064	7795.25
17-28N	40293507200	AGUA_BASE	1460467	752042.3	-7405	8135.82
17-28N	40293507200	64_ZONE_U_TOP	1460471	752044.7	-7634	8365.39
17-28N	40293507200	64_ZONE_U_BASE	1460472	752045.4	-7698	8429.48
17-28N	40293507200	64_ZONE_W_TOP	1460473	752045.9	-7741	8472.41
17-2N	40297793000	TEMBLOR SANDS_TOP	1470755	741123.8	-4692	5363.15
17-2N	40297793000	MEDIA_TOP	1470829	741150	-5782	6456.38
17-2N	40297793000	CARNEROS_TOP	1470906	741237	-6631	7313.15
17-2N	40297793000	CARNEROS_BASE	1470950	741293.3	-7142	7829.35
17-2N	40297793000	AGUA_TOP	1470953	741297	-7175	7862.37
17-2N	40297793000	AGUA_BASE	1470962	741309	-7277	7966.18
17-2N	40297793000	64_ZONE_U_TOP	1470994	741348.9	-7626	8318.86
17-2N	40297793000	64_ZONE_U_BASE	1471002	741359.5	-7716	8409.84
17-2N	40297793000	64_ZONE_W_TOP	1471006	741365.7	-7769	8463.34
17-2N	40297793000	64_ZONE_W_BASE	1471038	741410.2	-8149	8846.54
17-35N	40293507900	MEDIA_TOP	1470663	746419.3	-5553	6181.72
17-35N	40293507900	CARNEROS_TOP	1470663	746419.3	-6675	7304.26
17-35N	40293507900	CARNEROS_BASE	1470663	746419.3	-7183	7812.21
17-35N	40293507900	AGUA_TOP	1470663	746419.3	-7223	7851.59
17-35N	40293507900	AGUA_BASE	1470663	746419.3	-7275	7903.79

Well Name	UWI	Surface	X	Y	Z	MD
17-35N	40293507900	64_ZONE_U_TOP	1470663	746419.3	-7533	8162.13
17-35N	40293507900	64_ZONE_U_BASE	1470663	746419.3	-7614	8242.65
18-35N	40293508000	MEDIA_TOP	1469968	746436.2	-5391	6023.22
18-35N	40293508000	CARNEROS_TOP	1469962	746415.1	-6418	7050.41
18-35N	40293508000	CARNEROS_BASE	1469966	746395	-6990	7622.6
18-35N	40293508000	AGUA_TOP	1469966	746393.8	-7029	7661.46
18-35N	40293508000	AGUA_BASE	1469965	746393.1	-7057	7690.13
18-35N	40293508000	64_ZONE_U_TOP	1469963	746387.1	-7323	7955.73
18-35N	40293508000	64_ZONE_U_BASE	1469963	746385.1	-7412	8044.79
18-35N	40293508000	64_ZONE_W_TOP	1469962	746383.3	-7494	8126.51
18-35N_ST1	40293508001	MEDIA_TOP	1469968	746435.3	-5456	6088.28
18-35N_ST1	40293508001	CARNEROS_TOP	1469978	746279.4	-6381	7027.87
18-35N_ST1	40293508001	AGUA_TOP	1470028	746179.8	-6978	7636.23
18-35N_ST1	40293508001	AGUA_BASE	1470030	746176.2	-7007	7666.05
18-35N_ST1	40293508001	64_ZONE_U_TOP	1470027	746141.3	-7264	7925.34
18-35N_ST1	40293508001	64_ZONE_U_BASE	1470025	746132.1	-7348	8009.87
18-35N_ST1	40293508001	64_ZONE_W_TOP	1470023	746125.4	-7419	8081.01
18-36N	40293509200	TEMBLOR SANDS_TOP	1471913	744317.7	-4678	5285.59
18-36N	40293509200	MEDIA_TOP	1471917	744302.7	-5602	6209.83
18-36N	40293509200	CARNEROS_TOP	1471918	744285.8	-6546	7154.46
18-36N	40293509200	CARNEROS_BASE	1471914	744277.2	-7072	7680.66
18-36N	40293509200	AGUA_TOP	1471914	744276.9	-7095	7703.5
18-36N	40293509200	AGUA_BASE	1471913	744276.2	-7160	7768.66
18-36N	40293509200	64_ZONE_U_TOP	1471911	744271.9	-7416	8023.87
18-36N	40293509200	64_ZONE_U_BASE	1471909	744269.7	-7523	8131.26
18-36N	40293509200	64_ZONE_W_TOP	1471908	744268.6	-7576	8184.05
19-27N	40293506400	TEMBLOR SANDS_TOP	1464366	751863.7	-4764	5426.29
19-27N	40293506400	MEDIA_TOP	1464372	751855.3	-5398	6060.12
19-27N	40293506400	CARNEROS_TOP	1464367	751837.9	-6395	7058.21
19-27N	40293506400	CARNEROS_BASE	1464363	751828.6	-6930	7592.44
19-27N	40293506400	AGUA_TOP	1464362	751827.9	-6968	7631.18
19-27N	40293506400	AGUA_BASE	1464357	751823.2	-7184	7847.27
19-27N	40293506400	64_ZONE_U_TOP	1464353	751818.2	-7397	8060.06
19-27N	40293506400	64_ZONE_U_BASE	1464352	751817.1	-7455	8117.84
19-27N	40293506400	64_ZONE_W_TOP	1464351	751816	-7511	8173.74
19-36N	40293509300	TEMBLOR SANDS_TOP	1471258	744201.8	-4471	5105.39
19-36N	40293509300	MEDIA_TOP	1471257	744190.9	-5413	6047.5
19-36N	40293509300	CARNEROS_TOP	1471256	744184.9	-6346	6979.84
19-36N	40293509300	CARNEROS_BASE	1471251	744177.1	-6934	7568.5
19-36N	40293509300	AGUA_TOP	1471251	744176.6	-6972	7605.74
19-36N	40293509300	TUMEY	1471248	744172.4	-7837	8470.82
19-36N-RD	40293509301	TEMBLOR SANDS_TOP	1471301	744272	-4487	5107.38
19-36N-RD	40293509301	MEDIA_TOP	1471301	744272	-5394	6013.62
19-36N-RD	40293509301	CARNEROS_TOP	1471301	744272	-6393	7013.04
19-36N-RD	40293509301	AGUA_TOP	1471301	744272	-6964	7584.12
19-36N-RD	40293509301	AGUA_BASE	1471301	744272	-7003	7622.66
19-36N-RD	40293509301	64_ZONE_U_TOP	1471301	744272	-7200	7820.44
19-36N-RD	40293509301	64_ZONE_U_BASE	1471301	744272	-7293	7913.02
19-36N-RD	40293509301	64_ZONE_W_TOP	1471301	744272	-7361	7980.79
19-36N-RD	40293509301	64_ZONE_W_BASE	1471301	744272	-7738	8358.11
19-36N-RD	40293509301	TUMEY	1471301	744272	-7851	8470.99
1A-22N	40293504800	TEMBLOR SANDS_TOP	1460841	754386.3	-5000	5677.23
1A-22N	40293504800	MEDIA_TOP	1460841	754386.3	-5547	6223.97
1A-22N	40293504800	CARNEROS_TOP	1460841	754386.3	-6408	7085.11
1A-22N	40293504800	CARNEROS_BASE	1460841	754386.3	-6966	7642.99
1A-22N	40293504800	AGUA_TOP	1460841	754386.3	-7022	7698.8
1A-22N	40293504800	AGUA_BASE	1460841	754386.3	-7229	7906.38
1A-22N	40293504800	64_ZONE_U_TOP	1460841	754386.3	-7409	8086.44
1A-22N	40293504800	64_ZONE_U_BASE	1460841	754386.3	-7478	8154.52
1A-22N	40293504800	64_ZONE_W_TOP	1460841	754386.3	-7559	8235.57
1A-36N	40290153600	TEMBLOR SANDS_TOP	1471319	746308.7	-4878	5494.12
1A-36N	40290153600	MEDIA_TOP	1471319	746308.7	-5759	6374.74
1A-36N	40290153600	CARNEROS_TOP	1471319	746308.7	-6852	7467.53
1A-36N	40290153600	CARNEROS_BASE	1471319	746308.7	-7511	8127.44
1A-36N	40290153600	AGUA_TOP	1471319	746308.7	-7555	8171.07
1A-36N	40290153600	AGUA_BASE	1471319	746308.7	-7594	8210.22
1A-36N	40290153600	64_ZONE_U_TOP	1471319	746308.7	-7790	8405.96
1A-36N	40290153600	64_ZONE_U_BASE	1471319	746308.7	-7919	8534.7
1A-36N	40290153600	64_ZONE_W_TOP	1471319	746308.7	-7981	8597.02
1B-21N	40291502800	TEMBLOR SANDS_TOP	1457075	757861.2	-5771	6434.8
1B-21N	40291502800	MEDIA_TOP	1457075	757861.2	-6091	6754.61
1B-21N	40291502800	CARNEROS_TOP	1457075	757861.2	-7047	7711.37
1B-21N	40291502800	CARNEROS_BASE	1457075	757861.2	-7598	8262.4

Well Name	UWI	Surface	X	Y	Z	MD
1B-21N	40291502800	AGUA_TOP	1457075	757861.2	-7659	8322.59
1B-21N	40291502800	AGUA_BASE	1457075	757861.2	-7878	8542.32
1B-21N	40291502800	64_ZONE_U_TOP	1457075	757861.2	-8047	8711.01
1B-21N	40291502800	64_ZONE_U_BASE	1457075	757861.2	-8089	8753.17
1B-21N	40291502800	64_ZONE_W_TOP	1457075	757861.2	-8124	8787.68
1B-21N	40291502800	64_ZONE_W_BASE	1457075	757861.2	-8452	9115.82
1B-21N	40291502800	TUMEY	1457075	757861.2	-8614	9277.57
1Y-28N	40292962200	TEMBLOR SANDS_TOP	1460302	753193.5	-4884	5577.61
1Y-28N	40292962200	MEDIA_TOP	1460304	753195.1	-5402	6095.59
1Y-28N	40292962200	CARNEROS_TOP	1460308	753194.9	-6260	6953.43
1Y-28N	40292962200	AGUA_TOP	1460312	753198	-6824	7517.48
1Y-28N	40292962200	AGUA_BASE	1460313	753200.3	-7131	7824.93
1Y-28N	40292962200	64_ZONE_U_TOP	1460313	753201.3	-7356	8050.19
1Y-28N	40292962200	64_ZONE_U_BASE	1460313	753201.3	-7421	8114.51
1Y-28N	40292962200	64_ZONE_W_TOP	1460313	753201.3	-7463	8157.3
1Y-28N	40292962200	64_ZONE_W_BASE	1460311	753201.2	-7822	8516.24
1Y-28N	40292962200	TUMEY	1460310	753200.4	-7965	8659.16
2-17N	40291139600	TEMBLOR SANDS_TOP	1455096	759775.3	-6289	6985.27
2-17N	40291139600	MEDIA_TOP	1455096	759775.3	-6676	7371.69
2-17N	40291139600	CARNEROS_TOP	1455096	759775.3	-7607	8303
2-17N	40291139600	CARNEROS_BASE	1455096	759775.3	-8233	8929.16
2-17N	40291139600	AGUA_TOP	1455096	759775.3	-8262	8958.25
2-21N	40293503600	TEMBLOR SANDS_TOP	1460368	754443.5	-5025	5705.74
2-21N	40293503600	MEDIA_TOP	1460368	754443.5	-5514	6195.07
2-21N	40293503600	CARNEROS_TOP	1460368	754443.5	-6377	7058.5
2-21N	40293503600	CARNEROS_BASE	1460368	754443.5	-7030	7711.12
2-21N	40293503600	AGUA_TOP	1460368	754443.5	-7062	7743.32
2-21N	40293503600	AGUA_BASE	1460368	754443.5	-7334	8014.95
2-21N	40293503600	64_ZONE_U_TOP	1460368	754443.5	-7502	8182.96
2-21N	40293503600	64_ZONE_U_BASE	1460368	754443.5	-7563	8244.4
2-21N	40293503600	64_ZONE_W_TOP	1460368	754443.5	-7595	8275.97
2-21N	40293503600	64_ZONE_W_BASE	1460368	754443.5	-7891	8572.17
2-28N	40293507000	TEMBLOR SANDS_TOP	1459753	753299.1	-5000	5688.13
2-28N	40293507000	MEDIA_TOP	1459754	753299.6	-5502	6189.73
2-28N	40293507000	CARNEROS_TOP	1459761	753308.3	-6420	7108.39
2-28N	40293507000	CARNEROS_BASE	1459761	753309.3	-6988	7675.97
2-28N	40293507000	AGUA_TOP	1459761	753309.4	-7030	7718.1
2-28N	40293507000	AGUA_BASE	1459761	753309.3	-7314	8002.27
2-28N	40293507000	64_ZONE_U_TOP	1459764	753310.1	-7494	8181.82
2-28N	40293507000	64_ZONE_U_BASE	1459765	753310.7	-7557	8244.6
2-28N	40293507000	64_ZONE_W_TOP	1459765	753310.8	-7578	8266.01
2-28N	40293507000	64_ZONE_W_BASE	1459771	753313.6	-7895	8583.04
2-5	40297691300	TEMBLOR SANDS_TOP	1451702	770312.4	-9306	9940.74
2-5	40297691300	MEDIA_TOP	1451702	770312.4	-9485	10119.6
2-5	40297691300	CARNEROS_TOP	1451702	770312.4	-10432	11066.8
2-5	40297691300	AGUA_TOP	1451702	770312.4	-10786	11421.1
2-5	40297691300	AGUA_BASE	1451702	770312.4	-10917	11552.5
2-5	40297691300	64_ZONE_U_TOP	1451702	770312.4	-11051	11685.8
2-5	40297691300	64_ZONE_U_BASE	1451702	770312.4	-11090	11724.7
2-5	40297691300	64_ZONE_W_TOP	1451702	770312.4	-11123	11758.1
2-5	40297691300	64_ZONE_W_BASE	1451702	770312.4	-11486	12120.9
2-5	40297691300	TUMEY	1451702	770312.4	-11674	12309.2
20-36N	40293509400	TEMBLOR SANDS_TOP	1472604	744409.5	-4920	5518.65
20-36N	40293509400	MEDIA_TOP	1472604	744409.5	-5814	6412.56
20-36N	40293509400	CARNEROS_TOP	1472604	744409.5	-6854	7452.84
20-36N	40293509400	CARNEROS_BASE	1472604	744409.5	-7435	8033.67
20-36N	40293509400	AGUA_TOP	1472604	744409.5	-7482	8081.12
20-36N	40293509400	AGUA_BASE	1472604	744409.5	-7515	8113.68
20-36N	40293509400	64_ZONE_U_TOP	1472604	744409.5	-7694	8292.82
20-36N	40293509400	64_ZONE_U_BASE	1472604	744409.5	-7831	8430.08
21-1N	40293511100	TEMBLOR SANDS_TOP	1473137	741125.6	-4617	5240.93
21-1N	40293511100	MEDIA_TOP	1473136	741126.1	-5584	6207.4
21-1N	40293511100	AGUA_TOP	1473134	741108	-6938	7562.28
21-1N	40293511100	AGUA_BASE	1473133	741108.1	-7020	7643.64
21-1N	40293511100	64_ZONE_U_TOP	1473129	741110.7	-7358	7981.79
21-1N	40293511100	64_ZONE_U_BASE	1473127	741111.6	-7490	8113.96
21-1N	40293511100	64_ZONE_W_TOP	1473126	741112.1	-7565	8189.08
21-21N	40293503800	AGUA_BASE	1459677	753737.3	-7236	7931.56
21-21N	40293503800	64_ZONE_U_TOP	1459677	753737.3	-7474	8170.13
21-21N	40293503800	64_ZONE_U_BASE	1459677	753737.3	-7535	8231.38
21-21N	40293503800	64_ZONE_W_TOP	1459677	753737.3	-7564	8260.43
21-21N	40293503800	64_ZONE_W_BASE	1459677	753737.3	-7922	8617.66
22-21N	40293503900	TEMBLOR SANDS_TOP	1459692	754397.1	-5035	5715.5

Well Name	UWI	Surface	X	Y	Z	MD
22-21N	40293503900	MEDIA_TOP	1459692	754397.1	-5522	6202.11
22-21N	40293503900	CARNEROS_TOP	1459692	754397.1	-6381	7060.66
22-21N	40293503900	CARNEROS_BASE	1459692	754397.1	-6976	7655.54
22-21N	40293503900	AGUA_TOP	1459692	754397.1	-7017	7696.51
22-21N	40293503900	AGUA_BASE	1459692	754397.1	-7343	8023.35
22-21N	40293503900	64_ZONE_U_TOP	1459692	754397.1	-7504	8183.99
22-21N	40293503900	64_ZONE_U_BASE	1459692	754397.1	-7580	8259.69
22-21N	40293503900	64_ZONE_W_TOP	1459692	754397.1	-7641	8321.44
22-21N	40293503900	64_ZONE_W_BASE	1459692	754397.1	-7926	8606.09
22X-27	40292961700	MEDIA_TOP	1462191	751812.4	-5176	5888.47
23-1N	40293511300	TEMBLOR SANDS_TOP	1471929	741225.6	-4504	5146.2
23-1N	40293511300	MEDIA_TOP	1471930	741227.7	-5487	6129.58
23-1N	40293511300	CARNEROS_TOP	1471920	741237.3	-6302	6944.55
23-1N	40293511300	CARNEROS_BASE	1471916	741245.3	-6753	7395.9
23-1N	40293511300	AGUA_TOP	1471915	741247.8	-6854	7496.9
23-1N	40293511300	AGUA_BASE	1471915	741249.3	-6909	7551.62
23-1N	40293511300	64_ZONE_U_TOP	1471908	741258.8	-7242	7884.81
23-1N	40293511300	64_ZONE_U_BASE	1471906	741261	-7354	7997.34
23-1N	40293511300	64_ZONE_W_TOP	1471905	741262.4	-7421	8064.16
23-1N	40293511300	64_ZONE_W_BASE	1471902	741269	-7727	8370.15
23-22N	40292959000	CARNEROS_TOP	1461569	754993.3	-6724	7402.34
23-22N	40292959000	CARNEROS_BASE	1461571	754986.3	-7266	7943.7
23-22N	40292959000	AGUA_TOP	1461571	754985.4	-7311	7988.88
23-22N	40292959000	AGUA_BASE	1461570	754985	-7509	8186.73
23-22N	40292959000	64_ZONE_U_TOP	1461572	754984.6	-7697	8375.46
23-22N	40292959000	64_ZONE_U_BASE	1461572	754984.5	-7727	8404.94
23-22N	40292959000	64_ZONE_W_TOP	1461572	754984.4	-7787	8464.56
23X-35N	40295960000	TEMBLOR SANDS_TOP	1466900	746569	-4322	4993.93
23X-35N	40295960000	MEDIA_TOP	1466905	746578.9	-5119	5791.37
23X-35N	40295960000	CARNEROS_TOP	1466910	746600.6	-5943	6615.5
23X-35N	40295960000	CARNEROS_BASE	1466913	746608.9	-6405	7077.25
23X-35N	40295960000	AGUA_TOP	1466913	746610.4	-6475	7147.39
23X-35N	40295960000	AGUA_BASE	1466913	746611.8	-6531	7203.96
23X-35N	40295960000	64_ZONE_U_TOP	1466914	746627.6	-6885	7558.44
23X-35N	40295960000	64_ZONE_U_BASE	1466915	746633.9	-7010	7683.52
23X-35N	40295960000	64_ZONE_W_TOP	1466917	746639	-7107	7780.27
23X-35N	40295960000	64_ZONE_W_BASE	1466932	746664.2	-7540	8214.4
23X-35N	40295960000	TUMEY	1466936	746675.1	-7666	8340.9
24-21N	40292958800	TEMBLOR SANDS_TOP	1459768	755668.4	-5253	5942.58
24-21N	40292958800	MEDIA_TOP	1459775	755664.3	-5707	6397.21
24-21N	40292958800	CARNEROS_TOP	1459778	755657.4	-6627	7316.97
24-21N	40292958800	CARNEROS_BASE	1459780	755652.5	-7202	7891.89
24-21N	40292958800	AGUA_TOP	1459780	755652.5	-7252	7941.52
24-21N	40292958800	AGUA_BASE	1459781	755652.5	-7456	8145.82
24-21N	40292958800	64_ZONE_U_TOP	1459782	755652.5	-7626	8316.25
24-21N	40292958800	64_ZONE_U_BASE	1459782	755652.5	-7683	8373.3
24-21N	40292958800	64_ZONE_W_TOP	1459783	755652.5	-7741	8431.04
24-27N	40292960400	TEMBLOR SANDS_TOP	1460981	751839	-4760	5482.23
24-27N	40292960400	MEDIA_TOP	1460981	751838.5	-5316	6038.27
24-27N	40292960400	CARNEROS_TOP	1460982	751840.1	-6191	6913.62
24-27N	40292960400	CARNEROS_BASE	1460984	751842.4	-6727	7449.48
24-27N	40292960400	AGUA_TOP	1460984	751842.6	-6788	7510.35
24-27N	40292960400	AGUA_BASE	1460985	751843.8	-7042	7764.09
24-35N	40293508100	TEMBLOR SANDS_TOP	1466261	746532.8	-4405	5088.47
24-35N	40293508100	MEDIA_TOP	1466254	746548.6	-5192	5876.08
24-35N	40293508100	CARNEROS_TOP	1466244	746563.7	-6072	6755.43
24-35N	40293508100	CARNEROS_BASE	1466243	746575.5	-6915	7598.65
24-35N	40293508100	AGUA_TOP	1466244	746576.2	-6970	7654.3
24-35N	40293508100	AGUA_BASE	1466244	746576.8	-7005	7689.23
24-35N	40293508100	64_ZONE_U_TOP	1466248	746583.9	-7437	8121.4
24-35N	40293508100	64_ZONE_U_BASE	1466249	746585.3	-7520	8204.34
24-35N	40293508100	64_ZONE_W_TOP	1466249	746586.8	-7611	8294.93
25-26N	40293505300	TEMBLOR SANDS_TOP	1465863	750775.7	-4726	5389.23
25-26N	40293505300	MEDIA_TOP	1465865	750763.8	-5418	6081.28
25-26N	40293505300	CARNEROS_TOP	1465865	750747.6	-6457	7119.87
25-26N	40293505300	CARNEROS_BASE	1465867	750742	-6971	7634.64
25-26N	40293505300	AGUA_TOP	1465867	750741.4	-7005	7668.04
25-26N	40293505300	AGUA_BASE	1465864	750738.7	-7107	7770.23
25-26N	40293505300	64_ZONE_U_TOP	1465858	750730.8	-7397	8060.23
25-26N	40293505300	64_ZONE_U_BASE	1465856	750728.9	-7544	8207.12
25-26N	40293505300	64_ZONE_W_TOP	1465855	750728.2	-7601	8264.14
25-26N_ST1	40293505301	TEMBLOR SANDS_TOP	1465863	750776.5	-4707	5369.83
25-26N_ST1	40293505301	MEDIA_TOP	1465865	750764	-5409	6072.22

Well Name	UWI	Surface	X	Y	Z	MD
25-26N_ST1	40293505301	CARNEROS_TOP	1465826	750668	-6414	7083.84
25-26N_ST1	40293505301	CARNEROS_BASE	1465780	750610	-6876	7551.42
25-26N_ST1	40293505301	AGUA_TOP	1465776	750605.8	-6912	7588.62
25-26N_ST1	40293505301	AGUA_BASE	1465764	750595.6	-7015	7692.35
25-26N_ST1	40293505301	64_ZONE_U_TOP	1465735	750572	-7334	8013.5
25-26N_ST1	40293505301	64_ZONE_U_BASE	1465733	750570	-7487	8167.2
25-26N_ST1	40293505301	64_ZONE_W_TOP	1465733	750570	-7543	8222.97
26-1N	40293511400	TEMBLOR SANDS_TOP	1471852	740516.7	-4590	5230.57
26-1N	40293511400	MEDIA_TOP	1471857	740522.7	-5618	6259.05
26-1N	40293511400	CARNEROS_TOP	1471852	740539.6	-6456	7097.25
26-1N	40293511400	AGUA_TOP	1471841	740552.4	-7091	7732
26-1N	40293511400	AGUA_BASE	1471841	740553.5	-7157	7797.74
26-1N	40293511400	64_ZONE_U_TOP	1471834	740558.4	-7538	8179.12
26-1N	40293511400	64_ZONE_U_BASE	1471833	740559.3	-7628	8269.71
26-1N	40293511400	64_ZONE_W_TOP	1471832	740559.9	-7684	8325.43
26-27N	40292960500	MEDIA_TOP	1462663	751263.9	-5134	5838.85
26-27N	40292960500	CARNEROS_TOP	1462670	751250.8	-5932	6637.39
26-35N	40293508200	TEMBLOR SANDS_TOP	1466988	745856.8	-4385	5068.22
26-35N	40293508200	MEDIA_TOP	1466988	745856.8	-5197	5880.31
26-35N	40293508200	CARNEROS_TOP	1466988	745856.8	-6073	6756.34
26-35N	40293508200	CARNEROS_BASE	1466988	745856.8	-6778	7460.94
26-35N	40293508200	AGUA_TOP	1466988	745856.8	-6859	7542.17
26A-35N	40293508300	TEMBLOR SANDS_TOP	1466497	746129.8	-4444	5116.88
26A-35N	40293508300	MEDIA_TOP	1466487	746147.5	-5248	5921.31
26A-35N	40293508300	CARNEROS_TOP	1466471	746167.6	-6161	6834.55
26A-35N	40293508300	CARNEROS_BASE	1466466	746177.1	-7040	7713.45
26A-35N	40293508300	AGUA_TOP	1466465	746177.7	-7101	7774.56
26X-7N	40297727800	TEMBLOR SANDS_TOP	1446603	765284.7	-8881	9646.49
26X-7N	40297727800	MEDIA_TOP	1446619	765267.1	-9014	9781.46
26X-7N	40297727800	CARNEROS_TOP	1446668	765180	-9712	10486.8
26X-7N	40297727800	AGUA_TOP	1446697	765113.2	-10245	11024.7
26X-7N	40297727800	64_ZONE_U_TOP	1446705	765085	-10450	11231.8
26X-7N	40297727800	64_ZONE_W_TOP	1446708	765073.1	-10528	11310.7
26X-7N	40297727800	64_ZONE_W_BASE	1446718	765031.1	-10798	11584.2
26X-7N	40297727800	TUMEY	1446730	764999.8	-11001	11789.8
26X-8	40295943800	TEMBLOR SANDS_TOP	1482483	734206.5	-8866	9489.64
26X-8	40295943800	MEDIA_TOP	1482483	734353.2	-10070	10703.5
26X-8	40295943800	AGUA_TOP	1482483	734573.5	-12544	13187.5
26X-8	40295943800	AGUA_BASE	1482483	734592.6	-12746	13391
26X-8	40295943800	64_ZONE_U_TOP	1482483	734638.2	-13293	13939.2
26X-8	40295943800	64_ZONE_W_TOP	1482483	734657	-13545	14191.9
26X-8	40295943800	64_ZONE_W_BASE	1482483	734689.3	-13980	14628.2
27-1N	40293511500	TEMBLOR SANDS_TOP	1472490	740465.4	-4581	5227.45
27-1N	40293511500	MEDIA_TOP	1472491	740472.7	-5615	6260.88
27-1N	40293511500	CARNEROS_TOP	1472486	740480.2	-6397	7042.94
27-1N	40293511500	CARNEROS_BASE	1472482	740487.2	-6880	7526.12
27-1N	40293511500	AGUA_TOP	1472481	740487.9	-6947	7593.87
27-1N	40293511500	AGUA_BASE	1472481	740488.8	-7011	7657.63
27-1N	40293511500	64_ZONE_U_TOP	1472481	740494.2	-7313	7959.37
27-1N	40293511500	64_ZONE_U_BASE	1472481	740496	-7403	8049.36
27-1N	40293511500	64_ZONE_W_TOP	1472481	740497.1	-7455	8101.81
27-1N	40293511500	64_ZONE_W_BASE	1472481	740504.2	-7767	8413.67
27R-27N	40292961600	TEMBLOR SANDS_TOP	1462294	751177.7	-4544	5253.71
27R-27N	40292961600	MEDIA_TOP	1462298	751181.4	-5168	5877.31
27R-27N	40292961600	CARNEROS_TOP	1462299	751186.6	-5987	6696.48
27R-27N	40292961600	CARNEROS_BASE	1462302	751188.1	-6501	7210.9
27R-27N	40292961600	AGUA_TOP	1462302	751188.1	-6536	7245.65
27R-27N	40292961600	AGUA_BASE	1462303	751188.2	-6787	7496.9
27R-27N	40292961600	64_ZONE_U_TOP	1462303	751188.2	-6984	7693.13
27R-27N	40292961600	64_ZONE_U_BASE	1462303	751188.2	-7066	7775.07
27R-27N	40292961600	64_ZONE_W_TOP	1462303	751188.2	-7116	7825.34
27R-27N	40292961600	64_ZONE_W_BASE	1462299	751190.3	-7544	8253.28
28-1N	40293511600	MEDIA_TOP	1473358	740402.5	-5652	6284.96
28-1N	40293511600	CARNEROS_TOP	1473354	740396.7	-6468	7101.55
28-1N	40293511600	AGUA_TOP	1473350	740389.8	-6972	7605.43
28-1N	40293511600	AGUA_BASE	1473349	740389.6	-7026	7659.59
28-1N	40293511600	64_ZONE_U_TOP	1473347	740389	-7373	8006.33
28-1N	40293511600	64_ZONE_U_BASE	1473347	740389	-7492	8125.87
28-1N	40293511600	64_ZONE_W_TOP	1473347	740389	-7546	8179.88
28-1N_ST1	40293511601	CARNEROS_TOP	1473358	740396.7	-6517	7150.18
28-1N_ST1	40293511601	CARNEROS_BASE	1473362	740432.6	-6922	7558.14
28-1N_ST1	40293511601	AGUA_TOP	1473359	740443.1	-6996	7632.37
28-1N_ST1	40293511601	AGUA_BASE	1473359	740450.4	-7060	7697.19

Well Name	UWI	Surface	X	Y	Z	MD
28-1N_ST1	40293511601	64_ZONE_U_TOP	1473371	740485.2	-7356	7995.14
2A-22N	40293504900	TEMBLOR SANDS_TOP	1461489	754366.9	-5034	5705.69
2A-22N	40293504900	MEDIA_TOP	1461489	754366.9	-5589	6260.61
2A-22N	40293504900	CARNEROS_TOP	1461489	754366.9	-6510	7182.26
2A-22N	40293504900	CARNEROS_BASE	1461489	754366.9	-7010	7681.98
2A-22N	40293504900	AGUA_TOP	1461489	754366.9	-7061	7732.66
2A-22N	40293504900	AGUA_BASE	1461489	754366.9	-7266	7938.05
2A-22N	40293504900	64_ZONE_U_TOP	1461489	754366.9	-7455	8126.77
2A-22N	40293504900	64_ZONE_U_BASE	1461489	754366.9	-7506	8178.18
2A-22N	40293504900	64_ZONE_W_TOP	1461489	754366.9	-7579	8250.68
2R-27N	40292961400	TEMBLOR SANDS_TOP	1464751	753097.3	-5354	5997.35
2R-27N	40292961400	MEDIA_TOP	1464752	753082.6	-5976	6619.58
2R-27N	40292961400	CARNEROS_TOP	1464753	753059.6	-7106	7750.02
2R-27N	40292961400	CARNEROS_BASE	1464754	753055.3	-7623	8266.6
2R-27N	40292961400	AGUA_TOP	1464754	753055.1	-7668	8311.13
2R-27N	40292961400	AGUA_BASE	1464753	753054.3	-7897	8540.47
3-21N	40293503700	TEMBLOR SANDS_TOP	1460368	755067.2	-5146	5833.93
3-21N	40293503700	MEDIA_TOP	1460368	755067.2	-5642	6330.37
3-21N	40293503700	CARNEROS_TOP	1460368	755067.2	-6540	7227.68
3-21N	40293503700	CARNEROS_BASE	1460368	755067.2	-7097	7784.86
3-21N	40293503700	AGUA_TOP	1460368	755067.2	-7138	7825.88
3-21N	40293503700	AGUA_BASE	1460368	755067.2	-7359	8046.64
3-21N	40293503700	64_ZONE_U_TOP	1460368	755067.2	-7539	8226.57
3-21N	40293503700	64_ZONE_U_BASE	1460368	755067.2	-7585	8272.67
3-21N	40293503700	64_ZONE_W_TOP	1460368	755067.2	-7643	8331.22
3-22N	40293504700	TEMBLOR SANDS_TOP	1460898	755021.1	-5169	5844.13
3-22N	40293504700	MEDIA_TOP	1460905	755015.4	-5701	6376.14
3-22N	40293504700	CARNEROS_TOP	1460907	755008.2	-6641	7317.19
3-22N	40293504700	CARNEROS_BASE	1460910	755004.9	-7125	7801.2
3-22N	40293504700	AGUA_TOP	1460910	755003.3	-7186	7861.51
3-22N	40293504700	AGUA_BASE	1460910	754999.8	-7399	8075.08
3-22N	40293504700	64_ZONE_U_TOP	1460910	754999.9	-7576	8252.3
3-22N	40293504700	64_ZONE_U_BASE	1460910	754999.8	-7627	8302.65
3-22N	40293504700	64_ZONE_W_TOP	1460910	754999.7	-7665	8340.7
3-35N	40293507500	TEMBLOR SANDS_TOP	1469328	747650.1	-4681	5319.59
3-35N	40293507500	MEDIA_TOP	1469334	747645	-5472	6111.01
3-35N	40293507500	CARNEROS_TOP	1469333	747615.5	-6511	7150.15
3-35N	40293507500	CARNEROS_BASE	1469329	747594.3	-7028	7668.42
3-35N	40293507500	AGUA_TOP	1469328	747593.3	-7083	7723.28
3-35N	40293507500	AGUA_BASE	1469327	747592.7	-7115	7755.56
3-35N	40293507500	64_ZONE_U_TOP	1469320	747588.1	-7419	8058.98
3-35N	40293507500	64_ZONE_U_BASE	1469319	747587	-7499	8139.7
3-35N	40293507500	64_ZONE_W_TOP	1469317	747586	-7576	8216.14
3-35N_ST1	40293507501	MEDIA_TOP	1469329	747646.4	-5474	6113.47
3-35N_ST1	40293507501	CARNEROS_TOP	1469160	747527	-6391	7054.79
3-35N_ST1	40293507501	CARNEROS_BASE	1469063	747435.4	-6944	7623.89
3-35N_ST1	40293507501	AGUA_TOP	1469060	747432.6	-6963	7643.2
3-35N_ST1	40293507501	AGUA_BASE	1469055	747427.7	-6996	7676.46
3-35N_ST1	40293507501	64_ZONE_U_TOP	1469015	747386.2	-7260	7946.89
3-35N_ST1	40293507501	64_ZONE_U_BASE	1469001	747370.4	-7354	8042.98
3-35N_ST1	40293507501	64_ZONE_W_TOP	1468995	747363.8	-7392	8082.41
3-35N_ST2	40293507502	MEDIA_TOP	1469328	747645.8	-5487	6126.04
3-35N_ST2	40293507502	CARNEROS_TOP	1469221	747611.7	-6445	7092.76
3-35N_ST2	40293507502	AGUA_TOP	1469239	747646.3	-7083	7733.13
3-35N_ST2	40293507502	64_ZONE_U_TOP	1469266	747665.5	-7423	8074.81
3-35N_ST2	40293507502	64_ZONE_U_BASE	1469277	747670.4	-7528	8180.59
3-35N_ST2	40293507502	64_ZONE_W_TOP	1469284	747673.3	-7600	8252.67
30-1	40304401500	TEMBLOR SANDS_TOP	1446605	781277.5	-8911	9733.46
30-1	40304401500	MEDIA_TOP	1446651	781288.5	-9069	9898.49
30-1	40304401500	CARNEROS_TOP	1446892	781342.2	-9943	10806.6
30-1	40304401500	AGUA_TOP	1446983	781362.5	-10277	11152.9
30-1	40304401500	AGUA_BASE	1447011	781368.4	-10386	11265.3
30-1	40304401500	64_ZONE_U_TOP	1447041	781374.4	-10513	11396.8
30-1	40304401500	64_ZONE_U_BASE	1447057	781377.6	-10584	11469
30-1	40304401500	64_ZONE_W_TOP	1447068	781379.8	-10631	11517.4
30-1	40304401500	64_ZONE_W_BASE	1447140	781400.2	-10900	11797.4
30-1	40304401500	TUMEY	1447194	781417.4	-11125	12029.2
31-21N	40293504000	TEMBLOR SANDS_TOP	1459061	754113.9	-5111	5803.96
31-21N	40293504000	MEDIA_TOP	1459068	754121.5	-5576	6268.47
31-21N	40293504000	CARNEROS_TOP	1459082	754135.3	-6497	7190.36
31-21N	40293504000	CARNEROS_BASE	1459088	754139.1	-6989	7682.18
31-21N	40293504000	AGUA_TOP	1459088	754139.5	-7024	7716.55
31-21N	40293504000	AGUA_BASE	1459092	754142.3	-7365	8058.41

Well Name	UWI	Surface	X	Y	Z	MD
31-21N	40293504000	64_ZONE_U_TOP	1459094	754144.4	-7554	8246.95
31-21N	40293504000	64_ZONE_U_BASE	1459095	754145.6	-7640	8332.74
31-21N	40293504000	64_ZONE_W_TOP	1459096	754146	-7672	8364.82
31-27N	40293506500	TEMBLOR SANDS_TOP	1465036	751271.5	-4710	5367.19
31-27N	40293506500	MEDIA_TOP	1465039	751265.2	-5360	6016.47
31-27N	40293506500	CARNEROS_TOP	1465040	751244.6	-6357	7014.45
31-27N	40293506500	CARNEROS_BASE	1465040	751232.7	-6911	7567.73
31-27N	40293506500	AGUA_TOP	1465039	751232.2	-6941	7597.87
31-27N	40293506500	AGUA_BASE	1465037	751228.7	-7070	7727.29
31-27N	40293506500	64_ZONE_U_TOP	1465032	751221.3	-7343	8000.91
31-27N	40293506500	64_ZONE_U_BASE	1465031	751220.2	-7432	8089.03
31-27N	40293506500	64_ZONE_W_TOP	1465031	751219.4	-7479	8135.94
31R-28N	40292962100	TEMBLOR SANDS_TOP	1459788	751310.5	-5375	6096.14
31R-28N	40292962100	MEDIA_TOP	1459799	751305.9	-5866	6586.88
31R-28N	40292962100	CARNEROS_TOP	1459814	751319.8	-7145	7865.92
31R-28N	40292962100	CARNEROS_BASE	1459812	751335.8	-7737	8458.34
31R-28N	40292962100	AGUA_TOP	1459812	751336.9	-7786	8507.35
32-21N	40293504600	TEMBLOR SANDS_TOP	1459271	754549.1	-5045	5763.06
32-21N	40293504600	MEDIA_TOP	1459313	754528.8	-5585	6305.37
32-21N	40293504600	CARNEROS_TOP	1459375	754493.6	-6433	7156.24
32-21N	40293504600	CARNEROS_BASE	1459406	754477	-7012	7735.92
32-21N	40293504600	AGUA_TOP	1459408	754476.4	-7040	7763.99
32-21N	40293504600	AGUA_BASE	1459418	754469.8	-7353	8077.65
32-21N	40293504600	64_ZONE_U_TOP	1459425	754465.9	-7566	8291.05
32-21N	40293504600	64_ZONE_U_BASE	1459427	754464.8	-7629	8354.1
32-21N	40293504600	64_ZONE_W_TOP	1459428	754464.2	-7659	8384.06
32-35N	40293508400	MEDIA_TOP	1470650	745749.6	-5506	6135.03
32-35N	40293508400	CARNEROS_TOP	1470650	745749.6	-6422	7050.85
32-35N	40293508400	CARNEROS_BASE	1470650	745749.6	-7010	7639.24
32-35N	40293508400	AGUA_TOP	1470650	745749.6	-7031	7659.59
32-35N	40293508400	AGUA_BASE	1470650	745749.6	-7081	7710.03
32-35N	40293508400	64_ZONE_U_TOP	1470650	745749.6	-7337	7965.79
32-35N	40293508400	64_ZONE_U_BASE	1470650	745749.6	-7441	8070.2
32-35N	40293508400	64_ZONE_W_TOP	1470650	745749.6	-7527	8155.64
33-21N	40293504100	TEMBLOR SANDS_TOP	1459118	755026.4	-5118	5814.61
33-21N	40293504100	MEDIA_TOP	1459122	755028.3	-5626	6323.02
33-21N	40293504100	CARNEROS_TOP	1459122	755027.1	-6479	7175.78
33-21N	40293504100	AGUA_TOP	1459120	755021.8	-7118	7814.85
33-21N	40293504100	AGUA_BASE	1459120	755019.7	-7413	8110.44
33-21N	40293504100	64_ZONE_U_TOP	1459121	755018.2	-7578	8275.15
33-21N	40293504100	64_ZONE_U_BASE	1459121	755017.4	-7642	8338.76
33-21N	40293504100	64_ZONE_W_TOP	1459121	755016.9	-7682	8378.83
33-35N	40293508500	MEDIA_TOP	1470589	745078	-5365	5993.6
33-35N	40293508500	CARNEROS_TOP	1470582	745064.8	-6312	6940.52
33-35N	40293508500	CARNEROS_BASE	1470573	745051.3	-6837	7465.64
33-35N	40293508500	AGUA_TOP	1470572	745050.6	-6861	7490.21
33-35N	40293508500	AGUA_BASE	1470571	745049.3	-6914	7543.28
33-35N	40293508500	64_ZONE_U_TOP	1470568	745042.9	-7170	7798.99
33-35N	40293508500	64_ZONE_W_TOP	1470566	745039.3	-7334	7962.89
34-21N	40293504200	AGUA_TOP	1458990	755837.1	-7306	7981.26
34-21N	40293504200	AGUA_BASE	1458991	755837	-7537	8212.02
34-21N	40293504200	64_ZONE_U_TOP	1458991	755837	-7676	8350.55
34-21N	40293504200	64_ZONE_U_BASE	1458991	755837	-7726	8401.4
34-21N	40293504200	64_ZONE_W_TOP	1458991	755837	-7763	8437.54
34-21N_ST1	40293504201	MEDIA_TOP	1458974	755842.6	-5771	6446.23
34-21N_ST1	40293504201	CARNEROS_TOP	1458983	755833	-6635	7309.99
34-21N_ST1	40293504201	CARNEROS_BASE	1458978	755741.5	-7240	7922.91
34-21N_ST1	40293504201	AGUA_TOP	1458981	755724.7	-7309	7993.78
34-21N_ST1	40293504201	AGUA_BASE	1458997	755669.3	-7495	8188.5
34-21N_ST1	40293504201	64_ZONE_U_TOP	1459014	755619.6	-7652	8353.71
34-21N_ST1	40293504201	64_ZONE_U_BASE	1459018	755606.2	-7697	8400.88
34-21N_ST1	40293504201	64_ZONE_W_TOP	1459022	755592.9	-7741	8447.41
35-21N	40293504300	TEMBLOR SANDS_TOP	1458318	756473.1	-5415	6098.65
35-21N	40293504300	MEDIA_TOP	1458318	756473.1	-5825	6509.29
35-21N	40293504300	CARNEROS_TOP	1458318	756473.1	-6708	7392.3
35-21N	40293504300	CARNEROS_BASE	1458318	756473.1	-7326	8009.58
35-21N	40293504300	AGUA_TOP	1458318	756473.1	-7370	8053.84
35-21N	40293504300	AGUA_BASE	1458318	756473.1	-7579	8262.52
35-21N	40293504300	64_ZONE_U_TOP	1458318	756473.1	-7732	8416.23
35-21N	40293504300	64_ZONE_U_BASE	1458318	756473.1	-7790	8473.63
35-21N	40293504300	64_ZONE_W_TOP	1458318	756473.1	-7824	8508.42
35X-27N	40295827100	TEMBLOR SANDS_TOP	1464197	750692.2	-4438	5115.68
35X-27N	40295827100	MEDIA_TOP	1464192	750674.3	-5077	5755.33

Well Name	UWI	Surface	X	Y	Z	MD
35X-27N	40295827100	CARNEROS_TOP	1464170	750645.3	-5888	6567.44
35X-27N	40295827100	CARNEROS_BASE	1464157	750621.8	-6447	7126.67
35X-27N	40295827100	AGUA_TOP	1464156	750619.9	-6489	7168.66
35X-27N	40295827100	AGUA_BASE	1464150	750610	-6692	7371.77
35X-27N	40295827100	64_ZONE_U_TOP	1464146	750600.3	-6883	7563.69
35X-27N	40295827100	64_ZONE_U_BASE	1464145	750595.6	-6968	7648.14
35X-27N	40295827100	64_ZONE_W_TOP	1464143	750590.7	-7056	7737.01
37-1N	40293511700	TEMBLOR SANDS_TOP	1473101	739774.4	-4621	5261.54
37-1N	40293511700	MEDIA_TOP	1473099	739771.4	-5649	6289.61
37-1N	40293511700	AGUA_TOP	1473091	739785.6	-6993	7633.24
37-1N	40293511700	AGUA_BASE	1473091	739786.6	-7043	7683.72
37-1N	40293511700	64_ZONE_U_TOP	1473088	739793.7	-7394	8034.22
37-1N	40293511700	64_ZONE_U_BASE	1473087	739795.9	-7501	8141.91
37-1N	40293511700	64_ZONE_W_TOP	1473087	739796.9	-7548	8188.83
37-27N	40296064400	MEDIA_TOP	1462822	750734.5	-5077	5794.5
37-27N	40296064400	CARNEROS_TOP	1462822	750776.6	-5856	6574.48
37-27N	40296064400	AGUA_TOP	1462822	750817.2	-6492	7211.53
37-27N	40296064400	AGUA_BASE	1462822	750830.7	-6697	7417.04
38-35N	40292964700	TEMBLOR SANDS_TOP	1467340	745286.6	-4457	5144.74
38-35N	40292964700	MEDIA_TOP	1467331	745307.7	-5307	5994.54
38-35N	40292964700	CARNEROS_TOP	1467306	745352.7	-6242	6931.15
38-35N	40292964700	CARNEROS_BASE	1467300	745372.8	-6943	7632.84
38-35N	40292964700	AGUA_TOP	1467300	745373.2	-6963	7652.59
39-26N	40293505400	MEDIA_TOP	1466625	750146.1	-5406	6063.7
39-26N	40293505400	CARNEROS_TOP	1466621	750130.5	-6385	7043.47
39-26N	40293505400	AGUA_TOP	1466619	750126.9	-7026	7684.62
39-26N	40293505400	AGUA_BASE	1466617	750125.7	-7089	7747.68
39-26N	40293505400	64_ZONE_U_TOP	1466610	750116.3	-7402	8061
39-26N	40293505400	64_ZONE_U_BASE	1466608	750114	-7505	8163.81
39-26N	40293505400	64_ZONE_W_TOP	1466606	750112.7	-7573	8231.2
39-26N_ST1	40293505401	MEDIA_TOP	1466610	750142.4	-5389	6047.5
39-26N_ST1	40293505401	CARNEROS_TOP	1466536	750056.2	-6354	7019.37
39-26N_ST1	40293505401	CARNEROS_BASE	1466499	750004.4	-6926	7594.78
39-26N_ST1	40293505401	AGUA_TOP	1466497	750003.2	-6949	7618.56
39-26N_ST1	40293505401	AGUA_BASE	1466495	750001.2	-6990	7659.42
39-26N_ST1	40293505401	64_ZONE_U_TOP	1466474	749981.3	-7285	7955.46
39-26N_ST1	40293505401	64_ZONE_U_BASE	1466469	749973.2	-7367	8038.44
3A-22N	40291503100	TEMBLOR SANDS_TOP	1462419	754350.9	-5084	5752.58
3A-22N	40291503100	MEDIA_TOP	1462417	754343.4	-5690	6358.12
3A-22N	40291503100	CARNEROS_TOP	1462414	754332	-6616	7284.21
3A-22N	40291503100	CARNEROS_BASE	1462411	754325.2	-7164	7831.95
3A-22N	40291503100	AGUA_TOP	1462411	754324.8	-7198	7866.43
3A-22N	40291503100	AGUA_BASE	1462411	754322.2	-7409	8077.62
3A-22N	40291503100	64_ZONE_U_TOP	1462410	754320	-7584	8252.81
3A-22N	40291503100	64_ZONE_U_BASE	1462410	754319.1	-7655	8323.5
3A-22N	40291503100	64_ZONE_W_TOP	1462410	754318.7	-7686	8354.69
3A-22N	40291503100	64_ZONE_W_BASE	1462408	754314.5	-8026	8694.48
3A-22N	40291503100	TUMEY	1462408	754312.5	-8189	8857.76
4-1N	40297825900	TEMBLOR SANDS_TOP	1473697	742310.5	-4875	5532.84
4-1N	40297825900	MEDIA_TOP	1473637	742260.4	-5827	6489.16
4-1N	40297825900	CARNEROS_TOP	1473521	742156.2	-6775	7449.76
4-1N	40297825900	CARNEROS_BASE	1473459	742104.5	-7256	7937.04
4-1N	40297825900	AGUA_TOP	1473444	742091.5	-7377	8059.67
4-27N	40293505900	TEMBLOR SANDS_TOP	1463531	753057.8	-4987	5652.61
4-27N	40293505900	MEDIA_TOP	1463535	753046.7	-5586	6251.88
4-27N	40293505900	CARNEROS_TOP	1463534	753038.3	-6603	7268.54
4-27N	40293505900	CARNEROS_BASE	1463525	753031.6	-7152	7817.66
4-27N	40293505900	AGUA_TOP	1463525	753031.4	-7182	7847.47
4-27N	40293505900	AGUA_BASE	1463522	753030.7	-7409	8074.91
4-27N	40293505900	64_ZONE_U_TOP	1463521	753029.6	-7601	8266.55
4-27N	40293505900	64_ZONE_U_BASE	1463520	753029	-7673	8339.04
4-27N	40293505900	64_ZONE_W_TOP	1463520	753028.8	-7711	8376.96
4-27N_ST1	40293505901	MEDIA_TOP	1463529	753043.8	-5580	6246.06
4-27N_ST1	40293505901	CARNEROS_TOP	1463380	752961.4	-6488	7172.44
4-27N_ST1	40293505901	CARNEROS_BASE	1463290	752854.4	-7004	7707.7
4-27N_ST1	40293505901	AGUA_TOP	1463284	752846.7	-7040	7744.79
4-27N_ST1	40293505901	AGUA_BASE	1463246	752810.8	-7244	7955.91
4-27N_ST1	40293505901	64_ZONE_U_TOP	1463218	752791.4	-7417	8132.33
4-27N_ST1	40293505901	64_ZONE_U_BASE	1463207	752783.2	-7479	8195.69
4-27N_ST1	40293505901	64_ZONE_W_TOP	1463192	752771.4	-7569	8287.34
4-35N	40293507600	TEMBLOR SANDS_TOP	1468531	747928.7	-4562	5204.71
4-35N	40293507600	MEDIA_TOP	1468532	747924	-5305	5947.92
4-35N	40293507600	CARNEROS_TOP	1468511	747917.5	-6309	6951.95

Well Name	UWI	Surface	X	Y	Z	MD
4-35N	40293507600	CARNEROS_BASE	1468508	747909.6	-6883	7525.7
4-35N	40293507600	AGUA_TOP	1468508	747909.4	-6911	7553.92
4-35N	40293507600	AGUA_BASE	1468508	747909.1	-6976	7619.01
4-35N	40293507600	64_ZONE_U_TOP	1468508	747907.4	-7227	7870.35
4-35N	40293507600	64_ZONE_U_BASE	1468508	747906.5	-7330	7973.09
4-35N	40293507600	64_ZONE_W_TOP	1468508	747906.2	-7377	8019.88
4-36N	40293509600	MEDIA_TOP	1471874	743080.3	-5422	6043.54
4-36N	40293509600	CARNEROS_TOP	1471874	743080.3	-6366	6988.11
4-36N	40293509600	CARNEROS_BASE	1471874	743080.3	-6931	7552.81
4-36N	40293509600	AGUA_TOP	1471874	743080.3	-6964	7585.57
4-36N	40293509600	AGUA_BASE	1471874	743080.3	-6990	7611.31
4-36N	40293509600	64_ZONE_U_TOP	1471874	743080.3	-7172	7793.82
4-36N	40293509600	64_ZONE_U_BASE	1471874	743080.3	-7296	7917.71
4-36N	40293509600	64_ZONE_W_TOP	1471874	743080.3	-7351	7972.19
43-21N	40293504400	TEMBLOR SANDS_TOP	1458495	754798.7	-5263	5955.74
43-21N	40293504400	MEDIA_TOP	1458499	754804.5	-5684	6376.77
43-21N	40293504400	CARNEROS_TOP	1458502	754808.6	-6573	7265.27
43-21N	40293504400	AGUA_TOP	1458501	754807.4	-7207	7899.41
43-21N	40293504400	AGUA_BASE	1458500	754808.3	-7507	8198.97
43-21N	40293504400	64_ZONE_U_TOP	1458500	754808.7	-7709	8400.89
43-21N	40293504400	64_ZONE_U_BASE	1458500	754808.9	-7769	8461.24
43-21N	40293504400	64_ZONE_W_TOP	1458500	754808.9	-7810	8502.86
43-26N	40293505500	TEMBLOR SANDS_TOP	1467382	749654.7	-4721	5371.29
43-26N	40293505500	MEDIA_TOP	1467394	749635.9	-5452	6101.96
43-26N	40293505500	CARNEROS_TOP	1467396	749617.6	-6441	7091.2
43-26N	40293505500	CARNEROS_BASE	1467398	749610	-7073	7724.08
43-26N	40293505500	AGUA_TOP	1467398	749609.4	-7116	7766.67
43-26N	40293505500	AGUA_BASE	1467397	749608.6	-7165	7815.18
43-26N	40293505500	64_ZONE_U_TOP	1467394	749603.9	-7459	8109.75
43-26N	40293505500	64_ZONE_U_BASE	1467393	749602.4	-7561	8212.06
43-26N	40293505500	64_ZONE_W_TOP	1467392	749600.9	-7660	8310.63
43-27N	40297512600	TEMBLOR SANDS_TOP	1462087	749562.9	-4908	5661.66
43-27N	40297512600	MEDIA_TOP	1462119	749603.4	-5562	6317.47
43-27N	40297512600	CARNEROS_TOP	1462162	749679.2	-6450	7209.95
43-27N	40297512600	CARNEROS_BASE	1462176	749723.1	-7346	8108.17
43-27N	40297512600	AGUA_TOP	1462176	749724.3	-7400	8162.24
43-27N	40297512600	64_ZONE_W_BASE	1462199	749763.8	-8407	9170.83
43-27N	40297512600	TUMEY	1462207	749775.1	-8544	9307.75
44-21N	40293504500	TEMBLOR SANDS_TOP	1458245	755622.7	-5337	6026.21
44-21N	40293504500	MEDIA_TOP	1458245	755622.7	-5736	6425.47
44-21N	40293504500	CARNEROS_TOP	1458245	755622.7	-6620	7308.59
44-21N	40293504500	CARNEROS_BASE	1458245	755622.7	-7197	7885.58
44-21N	40293504500	AGUA_TOP	1458245	755622.7	-7245	7934.34
44-21N	40293504500	AGUA_BASE	1458245	755622.7	-7475	8164.21
44-21N	40293504500	64_ZONE_U_TOP	1458245	755622.7	-7653	8342.24
44-21N	40293504500	64_ZONE_U_BASE	1458245	755622.7	-7726	8415.38
44-21N	40293504500	64_ZONE_W_TOP	1458245	755622.7	-7764	8453.49
45-35N	40293508600	TEMBLOR SANDS_TOP	1468489	744648.4	-4340	4996.16
45-35N	40293508600	MEDIA_TOP	1468490	744650.5	-5207	5862.72
45-35N	40293508600	CARNEROS_TOP	1468488	744668.4	-6053	6709.41
45-35N	40293508600	AGUA_TOP	1468492	744689.4	-6878	7535.02
45-35N	40293508600	AGUA_BASE	1468492	744690.3	-6915	7572.13
45-35N	40293508600	64_ZONE_U_TOP	1468494	744696.2	-7167	7824.27
45-35N	40293508600	64_ZONE_U_BASE	1468496	744699.1	-7292	7948.58
45-35N	40293508600	64_ZONE_W_TOP	1468496	744700.4	-7345	8002.19
46X-35N	40295918900	MEDIA_TOP	1469025	744925.5	-5143	5801.43
46X-35N	40295918900	CARNEROS_TOP	1469025	744927.8	-5980	6638.34
46X-35N	40295918900	AGUA_TOP	1469023	744930.4	-6482	7139.99
46X-35N	40295918900	AGUA_BASE	1469022	744931.8	-6537	7195.3
46X-35N	40295918900	64_ZONE_U_TOP	1469020	744942.2	-6839	7497.35
46X-35N	40295918900	64_ZONE_U_BASE	1469022	744947.9	-6918	7576.58
46X-35N	40295918900	64_ZONE_W_TOP	1469028	744956.9	-7003	7662.11
46X-35N	40295918900	64_ZONE_W_BASE	1469072	745025.4	-7383	8051.04
46X-35N_ST1	40295918901	TEMBLOR SANDS_TOP	1469019	744920.6	-4313	4970.75
46X-35N_ST1	40295918901	MEDIA_TOP	1469025	744925.6	-5153	5810.91
46X-35N_ST1	40295918901	CARNEROS_TOP	1469025	744927.8	-5984	6642.13
46X-35N_ST1	40295918901	CARNEROS_BASE	1469024	744928.2	-6359	7017.35
46X-35N_ST1	40295918901	AGUA_TOP	1469023	744930.4	-6480	7137.81
46X-35N_ST2	40295918902	MEDIA_TOP	1469025	744925.3	-5124	5782.36
46X-35N_ST2	40295918902	CARNEROS_TOP	1469025	744927.8	-5967	6624.64
46X-35N_ST2	40295918902	AGUA_TOP	1469023	744928.7	-6410	7068.07
46X-35N_ST3	40295918903	MEDIA_TOP	1469025	744925.6	-5161	5818.77
46X-35N_ST3	40295918903	CARNEROS_TOP	1469025	744927.8	-5971	6628.99

Well Name	UWI	Surface	X	Y	Z	MD
46X-35N_ST3	40295918903	AGUA_TOP	1469022	744932.6	-6570	7228.01
46X-35N_ST4	40295918904	TEMBLOR SANDS_TOP	1469019	744920.6	-4310	4967.63
46X-35N_ST4	40295918904	MEDIA_TOP	1469025	744925.5	-5148	5806.07
46X-35N_ST4	40295918904	CARNEROS_TOP	1469025	744927.8	-5981	6638.68
46X-35N_ST4	40295918904	CARNEROS_BASE	1469024	744928.2	-6353	7011.27
46X-35N_ST4	40295918904	AGUA_TOP	1469023	744930.6	-6487	7144.77
46X-35N_ST4	40295918904	AGUA_BASE	1469022	744931.9	-6541	7199.13
46X-35N_ST4	40295918904	64_ZONE_U_TOP	1469022	744945.3	-6840	7498.5
46X-35N_ST4	40295918904	64_ZONE_U_BASE	1469028	744956.7	-6949	7608.4
46X-35N_ST4	40295918904	64_ZONE_W_TOP	1469035	744964.4	-7016	7675.69
46X-35N_ST4	40295918904	64_ZONE_W_BASE	1469074	745025.7	-7348	8016.75
46X-35N_ST4	40295918904	TUMEY	1469090	745053.2	-7449	8121.78
47-27N	40292960800	TEMBLOR SANDS_TOP	1465086	749790.4	-4348	5027.97
47-27N	40292960800	MEDIA_TOP	1465084	749790.8	-5027	5707.04
47-27N	40292960800	CARNEROS_TOP	1465075	749782.6	-5862	6541.48
47-27N	40292960800	CARNEROS_BASE	1465074	749777.6	-6395	7074.66
47-27N	40292960800	AGUA_TOP	1465074	749777.3	-6434	7113.93
47-27N	40292960800	AGUA_BASE	1465074	749776.3	-6520	7199.92
47-27N	40292960800	64_ZONE_U_TOP	1465074	749774.4	-6791	7470.62
47-27N	40292960800	64_ZONE_U_BASE	1465074	749774.3	-6884	7563.91
47-27N	40292960800	64_ZONE_W_TOP	1465074	749774.3	-6922	7601.96
47-27N	40292960800	64_ZONE_W_BASE	1465067	749763.5	-7314	7993.91
47-27N	40292960800	TUMEY	1465065	749757.2	-7435	8114.84
48A-35N	40293508700	TEMBLOR SANDS_TOP	1470619	744418.7	-4402	5044.88
48A-35N	40293508700	MEDIA_TOP	1470623	744419.7	-5252	5894.85
48A-35N	40293508700	CARNEROS_TOP	1470615	744405.9	-6217	6860.29
48A-35N	40293508700	CARNEROS_BASE	1470611	744395.9	-6758	7401
48A-35N	40293508700	AGUA_TOP	1470610	744395	-6804	7447.55
48A-35N	40293508700	AGUA_BASE	1470610	744394.1	-6858	7501.01
48A-35N	40293508700	64_ZONE_U_TOP	1470608	744391.6	-7011	7654.78
48A-35N	40293508700	64_ZONE_U_BASE	1470607	744389.8	-7124	7767.67
48A-35N	40293508700	64_ZONE_W_TOP	1470606	744389	-7175	7818.69
48A-35N	40293508700	64_ZONE_W_BASE	1470601	744383.8	-7534	8177.29
49-35N	40293508800	TEMBLOR SANDS_TOP	1470570	743763.7	-4327	4959.96
49-35N	40293508800	MEDIA_TOP	1470532	743750.8	-5255	5889.34
49-35N	40293508800	CARNEROS_TOP	1470526	743747.7	-6080	6714.01
49-35N	40293508800	CARNEROS_BASE	1470515	743748.5	-6701	7334.96
49-35N	40293508800	AGUA_TOP	1470514	743748.5	-6735	7369.44
49-35N	40293508800	AGUA_BASE	1470513	743748.2	-6801	7434.96
49-35N	40293508800	64_ZONE_U_TOP	1470512	743747.8	-6925	7559.63
49-35N	40293508800	64_ZONE_U_BASE	1470511	743747.1	-7037	7671.68
49-35N	40293508800	64_ZONE_W_TOP	1470510	743746.6	-7087	7721.4
49-35N	40293508800	64_ZONE_W_BASE	1470507	743741.6	-7436	8070.08
5-1N	40293510300	64_ZONE_U_TOP	1473140	742283.2	-7490	8106.48
5-1N	40293510300	64_ZONE_U_BASE	1473138	742279.7	-7614	8230.47
5-1N	40293510300	64_ZONE_W_TOP	1473137	742278	-7673	8289.86
5-1N_ST1	40293510301	MEDIA_TOP	1473083	742257.7	-5656	6279.43
5-1N_ST1	40293510301	CARNEROS_TOP	1472955	742163.5	-6584	7221.47
5-1N_ST1	40293510301	CARNEROS_BASE	1472885	742104	-7135	7779.32
5-1N_ST1	40293510301	AGUA_TOP	1472880	742099.9	-7177	7822.58
5-1N_ST1	40293510301	AGUA_BASE	1472874	742095.4	-7227	7872.61
5-1N_ST1	40293510301	64_ZONE_U_TOP	1472856	742082.4	-7374	8021.13
5-1N_ST1	40293510301	64_ZONE_W_TOP	1472837	742069.1	-7524	8173.61
5-27N	40293506000	TEMBLOR SANDS_TOP	1462849	753105.1	-4861	5536.05
5-27N	40293506000	MEDIA_TOP	1462852	753102.2	-5455	6130.03
5-27N	40293506000	CARNEROS_TOP	1462860	753094.9	-6396	7071.13
5-27N	40293506000	CARNEROS_BASE	1462863	753090.5	-6959	7634.48
5-27N	40293506000	AGUA_TOP	1462863	753090.5	-7010	7685.21
5-27N	40293506000	AGUA_BASE	1462856	753089.3	-7240	7914.98
5-27N	40293506000	64_ZONE_U_TOP	1462851	753087.4	-7421	8096.87
5-27N	40293506000	64_ZONE_U_BASE	1462850	753086.7	-7476	8151.43
5-27N	40293506000	64_ZONE_W_TOP	1462848	753085.3	-7571	8246.95
5-34N	40292963000	MEDIA_TOP	1464643	747643.4	-5294	5993.63
5-34N	40292963000	CARNEROS_TOP	1464643	747643.4	-6270	6969.82
5-34N	40292963000	64_ZONE_U_TOP	1464643	747643.4	-7645	8344.92
5-34N	40292963000	64_ZONE_U_BASE	1464643	747643.4	-7751	8450.95
5-34N	40292963000	64_ZONE_W_TOP	1464643	747643.4	-7848	8547.83
50X-27N	40295894600	TEMBLOR SANDS_TOP	1464529	749366.7	-4324	5027.86
50X-27N	40295894600	MEDIA_TOP	1464528	749367.6	-4963	5666.73
50X-27N	40295894600	CARNEROS_TOP	1464523	749372.7	-5745	6448.67
50X-27N	40295894600	AGUA_TOP	1464520	749371.6	-6451	7154.96
50X-27N	40295894600	AGUA_BASE	1464523	749372.2	-6525	7229.21
50X-27N	40295894600	64_ZONE_U_TOP	1464532	749375.7	-6761	7464.81

Well Name	UWI	Surface	X	Y	Z	MD
50X-27N	40295894600	64_ZONE_U_BASE	1464535	749376.9	-6835	7539.24
51-35N	40293508900	TEMBLOR SANDS_TOP	1469214	743870.5	-4370	5039.69
51-35N	40293508900	MEDIA_TOP	1469218	743873.4	-5292	5961.36
51-35N	40293508900	CARNEROS_TOP	1469218	743901.1	-6139	6808.66
51-35N	40293508900	AGUA_TOP	1469219	743923.4	-6871	7540.99
51-35N	40293508900	AGUA_BASE	1469219	743926.7	-6996	7666.55
51-35N	40293508900	64_ZONE_U_TOP	1469220	743931.4	-7158	7828.36
51-35N	40293508900	64_ZONE_U_BASE	1469220	743935.6	-7319	7989.07
51-35N	40293508900	64_ZONE_W_TOP	1469220	743936.6	-7357	8027.66
511N-1N_ST1	40293510601	TEMBLOR SANDS_TOP	1471228	742452.5	-4414	5040.89
511N-1N_ST1	40293510601	MEDIA_TOP	1471225	742454.4	-5357	5984.41
511N-1N_ST1	40293510601	CARNEROS_TOP	1471226	742456.1	-6232	6859.59
511N-1N_ST1	40293510601	CARNEROS_BASE	1471231	742454.5	-6621	7248.57
511N-1N_ST1	40293510601	AGUA_TOP	1471230	742453.8	-6699	7326.63
511N-1N_ST1	40293510601	AGUA_BASE	1471230	742453.7	-6759	7386.73
511N-1N_ST1	40293510601	64_ZONE_U_TOP	1471228	742454.3	-7071	7698.02
511N-1N_ST1	40293510601	64_ZONE_U_BASE	1471228	742454.6	-7176	7803.06
511N-1N_ST1	40293510601	64_ZONE_W_TOP	1471227	742454.7	-7249	7876.02
51X-35N	40292965300	MEDIA_TOP	1469455	743740.7	-5293	5959.09
51X-35N	40292965300	CARNEROS_TOP	1469478	743772.8	-6092	6760.04
51X-35N	40292965300	AGUA_TOP	1469467	743836.9	-6770	7441.38
522N-1N	40293510800	TEMBLOR SANDS_TOP	1471862	741801.3	-4469	5096.39
522N-1N	40293510800	MEDIA_TOP	1471864	741807.1	-5443	6070.32
522N-1N	40293510800	CARNEROS_TOP	1471856	741806.9	-6275	6902.91
522N-1N	40293510800	CARNEROS_BASE	1471847	741817.9	-6863	7490.63
522N-1N	40293510800	AGUA_TOP	1471847	741818.2	-6885	7512.42
522N-1N	40293510800	AGUA_BASE	1471846	741818.7	-6936	7563.93
522N-1N	40293510800	64_ZONE_U_TOP	1471843	741820.2	-7170	7798.09
522N-1N	40293510800	64_ZONE_U_BASE	1471842	741820.9	-7301	7929.25
522N-1N	40293510800	64_ZONE_W_TOP	1471842	741821.2	-7325	7953.16
53-26N	40293505600	TEMBLOR SANDS_TOP	1468070	749004.2	-4727	5359.59
53-26N	40293505600	MEDIA_TOP	1468081	748985.2	-5498	6130.66
53-26N	40293505600	CARNEROS_TOP	1468083	748961.2	-6443	7076.85
53-26N	40293505600	CARNEROS_BASE	1468088	748937.3	-7068	7702.44
53-26N	40293505600	AGUA_TOP	1468088	748936.3	-7117	7750.66
53-26N	40293505600	64_ZONE_U_TOP	1468087	748931	-7452	8086.37
53-26N	40293505600	64_ZONE_U_BASE	1468086	748929.2	-7553	8186.76
53-26N	40293505600	64_ZONE_W_TOP	1468086	748928.2	-7614	8248.51
53-26N_ST1	40293505601	MEDIA_TOP	1468074	748985.4	-5489	6121.63
53-26N_ST1	40293505601	CARNEROS_TOP	1467941	748912.6	-6386	7035.32
53-26N_ST1	40293505601	CARNEROS_BASE	1467843	748780.6	-6953	7625.68
53-26N_ST1	40293505601	AGUA_TOP	1467840	748776.2	-6973	7646.19
53-26N_ST1	40293505601	AGUA_BASE	1467835	748770.3	-7000	7674.29
53-26N_ST1	40293505601	64_ZONE_U_TOP	1467795	748714.9	-7255	7938.47
53-26N_ST1	40293505601	64_ZONE_U_BASE	1467783	748697.2	-7337	8023.17
53-26N_ST1	40293505601	64_ZONE_W_TOP	1467773	748681.6	-7407	8095.74
532N-1N	40293510900	TEMBLOR SANDS_TOP	1472510	741717.2	-4505	5139.19
532N-1N	40293510900	MEDIA_TOP	1472506	741716	-5481	6115.62
532N-1N	40293510900	CARNEROS_TOP	1472509	741706	-6325	6959.76
532N-1N	40293510900	CARNEROS_BASE	1472516	741696.1	-6882	7515.98
532N-1N	40293510900	AGUA_TOP	1472516	741695.8	-6923	7557.44
532N-1N	40293510900	AGUA_BASE	1472516	741695.4	-6972	7606.02
532N-1N	40293510900	64_ZONE_U_TOP	1472517	741693.8	-7220	7854.83
532N-1N	40293510900	64_ZONE_U_BASE	1472516	741693.4	-7341	7975.19
532N-1N	40293510900	64_ZONE_W_TOP	1472516	741693.3	-7379	8013.27
532N-1N	40293510900	64_ZONE_W_BASE	1472511	741695.4	-7741	8375
533N-1N	40293511200	64_ZONE_W_TOP	1472443	741140.9	-7410	8040.02
533N-1N	40293511200	64_ZONE_W_BASE	1472443	741142.2	-7729	8358.91
55-26N	40293505700	TEMBLOR SANDS_TOP	1466755	749123.4	-4444	5102.13
55-26N	40293505700	MEDIA_TOP	1466755	749123.4	-5176	5833.56
55-26N	40293505700	CARNEROS_TOP	1466755	749123.4	-6125	6783.03
55-26N	40293505700	CARNEROS_BASE	1466755	749123.4	-6634	7292.48
55-26N	40293505700	AGUA_TOP	1466755	749123.4	-6653	7310.74
55-26N	40293505700	AGUA_BASE	1466755	749123.4	-6688	7346.31
55-26N	40293505700	64_ZONE_U_TOP	1466755	749123.4	-6961	7618.56
55-26N	40293505700	64_ZONE_U_BASE	1466755	749123.4	-7058	7716.39
55-26N	40293505700	64_ZONE_W_TOP	1466755	749123.4	-7127	7785.15
55-26N	40293505700	64_ZONE_W_BASE	1466755	749123.4	-7503	8161.35
55-26N	40293505700	TUMEY	1466755	749123.4	-7633	8291.26
6-1N	40293510400	TEMBLOR SANDS_TOP	1472570	742420.8	-4562	5189.15
6-1N	40293510400	MEDIA_TOP	1472570	742420.8	-5512	6139.35
6-1N	40293510400	CARNEROS_TOP	1472570	742420.8	-6464	7090.96
6-1N	40293510400	CARNEROS_BASE	1472570	742420.8	-6949	7576.33

Well Name	UWI	Surface	X	Y	Z	MD
6-1N	40293510400	AGUA_TOP	1472570	742420.8	-7064	7690.52
6-1N	40293510400	AGUA_BASE	1472570	742420.8	-7130	7757.19
6-1N	40293510400	64_ZONE_U_TOP	1472570	742420.8	-7290	7916.97
6-1N	40293510400	64_ZONE_U_BASE	1472570	742420.8	-7407	8033.59
6-1N	40293510400	64_ZONE_W_TOP	1472570	742420.8	-7461	8088.19
6-27N	40293506100	TEMBLOR SANDS_TOP	1462235	753086.2	-4755	5437.93
6-27N	40293506100	MEDIA_TOP	1462243	753083.8	-5373	6055.94
6-27N	40293506100	CARNEROS_TOP	1462245	753072.7	-6248	6931.17
6-27N	40293506100	CARNEROS_BASE	1462243	753061.5	-6846	7529.22
6-27N	40293506100	AGUA_TOP	1462243	753061.2	-6885	7567.97
6-27N	40293506100	AGUA_BASE	1462239	753057.2	-7109	7792.38
6-27N	40293506100	64_ZONE_U_TOP	1462237	753054.3	-7346	8028.63
6-27N	40293506100	64_ZONE_U_BASE	1462237	753054	-7384	8067.41
6-27N	40293506100	64_ZONE_W_TOP	1462237	753053.6	-7475	8158.12
6-34N	40293507300	64_ZONE_U_TOP	1465070	747609.2	-7397	8095.06
6-34N	40293507300	64_ZONE_U_BASE	1465070	747609.2	-7483	8181.06
61-26N	40293505800	TEMBLOR SANDS_TOP	1468686	748335.9	-4713	5345.83
61-26N	40293505800	MEDIA_TOP	1468698	748318	-5451	6083.7
61-26N	40293505800	CARNEROS_TOP	1468707	748301.8	-6468	7100.73
61-26N	40293505800	CARNEROS_BASE	1468710	748278.9	-7050	7683.27
61-26N	40293505800	AGUA_TOP	1468710	748277.7	-7081	7714.77
61-26N	40293505800	AGUA_BASE	1468711	748275.5	-7143	7776.22
61-26N	40293505800	64_ZONE_U_TOP	1468710	748266.7	-7413	8047.34
61-26N	40293505800	64_ZONE_U_BASE	1468711	748263.9	-7498	8131.75
61-26N	40293505800	64_ZONE_W_TOP	1468711	748261.6	-7564	8198.01
61-26N_ST1	40293505801	MEDIA_TOP	1468655	748325.3	-5451	6086.55
61-26N_ST1	40293505801	CARNEROS_TOP	1468454	748351.1	-6373	7030.52
61-26N_ST1	40293505801	CARNEROS_BASE	1468344	748343.9	-6944	7612.16
61-26N_ST1	40293505801	AGUA_TOP	1468334	748345.1	-6994	7662.78
61-26N_ST1	40293505801	AGUA_BASE	1468326	748346	-7034	7703.61
61-26N_ST1	40293505801	64_ZONE_U_TOP	1468273	748347.4	-7307	7982.09
61-26N_ST1	40293505801	64_ZONE_U_BASE	1468253	748346.5	-7409	8086.43
61-26N_ST1	40293505801	64_ZONE_W_TOP	1468249	748346.2	-7430	8107.62
61-27N	40293506600	64_ZONE_W_BASE	1463763	748827.2	-8041	8747.46
63-35N	40293509000	TEMBLOR SANDS_TOP	1469974	743135.5	-4405	5061.84
63-35N	40293509000	MEDIA_TOP	1469976	743141	-5343	5999.46
63-35N	40293509000	CARNEROS_TOP	1469970	743163.3	-6170	6827.04
63-35N	40293509000	CARNEROS_BASE	1469963	743189.2	-6673	7331.39
63-35N	40293509000	AGUA_TOP	1469963	743190	-6689	7347.27
63-35N	40293509000	AGUA_BASE	1469962	743192.4	-6739	7397.52
63-35N	40293509000	64_ZONE_U_TOP	1469957	743208.2	-7137	7795.05
63-35N	40293509000	64_ZONE_U_BASE	1469957	743212.2	-7299	7957.1
63-35N	40293509000	64_ZONE_W_TOP	1469956	743213.5	-7366	8024.39
64-35N	40293509100	TEMBLOR SANDS_TOP	1470594	743102.6	-4383	5013.38
64-35N	40293509100	MEDIA_TOP	1470593	743104.3	-5311	5940.65
64-35N	40293509100	CARNEROS_TOP	1470593	743109.2	-6160	6789.76
64-35N	40293509100	CARNEROS_BASE	1470592	743109.7	-6620	7249.98
64-35N	40293509100	AGUA_TOP	1470592	743109.7	-6634	7264.35
64-35N	40293509100	AGUA_BASE	1470592	743109.9	-6685	7315.43
64-35N	40293509100	64_ZONE_U_TOP	1470593	743111.7	-7000	7630.02
64-35N	40293509100	64_ZONE_U_BASE	1470593	743113.5	-7127	7756.75
64-35N	40293509100	64_ZONE_W_TOP	1470594	743114.3	-7168	7798.02
64-35N	40293509100	64_ZONE_W_BASE	1470597	743120.5	-7520	8150.54
7-1N	40293510500	TEMBLOR SANDS_TOP	1471842	742448.5	-4452	5074.31
7-1N	40293510500	MEDIA_TOP	1471835	742450.4	-5397	6019.6
7-1N	40293510500	CARNEROS_TOP	1471825	742442	-6319	6941.7
7-1N	40293510500	CARNEROS_BASE	1471822	742439	-6902	7524.7
7-1N	40293510500	AGUA_TOP	1471822	742438.9	-6955	7577.01
7-1N	40293510500	64_ZONE_U_TOP	1471821	742438.5	-7129	7751.14
7-1N	40293510500	64_ZONE_U_BASE	1471821	742438	-7263	7885.06
7-1N	40293510500	64_ZONE_W_TOP	1471820	742437.9	-7309	7931.49
7-27N	40292960100	TEMBLOR SANDS_TOP	1461405	753223.7	-4775	5467.05
7-27N	40292960100	AGUA_TOP	1461397	753229.7	-6859	7551.33
7-27N	40292960100	AGUA_BASE	1461401	753232	-7102	7793.77
7-27N	40292960100	64_ZONE_U_TOP	1461402	753233.7	-7310	8002.3
7-27N	40292960100	64_ZONE_U_BASE	1461402	753233.9	-7363	8055.29
7-27N	40292960100	64_ZONE_W_BASE	1461403	753235.1	-7785	8476.83
7-27N	40292960100	TUMEY	1461403	753235.4	-7899	8591.16
7-34N	40293507400	TEMBLOR SANDS_TOP	1465225	747241.7	-4479	5187.78
7-34N	40293507400	MEDIA_TOP	1465225	747241.7	-5243	5952.33
7-34N	40293507400	CARNEROS_TOP	1465225	747241.7	-6161	6870.41
7-34N	40293507400	CARNEROS_BASE	1465225	747241.7	-7053	7762.25
7-34N	40293507400	AGUA_TOP	1465225	747241.7	-7102	7810.86

Well Name	UWI	Surface	X	Y	Z	MD
7-34N	40293507400	AGUA_BASE	1465225	747241.7	-7157	7866.42
7-34N	40293507400	64_ZONE_U_TOP	1465225	747241.7	-7577	8286.26
7-34N	40293507400	64_ZONE_U_BASE	1465225	747241.7	-7669	8378.13
7-34N	40293507400	64_ZONE_W_TOP	1465225	747241.7	-7759	8468.24
7-35N	40295794500	TEMBLOR SANDS_TOP	1466893	747875.1	-4326	4993.75
7-35N	40295794500	MEDIA_TOP	1466884	747852.2	-5077	5745.39
7-35N	40295794500	CARNEROS_TOP	1466868	747827.6	-5893	6561.37
7-35N	40295794500	CARNEROS_BASE	1466855	747812.9	-6334	7002.62
7-35N	40295794500	AGUA_TOP	1466854	747810.9	-6388	7057.17
7-35N	40295794500	AGUA_BASE	1466852	747808.9	-6444	7113.23
7-36N	40293509900	TEMBLOR SANDS_TOP	1472588	743047.5	-4664	5271.32
7-36N	40293509900	MEDIA_TOP	1472587	743036.4	-5598	6206.08
7-36N	40293509900	CARNEROS_TOP	1472586	743024.1	-6579	7187.32
7-36N	40293509900	CARNEROS_BASE	1472583	743012.8	-7084	7692
7-36N	40293509900	AGUA_TOP	1472583	743010.7	-7174	7782.3
7-36N	40293509900	AGUA_BASE	1472582	743009.1	-7256	7863.74
8-27N	40293506200	TEMBLOR SANDS_TOP	1460898	753206.2	-4805	5497.01
8-27N	40293506200	MEDIA_TOP	1460900	753206.2	-5338	6029.5
8-27N	40293506200	CARNEROS_TOP	1460909	753211.9	-6143	6835.08
8-27N	40293506200	CARNEROS_BASE	1460919	753215.5	-6772	7463.41
8-27N	40293506200	AGUA_TOP	1460919	753215.3	-6814	7505.76
8-27N	40293506200	AGUA_BASE	1460920	753214.6	-7128	7819.84
8-27N	40293506200	64_ZONE_U_TOP	1460922	753212	-7353	8044.58
8-27N	40293506200	64_ZONE_U_BASE	1460923	753211.6	-7382	8073.88
8-27N	40293506200	64_ZONE_W_TOP	1460923	753210.9	-7428	8120.35
8-27N	40293506200	64_ZONE_W_BASE	1460928	753206.3	-7744	8436.06
8-36N	40293510000	64_ZONE_U_TOP	1472565	743655.1	-7517	8116.55
8-36N	40293510000	64_ZONE_U_BASE	1472565	743654	-7632	8231.12
8-36N	40293510000	64_ZONE_W_TOP	1472565	743653.4	-7687	8285.72
8-36N_ST1	40293510001	64_ZONE_U_TOP	1472564	743633.6	-7510	8110.57
8-36N_ST1	40293510001	64_ZONE_U_BASE	1472564	743619.4	-7626	8227.35
8-36N_ST1	40293510001	64_ZONE_W_TOP	1472564	743612.4	-7683	8284.64
8-36N_ST1	40293510001	64_ZONE_W_BASE	1472563	743565.8	-8016	8620.63
888N-12	40304263000	TEMBLOR SANDS_TOP	1475326	732523.1	-5325	5998.13
888N-12	40304263000	MEDIA_TOP	1475035	732528.3	-6483	7192.75
888N-12	40304263000	CARNEROS_TOP	1474841	732530.5	-7380	8109.6
888N-12	40304263000	CARNEROS_BASE	1474751	732538.7	-7947	8684.49
888N-12	40304263000	AGUA_TOP	1474739	732540.7	-8030	8768.44
888N-12	40304263000	AGUA_BASE	1474735	732541.3	-8055	8793.82
888N-12	40304263000	64_ZONE_U_TOP	1474706	732546	-8247	8987.74
888N-12	40304263000	64_ZONE_U_BASE	1474687	732548.8	-8375	9117.17
888N-12	40304263000	64_ZONE_W_TOP	1474681	732549.8	-8424	9166.82
888N-12	40304263000	64_ZONE_W_BASE	1474633	732559.3	-8762	9507.88
888N-12	40304263000	TUMEY	1474607	732569.3	-8967	9714.98
9-1N	40293510700	TEMBLOR SANDS_TOP	1471237	741832.8	-4463	5097.15
9-1N	40293510700	MEDIA_TOP	1471236	741835.3	-5462	6096.16
9-1N	40293510700	CARNEROS_TOP	1471254	741840.3	-6308	6942.72
9-1N	40293510700	CARNEROS_BASE	1471263	741853.9	-6739	7374.19
9-1N	40293510700	AGUA_TOP	1471265	741856.1	-6793	7427.78
9-1N	40293510700	AGUA_BASE	1471266	741859.2	-6866	7501.12
9-1N	40293510700	64_ZONE_U_TOP	1471272	741870.2	-7193	7828.62
9-1N	40293510700	64_ZONE_U_BASE	1471273	741872.5	-7297	7932.33
9-1N	40293510700	64_ZONE_W_TOP	1471274	741873.9	-7365	8000.62
9-1N	40293510700	64_ZONE_W_BASE	1471279	741881.6	-7739	8374.18
9-27N	40292960200	TEMBLOR SANDS_TOP	1460997	752458.4	-4736	5448.26
9-27N	40292960200	MEDIA_TOP	1460997	752456.8	-5307	6019.91
9-27N	40292960200	CARNEROS_TOP	1461003	752455.4	-6140	6852.28
9-27N	40292960200	CARNEROS_BASE	1461005	752457.9	-6701	7413.95
9-27N	40292960200	AGUA_TOP	1461005	752458.2	-6759	7471.99
9-27N	40292960200	AGUA_BASE	1461004	752459	-6979	7691.97
9-27N	40292960200	64_ZONE_U_TOP	1461004	752459.7	-7194	7906.25
9-27N	40292960200	64_ZONE_U_BASE	1461004	752459.8	-7295	8007.9
9-27N	40292960200	64_ZONE_W_TOP	1461004	752459.8	-7352	8064.85
9-27N	40292960200	64_ZONE_W_BASE	1461004	752459.8	-7685	8397.23
9-27N	40292960200	TUMEY	1461004	752459.8	-7856	8568.68
9-36N	40293510100	TEMBLOR SANDS_TOP	1473235	743089.3	-4841	5445.47
9-36N	40293510100	MEDIA_TOP	1473234	743084.3	-5783	6387.66
9-36N	40293510100	CARNEROS_TOP	1473232	743083.1	-6754	7358.83
9-36N	40293510100	CARNEROS_BASE	1473229	743083.9	-7379	7983.17
9-36N	40293510100	AGUA_TOP	1473229	743083.9	-7401	8005.54
9-36N	40293510100	AGUA_BASE	1473228	743083.7	-7465	8069.78
9-36N	40293510100	64_ZONE_U_TOP	1473227	743083.3	-7634	8238.88
9-36N	40293510100	64_ZONE_U_BASE	1473226	743083	-7770	8374.26

Well Name	UWI	Surface	X	Y	Z	MD
9-36N	40293510100	64_ZONE_W_TOP	1473226	743082.9	-7816	8420.19
B2-21N	40291502900	TEMBLOR SANDS_TOP	1457795	758451.6	-5958	6619.57
B2-21N	40291502900	MEDIA_TOP	1457795	758451.6	-6352	7014.41
B2-21N	40291502900	CARNEROS_TOP	1457795	758451.6	-7342	8003.69
B2-21N	40291502900	CARNEROS_BASE	1457795	758451.6	-7958	8620.37
B2-21N	40291502900	AGUA_TOP	1457795	758451.6	-8027	8689.44
BP55-12	40290116900	TEMBLOR SANDS_TOP	1473912	734162.7	-5300	5955.21
BP55-12	40290116900	MEDIA_TOP	1473912	734162.7	-6499	7155.05
BP55-12	40290116900	CARNEROS_TOP	1473912	734162.7	-7268	7923.19
BP55-12	40290116900	CARNEROS_BASE	1473912	734162.7	-7836	8491.77
BP55-12	40290116900	AGUA_TOP	1473912	734162.7	-7902	8557.33
BP55-12	40290116900	AGUA_BASE	1473912	734162.7	-7964	8620.03
BP55-12	40290116900	64_ZONE_U_TOP	1473912	734162.7	-8145	8800.74
BP55-12	40290116900	64_ZONE_W_TOP	1473912	734162.7	-8323	8978.19
BP55-12	40290116900	64_ZONE_W_BASE	1473912	734162.7	-8709	9364.16
BP55-12	40290116900	TUMEY	1473912	734162.7	-8816	9471.17
GIBSON 7-36N	40292373800	MEDIA_TOP	1472735	745049.8	-5887	6489.37
GIBSON 7-36N	40292373800	CARNEROS_TOP	1472735	745049.8	-7103	7705.05
GIBSON 7-36N	40292373800	CARNEROS_BASE	1472735	745049.8	-7619	8221.02
GIBSON 7-36N	40292373800	AGUA_TOP	1472735	745049.8	-7710	8311.86
GIBSON 7-36N	40292373800	AGUA_BASE	1472735	745049.8	-7753	8354.84
GIBSON 7-36N	40292373800	64_ZONE_U_TOP	1472735	745049.8	-7968	8570.02
GIBSON 7-36N	40292373800	64_ZONE_U_BASE	1472735	745049.8	-8105	8707.28
GIBSON 7-36N	40292373800	64_ZONE_W_TOP	1472735	745049.8	-8172	8774.02
JDM1-22N	40293505000	TEMBLOR SANDS_TOP	1460910	753757.9	-4811	5487.45
JDM1-22N	40293505000	MEDIA_TOP	1460916	753756.5	-5434	6110.69
JDM1-22N	40293505000	CARNEROS_TOP	1460929	753757.8	-6249	6925.85
JDM1-22N	40293505000	CARNEROS_BASE	1460944	753763	-6908	7585.24
JDM1-22N	40293505000	AGUA_TOP	1460944	753763.4	-6944	7620.98
JDM1-22N	40293505000	AGUA_BASE	1460947	753763.2	-7170	7847.26
JDM1-22N	40293505000	64_ZONE_U_TOP	1460948	753762	-7363	8040.25
JDM1-22N	40293505000	64_ZONE_U_BASE	1460948	753761.6	-7414	8091.04
JDM1-22N	40293505000	64_ZONE_W_TOP	1460949	753761.2	-7484	8160.77
JDM2-22N	40293505100	TEMBLOR SANDS_TOP	1461503	753770.8	-4862	5532.15
JDM2-22N	40293505100	MEDIA_TOP	1461503	753770.8	-5460	6129.53
JDM2-22N	40293505100	CARNEROS_TOP	1461503	753770.8	-6365	7034.54
JDM2-22N	40293505100	CARNEROS_BASE	1461503	753770.8	-6907	7577.22
JDM2-22N	40293505100	AGUA_TOP	1461503	753770.8	-6944	7614.09
JDM2-22N	40293505100	AGUA_BASE	1461503	753770.8	-7169	7839.23
JDM2-22N	40293505100	64_ZONE_U_TOP	1461503	753770.8	-7379	8049.03
JDM2-22N	40293505100	64_ZONE_U_BASE	1461503	753770.8	-7421	8091.42
JDM2-22N	40293505100	64_ZONE_W_TOP	1461503	753770.8	-7488	8157.54
JDM4-22N	40291973900	64_ZONE_U_TOP	1462824	753733	-7606	8264.84
JDM4-22N	40291973900	64_ZONE_U_BASE	1462824	753733	-7671	8330.23
JDM4-22N	40291973900	64_ZONE_W_TOP	1462824	753733	-7709	8368.15
JDM5-22N	40291974000	TEMBLOR SANDS_TOP	1460939	753844.8	-4870	5560.91
JDM5-22N	40291974000	MEDIA_TOP	1460939	753844.8	-5423	6113.55
JDM5-22N	40291974000	CARNEROS_TOP	1460939	753844.8	-6248	6938.61
JDM5-22N	40291974000	CARNEROS_BASE	1460939	753844.8	-6899	7589.72
JDM5-22N	40291974000	AGUA_TOP	1460939	753844.8	-6939	7630
JDM5-22N	40291974000	AGUA_BASE	1460939	753844.8	-7164	7855.5
JDM5-22N	40291974000	64_ZONE_U_TOP	1460939	753844.8	-7346	8036.55
JDM5-22N	40291974000	64_ZONE_U_BASE	1460939	753844.8	-7406	8097.08
JDM5-22N	40291974000	64_ZONE_W_TOP	1460939	753844.8	-7461	8151.89
JDM5-22N	40291974000	64_ZONE_W_BASE	1460939	753844.8	-7825	8516.21
JDM6-22N	40291974100	TEMBLOR SANDS_TOP	1461189	753898.5	-4881	5571.36
JDM6-22N	40291974100	MEDIA_TOP	1461189	753898.5	-5423	6112.89
JDM6-22N	40291974100	CARNEROS_TOP	1461189	753898.5	-6310	7000.39
JDM6-22N	40291974100	CARNEROS_BASE	1461189	753898.5	-6869	7559.46
JDM6-22N	40291974100	AGUA_TOP	1461189	753898.5	-6924	7613.93
JDM6-22N	40291974100	AGUA_BASE	1461189	753898.5	-7131	7820.9
JDM7-22N	40291974200	TEMBLOR SANDS_TOP	1461850	753875.7	-4903	5586.07
JDM7-22N	40291974200	MEDIA_TOP	1461850	753875.7	-5507	6189.81
JDM7-22N	40291974200	CARNEROS_TOP	1461850	753875.7	-6443	7125.61
JDM7-22N	40291974200	CARNEROS_BASE	1461850	753875.7	-6967	7649.9
JDM7-22N	40291974200	AGUA_TOP	1461850	753875.7	-7016	7698.92
MCP2-36N	40293509502	MEDIA_TOP	1471299	745083	-5518	6133.2
MCP2-36N	40293509502	CARNEROS_TOP	1471299	745083	-6498	7113
MCP2-36N	40293509502	CARNEROS_BASE	1471299	745083	-7013	7627.48
MCP2-36N	40293509502	AGUA_TOP	1471299	745083	-7048	7662.71
MCP2-36N	40293509502	AGUA_BASE	1471299	745083	-7097	7711.57
MCP2-36N	40293509502	64_ZONE_U_TOP	1471299	745083	-7338	7953.02
MCP2-36N	40293509502	64_ZONE_U_BASE	1471299	745083	-7452	8066.64

Well Name	UWI	Surface	X	Y	Z	MD
MCP2-36N	40293509502	64_ZONE_W_TOP	1471299	745083	-7512	8127.02
MCP3-36N	40290153700	CARNEROS_TOP	1471963	745073.8	-6795	7401.88
MCP3-36N	40290153700	CARNEROS_BASE	1471963	745073.8	-7408	8014.25
MCP3-36N	40290153700	AGUA_TOP	1471963	745073.8	-7436	8042.65
MCP3-36N	40290153700	AGUA_BASE	1471963	745073.8	-7478	8084.14
MCP3-36N	40290153700	64_ZONE_U_TOP	1471963	745073.8	-7656	8262.88
MCP4-36N	40290153800	TEMBLOR SANDS_TOP	1471307	745739.8	-4792	5412.69
MCP4-36N	40290153800	MEDIA_TOP	1471307	745739.8	-5679	6299.34
MCP4-36N	40290153800	CARNEROS_TOP	1471307	745739.8	-6676	7297.01
MCP4-36N	40290153800	CARNEROS_BASE	1471307	745739.8	-7352	7972.31
MCP4-36N	40290153800	AGUA_TOP	1471307	745739.8	-7391	8011.35
MCP4-36N	40290153800	AGUA_BASE	1471307	745739.8	-7428	8048.48
MCP4-36N	40290153800	64_ZONE_U_TOP	1471307	745739.8	-7631	8251.28
MCP4-36N	40290153800	64_ZONE_U_BASE	1471307	745739.8	-7730	8351.08
NORRIS_BP-1	40294514100	MEDIA_TOP	1460074	759063.2	-8080	8788.33
NORRIS_BP-1	40294514100	CARNEROS_TOP	1460018	758977.3	-9453	10164.8
NORRIS_BP-1	40294514100	CARNEROS_BASE	1460002	758951.9	-9858	10570.7
NORRIS_BP-1	40294514100	AGUA_TOP	1459999	758948.1	-9916	10628.8
NORRIS_BP-1	40294514100	AGUA_BASE	1459991	758934.8	-10117	10831.3
NORRIS_BP-1	40294514100	64_ZONE_U_TOP	1459985	758925.7	-10254	10968.4
NORRIS_BP-1	40294514100	64_ZONE_U_BASE	1459983	758922.8	-10298	11012.6
NORRIS_BP-1	40294514100	64_ZONE_W_TOP	1459981	758919.5	-10349	11063.2

Notes:
Coordinates provided in NAD 1927 State Plane California V
Z - True Vertical Depth subsea level (feet)
MD - Measured Depth (feet)
Delta Z: Difference in TVDss (Z) from top well pick to base well pick (well based)
Delta MD: Difference in MD from top well pick to base well pick (well based)

Appendix 2B
Maps and Cross Sections of the AoR Supporting Data

North Belridge Structural Model and Property Modeling

Introduction

The following document describes the structural framework and geocellular grid models used to represent subsurface conditions based on seismic interpretation, well picks, well logs, and core analyses. The workflows were preformed in SLB's Petrel™ software.

Fault Framework

The fault framework for the North Belridge study area consists of 12 faults which were interpreted on the three-dimensional (3D) seismic. A brief overview is given below. The faulting is discussed in detail in **Section 2.3.2** of **Attachment C.**

In the figures below, white lines indicate fault truncations. In the fault modeling process, truncations create a linear weld between two faults and can be used for compartmentalization later when the geocellular grid is created.

Main Thrusts

Two large thrust faults run the entire length of the structure: the East Bounding and West Bounding Thrust Faults. The West Bounding Thrust Fault truncates in the east against the East Bounding Thrust Fault, as shown in **Figure 1(a)**.

Southern Faults

Three faults exist on the southern portion of the structure and are shown in **Figure 1(b):**

- The longest is MB13, shown in blue in **Figure 1(b)**, and it truncates against the East Bounding and West Bounding Thrust Faults at its base.
- Fault MB12 is shown in brick red in **Figure 1(b)**, and it truncates against the West Bounding Thrust Fault at its base.
- The Southern Crestal Fault (shown in teal in **Figure 1[b]**) truncates against the West Bounding Thrust Fault at its base and MB13 to the south.

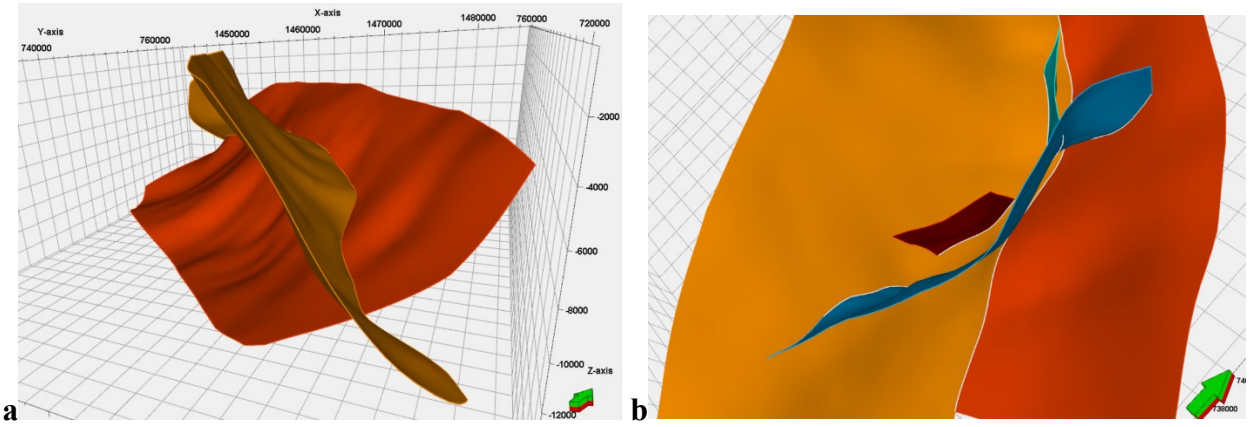


Figure 1 (a): East Bounding Thrust Fault (orange) and West Bound Thrust Fault(brown).

Figure 1 (b): MB 13 (blue), MB12 (brick red) and Southern Crestal Fault (teal) and their truncation relationships. The white lines correspond to fault truncations and the green arrow points North.

Central and Northern faults

Seven faults exist to the north of the faults in the southern section (discussed above). Six faults lie above the East Bounding and West Bounding Thrust Faults, as shown in **Figure 2.**

- The West Limb Thrust Fault (pink) is shown in **Figures 2a** and **2b**. It parallels the West Bounding Thrust Fault, truncates back against the East Bounding Thrust Fault to the east, and against the Northern Crestal Fault 2 (blue) to the northwest.
- The Central Crestal Fault 1 (violet) is truncated by the West Limb Thrust Fault at its base.
- The Central Crestal Fault 2 (dark purple) is truncated by the West Limb Thrust Fault at its base and by the Central Crestal Fault 1 to the southeast.
- The Northern Crestal Fault 1(green) is truncated by the West Limb Thrust Fault at its base and by the Northern Crestal Fault 2 to the northwest.
- The Northern Crestal Fault 2 (blue) truncates against the East Bounding Thrust Fault and the West Bounding Thrust Fault at its base.
- The Northern Crestal Fault 3 (grey) truncates against the East Bounding Thrust Fault at its base and the Northern Crestal Fault 2 to the south.
- The Downdip West Flank Cross Fault (light blue) lies completely beneath the West Bounding Thrust Fault (**Figure 2b**) and truncates against the West Bounding Thrust Fault at its top, and against the East Bounding Thrust Fault at its base.

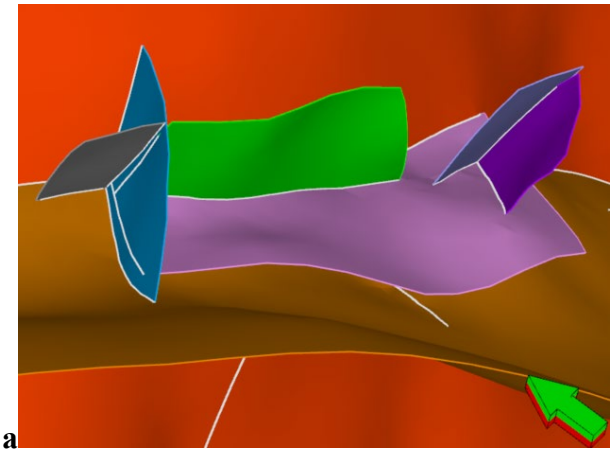
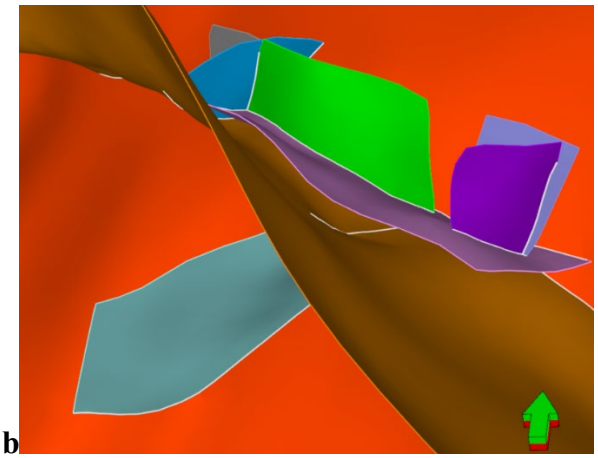
a  **b** 

Figure 2: 3D views of the West Limb Thrust Fault (pink), Central Crestal Fault 1(violet), the Central Crestal Fault 2 (dark purple), the Northern Crestal Fault 1(green), the Northern Crestal Fault 2 (blue), and the Northern Crestal Fault 3 (gray). The Downdip West Flank Cross Fault (light blue) is only displayed in 2b. The white lines correspond to fault truncations and the green arrow points North.

Horizon Modeling

Volume-based Modeling Theory

In the horizon modeling process, the volume-based modeling (VBM) algorithm is used to create a stratigraphic function based on the framework faults, the specified stratigraphy, and horizon interpretation. The structural model horizons are extracted as iso-values of this property, which makes the VBM approach fundamentally different from surface-based horizon modeling concepts. The stratigraphic function is defined throughout the structural model but is discontinuous across faults and unconformities. The algorithm is designed to minimize dip and thickness variations in the stratigraphic function. **Figure 3** shows an example of a stratigraphic function for a volume-based model.

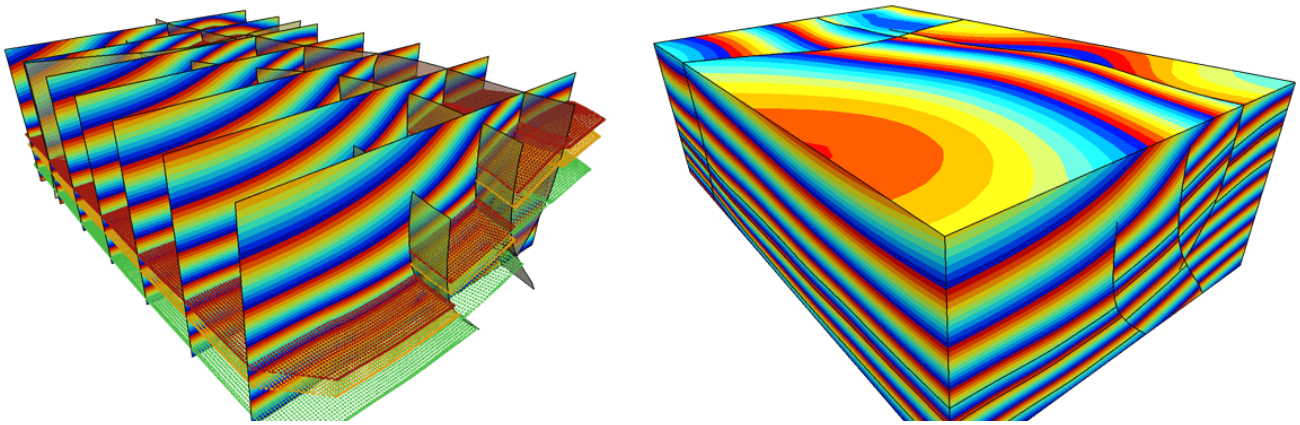


Figure 3: Stratigraphic function in sliced view with model faults and horizon interpretation (left), and in full view (right).

Modeled Horizons

Thirteen separate horizons were modeled in the North Belridge study area, listed below in **Table 1** from top to bottom. All horizons were tied to the well tops, although some well tops had to be excluded from the modeling process. The second column of **Table 1** gives the number of tops used in for each horizon in the structural framework, and the number of tops that were excluded are shown in parentheses. Other structural controls were also used to build the stratigraphic function (column 3 of **Table 1**) and were critical to modeling the structure away from the top of the anticlinal structure. The other controls included seismic interpretation for several horizons in the sequence, as well as isochore maps (maps of the true vertical thickness between consecutive horizons).

Table 1: Horizons, Wells Tops, Excluded Tops, and Other Controls

Horizon	Well Tops Used (Excluded Tops)	Other Control
MEDIA_TOP	140 (10)	Control from seismic interpretation
UPPER CARNEROS_TOP	123 (10)	
UPPER CARNEROS_BASE	121 (10)	
CARNEROS_TOP	136 (7)	Control from seismic interpretation
CARNEROS_BASE	142 (13)	Isochore map - Carneros Base to Agua Top
AGUA_TOP	143 (14)	
AGUA_BASE	137 (16)	Control from seismic interpretation
64_ZONE_U_TOP	140 (15)	Isochore map - Agua Base to U-Sand Top
64_ZONE_U_BASE	130 (15)	
64_ZONE_W_TOP	132 (15)	Control from seismic interpretation
64_ZONE_W_BASE	52 (6)	
GIBSON_TOP	29 (3)	
TUMEY	29 (1)	Control from seismic interpretation

1. A list of horizons in the structural framework is in the first column, the second column shows the number of well tops tied to the horizon in the modeling process, with the number of well tops not used in the solution is given in parentheses. The third column lists other controls (seismic interpretation, thickness grids) used to constrain the horizons in the structural framework.

The structural control inputs and the fault framework were used in the VBM process to create the final structure.

When the VBM process runs, it uses the tops and other inputs from all horizons together in a 3D space to solve for the stratigraphic function (shown in **Figure 3**) simultaneously. The solution for each horizon is then inspected and refined. During the quality control process for the structural framework, some of the well tops were excluded from the solution; typically, this was because the excluded top was very close to another top with a different elevation and caused unrealistic short-wavelength anomalies in the horizon, or due to poor log quality resulting in insufficient definition to reliably make a pick. Some tops that gave anomalous zone thicknesses were also excluded. The number of excluded tops for each horizon are given in **Table 1** in parentheses. **Figure 4** shows the horizon for the 64 Zone W Sandstone top, with the well tops for that horizon displayed as spheres. The well tops in green were used in the solution while the tops posted in red were excluded.

After many quality control iterations, the horizon and fault geometries converged on a geologically sound solution for the structure, as shown in **Figure 4.**

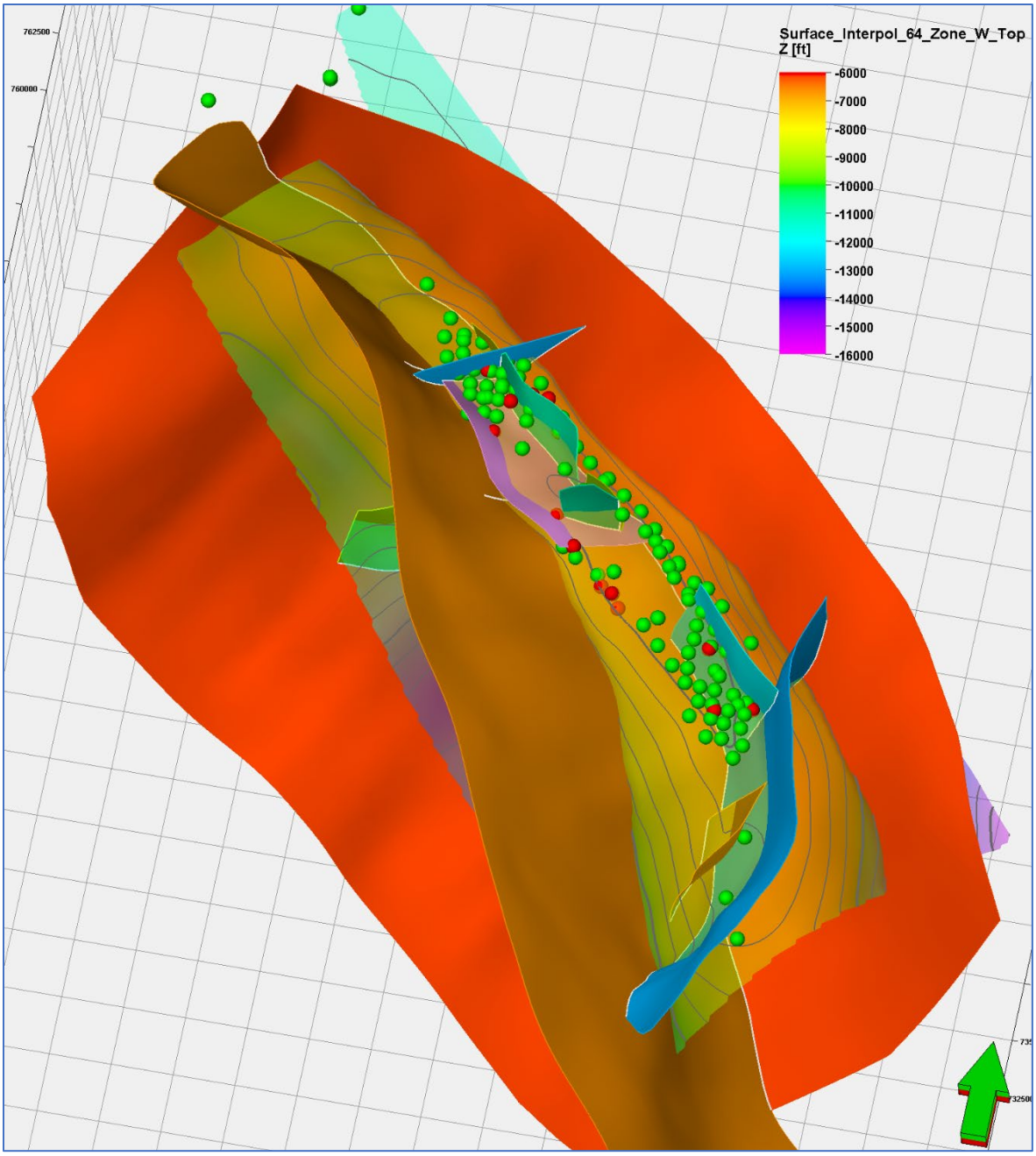


Figure 4: 64 Zone W Sandstone top horizon, shown with faults and well tops (posted as spheres). The well tops in green are the tops which were tied to the surface in structural modeling, and the tops shown in red were excluded during VBM. The green arrow points north.

Building Geocellular Grids from the Structural Framework

Pillar Geocellular Grid Theory

Pillar gridding is the process of using faults in the fault model as a basis for generating a 3D geocellular grid. In this type of gridding, faults retain their shape from the structural framework, and the corner-point grid pillars take on the dip of a nearby fault, as cells in a geocellular model must reside on one side of the fault or another. This gridding process results in a set of pillars along and between faults. The grid has no layers, only a set of pillars with user-supplied X and Y increments between them (like a pin cushion), and layering is introduced to the grid when making horizons and zones.

Creation of the Pillar Geocellular Grid

Creation of the pillar geocellular grid begins with creating a two-dimensional grid (skeleton) between the mid points of the key grid pillars. Then, top and bottom grids are generated from the top and bottom points of the key grid pillars, as shown in **Figure 5**.

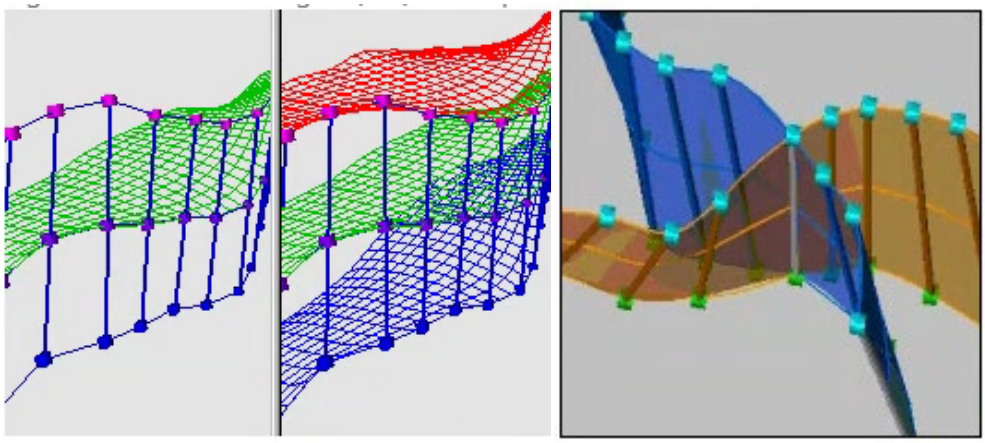


Figure 5: Mid-skeleton grid (left) and top-, mid-, and base-skeleton grid (middle) defined between shape points. Faulting from the fault model also provides additional detail to the skeleton grid through pillars that represent the plane of faulting (right).

The Z coordinates of the top, middle, and bottom grids have nothing to do with the positions of any future horizons, and, therefore, allow for grid pillars to be restructured based on key datapoints of faults in the structural model.

The pillar geocellular grid is ultimately restricted to the domain of the skeleton model in space once faults and layers are assigned. The vertical limits were from the Media Shale horizon to the Tumey horizon (**Table 1**), and the horizontal limits were defined by a polygon (**Figure 6)** that encompassed the locations of the well with porosity logs. The other critical parameters are cell dimensions in X, Y and Z. The horizontal dimensions for each cell are approximately 150 by 150 feet. The layering for the geocellular model uses the proportional method (i.e., a fixed number of layers per zone), so the cell height varies proportionally with the thickness of the zone. For the 64

Zone W Sandstone, there are 26 layers, and the average cell height is approximately 13 feet. For the 64 Zone U Sandstone, 7 layers were used, and for the shales above, below, and between the 64 Zone U and W Sandstones, 2 layers were used. **Figure 6** shows the cell height property for the 64 Zone W Sandstone and the vertical extents of the model. The faults are displayed for reference, and the 150-by-150-foot cell dimension and grid orientation can be inferred from the square cells in the cell height property.

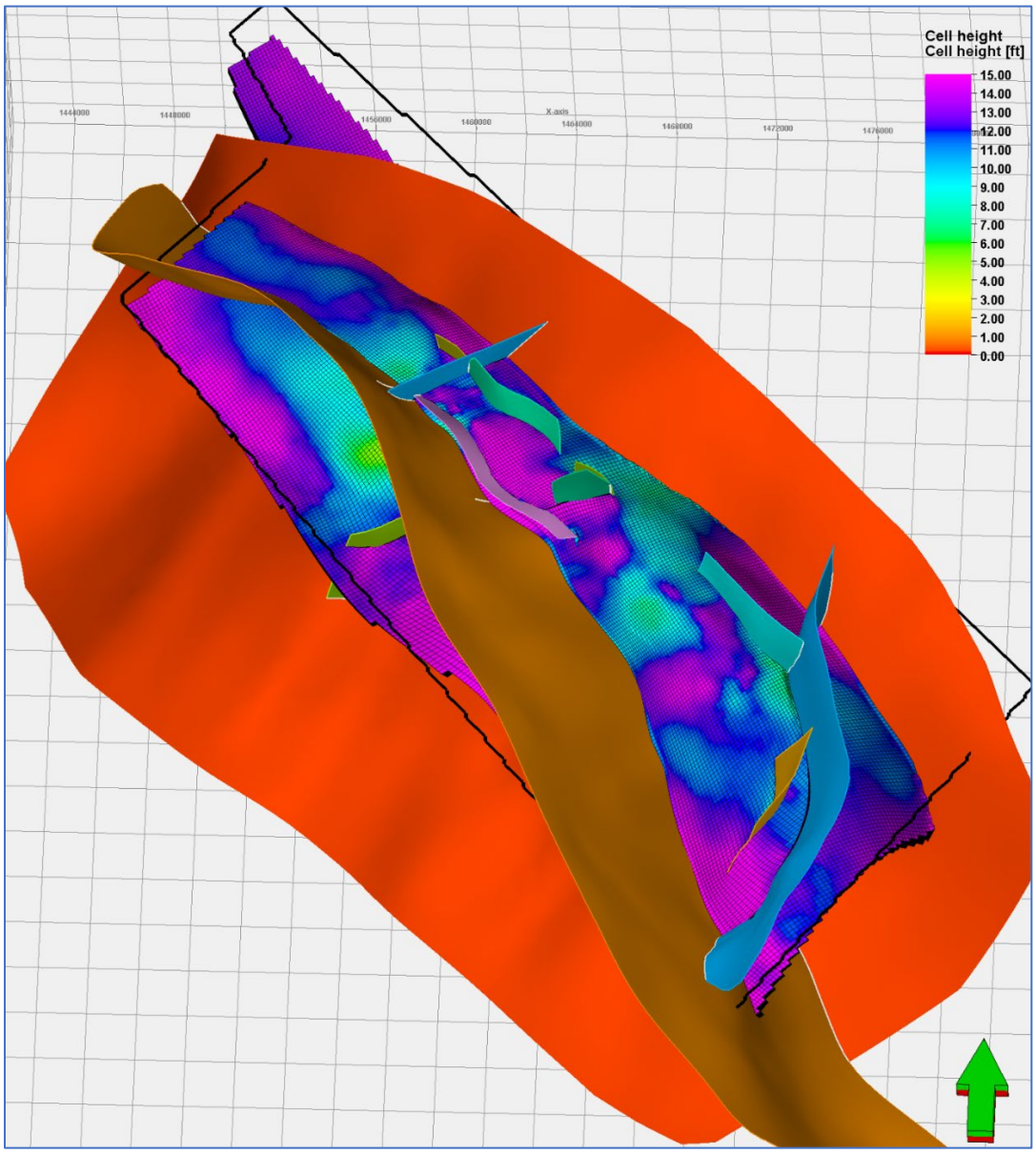


Figure 6: The cell height property for the 64 Zone W Sandstone is displayed along with the faults from the structural framework and the polygon used to set the limits for the pillar geocellular grid. The green arrow points north.

Petrophysical Property Distribution in the Geocellular Grid

Porosity

As described in **Section 3.3.1** of **Attachment C**, a density-neutron crossplot porosity was computed as an estimate of total porosity that accounts for the effects of mineralogy and fluid saturation on log measurements. In discussions with the petrophysical team, 24 porosity units (pu) was set as the reasonable upper limit for the petrophysically derived total porosity (PHIT). As a preconditioning step, the PHIT logs were passed through a process that set any values greater than 24 pu to undefined.

At this point, the PHIT well logs were upscaled to the grid cells in the geocellular model. A simple arithmetic average was determined to be the most accurate method for upscaling the well logs into the coincident cells in the geocellular model. A zone mapping technique was also employed to assure that the well logs are accurately mapped into the correct cells for those wells where the well top was excluded from the structural framework (the well tops displayed in red in **Figure 4**). This technique finds the exact location of the intersection of horizon with the wellbore at the top and base of each zone and corrects for the distance to the picked well tops.

After the well logs have been mapped into their corresponding cells in the geocellular model, they are used as inputs to the petrophysical modeling process. Petrophysical modeling uses the upscaled cells and a variogram to distribute the porosities into each cell in the model with a stochastic simulation technique called **Gaussian Random Function Simulation**. The variogram parameters for the distributions for the five zones are given in **Table 2**.

Table 2: Variogram Parameters for the PHIT Distribution in the Geocellular Model

Zone	Azimuth	Nugget	Type	Major	Minor	Vertical	Sill
MEDIA_TOP-UPPER CARNEROS_TOP	-52.3	0.0001	Spherical	7,700	4,800	5	1
UPPER CARNEROS_TOP-UPPER CARNEROS_BASE	-52.3	0.0001	Spherical	7,700	4,800	5	1
UPPER CARNEROS_BASE-CARNEROS_TOP	-52.3	0.0001	Spherical	7,700	4,830	4.275	1
CARNEROS_TOP-CARNEROS_BASE	-52.3	0.0001	Spherical	7,700	4,830	4.524	1
CARNEROS_BASE-AGUA_TOP	-52.3	0.0001	Spherical	7,700	4,830	3.226	1
AGUA_TOP-AGUA_BASE	-52.3	0.0001	Spherical	7,700	4,830	6.921	1
AGUA_BASE-64_ZONE_U_TOP	-52.3	0.0001	Spherical	13,400	5,730	5.572	1
64_ZONE_U_TOP-64_ZONE_U_BASE	-52.3	0.0001	Spherical	9,350	5,150	10.865	1
64_ZONE_U_BASE-64_ZONE_W_TOP	-52.3	0.0001	Spherical	13,400	5,730	6.421	1

Zone	Azimuth	Nugget	Type	Major	Minor	Vertical	Sill
64_ZONE_W_TOP-64_ZONE_W_BASE	-52.3	0.0001	Spherical	7,700	4,830	5.822	1
64_ZONE_W_BASE-GIBSON_TOP	-52.3	0.0001	Spherical	13,400	5,730	5.572	1
GIBSON_TOP-TUMEY	-52.3	0.0001	Spherical	7,700	4,800	5	1

Using the variogram and upscaled cells, the PHIT property is distributed throughout the model. The final property for the 64 Zone W Sandstone is shown in **Figure 7**.

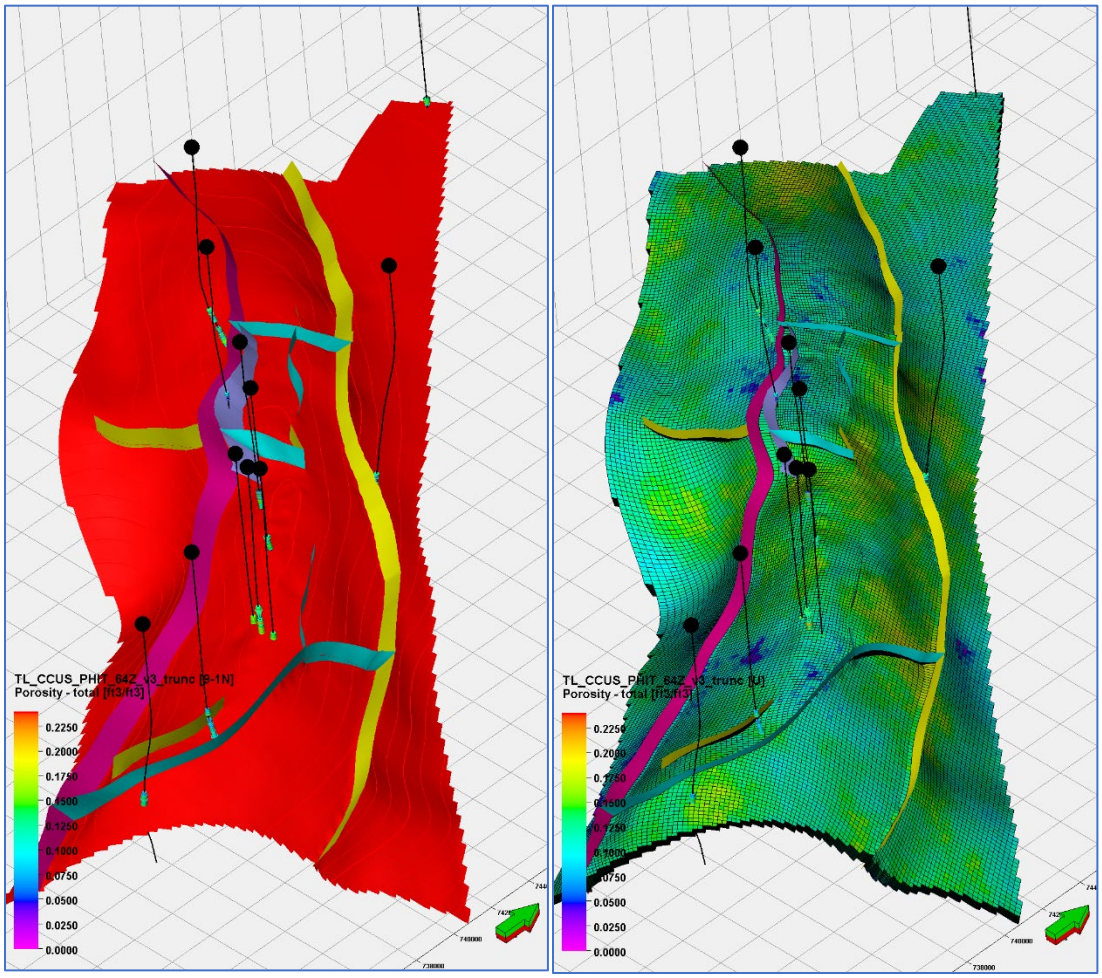


Figure 7: On the left are the PHIT well logs, pillar faults, and base of the 64 Zone W Sandstone. On the right is the distributed porosity property for 64 Zone W Sandstone. The green arrow points north.

Distributions of original porosity logs, upscaled logs, and modeled porosity are generally concordant. The modeled porosity distribution has an insignificant bias toward lower porosity values (a shift of approximately 1 pu from original and upscaled well logs), which can be attributable to interpolation and extrapolation of the input log data. **Figure 8 (a–d)** shows

correlations within the Lower Santos Shale, U-Sandstone, U-Shale, and W-Sandstone. The upscaled well log porosity within the shale intervals appears to have spikes, which can be attributed to the lack of samples being represented within the model layers. The shale intervals only have two layers each and 11 wells, equal to 22 total samples represented in the histograms. In comparison, the U and W Sandstones have over 5 layers each in the geocellular model, resulting in a smoother distribution of upscaled samples.

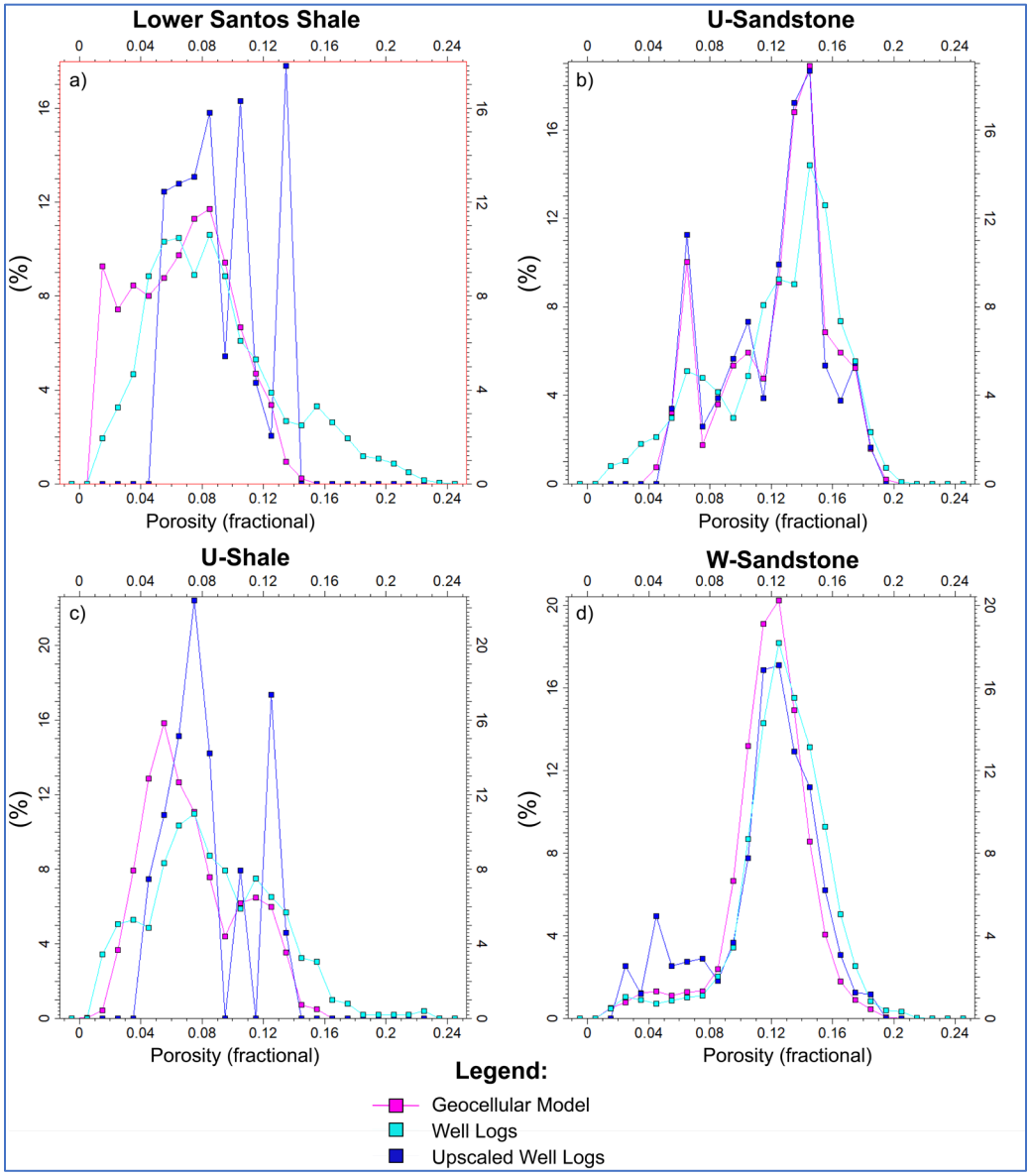


Figure 8: Histograms showing porosity distributions in the 64 Zone. The three lines represent well log inputs, upscales logs, and geocellular value distributions within the 3D model domain.

From upper left to bottom right: a) Lower Santos Shale, b) U-Sandstone, c) U-Shale, d) W-Sandstone.

Permeability

Air permeability was calculated for all zones using constant values, algorithms based on other properties in the model, and collocated co-kriging using regional information and PHIT distributions as shown in **Table 3**.

Table 3: Permeability Equations by Zone

Zone	K_{air} equation
MEDIA_TOP-UPPER CARNEROS_TOP	K_{air} = 0.0001
UPPER CARNEROS_ TOP-UPPER CARNEROS_BASE	Mean: 0.01879; Std: 0.03314; Min 0.001; Max 1,000
UPPER CARNEROS_ BASE-CARNEROS_TOP	K_{air} = 0.0001
CARNEROS_TOP-CARNEROS_BASE	Mean: 0.01879; Std: 0.03314; Min 0.001; Max 1,000
CARNEROS_BASE-AGUA_TOP	K_{air} = 0.0001
AGUA_TOP-AGUA_BASE	Mean: 2.587; Std: 3.958; Min 0.1; Max 1,000
AGUA_BASE-64_ZONE_U_TOP	K_{air} = 0.0001
64_ZONE_U_TOP-64_ZONE_U_BASE	K_{air}= Pow(10, ((10.91091***PHIT**) - (0.01585083*TL_**GR**) - 0.3733001))
64_ZONE_U_BASE-64_ZONE_W_TOP	K_{air} = 0.039
64_ZONE_W_TOP-64_ZONE_W_BASE	K_{air}=Exp((39.045117***PHIT**) - (0.010503***Height_below_Zone_Top**)-1.138712)
64_ZONE_W_BASE- GIBSON_TOP	K_{air} = 0.0001
GIBSON_TOP- TUMEY	Mean: 2.587; Std: 3.958; Min 0.1; Max 1,000

1. Model properties are **bold**.
2. Constants and statistics are in millidarcies.

For the shale-prone zones above, below, and between the 64 Zone U Sandstone and W Sandstone, permeabilities were set to a constant value based on regional data. An algorithm was developed to predict unstressed air permeability in the 64 Zone Sandstones using wireline logs as inputs: computed total porosity and normalized gamma ray for the U-Sandstone, and total porosity and distance from top of the sandstone unit for the W-Sandstone. The prediction algorithm trained with available conventional core data and was used to generate permeability estimates for all the wells with valid porosity log data. Cross plots comparing actual vs. predicted Log of Permeability to air for the training and test sets of the predictive model are presented in **Figure 9**. The U-Sandstone and W-Sandstone intervals were calculated using the algorithm mentioned above, and equations shown in **Table 3**, using the Petrel™ calculator on the existing 3D grid. Interpolated permeability values (W Sandstone) with associated distribution cross plots related to the Kair equation are shown in **Figure 10**. The sand-prone intervals outside of the 64 Zone relied on statistical analysis of well/core data (mean and stand deviations in Table 3) and collocated co-kriging of PHIT using a constant coefficient of 0.8 at each cell location. Each of these sand-prone intervals were given output ranges bounded between either 0.001mD – 1,000mD or 0.1 mD – 1,000 mD. Gaussian

random function simulation interpolation of the Upper Carneros Sandstone, Lower Carneros Sandstone, Agua Sandstone, and Gibson Sandstone used parameters in **Table 4**.

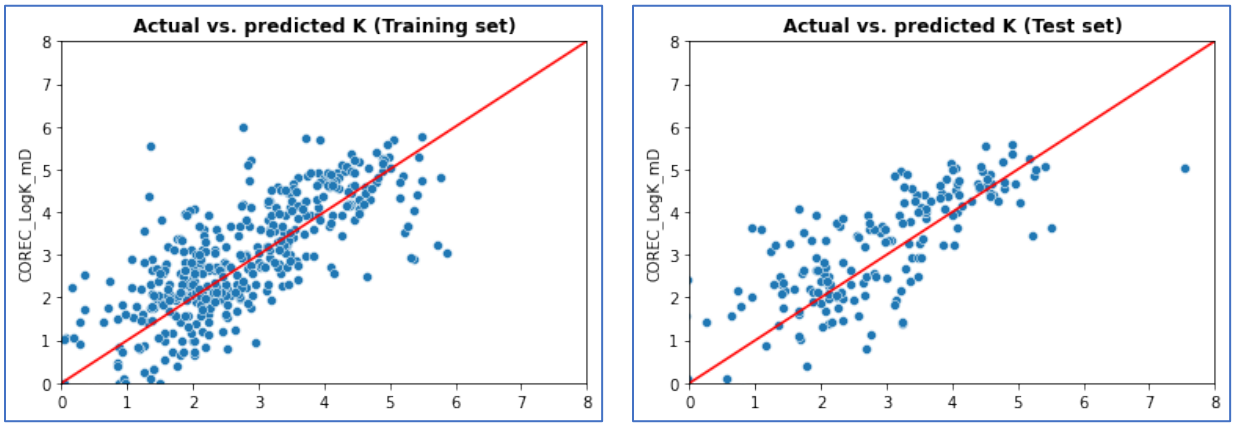


Figure 9: Permeability crossplots comparing actual vs. predicted log of permeability to air for the training and test sets of the predictive model.

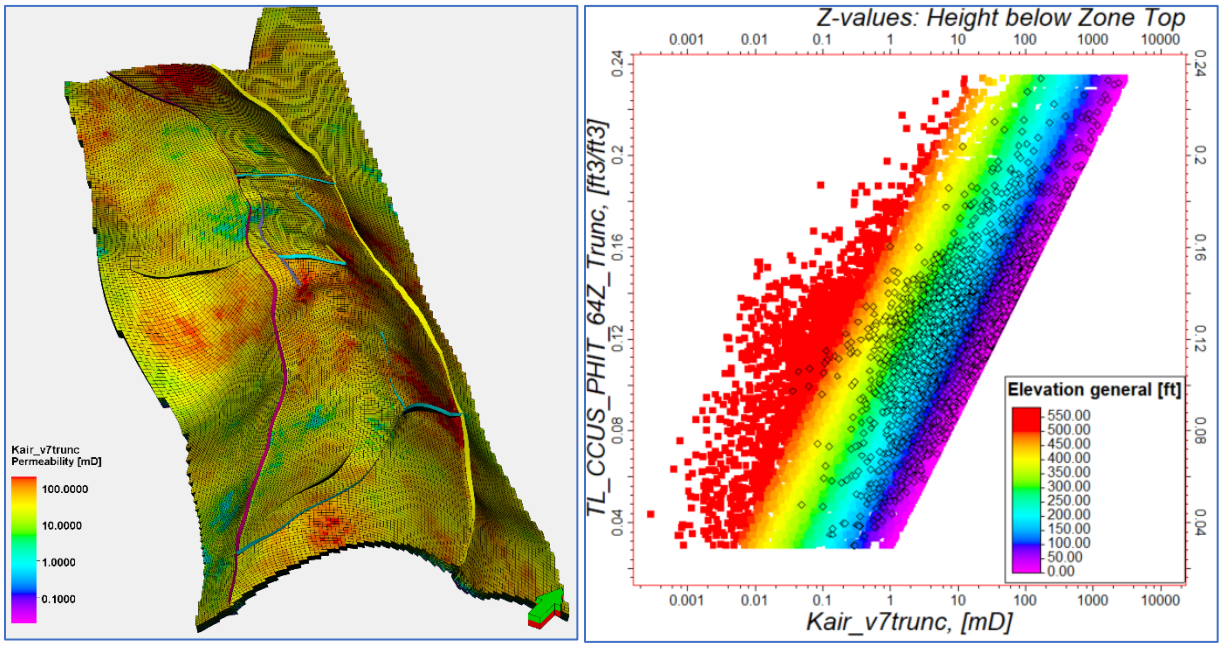


Figure 10: Permeability property for the 64 Zone W Sandstone (left), and crossplot of Permeability vs PHIT, colored by depth below zone top property (right). Black diamonds on the crossplot represent upscaled cells, background points are the complete model.

Table 4: Variogram Parameters for Permeability Distribution in the Geocellular Model in Select Zones

Zone	Azimuth	Nugget	Type	Major	Minor	Vertical	Sill
UPPER CARNEROS_ TOP-UPPER CARNEROS_BASE	-52.3	0.0001	Spherical	7800	3800	12	1

Zone	Azimuth	Nugget	Type	Major	Minor	Vertical	Sill
CARNEROS_TOP-CARNEROS_BASE	-52.3	0.0001	Spherical	7800	3800	12	1
AGUA_TOP-AGUA_BASE	-52.3	0.0001	Spherical	7800	3800	12	1
GIBSON_TOP-TUMEY	-52.3	0.0001	Spherical	7800	3800	12	1

1. Model properties are **bold**.
2. Constants and statistics are in millidarcies.

Distributions of permeabilities within the gridded model can be compared against statistically derived data from core measurements, as this data set was used for calibrating well log estimates and to derive inputs for collocated co-kriging. **Table 5** shows comparisons of statistics (mean and standard deviation) from core data and from the 3D geocellular model. All zones have mean permeabilities within 1 mD when comparing core and modeled data, except for the W Sandstone (~38 mD). The median values, which are a more representative comparison for log-scale measurements, of W Sandstone core and modeled permeability are within ~20 mD (28.5 mD and 8.9 mD, respectively). **Figure 11** shows porosity and permeability core data relative to porosity and permeability from the geocellular model. Overall, there is a strong correlation in input and modeled data.

Table 5: Comparison of Input Core data to gridded permeability in the Geocellular Model

	Core Derived Statistics - Inputs		Geocellular Model Statistics	
Zone	Mean (mD)	Standard Deviation (mD)	Mean (mD)	Standard Deviation (mD)
UPPER CARNEROS_ TOP-UPPER CARNEROS_BASE	0.01879	0.03314	0.0192	0.0314
CARNEROS_TOP-CARNEROS_BASE	0.01879	0.03314	0.0199	0.0382
AGUA_TOP-AGUA_BASE	2.587	3.958	2.688	3.778
64_ZONE_U_TOP-64_ZONE_U_BASE	1.123	1.362	0.971	1.052
64_ZONE_W_TOP-64_ZONE_W_BASE	55.967	1.094	17.472	26.001
GIBSON_TOP- TUMEY	2.587	3.958	2.264	2.769

1. Limited core samples from the Upper Carneros Sandstone, Carneros Sandstone, Agua Sandstone, and Gibson Sandstone resulted in groupings of input statistics based on regional understanding and professional judgement.
2. mD = millidarcies

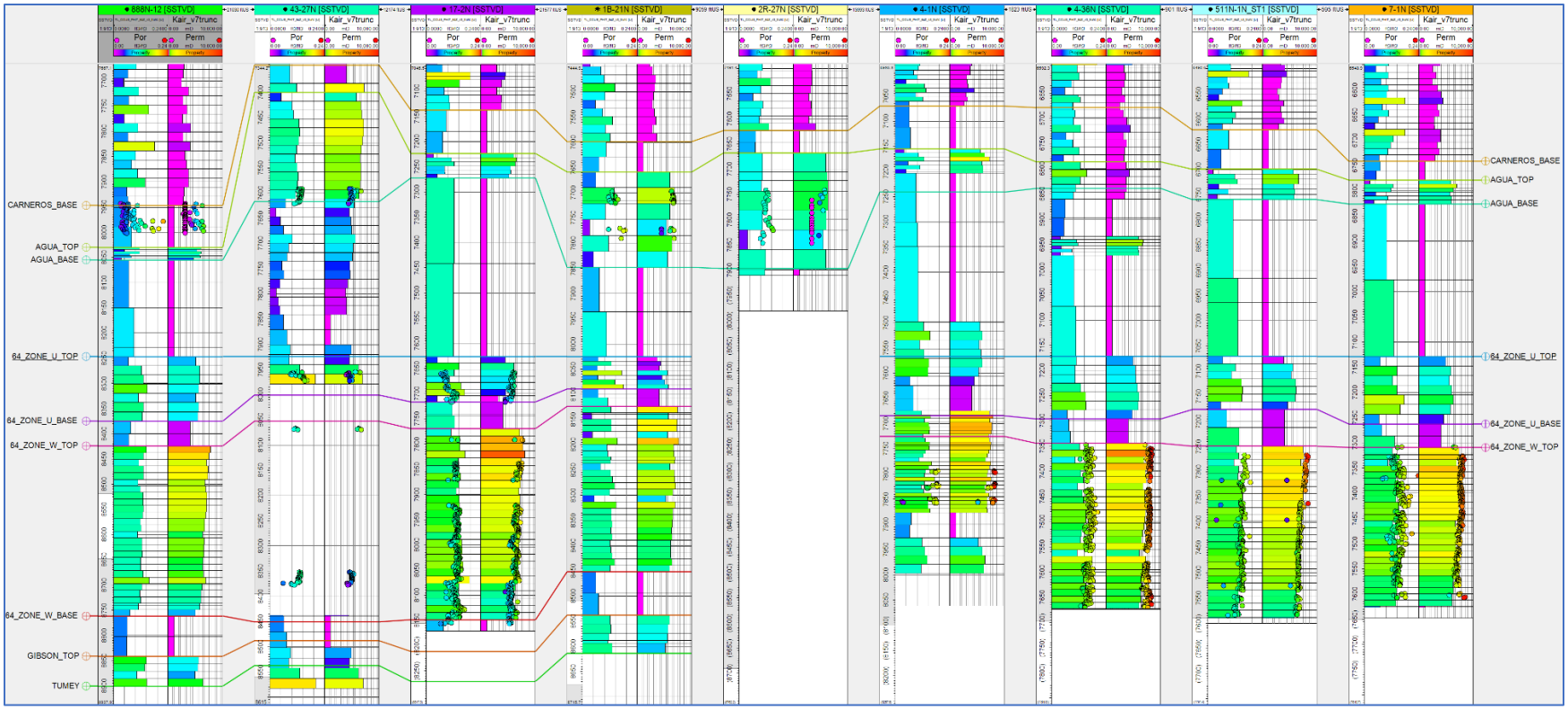


Figure 11: Porosity and permeability core data plotted with gridded porosity and permeability values along the borehole trajectory from the geocellular model. Porosity is in the left track with core data plotted as circles with color fill and gridded property as color fill line. Scale on the porosity track is 0-24% (fractional). Permeability is in the right track with core data plotted as circles with color fill and gridded property as color fill line. Scale for the permeability track is log scale from 0.00001 – 10,000 millidarcies. Well 43-27N penetrates the modeled West Limb thrust fault where the W Sandstone is faulted out.

Appendix 2B
Maps and Cross Sections of the AoR Supporting Data

Seismic Data Processing

2D Data Acquisition

SEI® Seismic Exchange, Inc.

Line List - QC Parameters

Line #	UID	BSP	ESP	Mileage	Price	Fold	Chnl	GI	SP	Max	Samp	Rec Sys	Rec Len	Energy	Shot Dt.	Shot By	Cable Config	Spread Config	Depth	Charg	Sweep #	Sweep Len	Sweep Freq
CGG-SJV-108	1944410	4.0	824.0	25.656	$2.475	24	96	165	330	8.333	4	Sercel 338	24.00	VIBROSEIS	02/81	CGG American Ser	8333-578-vp-578--8333	SPLIT		4	16	19	12-72
CGG-SJV-110	1944412	5.0	1,854.0	57.813	$2.475	24	96	165	330	8.333	4	Sercel 338	24.00	VIBROSEIS	12/81	CGG American Ser	8333-578-vp-578--8333	SPLIT		4	16	19	12-72
W-SJ-001	558273	100.0	2,082.0	82.625	$2.475	24	48	220	220	5.940	4	DDS-888	25.00	VIBROSEIS	03/79	Western Geophysic	5940-880-vp-880-5940	SPLIT		4	12	20	10-58
W-SJ-007	551471	579.0	2,176.0	66.583	$2.475	24	48	220	220	5.940	4	DDS-888	25.00	VIBROSEIS	02/82	Western Geophysic	5940-880-vp-880-5940	SPLIT		4	10	20	10-58
W-SJ-024	553592	103.0	2,583.0	51.688	$2.475	24	96	110	220	8.470	4	DFS V	26.00	VIBROSEIS	11/83	Western Geophysic	3190-660-vp-660-8470	SPLIT		5	10	20	10-58
W-SJ-029	552581	75.0	4,165.0	85.229	$2.475	24	96	110	220	11.330	4	DFS V	26.00	VIBROSEIS	01/83	Western Geophysic	11330-880-vp	OFFEND		5	10	20	10-58
W-SJ-074	554724	103.0	2,473.0	49.396	$2.475	24	96	110	220	8.470	4	DFS V	26.00	VIBROSEIS	05/85	Western Geophysic	3190-660-vp-660-8470	SPLIT		6	8	20	10-58
W-SJ-075	554725	104.0	1,516.0	29.438	$2.475	24	96	110	220	8.690	4	DFS V	26.00	VIBROSEIS	04/85	Western Geophysic	3410-880-vp-880-8690	SPLIT		6	8	20	10-58
W-SJ-123	556748	103.0	2,729.0	54.729	$2.475	30	120	110	220	10.450	2	DFS V	26.00	VIBROSEIS	04/88	Western Geophysic	3850-660-vp-660-10450	SPLIT		5	10	20	10-95
W-SJ-124	556749	103.0	2,981.0	59.979	$2.475	30	120	110	220	10.450	2	DFS V	26.00	VIBROSEIS	05/88	Western Geophysic	3850-660-vp-660-10450	SPLIT		5	10	20	10-95
W-SJ-126	556751	103.0	1,362.0	26.250	$2.475	30	120	110	220	10.450	2	DFS V	26.00	VIBROSEIS	06/88	Western Geophysic	3850-660-vp-660-10450	SPLIT		5	10	20	10-95
W-SJ-129	556754	103.0	2,054.0	40.667	$2.475	30	120	110	220	10.450	2	DFS V	26.00	VIBROSEIS	05/88	Western Geophysic	3850-660-vp-660-10450	SPLIT		5	10	20	10-95
W-SJ-129	556754	2,098.0	2,579.0	10.042	$2.475	30	120	110	220	10.450	2	DFS V	26.00	VIBROSEIS	05/88	Western Geophysic	3850-660-vp-660-10450	SPLIT		5	10	20	10-95
W-SJ-129	556754	2,055.0	2,097.0	0.896	$2.475	30	120	110	220	10.450	2	DFS V	26.00	VIBROSEIS	05/88	Western Geophysic	3850-660-vp-660-10450	SPLIT		5	10	20	10-95
W-SJ-144	556211	794.0	801.0	0.167	$2.475	30	120	110	220	10.450	2	DFS V	26.00	VIBROSEIS	03/87	Western Geophysic	10450-660-vp-660-3850	SPLIT		5	10	20	10-96
W-SJ-144	556211	802.0	2,970.0	45.188	$2.475	30	120	110	220	10.450	2	DFS V	26.00	VIBROSEIS	03/87	Western Geophysic	10450-660-vp-660-3850	SPLIT		5	10	20	10-96
W-SJ-144	556211	104.0	793.0	14.375	$2.475	30	120	110	220	10.450	2	DFS V	26.00	VIBROSEIS	03/87	Western Geophysic	10450-660-vp-660-3850	SPLIT		5	10	20	10-96
Grand Totals	17			700.721																			

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2D Data Processing

Standard Processing Flow for 1980's vintage 2D data

Edit field traces from shot records/Demultiplex and Vibroseis Correlation

Geometry Computation

CDP Sort

Spherical divergence correction

Elevation Statics

Datum Elevation: MSL

Correction Velocity: 6000'/sec

Deconvolution (Time Variant Minimum Phase Inverse Filter)

-Auto Correlation: 3 Equal Zones
-Predictive Distance: 2-4 ms
-Operator: 160 ms
-Time Interval: 0-6000 ms

Velocity Analysis

Source/Receiver Surface Consistent AutoStatics

2nd Pass Velocity Analysis

2nd Pass of Autostatics

NMO Correction and Reflection Statics

CDP Stack

Finite Difference Migration

Final Filter and Gain

3D Data Acquisition

Survey Name		**South Belridge**
	Exploration (base effort)	Embedded (higher effort, within field)
Parameter	Value	Value
Source Type	Mix of Vibroseis & dynamite	Mix of Vibroseis & dynamite
Charge Size	5.5 lbs	5.5 lbs
Charge Depth	40 ft	40 ft
Shot Line Spacing	1320 ft	330 ft
Shot Interval	165 ft	165 ft
Source Line direction	NW-SE	NW-SE
Number of Shots	26 680 (18 369 exploration + 8311 embedded)	
Recording Patch	16 Lines x 264 Channels	21 Lines x 120 Channels (5 lines shared with Exploration patch)
Receiver Line Direction	SW-NE	SW-NE
Receiver Line Spacing	1320 ft	330 ft
Receiver Interval	110 ft	110 ft
Number of Channels	1 – 40763 (exploration + embedded)	
Max Offset	11 – 42916 ft (exploration + embedded)	
Elevation Range	244 – 1535 ft	244 – 1535 ft
Front Ended Datum	900 ft	900 ft
Processing Datum	4000 ft	4000 ft
Front Ended Replacement Velocity	6500 ft/s	6500 ft
Processing replacement Velocity	6000 ft/s	6000 ft/s
Number of Vibroseis	3 or 4 vibes spaced 73 ft and 55 ft respectively	
Vibroseis Sweep	4 x 20 sec sweeps or 8 x 20 sec sweeps 10-80 Hz Linear	4 x 20 sec sweeps 10-80 Hz Linear
Survey Datum	900 ft	900 ft
Acquired By	Global Geophysical	Global Geophysical
Acquisition Date	June 2006 to March 2007	June 2006 to March 2007
Geometry Contractor	Western Geco	Western Geco
Recording System	Sercel 408	Sercel 408
Sample Rate	2 ms	2 ms
Record length	6000 ms	6000 ms
Natural Bin Dimension	55 ft x 82.5 ft	55 ft x 82.5 ft
Average fold	3 (2352 ft offset)-88 (uniform fold/all offset)	40(2352 ft 0ffset)-210(all offset limit to 6625 ft)
Survey square Miles	145 miles	21 miles

Survey Name	**ANTELOPE HILLS (aka NS40)**
Parameter	Value
Source Type	Mix of Vibroseis & dynamite
Charge Size	3.5 lbs to 6.0 lbs
Charge Depth	20 ft to 30 ft
Shot Line Spacing	1320 ft
Shot Interval	110 ft
Source Line direction	E-W
Number of Shots	43729
Recording Patch	28 lines x 252 Channels
Receiver Line Direction	N-S
Receiver Line Spacing	1100 ft
Receiver Interval	110 ft
Number of Channels	2499
Offset range	1 – 19577 ft
Elevation Range	500 – 2691 ft
Front Ended and processing Datum	4000 ft
Front Ended and processing Replacement Velocity	6000 ft/s
Number of Vibroseis	3
Vibroseis Sweep	3x 8 sec sweeps 8- 72 Hz Linear 0.2 Taper
Acquired By	SOLID State Geophysical
Acquisition Date	November 1999 to January 2001
Geometry Contractor	Excel Geophysical Services
Recording System	I/O RSR/2
Sample Rate	2 ms
Record length	7000 ms
Natural Bin Dimension	55 ft x 55ft
Fold range	1 -370
Survey square Miles	235 sq mi

3D Data Processing History and Flow

History

From 2012 through 2016 Aera undertook a reprocessing effort of the greater Belridge producing complex and surrounding areas. This included the South Belridge and Antelope Hills/NS40 surveys, as well as other surveys in the vicinity of the North Belridge and South Belridge fields. The initial processing (2012-2015) focused on the South Belridge survey but also involved several other surveys, located south and west of South Belridge. These were subsequently merged into a large data volume called the ABCSB dataset (or merged survey).

The data processing was conducted, in parts, by Excel Geophysical, WesternGeco and Shell Onshore Imaging Americas. In 2016, the Antelope Hills/NS40 survey was merged with the prior merged volume from ABCSB. Finally, in 2017, the processing products from these cumulative

efforts were extracted over the North Belridge field area and shipped to Advanced Geophysical Technology (AGT) for new velocity analysis, modeling and a Pre-Stack Depth Migration delivered to Aera in 2018. The processing flows for all three of these processing stages are described, in detail, below.

Phase 1: 2012-2015 Processing (Merge survey resulting in ABCSB)

Front-end processing (geometry, first-break picking, initial statics corrections, etc.) was conducted by WesternGeco.

WesternGeco front-end work: The processing was started from field shot-gathers. This included elevation and refraction statics solutions, appending geometry to trace headers, QC of geometry and edits of shot locations (if necessary), and picking first breaks. The products from these processing efforts were then delivered to Shell as input to the remaining processing flow, described below.

Processing Flow

REFRACTION STATICS: Each survey had contractor (as previously discussed, above) provided first breaks and refraction statics in the headers. The refraction statics were computed using the respective vendor methods. After Qcing the quality of the first breaks, it was decided to repick and rederive refraction statics using the Geotomo TomoPlus software. Each survey is a mix of dynamite and vibroseis sourced records. For better and consistent first break picking, all surveys were time and phase matched prior to picking. The survey match parameters were determined from analysis of the elevation stacks. See paragraph Survey Match for detail.

Near surface refraction statics were determined using the Geotomo TomoPlus software using shots and receivers from all six surveys. A multi-pass iterative approach was used. Pass one used a 3-layer initial model based on the first-break picks and a smoothing control of 10. Pass two used the output from pass one as input with a smoothing control of 1.0. The final pass used the output from the second pass as the input and a smoothing control of 0.1. 24 | P a g e Aera Merge 2014 Processing Report Confidential Statics were solved using a datum of 4000ft, and a replacement velocity of 6000 ft/s. We used only offsets from 2000 ft to 10 000 ft where the first break picks were most accurate.

NOISE ATTENUATION: Denoising was run in both shot and receiver domains and in cross-spread domains with the objective of first removing linear ground roll noise followed by the high amplitude noise that would affect the calculation of the Deconvolution operator. Stationary noise was removed using the BUZOFF (Shell internal code) operation prior to removing linear ground roll noise.

The noises observed on these data included:

- Ground roll: strong and (extremely) low velocity, as low as 500 ft/s – 600 ft/s
- Air wave: strong, especially for the vibroseis data
- Production noise due to the oil field: strong, dispersive and generally not coherent
- Unknown source coherent noise: possible related to surface facilities.

The ground roll energy in the middle of the oil field was the most challenging. Therefore, several steps were applied to attack ground roll and random/coherent noise. For linear ground roll noise attenuation, TREX (Shell internal code) was used to model the dipping low frequency ground roll linear noise. To attenuate the remaining noise, DIVERS (Shell internal code) was run on frequency sub-bands in the shot and receiver domains to attenuate high amplitude noise bursts in the data. Prior to attenuating the noise bursts, a pass of surface consistent gain was run for both shot and receiver components The most challenging noise in this area is the noise generated by the operational oil field in the southern portions of the South Belridge survey. On some receivers, this noise so dominated that no signal was observed, and these receivers were dropped from processing.

SCALING: Surface consistent scaling was performed to balance amplitudes before the DIVERS (Shell Internal Code) operation. Shot and receiver scalars were computed for each survey individually.

SURVEY MERGING: Elevation stacks for each survey were created to conduct the survey wavelet matching. For consistency, shot and receiver elevation statics were calculated using a datum of 4000 ft and replacement velocity of 6000ft/s. We encountered significant challenges to find signal for matching in some of the overlap zone. Of the six surveys in total to merge, South Belridge, Apex, Cymric, and Belgian surveys are a mix of dynamite and vibroseis, Prior to the survey matching, each survey had a vibroseis to dynamite filter applied. Each survey was stacked separately using the same velocity, the same datum correction, and binned to the merge grid which is iline55x crossline55. South Belridge was rebinned from il55 x xl82.5 to il55 x xl55

DECONVOLUTION: Surface consistent deconvolution was run using the global option in the Techco Deconvolution package (Techco Geophysical Services software). This option calculates the line, shot, and receiver components, but only the shot and receiver components are applied. By applying only the shot and receiver components, the amplitude spectra variations between the shots and receivers is corrected (residual deconvolution), and the average wavelet remains in the data. Prior to deconvolution, a spherical divergence correction with an alpha of 1.5 was applied along with a deabsorption correction with an alpha of 0.2. The near offsets have minimal coherent energy, so for the deconvolution operator design, an internal mute was applied. This allows the deconvolution operator to be designed more on signal, and to be less influenced by the noise in the data.

Techo Deconvolution Parameters

- Operator: 120ms
- PreWhitening: 0.1
- Mode: Global
- Window

Offset (ft)	Top Window (ms)	Bottom Window (ms)
1600	1500	3000
10000	2500	450

VELOCITIES: The Techco Velanal software package (Techco Geophysical Services) was used to perform one pass of stacking velocity analysis. Constant velocity scans were performed and picked every 60x60 bins. After obtaining an initial velocity function, a second velocity analysis was performed using percentages from 80% to 120% with 2% increment. As the data quality in the west was poor, the following data preconditioning was applied prior to making velocity scans: - Harsh 4D denoise (Madcow) (Shell proprietary noise reduction) - AGC with short (500 ms) window - Frequency high cut: 3-8-25-30 Hz

REFLECTION STATICS: One pass of surface consistent reflection statics was calculated after merge and deconvolution using the Jaguar operation (Shell internal code). The best results were obtained by using reference stacks with 4D MADCOW denoise applied post-stack. However, unsolved statics remain in the west side of the merged dataset. The number of residual statics passes was limited to one due to minimal improvement after the first pass.

Parameters
Window: 1000-3000ms
Freq: 3/8 - 25/30Hz
Maximum allowable shift: +/- 60m

Phase 2: 2016 Processing (Antelope Hills/NS40; subsequently merged with ABCSB)
Front-end processing (geometry, first-break picking, initial statics corrections, etc.) was conducted by Excel Geophysical (Antelope Hills/NS40).

Excel Geophysical front-end work: The processing was started from field shot-gathers. Front-end processing included elevation and refraction statics solutions, appending geometry to trace headers, QC of geometry and edits of shot locations (if necessary), and picking first breaks. The products from these processing efforts were then delivered to Shell as input to the remaining processing flow, described below.

Processing Flow for Antelope Hills/NS40 ONLY

- Reformat Geometry QC and correction (where needed)
- Survey match before tomography (South Belridge portion of ABCSB + NS40/Antelope Hills)
- First break picking for NS40 only, used ABCSB first break picks obtained on 2012-2015 project
- Tomographic refraction statics for merged NS40 (Antelope Hills) + ABCSB (South Belridge)… [Replacement velocity: 6000ft/s, datum: 4000 ft]
- Spherical divergence correction

- Extrapolation of the ABCSB (South Belridge portion) stacking velocity over the NS40 survey
- Linear ground roll noise attenuation in shot & receiver domains
- Random/coherent noise attenuation in shot & receiver domains
- Trace to trace scaling
- Deabsorption
- Surface consistent deconvolution
- Noise attenuation after deconvolution
- Surface consistent residual reflection statics
- Velocity analysis
- Survey wavelet match (South Belridge portion of ABCSB + Antelope Hills/NS40)
- Variable slotted data preparation
- Data regularization and infill Migration data preparation

-----> Output to AGT for Velocity Analysis, Modeling and Pre-Stack Depth Migration (see below)

Phase 3: 2017/2018 Processing (New Migration of North Belridge area)

3-D Land Seismic Processing Flow Advanced Geophysical Technology Kirchhoff PSDM(VTI/TTI)	
Processing Steps	Actions/ Results
Input data and QC (From Shell Onshore Imaging Americas)	
Load and QC Input Velocity Model	• Compare velocity cube to survey geometry to ensure compatibility • QC input data
Stack 3D Data Volume	• Compare velocity cube to survey geometry to ensure compatibility • QC input data
Data Preconditioning	• Interpolation • Noise Attenuations etc.
Velocity Model Building (Isotropic Portion)	
Initial Testing of Input Data	• Check geometry, input data, Initial velocity model

Kirchhoff Migration Parameter Testing	• Various tests for computing needed migration aperture • Determine variable grid • Test for amplitude compliancy
Velocity Model Building – 3D	• 4 iterations of isotropic tomographic velocity updating to converge on final standard Isotropic depth velocity field
Iteration 1: Global Update of Sediment Velocities	• Input Kirchhoff gathers • 3D Tomography- Global velocity update- Iteration 1 • QC Stack and Gathers-analyze for flatness-inversion • QC Residual move-out picking
Iteration 2: Global Update of Sediment Velocities	• QC Stack and Gathers-analyze for flatness/inversion • QC Residual move-out picking
Repeat as Above Until Isotropic Velocity Convergence	• Up to 4 Iterations
Velocity Model Building (VTI/TTI) (Anisotropic Portion)	
Anisotropy – Iteration 1 Check for epsilon & delta	• Incorporate wells into data volume • Determine anisotropy data parameters • Update velocity model with anisotropy
Anisotropy Velocity Model – Q.C. and Iterate as necessary - finalize	• Check Well ties • Q.C. Epsilon, Delta Velocity Cubes • Update and iterate Anisotropy as needed. • Finalize Velocity Field
Final Velocity Model and Migration - Kirchhoff	
Final Raw (VTI/TTI) Kirchhoff Migration Stack and Gathers	• Gathers- AVO Compliant
Post-Migration Gather processing RNMO as necessary.	• RNMO applied to flatten gathers • Test for AVO compliancy (Fidelity of gathers- Frequency and Amplitude)
Post Migration Processing	• Filtering • Final Mute • Amplitude balancing • Azimuthal filter

Appendix 2B
Maps and Cross Sections of the AoR Supporting Data

Key Well Logs

Appendix 2B: Maps and Cross Sections of the AoR Supporting Data
Key Well Logs
Site Characterization

- 4-1N
- 7-1N
- 9-1N
- 10X-1N
- 11X-26N
- 17-2N
- 23X-35N
- 43-27N
- 46X-35N ST4
- 511N-1N ST1
- 532N-1N
- 888N-12
- AMERICAN ENERGY 1-12
- GUMP TRUST 30-1
- SHIDELER 1-28

4-1N



7-1N

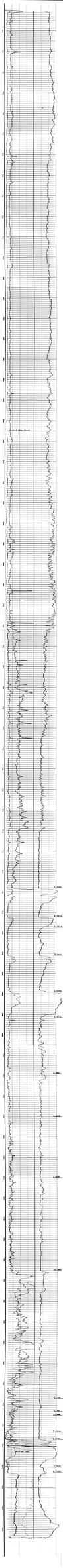
API 047-03348

COMPANY CONSOLIDATED GAS SUPPLY CORP.
WELL No. 7416
DISTRICT WEST UNION
FIELD No. N. FORK-UR
COUNTY DODDRIDGE
STATE WEST VIRGINIA

ELEVATION OF DERRICK FLOOR 1,000.00
GROUND 1,000.00
LOG MEASURED FROM KB
DRILLING MEASURED FROM KB
PERMANENT DATUM GROUND
DATE LOGGED 10-29-80
RUN NUMBER ONE
DEPTH-DRILLER 6,100
DEPTH-LOGGER 6,100
BTM. LOG INTERVAL 6,100
TOP LOG INTERVAL 2,000
CASING-DRILLER 8 5/8 @ 2,000
CASING-LOGGER 2,000
BIT SIZE 7 7/8
TYPE FLUID IN HOLE GEL CHEM
DENS. VISC. 10.0 40
PH FLUID LOSS 10.5 6.4
SOURCE OF SAMPLE CIRC. PIT
RM @ MEAS. TEMP. .95 @ 70°
RMF @ MEAS. TEMP. .75 @ 70°
RMC @ MEAS. TEMP. 1.2 @ 70°
SOURCE OF RMF & RMC MEASURED
RM @ BHT .55 @ 130°
TIME SINCE CIRC. 12 HRS.
MAX. REC. TEMP. 130°
EQUIP. NO. & LOCATION 1 & 2 WEST UNION
RECORDED BY R. HOLLOWAY
WITNESSED BY MR. CONNOLLY

REMARKS
RAN 8 3/4" CENTRALIZERS, BASKETS ON CENTERS AT 2,000', 1,980', 1,940', 1,900', 1,860', 1,820', 1,780', 1,740', 1,700', & 1,660'.

RUN NO. ONE
DATE 10-29-80
TYPE LOG DUAL INDUCTION LATEROLOG
DEPTH-DRILLER 6,100
DEPTH-LOGGER 6,100
BTM. LOG INTERVAL 6,100
TOP LOG INTERVAL 2,000
CASING-DRILLER 8 5/8 @ 2,000
CASING-LOGGER 2,000
BIT SIZE 7 7/8
TYPE FLUID IN HOLE GEL CHEM
DENS. VISC. 10.0 40
PH FLUID LOSS 10.5 6.4
SOURCE OF SAMPLE CIRC. PIT
RM @ MEAS. TEMP. .95 @ 70°
RMF @ MEAS. TEMP. .75 @ 70°
RMC @ MEAS. TEMP. 1.2 @ 70°
SOURCE OF RMF & RMC MEASURED
RM @ BHT .55 @ 130°
TIME SINCE CIRC. 12 HRS.
MAX. REC. TEMP. 130°
EQUIP. NO. & LOCATION 1 & 2 WEST UNION
RECORDED BY R. HOLLOWAY
WITNESSED BY MR. CONNOLLY



9-1N

COMPANY: [illegible]
WELL: [illegible]
ELEVATION: [illegible]
FIELD: [illegible]
COUNTY: [illegible]
STATE: CALIFORNIA

SOURCE OF DATA
DRILLING RECORD
ELECTRIC LOG
OTHER SERVICE

Rec.	[illegible]	[illegible]	[illegible]
Run No.	[illegible]	[illegible]	[illegible]
Date	[illegible]	[illegible]	[illegible]
Depth-Driller	[illegible]	[illegible]	[illegible]
Depth-Logger	[illegible]	[illegible]	[illegible]
Bottom Logged Interval	[illegible]	[illegible]	[illegible]
Top Logged Interval	[illegible]	[illegible]	[illegible]
Type Fluid in Hole	[illegible]	[illegible]	[illegible]
Salinity, PPM Cl	[illegible]	[illegible]	[illegible]
Density	[illegible]	[illegible]	[illegible]
Level	[illegible]	[illegible]	[illegible]
Max. Rec. Temp. Deg. F.	[illegible]	[illegible]	[illegible]
Operating Rig Time	[illegible]	[illegible]	[illegible]
Recorded By	[illegible]	[illegible]	[illegible]
Witnessed By	[illegible]	[illegible]	[illegible]

REMARKS

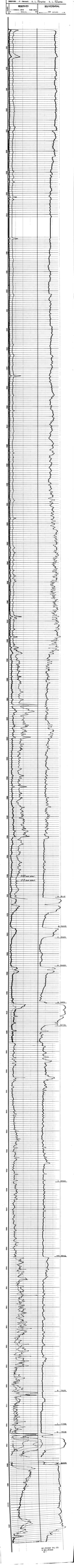
Field Data: Maximum Temperature 160°F

RUN NO. | BIT | FROM | TO | FEET | HOURS

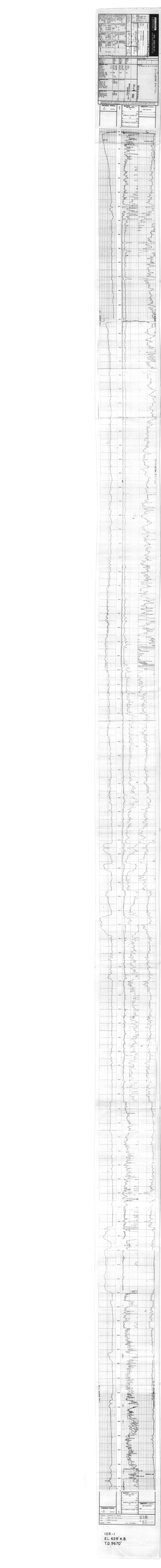
RECORDED BY: R. Peters L. L. Kinsey R. L. Kinsey

RECEIVED
[illegible]
[illegible] DIVISION OF OIL AND GAS

SCHLUMBERGER
WELL SURVEY CO.



10X-1N



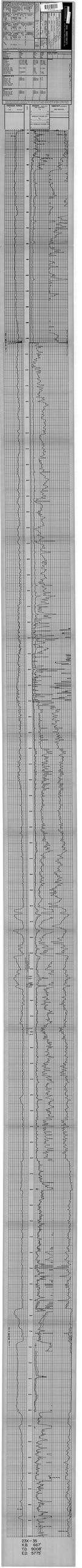
10X-1
E.L. 629' K.B.
T.D. 9670'

11X-26N

17-2N



23X-35N



23X – 35
KB 667'
TD 9008'
ED 5775'

SEACOAST WELL LOGGING SERVICE

LOT 1, 2 MILES N.E.L., GOLETA, CALIFORNIA

February 4, 1957

COMPANY SEACOAST OIL COMPANY
WELL NO. 1
FIELD WILDCAT
LOCATION 660' FNL & 660' FWL OF SEC. 36, T5N, R28W, S.B.B.&M.
COUNTY VENTURA
STATE CALIFORNIA

ELEVATION DERRICK FLOOR 1,000'
GROUND 990'
DATE RUN NO. 1 FEBRUARY 4, 1957
DEPTH DRILLER 7,500' TD
DEPTH LOGGER 7,500' TD
BTM. LOG INTERVAL 7,500'
TOP LOG INTERVAL 1,000'
CASING 13" @ 1,000' CEMENTED WITH 1,000 SACKS

LEGEND
OIL SAND INDICATING MUDCAL

RUN NO. ONE
RUN NO. TWO
RUN NO. THREE
RUN NO. FOUR
RUN NO. FIVE
RUN NO. SIX
RUN NO. SEVEN
RUN NO. EIGHT
RUN NO. NINE
RUN NO. TEN
RUN NO. ELEVEN
RUN NO. TWELVE
RUN NO. THIRTEEN
RUN NO. FOURTEEN
RUN NO. FIFTEEN
RUN NO. SIXTEEN
RUN NO. SEVENTEEN
RUN NO. EIGHTEEN
RUN NO. NINETEEN
RUN NO. TWENTY
RUN NO. TWENTY-ONE
RUN NO. TWENTY-TWO
RUN NO. TWENTY-THREE
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RUN NO. NINETY-THREE
RUN NO. NINETY-FOUR
RUN NO. NINETY-FIVE
RUN NO. NINETY-SIX
RUN NO. NINETY-SEVEN
RUN NO. NINETY-EIGHT
RUN NO. NINETY-NINE
RUN NO. ONE HUNDRED

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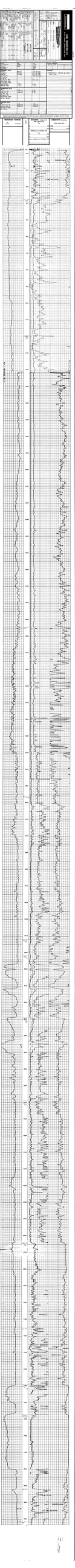
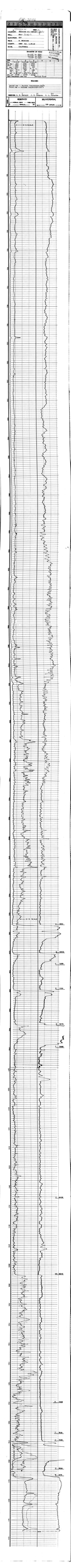
43-27N

46X-35N ST4



511N-1N ST1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100 A.P.I. SCALE
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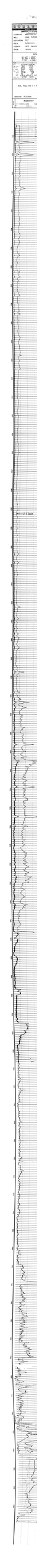
532N-1N



888N-12

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Synthesis of Cyclic Peptides and Depsipeptides by Intramolecular Thiol-Ene Reaction

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Department of Chemistry, Boston College, 2609 Beacon Street, Chestnut Hill, Massachusetts 02467, United States

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Received: October 15, 2018
Published: December 5, 2018

Abstract: Cyclic peptides and depsipeptides are a diverse class of natural products with a wide range of biological activities. Herein, we report the synthesis of cyclic peptides and depsipeptides by intramolecular thiol-ene reaction. Linear peptide precursors containing cysteine and dehydroalanine residues undergo cyclization in the presence of a photocatalyst and visible light irradiation. The reaction is compatible with a variety of amino acid side chains and can be used to synthesize cyclic peptides containing 5−21 amino acid residues. Cyclic depsipeptides can be synthesized by the thiol-ene reaction of linear peptide precursors containing a thiol-substituted α-hydroxy acid residue. The thiol-ene reaction can be used to synthesize cyclic peptides containing a thioether linkage between the side chains of two cysteine residues.

Introduction

Cyclic peptides and depsipeptides are a diverse class of natural products with a wide range of biological activities.[1] Many cyclic peptides and depsipeptides have been developed as therapeutic agents, including the immunosuppressant cyclosporin A, the antibiotic vancomycin, and the anticancer agent romidepsin.[2] The cyclic structure of these peptides can confer resistance to proteolytic degradation and can constrain the peptide into a bioactive conformation.[3] Cyclic peptides and depsipeptides are typically synthesized by the cyclization of linear peptide precursors. Macrocyclization can be challenging because it competes with intermolecular oligomerization and polymerization reactions.[4] Many methods have been developed for the synthesis of cyclic peptides and depsipeptides, including amide bond formation, ester bond formation, and transition metal-catalyzed cross-coupling reactions.[5]

The thiol-ene reaction is the addition of a thiol to an alkene to form a thioether.[6] The reaction can be initiated by radicals, bases, or nucleophiles. Radical-initiated thiol-ene reactions have been used in polymer chemistry, materials science, and bioconjugation.[7] The reaction is typically anti-Markovnikov selective and proceeds with high efficiency under mild conditions. Intramolecular thiol-ene reactions have been used to synthesize macrocycles, including cyclic peptides.[8] However, the application of the thiol-ene reaction to the synthesis of cyclic peptides has been limited by the availability of suitable linear precursors.

Herein, we report the synthesis of cyclic peptides and depsipeptides by intramolecular thiol-ene reaction. Linear peptide precursors containing cysteine and dehydroalanine residues undergo cyclization in the presence of a photocatalyst and visible light irradiation. The reaction is compatible with a variety of amino acid side chains and can be used to synthesize cyclic peptides containing 5−21 amino acid residues. Cyclic depsipeptides can be synthesized by the thiol-ene reaction of linear peptide precursors containing a thiol-substituted α-hydroxy acid residue. The thiol-ene reaction can be used to synthesize cyclic peptides containing a thioether linkage between the side chains of two cysteine residues.

Results and Discussion

We began our investigation by synthesizing linear peptide precursor **1** containing cysteine and dehydroalanine residues. Peptide **1** was synthesized by solid-phase peptide synthesis using Fmoc-protected amino acids. The dehydroalanine residue was introduced by the elimination of a phosphoserine residue. Peptide **1** was cleaved from the resin and purified by reverse-phase HPLC.

Scheme 1. Synthesis of Linear Peptide Precursor **1**

Peptide **1** was dissolved in DMF and irradiated with visible light in the presence of a photocatalyst. We screened several photocatalysts and found that fac-Ir(ppy)$_3$ was the most effective. The reaction proceeded to completion in 2 h and afforded cyclic peptide **2** in 85% yield. The structure of **2** was confirmed by ^{1}H NMR, ^{13}C NMR, and high-resolution mass spectrometry.

Table 1. Optimization of the Thiol-Ene Cyclization of Peptide **1**

entry	photocatalyst	solvent	time (h)	yield (%)
1	fac-Ir(ppy)$_3$	DMF	2	85
2	Ru(bpy)$_3$Cl$_2$	DMF	2	72
3	Eosin Y	DMF	2	41
4	fac-Ir(ppy)$_3$	MeCN	2	78
5	fac-Ir(ppy)$_3$	DMF	1	81
6	none	DMF	2	0

We next investigated the scope of the reaction with respect to the amino acid side chains. We synthesized a series of linear peptide precursors containing different amino acid residues and subjected them to the optimized reaction conditions. The reaction was compatible with a variety of amino acid side chains, including aromatic, aliphatic, polar, and charged residues. The reaction was also compatible with peptides containing multiple cysteine and dehydroalanine residues.

Figure 1. Scope of the thiol-ene cyclization. (a) Peptide **3**. (b) Peptide **4**. (c) Peptide **5**. (d) Peptide **6**.

We then investigated the synthesis of cyclic depsipeptides by the thiol-ene reaction of linear peptide precursors containing a thiol-substituted α-hydroxy acid residue. Peptide **7** was synthesized by solid-phase peptide synthesis using Fmoc-protected amino acids and a thiol-substituted α-hydroxy acid building block. Peptide **7** was cleaved from the resin and purified by reverse-phase HPLC. Peptide **7** was dissolved in DMF and irradiated with visible light in the presence of fac-Ir(ppy)$_3$. The reaction proceeded to completion in 2 h and afforded cyclic depsipeptide **8** in 78% yield.

Scheme 2. Synthesis of Cyclic Depsipeptide **8**

We also investigated the synthesis of cyclic peptides containing a thioether linkage between the side chains of two cysteine residues. Peptide **9** was synthesized by solid-phase peptide synthesis using Fmoc-protected amino acids. Peptide **9** was cleaved from the resin and purified by reverse-phase HPLC. Peptide **9** was dissolved in DMF and irradiated with visible light in the presence of fac-Ir(ppy)$_3$. The reaction proceeded to completion in 2 h and afforded cyclic peptide **10** in 82% yield.

Scheme 3. Synthesis of Cyclic Peptide **10**

Conclusion

In conclusion, we have developed a method for the synthesis of cyclic peptides and depsipeptides by intramolecular thiol-ene reaction. Linear peptide precursors containing cysteine and dehydroalanine residues undergo cyclization in the presence of a photocatalyst and visible light irradiation. The reaction is compatible with a variety of amino acid side chains and can be used to synthesize cyclic peptides containing 5−21 amino acid residues. Cyclic depsipeptides can be synthesized by the thiol-ene reaction of linear peptide precursors containing a thiol-substituted α-hydroxy acid residue. The thiol-ene reaction can be used to synthesize cyclic peptides containing a thioether linkage between the side chains of two cysteine residues.

Supporting Information

The Supporting Information is available free of charge on the ACS Publications website at DOI: 10.1021/jacs.8b10987.

Experimental procedures, characterization data, and NMR spectra (PDF)

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Notes
The authors declare no competing financial interest.

Acknowledgments

We thank Boston College and the National Institutes of Health (R01GM123456) for financial support. We thank Dr. Jane Doe for assistance with mass spectrometry.

References

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(4) Kaspar, A. A.; Reichert, J. M. Future directions for peptide therapeutics development. *Drug Discovery Today* **2013**, *18*, 807−817.
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AMERICAN ENERGY 1-12



GUMP TRUST 30-1



SHIDELER 1-28

HALLIBURTON

BOREHOLE SONIC ARRAY TOOL 5" = 100'

COMPANY VALLEY RESOURCES
WELL SHIDELER 1-28
FIELD/BLOCK NORTH BELRIDGE
COUNTY KERN
STATE CA

COMPANY **VALLEY RESOURCES**

WELL **SHIDELER 1-28**

FIELD/BLOCK **NORTH BELRIDGE**

COUNTY **KERN** STATE **CA**

API No. 04030671010000

Location 28929' W AND 262' S
FROM THE NE COR. SEC 28-T27S/R20E MDB&M.
X(E):1457491.96 Y(N):753262.91 CA ZONE V, NAD 27
X(E):6018883.51 Y(N):2393692.07 CA ZONE V, NAD 83

Sect. 28 Twp. 27S Rge. 20E

Other Services:
RWCH
ML
ACRT/SDL/DSN
XRMI
AST
ICT
SWC

Permanent Datum	GL	Elev. 703.0 ft	Elev.: K.B. 717.0 ft
Log measured from	KB	14.0 ft above perm. Datum	D.F.
Drilling measured from	KB		G.L. 703.0 ft

Date		11-Dec-19			@		@
Run No.		ONE					
Depth - Driller		9675.0 ft					
Depth - Logger		9672.0 ft					
Bottom - Logged Interval		9660.0 ft					
Top - Logged Interval		1170.0 ft					
Casing - Driller		9.625 in	@ 1164.0 ft		@		@
Casing - Logger		1170.0 ft					
Bit Size		8.750 in			@		@
Type Fluid in Hole		LSND					
Density	Viscosity	9.0 ppg	42.00 s/qt				
PH	Fluid Loss	7.00 pH	4.8 cptm				
Source of Sample		ACTIVE PIT					
Rm @ Meas. Temperature		2.87 ohmm	@ 57.00 degF		@		@
Rmf @ Meas. Temperature		2.95 ohmm	@ 55.00 degF		@		@
Rmc @ Meas. Temperature		2.95 ohmm	@ 55.00 degF		@		@
Source Rmf	Rmc	PRESSED	PRESSED				
Rm @ BHT		0.84 ohmm	@ 210.0 degF		@		@
Time Since Circulation		6.0000 hr					
Time on Bottom		11-Dec-19 03:19:18.000					
Max. Rec. Temperature		210.00 degF	@ N/A		@		@
Equipment	Location	11640421	BKFLD				
Recorded By		T. FOSTER					
Witnessed By		T. HOPPS					

Fold here

PGM Version: WL INSITE R6.2.1 (Build 2)

Service Ticket No.: 906169144 API Serial No.: 04030671010000

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

RESISTIVITY SCALE CHANGES

Date	Sample No.			Type Log	Depth	Scale Up Hole	Scale Down Hole
Depth-Driller							
Type Fluid in Hole							
Density	Viscosity						
Ph	Fluid Loss						
Source of Sample							
Rm @ Meas. Temp		@					
Rmf @ Meas. Temp.		@					
Rmc @ Meas. Temp.		@					
Source Rmf	Rmc						
Rm @ BHT		@					
Rmf @ BHT		@					
Rmc @ BHT		@					

RESISTIVITY EQUIPMENT DATA

	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
	@				
	@	ACRT	N/A	1.5" S.O.	N/A
	@	I:10940591	S:10904993		
	@				
	@				
	@				

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	11795753	Serial No.	111105778	Serial No.	10865883	Serial No.	11660717
Model No.	GTET	Model No.	BSAT	Model No.	SDLT	Model No.	DSNT
Diameter	3.625"	No. of Cent.	3.625"	Diameter	4.75"	Diameter	3.625"
Detector Model No.	102-T2	Spacing	NA	Log Type	GAM-GAM	Log Type	NEU-NEU
Type	SCINT			Source Type	Cs137	Source Type	Am241Be
Length	8.0"	LSA [Y/N]	NA	Serial No.	5477GW	Serial No.	61807B
Distance to Source	N/A	FWDA [Y/N]	NA	Strength	1.78 Ci	Strength	15.0 Ci

LOGGING DATA

GENERAL				GAMMA		ACOUSTIC			DENSITY			NEUTRON			
Run No.	Depth From	Depth To	Speed ft/min	Scale L	Scale R	Scale L	Scale R	Matrix	Scale L	Scale R	Matrix	Scale L	Scale R	Matrix
ONE	9672'	1170'	60	0	150				1.65	2.65	2.65	60	0	SAND

					GAPI						G/CC				

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@

Remarks: ACRT/BSAT/ICT/SDLT/DSNT/GR/RWCH RAN IN COMBINATION.

ICT VOLUMES (FT^3) CALCULATED FOR 5.5" CASING FROM TD TO SHOE: AHVT:3190 BHVT:4593

MAXIMUM TEMPERATURES (DegF): FLOWLINE: 138 THERMOMETER 1: 210 THERMOMETER 2: 210

DSN CLASSIC POROSITY PARAMETER ENABLED.

CHLORIDES REPORTED AT 1000 PPM.

BARITE NOT INDICATED ON MUD REPORT

RECEIVED GOOD MAGNETIC MARKS - ZERO RECHECKED ACCURATELY AT SURFACE.

CREW:F.VARGAS,A.VASQUEZ,M.BRASHEAR RIG: ENSIGN 535

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

HALLIBURTON

HALLIBURTON

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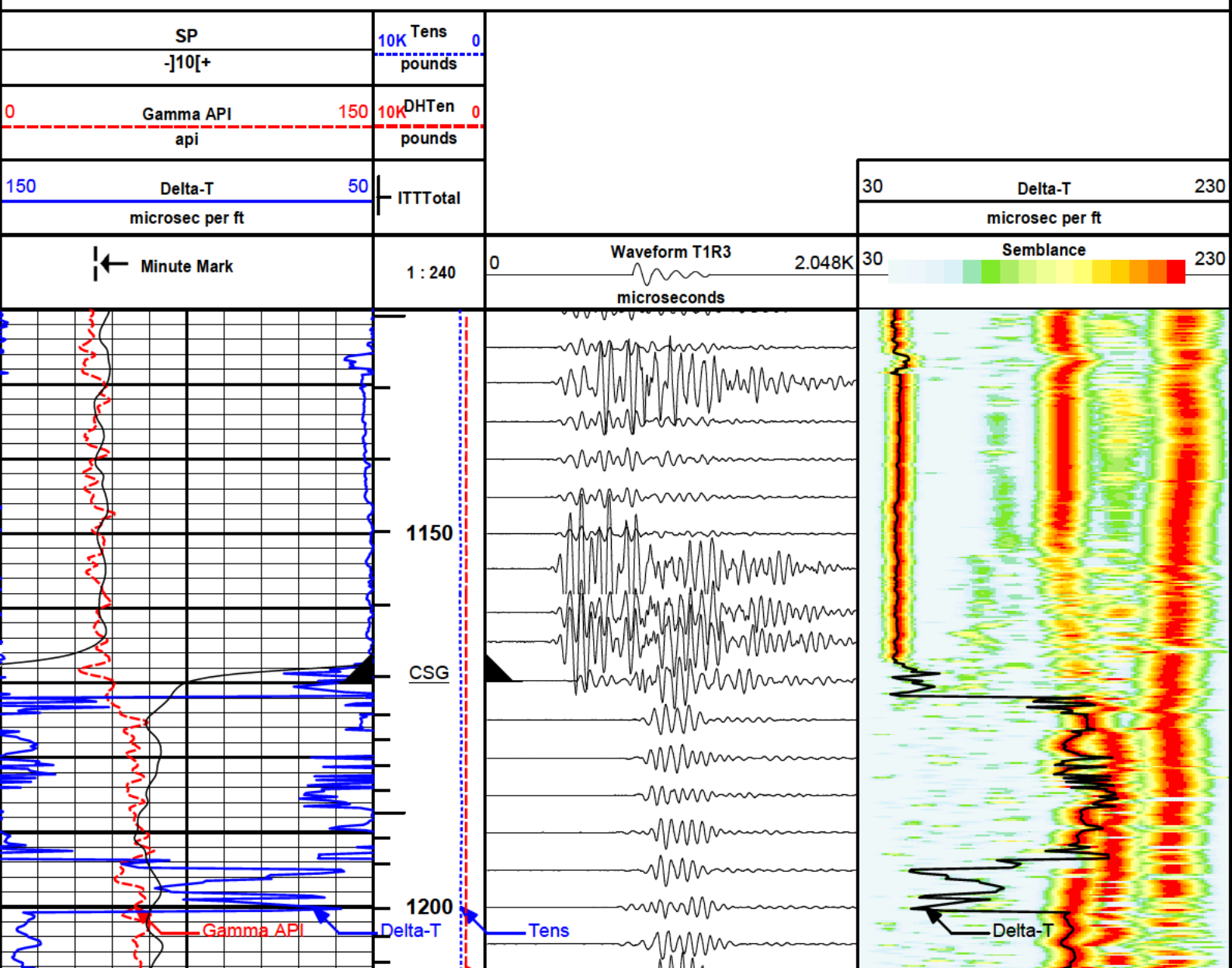
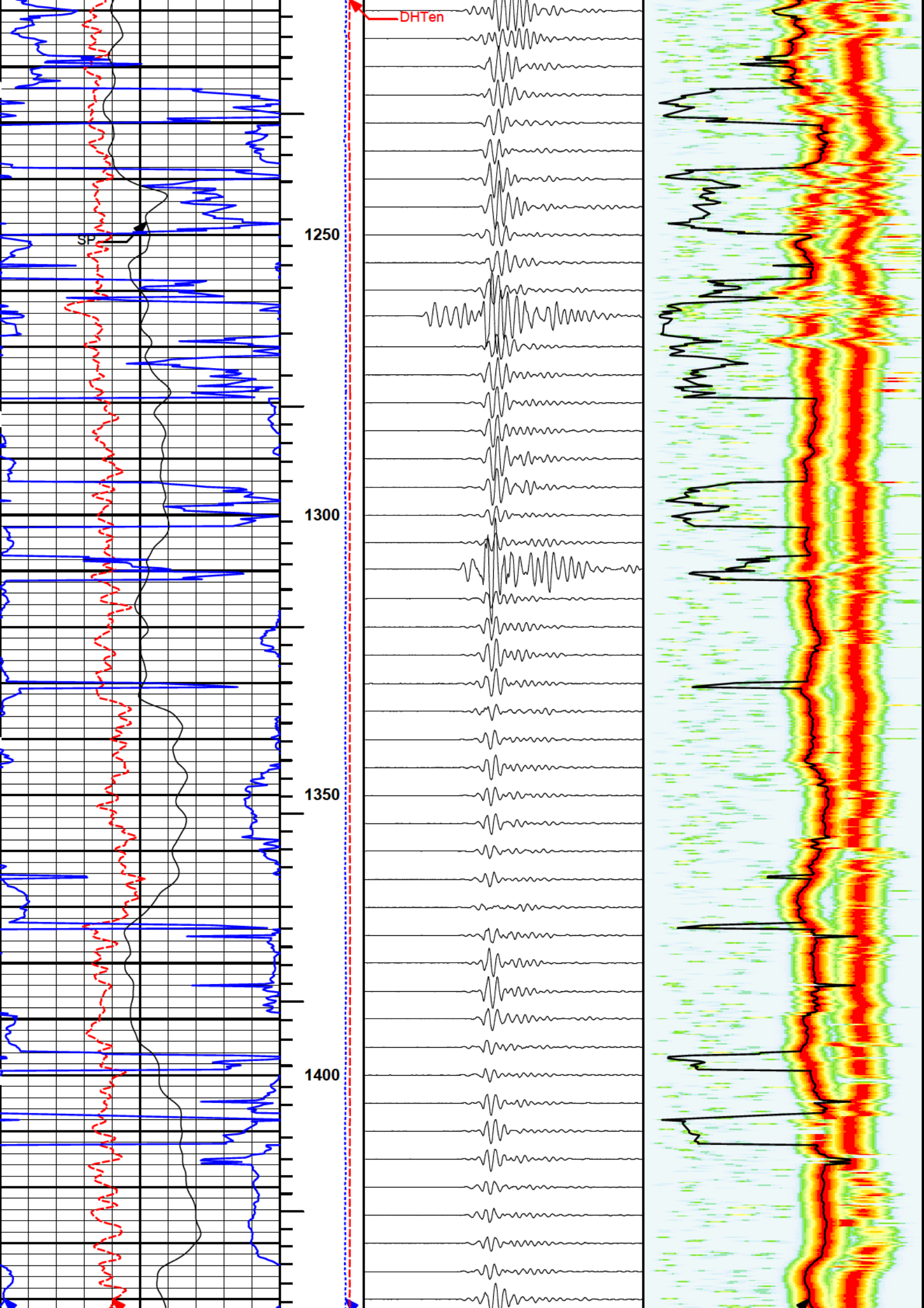
Plot File: \\BSAT\BSAT

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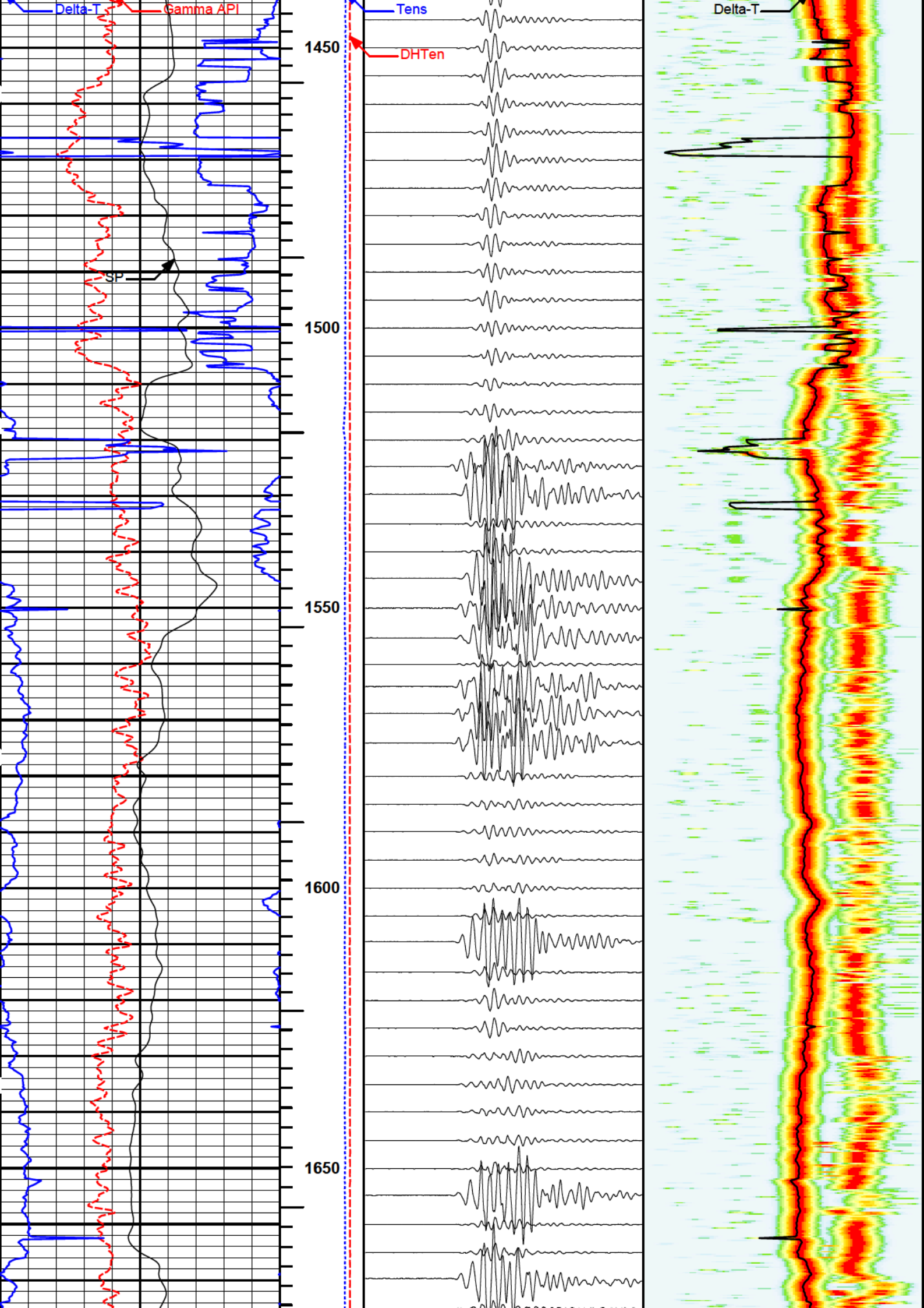
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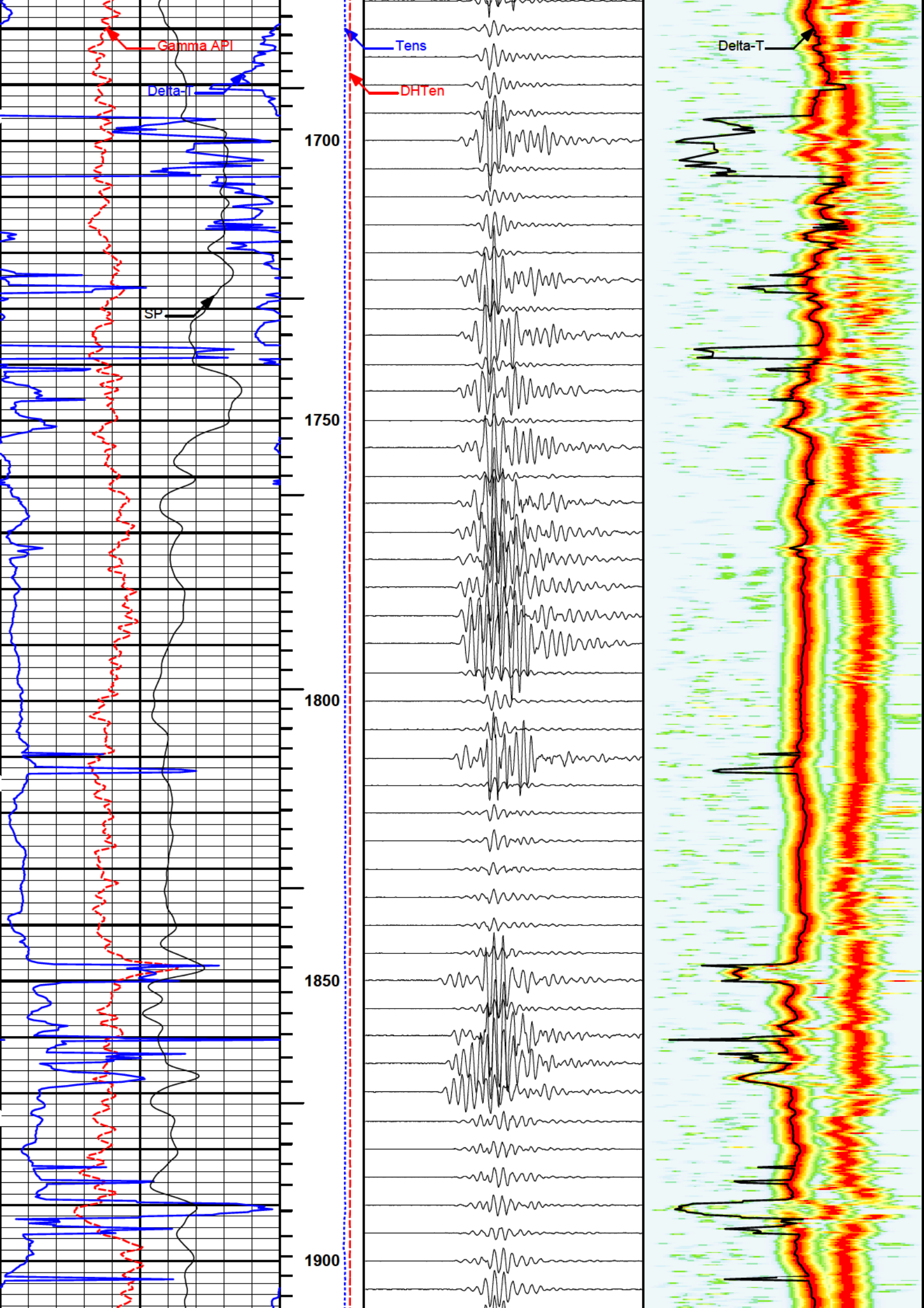
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Tens
DHTen
Delta-T
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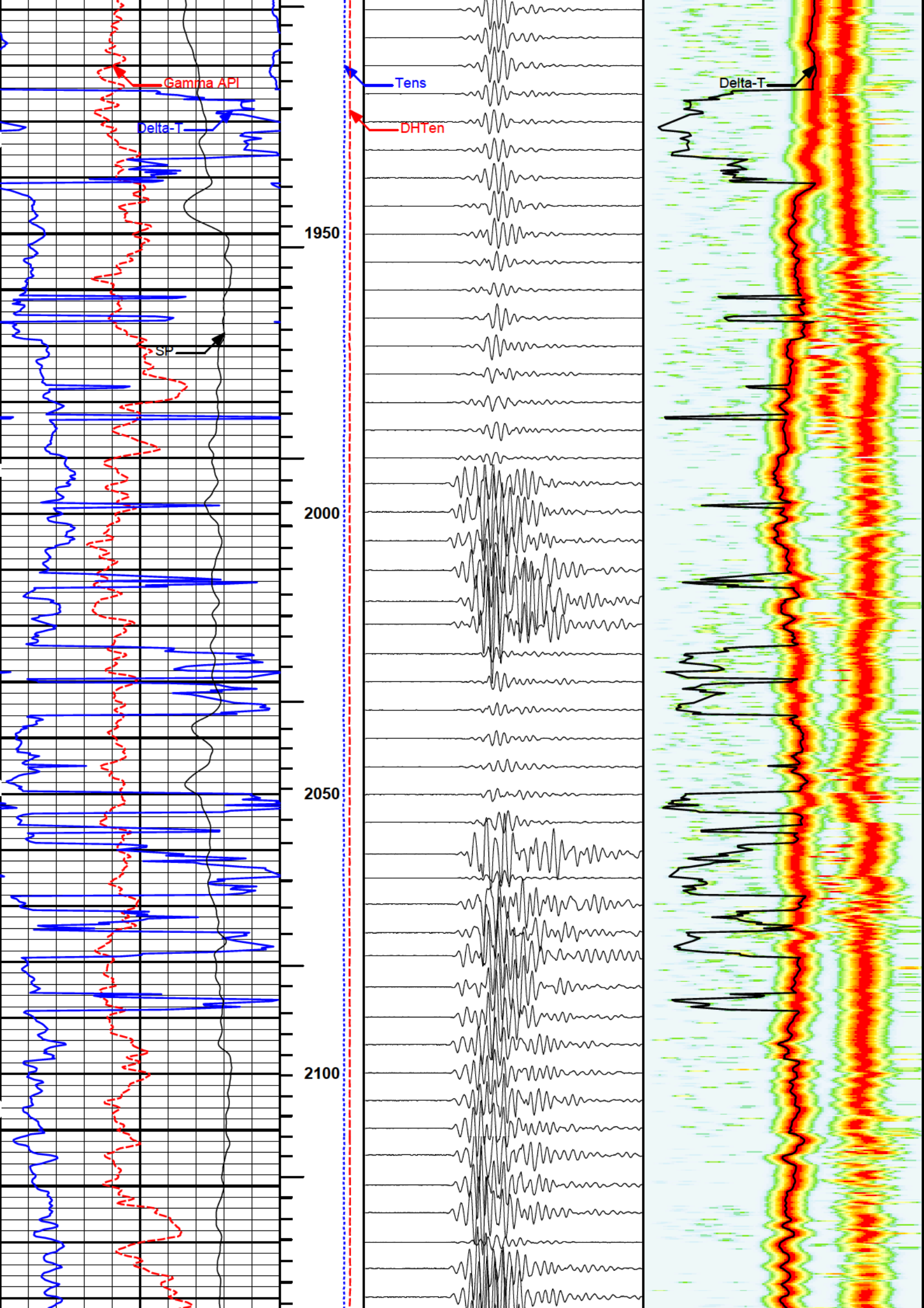
1750
1800
1850
1900


Gamma API
Delta-T
SP
Tens
DHTen
Delta-T
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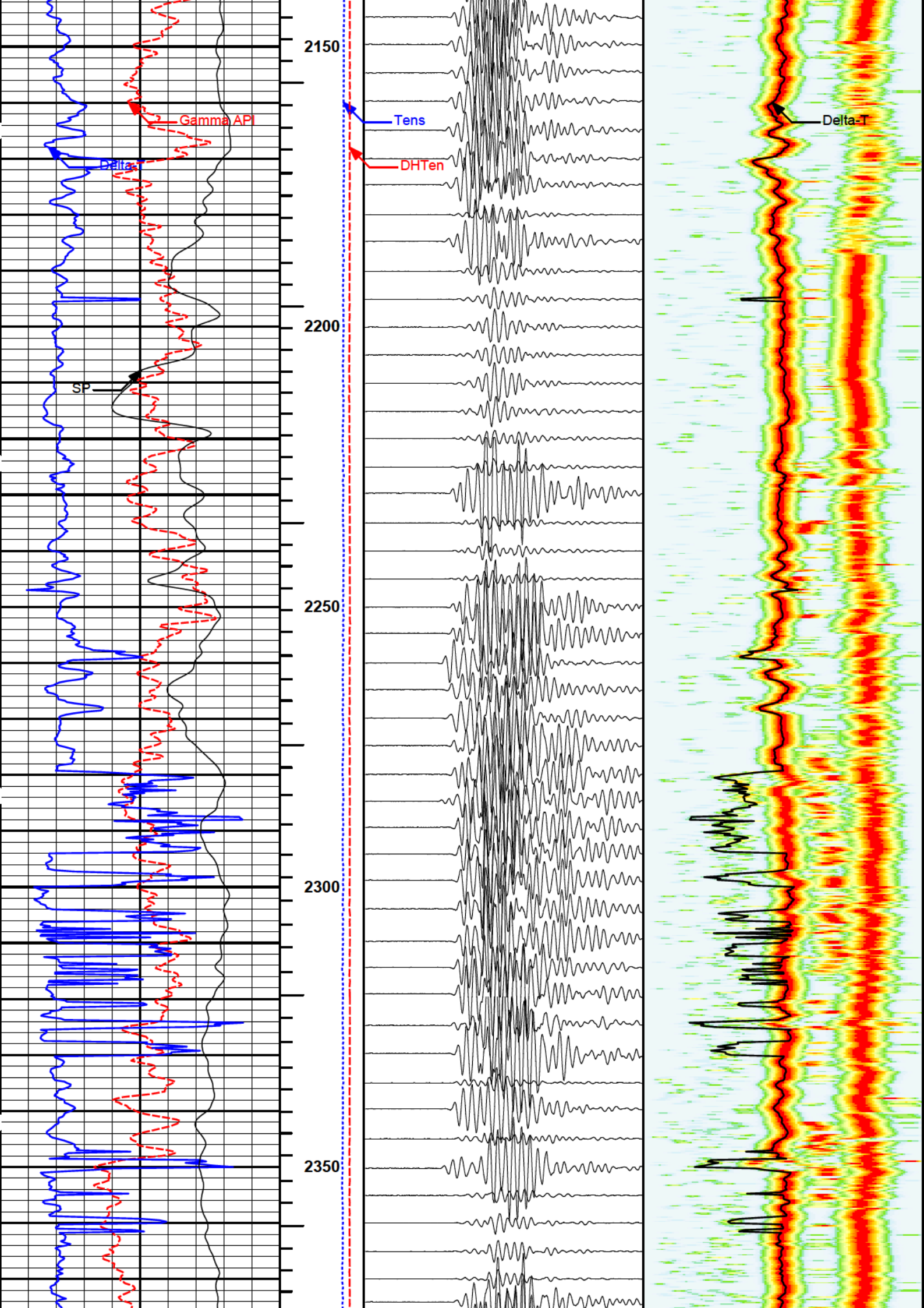
2050
2100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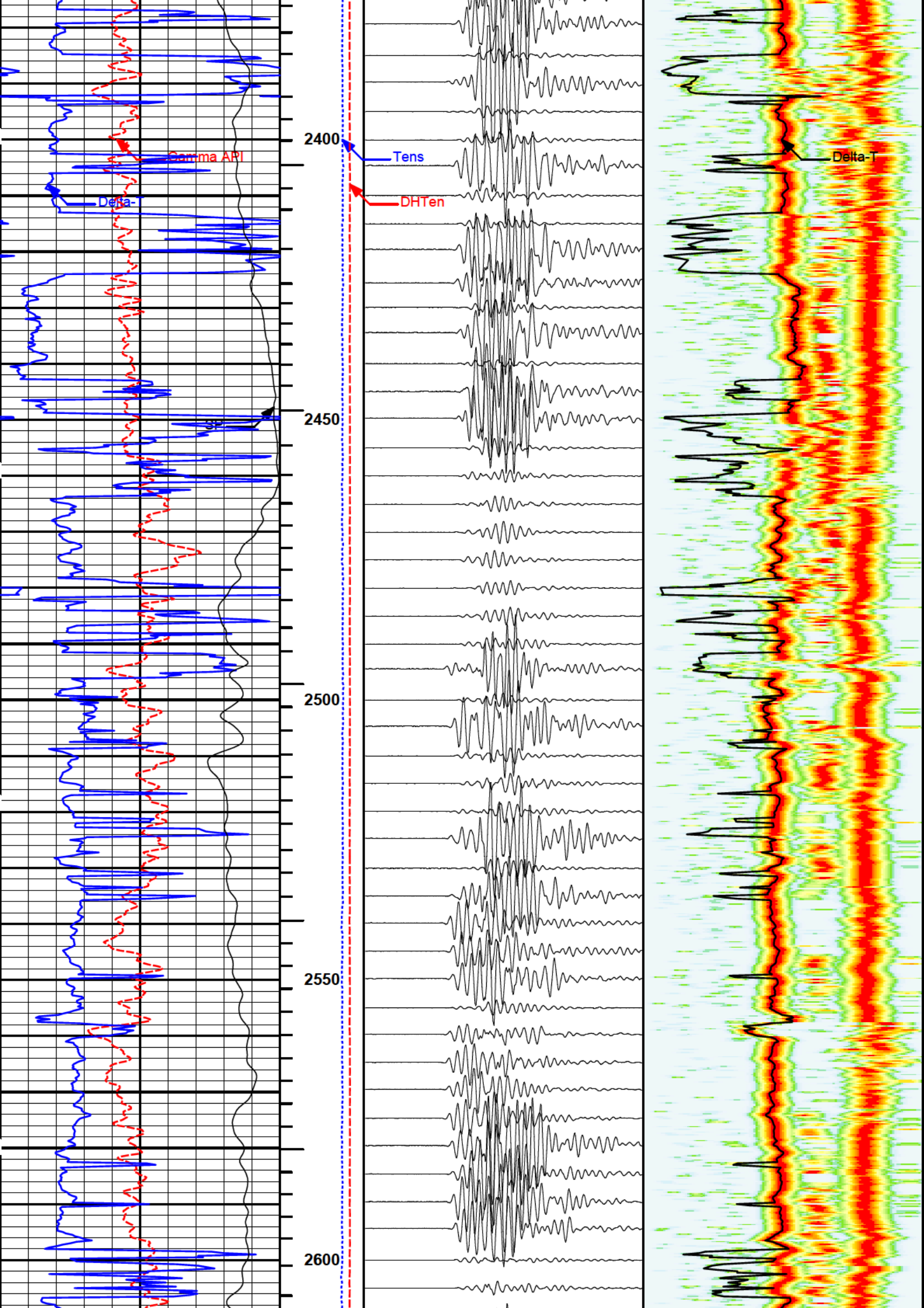
DHTen
Delta-T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Delta-T
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Tens
DHTen
Delta-T
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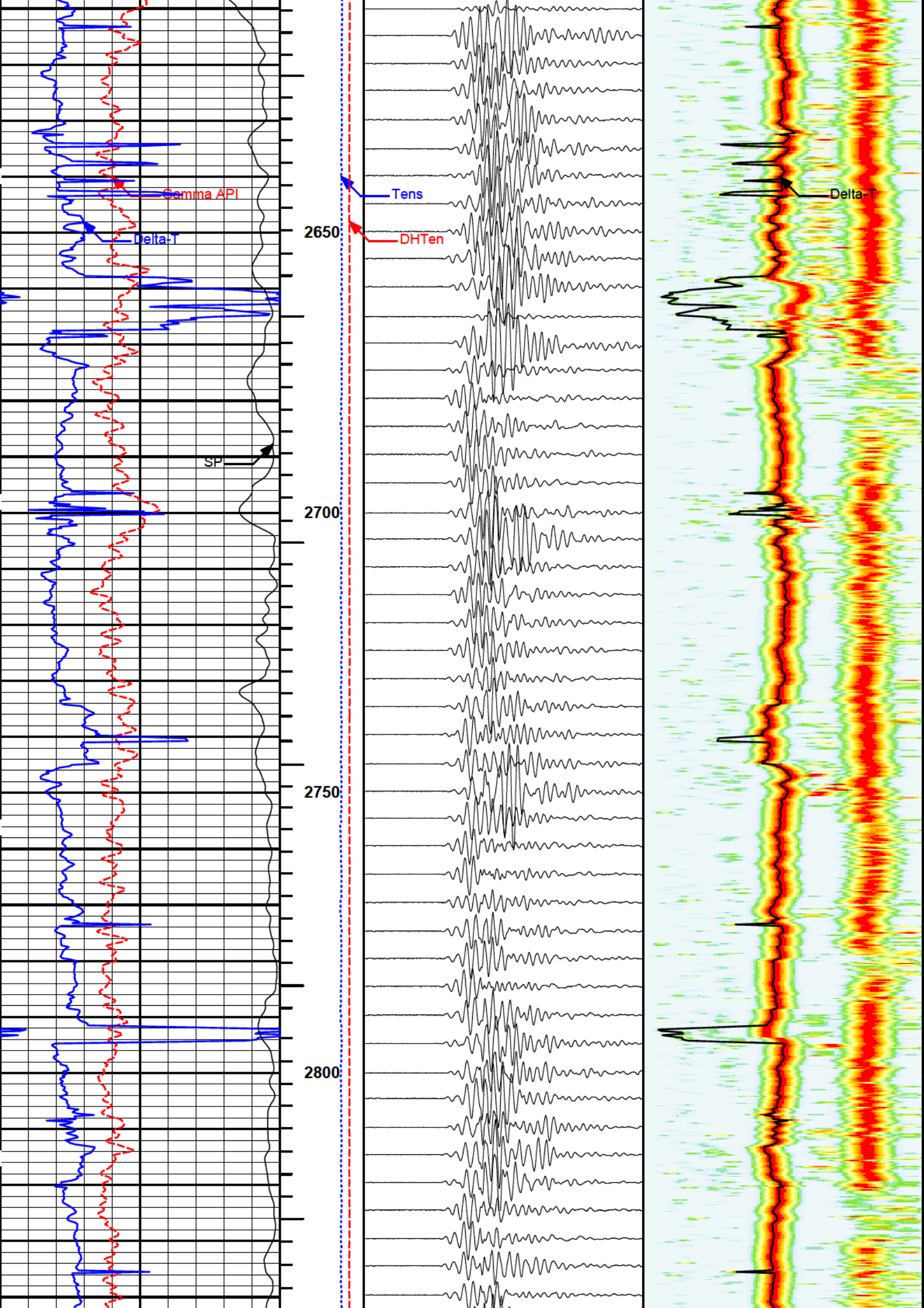
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SP
Tens
DHTen
Delta-T
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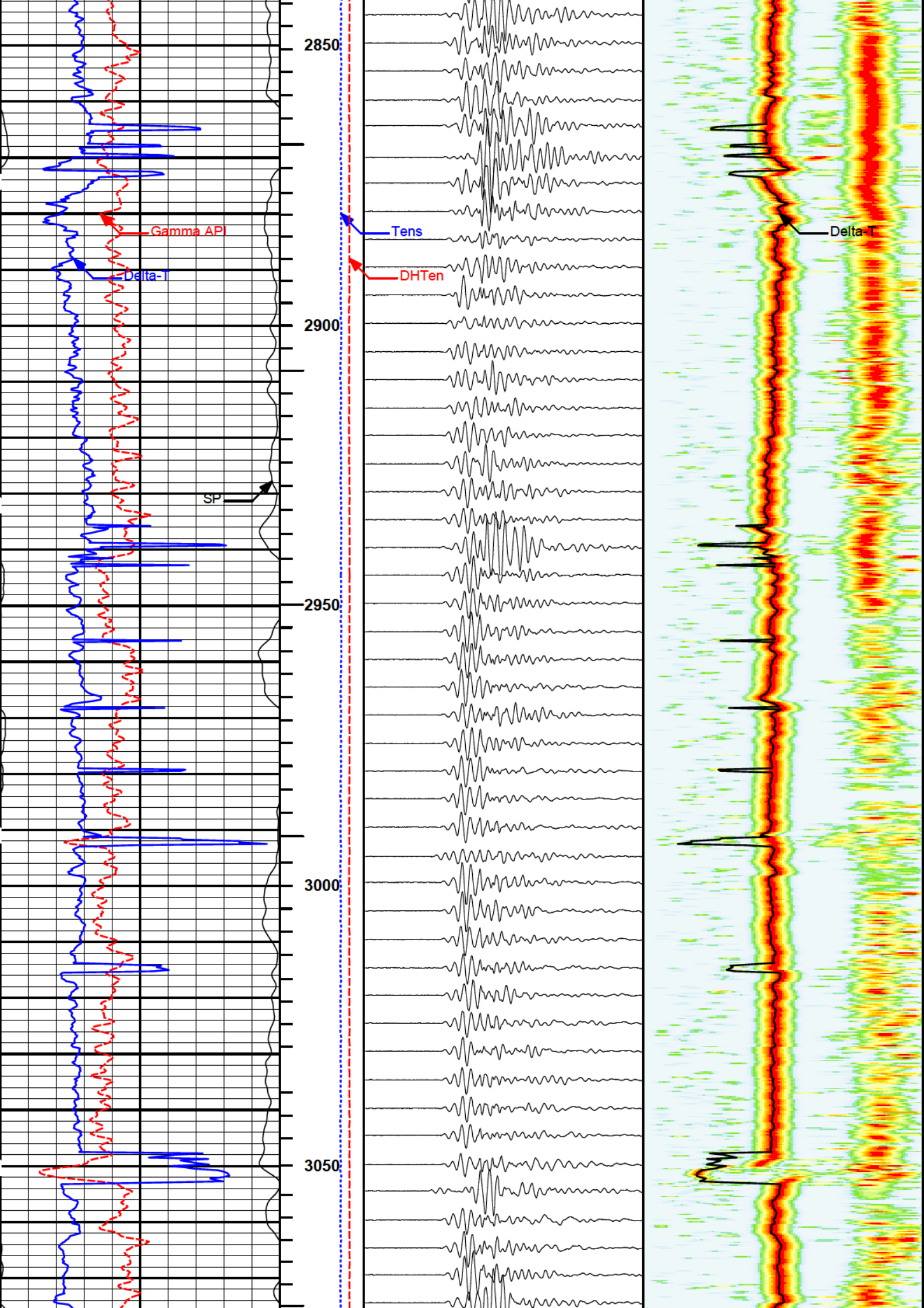
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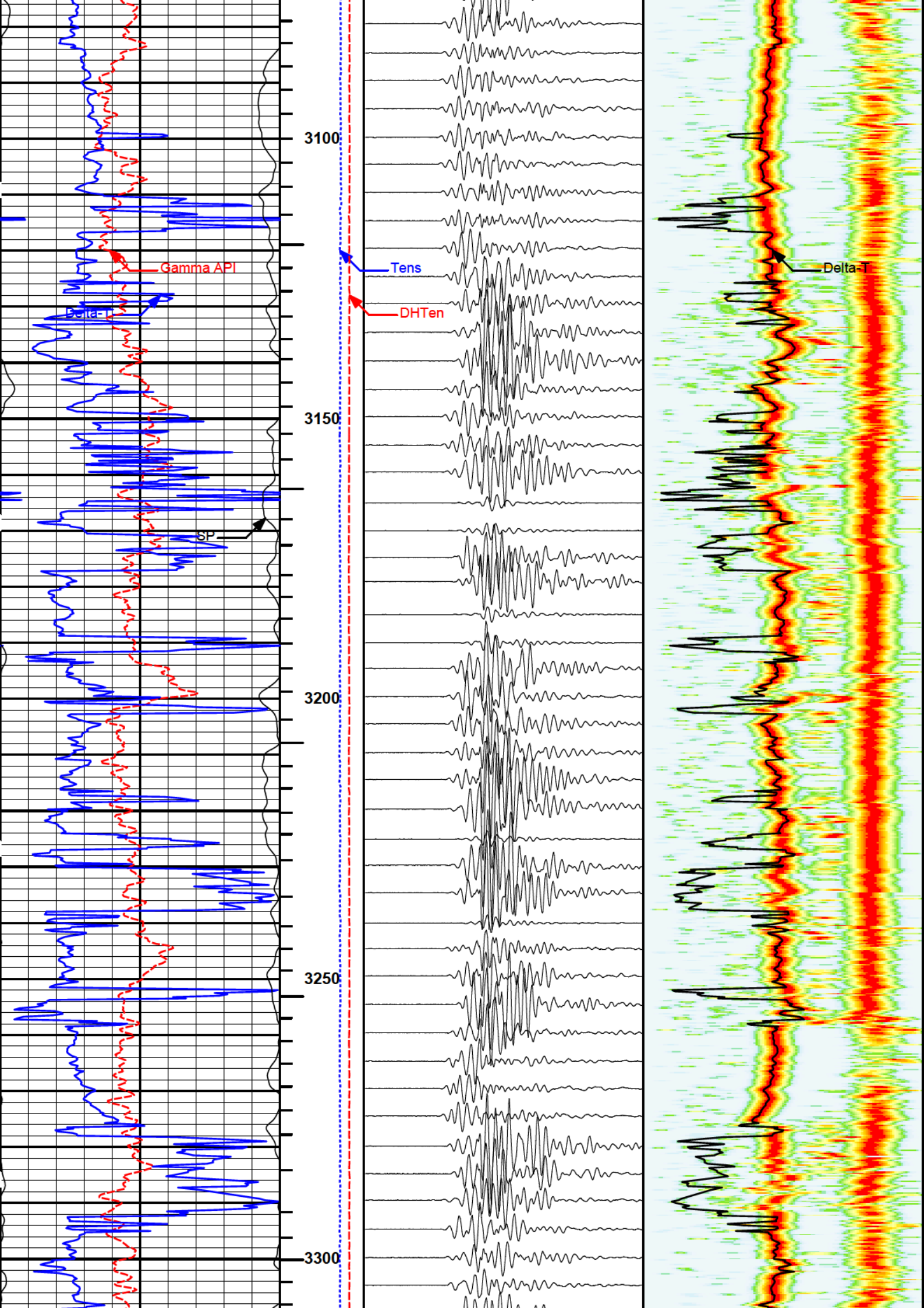
SP
Tens
DHTen
Delta-T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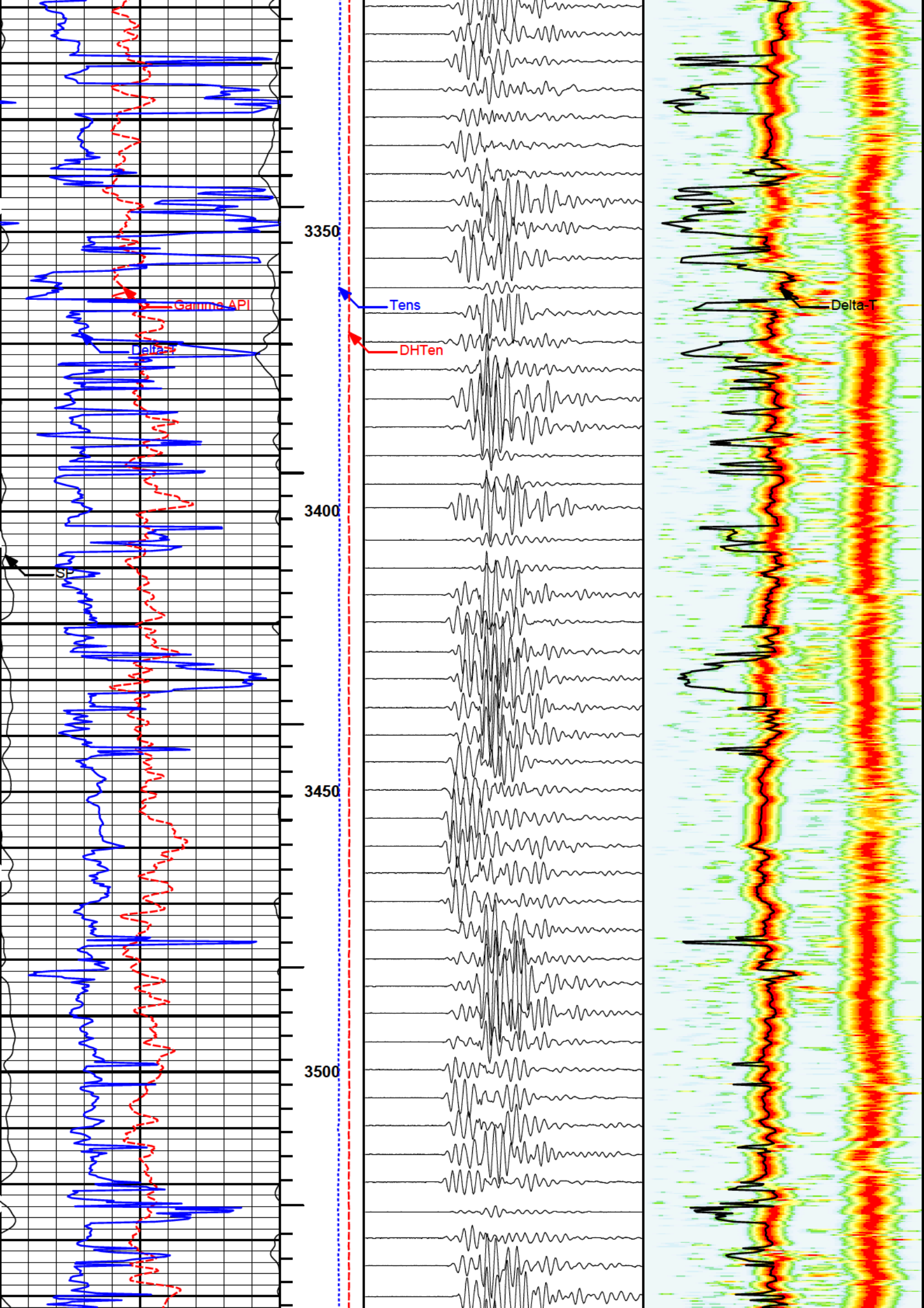
DHTen
Delta-T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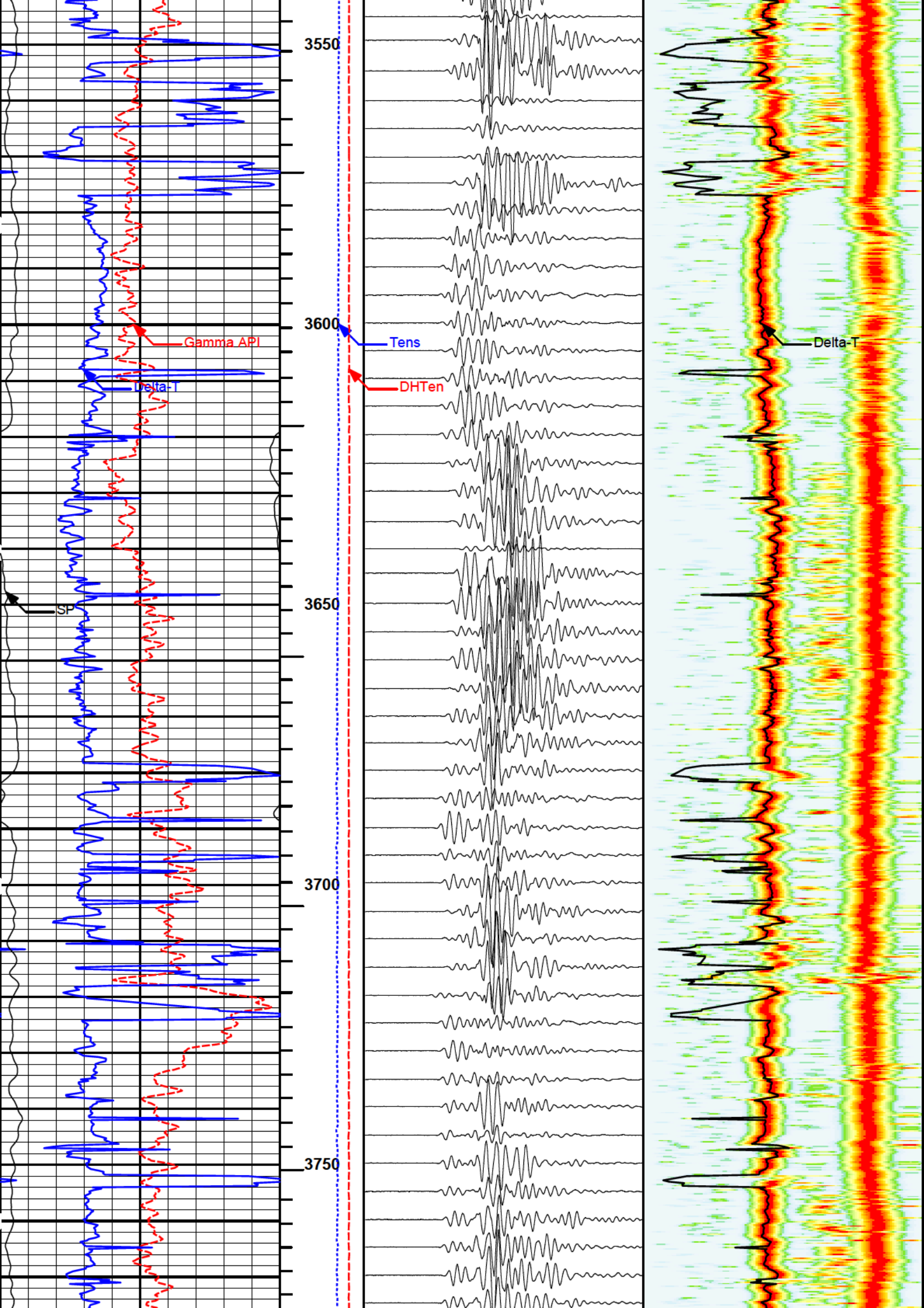
Delta-T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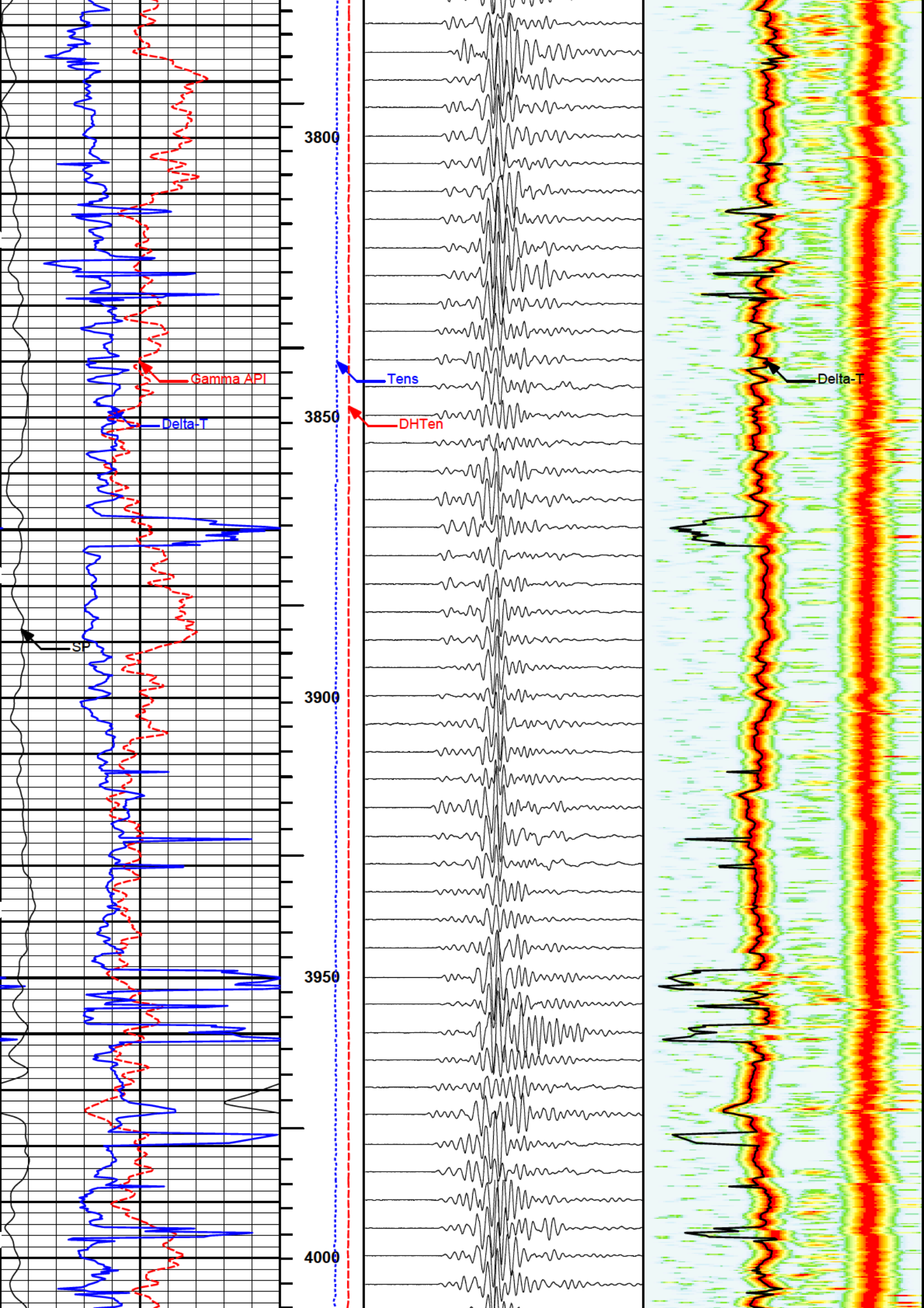
DHTen
Delta-T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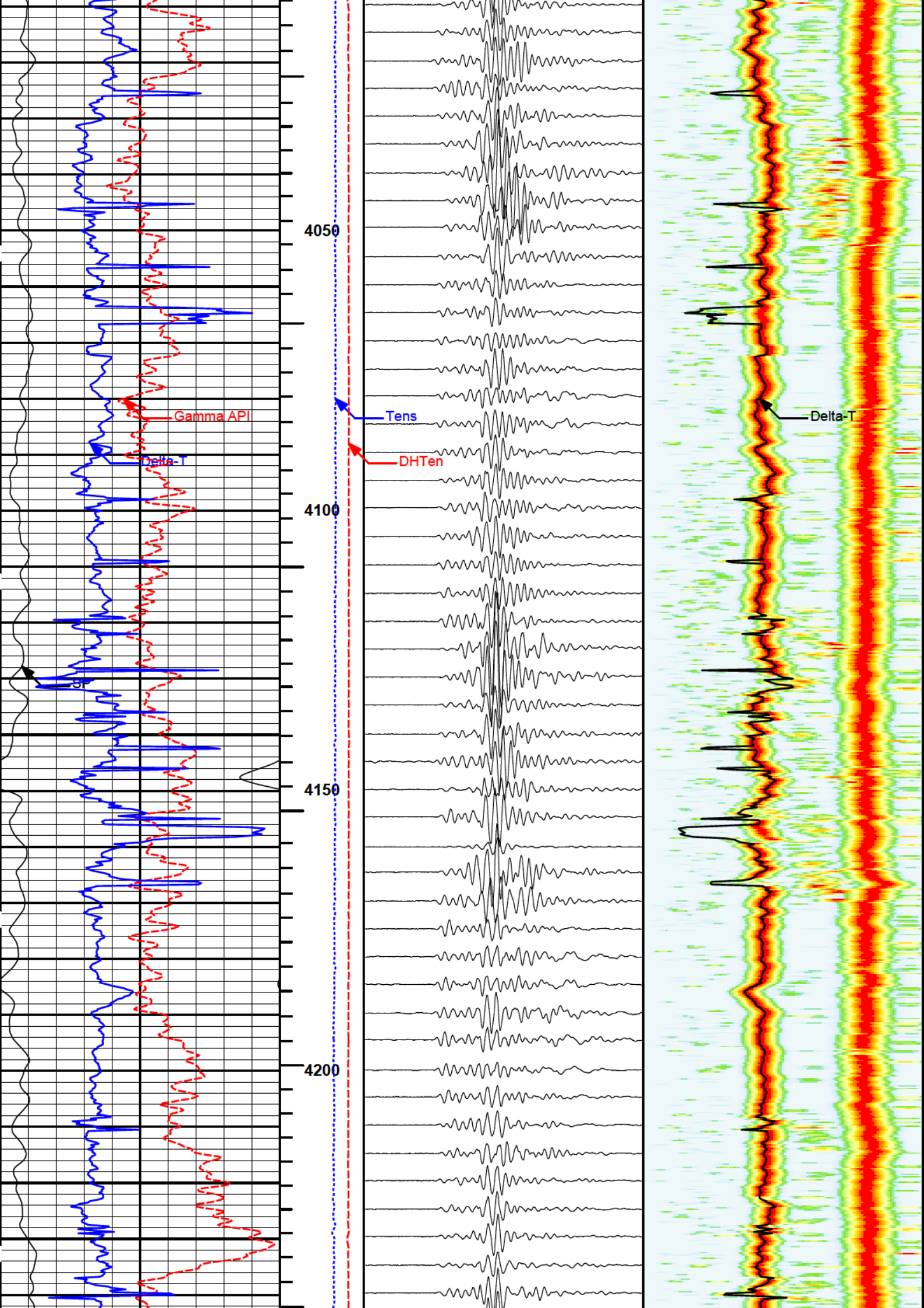
DHTen
Delta-T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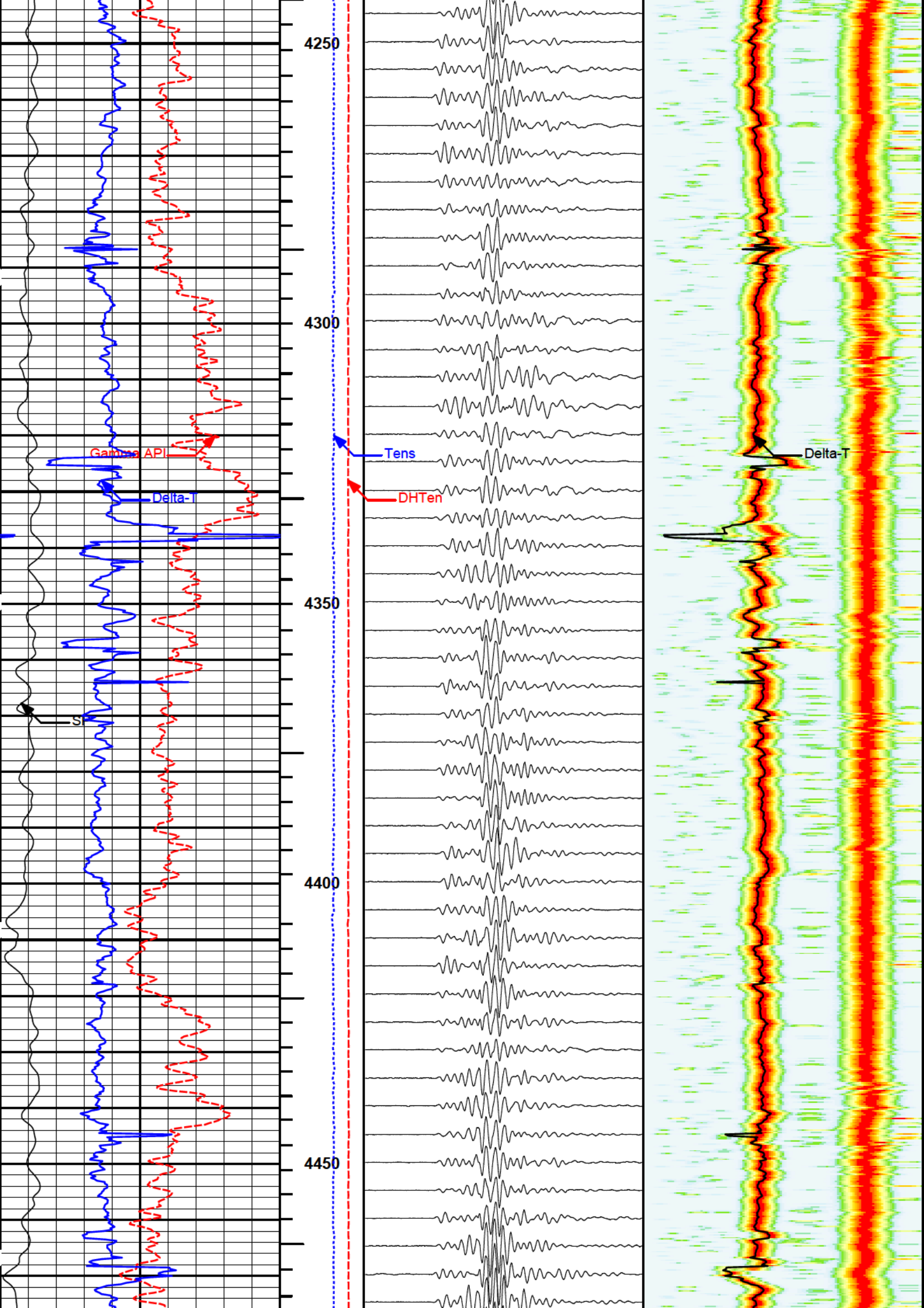
DHTen
Delta-T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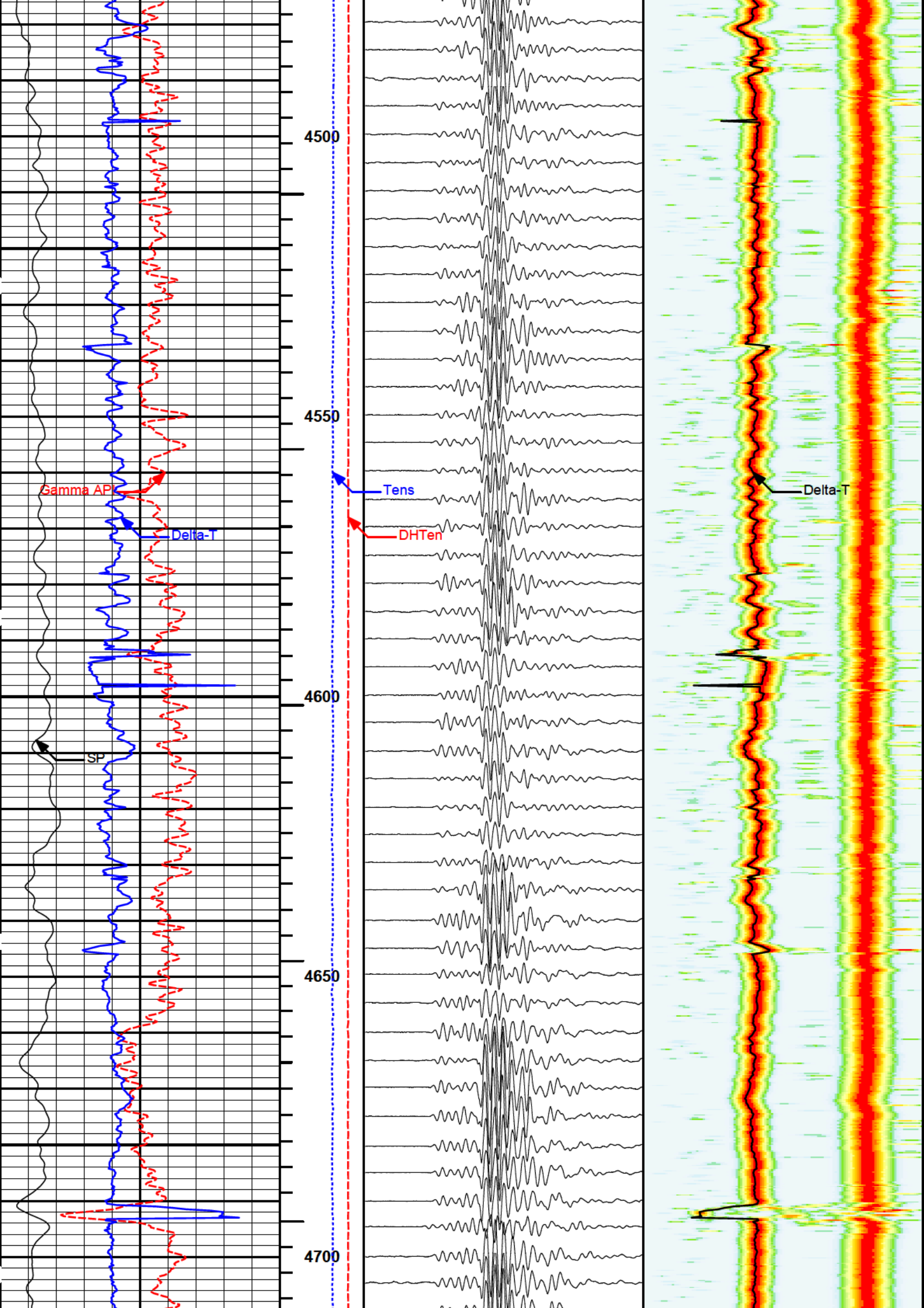
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Delta-T
SP
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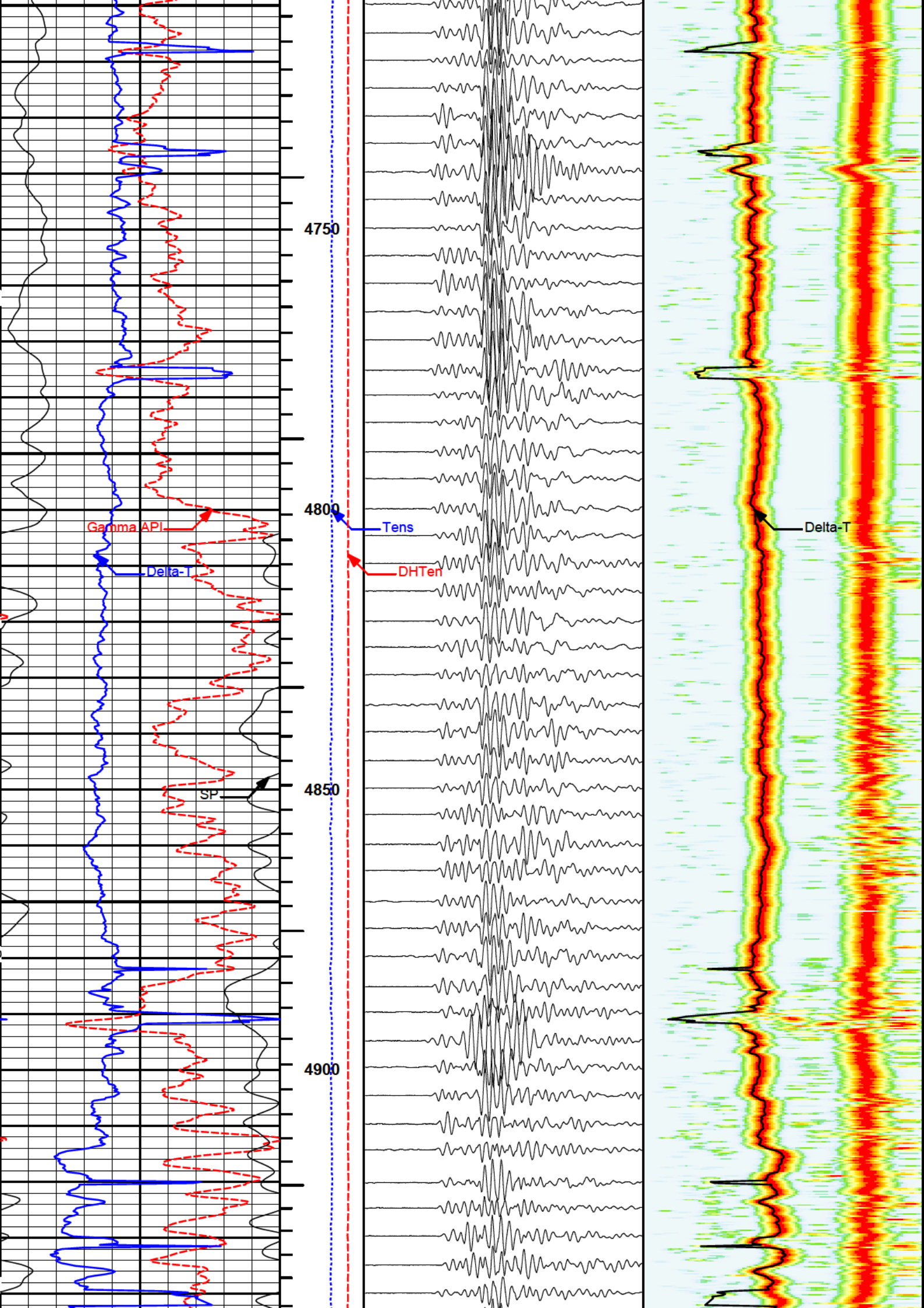
DHTen
Delta-T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Delta-T
SP
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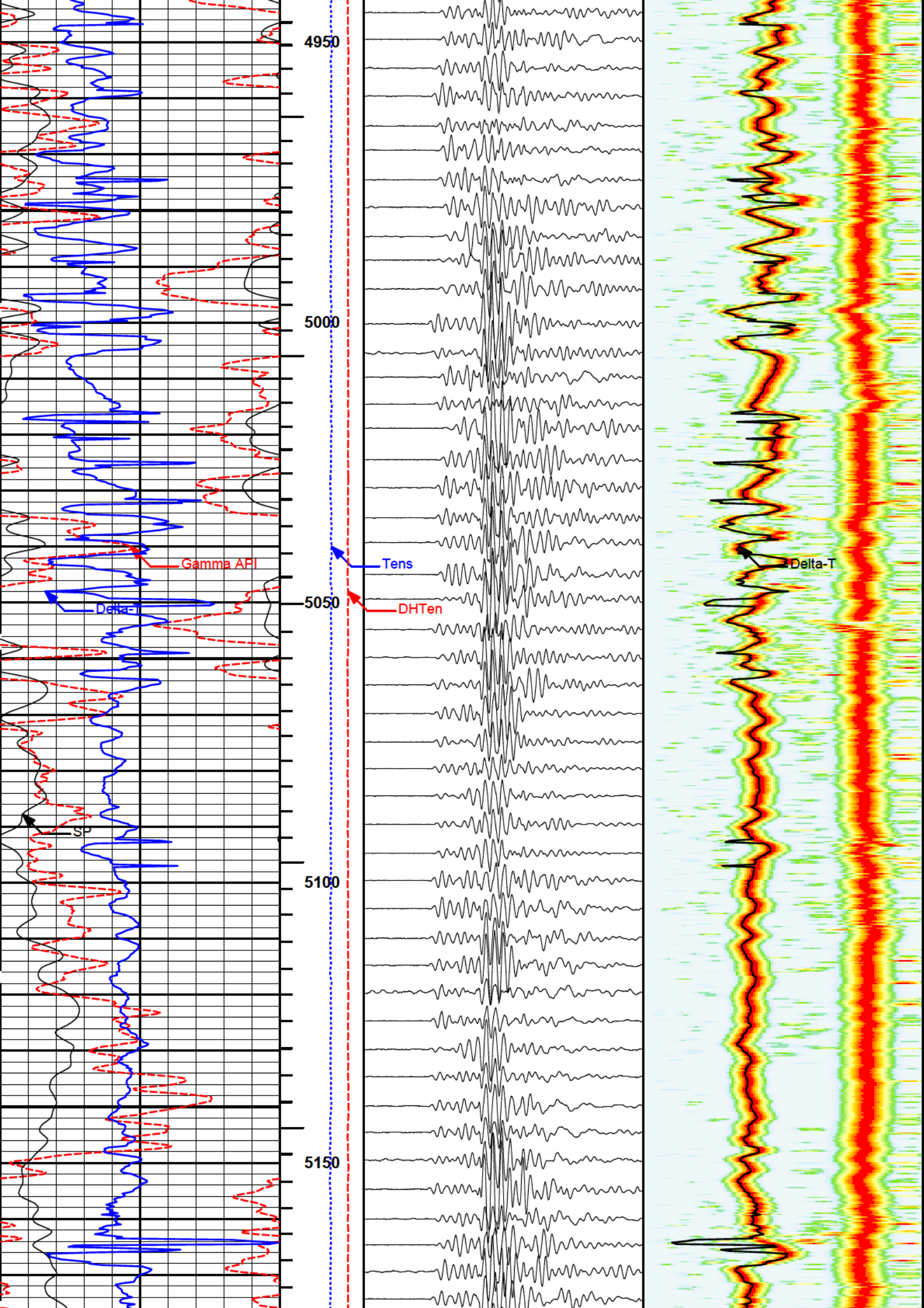
DHTen
Delta-T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5100
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Delta-T
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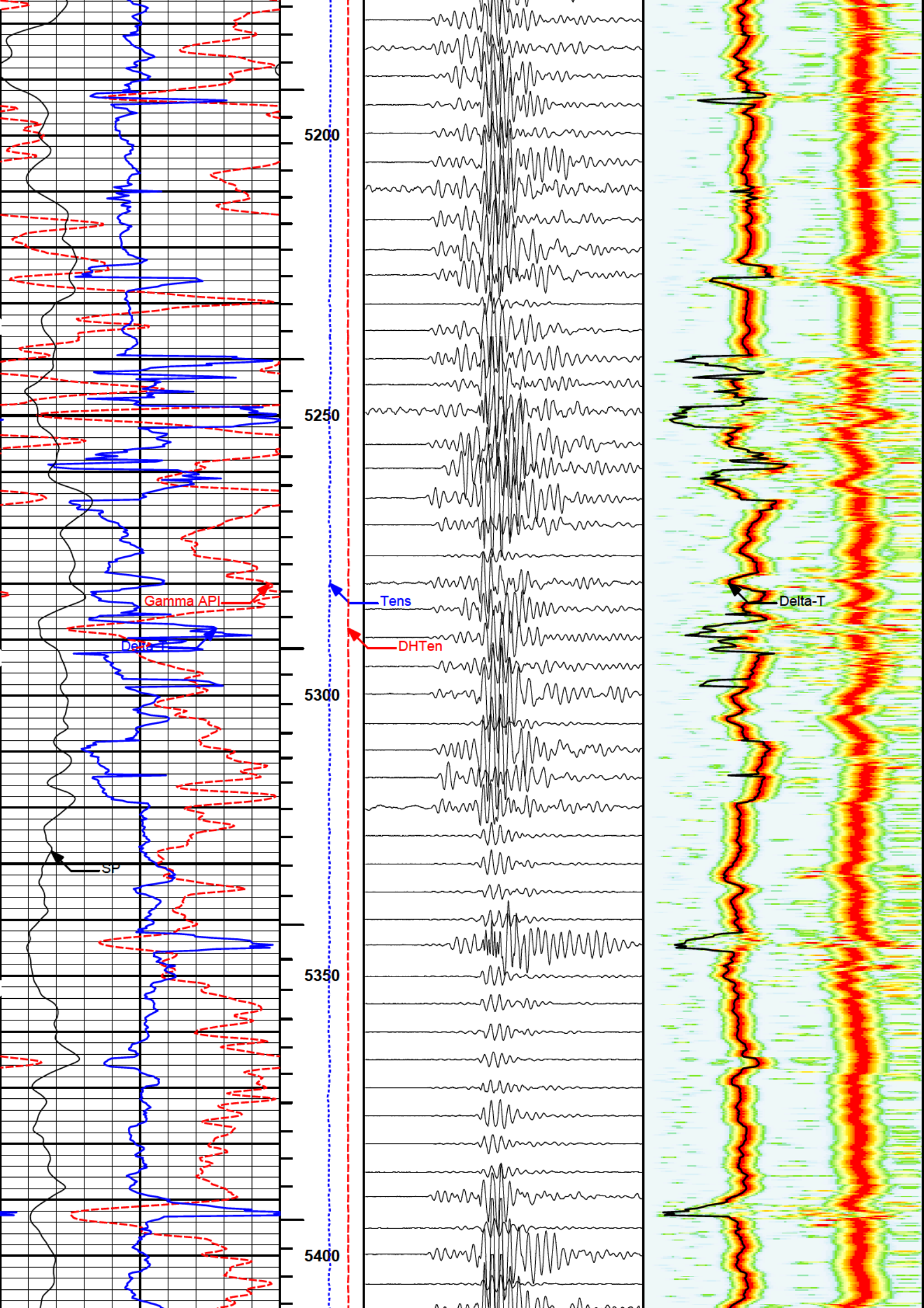
DHTen
Delta-T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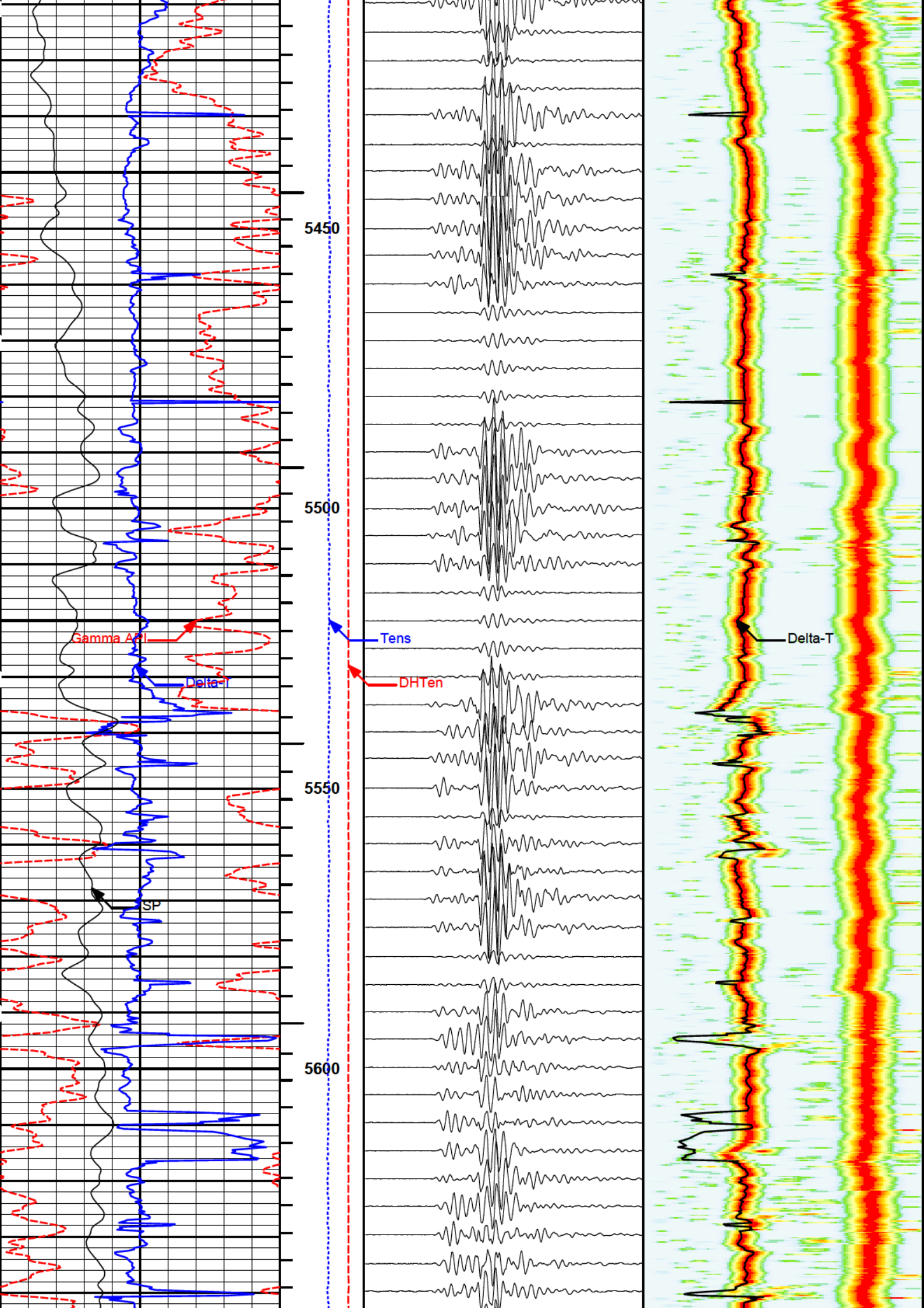
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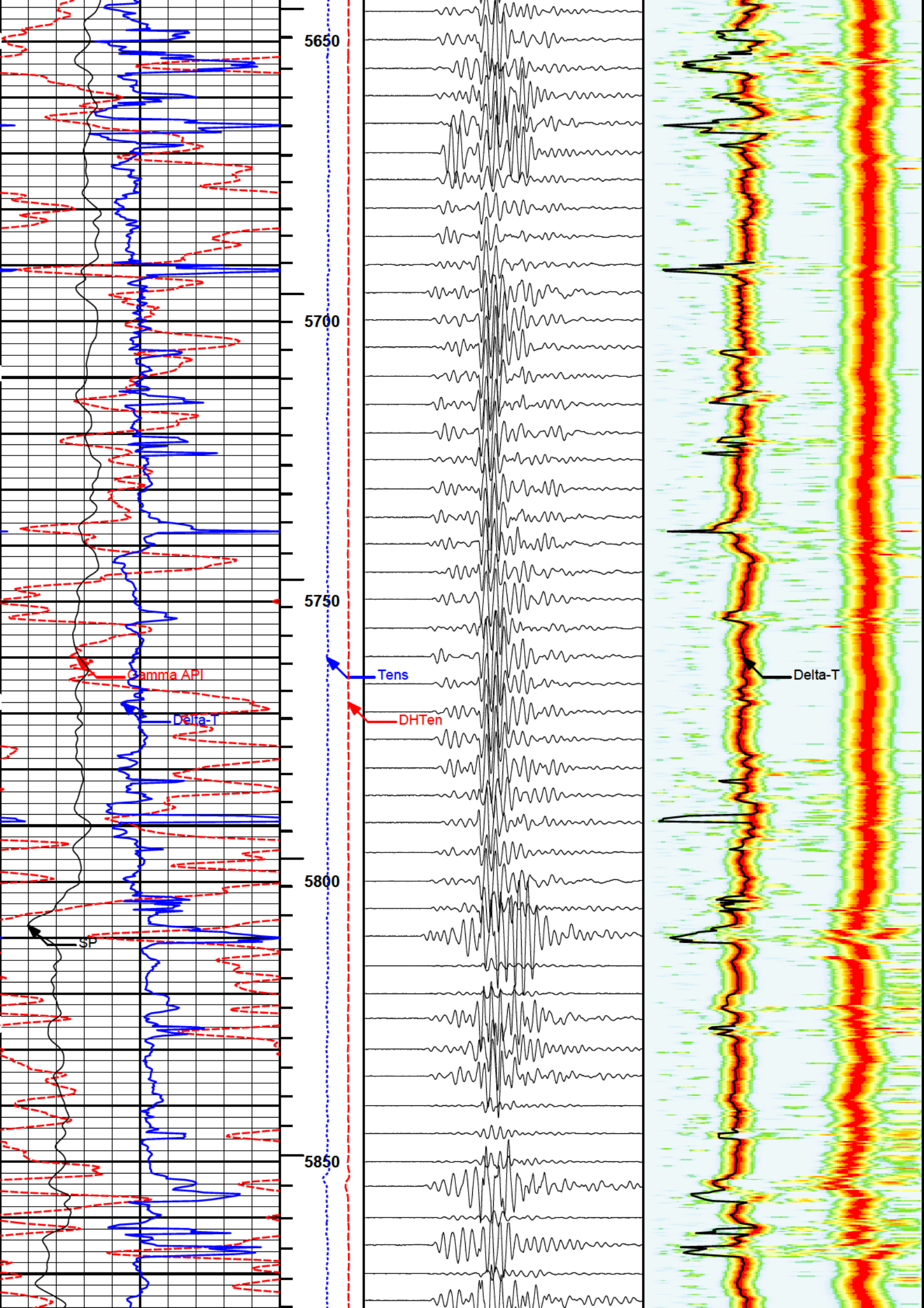
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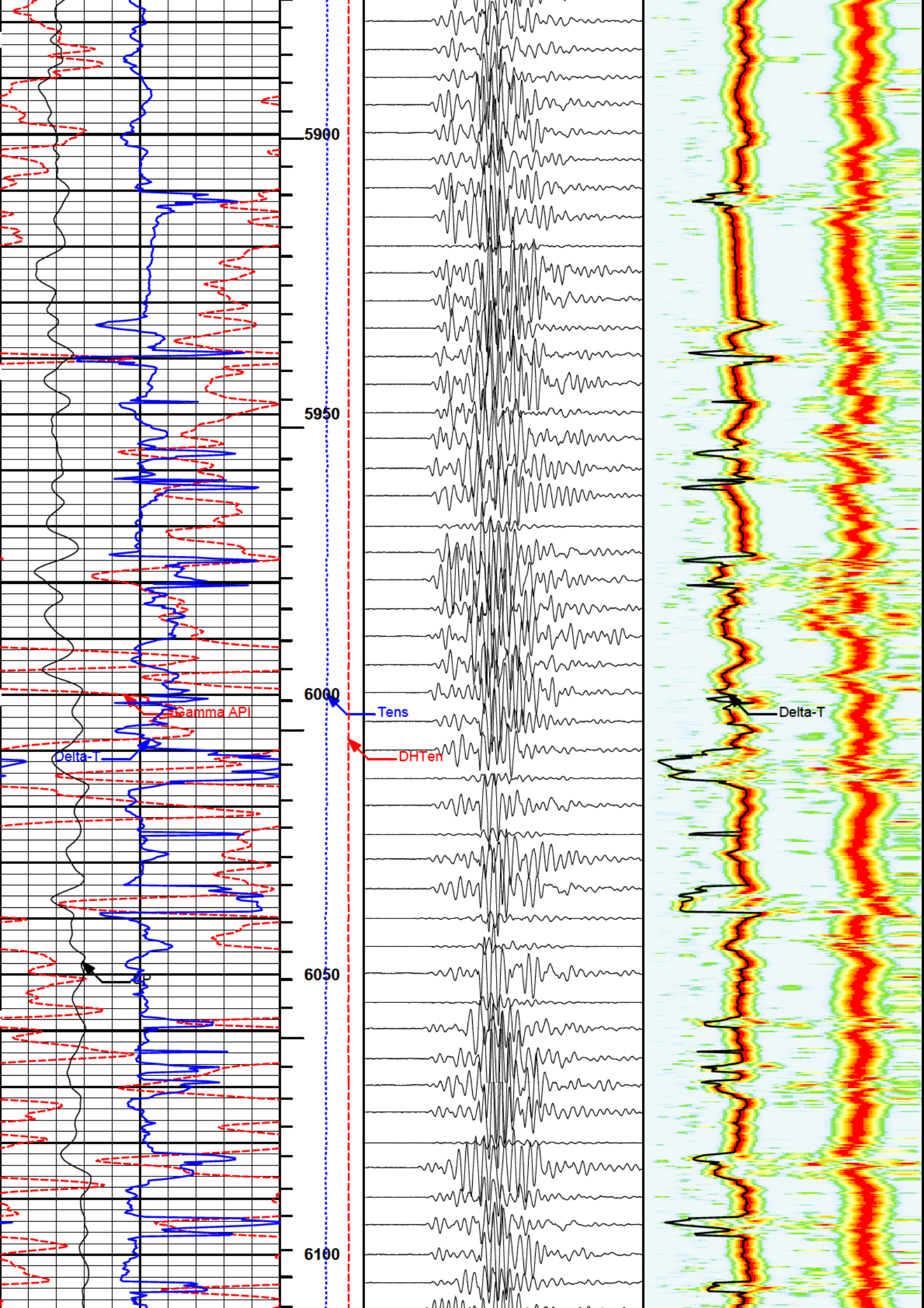
DHTen
Delta-T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Gamma API
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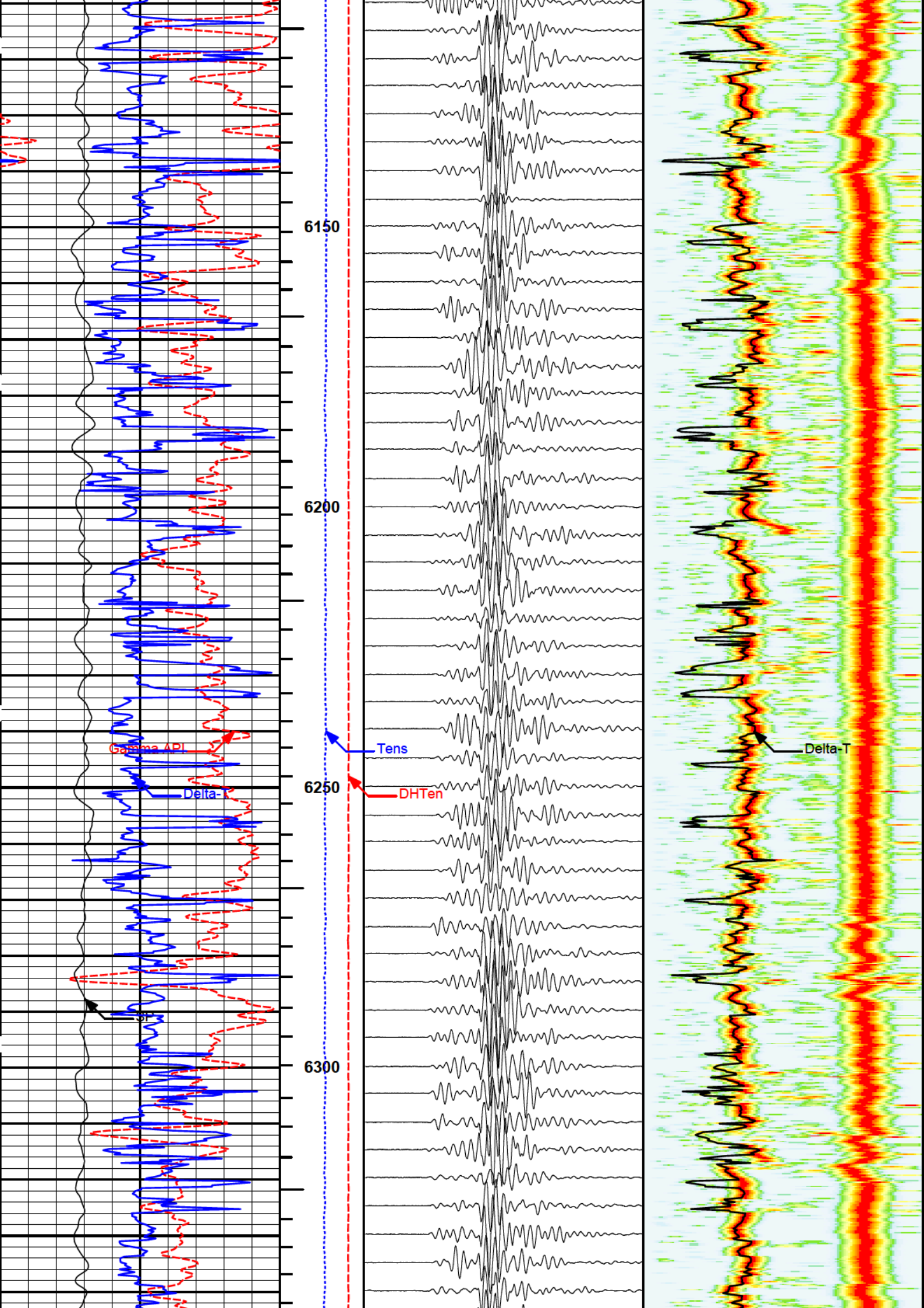
Tens
DHTen
Delta-T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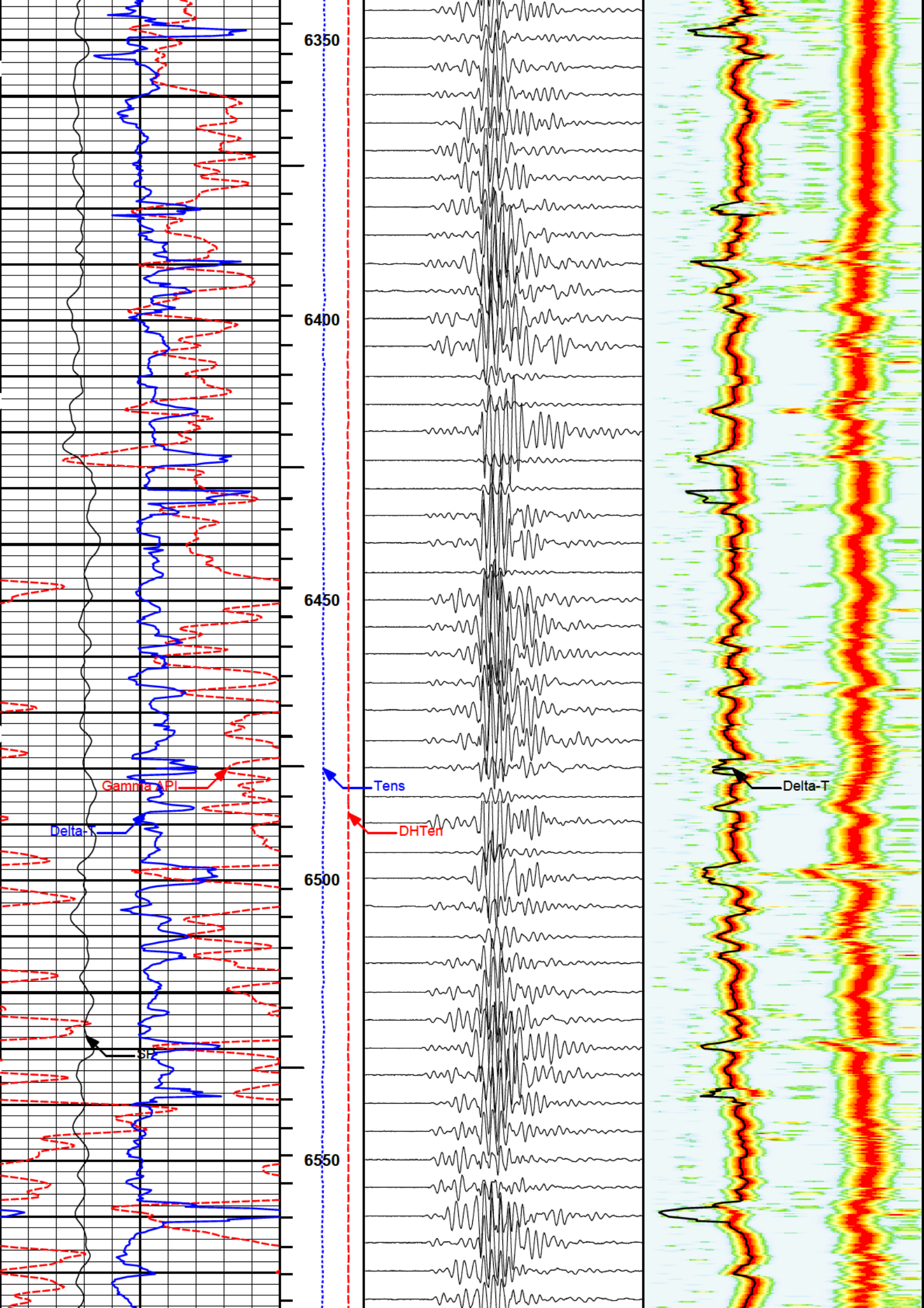
Delta-T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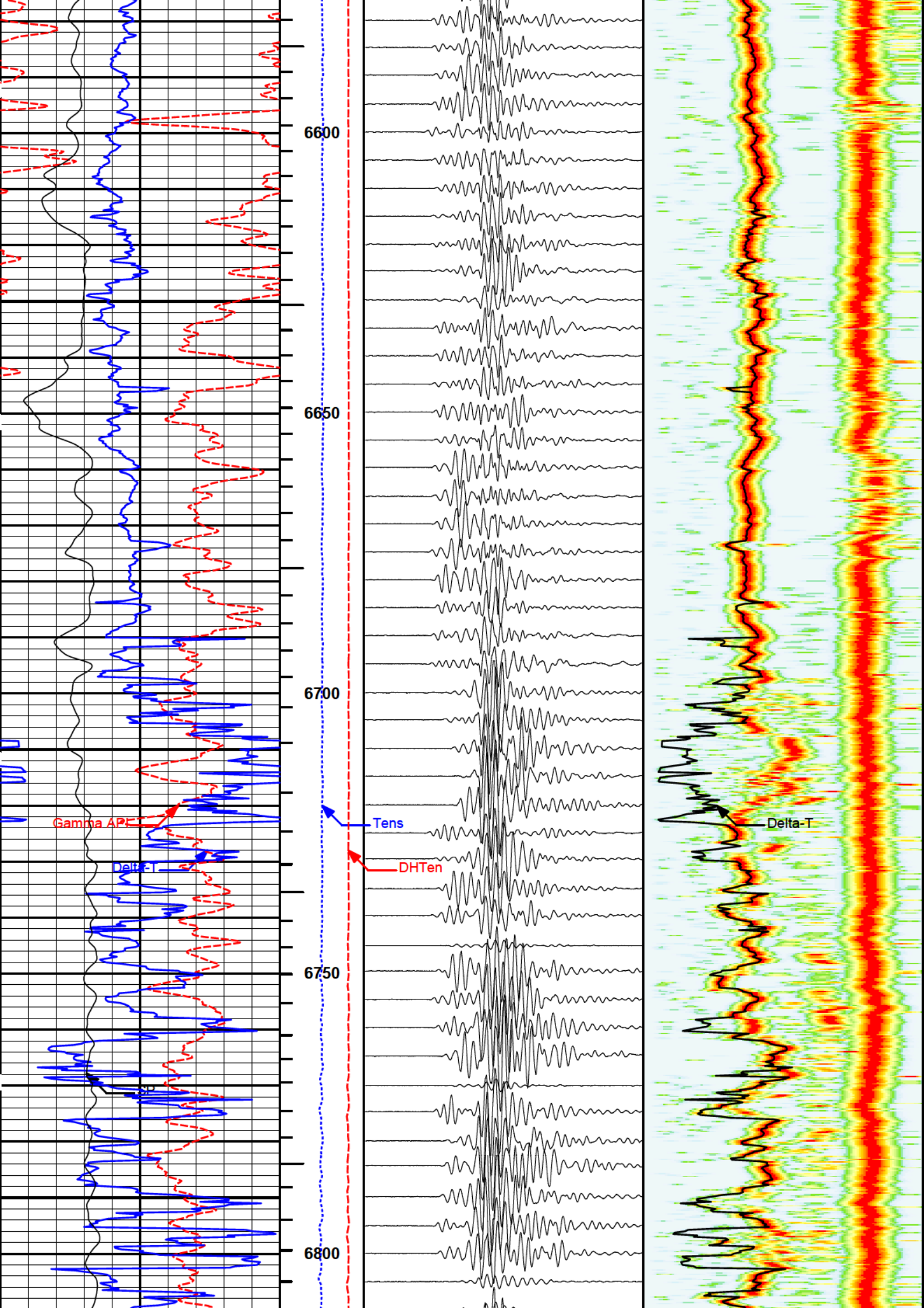
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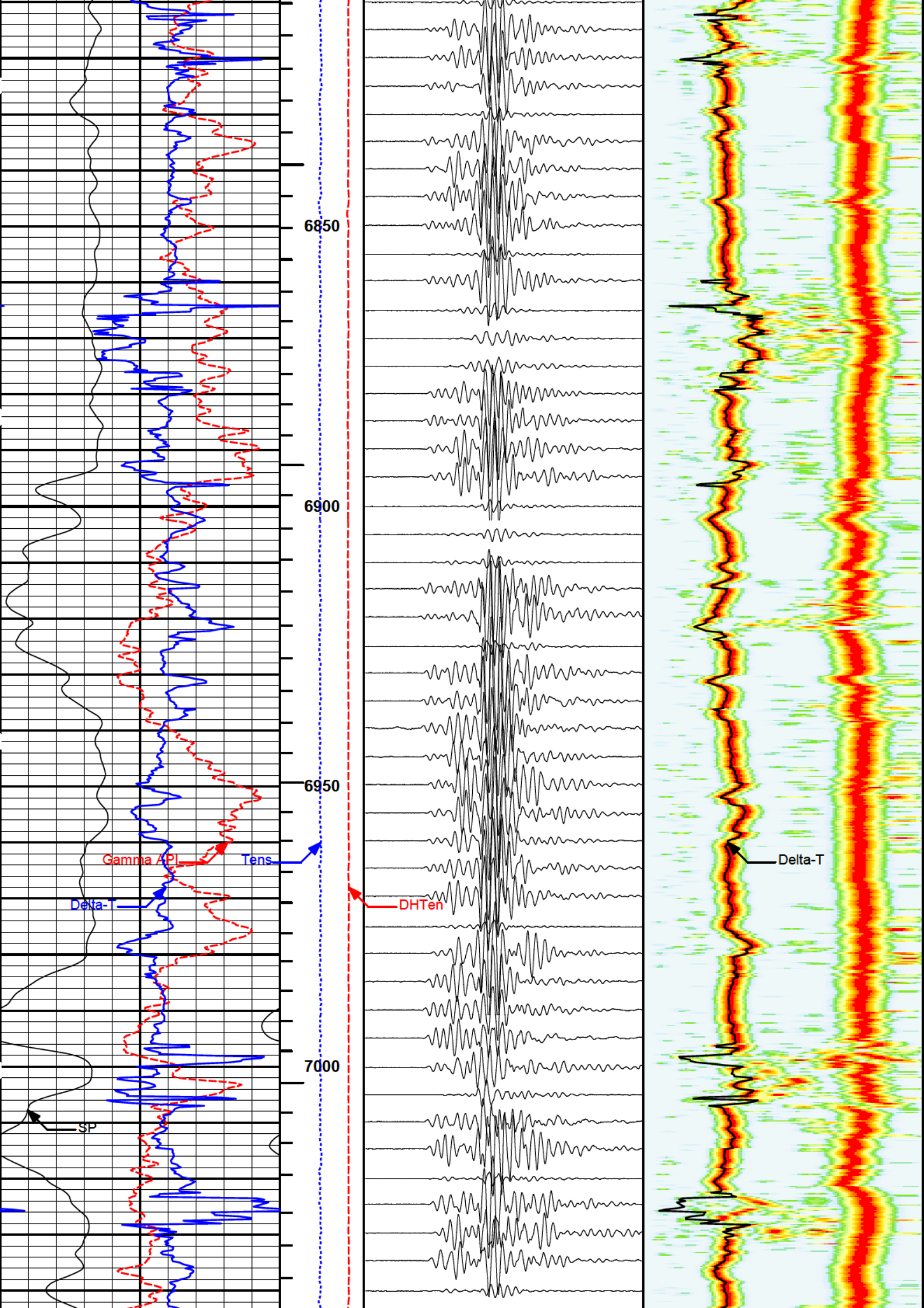
Delta-T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Delta-T
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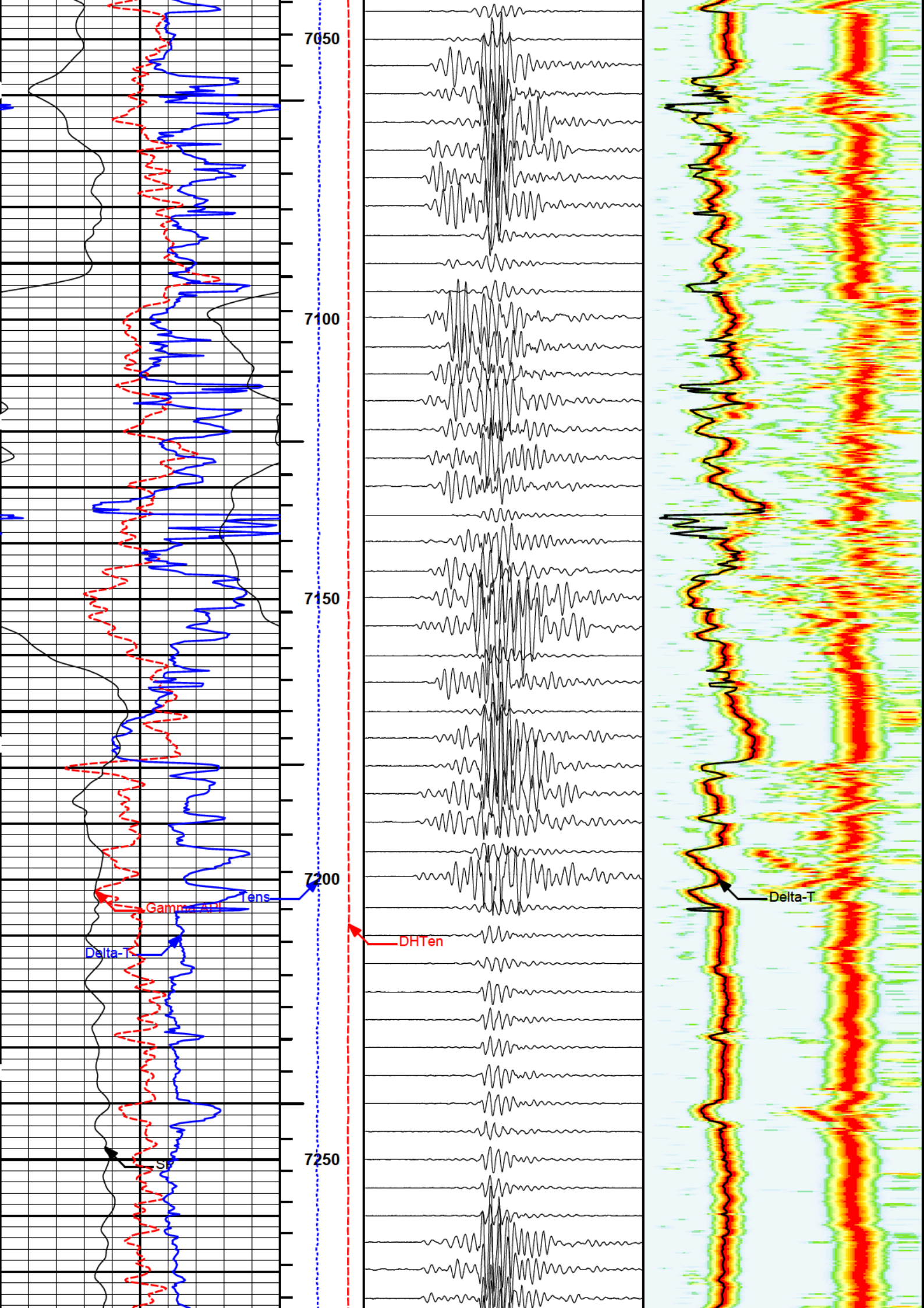
SP
Delta-T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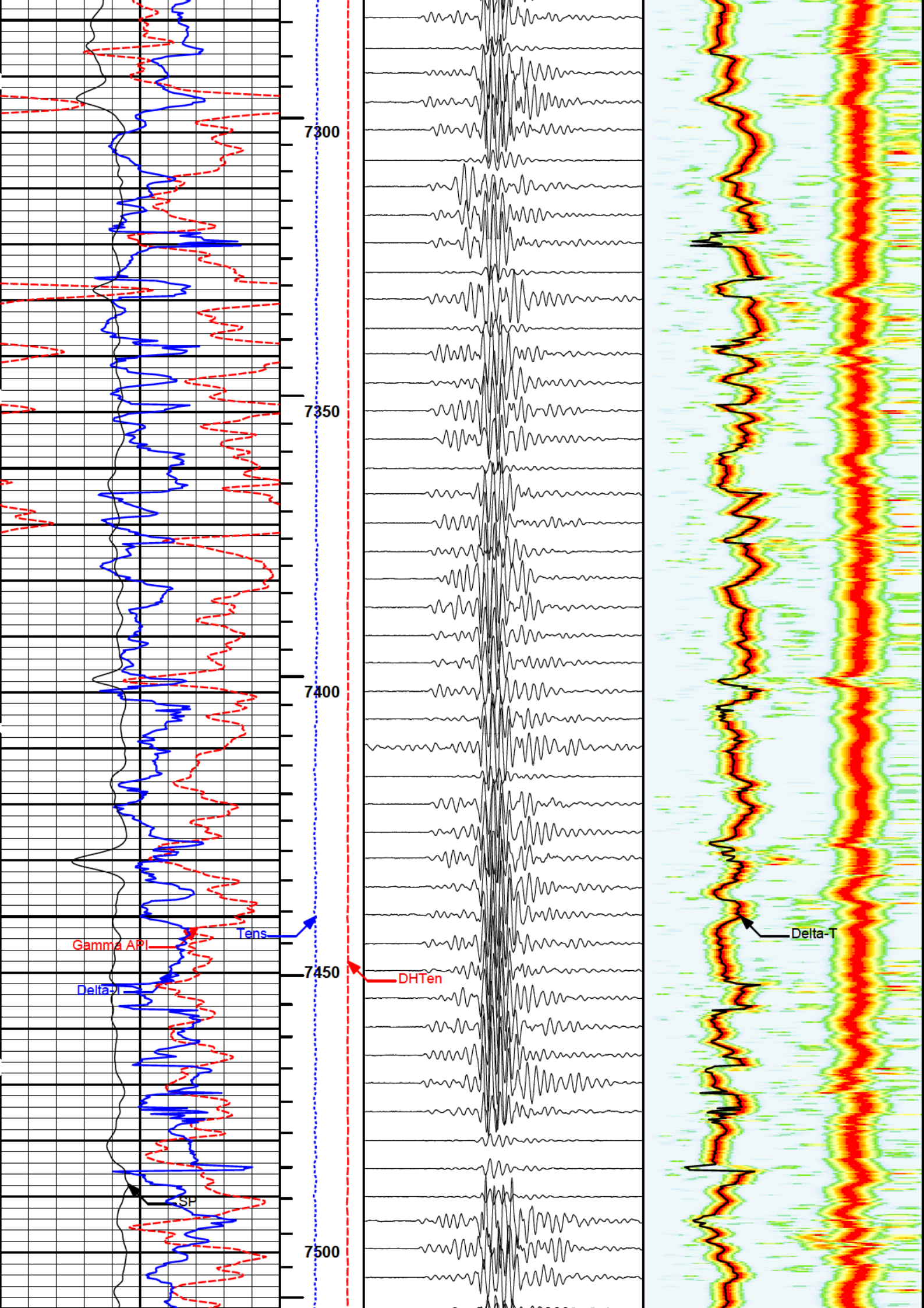
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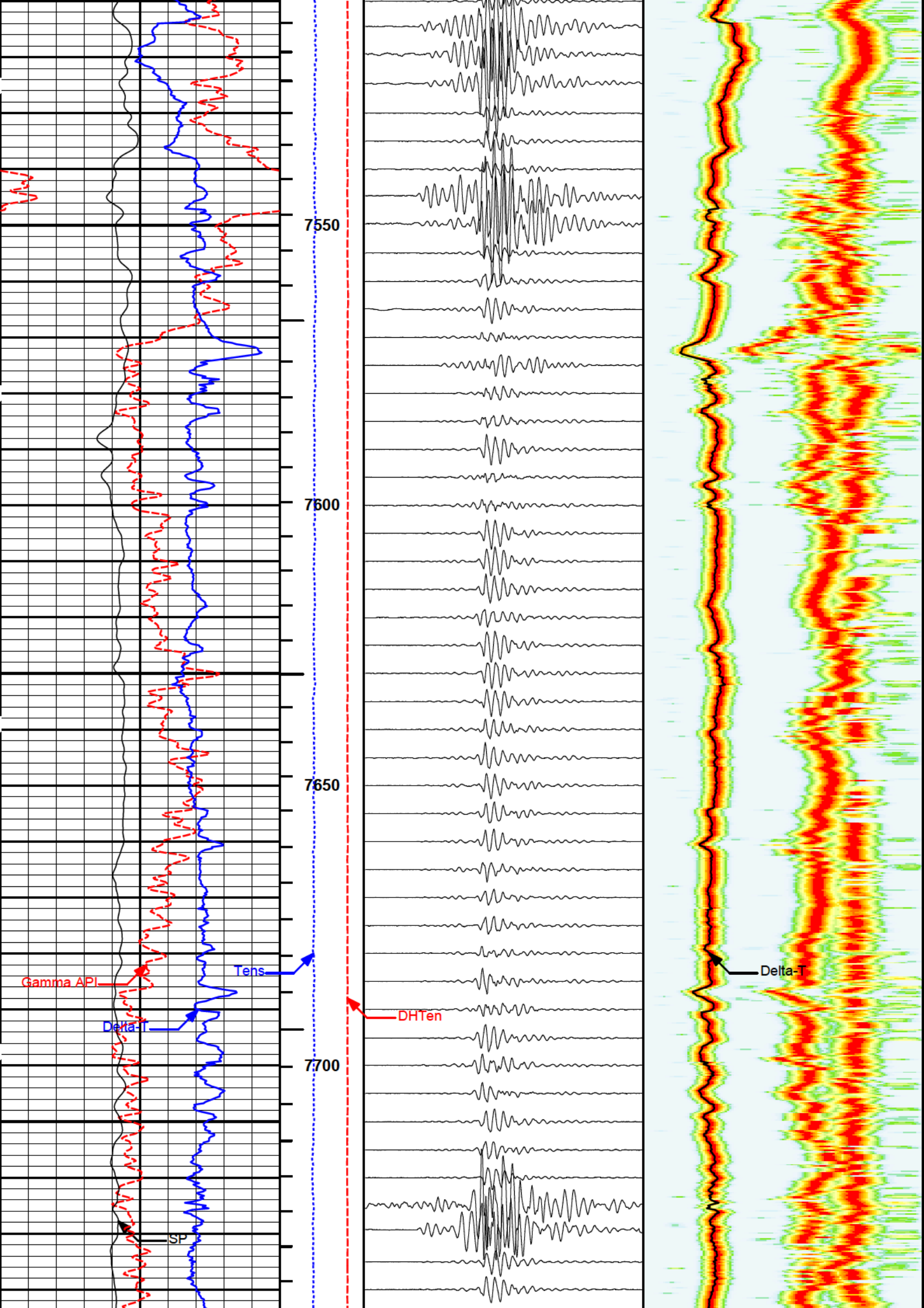
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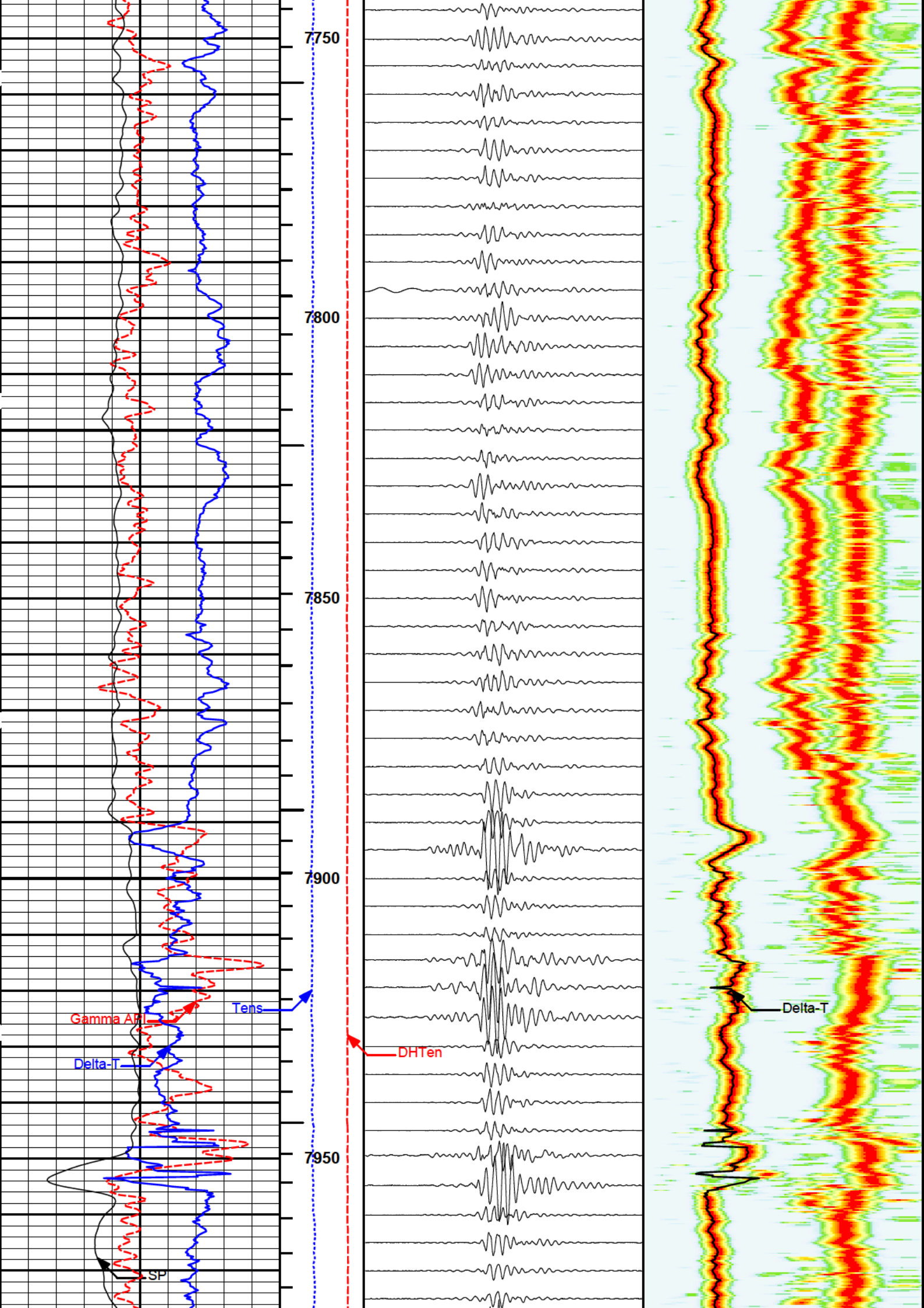
SP
DHTen
Delta-T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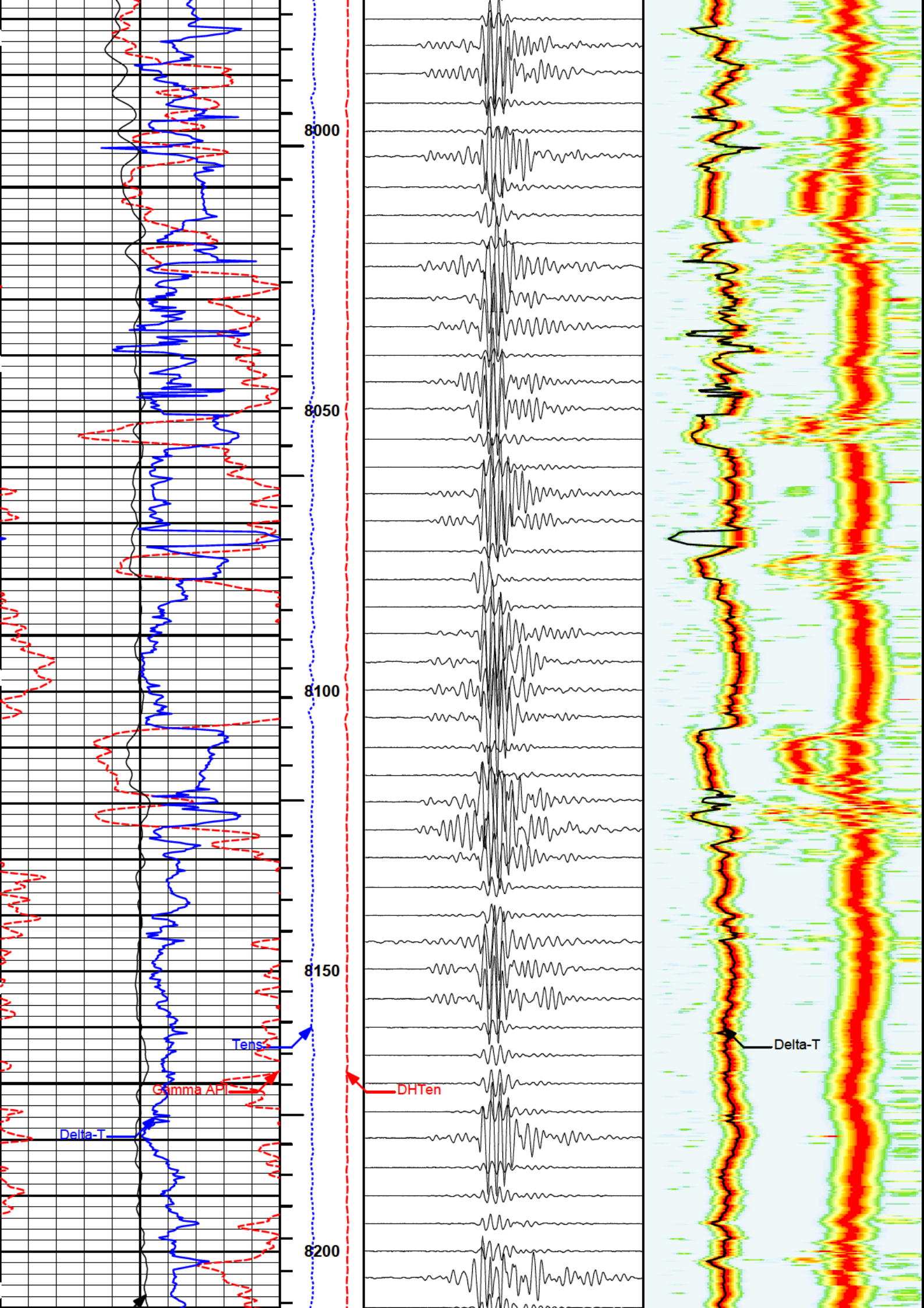
SP
Delta-T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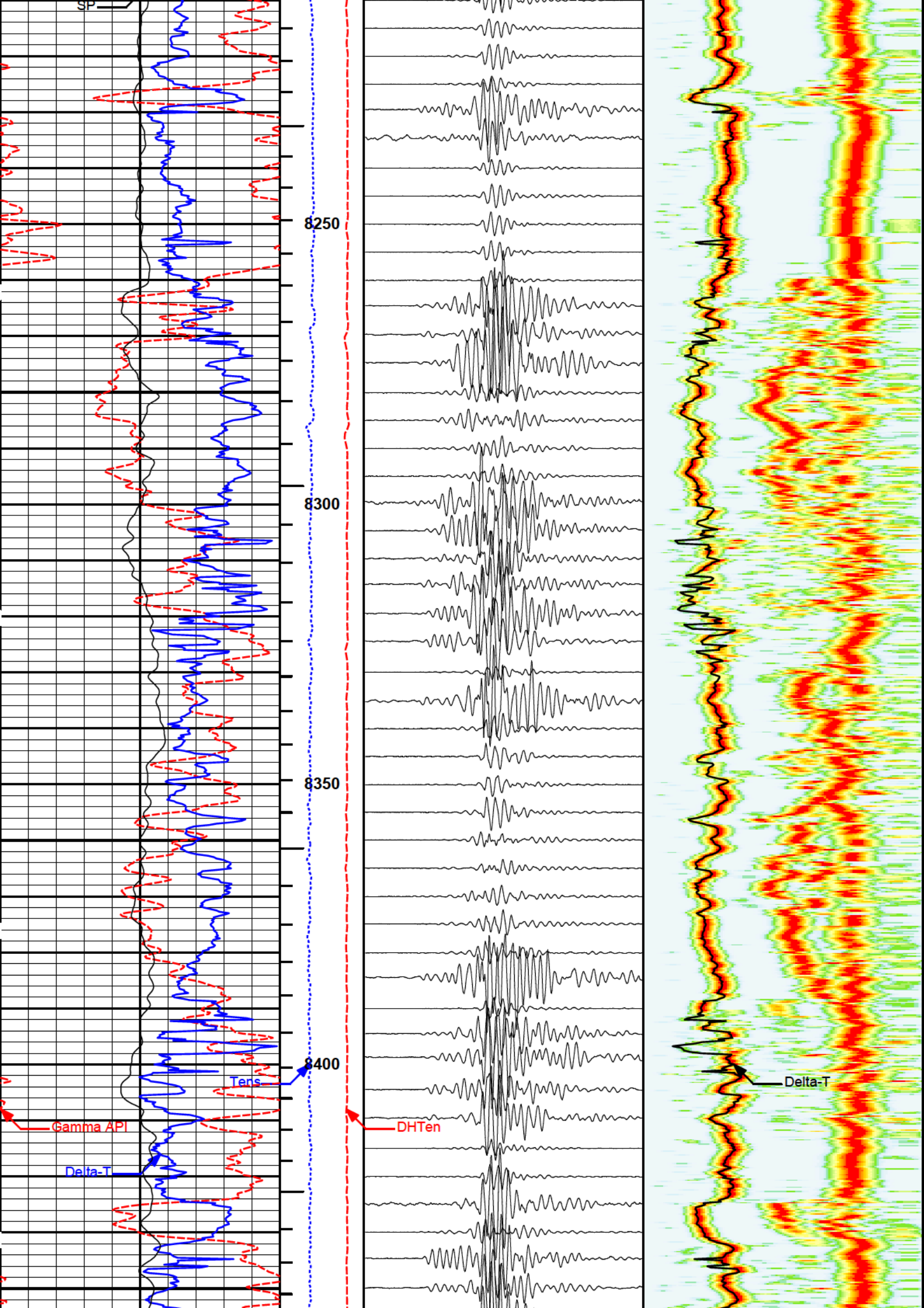
Delta-T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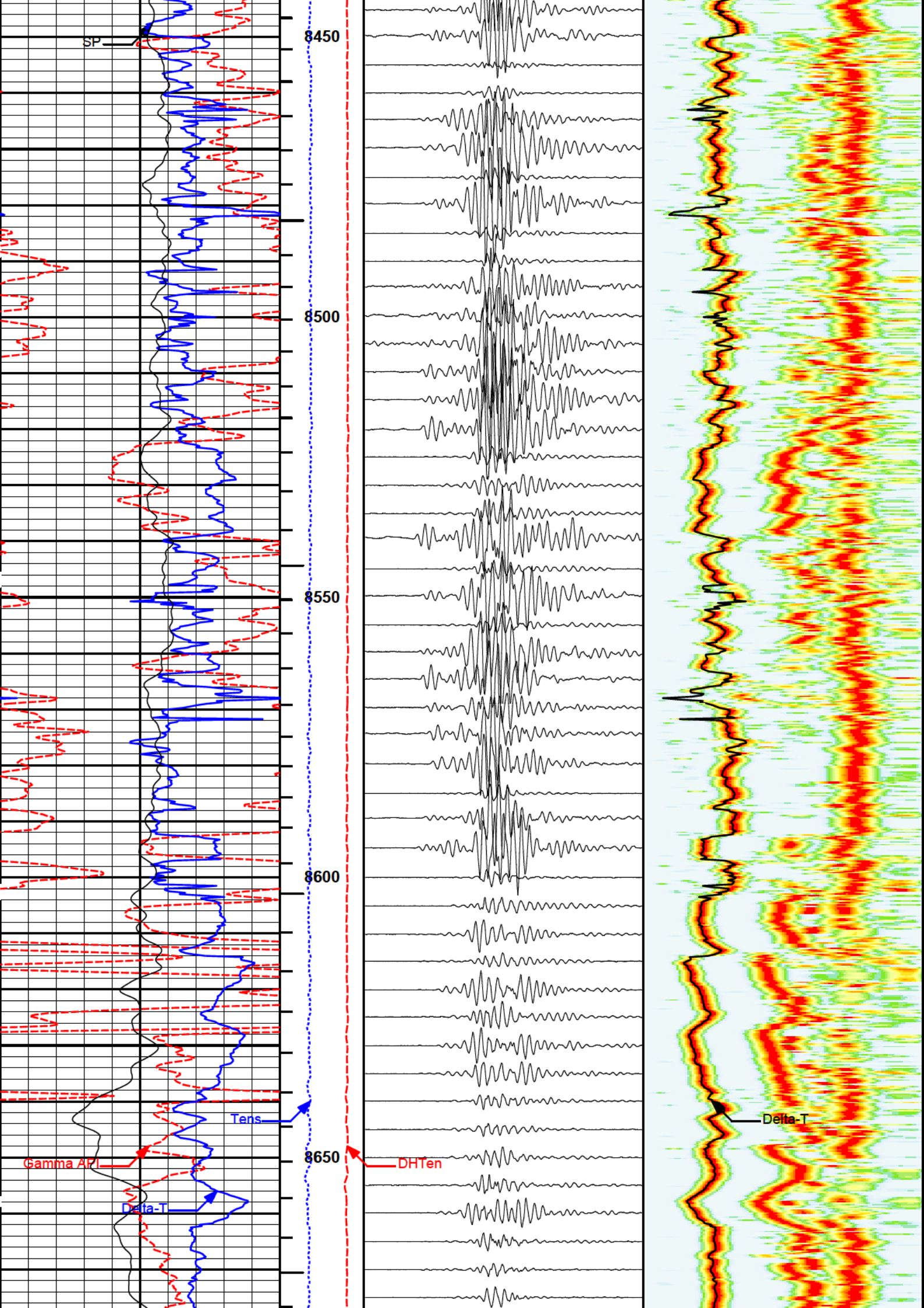
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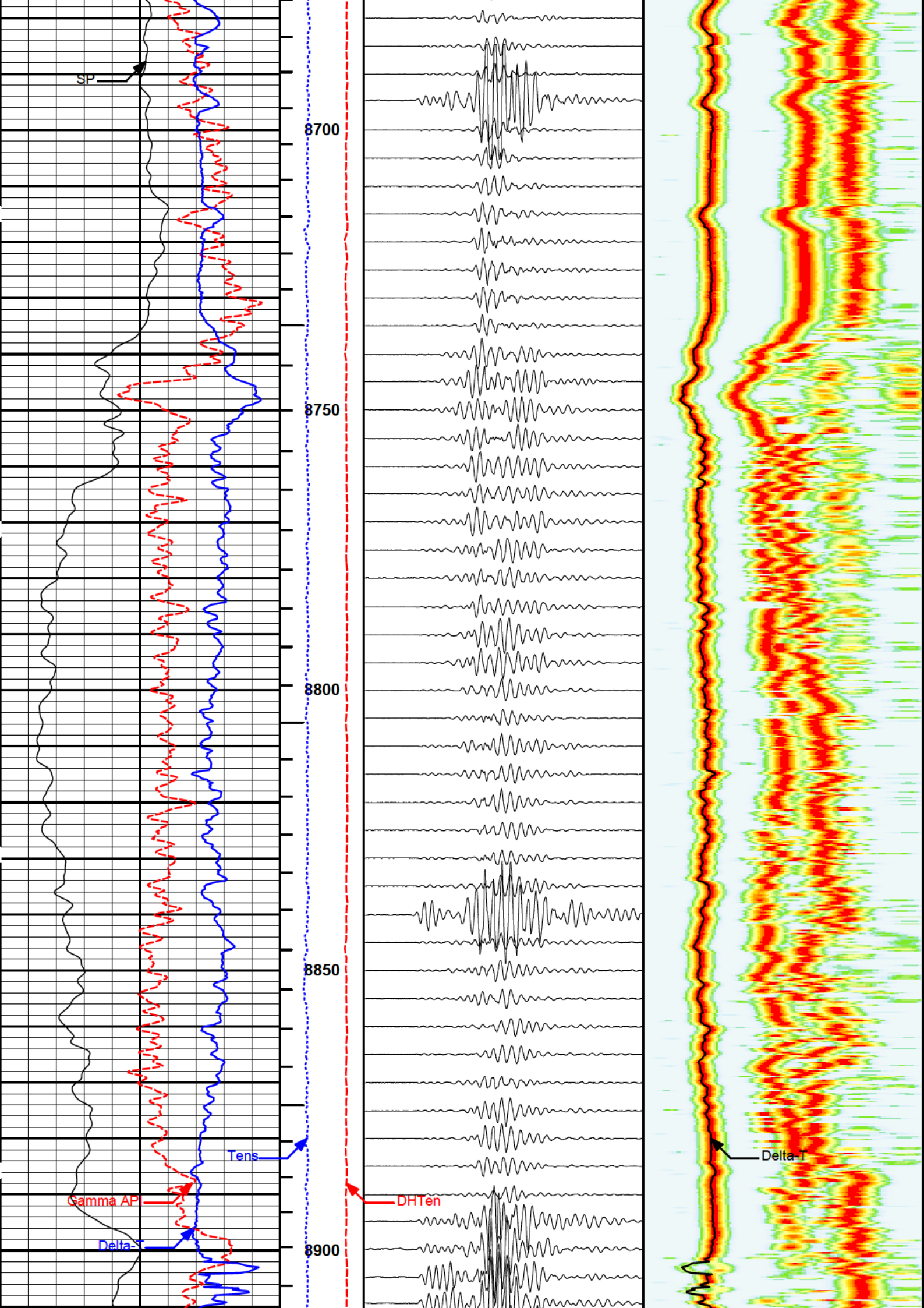
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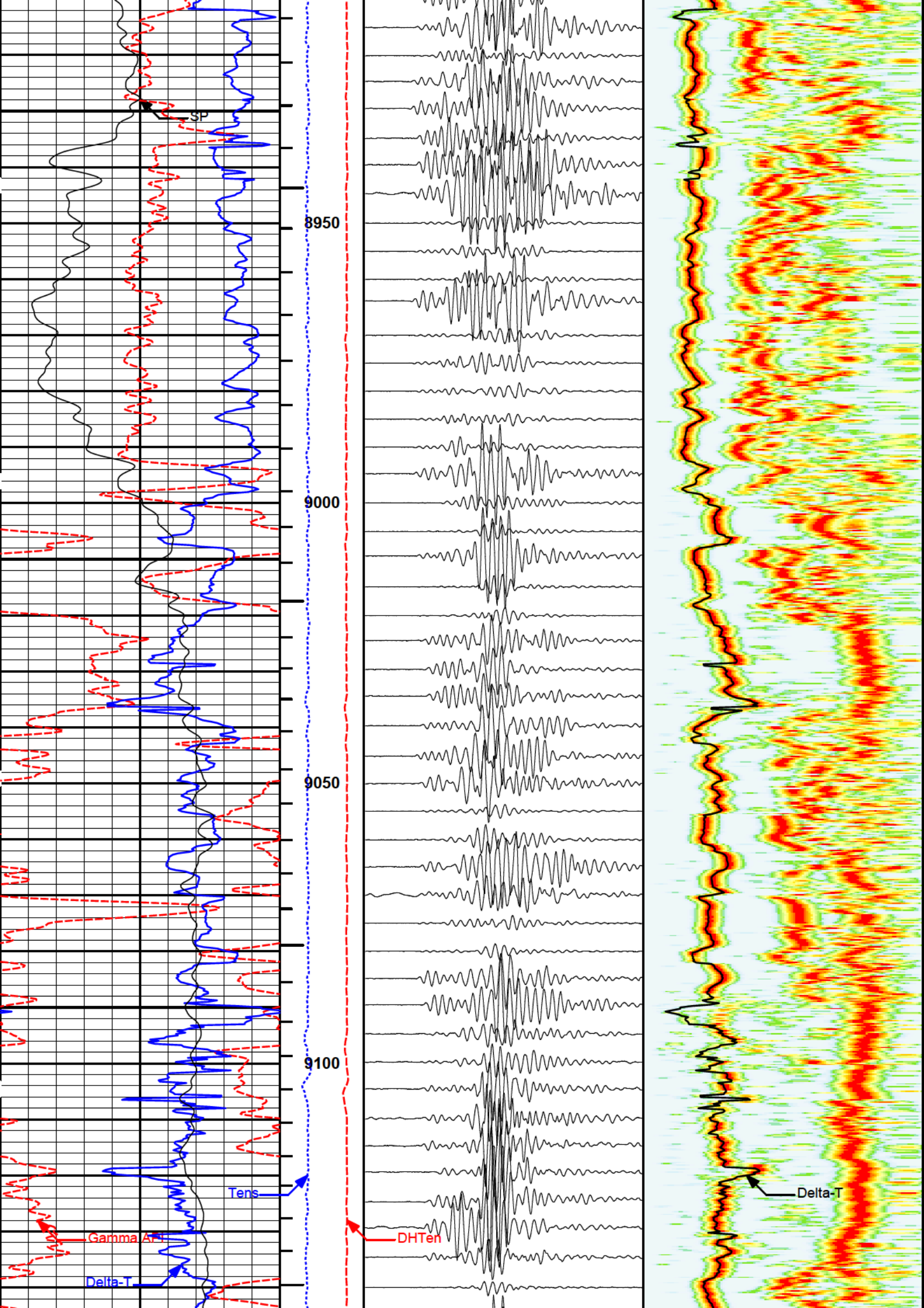
Delta-T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Tens
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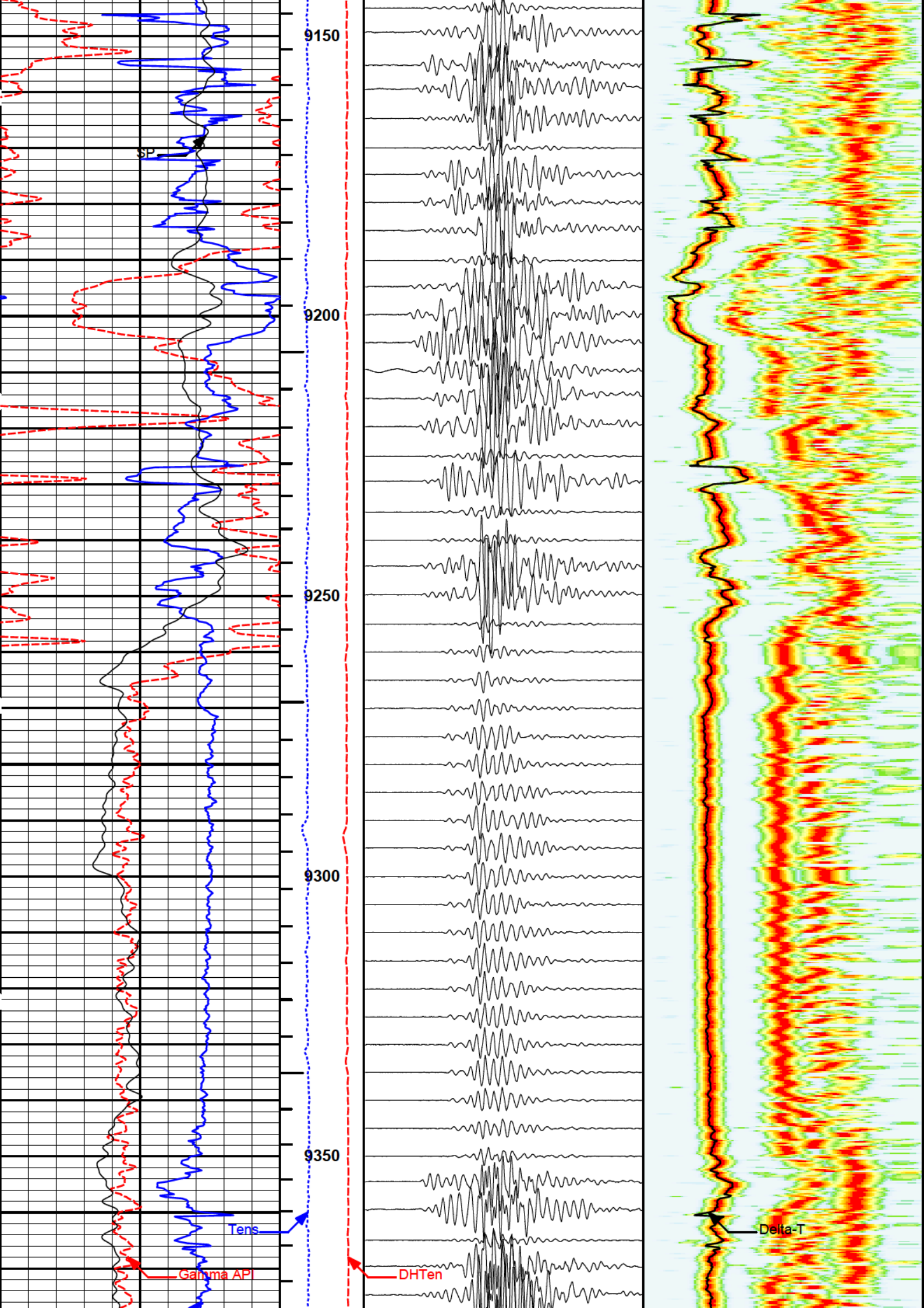
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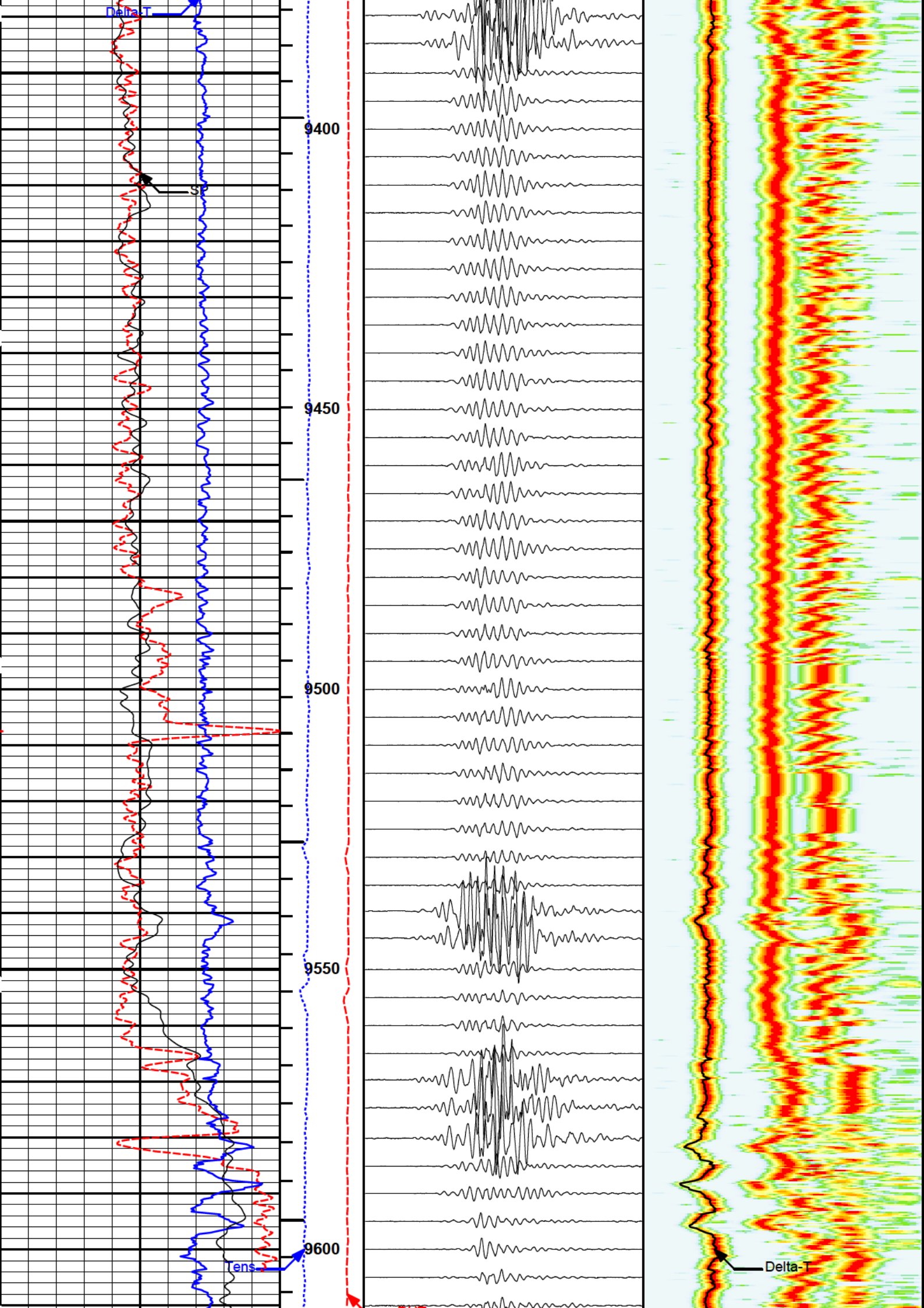
9350
SP
Tens
Gamma API
DHTen
Delta-T


Delta-T
SP
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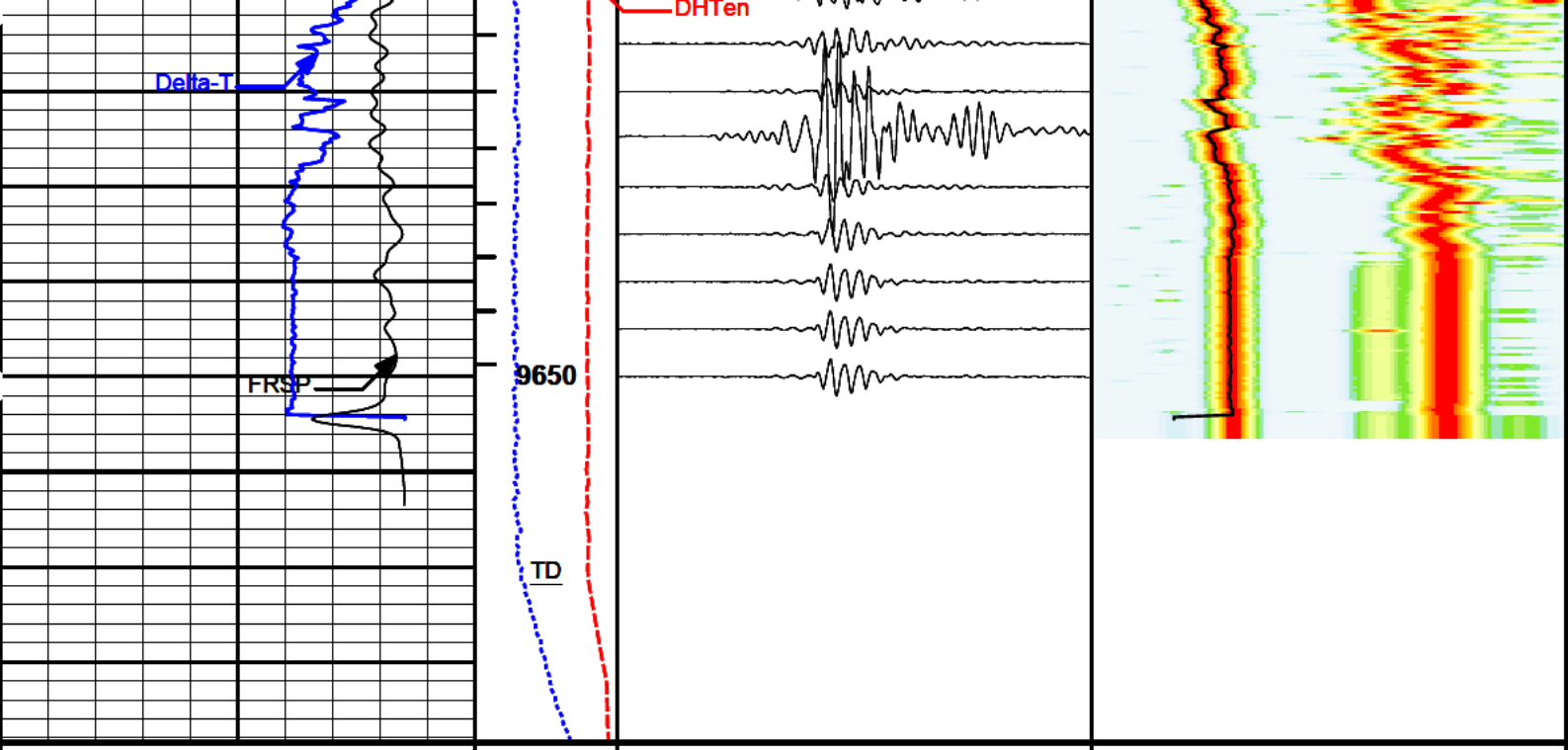
9600
Tens
Delta-T



Minute Mark

1 : 240

0 Waveform T1R3 2.048K
microseconds

30 Semblance 230

150 Delta-T 50
microsec per ft

ITTTotal

30 Delta-T 230
microsec per ft

0 Gamma API 150
api

10K DHTen 0
pounds

SP
-]10[+

10K Tens 0
pounds

HALLIBURTON

Plot Time: 11-Dec-19 06:14:44
Plot Range: 1120 ft to 9688.33 ft
Data: SHIDELER 1-28\Well Based\DAQ-0001-002\
Plot File: \\BSAT\BSAT

COMPANY	VALLEY RESOURCES
WELL	SHIDELER 1-28
FIELD	NORTH BELRIDGE
COUNTY	KERN
STATE	CA

HALLIBURTON

BOREHOLE
SONIC
ARRAY
TOOL
5" = 100'

HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY SPECTRAL DENSITY DUAL SPACED NEUTRON

2" = 100' & 5" = 100'

COMPANY VALLEY RESOURCES

WELL SHIDELER 1-28

FIELD/BLOCK NORTH BELRIDGE

COUNTY KERN STATE CA

COMPANY	VALLEY RESOURCES		
WELL	SHIDELER 1-28		
FIELD/BLOCK	NORTH BELRIDGE		
COUNTY	KERN	STATE	CA

API No. 04030671010000

Location 28929' W AND 262' S
FROM THE NE COR. SEC 28-T27S/R20E MDB&M.
X(E):1457491.96 Y(N):753262.91 CA ZONE V, NAD 27
X(E):6018883.51 Y(N):2393692.07 CA ZONE V, NAD 83

Sect. 28 Twp. 27S Rge. 20E

Other Services:
RWCH
ML
BSAT
XRMI
AST
SWC

Permanent Datum	GL	Elev. 703.0 ft	Elev.: K.B. 717.0 ft
Log measured from	KB	14.0 ft above perm. Datum	D.F.
Drilling measured from	KB		G.L. 703.0 ft

Date		11-Dec-19		
Run No.		ONE		
Depth - Driller		9675.0 ft		
Depth - Logger		9672.0 ft		
Bottom - Logged Interval		9660.0 ft		
Top - Logged Interval				
Casing - Driller		9.625 in @ 1164.0 ft	@	@
Casing - Logger				
Bit Size		8.750 in	@	@
Type Fluid in Hole		9672		
Density	Viscosity			
PH	Fluid Loss			
Source of Sample		ACTIVE PIT		
Rm @ Meas. Temperature		2.87 ohmm @ 57.00 degF	@	@
Rmf @ Meas. Temperature		2.95 ohmm @ 55.00 degF	@	@
Rmc @ Meas. Temperature		2.95 ohmm @ 55.00 degF	@	@
Source Rmf	Rmc	PRESSED	PRESSED	
Rm @ BHT		@	@	@
Time Since Circulation		6.0000 hr		
Time on Bottom		11-Dec-19 03:19:18.000		
Max. Rec. Temperature		@	@	@
Equipment	Location	11640421	BKFLD	
Recorded By		T. FOSTER		
Witnessed By		T. HOPPS		

Fold here

Service Ticket No.: 906169144 API Serial No.: 04030671010000 PGM Version: WL INSITE R6.2.1 (Build 2)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

	Sample No.				
Date					
Depth-Driller					
Type Fluid in Hole					
Density	Viscosity				
Ph	Fluid Loss				
Source of Sample					
Rm @ Meas. Temp		@	@	@	@
Rmf @ Meas. Temp.		@	@	@	@
Rmc @ Meas. Temp.		@	@	@	@
Source Rmf	Rmc				
Rm @ BHT		@	@	@	@
Rmf @ BHT		@	@	@	@
Rmc @ BHT		@	@	@	@

RESISTIVITY SCALE CHANGES

	Type Log	Depth	Scale Up Hole	Scale Down Hole

RESISTIVITY EQUIPMENT DATA

	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
				1.5" S.O.	N/A
	ONE	ACRT	N/A		
		I:10940591	S:10904993		

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	11795753	Serial No.	11105778	Serial No.	10865883	Serial No.	11660717
Model No.	GTET	Model No.	BSAT	Model No.	SDLT	Model No.	DSNT
Diameter	3.625"	No. of Cent.	3.625"	Diameter	4.75"	Diameter	3.625"
Detector Model No.	102-T2	Spacing	NA	Log Type	GAM-GAM	Log Type	NEU-NEU
Type	SCINT			Source Type	Cs137	Source Type	Am241Be
Length	8.0"	LSA [Y/N]	NA	Serial No.	5477GW	Serial No.	61807B
Distance to Source	N/A	FWDA [Y/N]	NA	Strength	1.78 Ci	Strength	15.0 Ci

LOGGING DATA

GENERAL			GAMMA		ACOUSTIC			DENSITY			NEUTRON		
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	9672'		60	0	150				1.65	2.65	2.65	60	0	SAND
					GAPI						G/CC			

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@

Remarks: ACRT/BSAT/ICT/SDLT/DSNT/GR/RWCH RAN IN COMBINATION.

SDL VOLUMES (FT^3) CALCULATED FOR 5.5" CASING FROM TD TO SHOE: AHVT: BHVT:

MAXIMUM TEMPERATURES (DegF): FLOWLINE: THERMOMETER 1: THERMOMETER 2: xxx

DSN CLASSIC POROSITY PARAMETER ENABLED.

CHLORIDES REPORTED AT PPM.

BARITE NOT INDICATED ON MUD REPORT

RECEIVED GOOD MAGNETIC MARKS - ZERO RECHECKED ACCURATELY AT SURFACE.

CREW:F.VARGAS,A.VASQUEZ,M.BRASHEAR RIG: ENSIGN 535

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

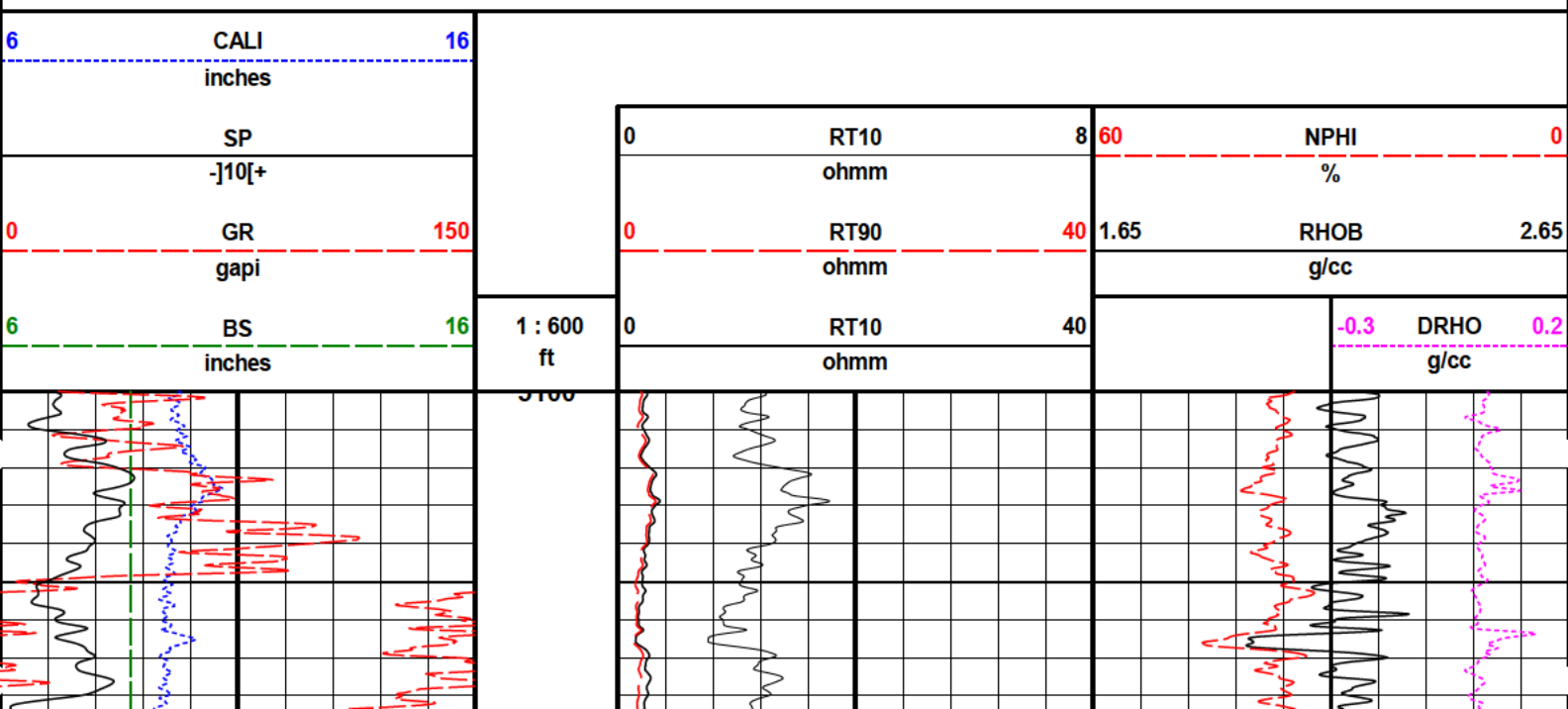
HALLIBURTON

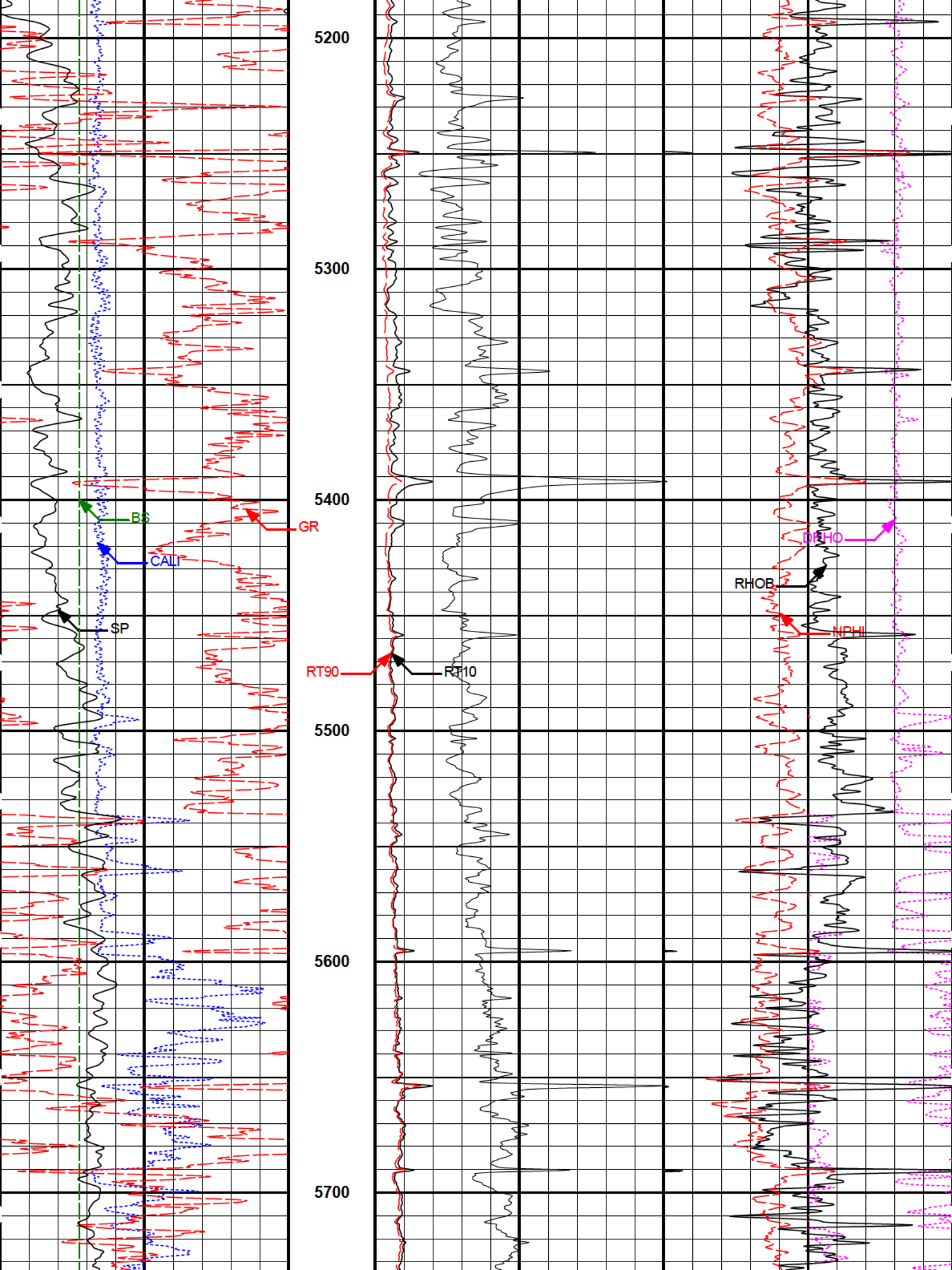
HALLIBURTON

Plot Time: 11-Dec-19 04:42:38
Plot Range: 5100 ft to 8100 ft
Data: SHIDELER 1-28\Well Based\DAQ-0001-002\
Plot File: \\TC\VR-2IN_2019

MAIN PASS

2" = 100'

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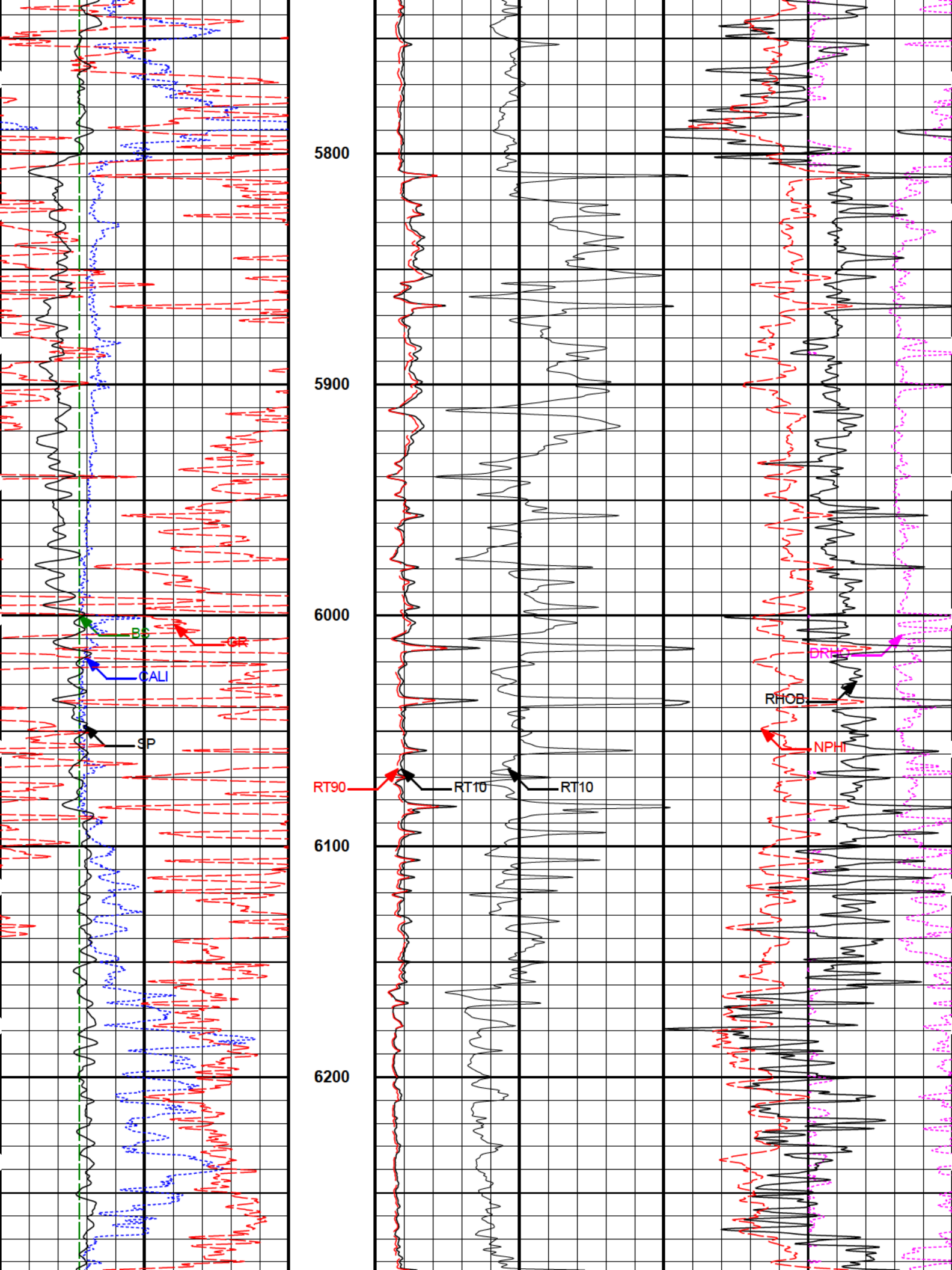
SP
GR
RT90
RT10
DPHO
RHOB
NPHI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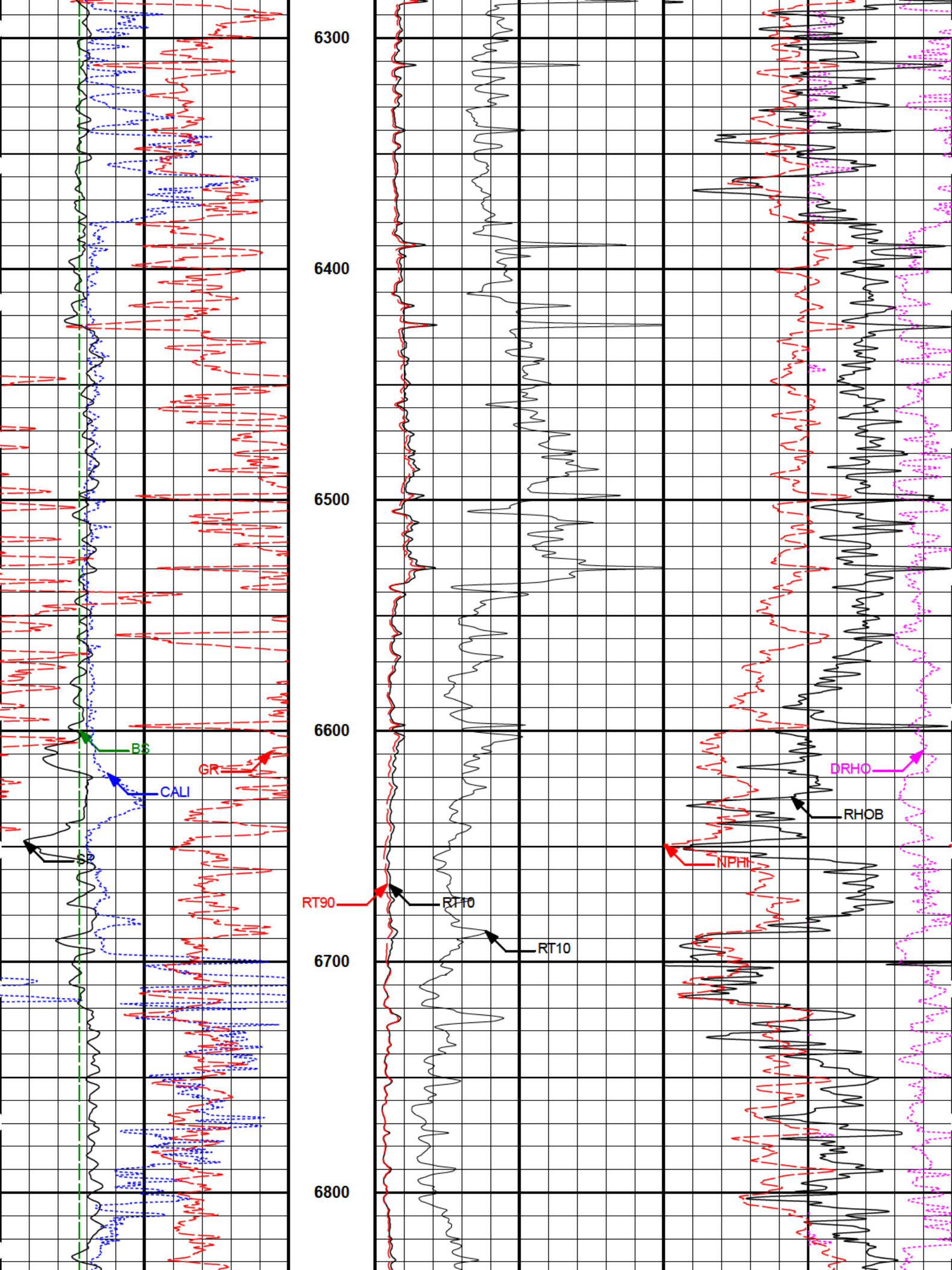
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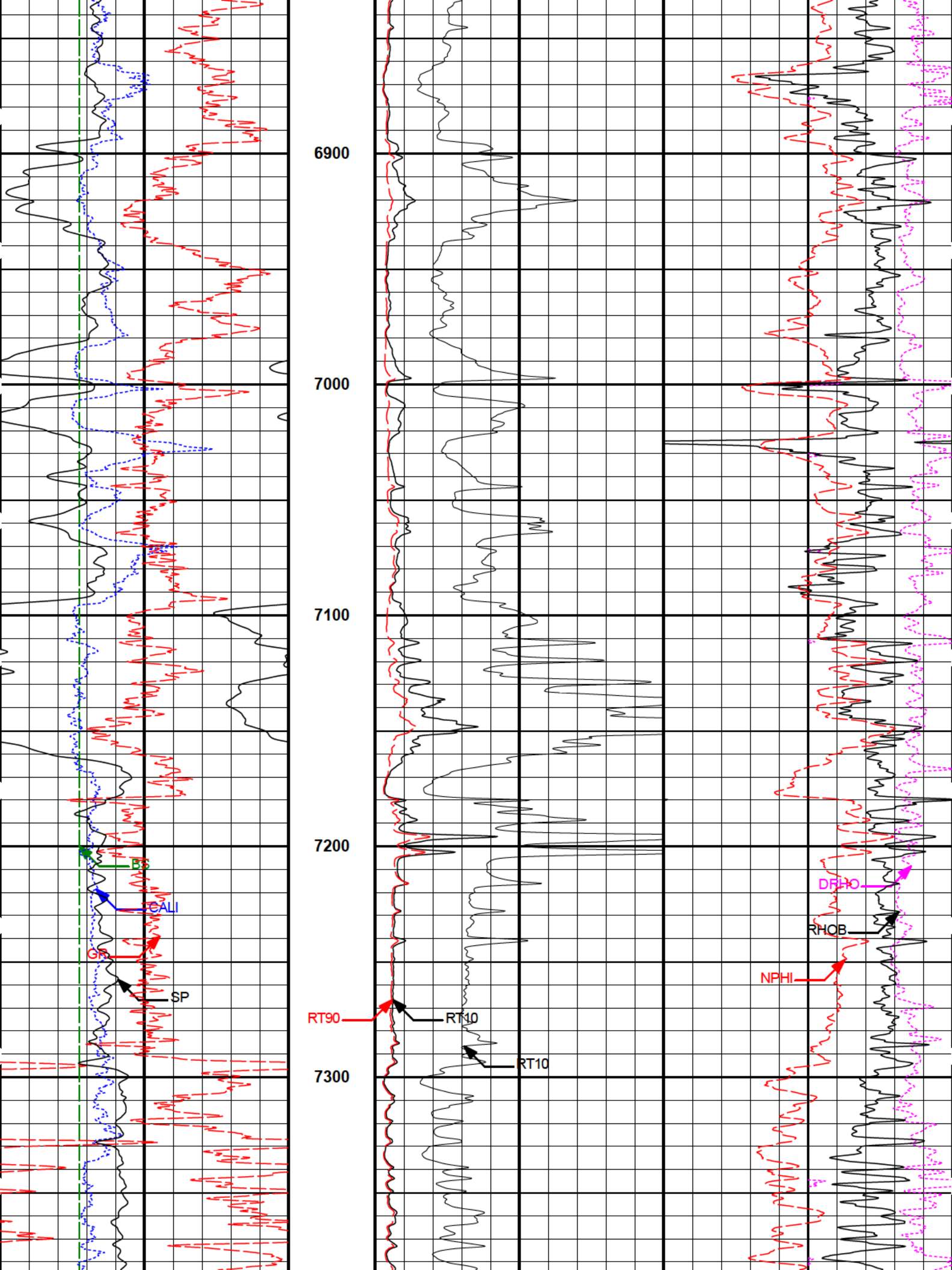
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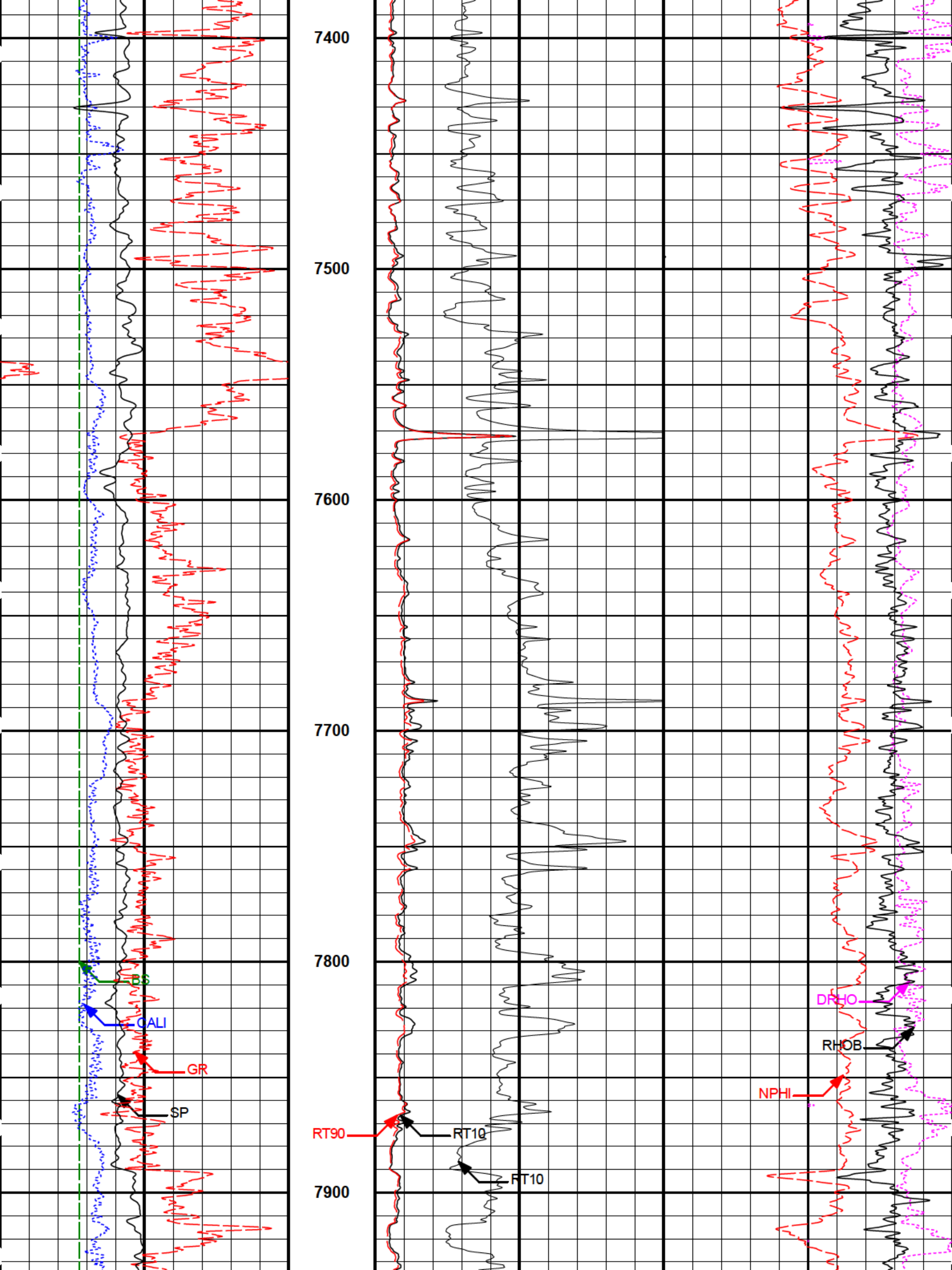
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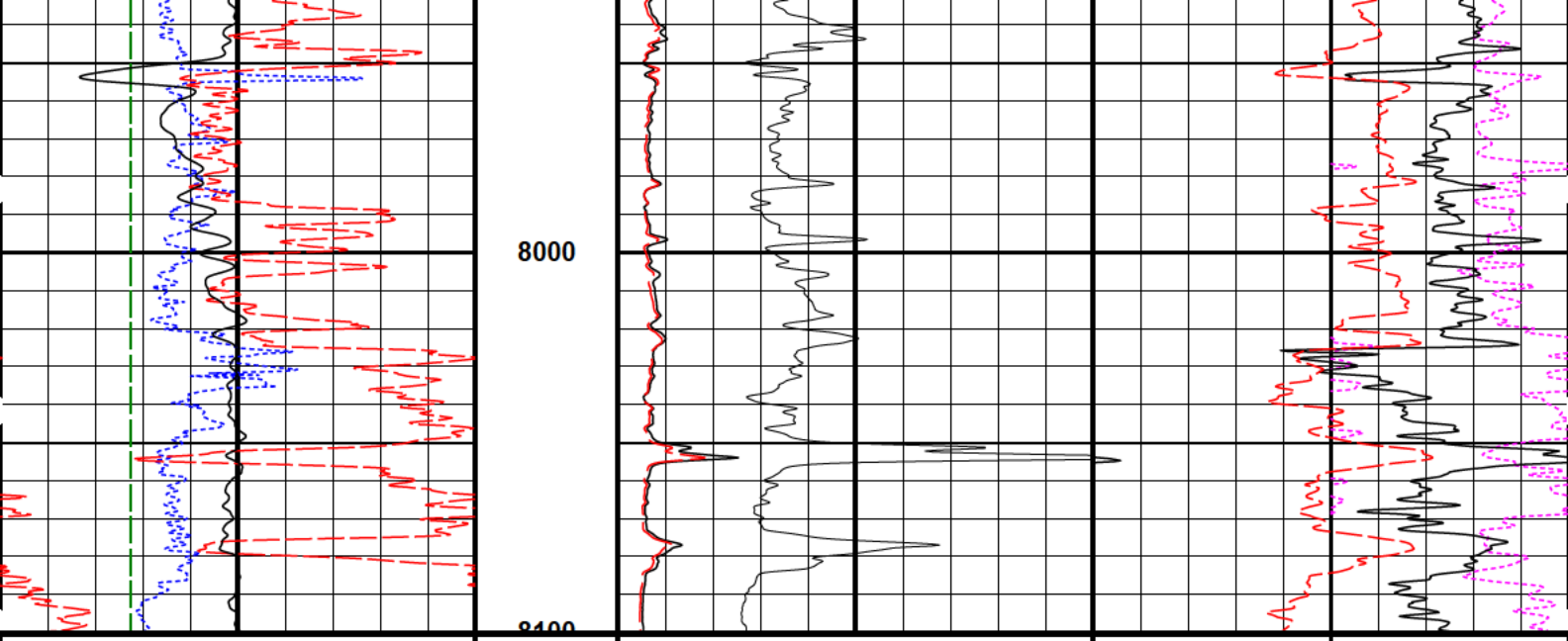


6 BS 16 inches		1 : 600 ft	0 RT10 40 ohmm			-0.3 DRHO 0.2 g/cc		
0 GR 150 gapi			0 RT90 40 ohmm			1.65 RHOB 2.65 g/cc		
SP -]10[+			0 RT10 8 ohmm			60 NPHI 0 %		
6 CALI 16 inches								

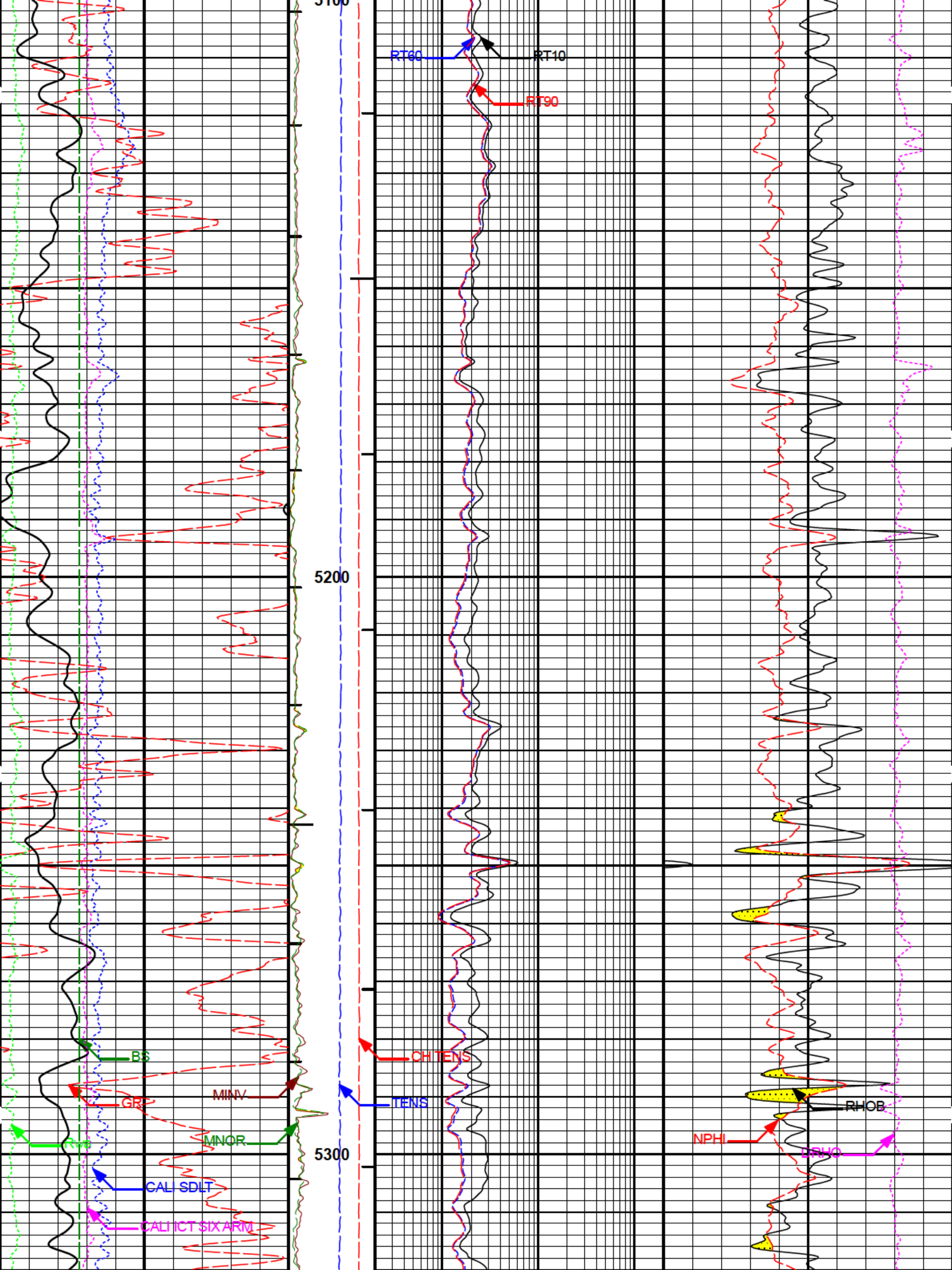
HALLIBURTON

Plot Time: 11-Dec-19 04:42:43
Plot Range: 5100 ft to 8100 ft
Data: SHIDELER 1-28\Well Based\DAQ-0001-002\
Plot File: \\TC\VR-5IN_2019

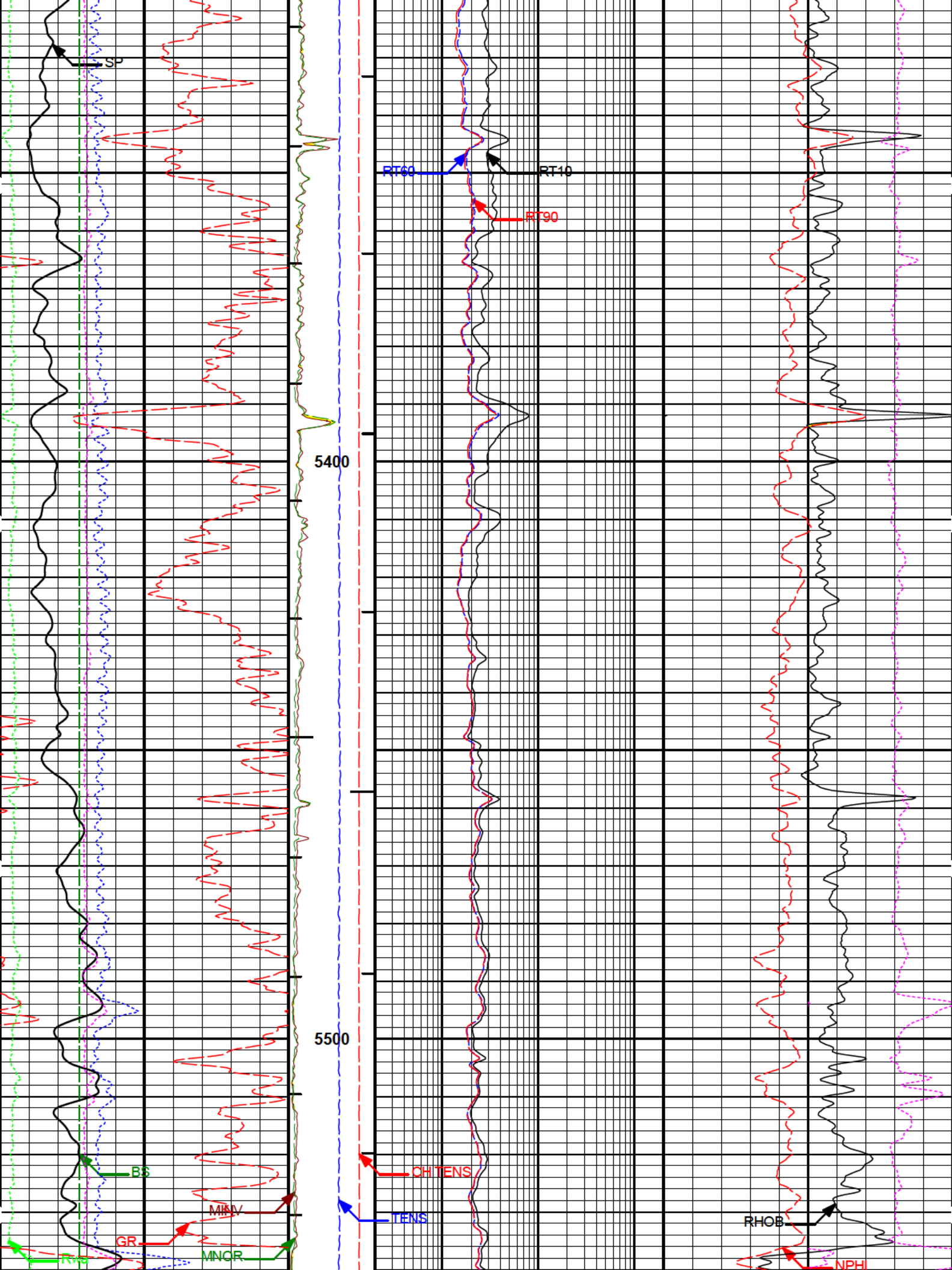
MAIN PASS

5" = 100'

		BHV						
6 CALI ICT SIX ARM 16 inches		AHV						
6 CALI SDLT 16 inches		CH TENS 10000 0						
SP -]10[+		TENS 10000 0						
0 GR 150 gapi		0 MINV 40 ohmm	0.2 RT90 200 ohmm			60 NPHI 0 %		
6 BS 16 inches		0 MNOR 40 ohmm	0.2 RT60 200 ohmm			1.65 RHOB 2.65 g/cc		
0 Rwa 5 ohm-metre		1 : 240 ft	0.2 RT10 200 ohmm				-0.3 DRHO 0.2 g/cc	



5100
RT60
RT10
RT90
5200
BS
CH TENS
MINV
GRF
TENS
RHOB
MNOR
NPHI
Rvd
5300
DRHO
CALI SDLT
CALI ICT SIX ARM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RT90
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BS
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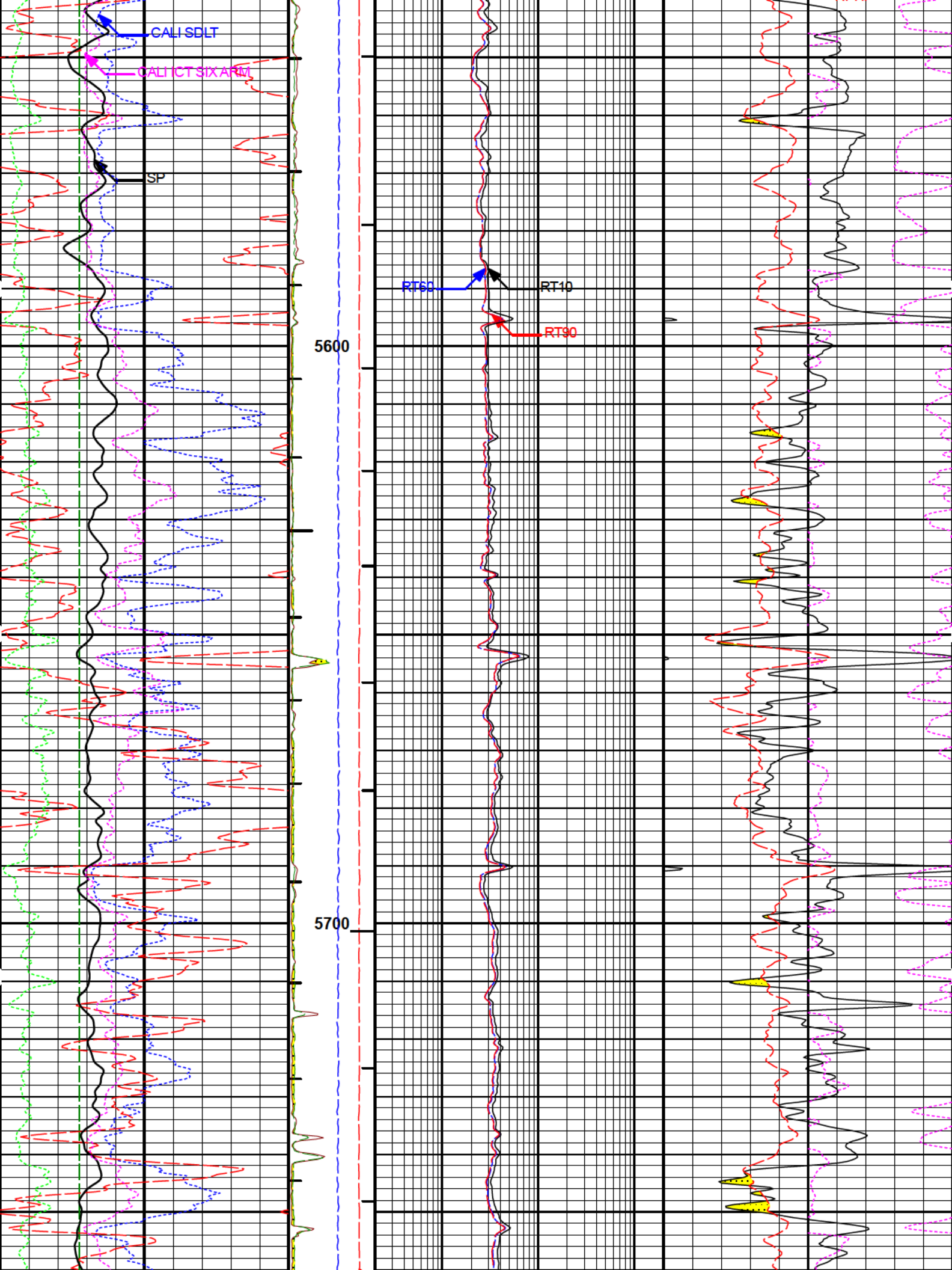
GR
MNOR
CH TENS
TENS
RHOB
NPHI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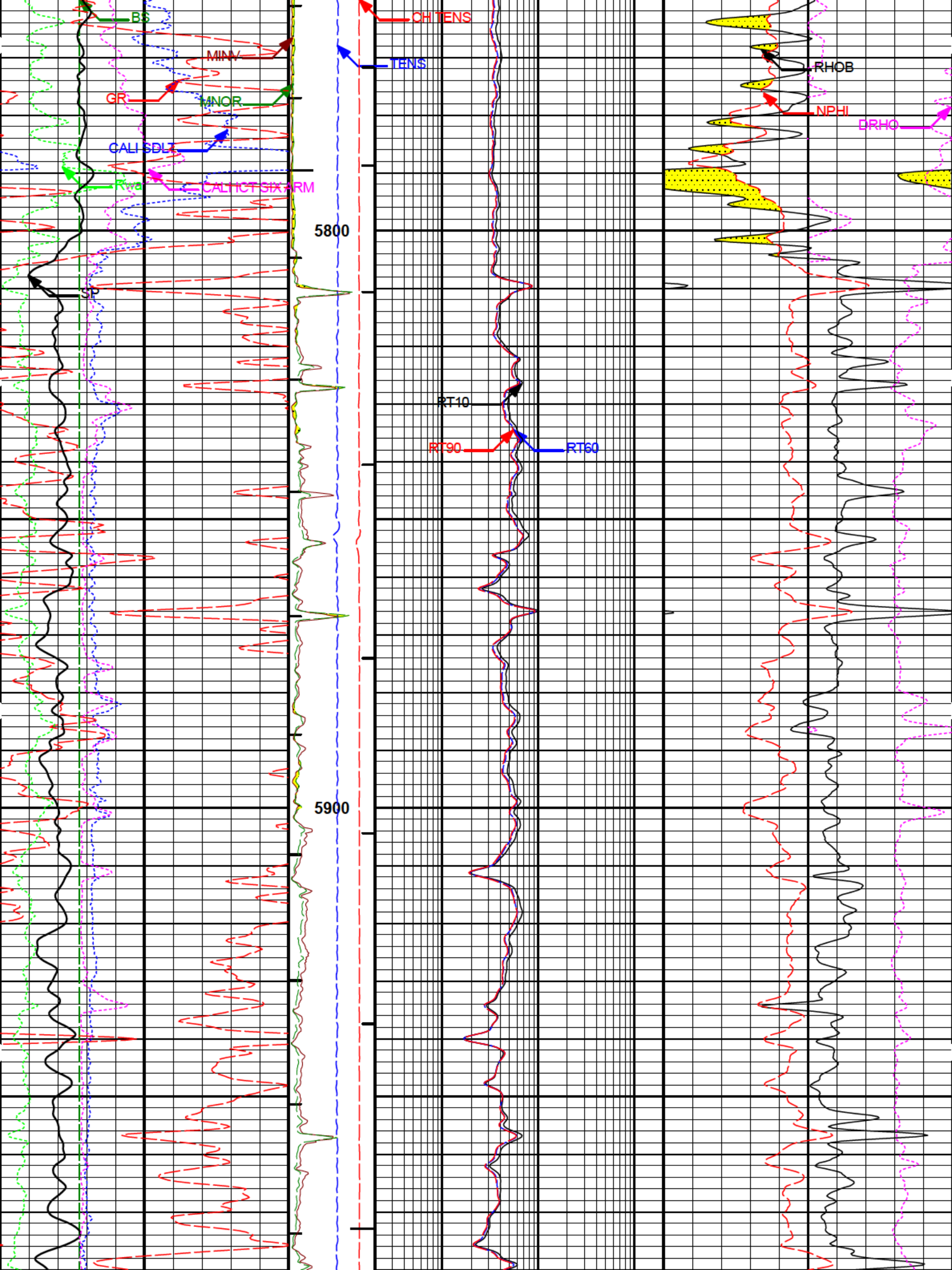
CALI ICT SIX ARM
SP
RT60
RT10
RT90
5600
5700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MINV
GR
MNOR
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Rwa
CALI CT SIX ARM
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TENS
RHOB
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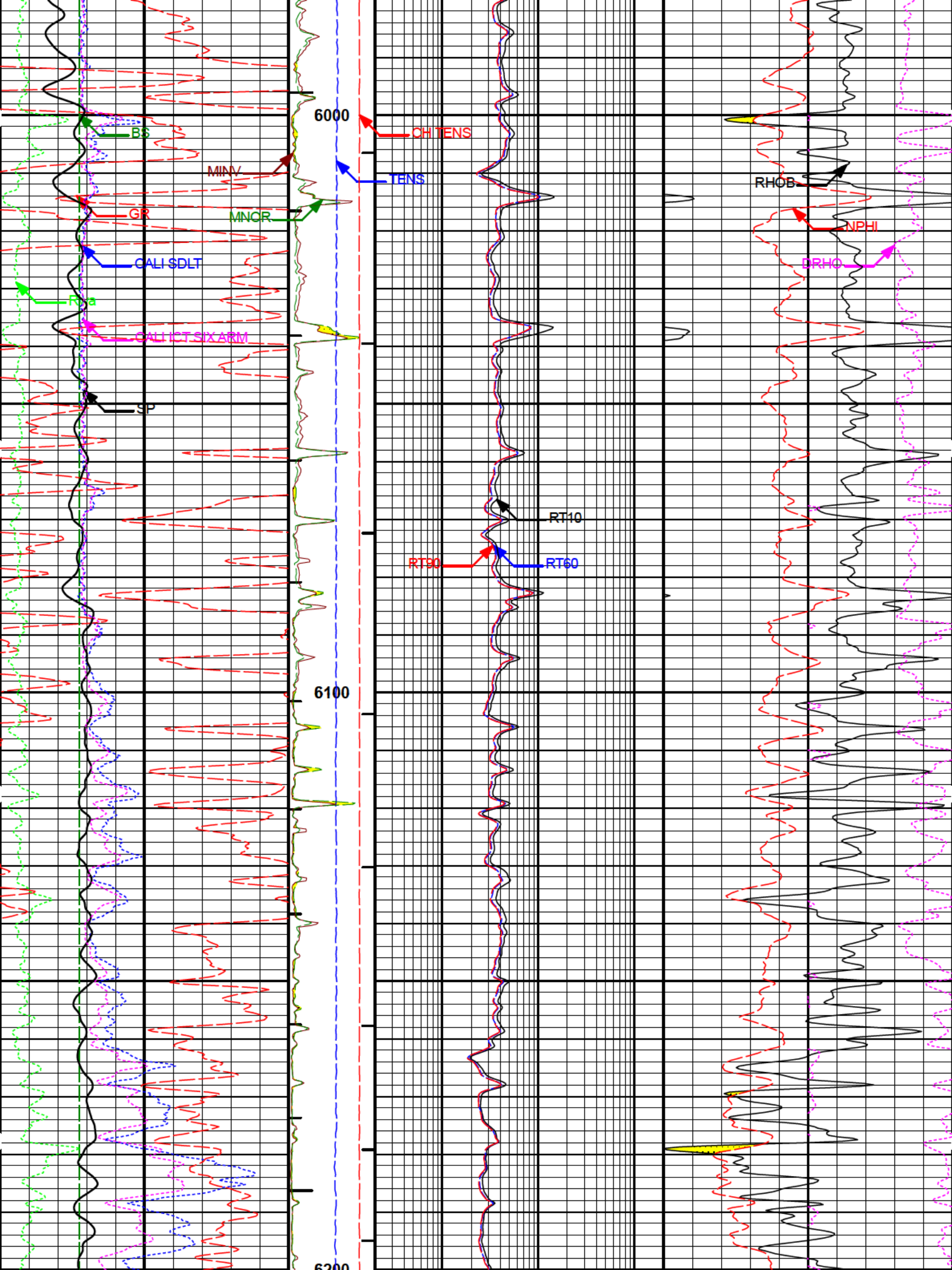
RT90
RT60
5900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RT60
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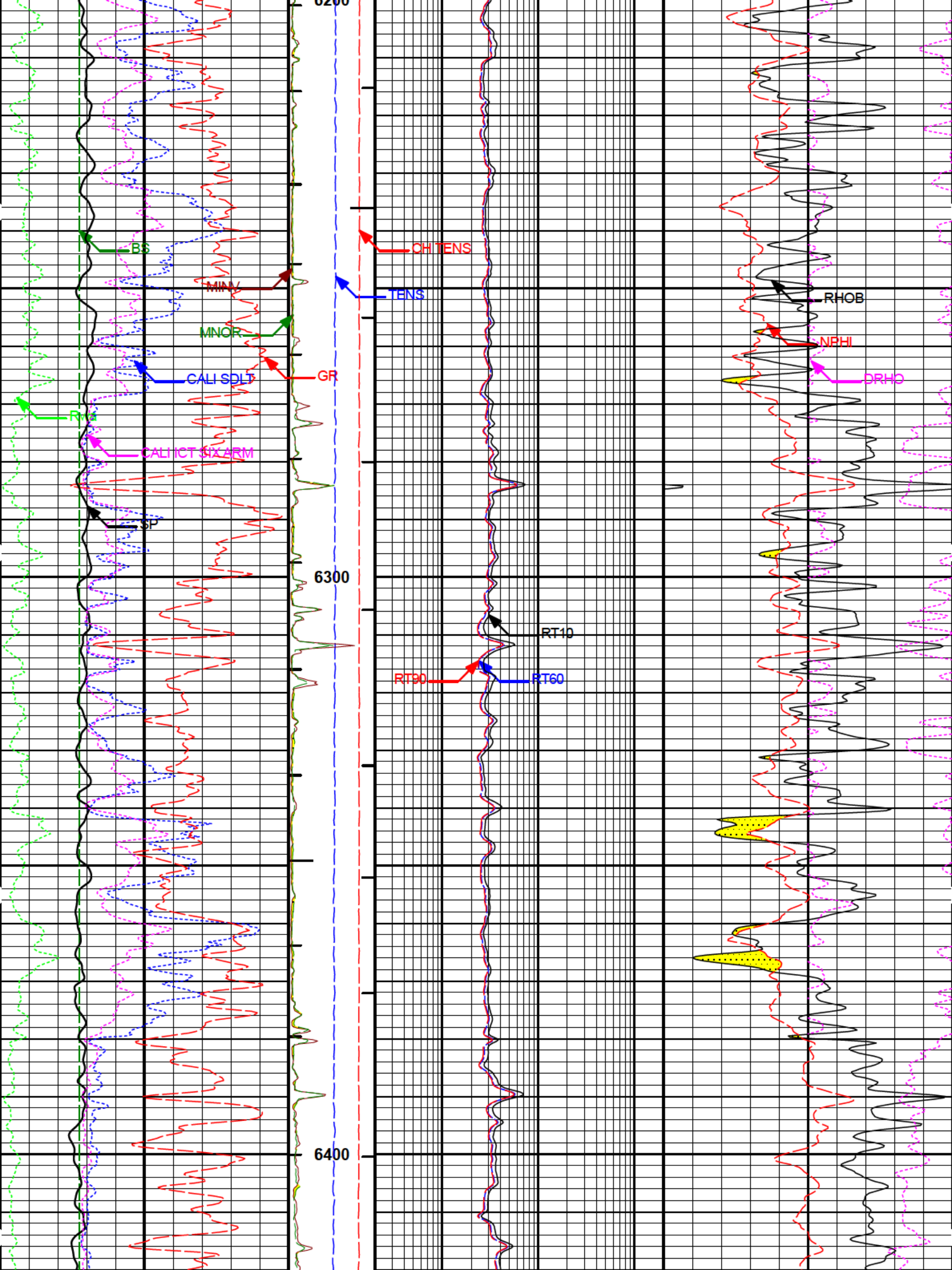
NPHI
DRHO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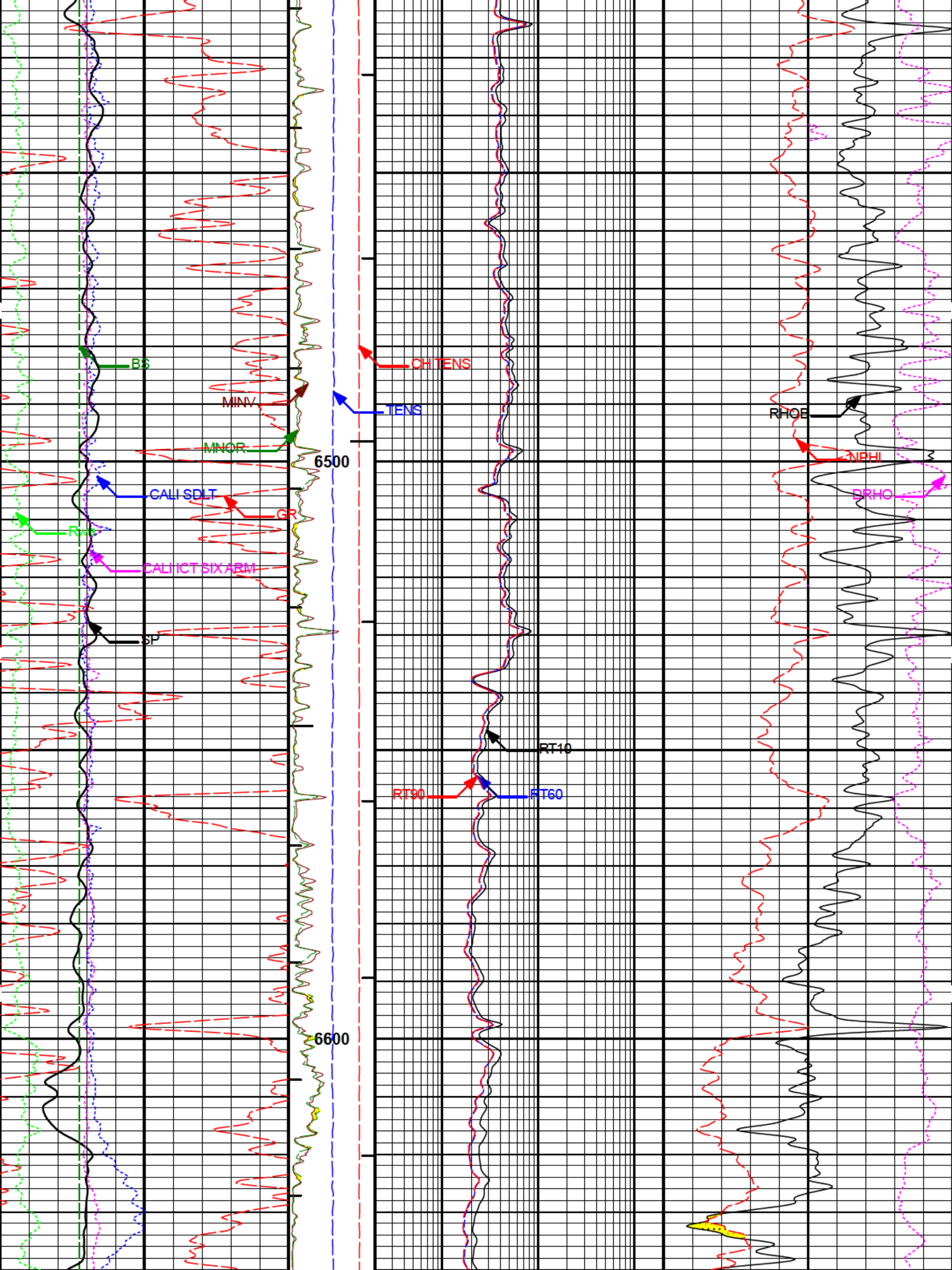
RHOB
NPHI
DRHO
6400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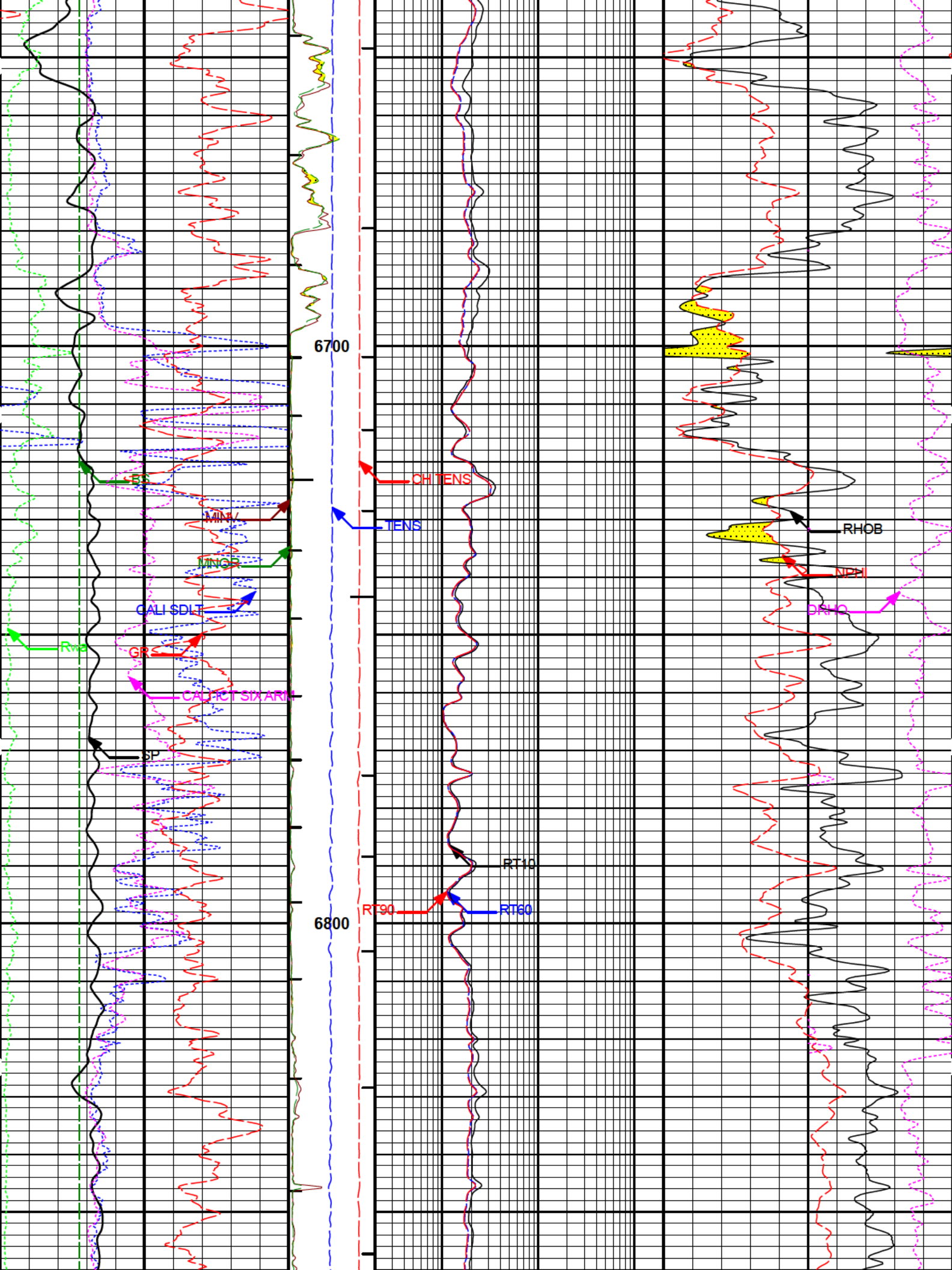
NPHI
DRHO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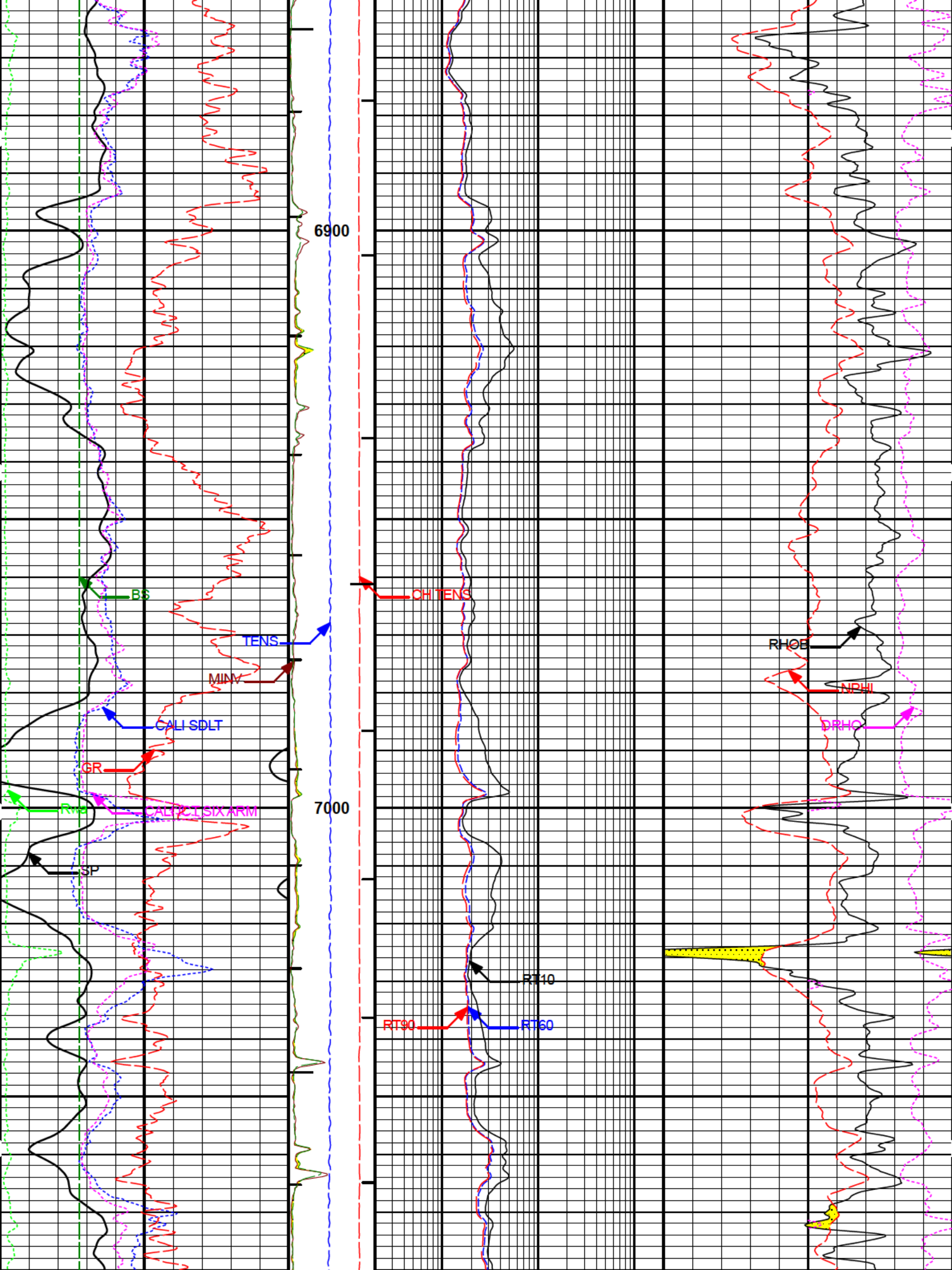
DRHO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CHI TENS
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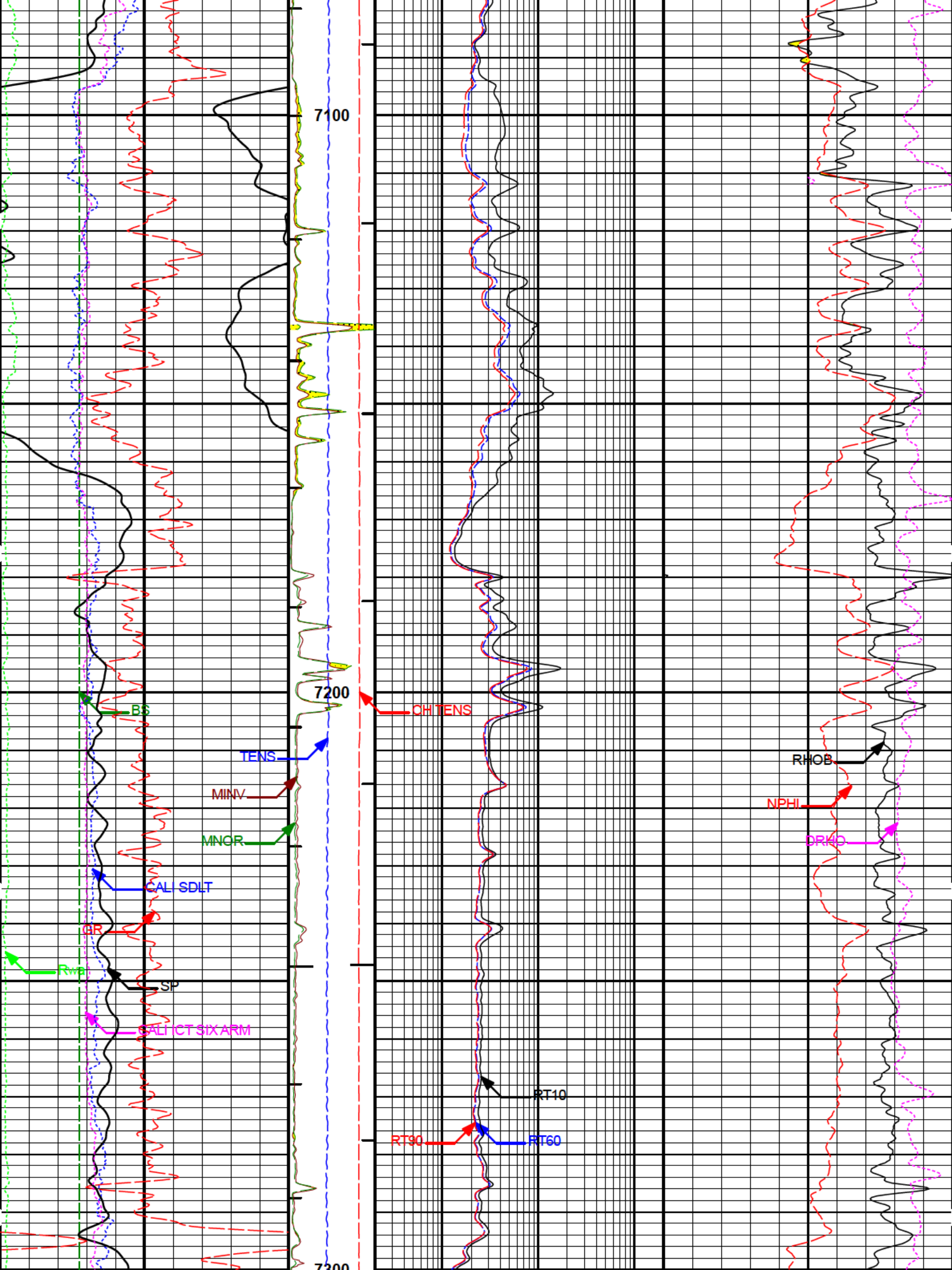
RT10
RT90
RT60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7200
7300
BS
TENS
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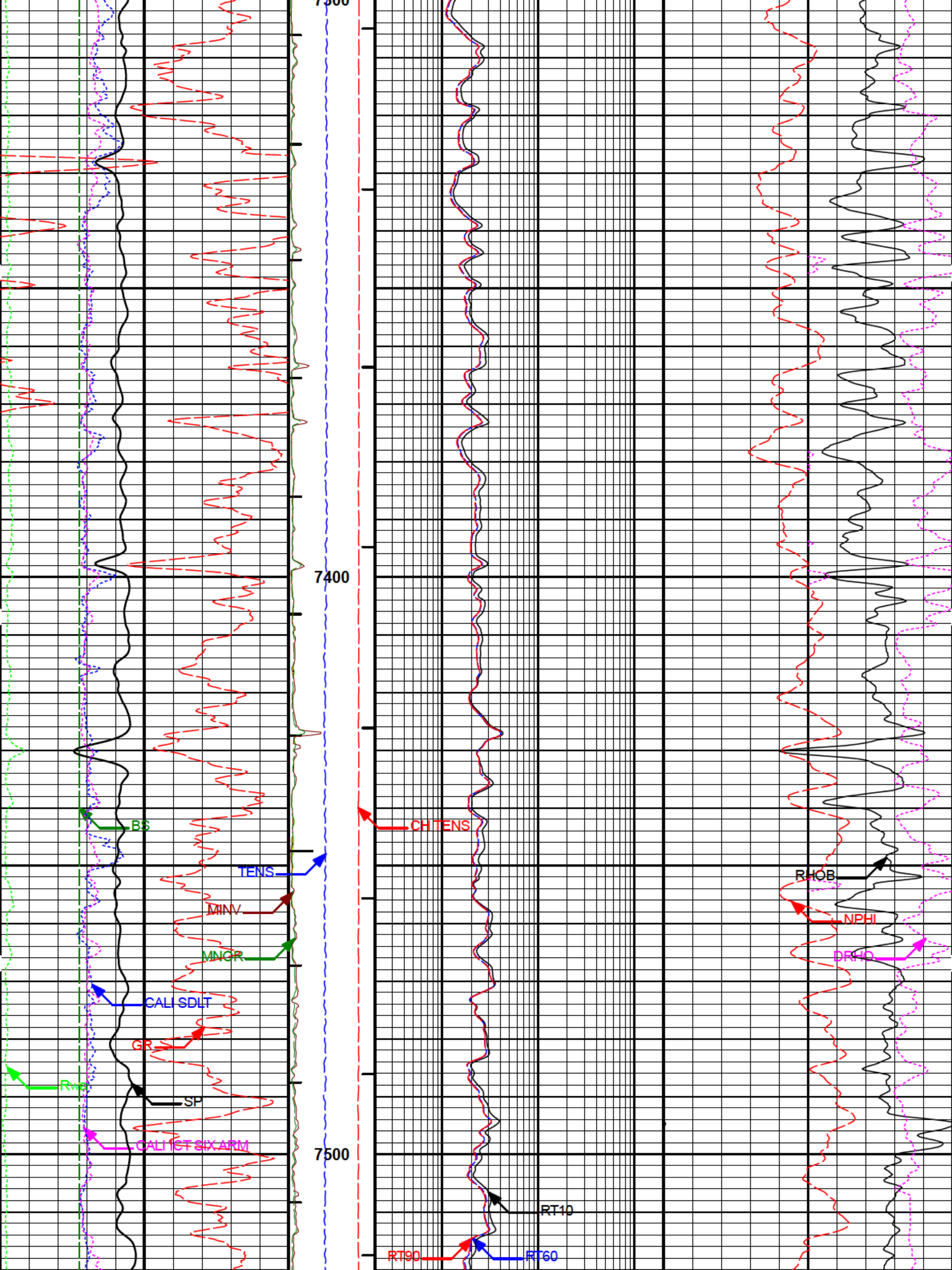
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7400
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BS
CH TENS
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RT90
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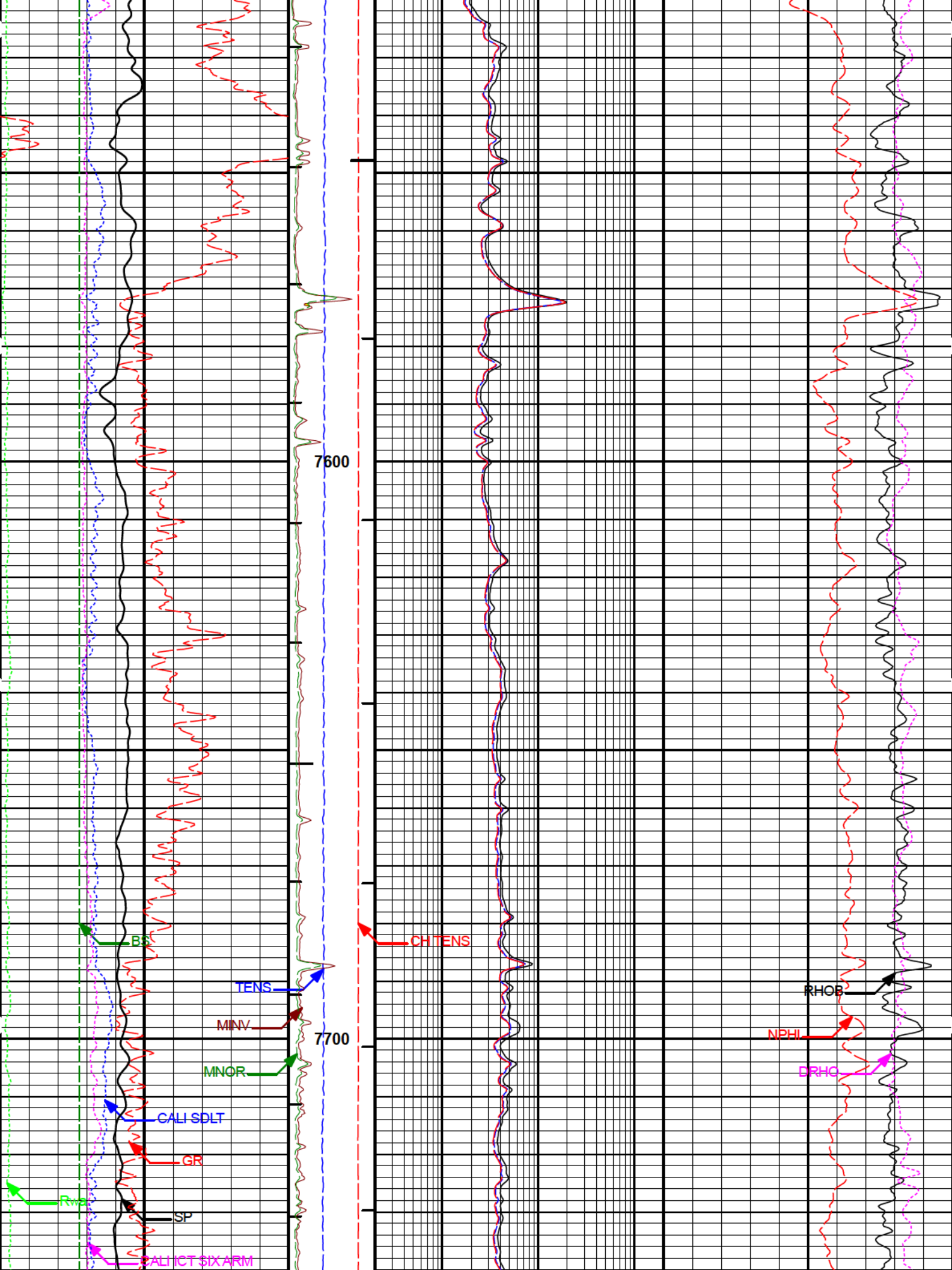
7600
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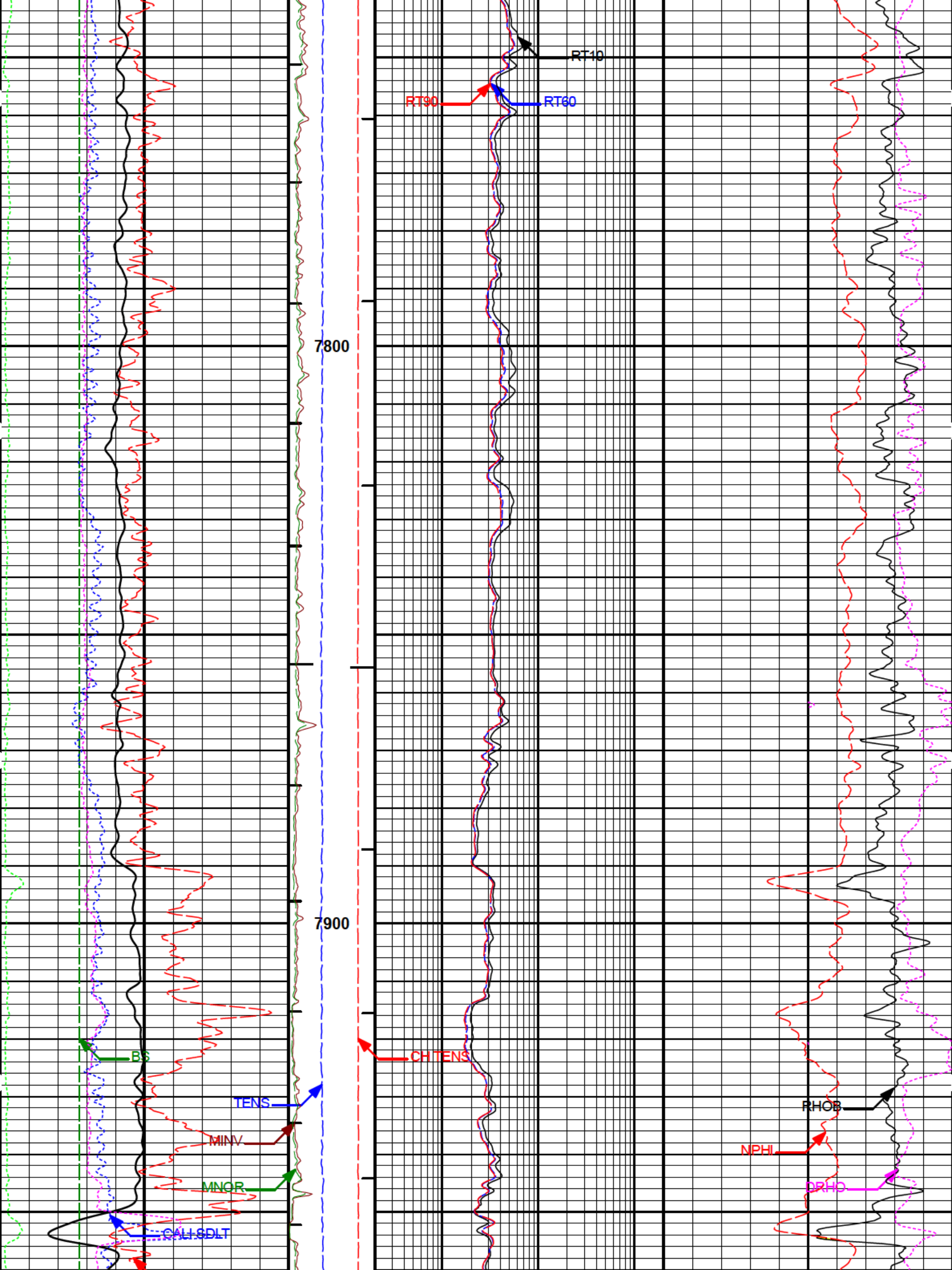
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7800
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BS
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MNOR
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RHOB
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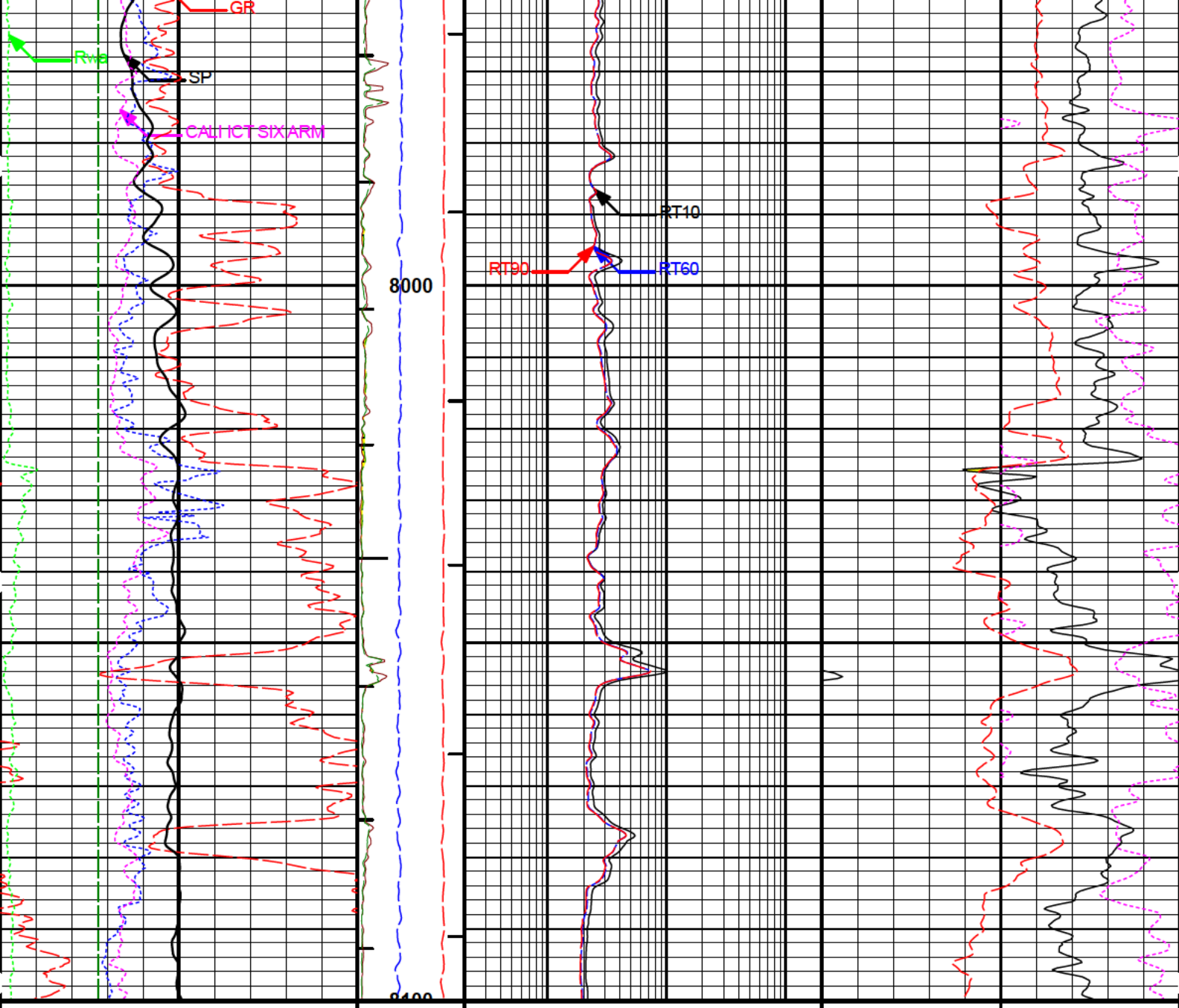


0	Rwa	5	1 : 240	0.2	RT10	200	-0.3	DRHO 0.2
	ohm-metre		ft		ohmm			g/cc
6	BS	16	0 MNOR 40	0.2	RT60	200	1.65	RHOB 2.65
	inches		ohmm		ohmm			g/cc
0	GR	150	0 MINV 40	0.2	RT90	200	60	NPHI 0
	gapi		ohmm		ohmm			%
	SP		TENS					
	-]10[+		10000 0					
6	CALI SDLT	16	CH TENS					
	inches		10000 0					
6	CALI ICT SIX ARM	16	AHV					
	inches							
			BHV					

HALLIBURTON

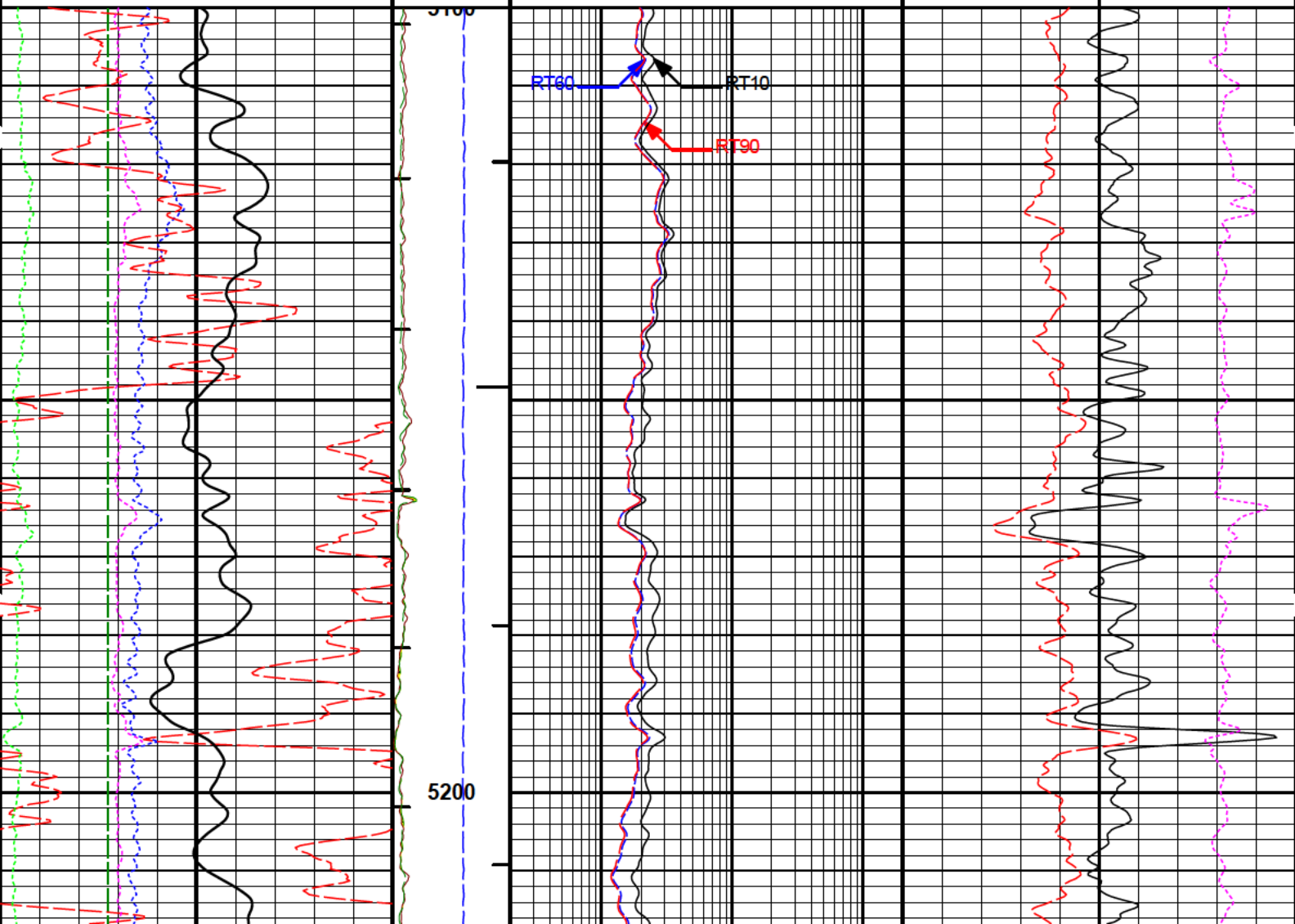
Plot Time: 11-Dec-19 04:42:56
Plot Range: 5100 ft to 8100 ft
Data: SHIDELER 1-28\Well Based\DAQ-0001-002\

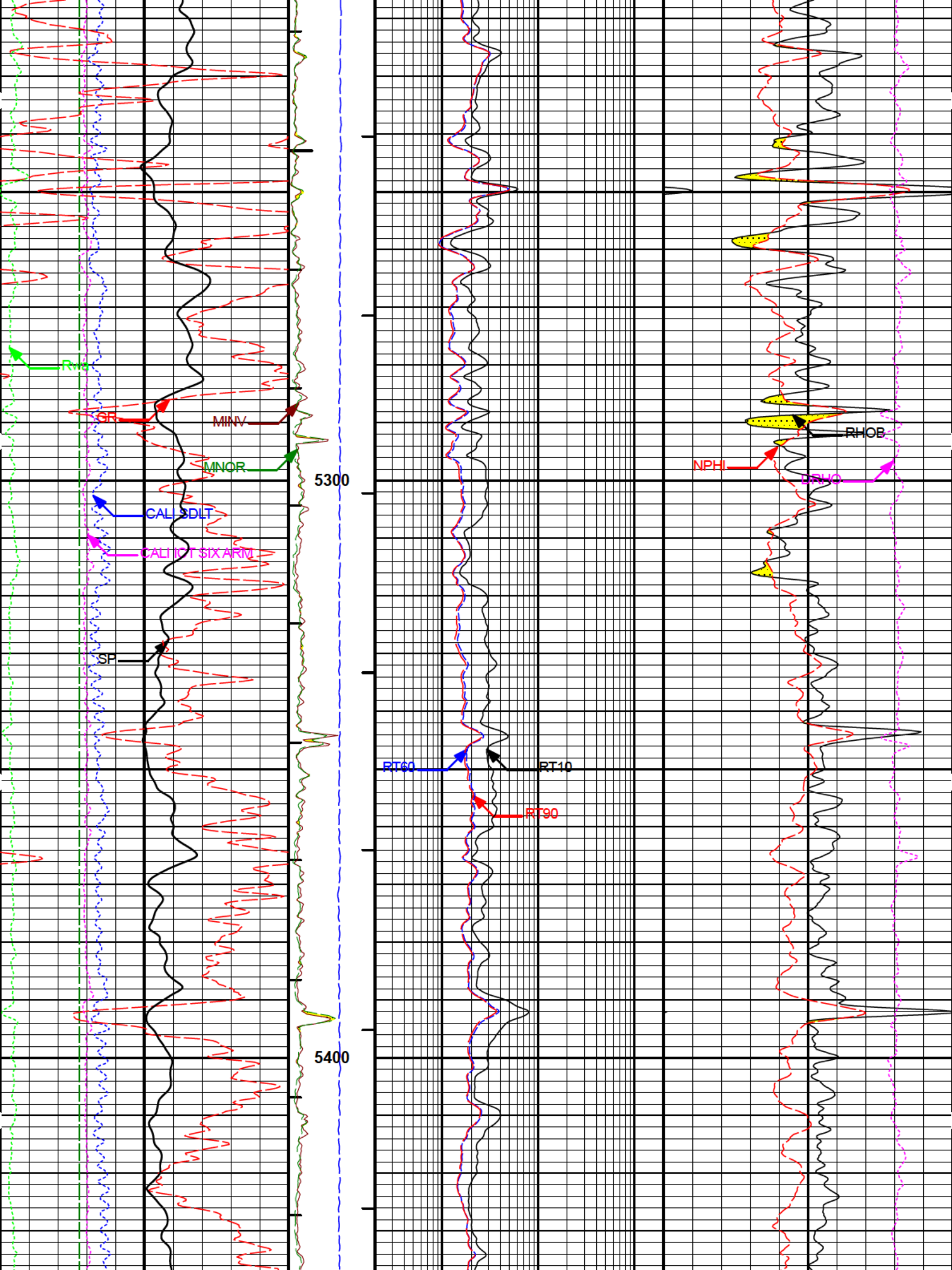
Plot File: \\TC\REPEAT

REPEAT PASS

5" = 100'

	BHV			
6 CALI ICT SIX ARM 16 inches	AHV			
6 CALI SDLT 16 inches	CH TENS 10000 0			
SP -]10[+	TENS 10000 0			
0 GR 150 gapi	0 MINV 40 ohmm	0.2 RT90 200 ohmm	60 NPHI 0 %	
6 BS 16 inches	0 MNOR 40 ohmm	0.2 RT60 200 ohmm	1.65 RHOB 2.65 g/cc	
0 Rwa 5 ohm-metre	1 : 240 ft	0.2 RT10 200 ohmm	-0.3 DRHO 0.2 g/cc	

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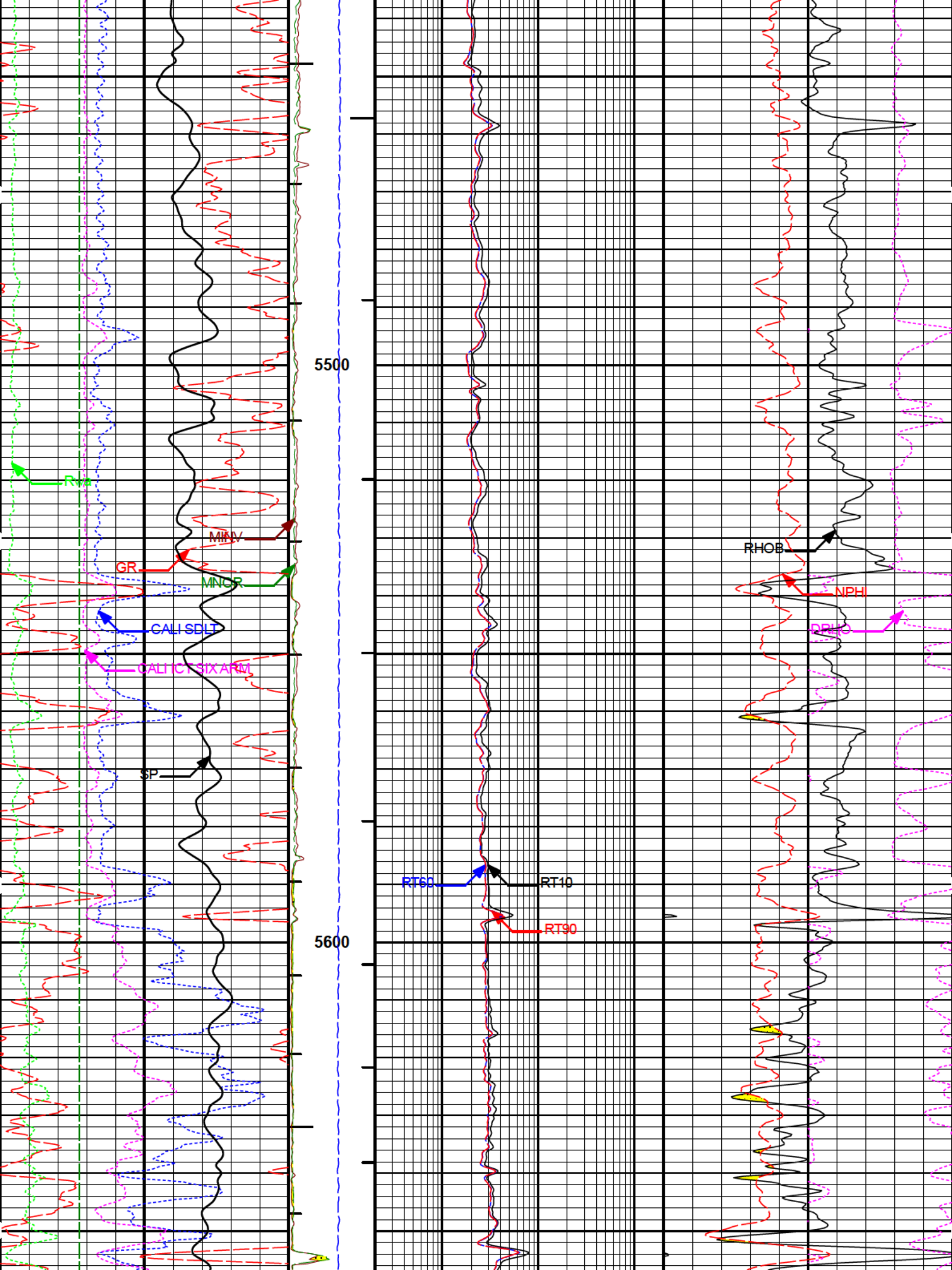
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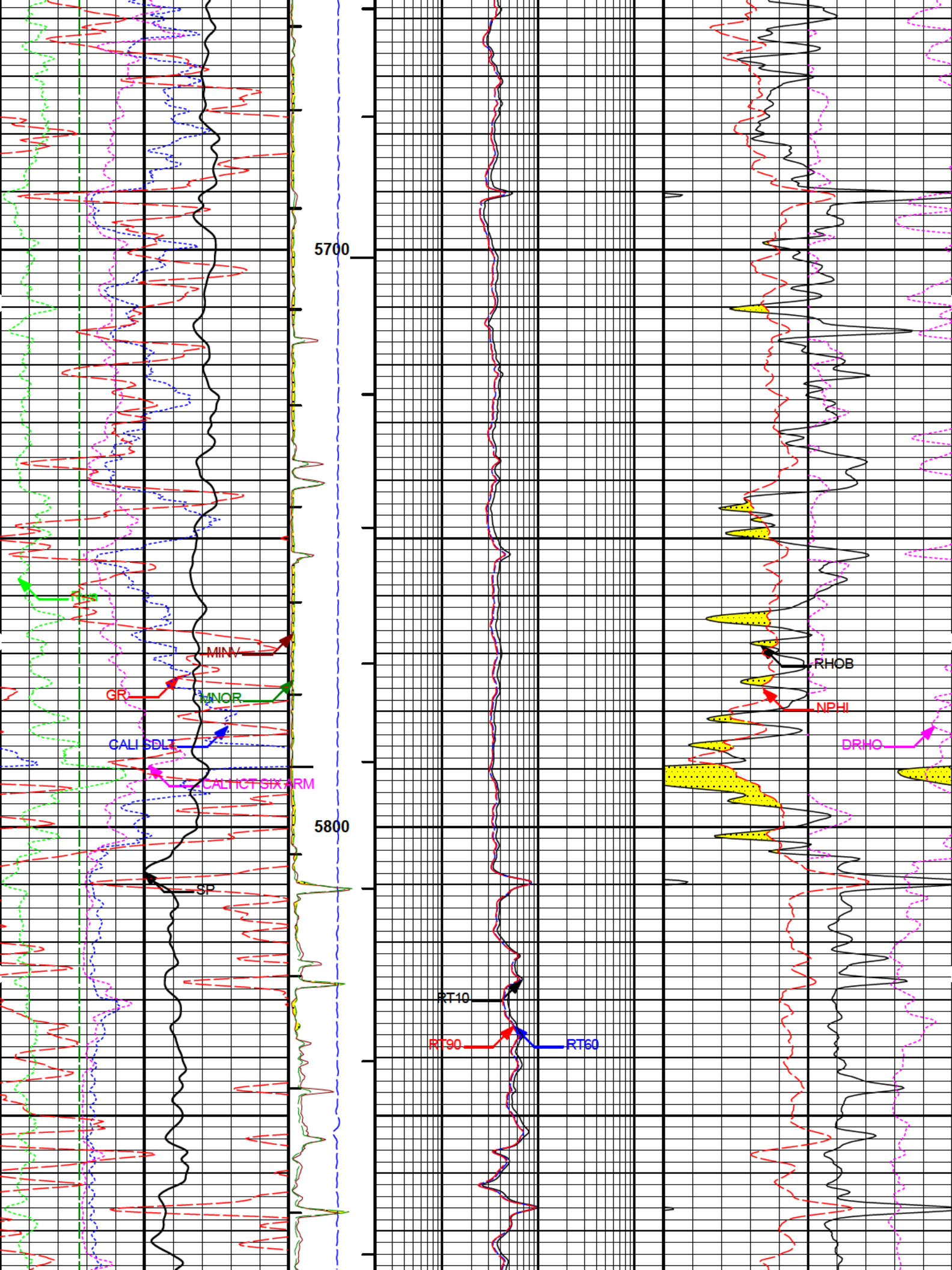
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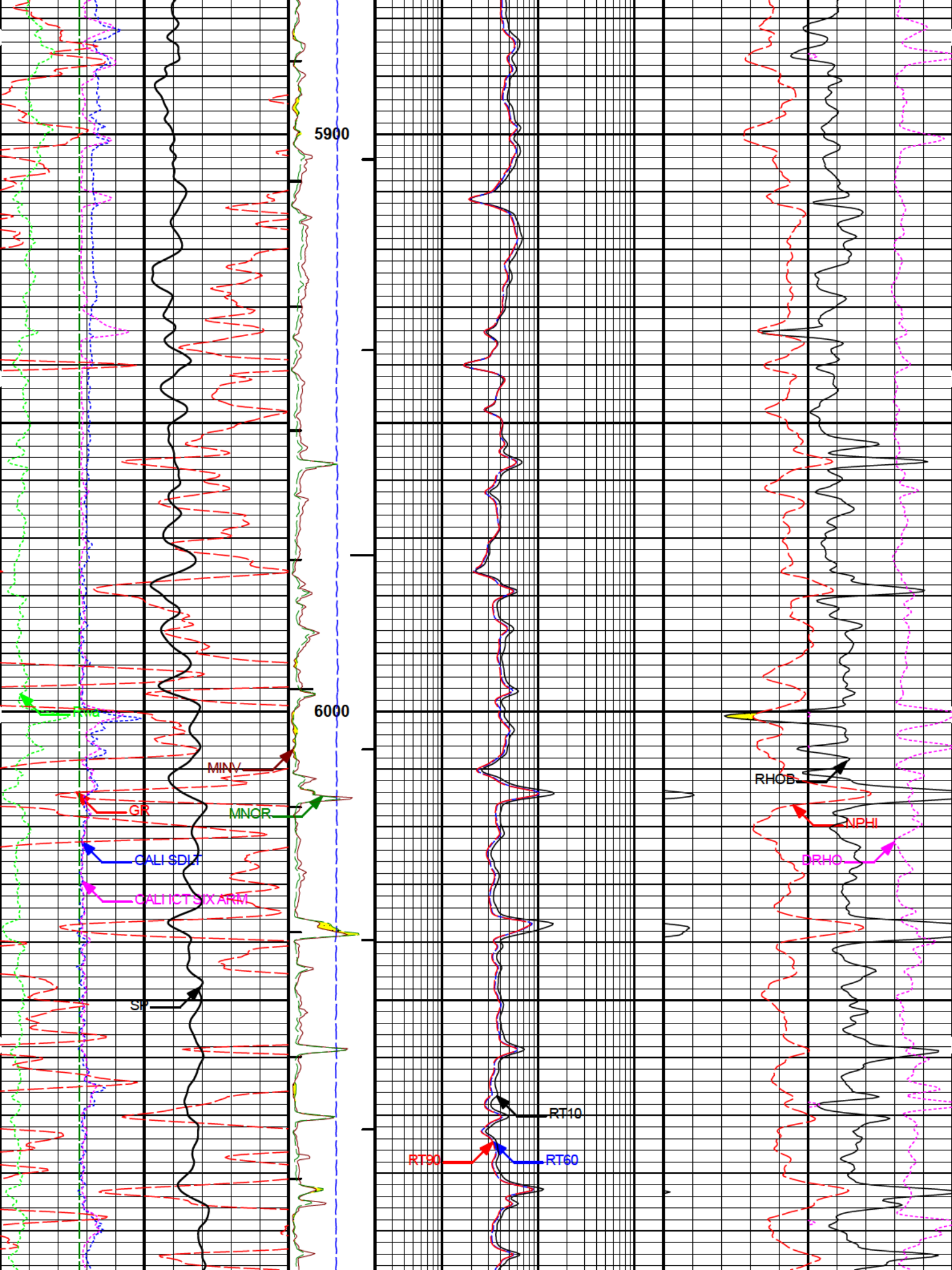
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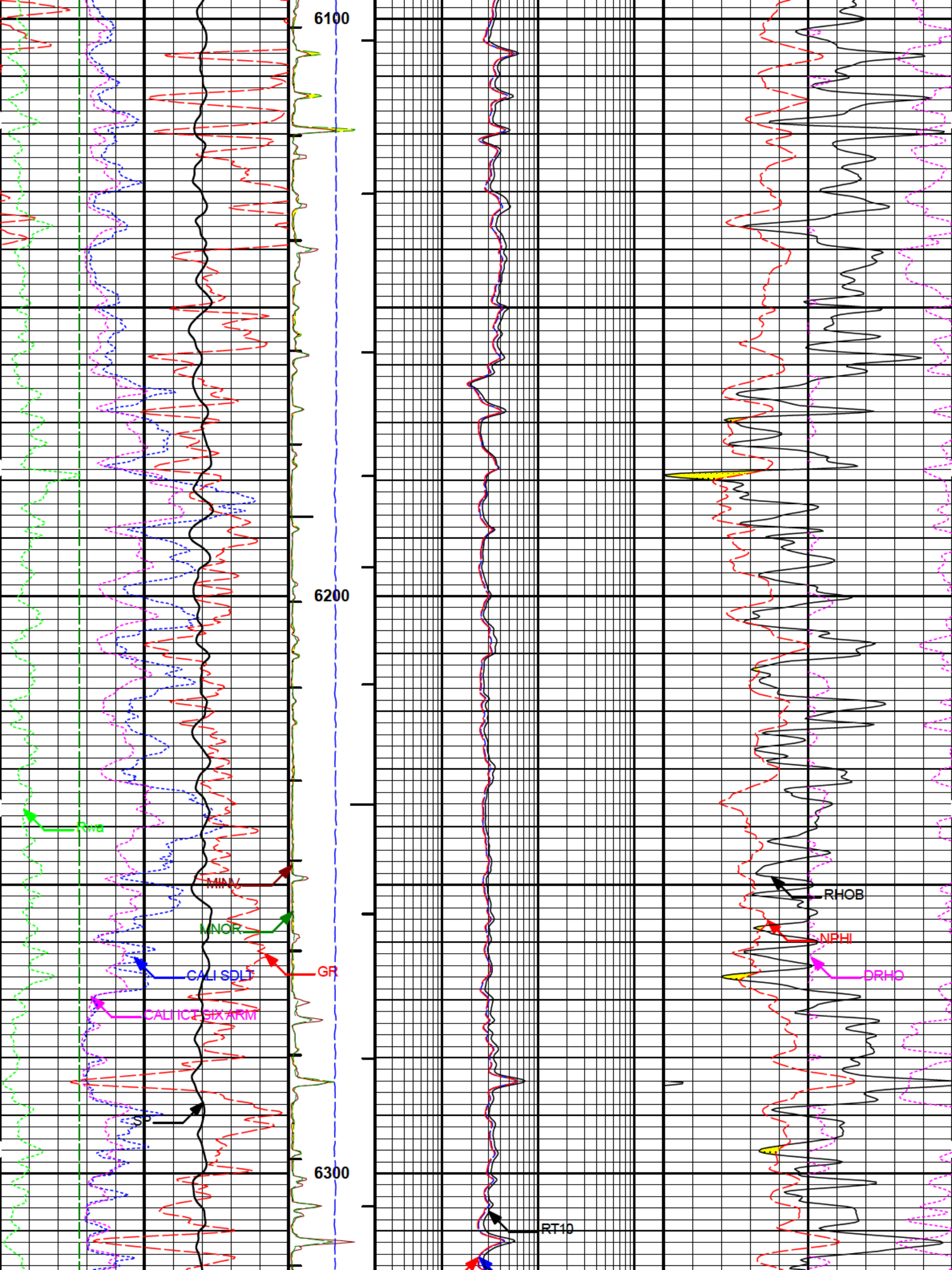
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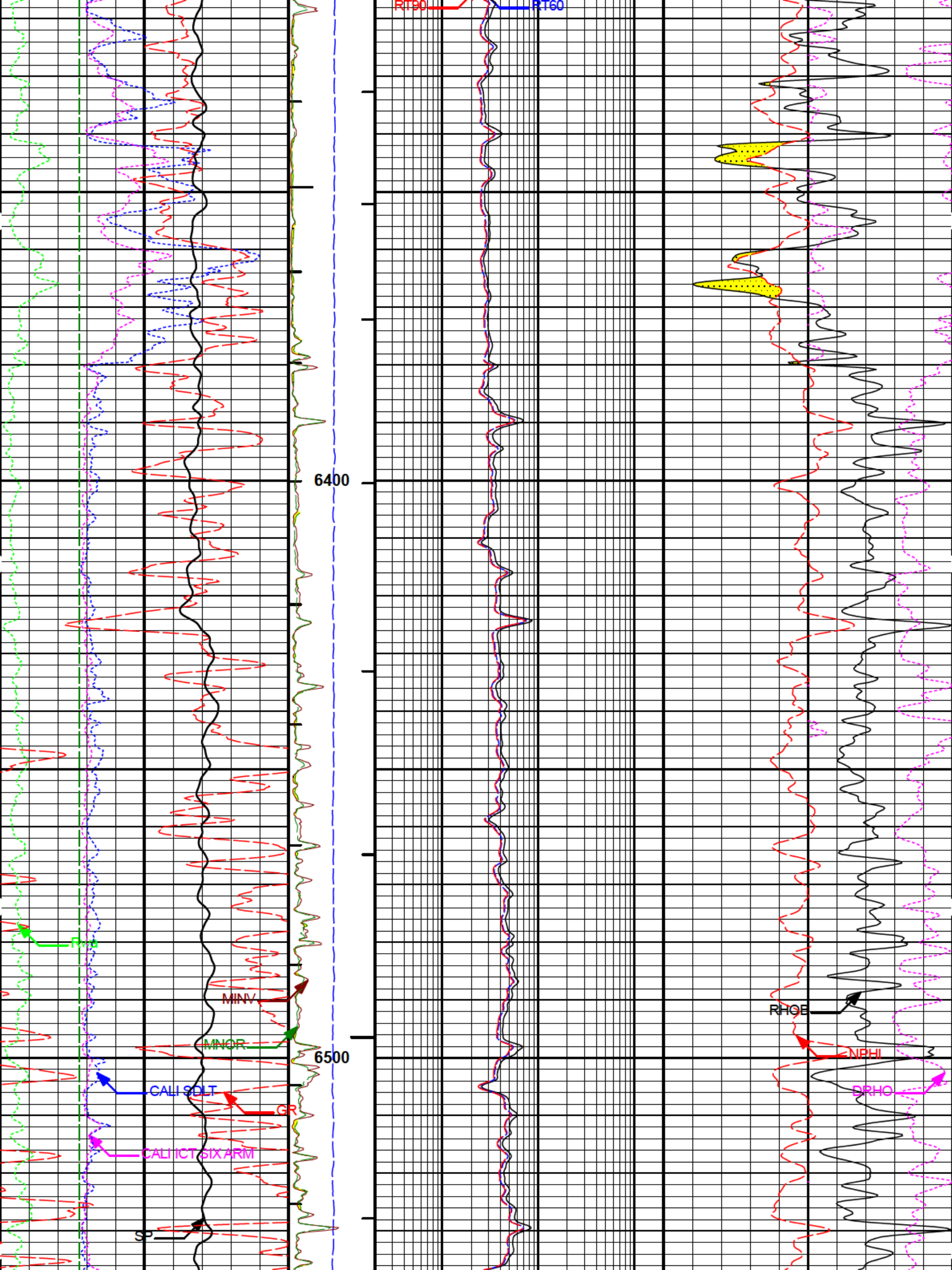
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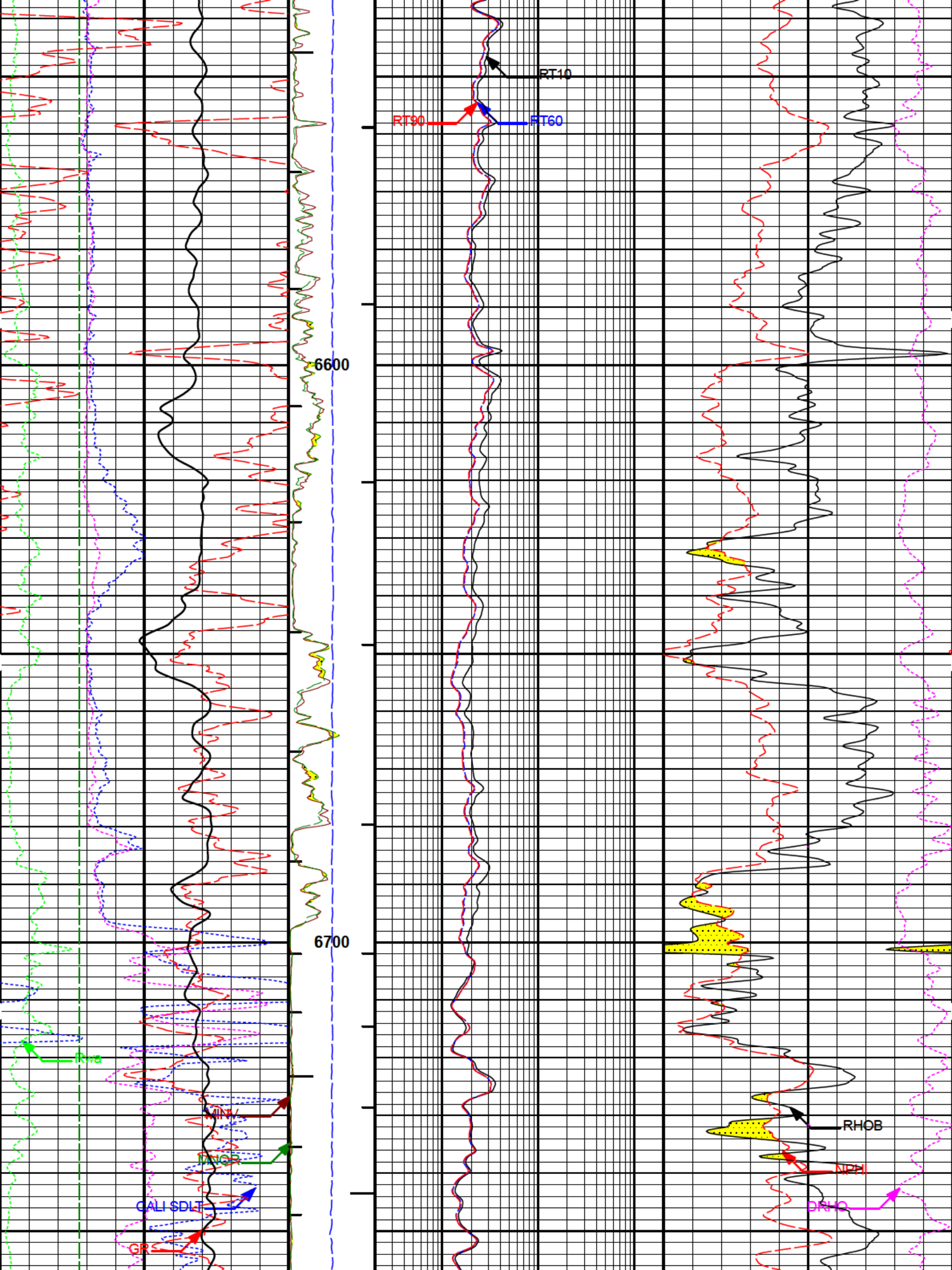
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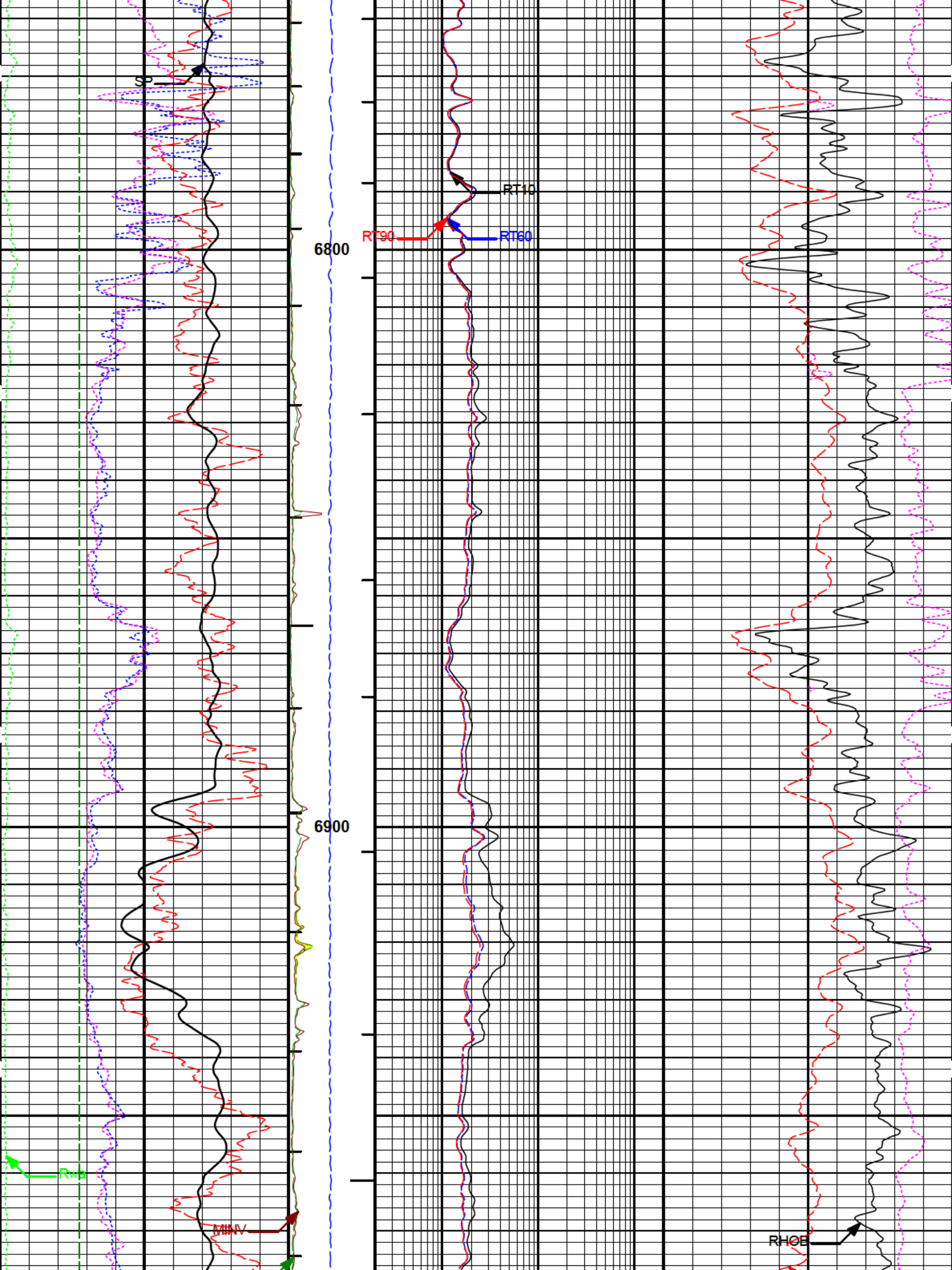
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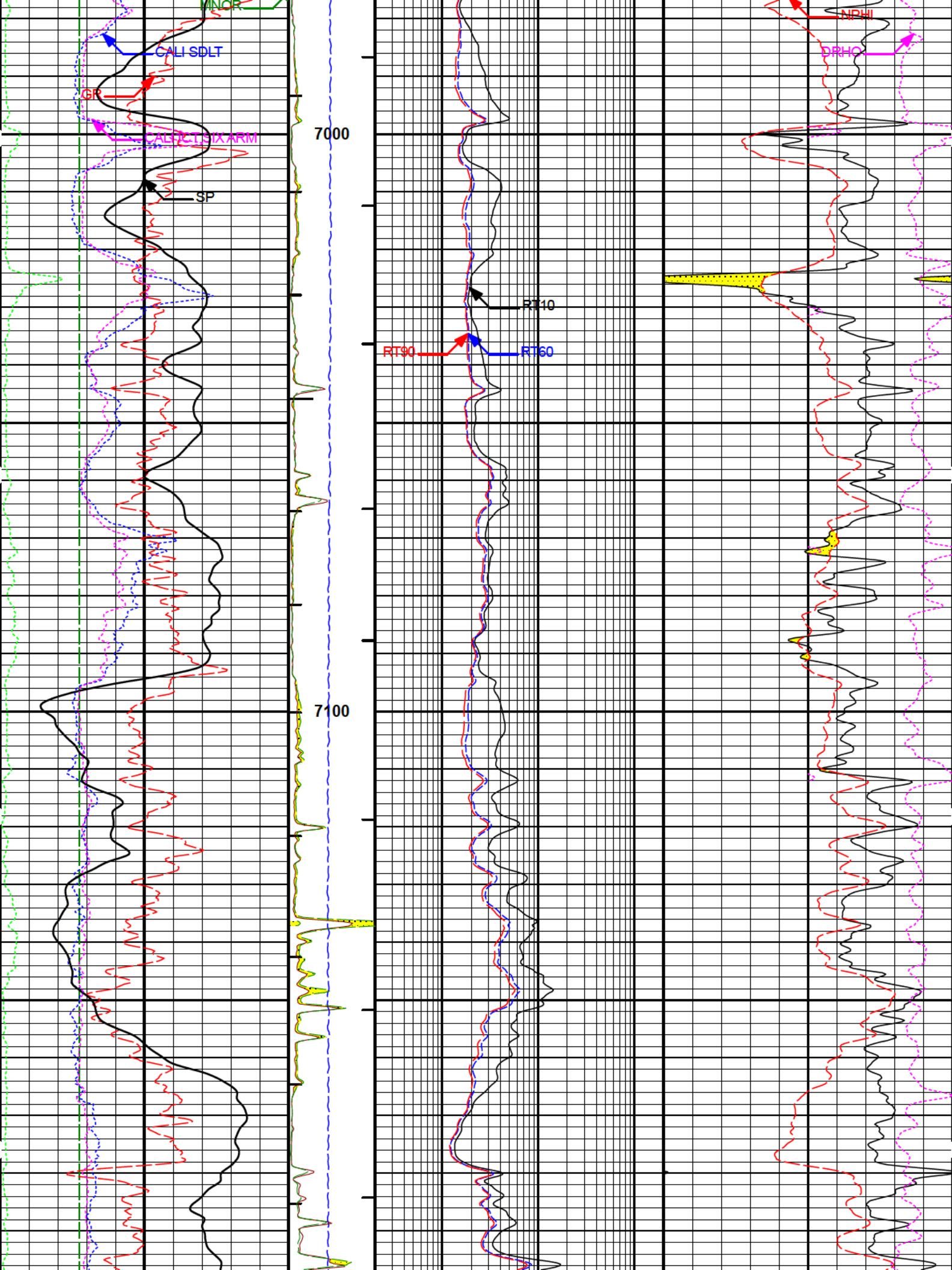
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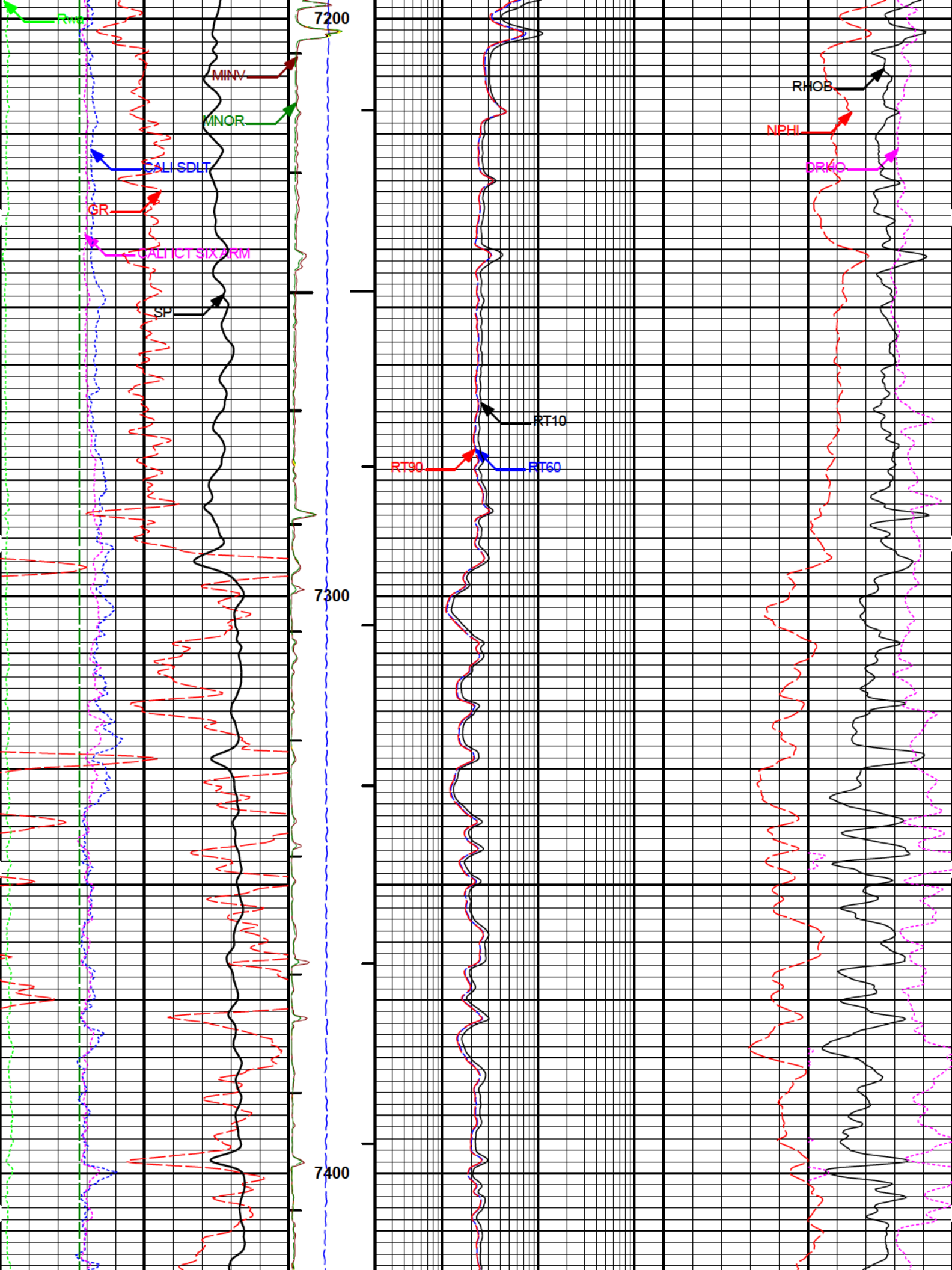
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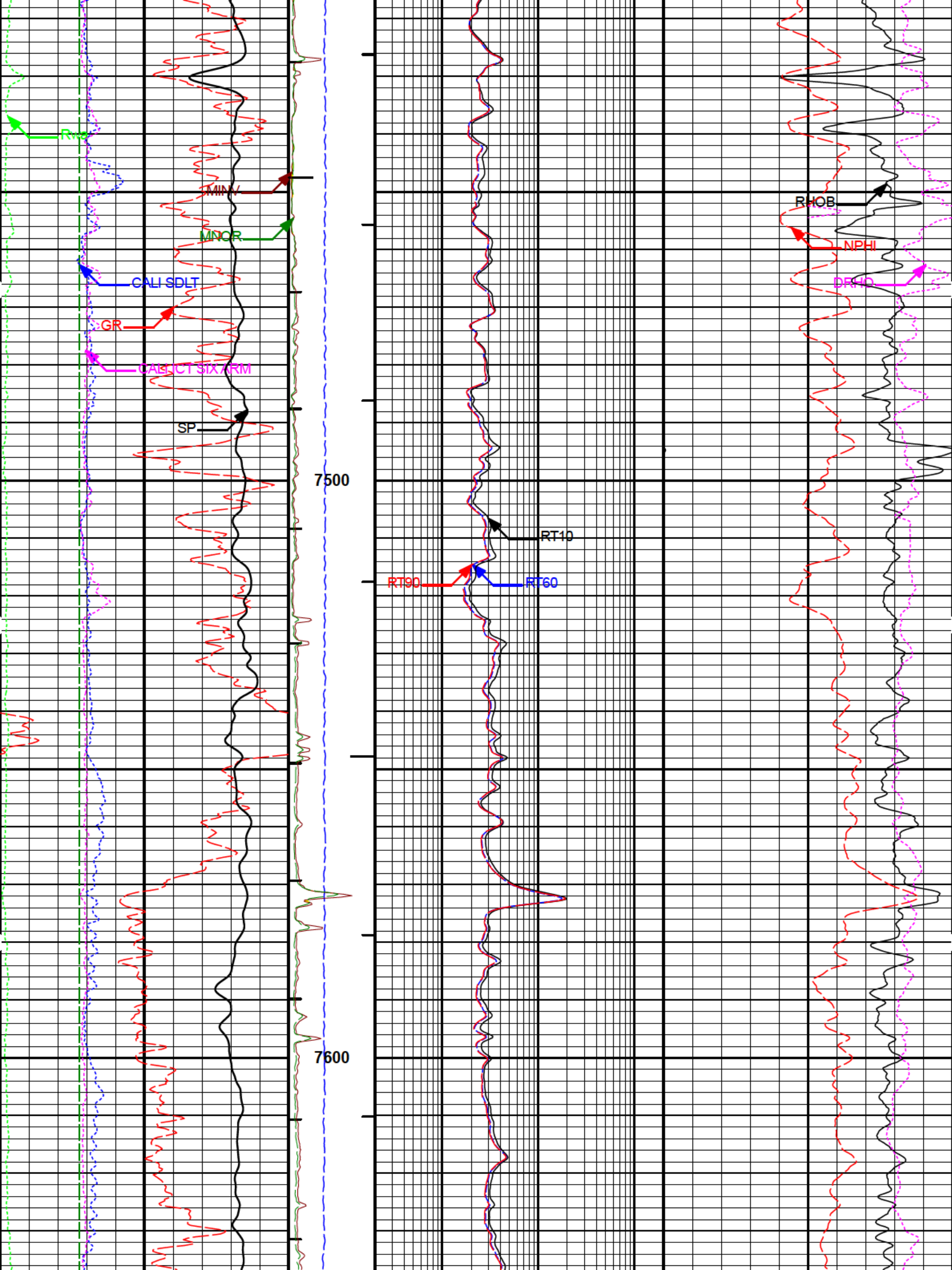
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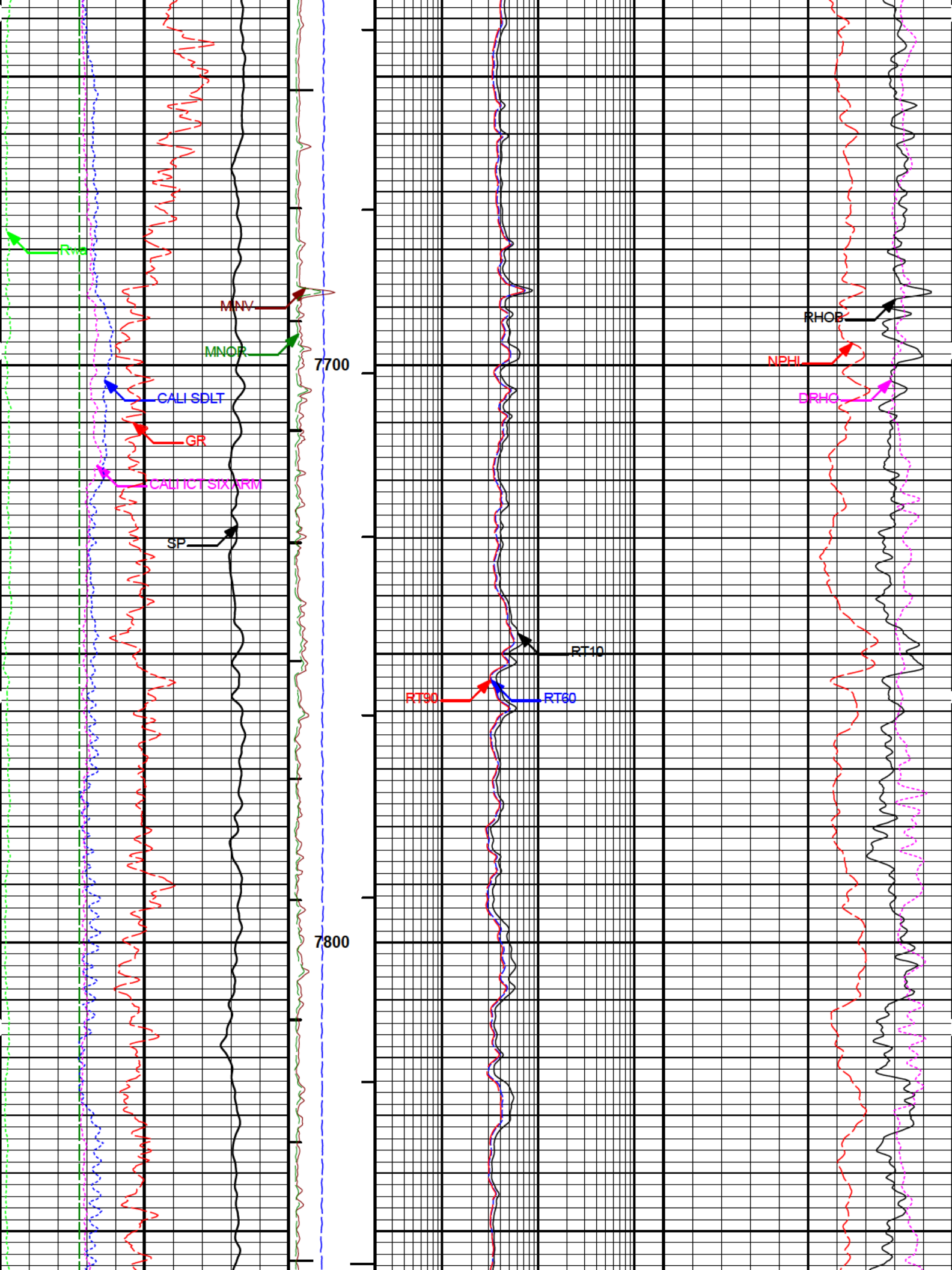
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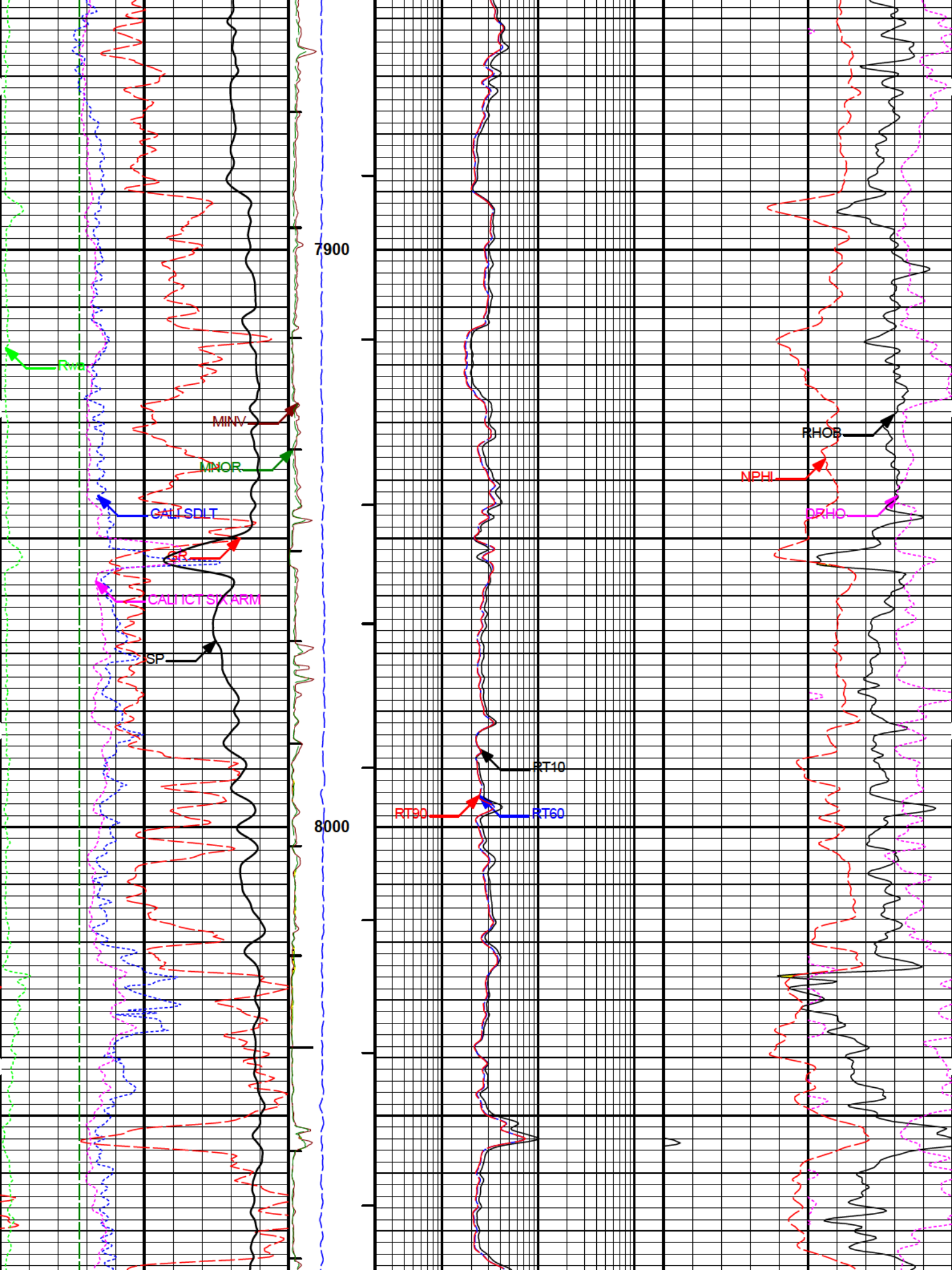
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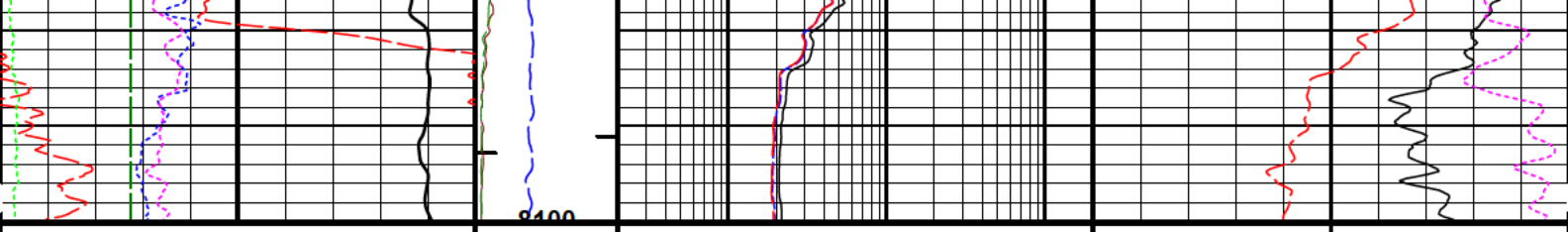


HALLIBURTON

CALIBRATION REPORT

DOWNHOLE TENSION SHOP CALIBRATION

Tool Name:	**RWCH - 11420838**	**Reference Calibration Date:**	**09-Dec-19 05:08:17**
Engineer:	**T. FOSTER**	**Calibration Date:**	**11-Dec-19 02:18:36**
Software Version:	**WL INSITE R6.2.1 (Build 2)**	**Calibration Version:**	**1**

DOWNHOLE LOAD CELL

Measurement	Tool Value	Measurement	Calibrated	Units
Low	-640.98	-31.68	0.00	lbs
High	8155.15	2065.37	2000.00	lbs

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	**GTET - 11795753**	**Reference Calibration Date:**	**31-Jul-19 12:52:15**
Engineer:	**T. FOSTER**	**Calibration Date:**	**16-Nov-19 15:11:31**
Software Version:	**WL INSITE R6.2.1 (Build 2)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB 67

Calibrator API Reference:243.00 api

Equivalent Calibrator API Reference:247.3 api

Measurement	Measured	Calibrated	Units
Background	56.5	56.8	api
Background + Calibrator	302.3	304.1	api
Calibrator	245.8	247.3	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	**GTET - 11795753**	**Reference Calibration Date:**	**16-Nov-19 15:11:31**
Engineer:	**T. FOSTER**	**Calibration Date:**	**10-Dec-19 12:36:54**
Software Version:	**WL INSITE R6.2.1 (Build 2)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB 67

Calibrator API Reference:243.00 api

Equivalent Calibrator API Reference:247.3 api

Field Verification	Shop	Field	Units
Background	56.8	89.1	api
Background + Calibrator	304.1	334.7	api
Calibrator	247.3	245.6	api

Shop	Field	Difference	Tolerance
247.3	245.6	1.7	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 11660717 **Reference Calibration Date:** 31-Jul-19 13:41:52

Engineer: T. FOSTER **Calibration Date:** 16-Nov-19 14:57:20

Software Version: WL INSITE R6.2.1 (Build 2) **Calibration Version:** 1

Logging Source S/N: 61807B

Tank Serial Number: 105014

Reference value assigned to Tank: 54.500

Snow Block S/N: TRUCK 21

Calibration Tank Water Temperature: 76 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.97427	0.97268	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)				
Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change	Control Limit On Change
Porosity (decp):	0.2272	0.2267	0.0005	+/- 0.0020
Calibrated Ratio:	10.2754	10.2585	0.017	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0580	0.02000 - 0.09000

PASS/FAIL SUMMARY	
Background Check:	Passed
Gain-Range Check:	Passed
Snow-Block Check:	Passed

DUAL SPACED NEUTRON FIELD CALIBRATION

Tool Name: DSNT - 11660717 **Reference Calibration Date:** 16-Nov-19 14:57:20

Engineer: T. FOSTER **Calibration Date:** 10-Dec-19 12:42:51

Software Version: WL INSITE R6.2.1 (Build 2) **Calibration Version:** 1

Logging Source S/N: 61807B

Snow Block S/N: TRUCK 21

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0580	0.0482	-0.0097	+/- 0.0150

PASS/FAIL SUMMARY	
Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - 10673800
Reference Calibration Date: 31-Jul-19 17:21:07
Engineer: T. FOSTER
Calibration Date: 16-Nov-19 17:03:00
Software Version: WL INSITE R6.2.1 (Build 2)
Calibration Version: 1
Host Tool Name: DSNT - 11660717

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-2482.35	-2499.46	-7000.00 - -1000.00
Pad Gain	0.0003834	0.0003841	0.0002000 - 0.0006000
Arm Offset	-850.82	-819.63	-5000.00 - 3000.00
Arm Gain	0.0005208	0.0005306	0.000300 - 0.000700
Arm Power	-0.000005061	-0.000005649	-0.000010000 - 0.000010000

The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER

Tool Diameter: 4.50 in

CALIBRATION RINGS

Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	2.00	2.00	0.00	+/- 0.20
Medium Ring (in)	3.75	3.75	0.00	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.45	6.50	0.05	+/- 0.20
Medium Ring (in)	8.19	8.25	0.06	+/- 0.20
Large Ring (in)	14.97	15.00	0.03	+/- 0.20

PASS/FAIL SUMMARY	
Calibration-Coefficients Range Check:	Passed
Ring-Measurement Check:	Passed

PASS/FAIL SUMMARY	
Calibration-Coefficients Range Check:	Passed

SDLT CALIPER FIELD CALIBRATION

Tool Name: SDLT - 10673800
Reference Calibration Date: 16-Nov-19 17:03:00
Engineer: T. FOSTER
Calibration Date: 10-Dec-19 12:38:39
Software Version: WL INSITE R6.2.1 (Build 2)
Calibration Version: 1

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.78	0.03	+/- 0.10
Ring Diameter	8.25	8.21	-0.04	+/- 0.15

PASS/FAIL SUMMARY	
Pad Extension Check:	Passed
Diameter Check:	Passed

MICRO LOG SHOP CALIBRATION

Tool Name:	**Microlog Pad - 10673800**	**Reference Calibration Date:**	**30-Oct-19 20:12:11**
Engineer:	**T. FOSTER**	**Calibration Date:**	**16-Nov-19 16:55:10**
Software Version:	**WL INSITE R6.2.1 (Build 2)**	**Calibration Version:**	**1**
Host Tool Name:	**DSNT - 11660717**		

CALIBRATION COEFFICIENT SUMMARY

Measurement	Micro Log Normal		Micro Log Lateral		
	Measured	Calibrated	Measured	Calibrated	Units
Tool Zero	-0.07	-0.07	-0.00	-0.00	ohmm
Calibration Point #1	-0.00	0.00	0.00	0.00	ohmm
Calibration Point #2	20.03	20.00	20.04	20.00	ohmm
Internal Reference	19.96	19.93	20.04	19.99	ohmm

Measurement	Micro Log Normal Tool Value	Micro Log Lateral Tool Value	Units
Tool Zero	0.05	0.20	V
Calibration Point #1	17.53	1.77	V
Calibration Point #2	5324.73	6904.44	V
Internal Reference	5306.53	6902.55	V

MICRO LOG FIELD CHECK

Tool Name:	**Microlog Pad - 10673800**	**Reference Calibration Date:**	**16-Nov-19 16:55:10**
Engineer:	**T. FOSTER**	**Calibration Date:**	**10-Dec-19 12:31:52**
Software Version:	**WL INSITE R6.2.1 (Build 2)**	**Calibration Version:**	**1**

Measurement	Micro Log Normal		Micro Log Lateral		
	Shop	Field	Shop	Field	Units
Tool Zero	-0.07	-0.07	-0.00	0.01	ohmm
Internal Reference	19.93	19.85	19.99	19.91	ohmm

Summary

Signal	Shop	Field	Difference	Tolerence
Microlog Normal	19.93	19.85	0.08	+/- 0.80
Microlog Lateral	19.99	19.91	0.08	+/- 0.80

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name:	**SDLT Pad - 10865883**	**Reference Calibration Date:**	**16-Nov-19 13:27:02**
Engineer:	**T. FOSTER**	**Calibration Date:**	**16-Nov-19 13:48:14**
Software Version:	**WL INSITE R6.2.1 (Build 2)**	**Calibration Version:**	**1**

Logging Source S/N: 5477GW

Aluminum Block S/N: 11342493	Density: 2.607g/cc	Pe: 3.100
Magnesium Block S/N: 10743529	Density: 1.680g/cc	Pe: 2.520

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0253	1.0275	0.90 - 1.10
Near Dens Gain	1.0126	0.9943	0.90 - 1.10
Near Peak Gain	1.0028	0.9671	0.90 - 1.10
Near Lith Gain	0.9672	0.9271	0.90 - 1.10
Far Bar Gain	1.0142	1.0129	0.90 - 1.10
Far Dens Gain	1.0007	1.0013	0.90 - 1.10
Far Peak Gain	0.9889	0.9935	0.90 - 1.10
Far Lith Gain	0.9629	0.9694	0.90 - 1.10

Near Bar Offset	-0.0616	-0.0834	NONE
Near Dens Offset	0.0422	0.2020	NONE
Near Peak Offset	0.1188	0.4142	NONE
Near Lith Offset	0.3969	0.7258	NONE
Far Bar Offset	-0.0337	-0.0213	NONE
Far Dens Offset	0.0977	0.0934	NONE
Far Peak Offset	0.1729	0.1358	NONE
Far Lith Offset	0.3300	0.2810	NONE

Near Bar Background	761.28	762.91	700 - 1450
Near Dens Background	250.06	253.64	230 - 480
Near Peak Background	110.29	110.06	100 - 210
Near Lith Background	134.40	135.32	125 - 260
Far Bar Background	470.39	471.09	450 - 900
Far Dens Background	183.26	183.10	175 - 345
Far Peak Background	72.87	73.56	70 - 140
Far Lith Background	75.56	75.14	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.685	1.680	-0.005	+/- 0.015
Pe	2.416	2.495	0.079	+/- 0.150
ALUMINUM				
Density (g/cc)	2.607	2.607	0.000	+/- 0.01500
Pe	3.074	3.071	-0.003	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0002	+/- 0.0110	-0.0001	+/- 0.0140
Magnesium Block	-0.0006	+/- 0.0110	-0.0011	+/- 0.0140
Aluminum Block	-0.0011	+/- 0.0110	0.0002	+/- 0.0140
Resolution	8.81	6.00 - 11.50	8.95	6.00 - 11.50
Internal Verifier(B+D+P+L)	1262	1200 - 2700	803	800 - 1700

PASS/FAIL SUMMARY

Background Quality Check:	Passed
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed
Aluminum Quality Check:	Passed
Gains Check:	Passed
Changes in Calibration Blocks:	Passed

SPECTRAL DENSITY FIELD CHECK

Tool Name: SDLT Pad - 10865883
Engineer: T. FOSTER
Software Version: WL INSITE R6.2.1 (Build 2)
Reference Calibration Date: 16-Nov-19 13:48:14
Calibration Date: 10-Dec-19 12:36:04
Calibration Version: 1

Pad Temperature: 61.1 degF

Pad Temperature: 31.1 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1261.928	1258.169	-3.759	14.397
Far (B+D+P+L) cps	802.892	795.104	-7.788	15.686
Near Resolution	8.81	8.93	0.120	0.50
Far Resolution	8.95	9.36	0.410	1.00

PASS/FAIL SUMMARY	
Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	**ACRt Sonde - 10904993**	**Reference Calibration Date:**	**31-Jul-19 18:59:24**
Engineer:	**T. FOSTER**	**Calibration Date:**	**17-Nov-19 09:41:05**
Software Version:	**WL INSITE R6.2.1 (Build 2)**	**Calibration Version:**	**1**
Host Tool Name:	**ACRt Instrument - 10940591**		

TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0066	1.05	0.95	1.0108	1.05	0.95	1.0075	1.05
A2 (50")	0.95	1.0089	1.05	0.95	1.0128	1.05	0.95	1.0100	1.05
A3 (29")	0.95	1.0057	1.05	0.95	1.0093	1.05	0.95	1.0084	1.05
A4 (17")	0.95	1.0105	1.05	0.95	1.0132	1.05	0.95	1.0149	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0054	1.05	0.95	1.0063	1.05
A6 (6")	N/A	N/A	N/A	0.95	1.0002	1.05	0.95	1.0028	1.05

SONDE OFFSET			
Subarray	R12KHz	R36KHz	R72KHz
	(mmho/m)	(mmho/m)	(mmho/m)
A1 (80")	0.119	-3.340	-5.102
A2 (50")	-2.165	-3.245	-4.983
A3 (29")	-14.314	-3.546	-3.315
A4 (17")	-102.556	-33.751	-26.640
A5 (10")	N/A	-61.101	-31.036
A6 (6")	N/A	263.519	132.461

TRANSMITTER CURRENT GAIN			
Signal	Lower	R	Upper
12K	0.6	0.88	1.3
36K	1.0	1.21	2.0
72K	1.0	1.47	2.0

R-MUD VERIFICATION			
Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	1.01	1.05

PASS/FAIL SUMMARY	
GAIN RANGE CHK	PASS
SONDE OFFSET CHK	PASS

TOOL OK TO LOG

CALIBRATION SUMMARY

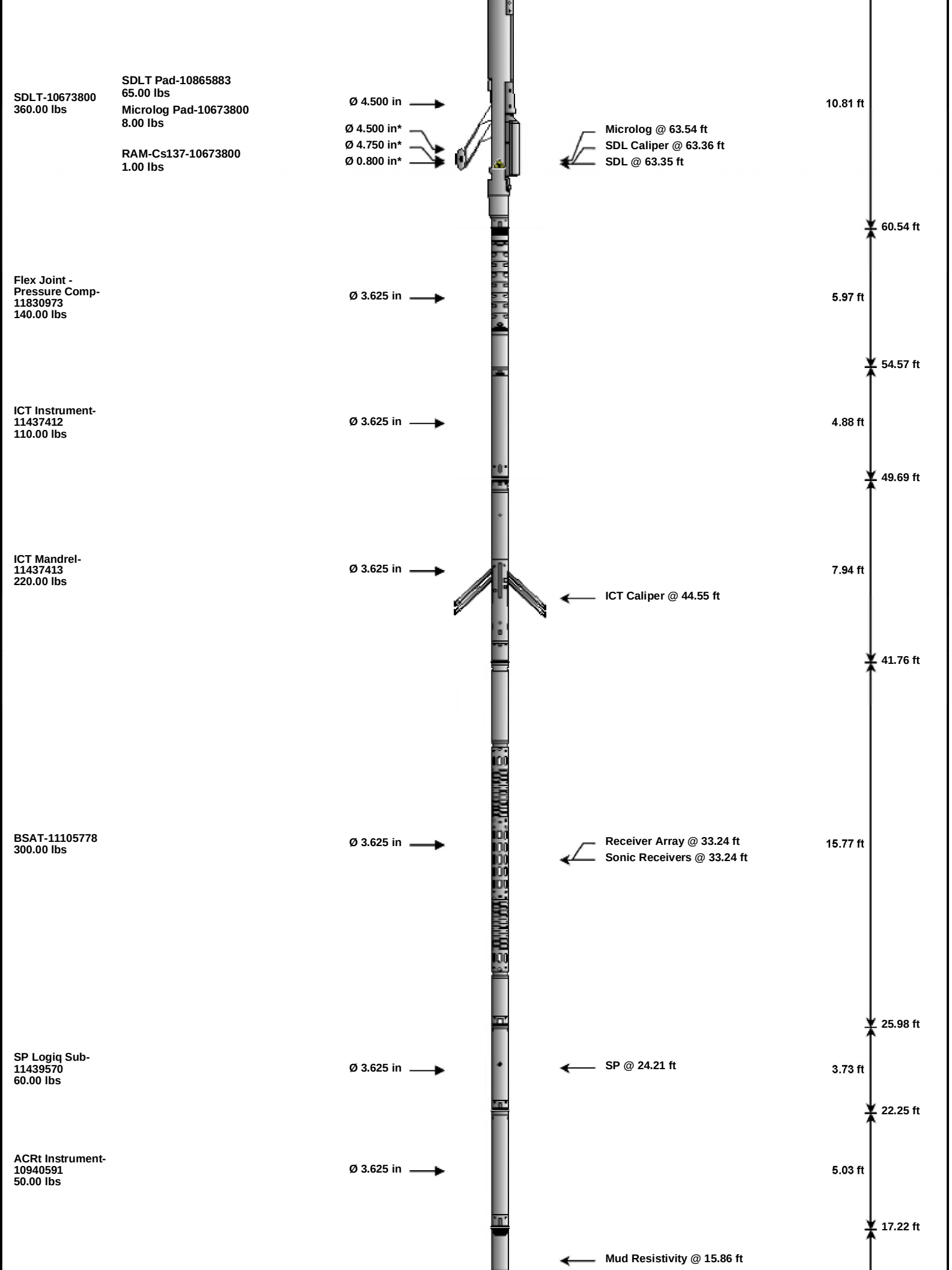
Sensor	Shop	Field	Post	Difference	Tolerance	Units
RWCH-11420838						
DH Tension Zero	0.00	----------	----------	0.00	----------	lbs
DH Tension Cal	2000.00	----------	----------	0.00	----------	lbs
GTET-11795753						
Gamma Ray Calibrator	247.3	245.6	----------	1.7	+/- 9.00	api
DSNT-11660717						
Snow-Block Porosity	0.0580	0.0482	----------	0.0098	+/- 0.0150	decp
SDLT-10673800						
Pad Extension	3.75	3.78	----------	-0.03	+/-0.10	in
Ring Diameter	8.25	8.21	----------	0.04	+/-0.15	in
Microlog Pad-10673800						
MicroLog Normal	19.93	19.85	----------	0.08	+/-0.80	ohmm
MicroLog Lateral	19.99	19.91	----------	0.08	+/-0.80	ohmm
SDLT Pad-10865883						
Near(B+D+P+L)	1261.928	1258.169	----------	3.759	+/-14.397	cps
Far(B+D+P+L)	802.892	795.104	----------	7.788	+/-15.686	cps
ACRt Sonde-10904993						
Mud Cell	1.01	----------	----------	0	----------	ohm-m

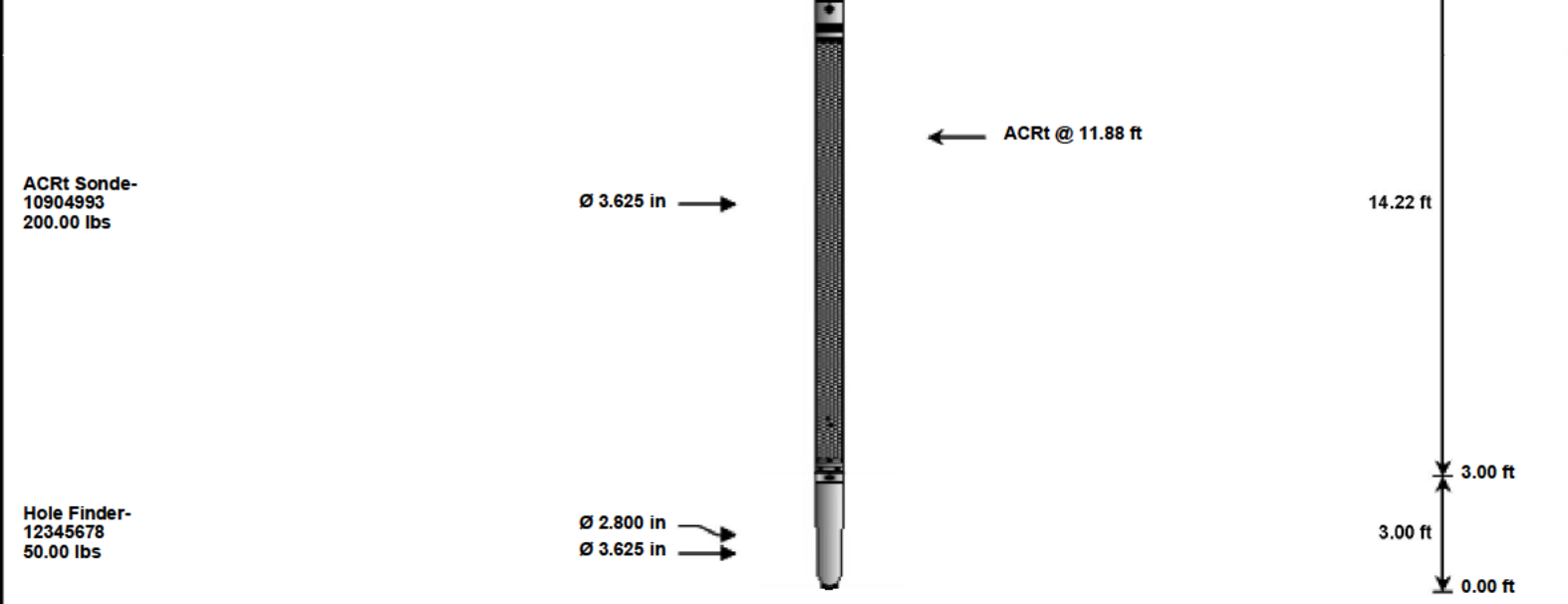
Data: SHIDELER 1-28\0001 TC BSAT\IDLE **Date: 11-Dec-19 02:20:16**

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
		Ø 2.310 in		Fishing Neck @ 94.93 ft		95.81 ft
RWCH-11420838 135.00 lbs		Ø 3.625 in		Load Cell @ 92.13 ft BH Temperature @ 91.56 ft	6.25 ft	
	Weak Point Solid- 12345678 0.01 lbs	Ø 0.010 in*		Z-Accelerometer @ 89.11 ft		89.56 ft
GTET-11795753 165.00 lbs		Ø 3.625 in		GammaRay @ 83.50 ft	8.52 ft	
						81.04 ft
	DSN Decentralizer- 12345678 6.60 lbs	Ø 5.000 in*				
DSNT-11660717 174.00 lbs		Ø 3.625 in		DSN Far @ 74.10 ft DSN Near @ 73.35 ft	9.69 ft	
						71.35 ft


SDLT-10673800
360.00 lbs
SDLT Pad-10865883
65.00 lbs
Microlog Pad-10673800
8.00 lbs
RAM-Cs137-10673800
1.00 lbs
Ø 4.500 in
Ø 4.500 in*
Ø 4.750 in*
Ø 0.800 in*
Microlog @ 63.54 ft
SDL Caliper @ 63.36 ft
SDL @ 63.35 ft
10.81 ft
60.54 ft
Flex Joint -
Pressure Comp-
11830973
140.00 lbs
Ø 3.625 in
5.97 ft
54.57 ft
ICT Instrument-
11437412
110.00 lbs
Ø 3.625 in
4.88 ft
49.69 ft
ICT Mandrel-
11437413
220.00 lbs
Ø 3.625 in
ICT Caliper @ 44.55 ft
7.94 ft
41.76 ft
BSAT-11105778
300.00 lbs
Ø 3.625 in
Receiver Array @ 33.24 ft
Sonic Receivers @ 33.24 ft
15.77 ft
25.98 ft
SP Logiq Sub-
11439570
60.00 lbs
Ø 3.625 in
SP @ 24.21 ft
3.73 ft
22.25 ft
ACRt Instrument-
10940591
50.00 lbs
Ø 3.625 in
5.03 ft
17.22 ft
Mud Resistivity @ 15.86 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	11420838	135.00	6.25		89.56	300.00
WPSS	Weak Point Solid	12345678	0.01	0.01	*	89.56	300.00
GTET	Gamma Telemetry Tool	11795753	165.00	8.52		81.04	60.00
DSNT	Dual Spaced Neutron	11660717	174.00	9.69		71.35	60.00
DCNT	DSN Decentralizer	12345678	6.60	5.13	*	74.68	300.00
SDLT	Spectral Density Tool	10673800	360.00	10.81		60.54	60.00
SDLP	Density Insite Pad	10865883	65.00	2.55	*	62.75	60.00
Cs137	Logging Source, SDLT-I, 1.78 Ci - Cs137	10673800	1.00	0.80	*	62.98	300.00
MICP	Microlog Pad	10673800	8.00	1.00	*	63.04	60.00
FLEX	Flex Joint - Pressure Compensated	11830973	140.00	5.97		54.57	300.00
ICT	Six Independent Arm Caliper Instrument	11437412	110.00	4.88		49.69	60.00
ICT	Six Independent Arm Caliper Mandrel	11437413	220.00	7.94		41.76	60.00
BSAT	Borehole Sonic Array Tool	11105778	300.00	15.77		25.98	60.00
SP	Analog Logiq SP Sub	11439570	60.00	3.73		22.25	300.00
ACRt	Array Compensated True Resistivity Instrument Section	10940591	50.00	5.03		17.22	120.00
ACRt	Array Compensated True Resistivity Sonde Section	10904993	200.00	14.22		3.00	120.00
HFND	Hole Finder	12345678	50.00	3.00		0.00	300.00
Total			**2,044.61**	**95.81**			

* Not included in Total Length and Length Accumulation.

Data: SHIDELER 1-28\0001 TC BSAT\IDLE **Date: 11-Dec-19 02:07:12**

COMPANY	**VALLEY RESOURCES**
WELL	**SHIDELER 1-28**
FIELD	**NORTH BELRIDGE**
COUNTY	**KERN** STATE **CA**

HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY SPECTRAL DENSITY DUAL SPACED NEUTRON
2" = 100' & 5" = 100'

Appendix 2B
Maps and Cross Sections of the AoR Supporting Data

Key Well Cores

Appendix 2B: Maps and Cross Sections of the AoR Supporting Data
Key Well Cores
Site Characterization

- 4-1N
- 4-36N
- 7-1N
- 9-1N
- 10X-1N
- 17-2N
- 23X-35N
- 43-27N
- 46X-35N ST4
- 511N-1N ST1
- SHIDELER 1-28

4-1N



PETROLEU
TESTING
SERVICE, I

Sec. 01 Twn. 28s Rng 20

PETROLEUM TESTING SERVICE, INC.
5880 DISTRICT BLVD., SUITE 1
BAKERSFIELD, CA 93313

SHELL CALIFORNIA PRODUCTION INC.

CORE ANALYSIS SUMMARY

4-1

NORTH BELRIDGE FIELD

JUNE 1986 FILE #80366

PETROLEUM TESTING SERVICE, INC.
5880 DISTRICT BLVD., SUITE 1
BAKERSFIELD, CA 93313

June 27, 1986
Our File #80366

SHELL CALIFORNIA PRODUCTION INC.

WELL: 4-1
FIELD: North Belridge

PROCEDURE SUMMARY

1. Conventional cores #3-#5 were received refrigerated at approximately 40 F.

2. Cores were oriented and slabbed in 1/3 - 2/3 portions. The 1/3 geologic portions were photographed under white and ultraviolet light, 12' per photo, immediately after slabbing. Slabs were made available for viewing and sample selection.

3. Samples 1-1/2" in length were drilled from bulk portion using liquid nitrogen on a one per foot basis.

4. Samples were packaged using aluminum foil and end screens. Package was seated to sample at 200 psi.

5. Samples were extracted with Dean Stark extraction equipment for two days using toluene solvent.

6. Samples were transferred to azeotrope solvent for additional cleaning. Azeotrope was monitored until clean.

7. Samples were dried in vacuum oven at 60 C until weights stabilized.

8. Samples were vacuum saturated with dewatered and deaerated toluene and pressure saturated at 1000 psi.

9. Liquid saturated porosity and grain density were determined and saturations calculated.

10. Nitrogen air permeability was measured at a confining stress of 200 psi.

FILE No. 80366
DATE June 26, 1986

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 3 1/4" Conventional Core
MUD TYPE Water Base

WELL 4-1, 1-28S-20E
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 1 (8435 - 8452) : REC. (8435 - 8436)								
SPONGE CORE - ANALYSIS NOT REQUESTED								
CORE NO. 2 (8452 - 8482) : REC. (8452 - 8458)								
SPONGE CORE - ANALYSIS NOT REQUESTED								
CORE NO. 3 (8482 - 8508) : REC. (8482 - 8486.1)								
8482.30	18.7	197.	0.49	19.1	39.3	58.4	2.64	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8483.30	17.0	178.	0.53	21.7	40.8	62.5	2.64	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8484.40	16.1	214.	0.38	17.0	44.7	61.7	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8485.50	17.4	192.	0.65	25.6	39.1	64.7	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8486.05	17.8	293.	0.32	15.3	47.5	62.8	2.63	Sst; lt olv gry, vfsd-crssd, well cmtd, fr odor, lt stn, yel fluor
CORE NO. 4 (8508 - 8538) : REC. (8508 - 8517.9)								
8508.70	18.2	264.	0.33	18.1	55.6	73.7	2.63	Sst; lt olv gry, vfsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8509.40	18.1	262.	0.19	13.6	71.8	85.4	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fnt odor, lt stn, yel fluor
8510.50	18.1	217.	0.27	18.8	68.7	87.5	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 3 1/4" Conventional Core
MUD TYPE Water Base

WELL 4-1, 1-28S-20E
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 4 (CONTINUED) (8508 - 8538) : REC. (8508 - 8517.9)								
8511.70	16.5	164.	0.29	15.8	53.6	69.4	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8512.50	19.1	147.	0.34	16.5	49.2	65.7	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8513.60	18.4	196.	0.24	12.7	53.7	66.4	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8514.65	13.7	24.	0.30	13.3	44.4	57.7	2.63	Sst; lt olv gry, vfsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8515.60	13.8	35.	0.32	13.3	42.1	55.4	2.63	Sst; lt olv gry, vfsd-msd, well cmtd, fr odor, lt stn, yel fluor
8516.60	14.7	56.	0.35	14.7	42.0	56.7	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8517.60	14.0	17.	0.31	11.0	35.2	46.2	2.63	Sst; lt olv gry, vfsd-msd, well cmtd, fr odor, lt stn, yel fluor
CORE NO. 5 (8538 - 8568) : REC. (8538 - 8547.1)								
8538.40	16.1	84.	0.40	18.6	46.7	65.3	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8539.45	15.3	71.	0.46	18.5	40.4	58.9	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8540.30	17.7	158.	0.37	16.4	44.1	60.5	2.62	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8541.60	17.9	253.	0.37	15.4	41.4	56.8	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8542.95	17.8	185.	0.43	16.8	39.3	56.1	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

FILE No. 80366
DATE June 26, 1986

COMPANY Shell California Production Inc.
CORE BARREL 3 1/4" Conventional Core
MUD TYPE Water Base

WELL 4-1, 1-28S-20E
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 5 (CONTINUED) (8538 - 8568) : REC. (8538 - 8547.1)								
8543.50	17.0	112.	0.52	18.4	35.2	53.6	2.62	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8544.30	3.0	0.4	0.64	26.4	41.4	67.8	2.65	Sst; lt gry, vfsd-msd, well cmtd, calc, no odor, no stn, gld sptd fluor
8545.70	3.5	0.4	0.62	18.8	30.4	49.2	2.66	Sst; lt gry, fsd-msd w/calc frac fill, well cmtd, calc, no odor, no stn, gld strkd fluor
8546.50	17.2	100.	0.54	18.7	34.8	53.5	2.63	Sst; lt olv gry, fsd-msd w/calc frac fill, well cmtd, fr odor, lt stn, yel fluor
8547.10	18.1	117.	0.61	17.8	29.2	47.0	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor

TYPE OF EXTRACTION - DEAN STARK TOLUENE EXTRACTION

CONFINING PRESSURE ON THE PERMEAMETER = 200 psi

OIL GRAVITY ESTIMATED BY VISUAL FLUORESCENCE = 35 API

PETROLEUM TESTING SERVICE, INC.
5880 DISTRICT BLVD., SUITE 1
BAKERSFIELD, CA 93313

June 27, 1986
Our File #80366

SHELL CALIFORNIA PRODUCTION INC.

WELL: 4-1
FIELD: North Belridge

BOX LIST

CORE NO.	BOX NO.	DEPTH INTERVAL
1	SPONGE CORE	
2	SPONGE CORE	
3	1	8482 - 8483.85
	2	8483.85 - 8486.1
4	3	8508 - 8509.3
	4	8509.3 - 8511.9
	5	8511.9 - 8514.9
	6	8514.9 - 8517.9
5	7	8538 - 8539.2
	8	8539.2 - 8542
	9	8542 - 8544.3
	10	8544.3 - 8547.1

PETROLEUM TESTING SERVICE, INC.
5880 DISTRICT BLVD., SUITE 1
BAKERSFIELD, CA 93313

June 27, 1986
Our File #80366

SHELL CALIFORNIA PRODUCTION INC.

WELL: 4-1
FIELD: North Belridge

SAMPLE INVENTORY, TRANSFER, AND SHIPMENT SUMMARY

1. Bulk core was shipped to Bellaire Research Center June 20, 1986.

2. Geologic portions are stored at Petroleum Testing Service storage facility.

3. Cores #1 and #2 of sponge core are stored at Petroleum Testing Service storage facility.

Well Name:	4-1
Well UWI:	0402978259
Sec-Twp-Rge:	S01-T28S-R20E
Central Files Barcode:	0000110003
Report Title:	CORE PHOTO

Coding date:	07/29/2009
This sheet coded by:	Lester Carcamo
Vendor:	Petroleum Testing Service Inc
Vendor file number	80366
Report Date:	06/27/1986
ANOTATED	NO

	Sample Type	Reservoir: a, b, c, d, e.
	Conventional-Plug	64 Zone
x	Conventional-Whole	
	Sidewall	
	Cuttings	
	Mudlog Sample	
	Produced	Top Depth
	Surface	8435
	Geological Outcrop	Bottom Depth
	Other	8547

	Data containers information	
	LIVE-LINK	Scan Requested
	Core DB	yes
	OpenWorks	Notes
	Binders	
	R:drive	
	LAS file	
	Ambient Pressure	
x	Stressed Pressure	

Check all pertaining to each report - submit sheet for each report

	Core Report Type	Core Report Subtype
x	Routine Analysis	Description-UV Light
	Routine Analysis	Photography-White/UV
x	Routine Analysis	Density-Grain
	Routine Analysis	Routine Analysis - Other
x	Routine Analysis	Porosity-Other
	Routine Analysis	Natural-Spectral Gamma Ray
x	Routine Analysis	Permeability-Air
	Routine Analysis	Density-Matrix
x	Routine Analysis	Fluid Saturation-PKS
	Routine Analysis	Sieve Analysis
x	Routine Analysis	Description-Lithological

	Core Report Type	Core Report Subtype
	Petrophysical-Flow Study	Heat Transfer Coefficient
	Petrophysical-Flow Study	Fines Migration-Mobilization Velocity
	Petrophysical-Flow Study	Petrophysical-Flow Study - Other
	Petrophysical-Flow Study	Permeability-Oil
	Petrophysical-Flow Study	Rock Pore Preferred Wettability
	Petrophysical-Flow Study	Permeability-Toluene
	Petrophysical-Flow Study	Relative Permeability
	Petrophysical-Flow Study	Permeability-Brine
	Petrophysical-Flow Study	Permeability-Vertical
	Petrophysical-Flow Study	Permeability-Water

	Petrophysical	Formation Resistivity Factor
	Petrophysical	Cementation Factor
	Petrophysical	Luminosity Analysis
	Petrophysical	Oil Viscosity
	Petrophysical	Petrophysical - Other
	Petrophysical	Saturation Exponent
	Petrophysical	Tortuosity
	Petrophysical	Formation Resistivity Index
	Petrophysical	Model Evaluation
	Petrophysical	Oil Gravity-Density
	Petrophysical	Oil Pyrolysis
	Petrophysical	Formation Water Resistivity
	Petrophysical	Matrix Neutron Index
	Petrophysical	Oil Chromatography
	Petrophysical	Bulk PEF
	Petrophysical	CAT Scan
	Petrophysical	Mercury Injection
	Petrophysical	Capillary Pressure Analysis
	petrophysical	Cation Exchange Capacity
	Petrophysical	NMR Analysis
	Petrophysical	Pore Throat Analysis

	Geochemistry	Geochemistry - Other
	Geochemistry	Formation Water-Brine Chemical
	Geological Service	Description-Petrographic
	Geological Service	Formation-Rock Unit Identification
	Geological Service	Rock Age
	Geological Service	Mineralogy-XRD/FTIR
	Geological Service	Geological Service - Other
	Geological Service	Photography-Infra Red
	Geological Service	Paleontological Analysis
	Geological Service	Box Report
	Geological Service	Thin Section
	Geological Service	Description-Field Engineer Report
	Geological Service	Hydralic Unit Analysis
	Geological Service	Scanning Electron Microscopy

	Reservoir Fluid	Steamflood Analysis
	Reservoir Fluid	Produced Gas Analysis
	Reservoir Fluid	Reservoir Fluid - Other
	Reservoir Fluid	Produced Water Analysis
	Reservoir Fluid	Produced Oil Analysis

	Rock Mechanics	Rock Mechanics - Other
	Rock Mechanics	Rock Acoustic Velocity
	Rock Mechanics	Surface Area Per Unit Volume
	Rock Mechanics	Rock Compressibility Analysis
	Other	Other

Lester Carcamo 07/23/2009

DATE 6/5/96

CORES EXAMINED BY C. Soule - SCPI 0402978259
E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD

COMPANY SCPI

LEASE AND WELL NO. #4-1

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO, A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
1	8437	8467	1.4	Sponge Core, end of core inspected: SANDSTONE, lt. gry to wh. gry; bedding unknown; v. hard; grain supported with calcareous cmt.; v. wk. petroleum odor; GRA: LM to UCRS, scat. VCRS; v. ang. to sbang, with scat. sbrnd; low spher; poor sort; extr. tight & dense, no vis. porosity; composition: clr. qtz; with com. to abdt. milky wh, softer fspar; com blk, gry, brn sbrnd to occ. well rnd grains; flouresence: pale yel. bkgrnd w/OCC bright yel. streaks & patches; no vis. oil; slow developing strmng yel. cut flour; pale straw vis cut.	8438.4		S	patchy brt. yel.	pale straw	1-	S
2	8472	8482	5.9	Sponge core, ends of core inspected: SANDSTONE, med. gry-brn, bedding not inspected; firm to sl. friable; grain supported, v. sl. calc. cmt, poss. kaolinitic; lt. brn oil stain, primarily in cmt, pinpoint stain on sand grains; fair petrol. odor on fresh surfaces, GRA: UF to LCRS, sl. coarser with incr. depth; ang-sbang w/scat. sbrnd; low to high spher; poor sort; composition: clear, vitr. & milky qtz; com wh. softer, grainy to chalky fspar; fair amt dk gry to blk rnd. grains; scant tr. glauc; vis porosity 10-15%; flourescence: even brt yel sample flour; instant streaming yel-wht to blue-wht cut flour; straw vis. cut; near opaque yel. resid cut flour; oily luster on lower sample.	8472		M	even brt. yel.	straw	1	S
					8477.9		A	even brt. yel.	straw	1	

AERA CENTRAL FILES
000421515

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). I-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

DATE 6/8/86 — C. Soule, E. Tikanen - Epoch, J. Affonso - Epoch — CORES EXAMINED BY

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 4-1

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
3	8482	8508	4.5	Sandstone, med. gry brn, incr. gry on fresh surfaces; firm to sl. friable; appar. massive bedding, but core is badly broken up. Prob. contiguous from 8483.5 to 8485.7, but broken into 7 pieces. Natural fracture at 8484.9, angle 30° from vertical. Fair to good light oil odor, and good even lt. brn oil stain. Top 1" piece of rubble v. calc., balance of core sl. to non-calc. Poss shell or burrow at 8483.7. GRA: UF to UCRS, dom MED; ang-sbang; low to high spher, poor sort; Composition: qtz & common fspar; seat. sbrnd-rnd dk., prob mafic grs; tr. glauc.; low to mod. vis. porosity; Flourescence: even brt yel-wht sample flour; instant streaming yel-wht cut flour; strong yel-wht resid. cut flour; straw to dk straw vis. cut.	8482		M	Brt.yel wht.	Dark straw	1+	S
4	8508	8538	10'	Sandstone, med. gry brn, except 1½' sec lt. gry near bottom. Bedding appar. massive, core broken up badly. Appar contiguous pieces from 8508.8-10.6, 11.5-12.2, 13.8-14.9; rest rubbly chunks. Poss. fractures at 8508.4, 14.0-14.4, 8508.9 (partially healed), vug/frac at 8511.85; poss burrowing or soft sed. deformation at 8512.9. Two fractures on each side of core break at 8513.2, with cross-cutting fracture at 13.4. Core generally firm to sl. friable. Med. brn oil stain, fair petrol. odor. GRA: varies VF- MED to VF-CRSsort mod to poor; fair spher; sbrnd to sbang; Composition: dom milky & clear qtz & fspar; tr to freq. dk. heavy minerals; rare pinhead sporbo. Generally clean with v. sl. argil. matrix, , occ. chlorite staining. Flourescence: even to patchy brt to dull yellow sample flour; fast to inst. grn-yel blooming to diffuse cut flour, amber vis & dry cut, opaque yel resid cut flour.	8508.8		M	Brt to dull yel.	Dark amber	2+	S
					8510.7		M	Even brt.yel			
					8513.2			brt.yel	Lt. amber	2-	
					8515		S	Spotty brt.yel	Lt. amber	2-	
					8518		S	Brt.yel	Amber	2	

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). I-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CPAH8619201

C. Soule - SCPI
E. Tikanen - Epoch
J. Affonso - Epoch

DATE 6/8/86

CORES EXAMINED BY

Shell California Production Inc.

CORE RECORD

("HEAVY" OIL PROVINCES)

AREA OR FIELD

COMPANY SCPI

LEASE AND WELL NO. 4-1

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
5	8538	8566	9.2	Sandstone, med. gry brn to grey; appar. massive bedding; firm to sl. friable, gry rock v. hd; lt. brn. oil stain at top, decr. in lower half, with incr. hardness. Fair to wk. petrol. odor; dom sl. to non-calc, becoming extr. calc in grey rock from 8543.8 to 8545.8. Natural fractures at 8541.9, 8542.5, 8542.7, 8544.5, 8544.6, several fractures filled w/calcite in tight streak. Two breaks between pieces in the tight section are obvious fracture surfaces with slickensides, calcite and gypsum lining. Sampled segment at 8545.7 also contains Reidel shears in opposing directions. Core partially rubble, but several contiguous segments are present: 8538-8541.1, 8542-42.8, 8543.8-45.8. One rubble piece at 8546.1 prob. belongs at 8545.8. Cement dom sl. to non-calc in upper core, abruptly becoming extr. calc. at diagenetic boundary at 8544.8: Sandstone on either side of irregulare cementation front. GRA: VF to CRS often VF to MED, dom MED; fair to poor sort; ang. to sbang. dk. grs. sbrnd; composition: dom clr to milky qtz, fspar ranges from occ. to com; common dk mafics & lithic frags; tr. glauc. or chlorite; grain supported matrix with silicic cmt, cmt incr. with depth. Cmt becomes calc. at 8544.8; "fault" gouge on fracture surfaces 8545 contain calcite and gypsum; sands without calc cmt. show fair to good porosity and perm. Flourescence: sample flour. varies from patchy to v. intense yel., pale yel. in tight strk; instant to fast blooming grn-yel cut flour, pale grn crush flour only in tight streak. vis. cut amber to dk amber.	8539.1		S	Uneven lt. to mod. Brt.yel	Amber	2	S
					8541.5		S	Brt.yel			
					8542.9		S	Intense brt yel	Amber	2	
					8545		Abs	Pale yel		0	
					8547		M	Intense to pale yel	Dark amber	2+	
				Cores 3, 4, 5 all show common fracturing, prob. grain shearing. Some fractures are filled, but most may be permeable. Some vugular porosity within fractures was observed. Core recovery was too poor to do meaningful fracture density study.							
				PTS labelled last tray (8544.3-8547.1) upside down. Lab measurements are at correct depths, but core photo is wrong. Tight streak is at top (8544.3).							

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). I-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CPAH8619201

4-36N

Aera Central Files

BOX: 029286

8000274644

Test & Analysis

0402935096

North Belridge 36 T27S R20E

RESULT 4-36

REMARKS

SAMPLE NUMBER OR DEPTH	% POROSITY	MILLIDARCY'S IN PERMEABILITY	RESIDUAL SATURATIONS % OF POROSITY: OIL	RESIDUAL SATURATIONS % OF POROSITY: WATER	RESIDUAL SALINITY WATER OR PER GAL	OIL-WATER RATIO	CONDUCTIVITY INDEX
0028	81.01	7.5					
5128	49.51	0.46					
0228	65.6	5.2					
7228	21.21	7.2					
5228	12.81	9.47					
9528	70.11	0.2					
6528	92.91	8.26					
5928	49.91	0.521					
9928	28.91	0.001					

Samples collected by Mr. C. H. Montgomery

LOCATION:- Belridge Oil Field

NAME OF WELL:- Continental Oil Company, Result #4

FILE NO.- Sheet #1 DATE August 7, 1940

CORE EVALUATION RECORD

LABORATORY REPORT

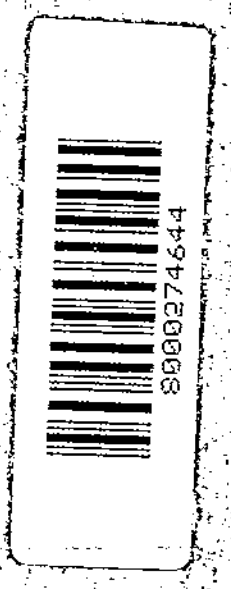
CORE LABORATORIES, INC.
Petroleum Engineering Service
Dallas

comp this well

Company	CONTINENTAL OIL COMPANY	Date Report	JUNE 28, 1940	File	FL10-38
Well	RESULT #4	Location		Analysts	NW:WA:OH
Field	BELRIDGE	Formation		Reports to	
County	KERN State CALIFORNIA	Elevation	611' DF	Coregraph	YES
Cores	DUNLAP WL	Remarks	ON LOCATION		

CORE ANALYSIS AND INTERPRETATION

Depth Feet	Permeability Millidarcys	Porosity Per Cent	Residual Oil Saturation % Pore Space	Probable Production	Remarks
7967.2	0	11.6	7.7	None	Low Perm. Shaly
68.2	0	12.3	5.7	"	" " "
69.2	26	15.1	2.6	Distillate	
7970.0 - 7976.0 LOST CORE					
7976.5	176	15.5	2.6	Distillate	
77.5	310	17.6	2.3	"	
78.5	203	16.5	2.4	"	
79.5	81	16.6	0.6	"	
80.3	159	16.0	0.0	"	
81.0	191	15.0	2.7	"	
81.7	188	17.7	0.6	"	
82.5	231	16.4	0.0	"	
83.5	239	15.7	0.0	"	
84.5	69	15.6	2.6	"	
85.5	102	14.9	0.7	"	
86.5	92	15.5	0.0	"	
87.5	81	15.5	0.0	"	
88.5	342	17.1	0.0	"	
89.5	101	16.0	0.6	"	



Note:
(*) Refer to attached letter.
(1) Incomplete core recovery - interpretation reserved.
(2) Off location analyses - no interpretation of results.

These analyses, opinions or interpretations are based on observations and material supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representation as to the productivity, proper operation, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

(The above notes apply to all the attached pages)

CORE ANALYSIS AND INTERPRETATION

Depth Feet	Permeability Millidarcys	Porosity Per Cent	Residual Oil Saturation % Pore Space	Probable Production	Remarks
7990.5	223	16.1	0.6	Distillate	
91.5	245	16.9	0.0	"	
92.5	187	16.4	2.4	"	
93.5	229	16.9	15.4	"	
94.5	120	15.8	0.6	"	
95.5	141	18.8	0.5	"	
96.5	121	15.0	0.7	"	
97.5	44	12.5	0.8	"	
7998.0 - 8006.0 CORE ALTERED					
7998.5	191	16.5	2.5		
99.5	135	17.5	2.3		
8000.5	76	16.5	0.6		
01.5	149	15.8	0.6		
02.5	242	16.8	0.6		
03.5	179	16.3	0.6		
04.5	139	16.9	2.4		
05.5	153	15.9	0.6		
06.5	125	15.9	0.6	Distillate	
07.5	185	15.9	0.6	"	
08.5	149	16.3	0.6	"	
10.5	162	18.1	0.6	"	
11.5	109	18.1	0.6	"	
12.5	233	15.4	0.6	"	
13.5	186	16.8	0.6	"	
14.5	102	17.2	0.6	"	
15.5	167	17.0	0.6	"	
16.5	154	15.3	0.7	"	
17.5	224	16.7	0.6	"	
18.5	208	15.9	0.6	"	
19.5	174	16.1	0.6	"	
20.5	146	16.8	0.6	"	
8021.0 - 8026.0 LOST CORE					
8026.5	106	15.8	2.5	Distillate	
27.5	134	17.2	0.6	"	
28.5	138	14.6	0.7	"	
29.5	153	17.4	0.6	"	
30.5	77	17.6	0.6	"	
31.5	73	15.5	0.6	"	
32.5	208	16.3	0.6	"	
8033.0 - 8041.0 LOST CORE					
8041.3	146	15.6	0.6	Distillate	
8041.5 - 8057.0 LOST CORE					

See notes on 1st page.

CORE ANALYSIS AND INTERPRETATION

Depth Feet	Permeability Millidarcys	Porosity Per Cent	Residual Oil Saturation % Pore Space	Probable Production	Remarks
8057.5	87	17.5	0.6	Distillate	
58.5	134	16.0	0.6	"	
59.5	85	16.3	0.6	"	
60.5	79	16.0	0.6	"	
61.5	78	15.0	0.7	"	
62.5	108	16.3	0.6	"	
63.5	55	15.5	0.6	"	
65.5	109	17.1	0.6	"	
66.5	90	17.0	0.6	"	
67.5	134	16.8	0.6	"	
68.5	141	17.6	0.6	"	
69.5	113	16.7	0.6	"	
70.5	97	16.8	0.6	"	
71.5	106	16.0	0.6	"	
73.5	143	17.9	0.6	"	
74.5	98	18.8	0.5	"	
75.5	0			None	Low Permeability
76.5	89	15.0	0.7	Distillate	
77.5	47	17.0	0.6	"	
78.5	67	16.2	0.6	"	
81.5	135	16.1	0.6	"	
82.5	107	16.8	0.6	"	
83.5	86	17.9	0.6	"	
84.5	128	16.8	0.6	"	
85.5	109	18.3	1.6	"	
86.5	154	17.4	0.6	"	
87.5	77	19.3	0.5	"	
88.5	84	16.1	0.6	"	
89.5	55	17.8	1.7	"	
91.5	140	16.6	0.6	"	
92.5	130	17.3	0.6	"	
93.5	141	16.8	0.6	"	
94.5	157	16.8	0.6	"	
95.5	210	17.1	0.6	"	
96.5	161	17.5	0.6	"	
97.5	111	17.4	0.6	"	
98.5	171	17.7	0.6	"	
99.5	163	17.0	0.6	"	
8100.5	127	18.7	0.5	Distillate	
01.5	105	18.4	2.2	"	
02.5	116	20.2	2.0	"	
03.5	157	16.0	2.5	"	
04.5	130	18.6	2.1	"	
05.5	138	16.9	0.6	"	
06.5	184	16.5	0.6	"	
07.5	153	16.6	0.6	"	
08.5	149	17.0	0.6	"	
10.5	166	17.9	0.6	"	
11.5	131	16.9	0.6	"	
12.5	105	16.4	0.6	"	

See notes on 1st page.

CORE ANALYSIS AND INTERPRETATION

Depth Feet	Permeability Millidarcys	Porosity Per Cent	Residual Oil Saturation % Pore Space	Probable Production	Remarks
8113.5	87	18.7	0.5	Distillate	
14.5	154	18.5	0.5	"	
15.5	114	18.6	1.6	"	
16.5	124	17.4	1.7	"	
17.5	169	18.6	0.5	"	
18.5	113	17.7	1.7	"	
19.5	145	16.9	1.8	"	
20.5	102	17.9	0.6	"	
21.5	107	17.0	2.4	"	
22.5	121	17.1	2.3	"	
23.5	121	19.3	2.1	"	
24.5	74	17.8	2.2	"	
25.5	106	18.3	2.2	"	
26.5	121	17.0	2.4	"	
27.5	148	18.0	2.2	"	
28.5	151	17.5	2.3	"	
29.5	92	17.5	2.3	"	
30.8	153	15.4	2.6	"	
32.5	108	14.7	2.7	"	
33.5	142	17.5	2.3	"	
34.5	120	17.8	2.2	"	
35.5	102	17.5	2.3	"	
36.5	161	18.0	2.2	"	
37.5	126	18.8	3.2	"	
38.5	80	14.5	2.8	"	
39.5	90	17.9	3.4	"	
40.5	155	18.1	3.3	"	
41.5	66	16.3	2.5	"	
42.7	47	15.4	3.9	"	
43.5	55	17.0	0.6	"	
44.5	86	16.9	0.6	"	
45.5	86	17.4	0.6	"	
8146.0 - 8150.0 LOST CORE					
8150.5	110	17.6	0.6	Distillate	
51.5	64	17.6	0.6	"	
52.5	68	17.4	0.6	"	
53.5	66	16.1	2.5	"	
54.5	146	15.1	0.7	"	
55.5	122	15.3	0.6	"	
56.5	104	14.8	0.7	"	
57.5	122	16.2	0.6	"	
58.5	85	16.6	0.6	"	
8159.5 GAS-OIL CONTACT					
8159.5	73	15.6	9.0	Oil	
60.5	115	16.7	11.4	"	
61.5	97	16.7	12.6	"	
62.5	94	15.3	12.4	"	
63.5	97	15.9	13.2	"	

See notes on 1st page.

CORE ANALYSIS AND INTERPRETATION

Depth Feet	Permeability Millidarcys	Porosity Per Cent	Residual Oil Saturation % Pore Space	Probable Production	Remarks
8164.5	100	16.3	17.1	Oil	
65.5	137	16.0	13.1	"	
66.5	83	17.3	13.9	"	
67.5	130	17.3	13.3	"	
68.5	150	18.1	14.3	"	
69.5	70	15.5	14.8	"	
70.5	33	14.8	15.5	"	
72.5	45	15.2	15.1	"	
73.5	67	18.0	12.2	"	
74.5	72	17.0	12.9	"	
75.5	36	17.2	12.8	"	
76.5	28	15.8	12.0	"	
77.5	39	15.3	14.3	"	
78.5	57	17.4	18.4	"	
79.5	60	16.7	14.3	"	
8180.0 - 8204.0	LOST CORE				
8204.5	70	16.9	17.8	Oil	
05.4	33	15.3	15.0	"	
06.3	37	15.8	17.1	"	
07.2	60	15.2	15.1	"	
08.1	33	15.7	15.3	"	
09.0	57	14.1	14.9	"	
09.8	43	15.3	16.7	"	
10.7	66	15.4	20.0	"	
11.6	66	16.1	18.6	"	
12.5	27	14.7	15.7	"	
13.4	55	14.9	15.4	"	
14.2	28	14.9	14.1	"	
15.0	55	16.4	23.1	"	
15.6	51	18.1	14.4	"	
16.5	28	15.7	16.5	"	
17.5	22	14.0	14.3	"	
18.3	52	14.2	16.9	"	
#-19.4	37	16.7	16.8	"	
20.1	30	15.0	16.0	"	
20.8	37	15.4	13.0	"	
21.6	22	17.1	19.3	"	
22.5	34	18.0	20.0	"	
23.4	27	16.6	21.1	"	
24.2	22	18.2	12.1	"	
24.9	13	14.7	16.3	"	
25.6	46	16.0	16.2	"	
26.5	35	17.1	18.7	"	
27.4	35	17.2	15.7	"	
28.0	16	16.1	14.3	"	
28.8	53	17.5	16.0	"	
29.7	19	15.4	14.9	"	
30.5	42	15.3	22.2	"	
31.3	95	17.6	18.2	"	
32.2	71	17.0	13.0	"	
#-18.9	41	14.2	14.8	"	

See notes on 1st page.

CORE ANALYSIS AND INTERPRETATION

Depth Feet	Permeability Millidarcys	Porosity Per Cent	Residual Oil Saturation % Pore Space	Probable Production	Remarks
8233.1	69	17.6	16.5	Oil	
33.9	65	17.1	20.5	"	
34.8	58	17.5	17.7	"	
35.6	67	17.7	18.1	"	
36.5	10	14.9	14.1	"	
37.4	37	16.5	17.0	"	
38.3	94	17.1	17.5	"	
39.2	94	18.1	16.6	"	
39.9	90	16.3	18.4	"	
40.5	33	17.0	16.5	"	
8241.0 - 8250.0 LOST CORE					
8250.5	51	17.7	17.5	Oil	
51.3	30	16.5	15.8	"	
52.2	14	16.1	19.9	"	
53.1	14	14.1	13.5	"	
53.9	7	13.5	14.1	"	
54.8	9	13.7	13.9	"	
55.7	12	16.6	14.5	"	
56.4	26	17.6	20.4	"	
57.3	36	18.3	20.2	"	
58.2	47	18.2	19.2	"	
59.1	126	15.8	16.5	"	
59.9	41	16.5	14.0	"	
60.7	124	14.2	18.3	"	
61.6	122	15.5	17.4	"	
62.4	154	16.3	21.5	"	
63.2	101	15.7	19.7	"	
63.9	45	16.5	18.8	"	
64.5	59	16.8	14.3	"	
65.5	40	15.8	17.7	"	
66.4	177	15.9	18.9	"	
67.3	154	15.7	16.6	"	
68.2	49	15.0	18.7	"	
69.0	163	16.8	17.9	"	
69.8	107	16.0	14.4	"	
70.7	274	15.8	17.1	"	
71.6	158	16.4	21.3	"	
72.5	215	16.7	18.0	"	
74.5	67	15.1	14.6	"	
75.5	70	16.7	16.7	"	
76.5	140	17.0	23.5	"	
77.5	141	16.1	14.3	"	
78.5	49	16.8	15.5	"	
79.5	23	15.2	17.7	"	

See notes on 1st page.

CORE ANALYSIS AND INTERPRETATION

Depth Feet	Permeability Millidarcys	Porosity Per Cent	Residual Oil Saturation % Pore Space	Probable Production	Remarks
8280.5	36	15.4	13.6	Oil	
81.5	75	15.9	17.6	"	
82.5	158	16.1	17.4	"	
83.5	193	17.3	16.8	"	
84.5	164	16.4	15.8	"	
85.4	290	14.1	16.3	"	
86.5	54	15.3	15.0	"	
88.3	30	13.4	17.2	"	
89.3	16	12.8	11.7	"	
90.3	19	14.6	15.8	"	
91.3	21	14.5	15.9	"	
92.2	71	14.6	13.0	"	Shaly

8293.0 - 8303.0 LOST CORE

See notes on 1st page.

CORE LABORATORIES, INC.
Petroleum Engineering Service
Dallas

File FL10-38

Well RESULT #4

CORE SUMMARY AND CALCULATED RECOVERABLE OIL (2)

CORE SUMMARY

Formation	WAGON WHEEL	WAGON WHEEL	WAGON WHEEL	WAGON WHEEL	WAGON WHEEL
Division No.	1	2	3	4	5
Depth, Feet	7969.0-8042.0	8057.0-8159.5	8159.5-8180.0	8204.0-8259.0	8259.0-8292.5
Feet Cored & Drilled	73.0	102.5	20.5	55.0	33.5
Feet of Core Recovered	53.0	92.0	19.5	46.0	32.0
% Core Recovery	73	90	95	84	96
Feet of Permeable, Productive Formation Recovered	52.5	91.0	19.5	46.0	31.0
Cumulative Feet of Permeable, Productive Formation			19.5	65.5	96.5
Average Permeability	158	115	79	42	107
Capacity			1540	1932	3317
Cumulative Capacity			1540	3472	6789
% Capacity			22.7	28.5	48.9
Cumulative % Capacity			22.7	51.2	100.0
Average Porosity, Percent	16.3	17.1	16.4	16.2	15.7
Bbls. Per Acre Foot	1265	1327	1272	1257	1218
Average Connate Water Saturation, % Pore Space	28	30	31	30	29
Gravity of Oil, °A.P.I.			35	34	34
Gas/Oil Ratio, Cu. Ft./Bbl.			700	700	700
Formation Volume Factor			1.39	1.39	1.39

Continued -

CORE LABORATORIES, INC.
Petroleum Engineering Service
Dallas

File FL10-38
Well RESULT #4

CORE SUMMARY AND CALCULATED RECOVERABLE OIL (2)

Continued -

CALCULATED RECOVERABLE OIL (6)

By Natural or Gas Expansion Bbls. per acre foot (4)	(5)	(5)	226	226	219
Increase due to Water Drive, Bbls. per acre foot	(5)	(5)	232	198	197
Total after Water Drive, Bbls. per acre foot (3)	(5)	(5)	458	424	416

CORE LABORATORIES, INC.

(Signed) William L. Horner July 12, 1940

Note:
(*) Refer to attached letter.
(1) Incomplete core recovery - interpretation reserved.
(2) Prediction based on complete isolation of each division.
(3) After complete water drive - original reservoir pressure maintained.
(4) After reduction of original reservoir pressure to zero pounds per square inch.
(5) No estimate for gas phase reservoirs.
(6) Structural position of well should be considered.

These analyses, opinions of interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representation, as to the productivity, proper operation, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

LABORATORY REPORT
CORE EVALUATION RECORD

FILE NO. Sheet #1 DATE August 7, 1940

NAME OF WELL:— Continental Oil Company, Result #4

LOCATION:— Belridge Oil Field

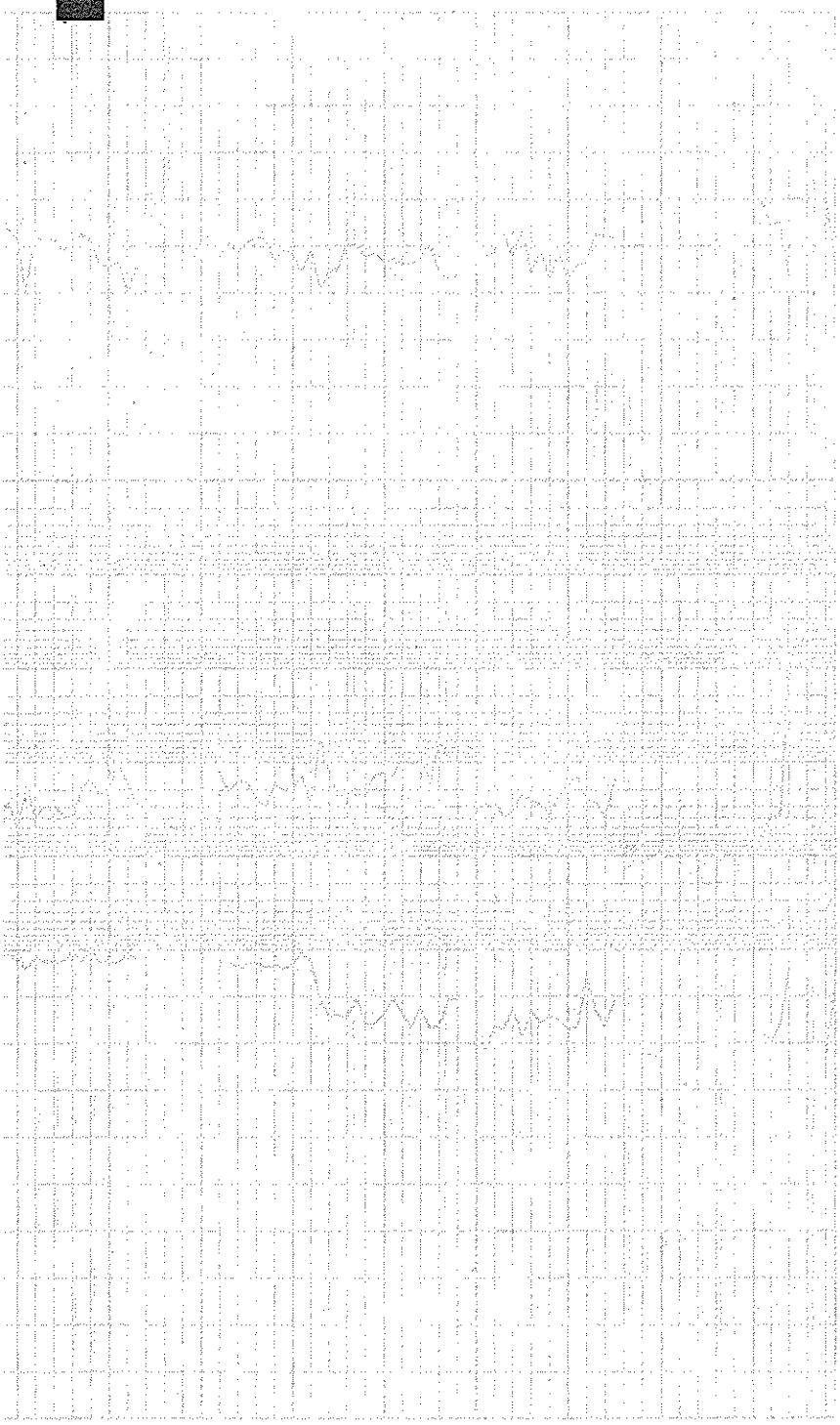
Samples collected by Mr. C. H. Montgomery

SAMPLE DEPTH OR NUMBER	POROSITY %	PERMEABILITY IN MILLIDARCY'S	RESIDUAL SATURATIONS % OF POROSITY		RESIDUAL WATER SALINITY — GR. PER GAL.	OIL—WATER RATIO	CONDUCTIVITY INDEX
			OIL	WATER			
8200	10.18	5.7					
8215	15.64	34.0					
8220	9.59	2.5					
8227	12.12	2.7					
8235	18.31	74.6					
8256	11.07	2.0					
8259	16.36	92.8					
8265	16.64	135.0					
8266	16.82	100.0					

REMARKS:

GRAYDON OLIVER
CONSULTING PETROLEUM ENGINEER
215 WEST SEVENTH STREET
LOS ANGELES, CALIF.

7-1N



Aera Central Files
BOX: 029287
8000274639
Test & Analysis
0402935105
North Belridge 01 T28S R20E
7-1

GRAYDON OLIVER
PETROLEUM ENGINEER
LOS ANGELES, CALIF.
1229 Bartlett Building
August 7, 1940

Mr. Jay B. Wharton
c/o Belridge Oil Company
McKittrick, California

Dear Sir:

I am sorry that I have been delayed in giving you the necessary data covering your Well 7-1 in the Belridge oil field. However, I have made my investigation and the conclusions and opinions herewith given may be of some value to you.

A minute inspection of the core samples revealed that the interstices were practically completely sealed off with a secondary cementing material, which reacted to acid treatment. After discovering this condition, I requested Mr. Roy Barnes, of the Continental Oil Company, to give me some of the core samples from the offset well, Result No. 4, in order to ascertain if this secondary cementing material would be found in the core samples of the Result well. Mr. Montgomery, field engineer for the Continental Oil Company, selected core samples which were presumed to correspond to the stratigraphic position in the Result well of the samples that you sent me. These were thoroughly inspected and clearly showed that there was no secondary cementing in the interstices of the core samples from this well. The cementing material found in the samples of your well is clearly a carbonate material and is undoubtedly from the mud which you used in drilling the well, in view of the fact that you informed me that you did use a mud containing a high lime content. The action of a colloidal lime material is oft times very peculiar. It has been frequently pointed out by various scientists that colloidal systems are mainly characterized by their extreme development of surface and surface boundaries. It has also been mentioned that in such boundaries there are energies typical thereto, which are generally designated as boundary energies. Whereas classical chemistry defines the properties of a system by the properties of its mass, we find that the properties of colloidal systems are primarily governed by those of the developed surface. The colloidal state differs in respect to the surface development of its systems from matter in the coarse state, or "hetrogeneous systems", by reason that in the latter case the boundary-surfaces are smaller and, therefore negligible compared to the mass, whereas in colloidal systems it is just the reverse. The boundary-surface energies manifest their presence in various ways, generally known as capillary phenomena. The study of these special properties of boundary-surface layers or of extremely thin layers of matter, is the subject of capillary physics and chemistry.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One of the most important phases covering the use of colloids, and particularly a lime colloid, is the adsorption phenomena and the capillary condensation. Undoubtedly, the most important of all adsorption phenomena in respect to the drilling of oil wells, are those taking place in solid-liquid interface. Such a phenomena at its best is extremely complex. The phenomenon that a pure and true solution, being brought in contact with an insoluble substance is tenaciously retained on the surface of the solid, is generally known as lyosorption. The wetting of a solid body is the simplest example of this phenomena. According to one scientist, the adsorption layer thus formed is termed lyosphere. The lyospheres are to be considered as diffuse so that a continuous transition exists between them and the interior of the surrounding liquid. Experiments on sedimentation volumes of comparatively coarse suspensions in different liquids, as carried on by W. O. Ostwald and W. Haller, A. B. Buzagh, H. Freundlich, H. L. Rodder, and E. A. Hauser, seem to prove that the thickness of the lyosphere is, contrary to previous assumption, far in excess of normal molecular dimension. The thickness of the lyosphere seems to depend on the type of adsorbing surface and on the liquid and nature of the colloid present. It has been ascertained that lyosorption is exceptionally pronounced with such substances as can be considered as extremely heteropolar, e.g., more of the silicates. This leads to the assumption that the development of a lyosphere depends to a large extent upon the residual electro-static valencies of the adsorbent. This results in the important conclusion that lyosorption can be very materially influenced by changes in the charges of the adsorbing surface. With increasing charge, lyosorption must also increase. In general, liquids of high dielectric constant will show lyosorption to a smaller degree than those of a low dielectric constant. Generally speaking, when colloidal systems are involved, the term lyosorption is more commonly referred to as solvation, or hydration.

The study of colloidal dispersion is extremely complex and, needless to say, unless many factors are known about the colloid that is used in a drilling mud, it is dangerous to arbitrarily make use of an unproven substance. I have referred before, in connection with this discussion, to polar adsorption. It is a known fact that when solid-liquid systems are involved, such as a colloidal system, only one constituent is really adsorbed, whereas the other remains in solution. Since the electric neutrality of the system as a whole must be maintained, another ion must be substituted. This ion can be either given off by the adsorbent

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in exchange for one taken on, or it must be obtained by a secondary reaction in the dispersion medium. This phenomenon is generally known as exchange adsorption, or ion exchange reaction. The most typical instance of this phenomenon is the so-called base exchange of zeolites or permutites, as are being used with increasing success for water softening purposes. The zeolites correspond generally in their chemical constitution to the clays. They are very open-textured, aluminum hydro-silicates. The oxygen atoms present in the surfaces or at the edges or corners of the crystal lattice possess residual electro-static fields. These are satisfied by available cations, such as sodium. If such a zeolite is brought into contact with water containing calcium salts, the calcium ions will be adsorbed, and the sodium ions given off.

In the foregoing discussion, I have merely called to your attention some of the factors surrounding the use of a colloidal material that penetrates a porous media, such as an oil-saturated formation. From the study of colloids and colloidal dispersions, we do know that various phenomenon take place, and that such colloidal suspensions are very often ionized to provide deposition of materials in the adsorbing media. I am of the opinion that the use of a mud having high lime content, used in the particular formations which you are attempting to produce, results in a deposition of this lime in the small interstices and capillaries of the formation, thereby effectively sealing them off from the transmission of fluids. The core sample submitted from your 7-1 well clearly revealed that there has been a secondary deposition, and that such was not the case in the well drilled by the Continental Oil Company on the offset location, their Result No. 4.

We made porosity and permeability determinations on all of the samples submitted to us, the results of which are herewith given.

Depth	Porosity %	Permeability Millidarcy's
8165	11.96	17.8
8176	14.78	4.7
8182	14.04	8.2
8193	13.54	6.3
8200	12.41	5.0
8221	13.65	7.1
8224	12.58	6.6
8230(A)	17.44	600.97
8230(B)		694.0
8230(C)	17.82	704.0
8230(D)	17.05	662.0
8231	11.18	10.6

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The sample from 8230 feet gave an extremely high permeability and the laboratory made several re-runs upon this particular sample in order to make certain that their findings were correct. It is quite apparent that this particular formation was not as tightly sealed as the other formations. It is entirely possible that you can arrange to produce this particular formation and exclude the others. There would undoubtedly be, beyond the limits of the well core, a vertical and horizontal migration, which would enable you to obtain a rather high recovery from this particular formation, even though it is relatively thin.

As previously stated, samples were taken from the Result No. 4 well and subjected to porosity and permeability determinations, the results of which are herewith given.

Depth	Porosity %	Permeability Millidarcy's
8200	10.18	5.7
8215	15.64	34.0
8220	9.59	2.5
8227	12.12	2.7
8235	18.31	74.6
8256	11.07	2.0
8259	16.36	92.8
8265	16.64	135.0
8266	16.82	100.0

I trust that the information given to you in this discussion will be of some value. I do not believe that it is wise for you to use a mud containing a lime colloid. It is quite apparent that such a material is adsorbed by the formations which you are drilling. It is very doubtful if you can offset this deposition by subsequent acidizing as there is insufficient capillary volume to allow the penetration of the acid to any degree into the formation. In the present well, you might be able to obtain satisfactory production from the thin layers at 8230 feet. At least, it has sufficient permeability, but I am not acquainted with its saturation characteristics. I do not believe you would be able to effectively remedy the present well without coming back up the hole and redrilling that portion of the hole that enters the producing formations. I do not believe that the deposition of lime material has penetrated very deeply into the formation from the well bore, and the new well bottomed a few feet away from the present bottom would enable you to core an entirely clean section free from lime contamination.

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Los Angeles, California

I hope that this investigation has been of some use to you. The opinions expressed in this letter are based upon the laboratory investigation made upon the samples submitted. Unfortunately, the samples as submitted, were not freshly taken from the core barrel and some of the deposition in the interstices might have taken place by the subsequent evaporation of the connate water, which would contain some of the suspended colloids. I do not believe this to be the case, however. I am more inclined to think that there was an effective sealing of the interstices by ion exchange of the colloid system, which was used in the drilling mud.

Very truly yours,

Graydon Oliver

GRAYDON OLIVER

GO:dm

LABORATORY REPORT
CORE EVALUATION RECORD

FILE NO. Sheet #1 DATE August 7, 1940

NAME OF WELL:— Belridge Oil Company Well 7-1

LOCATION:— Belridge Oil Field

Samples submitted by Mr. Jay B. Wharton

SAMPLE DEPTH OR NUMBER	POROSITY %	PERMEABILITY IN MILLIDARCY'S	RESIDUAL SATURATIONS % OF POROSITY		RESIDUAL WATER SALINITY — GR. PER GAL.	OIL—WATER RATIO	CONDUCTIVITY INDEX
			OIL	WATER			
8165	11.96	17.8					
8176	14.78	4.7					
8182	14.04	8.2					
8193	13.54	6.3					
8200	12.41	5.0					
8221	13.65	7.1					
8224	12.58	6.6					
8230(A)	17.44	600.97					
8230(B)		694.0					
8230(C)	17.82	704.0					
8230(D)	17.05	662.0					
8231	11.18	10.6					

REMARKS:

GRAYDON OLIVER
CONSULTING PETROLEUM ENGINEER
215 WEST SEVENTH STREET
LOS ANGELES, CALIF.

Code A

CORE LABORATORIES, INC.
Petroleum Engineering Service
SANTA FE BUILDING
DALLAS

July 11, 1940

Belridge Oil Company
McKittrick, California

Attention of Mr. J. B. Wharton

Gentlemen:

The results of core analysis on your well 7-1, North Belridge Field, Kern County, California are given for each point analyzed in the attached, tabulated data.

On the final page of this data are given summary figures for the distillate productive zone from 7973 feet to 8173 feet and for the oil productive zone from 8173 feet to 8230.5 feet. Average connate water saturation data are shown for two sections of the distillate zone, and recovery figures are given in columns three and four for the oil zone. Since these summary figures are applicable to sections represented by recovered core, they may be changed, if the adjacent sections of lost core prove oil productive, to correspond with the increased thickness of permeable formation.

Completion should be made sufficiently below the gas-oil contact at 8173 feet to avoid gas coning. As shown on the summary sheet, the productive capacity (feet of permeable sand thickness times average permeability) for the recovered part of the second oil zone is approximately the same as for the recovered part of the upper oil zone.

The numbers in parentheses on the summary sheet refer to footnote remarks.

Enclosed please find our original Coregraph and Van Dyke Negative. Additional prints may be made from either the original or the Van Dyke Negative; the latter, being unaffected by handling and use, is enclosed for your permanent records.

Very truly yours,

CORE LABORATORIES, INC.

William L. Horner

William L. Horner
Secretary-Treasurer

WLH:cm
Enc.

COPY

FORM F-2

CORE LABORATORIES, INC.
Petroleum Engineering Service
DALLAS

Company BELRIDGE OIL COMPANY | Date Report JULY 5, 1940 | File FL 8-105
Well 7-1 | Location | Analysts CP:HM:WA
Field NORTH BELRIDGE | Formation WAGON WHEEL | Reports to
County KERN State CALIFORNIA | Elevation 627' D.F. | Coregraph YES
Cores HUGHES "J" | Remarks ON LOCATION ANALYSIS

CORE ANALYSIS AND INTERPRETATION

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL OIL SATURATION % PORE SPACE	PROBABLE PRODUCTION	REMARKS
All Lowered		↑ I.V. Specific Perm on Sample				
1	7930.5	5	16.5	2.4		Low Permeability
2	31.5	11	14.6	2.7	Distillate	
	7932.0 - 7943.0 LOST CORE					
	7943.0 - 7948.0 LOST CORE					
	7948.0 - 7973.0 CORES EXPOSED					
3	7948.5	150	13.6	2.9		
4	49.5	187	10.8	Trace		
5	50.5	145	14.5	2.8		
6	52.5	136	13.3	0.8		
7	53.5	55	12.7	0.0		
8	54.5	98	11.9	0.0		
9	55.5	298	13.6	0.7		
10	56.5	122	12.8	3.2		
11	57.5	99	12.0	0.8		
12	58.5	131	12.1	3.3		
13	59.5	86	12.5	0.0		
14	60.5	64	12.9	0.8		
15	61.5	151	15.7	0.0		
16	62.5	95	12.8	0.0		
17	63.5	70	11.9	0.0		
18	64.5	130	13.4	3.0		
19	65.5	95	12.5	2.4		
20	66.5	64	14.5	2.8		
21	67.5	136	13.6	2.2		
22	68.5	137	14.3	2.1		
23	69.5	144	15.3	1.3		
24	70.5	91	12.7	3.1		
25	71.5	71	13.4	1.5		
26	72.5	72	12.8	1.6		
Contents		26)2843 = 109	26)346.7 = 13.2			

Called Core Lab yesterday & talked to Mr. Barber. He says this porosity is total porosity & not Effective porosity. Emp 7/10/41.

Emp 11/4/41

NOTE:
(*) REFER TO ATTACHED LETTER.
(1) INCOMPLETE CORE RECOVERY—INTERPRETATION RESERVED.
(2) OFF LOCATION ANALYSES—NO INTERPRETATION OF RESULTS.

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CORE ANALYSIS AND INTERPRETATION

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL OIL SATURATION % PORE SPACE	PROBABLE PRODUCTION	REMARKS
27	7973.5	75	17.2	2.3	Distillate	
28	74.5	193	17.3	2.3	Distillate	
29	75.5	86	15.8	2.5	Distillate	
30	76.5	65	15.9	2.5	Distillate	
31	77.5	129	17.6	1.7	Distillate	
32	78.5	142	16.7	2.4	Distillate	
33	79.5	97	15.5	2.6	Distillate	
34	80.5	89	15.4	2.6	Distillate	
35	81.5	108	15.5	2.6	Distillate	
36	82.5	71	16.3	2.5	Distillate	
37	83.5	127	17.6	2.3	Distillate	
38	84.5	90	14.7	0.0	Distillate	
39	85.5	51	14.9	2.7	Distillate	
40	86.5	60	16.0	1.9	Distillate	
41	87.5	152	23.7	1.7	Distillate	
42	88.5	74	16.5	0.0	Distillate	
43	89.5	63	15.7	2.5	Distillate	
44	90.5	68	17.4	0.6	Distillate	
45	91.5	59	8.8	1.1	Distillate	
46	92.5	50	9.5	3.1	Distillate	
47	93.5	78	8.0	1.2	Distillate	
	7994.0 - 8001.0 LOST CORE					
48	8001.5	51	14.5	0.0	Distillate	
49	02.5	73	16.4	0.0	Distillate	
50	03.5	50	15.1	0.7	Distillate	
51	04.5	54	15.3	2.6	Distillate	
52	05.5	46	15.0	0.7	Distillate	
53	06.5	73	14.9	0.7	Distillate	
54	07.5	71	14.5	2.1	Distillate	
55	08.5	45	16.4	2.4	Distillate	
56	09.5	52	16.6	1.8	Distillate	
57	10.5	82	18.9	0.0	Distillate	
58	11.5	100	16.9	0.6	Distillate	
59	12.5	50	16.0	0.0	Distillate	
60	13.5	95	15.9	0.0	Distillate	
61	14.5	108	16.9	0.0	Distillate	
62	15.5	83	14.0	0.0	Distillate	
63	16.5	51	13.9	0.0	Distillate	
64	17.5	76	15.0	0.7	Distillate	
65	18.5	83	14.4	0.7	Distillate	

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CORE ANALYSIS AND INTERPRETATION

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL OIL SATURATION % PORE SPACE	PROBABLE PRODUCTION	REMARKS
66	8019.5	134	15.8	0.0	Distillate	
67	20.5	82	15.8	1.9	Distillate	
68	21.5	69	13.7	1.0	Distillate	
69	22.5	50	14.9	2.7	Distillate	
70	23.5	105	15.4	1.0	Distillate	
71	24.5	116	15.9	1.0	Distillate	
72	25.5	98	17.0	2.3	Distillate	
73	26.5	144	16.9	1.0	Distillate	
74	27.5	118	15.5	0.0	Distillate	
75	28.5	125	20.3	2.0	Distillate	
76	29.5	113	19.6	2.0	Distillate	
77	30.5	78	17.3	2.3	Distillate	
78	31.5	113	16.3	2.4	Distillate	
79	32.5	144	16.9	2.4	Distillate	
80	33.5	83	17.5	1.7	Distillate	
81	34.5	65	17.0	1.8	Distillate	
82	35.5	94	17.0	2.3	Distillate	
83	36.5	102	16.1	2.5	Distillate	
84	37.5	104	17.2	1.8	Distillate	
85	38.5	106	16.2	2.5	Distillate	
86	39.5	160	19.7	2.0	Distillate	
87	40.5	84	17.7	1.7	Distillate	
88	41.5	102	16.4	1.2	Distillate	
89	42.5	135	15.9	1.3	Distillate	
90	43.5	99	17.2	1.2	Distillate	
91	44.5	65	17.1	3.5	Distillate	
92	45.5	63	17.1	2.3	Distillate	
93	46.5	110	19.2	2.1	Distillate	
94	47.5	109	18.3	2.7	Distillate	
95	48.5	132	17.8	2.2	Distillate	
	8049.0 - 8057.0 LOST CORE					
96	8057.5	127	14.3	2.8	Distillate	
97	58.5	164	13.6	2.9	Distillate	
98	59.5	93	14.5	2.1	Distillate	
99	60.5	97	16.8	2.4	Distillate	
100	61.5	134	16.8	2.4	Distillate	
101	62.5	171	16.6	2.4	Distillate	
102	63.5	111	16.9	2.4	Distillate	
103	64.5	90	15.0	0.0	Distillate	
104	65.5	121	17.3	4.6	Distillate	
105	66.5	151	16.9	3.6	Distillate	

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FORM F-9A

CORE LABORATORIES, INC.

File FL 8-105

Well 7-1

CORE ANALYSIS AND INTERPRETATION

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL OIL SATURATION % PORE SPACE	PROBABLE PRODUCTION	REMARKS
106	8067.5	123	16.8	0.0	Distillate	
107	68.5	106	15.6	2.6	Distillate	
108	69.5	62	15.0	2.7	Distillate	
109	70.5	142	14.9	0.7	Distillate	
110	71.5	66	14.7	0.7	Distillate	
111	72.5	116	14.0	0.7	Distillate	
112	73.5	70	17.7	2.3	Distillate	
113	74.5	66				
114	75.5	54	15.7	0.0	Distillate	
115	76.5	63	13.8	0.0	Distillate	
116	77.5	61	16.2	2.5	Distillate	
117	78.5	70	14.9	2.7	Distillate	
118	79.5	52	15.4	2.6	Distillate	
119	80.5	89	16.1	2.5	Distillate	
120	81.5	103	16.9	2.4	Distillate	
121	82.5	62	15.9	1.0	Distillate	
122	83.5	61	17.0	2.3	Distillate	
123	84.5	44	15.6	2.6	Distillate	
124	85.5	36	14.7	2.7	Distillate	
125	86.5	159	18.2	1.0	Distillate	
126	87.5	36	14.1	4.3	Distillate	
127	88.5	48	13.1	3.1	Distillate	
128	89.5	47	16.4	2.4	Distillate	
129	90.5	60	16.6	4.2	Distillate	
130	91.5	61	14.6	3.4	Distillate	
131	92.5	51	15.4	2.6	Distillate	
132	93.5	45	15.3	2.6	Distillate	
133	94.5	56	12.3	3.3	Distillate	
134	95.5	102	17.1	2.3	Distillate	
135	96.5	51	13.1	3.1	Distillate	
136	97.5	34	15.5	4.5	Distillate	
137	98.5	45	14.6	10.3	Distillate	
138	99.5	37	15.2	11.8	Distillate	
139	8100.5	32	14.0	14.3	Distillate	
140	02.5	32	20.9	13.9	Distillate	
141	03.5	33	17.0	10.6	Distillate	
142	04.5	19	16.6	12.6	Distillate	
143	05.5	21	16.3	2.5	Distillate	
144	06.5	25	17.5	2.3	Distillate	
145	07.5	0	10.6	3.8	None	Low Permeability
146	08.5	0	10.0	4.0	None	Low Permeability
147	09.5	0	11.5	5.2	None	Low Permeability

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CORE ANALYSIS AND INTERPRETATION

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL OIL SATURATION % PORE SPACE	PROBABLE PRODUCTION	REMARKS
148	8110.5	36	16.8	3.6	Distillate	
149	11.5	39	18.2	5.5	Distillate	
150	12.5	52	12.6	3.2	Distillate	
151	13.5	38	10.2	Trace	Distillate	
152	14.5	46	11.7	0.0	Distillate	
153	15.5	50	12.7	3.2	Distillate	
154	16.5	41	16.1	1.9	Distillate	
155	17.5	42	14.9	2.7	Distillate	
156	18.5	60	13.1	3.1	Distillate	
157	19.5	35	11.2	2.7	Distillate	
158	20.5	24	15.6	0.0	Distillate	
159	21.5	38	16.5	0.0	Distillate	
160	22.5	38	18.5	3.2	Distillate	
161	23.5	49	18.1	0.0	Distillate	
	8124.0 - 8132.0 LOST CORE					
162	8132.5	28	16.2	2.5	Distillate	
163	33.5	34	15.8	1.9	Distillate	
164	34.5	40	15.3	2.6	Distillate	
165	35.5	40	15.9	1.9	Distillate	
166	36.5	40	17.0	2.9	Distillate	
167	37.5	24	15.3	0.7	Distillate	
168	38.5	43	16.8	2.4	Distillate	
169	39.5	27	16.1	0.6	Distillate	
170	40.5	50	15.5	2.6	Distillate	
171	41.5	18	12.1	4.1	Distillate	
172	42.5	39	15.9	1.9	Distillate	
173	43.5	30	15.2	2.6	Distillate	
174	44.5	31	15.5	2.6	Distillate	
175	45.5	36	14.7	2.7	Distillate	
176	46.5	40	15.3	0.7	Distillate	
177	47.5	19	15.7	2.5	Distillate	
178	48.5	15	15.3	0.0	Distillate	
179	49.5	23	13.8	2.9	Distillate	
180	50.5	19	13.7	2.9	Distillate	
181	51.5	11	14.0	2.9	Distillate	
182	52.5	17	12.1	0.8	Distillate	
183	53.5	28	13.6	2.2	Distillate	
	8154.0 - 8162.0 LOST CORE					

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FORM F-9A

CORE LABORATORIES, INC.

File FL 8-105

Well 7-1

CORE ANALYSIS AND INTERPRETATION

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL OIL SATURATION % PORE SPACE	PROBABLE PRODUCTION	REMARKS
184	8162.5	13	14.3	2.8	Distillate	
185	63.5	21	15.1	2.7	Distillate	
186	64.5	16	14.6	4.1	Distillate	
187	65.5	17	15.2	3.3	Distillate	
188	66.5	24	15.6	2.6	Distillate	
189	67.5	30	15.4	3.9	Distillate	
190	68.5	17	14.1	3.5	Distillate	
191	69.5	20	14.7	4.1	Distillate	
192	70.5	20	14.6	5.4	Distillate	
193	71.5	14	13.4	0.7	Distillate	
194	72.5	28	14.7	2.7	Distillate	
	8173.0 - Gas/Oil Contact					
195	8173.5	6	12.3	10.6	Oil	
196	74.5	13	13.3	14.3	Oil	
197	75.5	24	13.6	14.0	Oil	
198	76.5	22	15.1	14.6	Oil	
199	77.5	23	15.0	10.0	Oil	
200	78.5	22	14.3	16.1	Oil	
201	79.5	14	14.6	15.8	Oil	
202	80.5	13	14.0	13.6	Oil	
203	81.5	14	14.1	10.6	Oil	
204	82.5	9	13.8	13.8	Oil	
205	83.5	0	13.8	16.7	None	Low Permeability
206	84.5	9	14.4	12.5	Oil	
207	85.5	17	15.0	16.7	Oil	
208	86.5	6	13.3	16.5	Oil	
209	87.5	9	12.9	10.9	Oil	
210	88.5	10	13.1	10.7	Oil	
	8189.0 - 8191.0 LOST CORE					
211	8191.5	29	14.4	21.5	Oil	
212	92.5	28	14.6	16.4	Oil	
213	93.5	39	15.8	17.1	Oil	
214	94.5	34	14.4	12.8	Oil	
215	95.5	23	16.0	18.7	Oil	
216	96.5	25	13.4	13.5	Oil	
217	97.5	29	14.7	15.6	Oil	
218	98.5	37	12.9	14.0	Oil	
219	99.5	23	14.5	15.2	Oil	
220	8200.5	18	12.9	17.0	Oil	

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FORM F-9A

CORE LABORATORIES, INC.

File FL 8-105

Well 7-1

CORE ANALYSIS AND INTERPRETATION

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL OIL SATURATION % PORE SPACE	PROBABLE PRODUCTION	REMARKS
221	8201.5	14	13.7	16.8	Oil	
222	02.5	26	14.1	6.4	-	
223	03.5	27	15.8	13.3	Oil	
224	04.5	39	15.6	16.7	Oil	
225	05.5	15	15.6	11.0	Oil	
	8206.0 - 8221.0 LOST CORE					
226	8221.5	66	17.8	18.0	Oil	
227	22.5	36	16.3	19.6	Oil	
228	23.5	42	16.5	16.3	Oil	
229	24.5	1	13.0	4.6		Low Permeability
230	28.5	401	18.0	22.8	Oil	
231	29.5	259	14.4	9.0	Oil	
	8234.0 - 8246.0 LOST CORE					
	8247.0 - 8250.0 LOST CORE					

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CORE LABORATORIES, INC.
Petroleum Engineering Service
DALLAS

File FL 8-105
Well 7-1

CORE SUMMARY AND CALCULATED RECOVERABLE OIL (2)

CORE SUMMARY

FORMATION	WAGON WHEEL	WAGON WHEEL	WAGON WHEEL	WAGON WHEEL
DIVISION NO.	1	2	3	4
DEPTH, FEET	7973.0-8084.0	8084.0-8173.0	8173.0-8225.0	8228.0-8230.5
FEET CORED AND DRILLED	111.0	89.0	52.0	2.5
FEET OF CORE RECOVERED	96.0	72.0	35.0	2.5
% CORE RECOVERY	86	81	67	100
FEET OF PERMEABLE, PRODUCTIVE FORMATION RECOVERED	96.0	69.0	34.0	2.5
CUMULATIVE FEET OF PERMEABLE, PRODUCTIVE FORMATION			34.0	36.5
AVERAGE PERMEABILITY	90	37	23	330
CAPACITY			782	825
CUMULATIVE CAPACITY			782	1607
% CAPACITY			48.7	51.3
CUMULATIVE % CAPACITY			48.7	100.0
AVERAGE POROSITY, PERCENT	16.0	15.1	14.5	16.2
BBLS. PER ACRE FOOT	1241	1172	1125	1257
AVERAGE CONNATE WATER SATURATION, % PORE SPACE	32	32	30	28
GRAVITY OF OIL, °A. P. I.			33	32
GAS/OIL RATIO, CU. FT./BBL.			700	700
FORMATION VOLUME FACTOR			1.39	1.39

CALCULATED RECOVERABLE OIL (6)

BY NATURAL OR GAS EXPANSION, BBLS. PER ACRE FOOT (4)	(5)	(5)	202	228
INCREASE DUE TO WATER DRIVE, BBLS. PER ACRE FOOT	(5)	(5)	197	223
TOTAL AFTER WATER DRIVE, BBLS. PER ACRE FOOT (3)	(5)	(5)	399	451

CORE LABORATORIES, INC.
William L. Horner
William L. Horner, July 10, 1940

NOTE:
(*) REFER TO ATTACHED LETTER.
(1) INCOMPLETE CORE RECOVERY—INTERPRETATION RESERVED.
(2) PREDICTION BASED ON COMPLETE ISOLATION OF EACH DIVISION.
(3) AFTER COMPLETE WATER DRIVE—ORIGINAL RESERVOIR PRESSURE MAINTAINED.
(4) AFTER REDUCTION OF ORIGINAL RESERVOIR PRESSURE TO ZERO POUNDS PER SQUARE INCH.
(5) NO ESTIMATE FOR GAS PHASE RESERVOIRS.
(6) STRUCTURAL POSITION OF WELL SHOULD BE CONSIDERED.

These analyses, opinions of interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representation, as to the productivity, proper operation, profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

7

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KB 627.0000 FT

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CORE ANALYSIS PHI PCT	CORE ANALYSIS KHOR MD	CORE ANALYSIS SO PCT
30. 0.	0.01 1000.	0. 100.

DEPTH FT

8000

8100

8200

CORE LABORATORIES, INC.

Petroleum Engineering Service

DALLAS

COMPANY [illegible] OIL COMPANY
WELL [illegible]
FIELD [illegible] WHITTIER
COUNTY [illegible] STATE [illegible]

DATE 6-7-56 FILE RA-105
CORES [illegible] ANALYSTS [illegible]
REMARKS [illegible]

COMPLETION COREGRAPH

PERMEABILITY-MILLIDARCYS ○—○
1000 100 10 1 .1 .01 .001

FLUID INDEX ○—○
WATER→ X ←OIL AND/OR GAS

POROSITY-% ×—×
50 40 30 20 10 0

OIL-% PORE SATURATION ×—×
0 20 50 60 80 100

NOTE: CORES TAKEN IN 7920' 10'DRIL FLUID
CL ANALYSIS BY [illegible]
[illegible]

7920
7930
7940
7950
7960
7970
7980
7990
8000
8010
8020
8030
8040
8050
8060
8070
8080
8090
8100
8110
8120
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8140
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8160
8170
8180
8190
8200
8210
8220
8230
8240
8250
8260
8270
8280
8290
8300
8310

Coring

355-357 Recovered 3 inches - 13%
Extremely hard calcareous sandstone, medium with some coarse grains. Glauconite and oolites scattered throughout. Few small and unidentifiable shell fragments.

357-361 Recovered 12 inches - 25%
Top 10" - same sandstone, but coarser. More fossils - cross sections of what appears to be a very small Echinoid (Scutella merriami?). Also one questionable small Pecten. No mica.
Bottom 2" - hard gray fine calcareous sandstone and calcareous siltstone and one small piece dark gray siliceous limestone.

361-365 Fishtail. Cuttings = small chips of fine to medium dark gray to light gray sandstone.

365-365'4" Recovered 1 inch - 25%
Extremely hard gray medium to fine calcareous sandstone. No mica.

365'4"-365'10" Recovered 2 inches - 33%
Extremely hard coarse gray calcareous sandstone. Suggestions of fossils. No mica.

365'10"-366'6" Recovered 4 inches - 50%
Extremely hard gray medium grained calcareous sandstone. Scattered oolites and glauconite grains.

366'6"-373'6" Recovered 2 inches - 3%
Extremely hard rather dark gray highly calcareous ill-sorted sandstone with grains varying from fine to granule size. Fossiliferous but fossils are not idenfifiable. No mica.

373'6"-376' No recovery.

376-379 Recovered 2 inches - 5%
Extremely hard gray fine to medium calcareous sandstone, scattered oolites, glauconite, and small fragments that appear to be shell fragments. No mica.

379-380'4" Recovered 5 inches - 31%
Same sandstone. Oolites and few glauconites - no mica.

380'4"-393 No recovery.

393-396'8" Recovered 3 inches - 7%
Extremely hard gray calcareous granuliferous sandstone. One small shell fragment. No mica.

396'8"-397'2" Very hard - no recovery.

9-1N

Shell California Production Inc.

Well: 9-1

Field: North Belridge

Sidewall Core Analysis Report

April 30, 1986 File No: 80334

Data uploaded to OpenWorks®

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL Sidewall Samples
MUD TYPE Water Base

WELL 9-1
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	REC IN.	LITHOLOGY
8127.0	15.5	51.	0.53	30.3	57.4	87.7	2.63	0.75	Sst; lt olv gry, vfsd-msd, well cmtd, fr odor, lt stn, yel fluor
8198.0	12.7	5.9	0.53	25.8	48.8	74.6	2.63	0.75	Sst; lt olv gry, vfsd-msd, well cmtd, fr odor, lt stn, yel fluor
8240.0	16.0	16.	0.52	30.5	59.0	89.5	2.63	1.00	Sst; lt olv gry, vfsd-msd, well cmtd, fr odor, lt stn, yel fluor
8267.0	14.3	7.2	0.37	25.0	68.2	93.2	2.63	0.50	Sst; lt olv gry, vfsd-msd, well cmtd, fr odor, lt stn, yel fluor

Type of Extraction - Dean Stark Toluene Extraction.
Confining Pressure on the Permeameter = 200 psi
Oil Gravity Estimated By Visual Fluorescence = 35 API

These results must be used with caution. Sidewall core samples are obtained by impact coring. This method can fracture hard formations, thereby possibly increasing the porosity and permeability. In soft formations, impact coring can compact the samples, resulting in decreased porosity and permeability.

Drilling mud may penetrate fractures and soft formations, thereby affecting the porosity, permeability, fluid saturation, grain density and cation exchange capacity results.

SIDEWALL CORE RECORD

To Be Distributed

Shell California Production Inc.

Kernridge DIVISION

FIELD No. Belridge WELL 9-01 SEC 1 T 28S R 27E MDBM

DATE 4/22/86 TYPE SAMPLER Gearhart hard rock coring tool EXAMINED BY C H Soule

REMARKS

PAGE 1 OF 1

DEPTH	REC	LITHOLOGY	COLOR	HARD.	GRAIN SIZE: silt	vf	f	m	cse	v cse / peb	SORT.	SHAPE	ϕ	REMARKS	STAIN %	ODOR	FLUORESCENCE: %	intens	color	TRICHLOR. CUT: cut	cut fluor	AVE. SHOW NO.	SYMBOL
8022	1½"+	SDSTN OSS	Dk Brn	FR V MF							M.	SR		many poker chips	3	1	1	1	G2	1+	1	1.5	•X
8027	1"	SDSTN OSS	Dk Brn Gry	FR MF							M	SR SA		4-5 poker chips	3	1	2	1	2G	2	2	1.9	•
8045	1"	Sdstn OSS	Red to Red Brn	FR							P	SR SA		4 - ¼" poker chips! prom. red streaks in sample	2+	1	1	1	1BG	1+	1	1.3	•X
8061	¼"	Sdstn OSS	Brn outside Gry-Brn inside	FR							M	SR SA		2 - ½" chips + rubble dk outside, lite stain inside	2	2	2	2	2G	2	2	2.0	•
8082	1"	Sdstn OSS	Brn	FR							M	SR SA		2 - ½" chips + rubble	3	2	2	2	2G	2	2	2.1	•
8098	¼	Sdstn OSS	Brn-Gy-Brn	FR MF							M	SR SA		3 chips, 1 is ¾" cut done on v. small sample	2+	1	2	2	2G	1+	1	1.7	•
8127	1½"	Sdstn OSS	Gry-Brn	FR MF							M	SR SA		2 chips, 1⅛", ⅜"	2	1+	2	2	2G	1+	1+	1.7	•
8153	⅞"	Sdstn OSS	Gry TO Gry Brn	MF							M	SR SA		2 chips ¾, ⅛	2-	1+	2	2	2G	1	1	1.6	•
8180	½"?	Sdstn OSS	Gry Brn	FR MF							M	SR SA		many poker chips	2	1+	1	2	2G	1+	1+	1.6	•
8198	2¼"	Sdstn OSS	Gry Brn	MF							M	SR SA		3 chips 1" ⅞" ½" cut done on v. small sample	2	1	2+	2	2G	1+	1	1.7	•
8218	¾	Sdstn OSS	Gry Brn	FR							M	SR SA		poker chips	2	2	2+	2	2G	1+	1+	1.8	•
8240	⅞	Sdstn OSS	Gry BN	?			prob. Same							1 good plug - did not disturb	2	2	2	2	2G			2	•
8267	1"±	Sdstn OSS	Gry Brn	FR MF							M	SR SA		1 ¾" plug + 5 poker chips v. prom. red layer (iron damage?)	2	2	2	2	2G	1	1	1.7	•

8000032486

WELL TEST + ANALYSI CORE DESCRIPTION

0402935107
SHELL
FEE

9-1

BELRIDGE N
31 028S 020E 01

CA

KERN
UNITED STATES

TO Be Distributed

Shell California Production Inc.

SIDEWALL CORE RECORD — Kernridge DIVISION

FIELD No. Belridge WELL 9-01 SEC 1 T 28S R 27E MDBM

DATE 4/22/86 TYPE SAMPLER Gearhart hard rock coring tool EXAMINED BY C.H. Soule

REMARKS

DEPTH	REC	LITHOLOGY	COLOR	HARD.	GRAIN SIZE: silt	vf	f	m	cse	v cse / peb	SORT.	SHAPE	Ø	REMARKS	STAIN %	ODOR	FLUORESCENCE: %	intens	color	TRICHLOR. CUT: cut	cut fluor	AVE. SHOW NO.	SYMBOL
8022	1½"+	SDSTN oss	Dk Brn	FR/MF							M.	SR		many poker chips	3	1	1	1	G2	1+	1	1.5	•X
8027	1"	SDSTN oss	Dk Brn Gry	FR/MF							M	SR SA		4-5 poker chips	3	1	2	1	2G	2	2	1.9	•
8045	1"	Sdstn oss	Red to Red Brn	FR							P	SR SA		4 – ¼" poker chips! prom. red streaks in sample	2+	1	1	1	1BG	1+	1	1.3	•X
8061	¼"	Sdstn oss	Brn outside Gry-Brn inside	FR							M	SR SA		2 – ½" chips + rubble dk outside, lite stain inside	2	2	2	2	2G	2	2	2.0	•
8062	1"	Sdstn oss	Brn	FR							M	SR SA		2 – ½" chips + rubble	3	2	2	2	2G	2	2	2.1	•
8098	¼	Sdstn oss	Brn-Gy-Brn	FR/MF							M	SR SA		3 chips, 1 is ¾" cut done on v. small sample	2+	1	2	2	2G	1+	1	1.7	•
8127	1½"	Sdstn oss	Gry-Brn	FR/MF							M	SR SA		2 chips, 1⅝", ⅜"	2	1+	2	2	2G	1+	1+	1.7	•
8153	⅞"	Sdstn oss	Gry TO Gry Brn	MF							M	SR SA		2 chips ¾, ⅛	2-	1+	2	2	2G	1	1	1.6	•
8180	½"?	Sdstn oss	Gry Brn	FR/MF							M	SR SA		many poker chips	2	1+	1	2	2G	1+	1+	1.6	•
8198	2¼"	Sdstn oss	Gry Brn	MF							M	SR SA		3 chips 1" ⅞" ½" cut done on v. small sample	2	1	2+	2	2G	1+	1	1.7	•
8218	¾	Sdstn oss	Gry Brn	FR							M	SR SA		poker chips	2	2	2+	2	2G	1+	1+	1.8	•
8240	⅞	Sdstn oss	Gry BN	?			prob. Same							1 good plug – did not disturb	2	2	2	2	2G			2	•
8267	1"1	Sdstn oss	Gry Brn	FR/MF							M	SR SA		1 ¾" plug + 5 poker chips v. prom. red layer (iron damage?)	2	2	2	2	2G	1	1	1.7	•

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WELL TEST + ANALYSI CORE DESCRIPTION

CA
FEE 9-1
BELRIDGE N




8000032486

8000032485

WELL TEST + ANALYSI CORE ANALYSIS-ROUTI

0402935107
SHELL
FEE
9-1

BELRIDGE N
31 028S 020E 01
CA

KERN
UNITED STATES

Well Name:	9-1
Well UWI:	0402935107
Sec-Twp-Rge:	01T28SR20E
Central Files Barcode:	8000032486
Report Title:	SIDEWALL CORE

Coding date:	10/27/2009
This sheet coded by:	Lester Carcamo
Vendor:	Petroleum Testing Service Inc
Vendor file number	80334
Report Date:	01/08/1941
ANOTATED	NO

	Sample Type	Reservoir: a, b, c, d, e.
	Conventional-Plug	64 Zone
	Conventional-Whole	
x	Sidewall	
	Cuttings	
	Mudlog Sample	
	Produced	Top Depth:
	Surface	8127
	Geological Outcrop	Bottom Depth
	Other	8267

	Data containers information	Scan Requested
	LIVE-LINK	
	Core DB	yes
	OpenWorks	Notes
	Binders	
	R:drive	
	LAS file	
	Ambient Pressure	
x	Stressed Pressure	

Check all pertaining to each report - submit sheet for each report

	Core Report Type	Core Report Subtype
	Routine Analysis	Description-UV Light
	Routine Analysis	Photography-White/UV
x	Routine Analysis	Density-Grain
	Routine Analysis	Routine Analysis - Other
	Routine Analysis	Porosity-Other
	Routine Analysis	Natural-Spectral Gamma Ray
	Routine Analysis	Permeability-Air
	Routine Analysis	Density-Matrix
X	Routine Analysis	Fluid Saturation-PKS
	Routine Analysis	Sieve Analysis
X	Routine Analysis	Description-Lithological

	Core Report Type	Core Report Subtype
	Petrophysical-Flow Study	Heat Transfer Coefficient
	Petrophysical-Flow Study	Fines Migration-Mobilization Velocity
	Petrophysical-Flow Study	Petrophysical-Flow Study - Other
	Petrophysical-Flow Study	Permeability-Oil
	Petrophysical-Flow Study	Rock Pore Preferred Wettability
	Petrophysical-Flow Study	Permeability-Toluene
	Petrophysical-Flow Study	Relative Permeability
	Petrophysical-Flow Study	Permeability-Brine
	Petrophysical-Flow Study	Permeability-Vertical
	Petrophysical-Flow Study	Permeability-Water

	Petrophysical	Formation Resistivity Factor
	Petrophysical	Cementation Factor
	Petrophysical	Luminosity Analysis
	Petrophysical	Oil Viscosity
	Petrophysical	Petrophysical - Other
	Petrophysical	Saturation Exponent
	Petrophysical	Tortuosity
	Petrophysical	Formation Resistivity Index
	Petrophysical	Model Evaluation
	Petrophysical	Oil Gravity-Density
	Petrophysical	Oil Pyrolysis
	Petrophysical	Formation Water Resistivity
	Petrophysical	Matrix Neutron Index
	Petrophysical	Oil Chromatography
	Petrophysical	Bulk PEF
	Petrophysical	CAT Scan
	Petrophysical	Mercury Injection
	Petrophysical	Capillary Pressure Analysis
	petrophysical	Cation Exchange Capacity
	Petrophysical	NMR Analysis
	Petrophysical	Pore Throat Analysis

	Geochemistry	Geochemistry - Other
	Geochemistry	Formation Water-Brine Chemical
	Geological Service	Description-Petrographic
	Geological Service	Formation-Rock Unit Identification
	Geological Service	Rock Age
	Geological Service	Mineralogy-XRD/FTIR
	Geological Service	Geological Service - Other
	Geological Service	Photography-Infra Red
	Geological Service	Paleontological Analysis
	Geological Service	Box Report
	Geological Service	Thin Section
x	Geological Service	Description-Field Engineer Report
	Geological Service	Hydralic Unit Analysis
	Geological Service	Scanning Electron Microscopy

	Reservoir Fluid	Steamflood Analysis
	Reservoir Fluid	Produced Gas Analysis
	Reservoir Fluid	Reservoir Fluid - Other
	Reservoir Fluid	Produced Water Analysis
	Reservoir Fluid	Produced Oil Analysis

	Rock Mechanics	Rock Mechanics - Other
	Rock Mechanics	Rock Acoustic Velocity
	Rock Mechanics	Surface Area Per Unit Volume
	Rock Mechanics	Rock Compressibility Analysis
	Other	Other

Lester Carcamo 07/23/2009

10X-1N

P.G

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

BELRIDGE OIL COMPANY
10X-1
NORTH BELRIDGE
KERN COUNTY,CA

DATE : 07-DEC-79
FORMATION :
DRLG. FLUID: WB
LOCATION : SEC.

FILE NO : 08706
LABORATORY: BAKERSFIELD
ANALYSTS : DLK
ELEVAION :

0402959890

SIDEWALL CORE ANALYSIS

REC IN	DEPTH	PERM MD	POR %	OIL% PORE	WTR% PORE	O/W RATIO	SAMPLE WEIGHT	DESCRIPTION
1.5	5468.0	114.	29.1	11.8	68.6	0.17	11.34	SD;GY-TAN,VF-FGR,VSLTY,MSTN,DGLD FLU
1.0	5475.0	682.	31.2	9.9	53.8	0.18	14.14	SD;BRN,VF-CGR,SLTY,MSTN,DGLD FLU
0.3	5486.0	1119.	36.1	27.3	45.5	0.60	2.31	SD;TAN,VF-CGR,SLTY,MSTN,DGLD FLU
0.2	5642.0	888.	35.7	10.0	50.0	0.20	2.08	SAME
0.4	5651.0	945.	31.0	20.8	51.4	0.41	4.62	SAME
0.3	5658.0	719.	31.5	20.0	45.2	0.44	7.32	SAME
0.5	5667.0	865.	31.8	14.1	48.1	0.29	8.36	SAME
1.0	5672.0	696.	32.6	16.3	52.3	0.31	10.63	SD;TAN,VF-FGR,SLTY,MSTN,DGLD FLU
0.6	5691.0	401.	29.4	5.9	72.4	0.08	14.55	SD;TAN,VF-CGR,VSLTY,LSTN,GLD FLU
1.0	5697.0	449.	26.7	0.0	78.1	0.00	13.41	SD;GY,VF-CGR,VSLTY,NO STN,NO FLU
0.4	5715.0	389.	27.6	0.0	76.9	0.00	9.81	SAME
0.3	8742.0	247.	27.1	10.4	68.0	0.15	9.81	SD;TAN,VF-CGR,VSLTY,LSTN,GLD FLU
0.3	8768.0	131.	26.5	2.6	76.9	0.03	3.05	SD;TAN,VF-MGR,VSLTY,LSTN,DGLD FLU
0.1	8770.0	127.	33.2	3.9	74.0	0.05	4.72	SAME
1.0	8773.0	45.	25.2	15.2	58.0	0.26	9.46	SAME/CALC

Aera Central Files
BOX: 029287
0000588863
Test & Analysis
0402959890
NORTH BELRIDGE 01 28S 20E
10X-1

AERA CENTRAL FILES
0000588863

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D.O.G.

BELRIDGE OIL CO.
10X-1
BELRIDGE-NORTH
KERN COUNTY, CA

DATE : 26-DEC-79
FORMATION :
DRLG. FLUID: WB
LOCATION :

FILE NO : 08764
LABORATORY: BAKERSFIELD
ANALYSTS : DLK
ELEVAION :

SIDEWALL CORE ANALYSIS

REC IN	DEPTH	PERM MD	POR %	OIL% PORE	WTR% PORE	O/W RATIO	SAMPLE WEIGHT	DESCRIPTION
0.1	9520.0	35.	18.2	1.3	77.9	0.02	4.55	SD;TAN,VFGR,SLTY,LSTN,GLD FLU
0.3	9528.0	59.	23.5	0.9	85.2	0.01	5.09	SAME
0.6	9536.0	42.	24.8	1.2	71.6	0.02	3.44	SAME
0.3	9543.0	33.	20.9	1.9	56.6	0.03	2.60	SAME
0.2	9546.0	44.	26.5	0.0	56.7	0.00	2.30	SAME
0.5	9551.0	35.	21.6	0.0	63.9	0.00	3.57	SAME
0.6	9558.0	22.	23.4	0.0	64.0	0.00	4.48	SAME
0.6	9563.0	41.	25.3	1.2	44.7	0.03	3.36	SAME
0.4	9580.0	37.	22.1	0.0	48.4	0.00	2.78	SAME
0.7	9589.0	24.	25.4	1.0	72.4	0.01	4.37	SAME
	9597.0							NO SAMPLE
0.6	9600.0	48.	21.7	1.5	43.1	0.04	3.02	SAME
0.7	9614.0	30.	24.8	1.5	64.6	0.02	2.78	SAME
1.2	9618.0	44.	26.5	1.6	52.5	0.03	2.41	SAME
0.6	9628.0	36.	19.4	2.0	81.6	0.02	2.64	SAME
0.8	9534.0	25.	29.1	1.7	82.8	0.02	4.02	SAME

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17-2N

Well Name:	17-2
Well UWI:	0402977930
Sec-Twp-Rge:	S2-T28S-R20E
Central Files Barcode:	0000421511
Report Title:	CORE PHOTO

Coding date:	08/19/2009
This sheet coded by:	Lester Carcamo
Vendor:	Shell California Production Inc
Vendor file number	
Report Date:	04/23/1986
ANOTATED	NO

	Sample Type	Reservoir: a, b, c, d, e.
	Conventional-Plug	Diatomite
x	Conventional-Whole	
	Sidewall	
	Cuttings	
	Mudlog Sample	
	Produced	Top Depth
	Surface	8350
	Geological Outcrop	Bottom Depth
	Other	8831

	Data containers Information
	LIVE-LINK
	Core DB
	OpenWorks
	Binders
	R:drive
	LAS file
x	Ambient Pressure
	Stressed Pressure

Scan Requested
yes

Notes

Check all pertaining to each report - submit sheet for each report

	Core Report Type	Core Report Subtype
	Routine Analysis	Description-UV Light
	Routine Analysis	Photography-White/UV
	Routine Analysis	Density-Grain
	Routine Analysis	Routine Analysis - Other
	Routine Analysis	Porosity-Other
	Routine Analysis	Natural-Spectral Gamma Ray
	Routine Analysis	Permeability-Air
	Routine Analysis	Density-Matrix
	Routine Analysis	Fluid Saturation-PKS
	Routine Analysis	Sieve Analysis
x	Routine Analysis	Description-Lithological

	Core Report Type	Core Report Subtype
	Petrophysical-Flow Study	Heat Transfer Coefficient
	Petrophysical-Flow Study	Fines Migration-Mobilization Velocity
	Petrophysical-Flow Study	Petrophysical-Flow Study - Other
	Petrophysical-Flow Study	Permeability-Oil
	Petrophysical-Flow Study	Rock Pore Preferred Wettability
	Petrophysical-Flow Study	Permeability-Toluene
	Petrophysical-Flow Study	Relative Permeability
	Petrophysical-Flow Study	Permeability-Brine
	Petrophysical-Flow Study	Permeability-Vertical
	Petrophysical-Flow Study	Permeability-Water

	Petrophysical	Formation Resistivity Factor
	Petrophysical	Cementation Factor
	Petrophysical	Luminosity Analysis
	Petrophysical	Oil Viscosity
	Petrophysical	Petrophysical - Other
	Petrophysical	Saturation Exponent
	Petrophysical	Tortuosity
	Petrophysical	Formation Resistivity Index
	Petrophysical	Model Evaluation
	Petrophysical	Oil Gravity-Density
	Petrophysical	Oil Pyrolysis
	Petrophysical	Formation Water Resistivity
	Petrophysical	Matrix Neutron Index
	Petrophysical	Oil Chromatography
	Petrophysical	Bulk PEF
	Petrophysical	CAT Scan
	Petrophysical	Mercury Injection
	Petrophysical	Capillary Pressure Analysis
	petrophysical	Cation Exchange Capacity
	Petrophysical	NMR Analysis
	Petrophysical	Pore Throat Analysis

	Geochemistry	Geochemistry - Other
	Geochemistry	Formation Water-Brine Chemical
	Geological Service	Description-Petrographic
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	Geological Service	Geological Service - Other
	Geological Service	Photography-Infra Red
	Geological Service	Paleontological Analysis
	Geological Service	Box Report
	Geological Service	Thin Section
	Geological Service	Description-Field Engineer Report
	Geological Service	Hydralic Unit Analysis
	Geological Service	Scanning Electron Microscopy

	Reservoir Fluid	Steamflood Analysis
	Reservoir Fluid	Produced Gas Analysis
	Reservoir Fluid	Reservoir Fluid - Other
	Reservoir Fluid	Produced Water Analysis
	Reservoir Fluid	Produced Oil Analysis

	Rock Mechanics	Rock Mechanics - Other
	Rock Mechanics	Rock Acoustic Velocity
	Rock Mechanics	Surface Area Per Unit Volume
	Rock Mechanics	Rock Compressibility Analysis
	Other	Other

Lester Carcamo 07/23/2009

SCPI - 142-85- I

DATE 4/23/86

CORES EXAMINED BY C. Soule - SCPI
E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD ~~NORTH BELRIDGE~~

COMPANY SCPI

LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
1	8350	8372	19.8	Sdst; Lt. gry with lt. brn oil stain mottling. Massive, firm to hard; sl. friable where stained. Lt. gry spots 2-4 mm diam. v. hard. These spots have non-calc, prob. silicious cement. Brn. mottles 2-5 mm are softer, have about 10% vis porosity. Composition: quartzose, com. clear gry; chalky altered fspar. Scat. dk lithic/mafic grains, trace glauc. Weak acid reaction. GRA: generally coarsens upward. Fine sd to U.CRS, dom L. med. at base, dom. U. Med at top. Com. V.CSE at 8356.6 Larger grains often lithic frags. Ang. to Sbrnd, dom sbang; Low to mod. spher; mod sort, to poor towards base. Basal 0.4 ft. has flakey habit, hint of bedding. More fine sd. at base. 50-60% oil flour., slow streaming to blooming.	8350		M	Brt.Yel	Pale straw		S
					8353.3		M	Brt.Yel	straw		
					8359.2		M	Brt.Yel to blue white	Pale straw		
					8364.9		M	Yel	Pale straw		
					8369.3		M	even Yel.on broken surfaces	straw		
2	8378	8380	1.5	Rec. 6" of rubble in core 2. Rec. 1' rubble at top of core 3, attrib. to core 2 Sdst. Lt. gry; firm to hard but in part sl. friable; v. sl. calc; prob silicious cmt. Dom. grain supported; v. sl. calc; silicic chalky to grainy appar. cmt/matrix; matrix appar. porous, perm. Composition Clr & Gry Qtz; com. frosted to chalky altered fspar; scat blk grs; scant tr. soft glauc. 60-70%± Lt. to mod brt yel oil flour, v. lt. brn stain; slow streaming to blooming, transp. yel to blu-wh cut flour. Wk petrol odor, staining wk & residual. GRA L med to LCRS subang, low to mod spher, mod. sort.	8378.5		M	Yel	Pale straw		S

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). I-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CP[illegible] 512803

SCPI - 112-85- F

DATE 4/23/86 C. Soule - SCPI

CORES EXAMINED BY E. Tikanen - Epouch

Shell California Production Inc.

CORE RECORD

("HEAVY" OIL PROVINCES)

AREA OR FIELD ~~NORTH BELRIDGE~~

COMPANY SCPI

LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO, A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
3	8380	8410	30.5	Rec. 30.5' core plus 1 ft. rubble at top. This rubble assigned to core #2 Sdstn, Lt. gry, massive, friable to non-friable, mottled ±20% with white spots 2-4 mm diam. Spots are hard, with non-calc cmt. Do not flouresce. Common spots 2-5mm diam oil stained sd. flouresce blue-white. Composition quartzose; com. soft, weathered fspar; tr. brittle blk malfics, sl. tr. glauc. w/mica cleavage (poss. chlorite?) weak lt. oil odor. Weak acid reaction. GRA coarsens upwards; 8401.5 UF to UM, incr. to LM to LCRS, dom UM at 98.7. Remains in this range to top, with scat. VCRS at top. Ang-subang, low to mod. spher. Mod. well sorted at base decreasing to mod/poor at top.	8381.2		S	Yel	Pale straw		S
					8387.3		S	Spotty yel	Pale		
					8390.2		S	Yel to wh.			
					8393		M	Yel to wh.	Straw		
					8395.3		S	Yel to Bl-wh	Pale straw		
					8401.5		S	Brt yel	Straw		
				8380-8403.5 Dom massive, coarsening upwards sdst.							
				8403.5-8403.6 Sharp but contorted (soft sed. deformation) depositional contact; massive sand above, burrowed sand below.	8404.4		Abs	Diffuse	Clear		3
				8403.6-8410.3 Sdstn, lt. gry, heavily burrowed, non-friable, developing argil. streaks & patches. Silicic cmt. & matrix, v. sl. calcareous. Composition: quartzose; chalky fspar; incr. amts. mica; scat. glauc, incr. argil downward. GRA: FN-Med sand, ang-subang, low sphericity, mod to poor sort.	8407.2						
					8410.3						
				Cut & Flouresence Spotty oil flour. 40-70% mod to brt. yel; slow blooming to streaming cut flour, yel. to wht; weak petrol odor. Pale straw vis cut. Stain lt. to v. light.							
				Below 8403.5 Sample flour. decr. to nil. No vis. oil stn; v. weak diffuse yel. cut flour.; No vis. cut.							
				Cores 1-3 from Upper 64 Zone "Bloemer" or "U" Sand							

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). I-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CP 512803

SCPI - 112- 85- I

DATE 4/23/86

CORES EXAMINED BY C. Soule - SCPI
E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD

COMPANY NORTH BELRIDGE

LEASE AND WELL NO. SCPI 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO, A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
4	8485	8489	2	SDSTN Lt. brn-gry to lt. brn, mod petrol. odor. 8485-8485.4 gry with lt. brn oil stain; 0.2 ft. transition to 8485.6-8487 brn. oil stained sand. Hard to sl. friable; massive but disturbed, suggestive of burrowing. Dom. tight, non-calc cmt, but some calcite cmt above, decreasing downwards. Composition vitreous & frosted Qtz, abdt. altered fspar, up to 5% blk. lithic/mafic grains, scat. glauc. One 1½" dolostone clast at 8485.3; GRA: fine to granule. Granules tend to be lithic frags, which diminish in frequency below 8485.6. Lg. pebble (1½") at 8435.3; ang.-subrnd, mod. spher.; poor sort. Flour. Even brt yellow sample flour.; slow streaming lt. yel to blue-white cut flour., stronger blue-white below 8485.6. Vis. cut pale straw to straw. Overall apparently sli. softer, more porous than U sand.	8485	8487	M	Yel to Bl-wh A white	Pale straw Blue	Straw	3
5	8489	8494.5	0.1	SDSTN as above, some v. crs subrounded grains. Even lt. bn oil stain, cmt. dom non-calc. Appar porosity ±10%. Even, grainy brt. yel. sample flour.	8489		A	Blue-white	Straw		S

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CPA[illegible]612803

SCPI - 112-'85- I·

DATE 4/23/86 C. Soule - SCPI
CORES EXAMINED BY J. Day - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD NORTH BELRIDGE
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
6	8532	8559	22.8	Sdst., Lt. to med. gry; massive; nonfriable to occ. friable; lt. brn. oil stain; sl. to absent petrol. odor; composition: dom frosted or glassy Qtz, lesser fspar and dk mafic/lithic grains. Fspar dom over dk grains above 8538, lithic/mafics dom 8538-8542±, then fspar more dom to base. Overall qtz % incr downward from 8545 to 8554 (base), Tr. glauc. Mostly grain supported with sl. to minor silicic cmt. Non-calcareous above 8540± becoming sl. calcareous below. Fair appar. porosity, poor appar. perm. Absorbs water extremely slowly. GRA: LF to UM, dom. LM from 8532-8535, incr coarser downward w/occ. VCRS near 8545, Core has coarsest grain size where lithics are common. Overall sequence, core coarsens upward from 8554.5 to 8545, then fines upwards to top of core; v. ang. to occ. well rounded, low to mod. spher. Mod to poor sort; Flourescence: sample fl. uneven mod brt. yel. to even brt. yel to v. brt wh yel., gen. increase downward; cut flour. mod. fast to fast difuse to streaming pale yel to yel-wht; pale straw to dk. straw to lt. amber cut; resid cut flour. brt. chalky yel. to mod. brt yel. to v. brt yel-wht or blue-wht, incr. downward.	8532		S	even brt. yel-white	dk. straw	1+	S
					8535.6		S	uneven brt. yel.	pale straw	1-	○
					8538.8		S	uneven brt yel	straw	1	
					8543.1			brt yel	dk. straw	1+	
					8545.3		S	even v.brt. yel	pale straw	1-	
					8551.3		S	even brt yel	lt. amber	2	
					8554.5		S	v.brt wh-yel	dk straw	1+	
											○

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CP[illegible]612803

SCPI - 112-"85- I'

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

DATE 4/23/86 C. Soule - SCPI
CORES EXAMINED BY E. Tikanen - Epoch

AREA OR FIELD NORTH BELRIDGE
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO, A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
7	8559	8615	7.5	Sdst. med. gry, appar. massive, but core broken into many small pieces ½ to 3" length, one 12" piece. Mostly non-friable, chalkly non-calc. cmt, prob. silicic. Some small patches calc. cmt. at base--8566.7(?). Sl. lit. brn oil stain, fair petrol. odor; overall incr. in oil attributes w/depth. Composition: qtz with abdt. fspar, scat. lithic/mafics, tr. to scant tr. glauc.; grain supported, non-calc chalky cmt. Basal 0.5 ft. has 5-10% non-calc(?) white patchy cmt. Vis. porosity 15%± in most of core, v. tight at bottom. Sl. permeable-water percolates slowly. GRA: UF to LCRS, dom UM. Bottom 0.5' M-CRS w/some VCRS. Dom sbang w/com. ang & sbrnd, some well rounded VCRS grains; dom low to high spher, basal 0.5' v. low to occ. high spher. Some oblate lithic/mafic grains. Sort mod, to low at base. Overall, abrupt coarsening in basal 0.5 ft. May be from deeper than 8566.7 Flourescence: brt. yel to powdery yel. Sample flour, streaming yellow to instant blooming blue-wh cut flour; straw dk straw vis. cut; overall incr. oil attributes at base. Core had very poor recovery due to junk in hole and damaged bit.	8559 8566.7		S S	brt yel powdery yel	straw dk straw	1 1+	S

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SCPI - 112- 85- I'

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Shell California Production Inc.
CORE RECORD
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AREA OR FIELD ~~NORTH BELRIDGE~~
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
8	8617	8647	28.5	Sdstn., med. grey w/pervasive lt. brn oil stain; massive; firm to hard; grain supported, calc. cmt. in part; cmt. appar. v. finely granular to XLN, dom non-calc. w/patches kaol. constituent of cmt.; composition: clr., milky & gry qtz, accessory fspar & blk lithic/mafic grs. Pss. greater lithic/mafic above 8630±; lithics decrease substantially & fspar common below 8630± Scat. to nil glauc. Incr. kaol. w/depth, esp. near 8638, then diminish towards base (8645.5). GRA: LM-VCRS, com UCRS above 8626, fn-CRS com ML below; shale wisps in bedding @ 8626.9, 8643.3; dom.ang-com sbang; mod to low spher; pr to mod srt. Stain decreases from sl. to v. sl. in lower 10ft; vis. por. tight, 10% to 15%, tighter where calc. cmt; flouresence: spotty to even (±80%) mod to brt. yel. sample flour., often powdery, yel-wh @ 8641.8, with poss. wh. mineral flour. Inst. yel to wh. cut flour., streaming to blooming at top, less prominent with depth. Mod. strong to translucent yel. cut flour., diminish with depth; straw to pale straw vis. cut. 8617-8619 core has 5+ steeply dipping (±60°) fractures, healed with calcite fill.	8617 8619.7 8623.7 8631 8634.8 8638.8 8641.8 8645.5		S 80%Brt yel. part mineral S even brt yel S spotty to even brt.yel S powdery yel S as above S mod. brt. yel V.S. powdery yel-wh V.S. powdery mod. brt-yel V.S. prob. some mineral	straw 1 straw 1 pale to straw straw 1 1 decr. decr. decr.		S

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CPAH86128

SCPI - 112-85- I

DATE 4/23/86 C. Soule - SCPI
CORES EXAMINED BY J. Day - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD NORTH BELRIDGE
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
9	8647	8677	30.5	Sdst. Lt. to mod. gry-brn, becoming lt. med gry below ±8668. Massive, w faint evidence of bedding in grain-size changes. Appar. dip 20-25°. Firm to hard; rubble from 8662.5 to 8664; Abdt. to sl. calc. cmt, often patchy. Common non-calc cmt. Some tr. kaolinite in cmt.; wk to tr. poss carbonaceous material @ 8652. Fair petrol. odor above 8668, weakening below. Composition: dom. frosted to glassy qtz; com to scat wh to gry fspar, scat to occ dom (over fspar) mafic/lithics. Tr to nil glauc. wk. tr. kaolinitic material in matrix. GRA: LF-UCRS, dom M, varying from UVF-CRS near 8660 to com UCRS grains most elsewhere. Texture change at 8677:LF-UCRS above, LF-UM w/rare UCRS below. The contact is diffuse, and dips about 20°. Less large mafics below. There are other grain-size changes, but they are gradational. Dom ang to subr., occ. rounded. Coarser grains com. subrounded. High to low spher., poor to mod. sort. Fracture, probably mechanically induced at 8651. Flourescence: sl. to com. v-brt mineral flour. from cmt, prob calcite; sample flour. (oil) powdery patchy (80%) to uniform brt. to mod. yel-wh to yel; crushed cut flour. range from v. fast streaming milky wh-yel at top through translucent to transparent wht. yel.; lt. amber to pale straw vis. cut; v. brt to mod brt chaly yel-wh to yel. resid. cut flour; all attributes diminish with depth.	8647.2 8650 8652.2 8656 8660 8662.5 8666.3 8669.2 8672 8677.5		S S S V.S. V.S V.S V.S V.S V.S. V.S.	powdery yel-wh brt yel 80% brt yel patchy powdery brt yel powdery wh-yel brt yel-wh incl. mineral mod yel-wht incl mineral mod.brt. yel-wh decr yel-wh patchy powdery yel-wh	lt. amber 2-straw 1 pale straw pale straw 1-straw 1	1-	S

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CPAH86128C

SCPI - 1124 85- I

DATE 5/8/86 C. H. Soule - SCPI
CORES EXAMINED BY E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
10	8677	8707	30.2	Sdstn; Lt. med gry; faint bedding, almost massive, with several fining upwards sequences; hard; patchy lt. brn oil stain with weak petrol odor from broken surfaces. Cmt varies from non-calc w/poss. kaol to wht. calc. spots, to v.calc.; Poss. 5 sequences: 8677-8685.8: LM-LCRS at base, UF-UM dom. LM at top. Poss. burrow @ 8677.2, 8680.2, coarser bed at 8681.7; 8685.8-8691.3: Fines upwards, poss twice w/coarse bed @ 8688; 8691.3-8692.2: LM-UCRS at base, shaley at top; 8692.2-8697.7: LM-CRS at base, with shale rip-up clasts, shaley at top, v.calc. at base; 8697.7-8707: mostly massive. Sl. fining upwards from F-LCRS at base to UF-UM at top. Base of core prob. not base of sequence. Tight white spots appear, and incr. upwards from 8701. Composition: Qtz, com. fspar, scat lithic/mafic, tr. glauc, tr. wh. mica. At 8692.2, grs. matrix supported in calc. cmt; incr. in lithic/mafics & wh. mica. GRA: as above. Angular to sbrd, low to mod spher, poor to mod. sort. Appar. tight even where no heavy calc. cmt. plugging porosity. Lt. brn oil stn. appears to be in cmt. Flouresence: part from minerals. Oil flour. mod brt. yel, becoming quite spotty in some places. Cut flour. instant to slow transluc. to transp. yel-wht, few streamers. Mod. strong to transp. resid. cut flour., pale straw to no vis. cut. Oil attributes decrease downwards through thinner sequences, then incr. slightly in lowest sequence. Overall oil properties appar. v. wk and residual.	8680.8		V.S.Scat.mod brt.yel	Pale straw 1-		S
					8685.7		V.S.As above				
					8689		V.S.40-50% Yel		Pale straw 1-		○
					8692.2		V.S.20-30% Yel		Pale straw to none 1-		
					8699		V.S. 70% Yel		Straw, pale straw 1		
					8706.9		As above				○

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CPAH86128C

SCPI - 112- 85- I

DATE 5/8/86 C. H. Soule - SCPI
CORES EXAMINED BY T. Day - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
11	8707	8737	28.9	SDST; med. gry; massive, except 4 thin fining upwards sequences topped by thin shales in basal 5 ft; hard; cmt. mostly silicic, tr. to sl.calc. cmt, becoming grain supported to calc cmtd near 8720. Weak petrol odor. Poor stain except lt. residual stain betwn 8718-8721, where core heavily broken into smaller pieces tight cmt. white spots incr. downward from 8727± to base of core. Prob. burrow at 8729.3; poss. permeable fracture at 8710.3; prob. permeable natural fracture at 8719.9-8720.4, broken from 8719.9-8720.2, unbroken 8720.2-8720.4; composition: frosted to glassy qtz; gry fspar; lesser lithics/mafics; tr. glauc; wk tr to tr wh. mica, incr. at base. GRA: LF to VCRS, dom M. fining upward from 8720 to 8707, 8735.9-8720; Qtz. mostly angular, sbang-sbrnd fspar; sbrnd mafics; poor to mod. sort; low to mod spher; Flourescence: common mineral flour., esp. where calc. cmt; patchy to spotty mod. brt yel-wht sample flour., less spotty where fractured near 8720; fast transluc. to transp. yel-wht cut flour. with freq. to few streamers; brt. yel resid. cut flour; straw to pale straw vis. cut.	8710.9		S	Patchy mod.brt. yel	Straw 1		
					8715.3		V.S.	incr. intensity (mineral?)			
					8719.7		V.S.	Mod.brt. yel-wht mineral 20% +			
					8725.4		V.S.	Patchy yel-wht			
					8730.2		V.S.	Patchy powdery yel-wht			
					8733.8		V.S.	Decr.	Pale straw 1		
					8735.9		V.S.	Incr. Prob. mineral	Pale straw 1		

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). I-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CPAH86128

SCPI - 112-85- I

DATE 5/14/86 C. H. Soule - SCPI
CORES EXAMINED BY E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO, A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
12	8737	8767	30	SDSTN, lt. to med. gry, mostly massive with hints of 2 to 3 ft. beds in upper quarter. Hard to sl. friable where stained. Traces free oil on occ. fracture surface; cmt mostly non-calc, occ. appar kaolinitic; weak lt. brn oil stn with faint petrol. odor; burrows at 8737.9, soft sed. deformation of shale laminae at 8745, three possible fining upwards sequences 8745-8743.3; 8743.3-8440.4; 8740.4-8737.5±; not much obvious grain size change, but shale laminae at top of each sequence. Top sequence has no shale but has scat. tight spots (wht, 2 mm diam), and 0.1' tight band at 8739.2. Coarser grained above 8737.5; composition: qtz; fspar; scat. glauc. and lithic/mafic grains; occ mottled layered argillaceous material. GRA: finer tops of cycles are LF-LM, coarser lower portions F-CRS, dom LM; poor to mod. sort; ang-sbang; low to mod. spher; gen. grain supported. Only occ. calc. cmt; flourescence: even to scattered 60-75% powdery yel. sample flour, incr. to wht. yel at 8760; prob. part mineral flour.; slow streaming to instant transluc. yel. cut flour.; pale straw vis. cut; mod to fair yel. resid. cut, decr. with depth.	8739.6		S	60-70% powdery yel	Pale straw	1-	S
					8740.5		V.S.	even scat. yel prob.part mineral	Pale straw	1-	
					8746		V.S.	even med.yel	Pale straw	1-	
					8749.1		V.S.	Grainy even	Pale straw	1-	
					8755.4		V.S.	60-70% scat wht-yel	Pale straw	1-	
					8760.7		V.S.	incr. to 75% mod. wht.yel	Pale straw	1-	
					8766		V.S.	Poor			

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CPAH86128

SCPI - 112- 85- 1

DATE 5/14/86 C. H. Soule - SCPI
CORES EXAMINED BY E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
13	8767	8772	5.5	SDSTN, med. gry; bedding 3 fining upwards seq. 1-2 ft. thick with coarser sand at base, fining upwards to shale lenses: 8771.9 to 8770.6; 8770.6 to 8768; 8768 to 8767.2; cmt. non-calc to sl. calc; little vis. stain, confined to cmt; core freq. broken at 90° to core axis suggesting argil. boundaries, esp. towards base of core; composition: Qtz; fspar, incr. com. wh. mica w/ depth; scat. tr. glac, blk lithic/mafic grs; GRA: M-VCRS at base of cycles to LF-MU at top of cycles; poor to fair sort; ang. sbang; dom low spher; dom gr. supported; flourescence: pervasive to 50% yel-wht sample flour; slow streaming transluc. wht-yel cut flour., fair to scat resid cut flour., pale straw vis. cut. All oil attributes decr. downward.	8769.4 8771.5		S Pervasive wht-yel V.S.Decr. to 50%	Pale straw Pale straw	1- 1-	

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CPAH86128

SCPI - 112-85-1

DATE 5/14/86 C. H. Soule - SCPI
CORES EXAMINED BY T. Day - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD ~~North Belridge~~
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
14	8772	8801	28.8	SDST, lt. to med gry; massive with occ. bioturbation and shale streaks; incr. downward. Common planar breaks at rt. angles to axis. Very little to no stain, v. weak petrol odor. Cmt. non-calc to com. calc; grain supported, occ. matrix supported, in v. calc. matrix; core hard to v. hard; overall, core is massive with thin argil. streaks every 1-2 ft, streaks frequently disturbed, esp. by burrows. Compostion: qtz; com. easily crushed gry fspar; com. to scat. lithic/mafic, often coarse grained; scat. books of wh-mica, increasing downward; wk tr. glauc. Incr. argill. streaks with depth, as reflected in increased fractures 90° to core axis. GRA: LF to CRS. CRS content varies, and is often composed of lithic/mafic grs. Poor sort; ang. sbrnd; low to mod spher; low vis. porosity; Flourescence: mostly mod to br yel min. flour. masking weak sample flour; instant transpar. wh-yel cut flour w/few streamers decr. downward to v.v. weak dull yel-wh. cut flour; v. pale to clear vis cut. Brt to mod brt wh-yel resid. cut flour.	8774.5		No	V. brt yel.min	V.Pale straw	1-	S
					8780.1		No	Patchy mod yel-wh	Clear	0	
					8784.9			Sl.incr. yel-wh	Clear	0	
					8787.8			V. Brt Yel-min	Clear	0	
					8794.4		V.S.	Wk spotty yel-wh			
					8800.5		No	Brt. yel-wh mineral masking sample	Clear	0	

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CPAH86128

SCPI - 112- 85- I

DATE 5/14/86 C. H. Soule - SCPI
CORES EXAMINED BY E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
15	8801	8831	30.3	SDSTN; lt. to med. gry; becoming bedded, approx. 1 ft. beds of massive sd topped by argillaceous layers. Core increasingly broken at rt. angles to axis along argill. partings. Burrowing increases downward, becoming pervasive, non-calc to sl. calc. cmt. No vis. stain, wk petrol odor from fresh surfaces. Composition: clear & milky qtz; fspar; tr to scat. glauc; gd tr white mica, markedly increased in argil. material, especially at base of core. Lithic/mafic component has almost vanished compared to higher cores. Argil. material increasing with depth; calcite vienlet at 8828.8; GRA: LF-UM, dom UF-LM: Mod to Mod. well sort, ang-sbang; low to mod spher; Flourescence: lt. yel grainy sample flour in patches; slightly; slow transl. to transp. streaming cut flour; sl. wk. powdery yel resid. cut flour. v. pale to no vis. cut. All petrol attributes decrease downward to 8822±, then incr. slightly.	8803.6		V.S. Patchy lt.yel.	15-30% Pale straw	1-	3
					8809.4		V. spotty Wht-yel	Lt. straw	1-	±
					8817.3		V.S. Spotty scat.lt. to mod. wht-yel	No	0	○
					8822.6		V.S. Incr. patchy wh-yel	Lt. straw	1-	
					8828.8		No Incr.to 60-70% on some surfaces	Pale straw	1-	
					8830.6		V.S. as above on fresh surf			○

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CPAH86128

SCPI - 112- 85- I

DATE 5/16/86 C. H. Soule - SCPI
CORES EXAMINED BY T. Day - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
16	8831	8861	24	SDST & Shale, sdstn med gry, sh. dk gry-brn. Heavily burrowed, with shale laminae increasing in frequency with depth. Core frequently broken along laminae, into pieces 0.4 to 0.05' in thickness. Basal 0.3' is shale. Mostly v. firm to hard, shale not fissile. Slow coring rate below 8855 and lack of recovery suggests that lost portion of core was mostly shale. Grain to matrix supported, wk. to strongly calcareous, incr. with depth, but patchy throughout core; Argill. streaks & prob. argil. content to cmt; v. sl. stain (30-40%) and weak odor at top, diminishingwith depth; tr. heavy blk oil on shale parting at 8852.3; Composition: clear to frosted qtz; fspar; spotty dk. lithic/mafics; wk tr to scat. glauc & wh mica; tr. poss phosphatic material at 8848.3; "shale" at 8855 (base) is very calcareous, almost an argillaceous limestone. GRA: quite variable, from UF-UCRS, dom M-LCRS, to LF-UM, to dom. shale, to argillaceous limestone with internal sd grains of VF to LM; sand ang-sbrnd, with dk mafic/lithic being sbrnd. Poor to mod sort; low to mod spher; Flourescence: sample flour. patchy v. brt to dull yel-wht to yel, with much bkgrnd mineral flour; cut flour fast, transluc. yel-wht with few wht streamers at top, rapidly degenerating to wk to v. wk transpar. to v. pale yel; v. pale straw to clear vis. cut; v. brt. yel-wht resid. cut flour at top, rapidly becoming dull yellow with incr. depth.	8833.5		V.S.	Patchy v.brt yel-wht			2
					8836.4		V.S.	Uneven v.brt yel-wht	V.Pale straw	1-	
					8839.9		TR	Decr. yel-wht	Clear	0	
					8845		No	Even v.dull yel			
					8848.3		No	V.wk.			
					8852.3		TR	Spotty dull yel			
					8855		No	Uniform dull yel			

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CPAH86128

AERA CENTRAL FILES
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112-85-5

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD NORTH BELRIDGE
COMPANY SCPI
LEASE AND WELL NO. 17-2

DATE 4/23/86
ES EXAMINED BY C. Soule - SCPI
E. Tikanen - Epoch

	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
1	8350	8372	19.8	Sdst; Lt. gry with lt. brn oil stain mottling. Massive, firm to hard; sl. friable where stained. Lt. gry spots 2-4 mm diam. v. hard. These spots have non-calc, prob. silicious cement. Brn. mottles 2-5 mm are softer, have about 10% vis porosity. Composition: quartzose, com. clear gry; chalky altered fspar. Scat. dk lithic/mafic grains, trace glauc. Weak acid reaction. GRA: generally coarsens upward. Fine sd to U.CRS, dom L. med. at base, dom. U. Med at top. Com. V.CSE at 8356.6 Larger grains often lithic frags. Ang. to Sbrnd, dom sbang; Low to mod. spher; mod sort, to poor towards base. Basal 0.4 ft. has flakey habit, hint of bedding. More fine sd. at base. 50-60% oil flour., slow streaming to blooming.	8350 8353.8 8359.2 8364.9 8369.8		M M M M	Brt.Yel Brt.Yel Brt.Yel to blue white Yel even Yel.on broken surfaces	Pale straw straw Pale straw Pale straw straw		S
	8378	8380	1.5	Rec. 6" of rubble in core 2. Rec. 1' rubble at top of core 3, attrib. to core 2 Sdst. Lt. gry; firm to hard but in part sl. friable; v. sl. calc; prob silicious cmt. Dom. grain supported; v. sl. calc; silicic chalky to grainy appar. cmt/matrix; matrix appar. porous, perm. Composition Clr & Gry Qtz; com. frosted to chalky altered fspar; scat blk grs; scant tr. soft glauc. 60-70%± Lt. to mod brt yel oil flour, v. lt. brn stain; slow streaming to blooming, transp. yel to blu-wh cut flour. Wk petrol odor, staining wk & residual. GRA L med to LCRS subang, low to mod spher, mod. sort.	8378.5		M	Yel	Pale straw		S

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ND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CP' 512803

UP 86-1

4/23/86 C. Soule - SCPI

EXAMINED BY E. Tikanen - Epouch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD NORTH BELRIDGE
COMPANY SCPI
LEASE AND WELL NO. 17-2

FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
				SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
8380	8410	30.5	Rec. 30.5' core plus 1 ft. rubble at top. This rubble assigned to core #2 Sdstn, Lt. gry, massive, friable to non-friable, mottled ±20% with white spots 2-4 mm diam. Spots are hard, with non-calc cmt. Do not flouresce. Common spots 2-5mm diam oil stained sd. flouresce blue-white. Composition quartzose; com. soft, weathered fspar; tr. brittle blk malfics, sl. tr. glauc. w/mica cleavage (poss. chlorite?) weak lt. oil odor. Weak acid reaction. GRA coarsens upwards; 8401.5 UF to UM, incr. to LM to LCRS, dom UM at 98.7. Remains in this range to top, with scat. VCRS at top. Ang-subang, low to mod. spher. Mod. well sorted at base decreasing to mod/poor at top.	8381.2		S	Yel	Pale straw		S
				8387.3		S	Spotty yel	Pale		
				8390.2		S	Yel to wh.			
				8393		M	Yel to wh.	Straw		
				8395.3		S	Yel to Bl-wh	Pale straw		
				8401.5		S	Brt yel	Straw		
				8404.4		Abs	Dif-fuse	Clear		3
				8407.2						
				8410.3						

8380-8403.5 Dom massive, coarsening upwards sdst.

8403.5-8403.6 Sharp but contorted (soft sed. deformation) depositional contact; massive sand above, burrowed sand below.

8403.6-8410.3 Sdstn, lt. gry, heavily burrowed, non-friable, developing argil. streaks & patches. Silicic cmt. & matrix, v. sl. calcareous. Composition: quartzose; chalky fspar; incr. amts. mica; scat. glauc, incr. argil downward. GRA: FN-Med sand, ang-subang, low sphericity, mod to poor sort.

Cut & Flouresence Spotty oil flour. 40-70% mod to brt. yel; slow blooming to streaming cut flour, yel. to wht; weak petrol odor. Pale straw vis cut. Stain lt. to v. light.

Below 8403.5 Sample flour. decr. to nil. No vis. oil stn; v. weak diffuse yel. cut flour.; No vis. cut.

Cores 1-3 from Upper 64 Zone "Bloemer" or "U" Sand

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CP 512803

112-85-1

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD NORTH BELRIDGE
COMPANY SCPI
LEASE AND WELL NO. 17-2

IT 4/23/86 C. Soule - SCPI
ILS EXAMINED BY E. Tikanen - Epoch

FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
8485	8489	2	SDSTN Lt. brn-gry to lt. brn, mod petrol. odor. 8485-8485.4 gry with lt. brn oil stain; 0.2 ft. transition to 8485.6-8487 brn. oil stained sand. Hard to sl. friable; massive but disturbed, suggestive of burrowing. Dom. tight, non-calc cmt, but some calcite cmt above, decreasing downwards. Composition vitreous & frosted Qtz, abdt. altered fspar, up to 5% blk. lithic/mafic grains, scat. glauc. One 1½" dolostone clast at 8485.3; GRA: fine to granule. Granules tend to be lithic frags, which diminish in frequency below 8485.6. Lg. pebble (1½") at 8435.3; ang.-subrnd, mod. spher.; poor sort. Flour. Even brt yellow sample flour.; slow streaming lt. yel to blue-white cut flour., stronger blue-white below 8485.6. Vis. cut pale straw to straw. Overall apparently sli. softer, more porous than U sand.	8485	8487	M	Yel to El-wh A white	Pale straw Blue	Straw	3
8489	8494.6	0.1	SDSTN as above, some v. crs subrounded grains. Even lt. bn oil stain, cmt. dom non-calc. Appar porosity ±10%. Even, grainy brt. yel. sample flour.	8489		A	Blue-white	Straw		S

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CPA 3612803

12/85-1

4/23/86 C. Soule - SCPI

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COMPANY SCPI

LEASE AND WELL NO. 17-2

FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
				SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO, A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
8532	8559	22.8	Sdst., Lt. to med. gry; massive; nonfriable to occ. friable; lt. brn. oil stain; sl. to absent petrol. odor; composition: dom frosted or glassy Qtz, lesser fspar and dk mafic/lithic grains. Fspar dom over dk grains above 8538, lithic/mafics dom 8538-8542±, then fspar more dom to base. Overall qtz % incr downward from 8545 to 8554 (base), Tr. glauc. Mostly grain supported with sl. to minor silicic cmt. Non-calcareous above 8540± becoming sl. calcareous below. Fair appar. porosity, poor appar. perm. Absorbs water extremely slowly. GRA: LF to UM, dom. LM from 8532-8535, incr coarser downward w/occ. VCRS near 8545, Core has coarsest grain size where lithics are common. Overall sequence, core coarsens upward from 8554.5 to 8545, then fines upwards to top of core; v. ang. to occ. well rounded, low to mod. spher. Mod to poor sort; Flourescence: sample fl. uneven mod brt. yel. to even brt. yel to v. brt wh yel., gen. increase downward; cut flour. mod. fast to fast difuse to streaming pale yel to yel-wht; pale straw to dk. straw to lt. amber cut; resid cut flour. brt. chalky yel. to mod. brt yel. to v. brt yel-wht or blue-wht, incr. downward.	8532		S	even brt. yel-white	dk. straw	1+	S
				8535.6		S	uneven brt. yel.	pale straw	1-	
				8538.8		S	uneven brt yel	straw	1	
				8543.1			brt yel	dk. straw	1+	
				8545.3		S	even v.brt. yel	pale straw	1-	
				8551.3		S	even brt yel	lt. amber	2	
				8554.5		S	v.brt wh-yel	dk straw	1+	

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

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4/23/86 C. Soule - SCPI
S EXAMINED BY E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD NORTH BELRIDGE
COMPANY SCPI
LEASE AND WELL NO. 17-2

FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
				SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
8559	8615	7.5	Sdst. med. gry, appar. massive, but core broken into many small pieces ½ to 3" length, one 12" piece. Mostly non-friable, chalkly non-calc. cmt, prob. silicic. Some small patches calc. cmt. at base--8566.7(?). Sl. lit. brn oil stain, fair petrol. odor; overall incr. in oil attributes w/depth. Composition: qtz with abdt. fspar, scat. lithic/mafics, tr. to scant tr. glauc.; grain supported, non-calc chalky cmt. Basal 0.5 ft. has 5-10% non-calc(?) white patchy cmt. Vis. porosity 15%± in most of core, v. tight at bottom. Sl. permeable-water percolates slowly. GRA: UF to LCRS, dom UM. Bottom 0.5' M-CRS w/some VCRS. Dom sbang w/com. ang & sbrnd, some well rounded VCRS grains; dom low to high spher, basal 0.5' v. low to occ. high spher. Some oblate lithic/mafic grains. Sort mod, to low at base. Overall, abrupt coarsening in basal 0.5 ft. May be from deeper than 8566.7 Flourescence: brt. yel to powdery yel. Sample flour, streaming yellow to instant blooming blue-wh cut flour; straw dk straw vis. cut; overall incr. oil attributes at base. Core had very poor recovery due to junk in hole and damaged bit.	8559		S	brt yel	straw	1	S
				8566.7		S	powdery yel	dk straw	1+	

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4/23/86 C. Soule - SCPI
EXAMINED BY E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD NORTH BELRIDGE
COMPANY SCPI
LEASE AND WELL NO. 17-2

FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
				SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO, A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
8617	8647	28.5	Sdstn., med. grey w/pervasive lt. brn oil stain; massive; firm to hard; grain supported, calc. cmt. in part; cmt. appar. v. finely granular to XLN, dom non-calc. w/patches kaol. constituent of cmt.; composition: clr., milky & gry qtz, accessory fspar & blk lithic/mafic grs. Pss. greater lithic/mafic above 8630±; lithics decrease substantially & fspar common below 8630± Scat. to nil glauc. Incr. kaol. w/depth, esp. near 8638, then diminish towards base (8645.5). GRA: LM-VCRS, com UCRS above 8626, fn-CRS com ML below; shale wisps in bedding @ 8626.9, 8643.3; dom.ang-com sbang; mod to low spher; pr to mod srt. Stain decreases from sl. to v. sl. in lower 10ft; vis. por. tight, 10% to 15%, tighter where calc. cmt; flouresence: spotty to even (±80%) mod to brt. yel. sample flour., often powdery, yel-wh @ 8641.8, with poss. wh. mineral flour. Inst. yel to wh. cut flour., streaming to blooming at top, less prominent with depth. Mod. strong to translucent yel. cut flour., diminish with depth; straw to pale straw vis. cut. 8617-8619 core has 5+ steeply dipping (±60°) fractures, healed with calcite fill.	8617		S	80%Brt yel. part mineral	straw 1		S
				8619.7		S	even brt yel			
				8623.7			spotty to even brt.yel	straw 1		
				8631		S	powdery yel	pale to straw	1-	
				8634.8		S	as above			
				8638.8		S	mod. brt. yel	straw 1 1		
				8641.8		V.S.	powdery yel-wh	decr.		
				8645.5		V.S.	powdery mod. brt-yel	decr.		
						V.S.	prob. some mineral	decr.		

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4/23/86 C. Soule - SCPI

S EXAMINED BY J. Day - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD NORTH BELRIDGE
COMPANY SCPI
LEASE AND WELL NO. 17-2

FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
				SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
8647	8677	30.6	Sdst. Lt. to mod. gry-brn, becoming lt. med gry below ±8668. Massive, w faint evidence of bedding in grain-size changes. Appar. dip 20-25°. Firm to hard; rubble from 8662.5 to 8664; Abdt. to sl. calc. cmt, often patchy. Common non-calc cmt. Some tr. kaolinite in cmt.; wk to tr. poss carbonaceous material @ 8652. Fair petrol. odor above 8668, weakening below. Composition: dom. frosted to glassy qtz; com to scat wh to gry fspar, scat to occ dom (over fspar) mafic/lithics. Tr to nil glauc. wk. tr. kaolinitic material in matrix. GRA: LF-UCRS, dom M, varying from UVF-CRS near 8660 to com UCRS grains most elsewhere. Texture change at 8677:LF-UCRS above, LF-UM w/rare UCRS below. The contact is diffuse, and dips about 20°. Less large mafics below. There are other grain-size changes, but they are gradational. Dom ang to subr., occ. rounded. Coarser grains com. subrounded. High to low spher., poor to mod. sort. Fracture, probably mechanically induced at 8651. Flourescence: sl. to com. v-brt mineral flour. from cmt, prob calcite; sample flour. (oil) powdery patchy (80%) to uniform brt. to mod. yel-wh to yel; crushed cut flour. range from v. fast streaming milky wh-yel at top through translucent to transparent wht. yel.; lt. amber to pale straw vis. cut; v. brt to mod brt chaly yel-wh to yel. resid. cut flour; all attributes diminish with depth.	8647.2		S	powdery yel-wh	lt. amber 2-		S
				8650		S	brt yel	straw 1		
				8652.2		S	80% brt yel	pale straw	1-	
				8656		V.S.	patchy powdery brt yel	pale straw 1-		
				8660		V.S	powdery wh-yel	straw 1		
				8662.5		V.S	brt yel-wh incl. mineral			
				8666.3		V.S	mod yel-wht incl mineral			
				8669.2		V.S	mod.brt. yel-wh			
				8672		V.S.	decr yel-wh			
				8677.5		V.S.	patchy powdery yel-wh			

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5/8/86 C. H. Soule - SCPI

EXAMINED BY E. Tikanen - Epoch

Shell California Production Inc.

CORE RECORD

("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge

COMPANY SCPI

LEASE AND WELL NO. 17-2

FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
				SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO, A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
8677	8707	30.2	Sdstn; Lt. med gry; faint bedding, almost massive, with several fining upwards sequences; hard; patchy lt. brn oil stain with weak petrol odor from broken surfaces. Cmt varies from non-calc w/poss. kaol to wht. calc. spots, to v.calc.; Poss. 5 sequences: 8677-8685.8: LM-LCRS at base, UF-UM dom. LM at top. Poss. burrow @ 8677.2, 8680.2, coarser bed at 8681.7; 8685.8-8691.3: Fines upwards, poss twice w/coarse bed @ 8688; 8691.3-8692.2: LM-UCRS at base, shaley at top; 8692.2-8697.7: LM-CRS at base, with shale rip-up clasts, shaley at top, v.calc. at base; 8697.7-8707: mostly massive. Sl. fining upwards from F-LCRS at base to UF-UM at top. Base of core prob. not base of sequence. Tight white spots appear, and incr. upwards from 8701. Composition: Qtz, com. fspar, scat lithic/mafic, tr. glauc, tr. wh. mica. At 8692.2, grs. matrix supported in calc. cmt; incr. in lithic/mafics & wh. mica. GRA: as above. Angular to sbrd, low to mod spher, poor to mod. sort. Appar. tight even where no heavy calc. cmt. plugging porosity. Lt. brn oil stn. appears to be in cmt. Flouresence: part from minerals. Oil flour. mod brt. yel, becoming quite spotty in some places. Cut flour. instant to slow transluc. to transp. yel-wht, few streamers. Mod. strong to transp. resid. cut flour., pale straw to no vis. cut. Oil attributes decrease downwards through thinner sequences, then incr. slightly in lowest sequence. Overall oil properties appar. v. wk and residual.	8680.8		V.S.	Scat.mod brt.yel	Pale straw 1-		S
				8685.7		V.S.	As above			
				8689		V.S.	40-50% Yel	Pale straw 1-		
				8692.2		V.S.	20-30% Yel	Pale straw to none 1-		
				8699		V.S.	70% Yel	Straw, pale straw 1		
				8706.9		As above				

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112- 85-1

5/8/86 C. H. Soule - SCPI

S EXAMINED BY T. Day - Epoch

Shell California Production Inc.

CORE RECORD

("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge

COMPANY SCPI

LEASE AND WELL NO. 17-2

FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
				SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
8707	8737	28.9	SDST; med. gry; massive, except 4 thin fining upwards sequences topped by thin shales in basal 5 ft; hard; cmt. mostly silicic, tr. to sl.calc. cmt, becoming grain supported to calc cmtd near 8720. Weak petrol odor. Poor stain except lt. residual stain betwn 8718-8721, where core heavily broken into smaller pieces tight cmt. white spots incr. downward from 8727± to base of core. Prob. burrow at 8729.3; poss. permeable fracture at 8710.3; prob. permeable natural fracture at 8719.9-8720.4, broken from 8719.9-8720.2, unbroken 8720.2-8720.4; composition: frosted to glassy qtz; gry fspar; lesser lithics/mafics; tr. glauc; wk tr to tr wh. mica, incr. at base. GRA: LF to VCRS, dom M. fining upward from 8720 to 8707, 8735.9-8720; Qtz. mostly angular, sbang-sbrnd fspar; sbrnd mafics; poor to mod. sort; low to mod spher; Flourescence: common mineral flour., esp. where calc. cmt; patchy to spotty mod. brt yel-wht sample flour., less spotty where fractured near 8720; fast transluc. to transp. yel-wht cut flour. with freq. to few streamers; brt. yel resid. cut flour; straw to pale straw vis. cut.	8710.9		S	Patchy mod.brt. yel	Straw 1		
				8715.3		V.S.	incr. intensity (mineral?)			
				8719.7		V.S.	Mod.brt. yel-wht mineral 20% +			
				8725.4		V.S.	Patchy yel-wht			
				8730.2		V.S.	Patchy powdery yel-wht			
				8733.8		V.S.	Decr.	Pale straw 1		
				8735.9		V.S.	Incr. Prob. mineral	Pale straw 1		

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). I-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

PAH86128

112-86-1

E 5/14/86 C. H. Soule - SCPI

ES EXAMINED BY E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
				SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
8737	8767	30	SDSTN, lt. to med. gry, mostly massive with hints of 2 to 3 ft. beds in upper quarter. Hard to sl. friable where stained. Traces free oil on occ. fracture surface; cmt mostly non-calc, occ. appar kaolinitic; weak lt. brn oil stn with faint petrol. odor; burrows at 8737.9, soft sed. deformation of shale laminae at 8745, three possible fining upwards sequences 8745-8743.3; 8743.3-8440.4; 8740.4-8737.5±; not much obvious grain size change, but shale laminae at top of each sequence. Top sequence has no shale but has scat. tight spots (wht, 2 mm diam), and 0.1' tight band at 8739.2. Coarser grained above 8737.5; composition: qtz; fspar; scat. glauc. and lithic/mafic grains; occ mottled layered argillaceous material. GRA: finer tops of cycles are LF-LM, coarser lower portions F-CRS, dom LM; poor to mod. sort; ang-sbang; low to mod. spher; gen. grain supported. Only occ. calc. cmt; flourescence: even to scattered 60-75% powdery yel. sample flour, incr. to wht. yel at 8760; prob. part mineral flour.; slow streaming to instant transluc. yel. cut flour.; pale straw vis. cut; mod to fair yel. resid. cut, decr. with depth.	8739.6		S	60-70% powdery yel	Pale straw	1-	S
				8740.5		V.S.	even scat. yel prob.part mineral	Pale straw	1-	
				8746		V.S.	even med.yel	Pale straw	1-	
				8749.1		V.S.	Grainy even	Pale straw	1-	
				8755.4		V.S.	60-70% scat wht-yel	Pale straw	1-	
				8760.7		V.S.	Incr. to 75% mod. wht.yel	Pale straw	1-	
				8766		V.S.	Poor			

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ND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

PAH86128

112-85-1

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Bel[illegible]ridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

DATE 5/14/86 C. H. Soule - SCPI
CORES EXAMINED BY E. Tikanen - Epoch

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
13	8767	8772	5.5	SDSTN, med. gry; bedding 3 fining upwards seq. 1-2 ft. thick with coarser sand at base, fining upwards to shale lenses: 8771.9 to 8770.6; 8770.6 to 8768; 8768 to 8767.2; cmt. non-calc to sl. calc; little vis. stain, confined to cmt; core freq. broken at 90° to core axis suggesting argil. boundaries, esp. towards base of core; composition: Qtz; fspar, incr. com. wh. mica w/ depth; scat. tr. glac, blk lithic/mafic grs; GRA: M-VCRS at base of cycles to LF-MU at top of cycles; poor to fair sort; ang. sbang; dom low spher; dom gr. supported; flourescence: pervasive to 50% yel-wht sample flour; slow streaming transluc. wht-yel cut flour., fair to scat resid cut flour., pale straw vis. cut. All oil attributes decr. downward.	8769.4		S	Pervasive wht-yel	Pale straw	1-	
					8771.5		V.S.	Decr. to 50%	Pale straw	1-	

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS AND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

PAH86128

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Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

DATE 5/14/85 C. H. Soule - SCPI
CORE EXAMINED BY T. Day - Epoch

FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
8772	8801	28.8	SDST, lt. to med gry; massive with occ. bioturbation and shale streaks; incr. downward. Common planar breaks at rt. angles to axis. Very little to no stain, v. weak petrol odor. Cmt. non-calc to com. calc; grain supported, occ. matrix supported, in v. calc. matrix; core hard to v. hard; overall, core is massive with thin argil. streaks every 1-2 ft, streaks frequently disturbed, esp. by burrows. Compostion: qtz; com. easily crushed gry fspar; com. to scat. lithic/mafic, often coarse grained; scat. books of wh-mica, increasing downward; wk tr. glauc. Incr. argill. streaks with depth, as reflected in increased fractures 90° to core axis. GRA: LF to CRS. CRS content varies, and is often composed of lithic/mafic grs. Poor sort; ang. sbrnd; low to mod spher; low vis. porosity; Flourescence: mostly mod to br yel min. flour. masking weak sample flour; instant transpar. wh-yel cut flour w/few streamers decr. downward to v.v. weak dull yel-wh. cut flour; v. pale to clear vis cut. Brt to mod brt wh-yel resid. cut flour.	8774.5		No	V. brt yel. min	V. Pale straw	1-	S
				8780.1		No	Patchy mod yel-wh	Clear	0	
				8784.9			S. incr. yel-wh	Clear	0	
				8787.8			V. Brt Yel-min	Clear	0	
				8794.4		V.S.	Wk spotty yel-wh			
				8800.5		No	Brt. yel-wh mineral masking sample	Clear	0	

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

PAH86128

112-85-1

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

DATE 5/14/86 C. H. Soule - SCPI
S EXAMINED BY E. Tikanen - Epoch

FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
8801	8831	30.3	SDSTN; lt. to med. gry; becoming bedded, approx. 1 ft. beds of massive sd topped by argillaceous layers. Core increasingly broken at rt. angles to axis along argill. partings. Burrowing increases downward, becoming pervasive, non-calc to sl. calc. cmt. No vis. stain, wk petrol odor from fresh surfaces. Composition: clear & milky qtz; fspar; tr to scat. glauc; gd tr white mica, markedly increased in argil. material, especially at base of core. Lithic/mafic component has almost vanished compared to higher cores. Argil. material increasing with depth; calcite vienlet at 8828.8; GRA: LF-UM, dom UF-LM: Mod to Mod. well sort, ang-sbang; low to mod spher; Flourescence: lt. yel grainy sample flour in patches; slightly; slow transl. to transp. streaming cut flour; sl. wk. powdery yel resid. cut flour. v. pale to no vis. cut. All petrol attributes decrease downward to 8822±, then incr. slightly.	8803.6		V.S. Patchy lt.yel.	15-30%	Pale straw	1-	3
				8809.4		V. spotty Wht-yel	Lt. straw		1-	±
				8817.3		V.S. Spotty scat.lt. to mod. wht-yel	No		0	
				8822.6		V.S. Incr. patchy wh-yel	Lt. straw		1-	
				8828.8		No Incr.to 60-70% on some surfaces	Pale straw		1-	
				8830.6		V.S. on fresh surf	as above			

MBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS
ND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

PAH86128

2-85-1

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

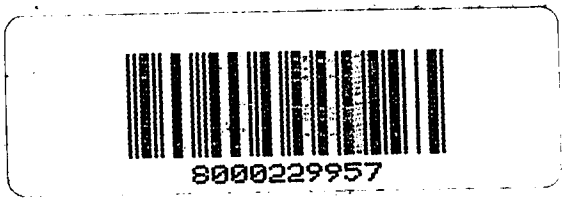
AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

5/16/86 C. H. Soule - SCPI
IS EXAMINED BY T. Day - Epoch

FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (off / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
				SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
8831	8861	24	SDST & Shale, sdstn med gry, sh. dk gry-brn. Heavily burrowed, with shale laminae increasing in frequency with depth. Core frequently broken along laminae, into pieces 0.4 to 0.05' in thickness. Basal 0.3' is shale. Mostly v. firm to hard, shale not fissile. Slow coring rate below 8855 and lack of recovery suggests that lost portion of core was mostly shale. Grain to matrix supported, wk. to strongly calcareous, incr. with depth, but patchy throughout core; Argill. streaks & prob. argil. content to cmt; v. sl. stain (30-40%) and weak odor at top, diminishingwith depth; tr. heavy blk oil on shale parting at 8852.3; Composition: clear to frosted qtz; fspar; spotty dk. lithic/mafics; wk tr to scat. glauc & wh mica; tr. poss phosphatic material at 8848.3; "shale" at 8855 (base) is very calcareous, almost an argillaceous limestone. GRA: quite variable, from UF-UCRS, dom M-LCRS, to LF-UM, to dom. shale, to argillaceous limestone with internal sd grains of VF to LM; sand ang-sbrnd, with dk mafic/lithic being sbrnd. Poor to mod sort; low to mod spher; Flourescence: sample flour. patchy v. brt to dull yel-wht to yel, with much bkgrnd mineral flour; cut flour fast, transluc. yel-wht with few wht streamers at top, rapidly degenerating to wk to v. wk transpar. to v. pale yel; v. pale straw to clear vis. cut; v. brt. yel-wht resid. cut flour at top, rapidly becoming dull yellow with incr. depth.	8833.5		V.S.	Patchy v.brt yel-wht			2
				8836.4		V.S.	Uneven v.brt yel-wht	V.Pale straw	1-	
				8839.9		TR	Decr. yel-wht	Clear	0	
				8845		No	Even v.dull yel			
				8848.3		No	V.wk.			
				8852.3		TR	Spotty dull yel			
				8855		No	Uniform dull yel			

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS AND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

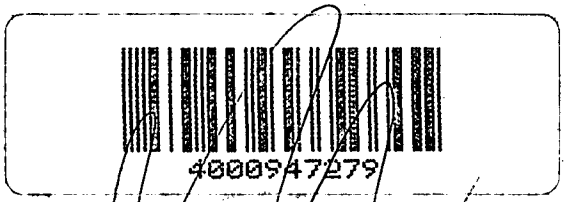
PAH86128



8000229957
31 28S 20E 2
WELL TEST + ANALYSI OIL ANALYSIS

CA

FEE 17-2
BELRIDGE N



4000947279
WELL TEST & ANALYSIS
CORE DESCRIPTION

BELRIDGE N
WELL
#17-2
KERNRIDGE
KERN CA
31 28S 20E 2

0402977930

8000229957

WELL TEST + ANALYSI OIL ANALYSIS

0402977930
SHELL
FEE
17-2
BELRIDGE N
31 28S 20E 2
CA

KERN
UNITED STATES

Well Name:	17-2	Coding date:	01/00/1900
Well UWI:	0402977930	This sheet coded by:	Lester Carcamo
Sec-Twp-Rge:	S02-T28S-R20E	Vendor:	Shell Development Company
Central Files Barcode:	8000229957	Vendor file number	
Report Title:	CONVENTIONAL CORE DESCRIPTIONS	Report Date:	05/04/1986
		ANOTATED	NO

	Sample Type	Reservoir: a, b, c, d, e.
	Conventional-Plug	64 Zone
X	Conventional-Whole	
	Sidewall	
	Cuttings	
	Mudlog Sample	
	Produced	Top Depth
	Surface	8350
	Geological Outcrop	Bottom Depth
	Other	8855

	Data containers Information	Scan Requested
	LIVE-LINK	
	Core DB	yes
	OpenWorks	Notes
	Binders	
	R:drive	
	LAS file	
X	Ambient Pressure	
	Stressed Pressure	

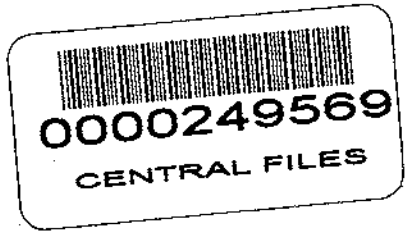
Check all pertaining to each report - submit sheet for each report

	Core Report Type	Core Report Subtype
X	Routine Analysis	Description-UV Light
	Routine Analysis	Photography-White/UV
	Routine Analysis	Density-Grain
	Routine Analysis	Routine Analysis - Other
	Routine Analysis	Porosity-Other
	Routine Analysis	Natural-Spectral Gamma Ray
	Routine Analysis	Permeability-Air
	Routine Analysis	Density-Matrix
	Routine Analysis	Fluid Saturation-PKS
	Routine Analysis	Sieve Analysis
X	Routine Analysis	Description-Lithological
	Petrophysical	Formation Resistivity Factor
	Petrophysical	Cementation Factor
	Petrophysical	Luminosity Analysis
	Petrophysical	Oil Viscosity
	Petrophysical	Petrophysical - Other
	Petrophysical	Saturation Exponent
	Petrophysical	Tortuosity
	Petrophysical	Formation Resistivity Index
	Petrophysical	Model Evaluation
	Petrophysical	Oil Gravity-Density
	Petrophysical	Oil Pyrolysis
	Petrophysical	Formation Water Resistivity
	Petrophysical	Matrix Neutron Index
	Petrophysical	Oil Chromatography
	Petrophysical	Bulk REF
	Petrophysical	CAT Scan
	Petrophysical	Mercury Injection
	Petrophysical	Capillary Pressure Analysis
	petrophysical	Cation Exchange Capacity
	Petrophysical	NMR Analysis
	Petrophysical	Pore Throat Analysis

	Core Report Type	Core Report Subtype
	Petrophysical-Flow Study	Heat Transfer Coefficient
	Petrophysical-Flow Study	Fines Migration-Mobilization Velocity
	Petrophysical-Flow Study	Petrophysical-Flow Study - Other
	Petrophysical-Flow Study	Permeability-Oil
	Petrophysical-Flow Study	Rock Pore Preferred Wettability
	Petrophysical-Flow Study	Permeability-Toluene
	Petrophysical-Flow Study	Relative Permeability
	Petrophysical-Flow Study	Permeability-Brine
	Petrophysical-Flow Study	Permeability-Vertical
	Petrophysical-Flow Study	Permeability-Water
	Geochemistry	Geochemistry - Other
	Geochemistry	Formation Water-Brine Chemical
	Geological Service	Description-Petrographic
	Geological Service	Formation-Rock Unit Identification
	Geological Service	Rock Age
	Geological Service	Mineralogy-XRD/FTIR
	Geological Service	Geological Service - Other
	Geological Service	Photography-Infra Red
	Geological Service	Paleontological Analysis
	Geological Service	Box Report
	Geological Service	Thin Section
	Geological Service	Description-Field Engineer Report
	Geological Service	Hydralic Unit Analysis
	Geological Service	Scanning Electron Microscopy
	Reservoir Fluid	Steamflood Analysis
	Reservoir Fluid	Produced Gas Analysis
	Reservoir Fluid	Reservoir Fluid - Other
	Reservoir Fluid	Produced Water Analysis
	Reservoir Fluid	Produced Oil Analysis
	Rock Mechanics	Rock Mechanics - Other
	Rock Mechanics	Rock Acoustic Velocity
	Rock Mechanics	Surface Area Per Unit Volume
	Rock Mechanics	Rock Compressibility Analysis
	Other	Other

Lester Carcamo 07/23/2009

2-28S-20E



Aera Central Files

BOX: 029287

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Test & Analysis

0402977930

North Belridge 02 T28S R20E

17-2



Shell California Production Inc.

Well: 17-2

Field: North Belridge

Core Analysis Report

May 28, 1986 File No: 80329

REVISED JUNE 4, 1986

FILE No. 80329
DATE May 28, 1986

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 1 (8350 - 8372) : REC. (8350 - 8369.85)								
8350.50	8.4	2.1	0.18	9.0	49.4	58.4	2.66	Sst; lt olv gry w/med lt gry spts, fsd-crssd, well cmtd, vfnt odor, lt stn, yel fluor
8351.50	8.7	3.6	0.32	13.7	42.9	56.6	2.65	Sst; lt olv gry w/med lt gry spts, fsd-crssd, well cmtd, vfnt odor, lt stn, yel fluor
8352.50	8.1	2.4	0.23	10.8	46.1	56.9	2.66	Sst; lt olv gry w/med lt gry spts, fsd-crssd, well cmtd, vfnt odor, lt stn, yel fluor
8353.50	6.5	3.0	0.34	14.3	41.5	55.8	2.67	Sst; lt olv gry w/med lt gry spts, fsd-crssd, well cmtd, vfnt odor, lt stn, yel fluor
8354.50	7.4	2.6	0.30	11.7	39.0	50.7	2.66	Sst; lt olv gry w/med lt gry spts, fsd-crssd, well cmtd, vfnt odor, lt stn, yel fluor
8355.50	7.8	1.9	0.18	9.5	53.4	62.9	2.66	Sst; lt olv gry w/med lt gry spts, fsd-crssd, well cmtd, vfnt odor, lt stn, yel fluor
8356.50	7.9	2.3	0.20	9.5	47.3	56.8	2.66	Sst; lt olv gry w/med lt gry spts, fsd-crssd, well cmtd, vfnt odor, lt stn, yel fluor
8357.50	7.2	1.3	0.39	16.7	42.5	59.2	2.66	Sst; lt olv gry w/med lt gry spts, fsd-crssd, well cmtd, vfnt odor, lt stn, yel fluor
8358.50	7.7	1.8	0.30	13.8	46.2	60.0	2.66	Sst; lt olv gry w/med lt gry spts, fsd-crssd, well cmtd, vfnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 1 (CONTINUED) (8350 - 8372) : REC. (8350 - 8369.85)								
8359.50	8.7	2.8	0.28	12.3	44.2	56.5	2.66	Sst; lt olv gry w/med lt gry spts, fsd-crssd, well cmtd, vfnt odor, lt stn, yel fluor
8360.50	8.2	1.0	0.33	14.3	43.6	57.9	2.66	Sst; lt olv gry w/med lt gry spts, fsd-crssd, well cmtd, vfnt odor, lt stn, yel fluor
8361.50	8.4	0.9	0.32	14.0	43.8	57.8	2.67	Sst; lt olv gry w/med lt gry spts, fsd-crssd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8362.50	9.3	1.3	0.31	13.9	45.0	58.9	2.65	Sst; lt olv gry w/med lt gry spts, fsd-crssd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8363.50	8.4	1.1	0.23	10.5	46.5	57.0	2.66	Sst; lt olv gry w/med lt gry spts, fsd-crssd, well cmtd, vfnt odor, lt stn, yel fluor
8364.50	8.8	0.8	0.10	5.7	54.3	60.0	2.66	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8365.50	8.8	1.5	0.11	5.9	53.1	59.0	2.66	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8366.50	8.0	1.7	0.29	13.0	45.5	58.5	2.66	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8367.50	9.1	1.3	0.13	6.9	52.4	59.3	2.66	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 1 (CONTINUED) (8350 - 8372) : REC. (8350 - 8369.85)								
8368.50	8.6	2.1	0.22	10.3	46.3	56.6	2.66	Sst; lt olv gry w/med lt gry spts, msd-fsd, well cmtd, vfnt odor, lt stn, yel fluor
8369.50	8.5	1.1	0.24	11.0	46.6	57.6	2.66	Sst; lt olv gry w/med lt gry spts, msd-fsd, well cmtd, vfnt odor, lt stn, yel fluor
CORE NO. 2 (8378 - 8380) : REC. (8378 - 8379.5)								
8378.00	9.7	2.9	0.40	16.1	40.0	56.1	2.66	Sst; lt olv gry w/med lt gry spts, msd-fsd, well cmtd, vfnt odor, lt stn, yel fluor
8379.00	9.0	0.8	0.46	13.7	29.7	43.4	2.66	Sst; lt olv gry w/med lt gry spts, msd-fsd, well cmtd, vfnt odor, lt stn, yel fluor
CORE NO. 3 (8380 - 8410) : REC. (8380 - 8410.5)								
8380.50	8.5	0.4	0.18	8.8	49.7	58.5	2.66	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8381.50	9.0	1.1	0.33	13.8	41.2	55.0	2.66	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8382.50	9.2	1.1	0.45	18.0	39.8	57.8	2.66	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 3 (CONTINUED) (8380 - 8410) : REC. (8380 - 8410.5)								
8383.50	8.8	0.5	0.12	5.6	47.9	53.5	2.65	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8384.50	9.3	1.2	0.31	13.9	44.9	58.8	2.65	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8385.50	9.4	1.7	0.20	9.4	47.2	56.6	2.66	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8386.50	9.6	0.4	0.21	11.1	52.8	63.9	2.65	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8387.50	10.3	0.7	0.33	15.3	45.8	61.1	2.65	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8388.50	10.9	0.9	0.21	10.8	51.2	62.0	2.66	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8389.50	12.1	1.8	0.30	14.3	47.0	61.3	2.65	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8390.50	12.0	1.9	0.24	12.5	51.6	64.1	2.65	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8391.50	11.8	1.8	0.26	13.9	54.1	68.0	2.65	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 3 (CONTINUED) (8380 - 8410) : REC. (8380 - 8410.5)								
8392.50	13.2	1.6	0.15	8.9	58.0	66.9	2.65	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8393.50	12.3	1.4	0.27	14.6	54.7	69.3	2.65	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8394.50	13.6	1.9	0.24	12.6	53.4	66.0	2.65	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8395.50	13.3	1.6	0.22	12.3	55.0	67.3	2.65	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8396.50	12.6	1.0	0.16	9.8	59.4	69.2	2.65	Sst; lt ovl gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8397.50	11.5	1.1	0.08	4.8	63.2	68.0	2.66	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8398.50	12.3	1.4	0.10	6.0	59.1	65.1	2.65	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8399.50	13.3	1.1	0.15	8.4	55.8	64.2	2.65	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8400.50	13.0	1.1	0.20	11.0	54.5	65.5	2.65	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 3 (CONTINUED) (8380 - 8410) : REC. (8380 - 8410.5)								
8401.50	13.2	1.0	0.17	9.3	54.5	63.8	2.64	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8402.50	12.4	0.6	0.21	11.9	58.0	69.9	2.65	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8403.50	10.7	0.3	0.14	8.5	59.6	68.1	2.67	Sst; lt olv gry w/med lt gry spts, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8404.50	8.9	0.1	0.02	1.4	74.3	75.7	2.66	Sst; lt gry, slt-fsd, well cmtd, no odor, no stn, no fluor
8405.50	12.0	0.2	0.09	5.6	60.1	65.7	2.65	Sst; lt gry, vfsd-fsd, well cmtd, vfnt odor, no stn, yel fluor
8406.50	12.5	1.0	0.12	7.2	59.0	66.2	2.65	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, no stn, yel fluor
8407.50	11.7	0.8	0.04	2.6	68.1	70.7	2.65	Sst; lt gry, vfsd-fsd, well cmtd, vfnt odor, no stn, yel sptd fluor
8408.50	11.5	0.1	0.00	0.0	65.9	65.9	2.65	Sst; lt gry, slt-fsd, well cmtd, no odor, no stn, no fluor
8409.50	10.8	0.1	0.00	0.0	57.4	57.4	2.65	Sst; lt gry, slt-fsd, well cmtd, no odor, no stn, no fluor
8410.30	11.3	0.1	0.00	0.0	69.6	69.6	2.66	Sst; lt gry, slt-fsd, well cmtd, no odor, no stn, no fluor
CORE NO. 4 (8485 - 8489) : REC. (8485 - 8487)								
8485.50	11.1	3.6	0.44	20.1	46.0	66.1	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, calc, fr odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 4 (CONTINUED) (8485 - 8489) : REC. (8485 - 8487)								
8486.50	13.9	75.	0.78	26.5	34.0	60.5	2.63	Sst; lt ovl gry, fsd-crssd, well cmtd, calc, fr odor, lt stn, yel fluor
CORE NO. 6 (8532 - 8559) : REC. (8532 - 8554.8)								
8532.50	13.2	55.	0.62	21.6	34.7	56.3	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8533.50	12.5	15.	0.85	25.9	30.5	56.4	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8534.50	13.0	20.	0.73	23.8	32.8	56.6	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8535.50	13.2	29.	0.77	24.4	31.7	56.1	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8536.50	12.8	19.	0.75	22.5	30.2	52.7	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8537.50	12.3	23.	0.74	23.5	31.9	55.4	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8538.50	12.4	50.	0.93	27.0	28.9	55.9	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8539.50	12.8	28.	1.08	28.5	26.4	54.9	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8540.50	12.9	25.	0.72	23.3	32.2	55.5	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8541.50	13.1	25.	0.97	27.2	27.9	55.1	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8542.50	13.5	47.	0.98	27.9	28.4	56.3	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

FILE No. 80329
DATE May 28, 1986

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 6 (CONTINUED) (8532 - 8559) : REC. (8532 - 8554.8)								
8543.50	13.3	26.	0.71	23.3	32.9	56.2	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8544.50	13.0	34.	0.68	22.0	32.5	54.5	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8545.50	13.3	34.	0.80	23.7	29.6	53.3	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8546.50	12.7	35.	0.75	21.9	29.3	51.2	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8547.50	12.9	23.	0.65	21.0	32.4	53.4	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8548.50	12.6	19.	1.03	27.3	26.6	53.9	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8549.50	12.9	27.	0.60	19.2	32.2	51.4	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fr odor, lt stn, yel fluor
8550.50	12.7	7.0	0.59	21.2	35.7	56.9	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8551.50	13.4	28.	0.70	23.3	33.2	56.5	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8552.50	13.6	30.	0.66	23.6	35.5	59.1	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8553.50	13.2	9.8	0.52	18.7	35.9	54.6	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8554.60	12.7	7.1	0.53	20.5	38.7	59.2	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
CORE NO. 7 (8559 - 8615) : REC. (8559 - 8566.7)								
8559.40	12.7	15.	0.60	22.1	37.1	59.2	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 7 (CONTINUED) (8559 - 8615) : REC. (8559 - 8566.7)								
8560.40	12.8	8.7	0.62	22.7	36.9	59.6	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8561.50	12.8	6.2	0.40	16.3	40.7	57.0	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8562.35	12.9	10.	0.26	11.4	44.5	55.9	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8563.65	12.3	7.8	0.43	17.1	39.8	56.9	2.62	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8564.40	12.3	5.7	0.39	16.2	41.8	58.0	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8565.30	13.8	10.	0.47	21.0	44.5	65.5	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fr odor, lt stn, yel fluor
8566.50	9.6	1.9	0.49	17.5	36.0	53.5	2.65	Sst; lt olv gry, fsd-crssd, well cmtd, calc, fr odor, lt stn, yel fluor
CORE NO. 8 (8617 - 8647) : REC. (8617 - 8645.5)								
8617.35	9.9	5.7	0.90	30.7	34.0	64.7	2.65	Sst; lt olv gry, fsd-crssd, well cmtd, calc, fnt odor, lt stn, yel fluor
8618.50	11.8	4.8	0.96	29.9	31.3	61.2	2.64	Sst; lt olv gry, fsd-crssd, well cmtd, fnt odor, lt stn, yel fluor
8619.50	11.8	12.	1.03	30.8	29.8	60.6	2.64	Sst; lt olv gry, fsd-crssd, well cmtd, fnt odor, lt stn, yel fluor
8620.50	12.6	14.	1.84	39.1	21.2	60.3	2.64	Sst; lt olv gry, fsd-crssd, well cmtd, fnt odor, lt stn, yel fluor
8621.50	12.7	10.	0.83	26.7	32.2	58.9	2.64	Sst; lt olv gry, fsd-crssd, well cmtd, fnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 8 (CONTINUED) (8617 - 8647) : REC. (8617 - 8645.5)								
8622.50	12.5	9.8	1.47	36.9	25.1	62.0	2.64	Sst; lt olv gry, fsd-crssd, well cmtd, fnt odor, lt stn, yel fluor
8623.50	12.9	16.	0.95	30.8	32.3	63.1	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fnt odor, lt stn, yel fluor
8624.50	12.8	7.1	0.84	27.4	32.7	60.1	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fnt odor, lt stn, yel fluor
8625.50	14.0	13.	0.94	29.0	31.0	60.0	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8626.50	14.7	36.	0.98	29.9	30.4	60.3	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8627.50	14.3	17.	0.93	28.6	30.8	59.4	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8628.50	14.3	21.	1.04	30.5	29.2	59.7	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8629.50	13.7	11.	0.67	24.2	36.3	60.5	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8630.50	13.5	5.3	0.58	21.8	37.5	59.3	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8631.50	14.7	24.	0.75	25.9	34.7	60.6	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8632.50	14.5	28.	0.78	26.1	33.5	59.6	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8633.50	14.5	15.	0.89	29.8	33.6	63.4	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8634.50	14.0	13.	0.78	27.0	34.8	61.8	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 8 (CONTINUED) (8617 - 8647) : REC. (8617 - 8645.5)								
8635.50	13.1	7.3	0.63	23.5	37.3	60.8	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8636.50	13.8	7.5	0.68	25.7	37.6	63.3	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8637.50	12.9	8.8	0.68	25.6	37.5	63.1	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8638.50	13.2	3.4	0.56	22.1	39.2	61.3	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8639.50	13.4	4.6	0.57	21.8	38.2	60.0	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8640.50	12.9	4.3	0.42	18.0	42.7	60.7	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8641.50	13.4	7.1	0.70	24.5	34.9	59.4	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8642.50	13.6	4.8	0.60	22.8	38.0	60.8	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8643.40	13.0	7.2	0.65	23.5	36.0	59.5	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8644.50	13.8	8.3	0.62	23.1	37.0	60.1	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8645.40	12.8	3.1	0.54	21.8	40.7	62.5	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
CORE NO. 9 (8647 - 8677) : REC. (8647 - 8677.5)								
8647.10	12.3	2.7	0.47	20.7	44.2	64.9	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
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STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 9 (CONTINUED) (8647 - 8677) : REC. (8647 - 8677.5)								
8648.40	12.9	4.1	0.51	21.6	42.0	63.6	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8649.60	12.9	5.0	0.57	22.3	39.1	61.4	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8650.10	12.6	18.	0.71	25.8	36.3	62.1	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fnt odor, lt stn, yel fluor
8651.50	12.8	31. *	0.57	23.6	41.4	65.0	2.63	Sst; lt olv gry, fsd-crssd, well cmtd, fnt odor, lt stn, yel fluor
8652.50	13.7	2.2	0.44	18.8	43.0	61.8	2.62	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8653.50	14.2	2.2	0.34	15.7	46.5	62.2	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8654.50	14.4	3.1	0.45	19.3	42.9	62.2	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8655.50	14.1	3.5	0.53	21.9	41.4	63.3	2.62	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8656.50	13.8	5.1	0.56	22.5	40.4	62.9	2.62	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8657.50	13.8	4.9	0.56	22.4	39.9	62.3	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8658.50	13.2	5.7	0.56	22.0	39.0	61.0	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8659.50	13.9	6.3	0.34	15.5	46.2	61.7	2.64	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8660.50	13.9	10.	0.32	14.5	45.7	60.2	2.64	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor

* FRACTURED

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 9 (CONTINUED) (8647 - 8677) : REC. (8647 - 8677.5)								
8661.50	14.1	7.7	0.40	17.5	43.5	61.0	2.64	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8662.40	13.8	14.	0.30	13.9	45.6	59.5	2.64	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8663.00	INSUFFICIENT MATERIAL							
8664.50	13.8	14.	0.59	22.5	38.2	60.7	2.64	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8665.50	14.2	15.	0.40	17.4	43.7	61.1	2.64	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8666.50	13.6	9.0	0.41	17.8	43.0	60.8	2.64	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8667.50	13.7	15.	0.41	17.7	43.2	60.9	2.64	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8668.50	13.7	14.	0.22	10.4	48.3	58.7	2.64	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8669.50	13.9	14.	0.21	9.7	47.2	56.9	2.64	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8670.50	13.5	15.	0.15	7.6	50.4	58.0	2.64	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8671.50	13.5	15.	0.18	9.2	49.8	59.0	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8672.50	13.6	15.	0.31	14.2	45.3	59.5	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8673.50	13.2	15.	0.26	12.0	46.7	58.7	2.62	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8674.50	13.2	17.	0.27	12.1	44.7	56.8	2.62	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

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CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
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STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 9 (CONTINUED) (8647 - 8677) : REC. (8647 - 8677.5)								
8675.50	13.0	11.	0.29	12.9	43.9	56.8	2.62	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8676.50	12.9	9.8	0.25	11.6	46.3	57.9	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
CORE NO. 10 (8677 - 8707) : REC. (8677 - 8708.2)								
8677.50	13.7	5.8	0.18	9.1	49.6	58.7	2.63	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8678.50	13.4	4.0	0.20	9.3	46.6	55.9	2.63	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8679.50	14.3	12.	0.33	13.7	41.9	55.6	2.62	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8680.50	13.1	3.2	0.23	10.4	46.0	56.4	2.63	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8681.50	13.2	1.9	0.31	14.2	45.2	59.4	2.63	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8682.50	13.0	3.7	0.24	10.6	45.1	55.7	2.63	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8683.50	12.4	2.1	0.27	12.5	45.5	58.0	2.63	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8684.50	13.3	2.1	0.19	9.3	48.6	57.9	2.63	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8685.50	12.4	3.0	0.37	15.9	43.5	59.4	2.63	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8686.50	12.2	3.2	0.24	10.7	44.6	55.3	2.65	Sst; med dk gry, fsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 10 (CONTINUED) (8677 - 8707) : REC. (8677 - 8708.2)								
8687.50	12.2	1.7	0.35	15.6	44.9	60.5	2.64	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8688.40	13.6	11.	0.40	16.3	40.4	56.7	2.64	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8689.50	11.5	1.3	0.05	2.6	52.9	55.5	2.63	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8690.50	12.1	1.0	0.23	11.3	48.7	60.0	2.64	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8691.50	10.9	0.7	0.21	9.5	45.0	54.5	2.65	Sst; lt olv gry, fsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8692.80	10.4	0.7	0.09	4.7	51.5	56.2	2.64	Sst; lt olv gry, fsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8693.50	10.3	0.9	0.29	13.6	47.1	60.7	2.63	Sst; lt olv gry, fsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8694.50	10.8	0.9	0.09	4.6	52.9	57.5	2.64	Sst; lt olv gry, fsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8695.40	11.4	0.8	0.13	6.6	51.4	58.0	2.64	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8696.50	11.8	0.9	0.24	11.8	48.7	60.5	2.63	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8697.50	10.8	0.5	0.14	7.9	55.3	63.2	2.66	Sst; lt olv gry, fsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8698.50	13.0	1.5	0.14	7.1	50.0	57.1	2.63	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8699.50	13.1	1.5	0.17	8.4	48.6	57.0	2.62	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 10 (CONTINUED) (8677 - 8707) : REC. (8677 - 8708.2)								
8700.40	13.7	2.7	0.40	16.2	40.2	56.4	2.62	Sst; lt olv gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8701.40	14.2	2.3	0.15	7.3	47.1	54.4	2.63	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8702.50	13.3	2.7	0.37	12.9	35.3	48.2	2.63	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8703.50	13.8	3.7	0.26	9.8	37.7	47.5	2.63	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8704.50	13.5	4.9	0.23	9.1	39.1	48.2	2.63	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8705.50	13.3	4.1	0.12	5.1	42.4	47.5	2.63	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8706.50	14.1	8.8	0.15	6.1	40.4	46.5	2.63	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
CORE NO. 11 (8707 - 8737) : REC. (8707 - 8735.9)								
8707.50	14.2	9.7	0.27	11.1	40.6	51.7	2.63	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8708.50	13.8	8.5	0.17	7.1	42.4	49.5	2.63	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8709.50	13.9	10.	0.25	9.4	37.9	47.3	2.63	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8710.50	14.3	13.	0.26	10.3	39.1	49.4	2.63	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8711.50	14.1	13.	0.24	9.6	40.0	49.6	2.63	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 11 (CONTINUED) (8707 - 8737) : REC. (8707 - 8735.9)								
8712.40	13.5	8.5	0.19	8.2	43.6	51.8	2.63	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8713.50	13.7	14.	0.34	11.8	34.7	46.5	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8714.50	13.6	10.	0.35	12.2	34.6	46.8	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8715.50	13.4	7.5	0.42	14.2	34.0	48.2	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8716.50	13.6	13.	0.38	13.2	34.4	47.6	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8717.50	14.1	17.	0.57	19.0	33.1	52.1	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8718.50	14.0	14.	0.57	19.3	34.0	53.3	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8719.50	14.2	15.	0.57	19.2	33.7	52.9	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8720.50	13.1	7.4	0.54	19.4	35.8	55.2	2.63	Sst; lt olv gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8721.50	13.2	9.0	0.28	11.4	40.3	51.7	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8722.50	14.9	7.4	0.33	13.7	42.0	55.7	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8723.50	14.6	7.2	0.19	9.2	47.8	57.0	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8724.40	14.3	6.6	0.08	4.0	51.3	55.3	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 11 (CONTINUED) (8707 - 8737) : REC. (8707 - 8735.9)								
8725.50	14.0	7.8	0.34	12.4	36.4	48.8	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8726.50	13.4	2.8	0.34	14.0	41.0	55.0	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8727.50	14.1	8.3	0.52	18.2	34.7	52.9	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8728.50	13.7	7.9	0.58	18.3	31.5	49.8	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8729.50	13.6	4.9	0.50	17.2	34.6	51.8	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8730.50	13.1	6.2	0.47	15.7	33.2	48.9	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8731.50	14.0	14.	0.45	17.1	37.9	55.0	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8732.50	13.5	5.4	0.36	14.8	41.6	56.4	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8733.50	13.0	2.9	0.33	13.3	40.1	53.4	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8734.50	12.8	4.3	0.59	21.3	36.3	57.6	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8735.50	13.7	5.1	0.37	15.4	41.3	56.7	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
CORE NO. 12 (8737 - 8767) : REC. (8737 - 8767)								
8737.50	12.3	2.4	0.37	15.0	40.1	55.1	2.65	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor

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COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 12 (CONTINUED) (8737 - 8767) : REC. (8737 - 8767)								
8738.50	13.6	5.3	0.35	13.6	39.2	52.8	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8739.50	12.9	3.9	0.23	10.3	44.8	55.1	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8740.50	11.6	1.5	0.25	10.7	42.0	52.7	2.66	Sst; lt gry, fsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8741.50	13.5	2.7	0.28	12.3	43.2	55.5	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8742.50	12.7	2.4	0.32	13.5	42.4	55.9	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8743.50	13.8	5.0	0.37	14.2	38.9	53.1	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8744.50	14.9	3.4	0.40	16.6	41.5	58.1	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8745.40	15.1	4.2	0.26	11.5	44.6	56.1	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8746.50	14.5	4.9	0.25	10.8	43.6	54.4	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8747.50	14.9	5.3	0.25	10.5	42.0	52.5	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8748.50	14.0	3.2	0.36	13.8	38.3	52.1	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8749.50	12.7	2.2	0.32	12.1	37.9	50.0	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8750.50	12.7	2.3	0.29	10.8	36.7	47.5	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 12 (CONTINUED) (8737 - 8767) : REC. (8737 - 8767)								
8751.50	13.9	8.2	0.30	11.5	37.8	49.3	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8752.40	13.4	5.7	0.23	8.7	38.1	46.8	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8753.50	13.4	8.5	0.49	15.7	32.3	48.0	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8754.50	13.0	5.0	0.30	11.7	39.3	51.0	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8755.50	13.4	7.8	0.41	14.3	34.9	49.2	2.64	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8756.40	13.4	8.0	0.36	11.7	32.1	43.8	2.64	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8757.50	13.3	12.	0.36	13.2	36.7	49.9	2.64	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8758.50	13.4	10.	0.46	16.0	35.0	51.0	2.64	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8759.50	13.7	11.	0.53	17.8	33.7	51.5	2.63	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8760.50	13.9	13.	0.66	20.1	30.4	50.5	2.64	Sst; lt gry, fsd-msd, well cmtd, fnt odor, lt stn, yel fluor
8761.50	13.8	7.9	0.52	17.8	34.5	52.3	2.63	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8762.50	13.8	6.5	0.46	16.6	36.3	52.9	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8763.50	14.8	12.	0.53	16.9	31.9	48.8	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.		O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 12 (CONTINUED) (8737 - 8767) : REC. (8737 - 8767)									
8764.50	15.2	15.		0.61	20.7	33.9	54.6	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8765.40	14.1	16.		0.75	23.8	31.8	55.6	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8766.00	INSUFFICIENT MATERIAL								
CORE NO. 13 (8767 - 8772) : REC. (8767 - 8772.5)									
8767.50	13.5	22.		0.54	20.3	37.9	58.2	2.64	Sst; lt gry, fsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8768.50	13.2	4.6		0.40	16.4	40.6	57.0	2.64	Sst; lt gry, fsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8769.50	12.6	4.5		0.42	16.5	39.7	56.2	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8770.50	12.1	4.9		0.47	18.7	39.8	58.5	2.64	Sst; lt gry, fsd-msd, well cmtd, calc, fnt odor, lt stn, yel fluor
8771.50	10.4	1.1		0.41	17.8	43.2	61.0	2.65	Sst; lt gry, vfsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
CORE NO. 14 (8772 - 8801) : REC. (8772 - 8800.8)									
8772.60	8.6	98.	*	0.20	9.0	44.6	53.6	2.68	Sst; lt gry, vfsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8773.50	10.6	1.0		0.32	12.9	40.0	52.9	2.66	Sst; lt gry, vfsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8774.50	9.4	162.	*	0.20	9.7	48.8	58.5	2.69	Sst; lt gry, vfsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor

* FRACTURED

PETROLEUM TESTING SERVICE, INC.

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WELL 17-2
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CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 14 (CONTINUED) (8772 - 8801) : REC. (8772 - 8800.8)								
8775.40	9.8	1.7	0.13	7.0	52.2	59.2	2.66	Sst; lt gry, vfsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8776.50	11.5	0.3	0.92	35.9	39.0	74.9	2.77	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8777.50	11.7	0.9	0.41	16.7	40.4	57.1	2.65	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8778.45	10.7	0.7	0.27	10.4	39.2	49.6	2.66	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8779.45	10.0	0.4	0.16	6.8	41.9	48.7	2.66	Sst; lt gry, vfsd-fsd, well cmtd, vfnt odor, lt stn, yel fluor
8780.50	10.2	0.3	0.27	11.0	41.5	52.5	2.66	Sst; lt gry, vfsd-fsd, well cmtd, vfnt odor, lt stn, yel fluor
8781.50	12.2	0.7	0.19	8.1	43.5	51.6	2.64	Sst; lt gry, vfsd-fsd, well cmtd, vfnt odor, lt stn, yel fluor
8782.50	11.4	0.7	0.28	10.4	37.7	48.1	2.65	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8783.50	11.4	0.6	0.19	8.4	44.8	53.2	2.66	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8784.50	12.9	0.9	0.21	9.4	44.0	53.4	2.65	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8785.55	12.0	0.7	0.23	9.2	39.3	48.5	2.65	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8786.50	11.8	0.8	0.27	11.6	42.6	54.2	2.65	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8787.50	11.6	0.4	0.19	8.6	44.5	53.1	2.66	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 14 (CONTINUED) (8772 - 8801) : REC. (8772 - 8800.8)								
8788.50	12.1	0.5	0.18	8.5	47.9	56.4	2.66	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8789.50	12.7	0.9	0.27	11.2	41.4	52.6	2.65	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8790.40	8.4	0.1	0.06	3.7	61.8	65.5	2.70	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8791.50	12.1	0.6	0.19	9.2	48.3	57.5	2.66	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8792.50	11.6	0.4	0.23	10.5	44.9	55.4	2.66	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8793.50	12.4	0.7	0.24	11.0	46.4	57.4	2.65	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8794.50	12.2	0.6	0.20	9.6	47.4	57.0	2.66	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8795.50	11.2	0.5	0.34	14.4	42.9	57.3	2.66	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8796.50	13.1	1.6	0.14	6.3	46.6	52.9	2.65	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8797.50	12.0	0.8	0.19	9.2	48.3	57.5	2.66	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8798.50	12.1	0.6	0.10	4.8	49.8	54.6	2.67	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8799.50	12.7	0.8	0.12	5.3	44.7	50.0	2.65	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8800.50	12.6	0.6	0.07	3.4	49.6	53.0	2.65	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

FILE No. 80329
DATE May 28, 1986

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 15 (8801 - 8831) : REC. (8801 - 8831.3)								
8801.50	12.6	0.9	0.07	3.4	50.8	54.2	2.65	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8802.40	8.8	0.4	0.08	4.9	60.9	65.8	2.70	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8803.40	11.2	0.5	0.02	1.1	56.3	57.4	2.68	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8804.50	11.4	0.7	0.13	7.0	53.4	60.4	2.67	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8805.50	13.0	0.9	0.18	8.5	48.0	56.5	2.65	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8806.50	12.8	0.8	0.18	9.1	49.5	58.6	2.65	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8807.50	12.8	0.6	0.19	10.3	53.3	63.6	2.66	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8808.50	13.9	0.6	0.10	5.4	54.6	60.0	2.64	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8809.40	13.7	0.6	0.24	11.6	48.8	60.4	2.65	Sst; lt gry, vfsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8810.50	13.4	11.	0.19	11.3	59.0	70.3	2.66	Sst; lt gry, vfsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8811.50	12.7	0.5	0.14	8.5	62.7	71.2	2.65	Sst; lt gry, vfsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8812.50	13.4	0.6	0.30	15.9	53.8	69.7	2.65	Sst; lt gry, vfsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8813.50	12.3	0.3	0.20	12.1	61.4	73.5	2.67	Sst; lt gry, vfsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8814.50	13.7	0.5	0.23	12.8	56.4	69.2	2.64	Sst; lt gry, vfsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 15 (CONTINUED) (8801 - 8831) : REC. (8801 - 8831.3)								
8815.50	14.1	1.1	0.08	4.5	57.4	61.9	2.65	Sst; lt gry, vfsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8816.40	12.8	0.7	0.17	9.5	55.1	64.6	2.66	Sst; lt gry, vfsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8817.50	14.0	0.9	0.07	3.6	54.4	58.0	2.65	Sst; lt gry, vfsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8818.50	14.2	1.0	0.32	15.0	46.8	61.8	2.65	Sst; lt gry, vfsd-msd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8819.50	14.6	0.6	0.02	0.9	59.1	60.0	2.64	Sst; lt gry, vfsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8820.50	14.3	0.6	0.15	8.0	52.6	60.6	2.64	Sst; lt gry, vfsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8821.50	15.3	1.1	0.66	26.1	39.4	65.5	2.64	Sst; lt gry, vfsd-fsd, well cmtd, vfnt odor, lt stn, yel fluor
8822.50	15.0	0.7	0.03	2.1	68.3	70.4	2.64	Sst; lt gry, vfsd-fsd, well cmtd, vfnt odor, lt stn, yel fluor
8823.50	16.0	0.7	0.05	3.1	63.3	66.4	2.64	Sst; lt gry, vfsd-fsd, well cmtd, vfnt odor, lt stn, yel fluor
8824.50	15.5	1.4	0.07	4.4	61.4	65.8	2.63	Sst; lt gry, vfsd-fsd, well cmtd, vfnt odor, lt stn, yel fluor
8825.50	16.7	2.1	0.15	8.3	55.3	63.6	2.63	Sst; lt gry, vfsd-fsd, well cmtd, vfnt odor, lt stn, yel fluor
8826.50	16.8	0.7	0.05	3.4	64.8	68.2	2.64	Sst; lt gry, vfsd-fsd, well cmtd, vfnt odor, lt stn, yel fluor
8827.60	15.3	0.8	0.01	0.4	68.3	68.7	2.63	Sst; lt gry, vfsd-fsd, well cmtd, vfnt odor, lt stn, yel fluor

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.		O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 15 (CONTINUED) (8801 - 8831) : REC. (8801 - 8831.3)									
8828.50	15.6	1.4		0.13	7.7	58.6	66.3	2.64	Sst; lt gry, vfsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8829.50	15.1	4.4		0.24	12.7	53.8	66.5	2.64	Sst; lt gry, vfsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8830.50	11.6	5.5		0.10	6.4	66.2	72.6	2.64	Sst; lt gry, vfsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
CORE NO. 16 (8831 - 8861) : REC. (8831 - 8855)									
8831.50	14.5	7.4		0.15	8.5	55.8	64.3	2.64	Sst; lt gry, vfsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8832.30	12.5	9.3		0.13	6.1	48.7	54.8	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8833.60	11.5	5.4		0.29	15.4	52.8	68.2	2.64	Sst; lt gry, fsd-msd, well cmtd, vfnt odor, lt stn, yel fluor
8834.50	13.6	1.1		0.12	8.2	66.5	74.7	2.65	Sst; lt gry, vfsd-msd, well cmtd, mica, vfnt odor, lt stn, yel fluor
8835.60	12.6	0.4		0.17	9.4	55.6	65.0	2.64	Sst; lt gry, vfsd-fsd, well cmtd, mica, vfnt odor, lt stn, yel fluor
8836.30	13.0	38.	*	0.23	11.6	51.2	62.8	2.64	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8837.40	9.7	0.5		0.13	7.1	54.9	62.0	2.65	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, dl yel fluor
8838.45	9.6	0.4		0.12	6.6	55.9	62.5	2.64	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, dl yel fluor
8839.40	12.1	76.	*	0.00	0.0	66.1	66.1	2.64	Sst; lt gry, vfsd-fsd, well cmtd, calc, mica, vfnt odor, lt stn, dl yel fluor

* FRACTURED

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 16 (CONTINUED) (8831 - 8861) : REC. (8831 - 8855)								
8840.50	14.7	2.1	0.07	4.4	59.5	63.9	2.64	Sst; lt gry, vfsd-fsd, well cmtd, vfnt odor, lt stn, dl yel fluor
8841.40	14.6	2.3	0.13	6.7	53.6	60.3	2.64	Sst; lt gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, yel fluor
8842.55	14.2	5.8	0.13	7.1	53.8	60.9	2.63	Sst; lt gry, vfsd-fsd, well cmtd, vfnt odor, lt stn, yel fluor
8843.40	13.0	0.5	0.02	1.6	82.2	83.8	2.63	Sst; lt gry, vfsd-fsd, well cmtd, no odor, no stn, no fluor
8844.50	9.6	0.4	0.00	0.0	66.5	66.5	2.63	Sst; lt gry, vfsd-fsd, well cmtd, no odor, no stn, no fluor
8845.50	10.1	0.5	0.03	1.9	69.7	71.6	2.64	Sst; lt gry, vfsd-fsd, well cmtd, no odor, no stn, no fluor
8846.50	9.9	0.7	0.00	0.0	70.3	70.3	2.64	Sst; lt gry, vfsd-fsd, well cmtd, no odor, no stn, no fluor
8847.40	9.8	0.6	0.10	6.2	61.4	67.6	2.64	Sst; lt gry, vfsd-fsd, well cmtd, no odor, no stn, no fluor
8848.50	9.8	0.7	0.00	0.0	65.2	65.2	2.64	Sst; lt gry, vfsd-fsd, well cmtd, no odor, no stn, no fluor
8849.50	9.6	0.7	0.04	2.6	66.9	69.5	2.64	Sst; lt gry, vfsd-fsd, well cmtd, no odor, no stn, no fluor
8850.40	10.1	0.4	0.00	0.0	68.2	68.2	2.64	Sst; lt gry, vfsd-fsd, well cmtd, no odor, no stn, no fluor
8851.50	10.6	0.6	0.04	2.4	67.7	70.1	2.64	Sst; lt gry, vfsd-fsd, well cmtd, no odor, no stn, no fluor
8852.40	11.1	1.0	0.12	7.6	63.2	70.8	2.64	Sst; lt gry w/med gry strk, vfsd-fsd, well cmtd, vfnt odor, lt stn, dl yel fluor

FILE No. 80329
DATE May 28, 1986

PETROLEUM TESTING SERVICE, INC.

COMPANY Shell California Production Inc.
CORE BARREL 5 1/4" Conventional
MUD TYPE Water Base

WELL 17-2
FIELD North Belridge
COUNTY Kern
STATE California

CORE ANALYSIS

DEPTH FEET	ARCHIMEDES POROSITY PERCENT	AIR PERMEABILITY md.	O/W RATIO	SATURATION % PORE SPACE OIL	WATER	TOTAL	APPARENT SAND GRAIN DENSITY gm/cc	LITHOLOGY
CORE NO. 16 (CONTINUED) (8831 - 8861) : REC. (8831 - 8855)								
8853.60	8.4	0.7	0.06	3.8	66.0	69.8	2.66	Sst; lt gry w/med gry strk, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, dl yel fluor
8854.50	6.4	0.5	0.00	0.0	85.7	85.7	2.66	Sst; med dk gry, vfsd-fsd, well cmtd, calc, vfnt odor, lt stn, dl yel fluor
8855.50	INSUFFICIENT MATERIAL							

TYPE OF EXTRACTION - DEAN STARK TOLUENE EXTRACTION

CONFINING PRESSURE ON THE PERMEAMETER = 200 psi

OIL GRAVITY SUPPLIED BY CUSTOMER = 35 API

23X-35N

Goode Core Analysis Service

P. O. BOX 9291
BAKERSFIELD, CALIFORNIA 93309

PET. ENG. FILES
BELRIDGE OIL CO.
McKITTRICK, CAL.

Company BELRIDGE OIL COMPANY Formation _____ File 79301
Well NO. 23 "X"-35 Core Type SIDEWALL Date Report 28 AUGUST 79
Field NORTH BELRIDGE Drilling Fluid WATER BASE Analysts BG
County KERN State CAL. Elev. _____ Location SEC. 35- 27S- 20E

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SMPL		SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER	O/W	WT.	
1	5026	74	24.2	0.5	89.6	.01	15	SD; gry, vf-fgr, cly, lmy no stn, dull yell flu.
2	5034	110	27.2	8.1	78.7	.10	14	Same/yell flu.
3	5052	170	26.4	9.5	71.6	.13	16	SD; gry, fgr, cly lmy, no stn, yell flu.
4	5065	155	27.9	13.8	70.9	.19	18	Same. 36° Gravity.
5	5154	130	25.4	12.9	76.1	.17	12	Same.
6	5249	47	26.4	0.5	76.7	.01	14	SD; gry, vfgr, v cly,lmy, no stn, dull yell flu.
7	5318	115	28.3	17.4	59.6	.29	15	SD; tan, vf-fgr, cly, lt stn, dull yell flu.
8	5324	160	27.5	17.5	60.7	.29	14	Same. 36° Gravity.
9	5345	41	22.8	14.6	78.7	.19	16	SD; gry, vfgr, v slty, lmy, no stn, dull yell flu.
10	5437	97	26.5	14.2	73.7	.19	17	SD; tan, vf-fgr, cly, lt stn, yell flu.
11	5455	6.1	21.3	0.0	55.9	.00	6	SD; gry, vfgr, cly/ calcite lam, no stn, yell mineral flu.
12	5474	37	24.7	13.4	62.7	.21	16	SD; tan, vf-fgr, shy, lt stn, yell flu. 36° Gravity.
13	8645	14	22.2	4.5	72.2	.06	10	SD; gry, vfgr, cly, pbly, lmy, no stn, yell flu.
14	8777	4.7	20.6	0.0	64.8	.00	6	Same
15	8873	0.7	21.5	1.7	64.4	.03	5	SD; gry, vfgr, shy, lmy, no stn, dull gold flu.
16	8878	3.3	14.5	6.1	6.1	1.00	4	Same/calcite lam, no stn, yell flu.
17	8880	7.0	20.8	2.6	40.2	.06	6	SD; gry, vfgr, v cly, lmy no stn, yell flu.
18	8883	0.4	17.2	0.0	29.5	.00	6	SD; gry, vfgr, v shy, no stn, dull yell flu.
19	8885	16	22.4	12.9	44.0	.29	10	SD; tan, fgr, cly, lt stn, yell flu.

Gravity values determined by refractive index on oil after passing thru extraction process and may be in error with the raw reservoir fluid.

These analyses, opinons or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgement of Goode Core Analysis Service (all errors and omissions excepted); but Goode Core Analysis Service and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon. KBF — 1697

Goode Core Analysis Service

P. O. BOX 9291
BAKERSFIELD, CALIFORNIA 93309

P--- ---FILES
BELRIDGE OIL CO.
McKITTRICK, CALIF.

Company BELRIDGE OIL COMPANY Formation _____ File 79274

Well NO. 23 "X"-35 Core Type SIDEWALL Date Report 15 AUGUST 79

Field NORTH BELRIDGE Drilling Fluid WATER BASE Analysts BG

County KERN State CAL. Elev. _____ Location SEC. 35- 27S- 20E

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SMPL O/W	SMPL WT.	SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER			
1	5061	24	26.3	11.9	51.5	.23	12	SD; lt tan, vf-fgr, cly, v lt stn, dull gold flu.
2	5317	170	25.4	11.2	59.0	.19	10	SD; tan, fgr, slty/fn cly chips, lt stn, yell flu.
3	5323	140	27.8	13.3	49.6	.27	10	SD; tan, fgr, slty, lt stn, yell flu.
4	5435	81	26.3	14.9	63.2	.24	12	Same
5	5439	110	26.9	18.1	49.8	.36	10	Same/dull yell flu.
6	5444	160	25.0	15.0	64.6	.23	9	Same
7	5446	39	27.8	17.3	60.0	.29	7	SD; tan, vfgr, v cly, v lt stn, dull yell flu.
8	5454	120	25.2	15.4	62.3	.25	10	SD; tan, fgr, cly, lt stn, yell flu.
9	5462	170	26.2	15.9	63.5	.25	10	Same
10	5483	58	26.9	15.3	62.3	.25	7	SD; lt tan, vfgr, cly, v lt stn, dull gold flu.
11	6775	11	24.9	0.0	62.6	.00	5	SD; gry, fgr, v shy, no stn, no flu.
12	8301	6.4	20.4	7.0	79.1	.09	7	SD; lt tan, vf-fgr, v cly, lt stn, yell flu.
13	8325	17	22.2	4.2	59.7	.07	6	Same, shy/dull yell flu.

These analyses, opinons or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgement of Goode Core Analysis Service (all errors and omissions excepted); but Goode Core Analysis Service and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

KBF — 1657

PET. ENG. FILES
BELRIDGE OIL CO.
MCKITTRICK, CALIF.

23X-35

SIDEWALL CORE DESCRIPTIONS

8330	NR
8325	Rec. 1/2" - oil sand - brownish gray, fine grained, silty, subangular abundant mafic minerals, mottled brt. yell. flour. faint odor
8314	NR
8311	NR
8307	NR
8304	NR
8301	Rec. 1/2" oil sand brownish gray, faint to medium grained, subangular abundant rounded mafic minerals, bright yellow oil fluor.
8297	NR
8294	NR
6786	NR
6775	Rec. 1/2" sand, gray fine grained, angular grains, kaolinitic NOSCF
6760	NR
5483	Rec. 1" sand, gray, fine grained, ashy, hard, NOSCF
5462	Rec. 1" sand, light tan, grey, fine grained well sorted, faint odor, wt-yellow oil fluorescense
5454	Rec. 1/4" sand, light tan-gray, as above
5446	Rec. 3/4" oil sand- brown, sand as above, good odor, uniform white-yellow, oil fluorescense
5444	Rec. 1-1/4" Sand-tan-gray fine grained, well sorted, angular faint odor. Bright white oil fluorescense
5439	Rec. 1" sand-gray, very, very fine grained, silty, faint odor, spotty white oil fluorescense
5435	Rec. 1-1/4" sd, lt ta, fn, well sorted faint odor, uniform white-yellow oil fluor
5435	Rec. 1-1/4" as above.
5425	NR
5323	Rec. 3/4" Oil sand, brown, fine grained, fairly well sorted, subangular good odor, white-yellow oil fluorescense
5317	Rec. 1-1/4" oil sand as above w/milky-yellow oil fluorescense
5061	Rec. 1" sand-tannish gray very, very fine grained silty faint odor, milky white-yellow oil fluorescense.

JAD/ble

PET. ENG. FILES
ELDRIDGE OIL CO.
McKITTRICK, CALIF.

23X-35

SIDEWALL CORES

Depth	
8970'	Recovered 3/4" shale: Chocolate brown, silty.
8950	Recovered 3/4" shale: as above.
8907	Recovered 3/4" shale: as above.
8898	Recovered 1-1/4" claystone: gritty, dark chocolate brown, abundant subrounded mafic minerals no fluorescence.
8885	Recovered 1-1/4" oil stained sand: light tannish gray, fine to medium grained, silty, angular - subangular grains, with common scattered coarse grains, poorly sorted, fair odor, bright yellow oil fluorescence.
8883'	Recovered 3/4" sand: gray with tannish cast on half of core otherwise as above, 1/2 of core has bright yellow oil fluorescence faint odor.
8880'	Recovered 1/2" sand: gray with a tannish cast, fine to medium grained, subangular to subrounded, with scattered dark mineral grains, bright yellow fluorescence.
8878'	Recovered 5/8" sand: light tannish - gray as above with 3/8" streak of calcite crystals running through core, bright yellow oil & mineral fluorescence, slight odor.
8873'	Recovered 3/8" Sand: dark gray with tannish cast, fine to medium with scattered coarse grains, silty, poorly sorted, common dark minerals, dark gold oil fluorescence.
8840'	Recovered 1-1/4" shale: dark chocolate brown, silty, highly fractured, common forams.
8779'	No recovery.
8777'	Recovered 1" sand: gray, fine to medium grained, very silty, subangular, abundant dark minerals, calcite with oil staining throughout core with streaks of bright yellow oil fluorescence.
8740'	Rec. 1-1/8" shale, dark chocolate brown with scattered sand grains, slightly fractured with oil in fractures, dull yellow fluorescence.
8645'	Rec. 1-1/4" sand: light tannish gray, oil stained, fine to medium , subangular common dark grains, silty, poorly sorted with streaks of calcite, mottled bright yellow fluorescence.
5474'	Rec. 2" oil stained sand, light tan-gray, fine grained, subangular with common dark minerals, slightly silty, good odor, bright yellow fluorescence.
5455'	Rec. 3/4" sand-gray with tannish cast, medium grained, subrounded to subangular with some rounded grains, silty,core is 75% calcite crystals, bright white - yellow mineral fluorescence.
5437'	Rec. 2" Oil sand: light brown fine grained subangular to subrounded, well sorted, good odor, white fluorescence.
5432'	NR
5427'	NR
5345'	Rec. 2" sand: medium gray with tannish cast, as above with 25% mafic minerals, dull whitish yellow fluorescence.
5324'	Rec. 2" sand: light brown fine to medium grained as above, good odor, bright yellow fluorescence.

5322'	No recovery.
5154'	Rec. 2" sand: light tannish gray as above with dull yellowish fluorescence faint odor.
5065'	Rec. 2" oil stained sand: light tannish gray as above, somewhat brighter yellow fluorescence.
5060'	NR
5052'	Rec. 2" oil stained sand: light tannish gray as above, good odor, whitish-yellow fluorescence.
5034'	Rec. 2" oil stained sand; light tannish gray as above, faint odor, very dull gold fluorescence.
5026'	Rec. 2" sand: gray sand as above, no fluorescence or odor.

JAD/ble

621 TRUXTUN AVENUE

TELEPHONE 805 - 324-9094

R. STANLEY BECK
CONSULTING PALEONTOLOGISTS and GEOLOGISTS
SINCE 1944
BAKERSFIELD, CALIFORNIA

PET. ENG. FILES
BELRIDGE OIL CO.
McKITTRICK, CALIF.

August 30, 1979

Paleontologic summary of Belridge Oil Company 23X-35, Sec.35-27S-20E, MDB&M; Kern County, California.

Belridge Oil Company
c/o Mr. Joseph A. Dunwoody

3790-4730	Upper Miocene - Bolivina vaughani Zone equals Antelope (McLure) and Stevens sands.
3790-3820	(ditch) Uvigerina subperegrina fragment, Haplophragmoides sp. common, Coscinodiscus sp. rare and radiolaria rare.
3850-3880	(ditch) Uvigerina subperegrina fragment, Haplophragmoides sp. common and radiolaria rare.
3910-4000	(2 ditch) Haplophragmoides sp. abundant.
4030-4060	(ditch) Haplophragmoides sp. common, radiolaria rare and pyrite few.
4090-4120	(ditch) Globigerina bulloides rare, Haplophragmoides sp. common and radiolaria few.
4150-4180	(ditch) Haplophragmoides sp. abundant and Globobulimina pacifica rare.
4210-4240	(ditch) Bulimina sp. rare and Haplophragmoides sp. common.
4270-4300	(ditch) Bulimina cf. ovata rare and Haplophragmoides sp. abundant.
4330-4360	(ditch) Bulimina cf. ovata rare, Haplophragmoides sp. abundant and light tan sporbo rare.

4390-4420	(ditch) Haplophragmoides sp. abundant and light tan sporbo rare.
4450-4480	(ditch) Haplophragmoides sp. abundant.
4520-4610	(2 ditch) Haplophragmoides sp. abundant and light tan sporbo rare.
4640-4670	(ditch) Haplophragmoides sp. abundant.
4700-4730	(ditch) Haplophragmoides sp. rare and small sporbo common.

4760-5560± Upper Miocene. Pulvinulinella gyroidinaformis Zone equals MacDonald.

4760-4790	(ditch) Uvigerina cf. hootsi rare, Virgulina californiensis few and Buliminella subfusiformis rare.
4820-4850	(ditch) Uvigerina cf. hootsi few, Nonion costiferum rare, Valvulineria miocenica few, Valvulineria cf. obesa rare and Bolivina cf. advena rare.
4870-4900	(ditch) Valvulineria miocenica rare, Bolivina advena rare and Haplophragmoides sp. abundant.
4930-4960	(ditch) Valvulineria miocenica rare, Uvigerinella sp. rare and Haplophragmoides sp. abundant.
4990-5020	(ditch) Haplophragmoides sp. abundant and Virgulina californiensis rare.
5050-5080	(ditch) Haplophragmoides sp. common and fine sand common.
5110-5140	(ditch) Haplophragmoides sp. common.

5170-5200 (ditch) Uvigerina cf. hootsi rare, Valvulineria miocenica rare, Valvulineria cf. californica obesa rare, fish remains rare and Haplophragmoides sp. common.

5230-5260 (ditch) Haplophragmoides sp. few and fine sand common.

5290-5320 (ditch) Haplophragmoides sp. few, indeterminate Mollusk fragments common, sporbo few and fine sand common.

5350-5380 (ditch) Haplophragmoides sp. rare, sporbo few, indeterminate Mollusk fragments common and fine sand common.

5410-5440 (ditch) Similar to last above but with Mollusk fragments and sand more common.

5470-5560 (2 ditch) Indeterminate Mollusk fragments rare, sand common and "lost circulation material" abundant.

5590-6280 Undifferentiated Middle Miocene equals undifferentiated Valvulineria californica (Devilwater) - Siphogenerina branneri (Gould-Buttonbeds-Temblor) Zone.

5590-5620 (ditch) Valvulineria californica gens few, Valvulineria depressa rare and Robulus smileyi rare.

5650-5680 (ditch) Valvulineria californica ? rare, Nonion costiferum rare and Bulimina ovata rare.

5710-5740 (ditch) Pullenia cf. miocenica fragment and Haplophragmoides sp. common.

5770-5800 (ditch) Haplophragmoides sp. few and gray sporbo common.

5830-5920	(2 ditch) Cement ? fragments few and gray sporbo common.
5950-5980	(ditch) Haplophragmoides sp. few and sporbo common.
6010-6100	(2 ditch) Nonionella miocenica rare, Haplophragmoides sp. few and sporbo few.
6130-6160	(ditch) Haplophragmoides sp. common.
6190-6220	(ditch) Barren sand. Probably Button bed (Temblor) sand.
6250-6280	(ditch) Indeterminate fossil fragments rare and sand clusters few.

6280-7060 Lower Miocene - Saucesian equals Media shale and Carneros sand.

6280-6310	(ditch) Robulus cf. warmani rare, Nonion costiferum rare, Haplophragmoides cf. trullissata rare and pyrite few.
6340-6370	(ditch) Haplophragmoides sp. fragments few, pyrite few and sporbo rare.
6400-6430	(ditch) Similar to last above.
6460-6490	(ditch) Nonionella sp. rare, Haplophragmoides sp. fragments few, Globigerina bulloides rare, pyrite few and sporbo few.
6520-6550	(ditch) Robulus cf. warmani fragment, Uvigerinella sp. rare, Nonion costiferum rare, Haplophragmoides sp. rare and sporbo few.
6580-6610	(ditch) Robulus warmani rare, Nonion costiferum rare, sporbo few and kaolinitic sand few.

	6640-6670	(ditch) Cyclammina obesa rare, Nonionella sp. rare, fish remains rare and sporbo few.
	6700-6730	(ditch) Robulus sp. rare, Gyroidina soldanii rare, Nonion costiferum rare, sporbo few and pyrite few.
	6760-6790	(ditch) Haplophragmoides sp. rare and ill-sorted kaolinitic sand common.
	6820-6850	(ditch) Robulus warmani rare, Haplophragmoides sp. few, Cyclammina obesa rare and sand as last above few.
	6880-6910	(ditch) Siphogenerina transversa few, Robulus warmani common and Cyclammina obesa rare.
	6940-6970	(ditch) Siphogenerina transversa few, Robulus warmani abundant and Haplophragmoides sp. rare.
	7000-7030	(ditch) Robulus warmani rare and Uvigerinella sp. rare.
	7030-7060	(ditch) Robulus warmani rare.
7090-7210	Lower Miocene. Saucesian equals Upper Santos.	
	7090-7120	(ditch) Siphogenerina tenua rare, Valvulineria "turbinatus" rare and sporbo abundant.
	7120-7150	(ditch) Siphogenerina tenua abundant, Valvulineria "turbinatus" few, Robulus warmani rare, glauconite rare and sporbo few.

	7150-7180	(ditch) Siphogenerina transversa few, Siphogenerina sp. (phosphatic) few, Uvigerinella parva common, Gyroidina soldanii rare, Robulus simplex rare and sporbo few.
	7180-7210	(ditch) Siphogenerina transversa rare, Robulus warmani rare, Valvulineria "turbinatus" rare, glauconite common and sporbo common.
7210-7300	Lower Miocene. Possibly Upper Zemorrian equals "Middle" Santos.	
	7210-7240	(ditch) Siphogenerina cf. transversa (phosphatic) rare, Bulimina cf. carnerosensis ? rare, Robulus warmani rare and sporbo common.
	7270-7300	(ditch) Siphogenerina cf. transversa few, Siphogenerina sp. (phosphatic) rare, Robulus simplex rare, Cyclammina obesa few, glauconite few and sporbo few.
7330-8670	Lower Miocene. Lower Zemorrian equals undifferentiated Lower Santos - Bloemer - Belridge 64.	
	7330-7360	(ditch) Siphogenerina nodifera few, Nodosaria anomala rare, Robulus warmani rare, glauconite few and sporbo few.
	7390-7420	(ditch) Uvigerina cf. atwilli few, Robulus warmani rare and Cyclammina obesa rare.
	7450-7480	(ditch) Uvigerina cf. atwilli rare, Siphogenerina sp. rare, Robulus warmani rare, Uvigerinella "belridgensis" rare and glauconite few.

7510-7540	(ditch) Robulus warmani rare, Siphogenerina sp. fragment, sporbo abundant, glauconite abundant and pyrite common.
7570-7600	(ditch) Indeterminate Mollusk fragments few, sporbo few and kaolinitic sand common.
7630-7660	(ditch) Uvigerina cf. atwilli rare, Siphogenerina sp. rare, Ostracoda rare, indeterminate Mollusk fragments rare and sand as last above few.
7690-7720	(ditch) Siphogenerina sp. fragment, sporbo abundant, glauconite rare and sand common.
7750-7780	(ditch) Uvigerina cf. gesteri crushed single specimen, sporbo abundant, glauconite common and sand common.
7790-7810	(ditch) Siphogenerina sp. (phosphatic) rare, sporbo abundant, "glauconitic grit" common and pyrite few.
8140-8170	(ditch) Siphogenerina cf. transversa few, Cyclammina sp. fragments rare, sporbo common and glauconite common.
8230-8260	(ditch) Gyroidina soldanii rare, Uvigerina cf. atwilli fragment, Cyclammina obesa rare, sporbo few and glauconite rare.
8290-8320	(ditch) Siphogenerina sp. fragment, Cyclammina obesa few, Cyclammina incisa rare, sporbo few, glauconite few and ill-sorted sand common.
8330-8345	(ditch) Cyclammina sp. rare, Haplophragmoides sp. (coarsely arenaceous) rare, sporbo few, glauconitic grit common and fine sand common.

8370-8400	(ditch) Uvigerina atwilli rare and sporbo common.
8430-8460	(ditch) Uvigerina atwilli rare, Siphogenerina sp. rare, Haplophragmoides sp. rare, sporbo common and glauconite few.
8520-8550	(ditch) Uvigerina atwilli rare, Robulus warmani rare, Cyclammina ? sp. fragments few, sporbo few and sand few.
8580-8610	(ditch) Cyclammina incisa few, Robulus warmani rare, Siphogenerina transversa rare, sporbo few and glauconite rare.
8640-8670	(ditch) Dentalina sp. rare, sporbo few and glauconitic sand common.

8700-8890± Oligocene. Uvigerina cocoaensis Zone equals Tumey (Wagonwheel).

8700-8730	(ditch) Uvigerina atwilli common, Uvigerina sp. few, Bulimina sculptilis few, Nodosaria ? chambers few and Gyroidina soldanii rare.
8740	(sidewall) Nodosaria sp. chambers few, Haplophragmoides cf. trullissata rare, Cyclammina spp. few and Bathysiphon sp. few.
8760-8790	(ditch) Uvigerina atwilli rare, Bulimina sculptilis rare, Cyclammina sp. few, Bathysiphon sp. few and glauconitic sand abundant.
8820-8850	(ditch) Uvigerina atwilli rare, Cyclammina sp. common and Nodosaria ? chambers few.
8840	(sidewall) Indeterminate fossil fragments few.

8880-8900	(ditch) Cyclammina sp. common, Robulus sp. rare, Uvigerina cf. atwilli rare and glauconite few.

8898-9000 Possibly undifferentiated Upper Eocene equals possible undifferentiated Kreyenhagen.

8898	(sidewall) Haplophragmoides sp. common, sponge spicules few, small pyritized radiolaria rare and glauconite few.
8907	(sidewall) Cyclammina sp. rare and Bathysiphon sp. rare.
8930-8960	(ditch) Cyclammina sp. common.
8950	(sidewall) Fish remains rare and small pyritized radiolaria rare.
8960-8990	(ditch) Haplophragmoides sp. common, sponge spicules rare, pyritized radiolaria few and pyrite common.
8970	(sidewall) Pyrite rare.
8990-9000	(ditch) Haplophragmoides sp. few, Bathysiphon sp. few, pyritized radiolaria rare, pyritized plant spores rare, pyritized sponge spicules rare and pyrite common.

Sincerely,

R. Stanley Beck

RSB:esp

NORTH BELRIDGE
#23X SEC. 35
CORE DATA.


8000031568

800031568

Central Files Bar Code:

Core Sample Type: Check all pertaining to each report - Submit sheet for each report

	Core Report Type	Core Report Subtype
	Sample Type	Conventional-Plug
	Sample Type	Conventional-Whole
/	Sample Type	Sidewall
	Sample Type	Cuttings
	Sample Type	Mudlog Sample
	Sample Type	Produced
	Sample Type	Surface
	Sample Type	Geological Outcrop
	Sample Type	Other

	Core Report Type	Core Report Subtype
	Analysis Pressure	Ambient
	Analysis Pressure	Stressed
	Reservoir	
	Reservoir Name	Goodle

JAN 29 2009

	Scan Report Requested
	Electronic File Available
File Location	79301

Core Report Type/Core Report Sub SubType

	Core Report Type	Core Report Subtype
	Routine Analysis	Density-Grain
	Routine Analysis	Density-Matrix
/	Routine Analysis	Description-Lithological
	Routine Analysis	Description-UV Light
/	Routine Analysis	Fluid Saturation-PKS
	Routine Analysis	Natural-Spectral Gamma Ray
/	Routine Analysis	Permeability-Air
	Routine Analysis	Photography-White/UV
/	Routine Analysis	Porosity-Other
	Routine Analysis	Sieve Analysis
	Routine Analysis	Other
	Petrophysical	Bulk PEF
	Petrophysical	Capillary Pressure Analysis
	Petrophysical	CAT Scan
	Petrophysical	Cation Exchange Capacity
	Petrophysical	Cementation Factor
	Petrophysical	Formation Resistivity Factor
	Petrophysical	Formation Resistivity Index
	Petrophysical	Formation Water Resistivity
	Petrophysical	Luminosity Analysis
	Petrophysical	Matrix Neutron Index
	Petrophysical	Mercury Injection
	Petrophysical	Model Evaluation
	Petrophysical	NMR Analysis
	Petrophysical	Oil Chromatography
	Petrophysical	Oil Gravity-Density
	Petrophysical	Oil Pyrolysis
	Petrophysical	Oil Viscosity
	Petrophysical	Pore Throat Analysis
	Petrophysical	Saturation Exponent
	Petrophysical	Tortuosity
	Petrophysical	Other

	Core Report Type	Core Report Subtype
	Petrophysical-Flow Study	Fines Migration-Mobilization Velocity
	Petrophysical-Flow Study	Heat Transfer Coefficient
	Petrophysical-Flow Study	Permeability-Brine
	Petrophysical-Flow Study	Permeability-Oil
	Petrophysical-Flow Study	Permeability-Toluene
	Petrophysical-Flow Study	Permeability-Vertical
	Petrophysical-Flow Study	Permeability-Water
	Petrophysical-Flow Study	Relative Permeability
	Petrophysical-Flow Study	Rock Pore Preferred Wettability
	Petrophysical-Flow Study	Other
	Geochemistry	Formation Water-Brine Chemical
	Geochemistry	Other
	Geological Service	Box Report
	Geological Service	Description-Field Engineer Report
	Geological Service	Description-Petrographic
	Geological Service	Formation-Rock Unit Identification
	Geological Service	Hydralic Unit Analysis
	Geological Service	Mineralogy-XRD/FTIR
	Geological Service	Paleontological Analysis
	Geological Service	Photography-Infra Red
	Geological Service	Rock Age
	Geological Service	Scanning Electron Microscopy
	Geological Service	Thin Section
	Geological Service	Other
	Reservoir Fluid	Produced Gas Analysis
	Reservoir Fluid	Produced Oil Analysis
	Reservoir Fluid	Produced Water Analysis
	Reservoir Fluid	Steamflood Analysis
	Reservoir Fluid	Other
	Rock Mechanics	Rock Acoustic Velocity
	Rock Mechanics	Rock Compressibility Analysis
	Rock Mechanics	Surface Area Per Unit Volume
	Rock Mechanics	Other
	Other	Other

43-27N

Well Name:	43-27
Well UWI:	0402975126
Sec-Twp-Rge:	S27-T27S-R20E
Central Files Barcode:	0000259482
Report Title:	CORE PHOTO

Coding date:	08/19/2009
This sheet coded by:	Lester Carcamo
Vendor:	Shell California Production
Vendor file number	
Report Date:	05/12/1985
ANOTATED	NO

	Sample Type	Reservoir: a, b, c, d, e.
	Conventional-Plug	Temblor
x	Conventional-Whole	Media Shale
	Sidewall	Carneros
	Cuttings	Agua
	Mudlog Sample	64 Zone
	Produced	Top Depth
	Surface	5700
	Geological Outcrop	Bottom Depth
	Other	9695

	Data containers Information
	LIVE-LINK
	Core DB
	OpenWorks
	Binders
	R:drive
	LAS file
	Ambient Pressure
x	Stressed Pressure

Scan Requested
yes

Notes

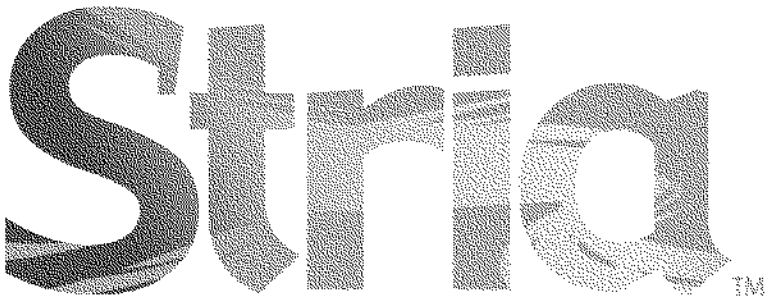
Check all pertaining to each report - submit sheet for each report

	Core Report Type	Core Report Subtype
	Routine Analysis	Description-UV Light
	Routine Analysis	Photography-White/UV
	Routine Analysis	Density-Grain
	Routine Analysis	Routine Analysis - Other
	Routine Analysis	Porosity-Other
	Routine Analysis	Natural-Spectral Gamma Ray
	Routine Analysis	Permeability-Air
	Routine Analysis	Density-Matrix
x	Routine Analysis	Fluid Saturation-PKS
	Routine Analysis	Sieve Analysis
	Routine Analysis	Description-Lithological
	Petrophysical	Formation Resistivity Factor
	Petrophysical	Cementation Factor
	Petrophysical	Luminosity Analysis
	Petrophysical	Oil Viscosity
	Petrophysical	Petrophysical - Other
	Petrophysical	Saturation Exponent
	Petrophysical	Tortuosity
	Petrophysical	Formation Resistivity Index
	Petrophysical	Model Evaluation
	Petrophysical	Oil Gravity-Density
	Petrophysical	Oil Pyrolysis
	Petrophysical	Formation Water Resistivity
	Petrophysical	Matrix Neutron Index
	Petrophysical	Oil Chromatography
	Petrophysical	Bulk PEF
	Petrophysical	CAT Scan
	Petrophysical	Mercury Injection
	Petrophysical	Capillary Pressure Analysis
	petrophysical	Cation Exchange Capacity
	Petrophysical	NMR Analysis
	Petrophysical	Pore Throat Analysis

	Core Report Type	Core Report Subtype
	Petrophysical-Flow Study	Heat Transfer Coefficient
	Petrophysical-Flow Study	Fines Migration-Mobilization Velocity
	Petrophysical-Flow Study	Petrophysical-Flow Study - Other
	Petrophysical-Flow Study	Permeability-Oil
	Petrophysical-Flow Study	Rock Pore Preferred Wettability
	Petrophysical-Flow Study	Permeability-Toluene
	Petrophysical-Flow Study	Relative Permeability
	Petrophysical-Flow Study	Permeability-Brine
	Petrophysical-Flow Study	Permeability-Vertical
	Petrophysical-Flow Study	Permeability-Water
	Geochemistry	Geochemistry - Other
	Geochemistry	Formation Water-Brine Chemical
	Geological Service	Description-Petrographic
	Geological Service	Formation-Rock Unit Identification
	Geological Service	Rock Age
	Geological Service	Mineralogy-XRD/FTIR
	Geological Service	Geological Service - Other
	Geological Service	Photography-Infra Red
	Geological Service	Paleontological Analysis
	Geological Service	Box Report
	Geological Service	Thin Section
	Geological Service	Description-Field Engineer Report
	Geological Service	Hydralic Unit Analysis
	Geological Service	Scanning Electron Microscopy
	Reservoir Fluid	Steamflood Analysis
	Reservoir Fluid	Produced Gas Analysis
	Reservoir Fluid	Reservoir Fluid - Other
	Reservoir Fluid	Produced Water Analysis
	Reservoir Fluid	Produced Oil Analysis
	Rock Mechanics	Rock Mechanics - Other
	Rock Mechanics	Rock Acoustic Velocity
	Rock Mechanics	Surface Area Per Unit Volume
	Rock Mechanics	Rock Compressibility Analysis
	Other	Other

Lester Carcamo 07/23/2009

Best Image
from Original



Best Image
from Original

029-75-10
Sec. 27-27/20

RECEIVED
NOV 20 1986
DIVISION OF OIL & GAS
BAKERSFIELD

Shell California Production
SCPI Well 43-27

Porosity, Permeability, and Saturations

Performed by:

Petrophysical Services
1500 Salado Drive
Mountain View, CA 94043
(415) 960-0964

Approved by: Carol A. Tosaya

Dr. Carol Tosaya
Director, Laboratory

361/8G

PETROPHYSICAL PROPERTIES OF THE SAMPLES
TABLE 1.a

RECEIVED
NOV 20 1986
DIVISION OF OIL & GAS
BAKERSFIELD

SAMPLE DEPTH (ft)	HELIUM POROSITY	GRAIN DENSITY (g/cc)	k-gas (mD)	Sw	So
5700	0.2543	2.645	10.0000	0.78	0.06
5701	0.2482	2.636	15.8000	0.87	0.03
5702	0.2535	2.643	20.2000	0.87	0.03
5703	0.0622	2.683	0.0030	0.84	0.14
5704	0.2045	2.644	1.8000	0.84	0.01
5705	0.0693	2.658	0.0340	0.95	0.13
5706	0.2167	2.644	2.8000	no	data
5707	0.2186	2.641	2.4300	0.90	0.02
5708	0.2117	2.640	1.2900	0.86	0.06
5709	0.2171	2.639	1.8300	0.83	0.06
5710	0.2126	2.639	0.5800	0.61	0.17
5711	0.1904	2.640	1.2100	0.65	0.13
5712	0.2383	2.637	3.0400	0.71	0.12
5713	0.2117	2.649	0.4500	0.67	0.12
5714	0.0552	2.675	0.0049	0.14	0.47
5715	0.2405	2.645	9.8800	0.74	0.09
5716	0.2150	2.648	2.6100	0.72	0.05
5717	0.1963	2.661	0.4200	0.71	0.09
5718	0.2352	2.646	9.6400	0.69	0.06
5719	0.2224	2.650	0.8900	0.74	0.08
5720	0.2116	2.636	0.9200	0.65	0.12
5721	0.2061	2.653	0.5600	0.61	0.08
5722	0.1843	2.661	0.3300	0.75	0.16
5723	0.1293	2.655	0.3100	0.58	0.26
5724	0.2151	2.639	0.9100	0.83	0.05
5725	0.1923	2.637	0.4900	0.82	0.04
5726	0.1799	2.651	0.6700	0.71	0.11
5727	0.2119	2.653	1.0200	0.58	0.28
5765	0.1609	2.674	0.1500	1.00	0.00
5766	0.1960	2.696	1.0600	0.88	0.10
5768	0.1469	2.682	0.4500	0.93	0.10
5771	0.2141	2.661	4.3100	0.78	0.03
5772	0.2194	2.647	8.8600	0.82	0.05
5773	0.3008	2.651	14.1000	0.58	0.07
5774	0.2322	2.670	9.6900	no	data
5775	0.2672	2.643	184.0000	0.68	0.12

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PETROPHYSICAL PROPERTIES OF THE SAMPLES
TABLE 1.b

SAMPLE DEPTH (ft)	HELIUM POROSITY	GRAIN DENSITY (g/cc)	k-gas (mD)	Sw	So
5777.00	0.2023	2.646	63.500	0.880	0.00
5778.00	0.2457	2.636	101.000	0.800	0.06
5779.00	0.2698	2.635	452.000	0.780	0.08
5780.00	0.2519	2.640	122.000	0.760	0.07
5781.00	0.2518	2.632	143.000	0.810	0.04
5782.00	0.2584	2.633	78.600	0.790	0.04
5783.00	0.2388	2.642	33.800	0.810	0.01
5784.00	0.2245	2.654	15.900	0.730	0.12
5785.00	0.1231	2.667	0.990	0.660	0.13
5786.00	0.0760	2.713	0.032	0.710	0.12
5787.00	0.0730	2.680	0.110	0.714	0.19
5788.00	0.1754	2.672	0.810	0.740	0.14
5789.00	0.2007	2.670	2.090	0.740	0.10
5789.11	0.1867	2.667	0.890	0.770	0.12
5951.10	0.2185	2.628	0.690	0.830	0.09
5952.00	0.2230	2.634	2.050	0.860	0.00
5956.00	0.2398	2.636	30.500	0.870	0.00
5957.00	0.2323	2.627	30.500	0.770	0.08
5958.00	0.2300	2.625	24.400	0.800	0.05
5959.00	0.2459	2.628	43.700	0.790	0.10
5960.00	0.2276	2.630	28.900	0.800	0.04
5961.00	0.2584	2.625	109.000	0.800	0.02
5962.00	0.2424	2.628	51.500	0.870	0.00
5963.00	0.2525	2.627	85.100	0.800	0.04
5964.00	0.2686	2.620	170.000	0.770	0.06
5965.00	0.2610	2.632	82.100	0.810	0.03
5966.00	0.0223	2.683	0.047	0.350	0.29
5967.00	0.2358	2.627	20.900	0.810	0.05
5968.00	0.2532	2.628	84.300	0.860	0.03
5969.00	0.2614	2.622	113.000	0.900	0.00
5970.00	0.2599	2.627	152.000	0.870	0.02
5971.00	0.2612	2.623	95.900	0.910	0.00
5972.00	0.3140	2.616	85.000	0.650	0.02
5973.00	0.2712	2.638	150.000	0.850	0.02
5974.00	0.2538	2.617	154.000	0.910	0.00
5975.00	0.2643	2.618	174.000	0.880	0.00
5976.00	0.2725	2.627	151.000	0.800	0.03
5977.00	0.2768	2.626	222.000	0.850	0.00

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PETROPHYSICAL PROPERTIES OF THE SAMPLES
TABLE 1:c

SAMPLE DEPTH (ft)	HELIUM POROSITY	GRAIN DENSITY (g/cc)	k-gas (mD)	Sw	So
5978.0	0.2691	2.630	156.000	0.80	0.03
5979.0	0.2729	2.628	224.000	0.80	0.02
5980.0	0.2614	2.630	171.000	0.76	0.01
6039.1	0.2265	2.630	3.030	0.86	0.06
6040.0	0.2191	2.634	2.060	0.86	0.01
6041.0	0.2353	2.633	7.130	0.82	0.05
6042.0	0.2273	2.634	7.080	0.83	0.02
6043.0	0.2077	2.648	0.740	0.70	0.04
6044.0	0.2091	2.637	2.280	0.71	0.15
6045.0	0.2326	2.631	7.200	0.83	0.04
6046.0	0.2430	2.630	4.020	0.81	0.01
6047.0	0.0896	2.655	0.075	0.63	0.15
6048.0	0.2350	2.624	30.900	0.84	0.08
6049.0	0.2320	2.623	27.500	0.93	0.00
6050.0	0.2394	2.623	28.300	0.83	0.02
6051.0	0.2096	2.622	9.780	0.90	0.00
6052.0	0.1822	2.645	1.160	0.77	0.07
6053.0	0.1850	2.617	2.520	0.83	0.01
6054.0	0.1817	2.737	0.980	0.82	0.02
6055.0	0.1655	2.639	0.810	0.77	0.04
6056.0	0.1572	2.638	0.280	0.79	0.04
6057.0	0.1408	2.643	0.120	0.79	0.04
6058.0	0.1310	2.638	0.070	0.81	no data
6059.0	0.0979	2.630	0.033	0.81	0.09
6060.0	0.1010	2.625	0.086	0.82	0.08
6061.0	0.0763	2.628	0.023	0.82	0.15
6062.0	0.1189	2.642	0.015	0.81	0.01
6063.0	0.1326	2.641	0.015	0.71	0.15
6064.0	0.1294	2.633	0.014	0.88	0.04
6065.0	0.1305	2.635	0.046	0.91	0.04
6066.0	0.1342	2.637	0.019	0.95	0.01
6067.0	0.1217	2.636	0.053	0.84	0.11

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PETROPHYSICAL PROPERTIES OF THE SAMPLES
TABLE 1.a

SAMPLE DEPTH (ft)	HELIUM POROSITY	GRAIN DENSITY (g/cc)	k-gas (mD)	Sw	So
8353.3	0.1274	2.643	0.128	0.76	0.08
8354.0	0.1414	2.645	0.298	0.63	0.07
8355.0	0.1309	2.639	0.161	0.68	0.08
8356.2	0.1341	2.644	0.792	0.71	0.03
8357.2	0.1231	2.639	2.480	0.71	0.00
8358.0	0.1406	2.645	10.500	0.74	0.00
8359.0	0.1372	2.645	0.475	0.59	0.13
8360.0	0.1390	2.641	0.726	0.61	0.12
8361.0	0.1359	2.646	0.268	0.70	0.08
8362.0	0.1327	2.643	0.266	0.67	0.07
8363.0	0.1298	2.643	0.184	0.64	0.11
8364.0	0.1332	2.645	0.250	0.64	0.08
8365.0	0.1385	2.651	0.273	0.63	0.12
8366.0	0.1310	2.640	0.241	0.66	0.11
8367.0	0.1372	2.641	0.230	0.61	0.14
8368.0	0.1275	2.649	0.641	0.70	0.15
8369.0	0.1345	2.641	0.357	0.64	0.11
8370.0	0.1366	2.640	0.481	0.73	0.05
8371.0	0.1364	2.648	0.252	0.68	0.14
8372.0	0.1327	2.642	0.358	0.68	0.08
8373.0	0.1310	2.643	0.266	0.72	0.06
8374.0	0.1281	2.639	0.175	0.82	0.00
8375.0	0.1340	2.645	0.305	0.74	0.09
8376.0	0.1263	2.634	0.265	0.74	0.09
8377.0	0.1292	2.638	0.142	0.73	0.13
8378.0	0.1298	2.639	0.176	0.75	0.09
8379.0	0.1310	2.636	0.180	0.75	0.10
8380.0	0.1261	2.636	0.092	0.81	0.09
8381.0	0.1201	2.635	0.093	0.78	0.14
8382.0	0.1142	2.636	0.082	0.82	0.11
8383.0	0.1059	2.626	0.090	0.87	0.08
8717.0	0.1242	2.636	1.150	0.58	0.12
8718.0	0.1408	2.629	6.880	0.57	0.11
8719.0	0.1011	2.635	0.096	0.73	0.06
8720.0	0.1010	2.645	0.088	0.73	0.10

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PETROPHYSICAL PROPERTIES OF THE SAMPLE
TABLE 1.b

SAMPLE DEPTH (ft)	HELIUM POROSITY	GRAIN DENSITY (g/cc)	k-gas (mD)	Sw	So
8721.0	0.0922	2.665	0.048	0.71	0.07
8722.0	0.0906	2.654	0.048	0.81	0.07
8723.0	0.0957	2.651	0.038	0.84	0.05
8724.0	0.1142	2.652	0.086	0.74	0.08
8725.0	0.1301	2.640	0.133	0.73	0.07
8726.0	0.1313	2.638	0.348	0.62	0.12
8727.0	0.1482	2.633	0.201	0.69	0.09
8728.0	0.1481	2.632	0.174	0.74	0.07
8729.0	0.1463	2.635	0.185	0.78	0.08
8730.0	0.1449	2.633	0.154	0.75	0.06
8731.0	0.1482	2.632	0.135	0.80	0.05
8732.2	0.1513	2.641	0.158	0.82	0.00
8733.0	0.1523	2.638	0.162	0.80	0.06
8734.0	0.1633	2.661	0.311	0.74	0.06
8735.0	0.1528	2.643	0.129	0.71	0.06
8829.3	0.1122	2.628	4.100	0.50	0.25
8829.9	0.1126	2.626	4.090	0.48	0.23
8830.9	0.1052	2.626	2.540	0.43	0.22
8832.0	0.1223	2.629	11.100	0.45	0.24
9115.0	0.1292	2.633	0.132	0.68	0.13
9116.0	0.1355	2.632	0.197	0.69	0.11
9117.0	0.1329	2.626	0.307	0.71	0.05
9118.0	0.1308	2.639	0.520	0.61	0.13
9119.0	0.1357	2.623	0.626	0.64	0.11
9120.0	0.1339	2.620	0.374	0.64	0.08
9121.0	0.1297	2.634	0.257	0.67	0.06
9122.0	0.1285	2.620	0.292	0.68	0.07
9123.0	0.1349	2.625	0.374	0.62	0.06
9124.0	0.1292	2.633	0.277	0.65	0.05
9125.0	0.1258	2.624	0.283	0.68	0.07
9126.0	0.1284	2.624	0.296	0.68	0.06
9127.0	0.1261	2.626	0.294	0.65	0.06
9128.0	0.1224	2.622	0.314	0.66	0.06
9129.0	0.1230	2.629	0.301	0.66	0.06
9130.0	0.1222	2.630	0.328	0.63	0.10

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PETROPHYSICAL PROPERTIES OF THE SAMPLES
TABLE 1.c

SAMPLE DEPTH	HELIUM POROSITY	GRAIN DENSITY	k-gas (mD)	Sw	So
9131.0	0.1218	2.625	0.3470	0.66	0.06
9132.0	0.1222	2.624	0.3010	0.64	0.09
9133.0	0.1255	2.627	0.2690	0.65	0.08
9134.0	0.1314	2.633	0.2530	0.62	0.06
9135.0	0.1278	2.629	0.2330	0.63	0.09
9136.0	0.1196	2.632	0.2140	0.63	0.09
9137.0	0.0581	2.650	0.0485	0.74	0.24
9138.0	0.0938	2.641	0.0565	0.80	0.12
9139.0	0.0945	2.642	0.0650	0.76	0.24*
9140.0	0.0991	2.636	0.1110	0.66	0.34*
9141.0	0.1079	2.630	0.0685	0.78	0.22*
9674.1	0.0602	2.754	12.7000	0.48	0.09
9675.0	0.0385	2.745	0.0699	0.50	0.14
9675.9	0.0439	2.783	0.1200	0.49	0.15
9677.0	0.0373	2.729	0.0970	0.49	0.06
9678.1	0.0633	2.750	0.6200	0.39	0.04
9679.0	0.0624	2.666	0.4030	0.50	0.10
9680.0	0.0420	2.656	0.1350	0.61	0.09
9681.0	0.0811	2.660	0.6240	0.46	0.13
9682.0	0.0892	2.641	0.4490	0.44	0.22
9683.0	0.0810	2.639	0.4240	0.47	0.23
9684.0	0.0745	2.640	0.3820	0.53	0.14
9685.0	0.0852	2.640	0.6680	0.53	0.10
9686.0	0.0890	2.643	0.7890	0.54	0.07
9687.0	0.1078	2.637	0.6030	0.56	0.08
9687.9	0.1103	2.637	1.0600	0.55	0.11
9689.0	0.1083	2.637	0.7840	0.59	0.08
9690.0	0.1130	2.635	0.6110	0.56	0.11
9691.0	0.1112	2.636	0.8020	0.60	0.08
9692.0	0.1101	2.641	1.2000	0.53	0.12
9693.0	0.1118	2.642	0.5720	0.54	0.13
9694.0	0.1083	2.638	0.6900	0.49	0.22
9695.0	0.1309	2.650	0.7550	0.47	0.19

* The samples experienced a weight loss which based on a fluid specific gravity of 0.85, results in a calculated value of So greater than 1-Sw. The So values listed have be constrained such that Sw + So = 1.00

Sec 27 Twp 7S Rng 20E

Well Test / Analysis 0000259482
API 0402975126 BELRIDGE N
43-27



0000259482

CENTRAL FILES

ZALCO LABORATORIES, INC.

Analytical & Consulting Services

G-009

SHELL CALIF PROD INC
P.O. BOX 11164
BAKERSFIELD CA. 93389

LABORATORY NO : 6720
DATE RECEIVED : 11/15/85
DATE REPORTED : 11/25/85

Swab run 11/15/85

ATTENTION : JIM THURMAN

SAMPLE DESCRIPTION : 43-27 North NO. BELRIDGE R SAND ~~81-80 8300~~ 8180'-8300'

GEOCHEMICAL WATER ANALYSIS

CONSTITUENTS	MG/L	MEQ/L	REACTING PERCENT
CALCIUM, CA	5000.00	249.50	15.16
MAGNESIUM, MG	2300.00	189.14	11.49
SODIUM, NA	2600.00	113.05	6.87
POTASSIUM, K	5340.00	136.56	8.30
IRON, FE (TOTAL)	2500.00	134.40	8.16
CHLORIDE, CL	28750.00	810.42	49.25
SULFATE, S04	520.00	10.82	0.65
SULFIDE, S	0.00		
BICARBONATE, HC03	83.00	1.36	0.08
CARBONATE, C03	0.00	0.00	0.00
HYDROXIDE	0.00	0.00	0.00
TOTALS (SUM)	47050.81	1645.29	100.00
BORON	23.20		
TOTAL DIS SOLIDS (GRAV)	53180.00		
TOTAL HARDNESS AS CAC03	26431.80		
SODIUM CHLORIDE, TOTAL	42047.41		

PH	5.43	PRIMARY SALINITY	13.74
SPECIFIC GRAVITY @ 60 F	1.04	SECONDARY SALINITY	86.08
		TOTAL SALINITY	99.83
ELECTRICAL CONDUCTIVITY, (E.C., MILLIMHO/CM @ 25C)	68.57	PRIMARY ALKALINITY	0.00
RESISTIVITY @ 25 C (OHM-METERS)	0.145	SECONDARY ALKALINITY	0.16
		TOTAL ALKALINITY	0.16
		LANGELIER SCALE INDEX	-.60

	mg/l
Barium, BA	2.5
Silica, SiO_2	81
Strontium, Sr	30
BS&W on Oil Portion	
Total Cut	100
Emulsion	0
Water	100
Sediment	Trace

(There is only a trace of oil in this sample.)

Jim Etherton, J.Z

JIM ETHERTON
LABORATORY DIRECTOR

4309 Armour Avenue Bakersfield, California 93308
(805) 395-0539

8000023255
31 027S 020E 27
WELL TEST + ANALYSI WATER ANALYSIS

CA
FEE 43-27
BELRIDGE N



Well Name:	43-27
Well UWI:	0402975126
Sec-Twp-Rge:	S27-T27S-R20E
Central Files Barcode:	8000023255
Report Title:	CORE PHOTO

Coding date:	08/11/2009
This sheet coded by:	Lester Carcamo
Vendor:	Zalco
Vendor file number	6720
Report Date:	08/24/1985
ANOTATED	YES

	Sample Type	Reservoir: a, b, c, d, e.
	Conventional-Plug	Agua
	Conventional-Whole	
	Sidewall	
	Cuttings	
	Mudlog Sample	
	Produced	Top Depth
	Surface	8180
	Geological Outcrop	Bottom Depth
x	Other	8300

Data containers information	
LIVE-LINK	Scan Requested
Core DB	yes
OpenWorks	Notes
Binders	
R:drive	
LAS file	
x Ambient Pressure	
Stressed Pressure	

Check all pertaining to each report - submit sheet for each report

	Core Report Type	Core Report Subtype
	Routine Analysis	Description-UV Light
	Routine Analysis	Photography-White/UV
	Routine Analysis	Density-Grain
	Routine Analysis	Routine Analysis - Other
	Routine Analysis	Porosity-Other
	Routine Analysis	Natural-Spectral Gamma Ray
	Routine Analysis	Permeability-Air
	Routine Analysis	Density-Matrix
	Routine Analysis	Fluid Saturation-PKS
	Routine Analysis	Sieve Analysis
	Routine Analysis	Description-Lithological

	Core Report Type	Core Report Subtype
	Petrophysical-Flow Study	Heat Transfer Coefficient
	Petrophysical-Flow Study	Fines Migration-Mobilization Velocity
	Petrophysical-Flow Study	Petrophysical-Flow Study - Other
	Petrophysical-Flow Study	Permeability-Oil
	Petrophysical-Flow Study	Rock Pore Preferred Wettability
	Petrophysical-Flow Study	Permeability-Toluene
	Petrophysical-Flow Study	Relative Permeability
	Petrophysical-Flow Study	Permeability-Brine
	Petrophysical-Flow Study	Permeability-Vertical
	Petrophysical-Flow Study	Permeability-Water

	Petrophysical	Formation Resistivity Factor
	Petrophysical	Cementation Factor
	Petrophysical	Luminosity Analysis
	Petrophysical	Oil Viscosity
	Petrophysical	Petrophysical - Other
	Petrophysical	Saturation Exponent
	Petrophysical	Tortuosity
	Petrophysical	Formation Resistivity Index
	Petrophysical	Model Evaluation
	Petrophysical	Oil Gravity-Density
	Petrophysical	Oil Pyrolysis
	Petrophysical	Formation Water Resistivity
	Petrophysical	Matrix Neutron Index
	Petrophysical	Oil Chromatography
	Petrophysical	Bulk PEF
	Petrophysical	CAT Scan
	Petrophysical	Mercury Injection
	Petrophysical	Capillary Pressure Analysis
	petrophysical	Cation Exchange Capacity
	Petrophysical	NMR Analysis
	Petrophysical	Pore Throat Analysis

	Geochemistry	Geochemistry - Other
x	Geochemistry	Formation Water-Brine Chemical
	Geological Service	Description-Petrographic
	Geological Service	Formation-Rock Unit Identification
	Geological Service	Rock Age
	Geological Service	Mineralogy-XRD/FTIR
	Geological Service	Geological Service - Other
	Geological Service	Photography-Infra Red
	Geological Service	Paleontological Analysis
	Geological Service	Box Report
	Geological Service	Thin Section
	Geological Service	Description-Field Engineer Report
	Geological Service	Hydratic Unit Analysis
	Geological Service	Scanning Electron Microscopy

	Reservoir Fluid	Steamflood Analysis
	Reservoir Fluid	Produced Gas Analysis
	Reservoir Fluid	Reservoir Fluid - Other
	Reservoir Fluid	Produced Water Analysis
	Reservoir Fluid	Produced Oil Analysis

	Rock Mechanics	Rock Mechanics - Other
	Rock Mechanics	Rock Acoustic Velocity
	Rock Mechanics	Surface Area Per Unit Volume
	Rock Mechanics	Rock Compressibility Analysis
	Other	Other

Lester Carcamo 07/23/2009

FORM 1012.5-6

LITTLE'S

CHEMICAL RESEARCH AND DEVELOPMENT DEPARTMENT

HALLIBURTON SERVICES
DUNCAN, OKLAHOMA

LABORATORY REPORT

No. T11-A240-85

To Mr. Mike Eberhard
Halliburton Services
Bakersfield, CA

Date December 21, 1985

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We give below results of our examination of one formation core sample.

Submitted by Shell E & P

Marked Well: 43-27
Location: North Belridge, Kern County, CA
Formation: Upper 64 "U" Sand
Depth: 8,727 feet
Samples Received: December 9, 1985
Los Angeles Division Reference No: CBB-A98-0394-0822-85

Purpose

The purpose of this report is to analyze the submitted samples. The tests include rock properties, and a permeability and porosity measurement.

Discussion

The results of the requested tests are included in the Data Section of this report.

8000031992
Test & Analysis
0402975126
North Belridge
27 T27S R20E
43-27

8000031992

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Data

Permeability and Porosity Analyses

Purpose: To measure the permeability and porosity of a porous media.

Procedure: A test plug 1 inch in diameter by 1.187 inches long is obtained from the submitted core sample so that the longitudinal axis of the plug is normal to the depth. The plug is then oven dried and allowed to cool to room temperature.

Permeability is determined by placing the plug securely in a Hassler Sleeve of the Permeameter. Dry air is then flowed through the plug. Measurements of flow rate and pressure drop across the plug are then obtained.

Porosity is determined by placing the plug securely in a Hassler Sleeve of the Porosimeter. The system is purged with helium gas. The meter has a known storage volume in which the helium gas is allowed to reach equilibrium, a reference point is set on the gauge and a reading taken. The valve to the plug chamber is opened allowing the helium gas to expand into all the void spaces of the plug. A gauge reading is taken in cubic centimeters. The plug is removed and a nonporous plug is placed in the holder. The gas volume is measured in the same manner as the sample plug. The difference in the volumes is the pore volume of the test plug. The bulk volume is calculated from measuring the plug with calipers.

Results: $$\text{Permeability (md)} = \frac{C\,Q\,L}{0.7845\,(D)(D)}$$

$$\text{Porosity (\%)} = \frac{P.V.}{B.V.} \times 100$$

C is the constant taken from the Permeameter calibration charts.
Q is the flow rate in cubic centimeters per second (cc/sec).
L is the plug's longitudinal length in centimeters (cm).
D is the diameter of the plug in centimeters (cm).
P.V. is the pore volume measured in cubic centimeters (cc).
B.V. is the bulk volume measured in cubic centimeters (cc).

Sample No.	Depth (feet)	Porosity (%)	Air Permeability (md)
1	8,727	12.6	0.5

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Data Cont'd

Rock Properties Tests

Purpose: To measure the elastic deformation and strength of rock materials.

Procedures: A 15/16 inch diameter by 2 inch plug is drilled horizontally from a core and placed in the test load cell. An axial stress is applied to the plug and the resulting deformation is measured by displacement transducers. Two transducers are mounted to detect axial strain and one transducer to detect lateral strain. Measurements are taken on the first flat portion of the stress-strain curve. This is prior to permanent rock deformation, i.e. in the elastic limit of the sample. This varies with the properties of the sample. For compressive strength measurements the axial stress is applied to the test plug until full scale (120,000 lb) is reached or failure occurs.

Results: This data is recorded as Young's Modulus, which is the ratio of stress to strain for values of stress not exceeding the elastic limit of the test plug. Poisson's Ratio is the ratio of lateral strain to axial strain within the elastic limit of the test plug.

Sample No.	Depth (feet)	Young's Modulus (psi)	Poisson's Ratio
1	8,727	1.4E6	0.22

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Remarks

The data in this report were given to Mr. Mike Eberhard by Mr. Mark Parker during a telephone conversation on December 19, 1985.

Core Sample Disposition

The core samples will be held in storage for 60 days following mailing of the report. At the end of this time, we will select representative core pieces for storage in the Core Library and discard the remainder unless we are requested to ship the cores to another location.

The selected core pieces will be in the Core Library for two years and will be considered the property of the customer. These core pieces will not be released without the permission of the customer, the originating Halliburton Engineer, or a Stimulation Engineering and Design Section Supervisor. After two years, the selected core pieces will be kept for another eight years, during this time the pieces may be used for a variety of projects.

Data Book Reference

The data presented in this report are recorded in Stimulation Engineering and Design Book No. 5842, page 68; and Reservoir Research and Engineering Book No. R112, page 8.

cc: Mr. J. B. McCalla, Jr.
Mr. J. R. Fehrenbach
Mr. J. E. Diller
Mr. R. M. Melton
Mr. R. M. Lasater
Mr. A. B. Waters
Dr. L. E. Harris

Respectfully submitted,

Laboratory Analyst

Parker-Arrington-Meadows

rdf

HALLIBURTON SERVICES

By Mark Parker by DF

Mark A. Parker

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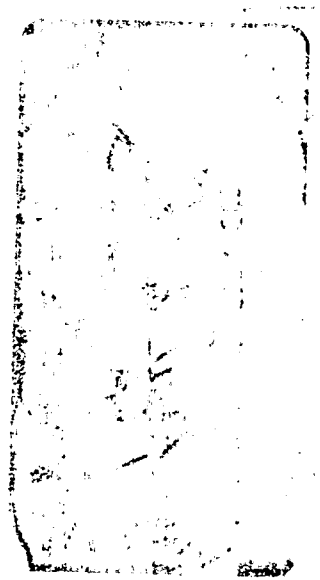

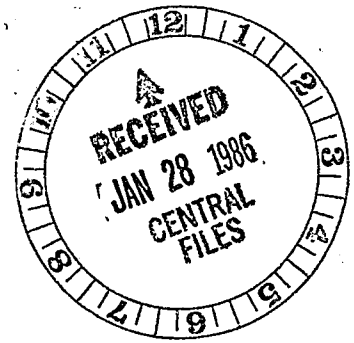
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FILES

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Well Name:	43-27
Well UWI:	0402975126
Sec-Twp-Rge:	27T27SR20E
Central Files Barcode:	8000031992
Report Title:	PERMEABILITY AND POROSITY ANALYS

Coding date:	01/00/1900
This sheet coded by:	Lester Carcamo
Vendor:	Halliburton Services
Vendor file number	T11-A240-85
Report Date:	12/21/1985
ANOTATED	NO

	Sample Type	Reservoir: a, b, c, d, e.
X	Conventional-Plug	Oceanic Y
	Conventional-Whole	
	Sidewall	
	Cuttings	
	Mudlog Sample	
	Produced	Top Depth
	Surface	8727
	Geological Outcrop	Bottom Depth
	Other	8727

	Data containers Information	
	LIVE-LINK	Scan Requested
	Core DB	Y
	OpenWorks	Notes
	Binders	
	R:drive	
	LAS file	
	Ambient Pressure	
X	Stressed Pressure	

Check all pertaining to each report - submit sheet for each report

	Core Report Type	Core Report Subtype
	Routine Analysis	Description-UV Light
	Routine Analysis	Photography-White/UV
	Routine Analysis	Density-Grain
	Routine Analysis	Routine Analysis - Other
X	Routine Analysis	Porosity-Other
	Routine Analysis	Natural-Spectral Gamma Ray
X	Routine Analysis	Permeability-Air
	Routine Analysis	Density-Matrix
	Routine Analysis	Fluid Saturation-PKS
	Routine Analysis	Sieve Analysis
	Routine Analysis	Description-Lithological

	Core Report Type	Core Report Subtype
	Petrophysical-Flow Study	Heat Transfer Coefficient
	Petrophysical-Flow Study	Fines Migration-Mobilization Velocity
	Petrophysical-Flow Study	Petrophysical-Flow Study - Other
	Petrophysical-Flow Study	Permeability-Oil
	Petrophysical-Flow Study	Rock Pore Preferred Wettability
	Petrophysical-Flow Study	Permeability-Toluene
	Petrophysical-Flow Study	Relative Permeability
	Petrophysical-Flow Study	Permeability-Brine
	Petrophysical-Flow Study	Permeability-Vertical
	Petrophysical-Flow Study	Permeability-Water

	Petrophysical	Formation Resistivity Factor
	Petrophysical	Cementation Factor
	Petrophysical	Luminosity Analysis
	Petrophysical	Oil Viscosity
	Petrophysical	Petrophysical - Other
	Petrophysical	Saturation Exponent
	Petrophysical	Tortuosity
	Petrophysical	Formation Resistivity Index
	Petrophysical	Model Evaluation
	Petrophysical	Oil Gravity-Density
	Petrophysical	Oil Pyrolysis
	Petrophysical	Formation Water Resistivity
	Petrophysical	Matrix Neutron Index
	Petrophysical	Oil Chromatography
	Petrophysical	Bulk PEF
	Petrophysical	CAT Scan
	Petrophysical	Mercury Injection
	Petrophysical	Capillary Pressure Analysis
	petrophysical	Cation Exchange Capacity
	Petrophysical	NMR Analysis
	Petrophysical	Pore Throat Analysis

	Geochemistry	Geochemistry - Other
	Geochemistry	Formation Water-Brine Chemical
	Geological Service	Description-Petrographic
	Geological Service	Formation-Rock Unit Identification
	Geological Service	Rock Age
	Geological Service	Mineralogy-XRD/FTIR
X	Geological Service	Geological Service - Other
	Geological Service	Photography-Infra Red
	Geological Service	Paleontological Analysis
	Geological Service	Box Report
	Geological Service	Thin Section
	Geological Service	Description-Field Engineer Report
	Geological Service	Hydralic Unit Analysis
	Geological Service	Scanning Electron Microscopy

	Reservoir Fluid	Steamflood Analysis
	Reservoir Fluid	Produced Gas Analysis
	Reservoir Fluid	Reservoir Fluid - Other
	Reservoir Fluid	Produced Water Analysis
	Reservoir Fluid	Produced Oil Analysis

	Rock Mechanics	Rock Mechanics - Other
	Rock Mechanics	Rock Acoustic Velocity
	Rock Mechanics	Surface Area Per Unit Volume
	Rock Mechanics	Rock Compressibility Analysis
	Other	Other

Lester Carcamo 07/23/2009

G-0012

Shell Development Company
Petrophysical Services Section
Core Analyses Data

Date : DECEMBER 13, 1985
Company : SHELL CALIFORNIA PRODUCTION INC.
Lease :
Well No. : 43-27
Field : NORTH BELRIDGE
State : CALIFORNIA

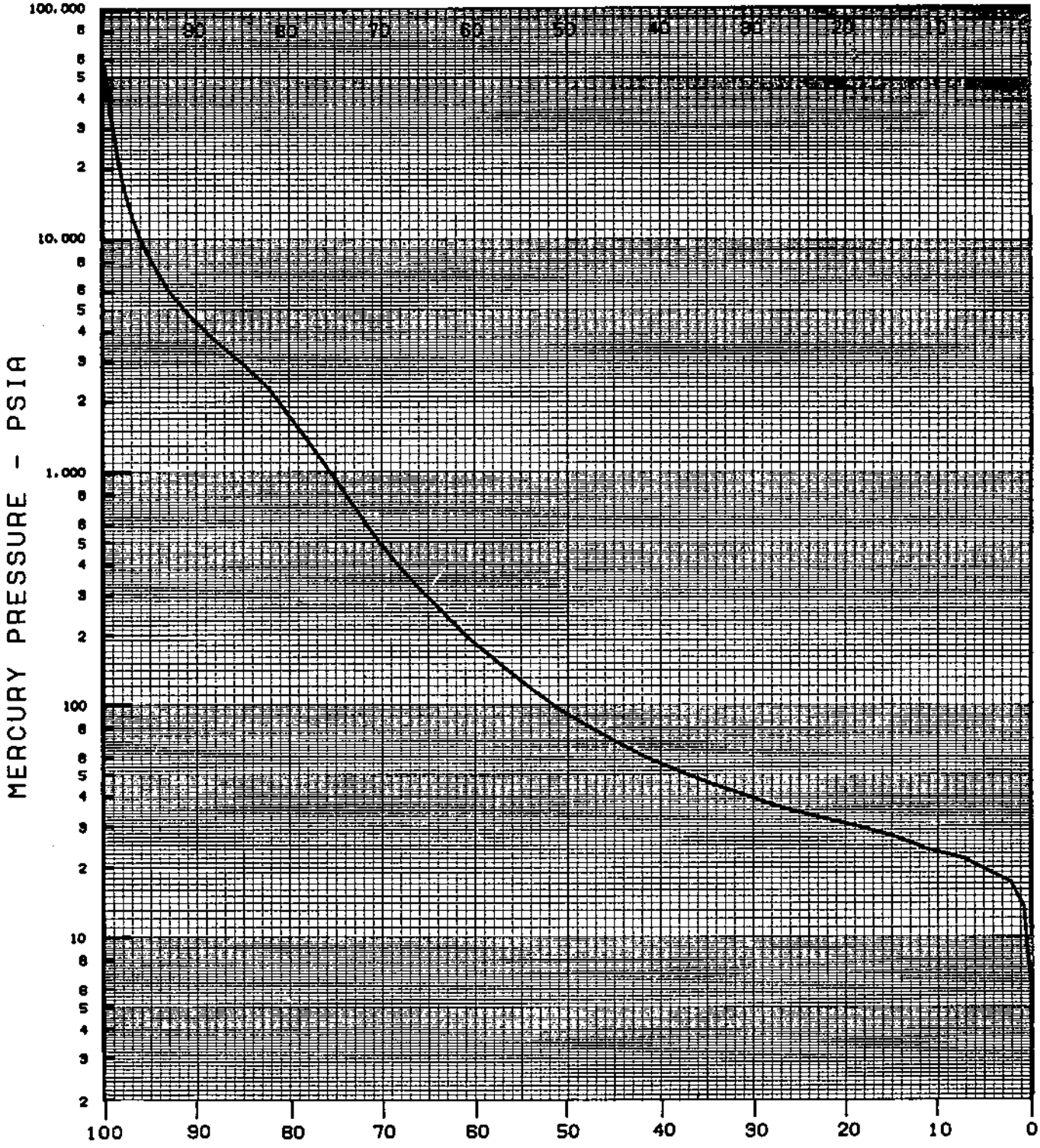
Comments : API No. 04-029-75126

Sample No.	Depth	Porosity %	Air Perm. md	Grain Density g/cc
1	5701' 11"	23.2	NT	2.643
2	5709' 0"	21.1	2.1	2.645
3	5782' 0"	23.7	160.	2.644
4	5977' 0"	25.8	265.	2.624
5	6049' 0"	23.4	38.	2.640
6	8358' 0"	13.9	12.	2.641
7	8366' 0"	13.2	.61	2.645
8	8718' 0"	14.4	11.	2.649
9	8728' 0"	14.7	.41	2.648
10	8829' 11"	14.1	.40	2.648
11	8832' 0"	14.5	.34	2.651
12	9119' 0"	13.7	1.2	2.633
13	9130' 0"	12.0	.70	2.634
14	9138' 0"	9.5	.15	2.664
15	9674' 0"	5.8	1.0	2.668
16	9681' 0"	7.3	1.3	2.662
17	9687' 11"	10.2	1.8	2.639

8000031989
Test & Analysis
0402975126
North Belridge
27 T27S R20E
43-27

8000031989

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



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COMPANY	:SHELL CA. PROD. INC.	ϕ = 23.2 %
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WELL NO.	:43-27	G.D.= 2.843 GMS/CC
FIELD	:NORTH BELRIDGE	VALUES EST. FROM CURVE
STATE	:CALIFORNIA	ϕ =23.1 %
		$K_{w\text{-est}}$ =10.9 MD
DEPTH	:5702' 0"	$K_{a\text{-est}}$ =20.8 MD
SAMPLE NO.	:1	G.D. est=

SHELL DEVELOPMENT COMPANY
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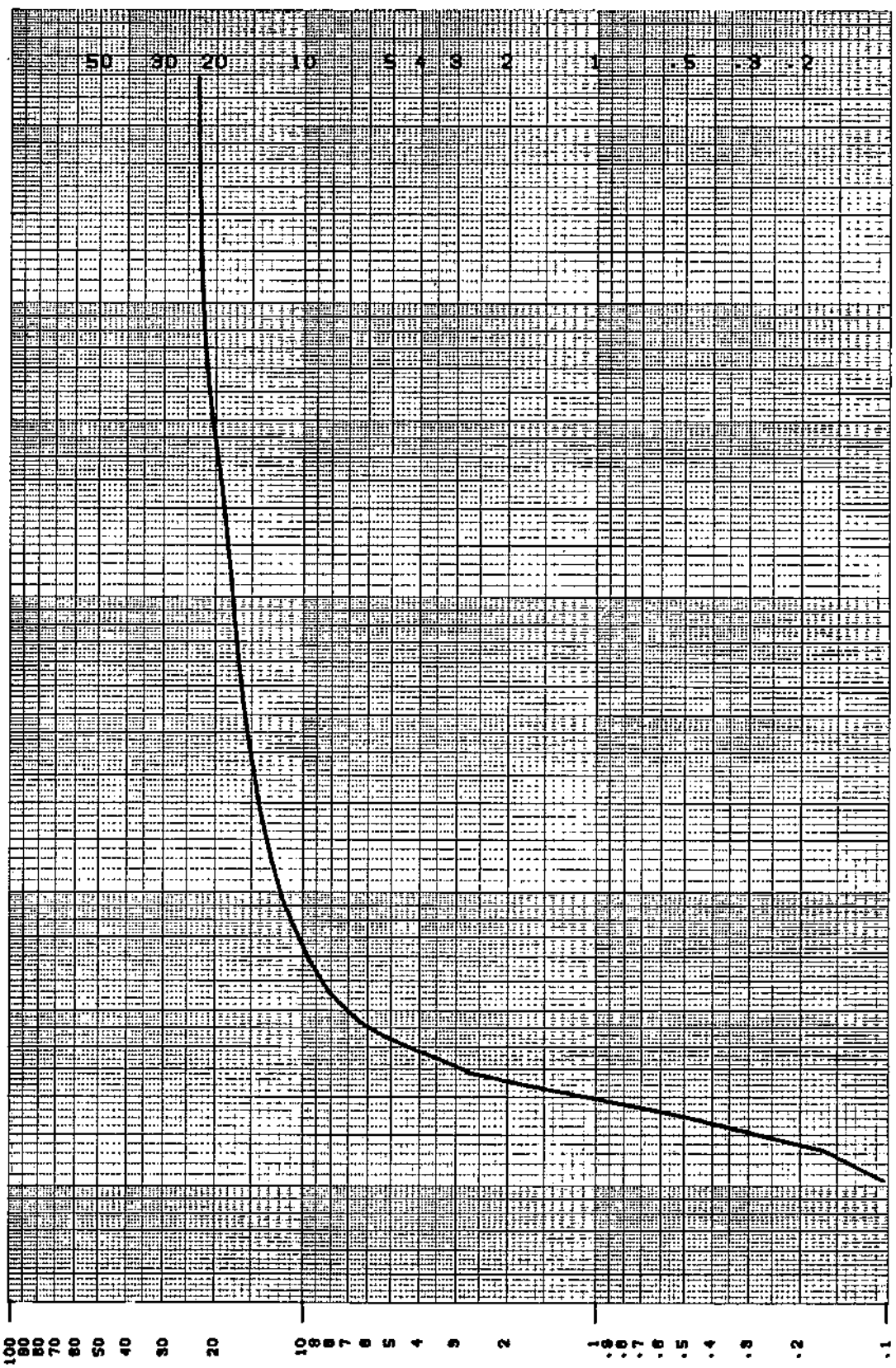

SAMPLE NO.	:1	LEASE	:
DEPTH	:5702' 0"	WELL NO.	:43-27
DATE	:DECEMBER 14, 1985	FIELD	:NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
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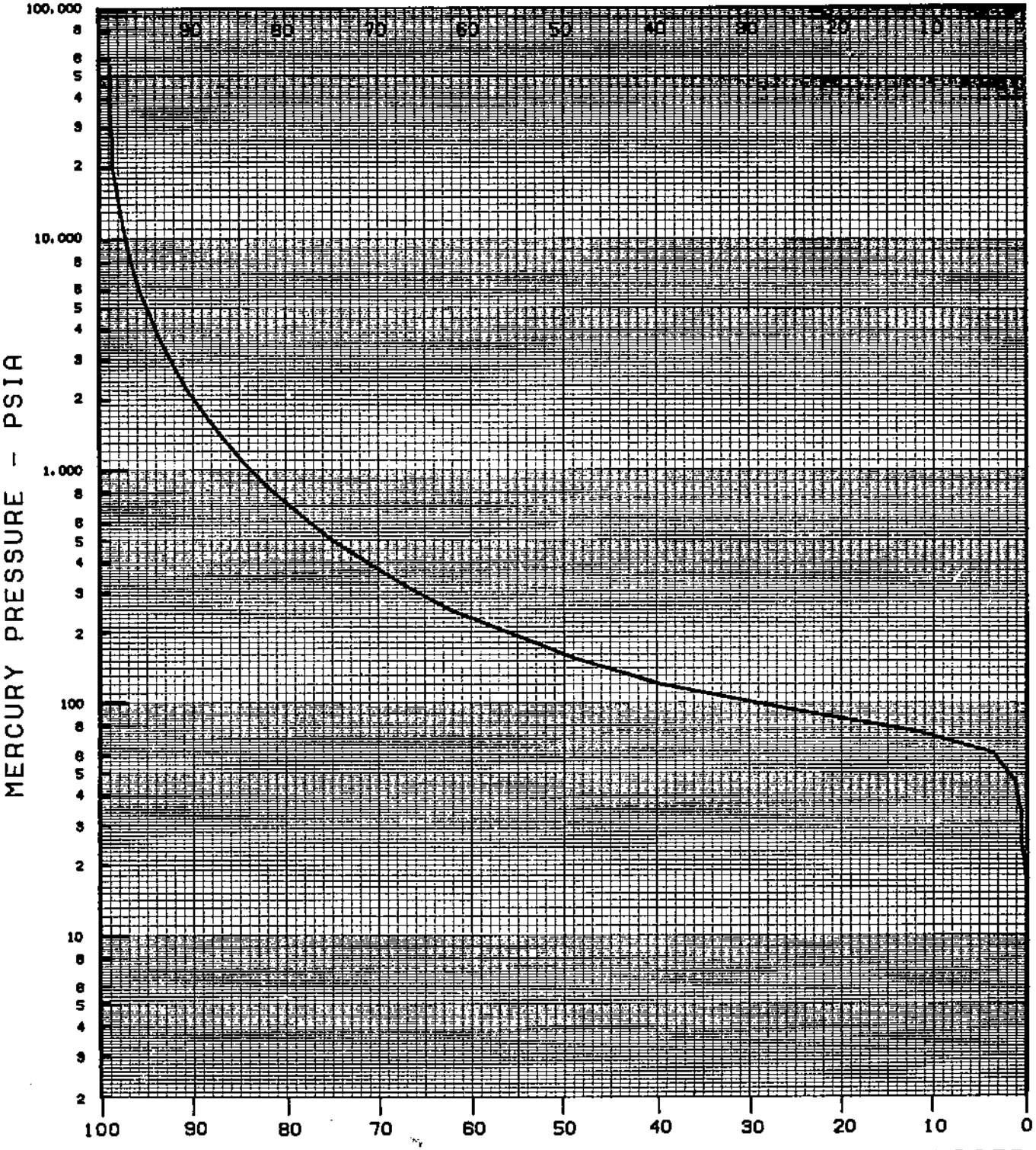

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COMPANY	: SHELL CA. PROD. INC.	ϕ	= 10.2 %
LEASE	:	K_a	= 1.8 MD
WELL NO.	: 43-27	G.D.	= 2.639 GMS/CC
FIELD	: NORTH BELRIDGE	VALUES EST. FROM CURVE	
STATE	: CALIFORNIA	ϕ	= 9.9 %
		K_w-est	= 0 MD
DEPTH	: 9687' 11"	K_a-est	= .01 MD
SAMPLE NO.	: 17	G.D. est	=

[redacted]

WELL TEST + ANALYSI BOTTOM HOLE PRESSUR

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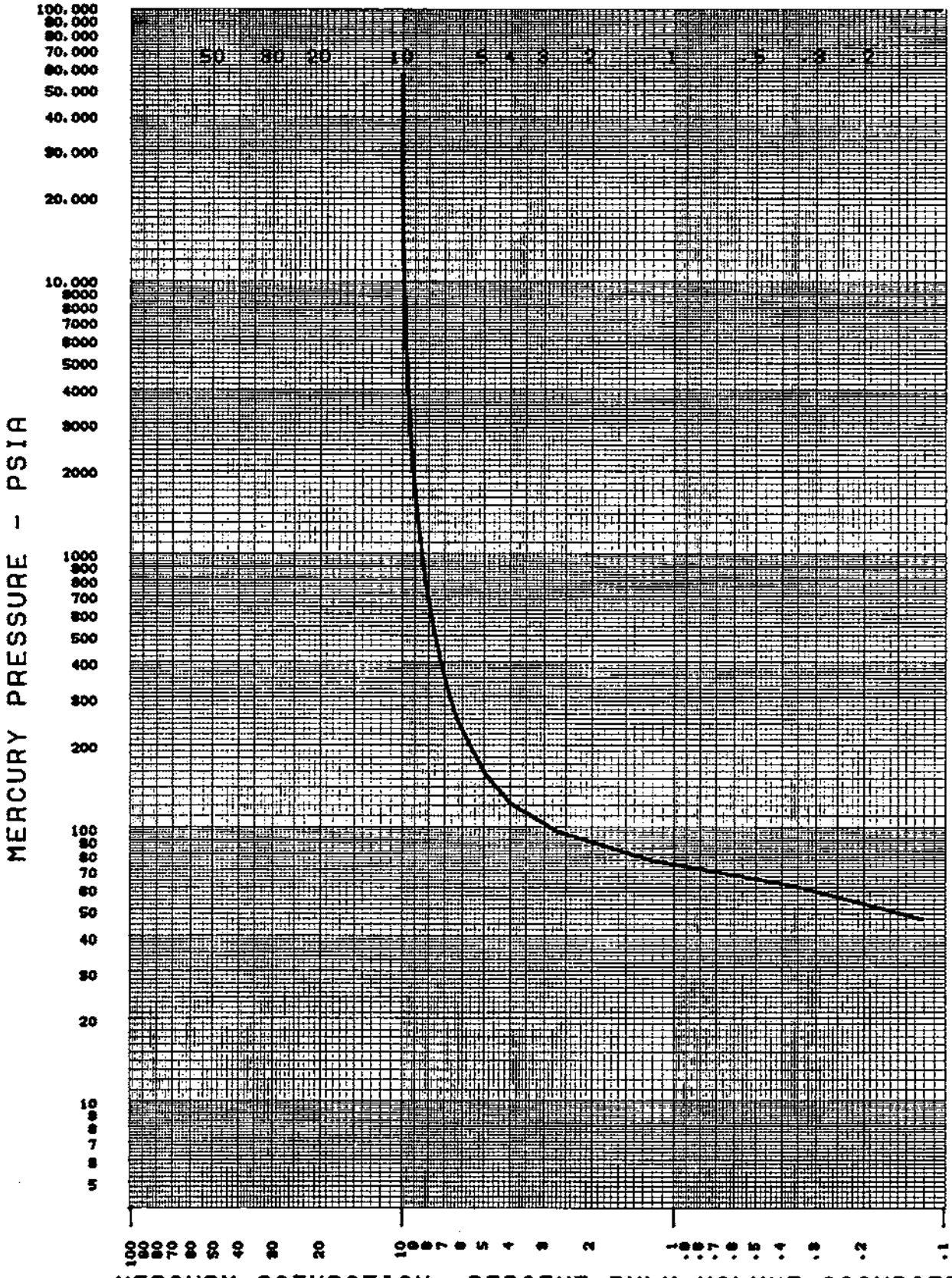
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



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DEPTH	:9887' 11"	WELL NO.	:49-27
DATE	:DECEMBER 20, 1985	FIELD	:NORTH BELRIDGE

[redacted]

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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR

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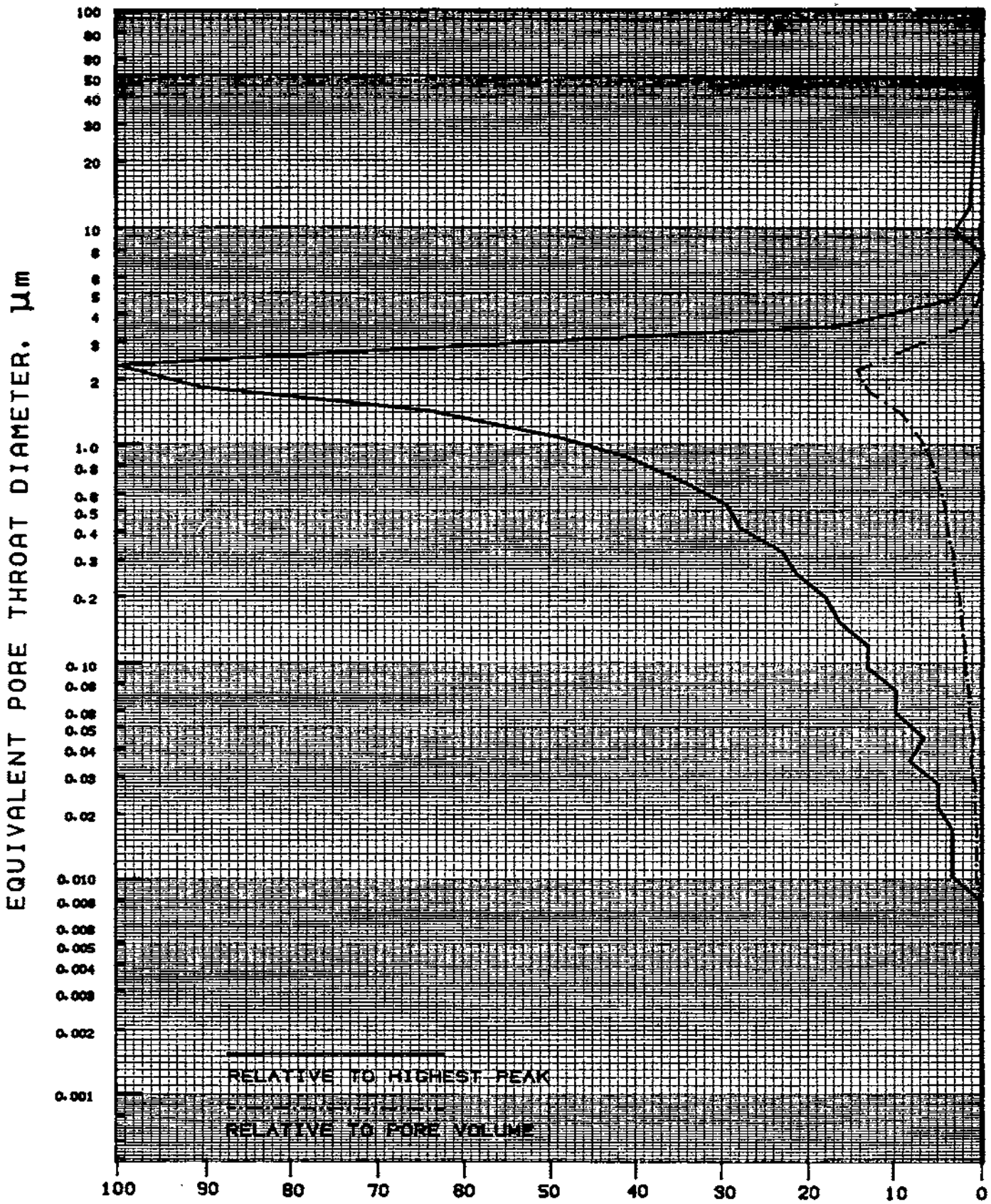
BELRIDGE N

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION



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DEPTH	: 9887' 11"	WELL NO.	: 49-27
DATE	: DECEMBER 20, 1985	FIELD	: NORTH BELRIDGE

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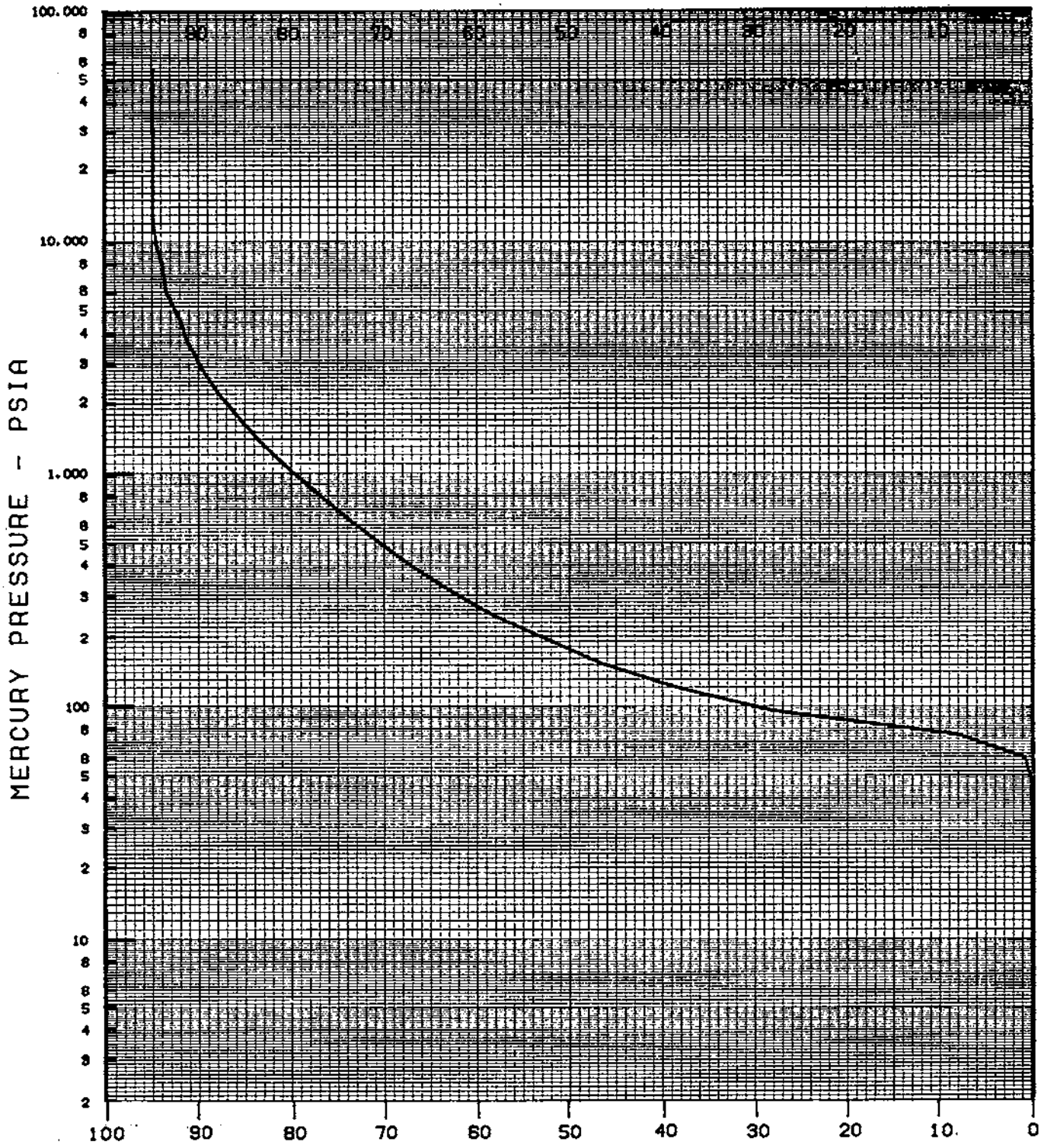

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COMPANY	: SHELL CA. PROD. INC.	ϕ	= 7.3 %
LEASE	:	K_a	= 1.9 MD
WELL NO.	: 43-27	G.D.	= 2.662 GMS/CC
FIELD	: NORTH BELRIDGE	VALUES EST. FROM CURVE	
STATE	: CALIFORNIA	ϕ	= 7.1 %
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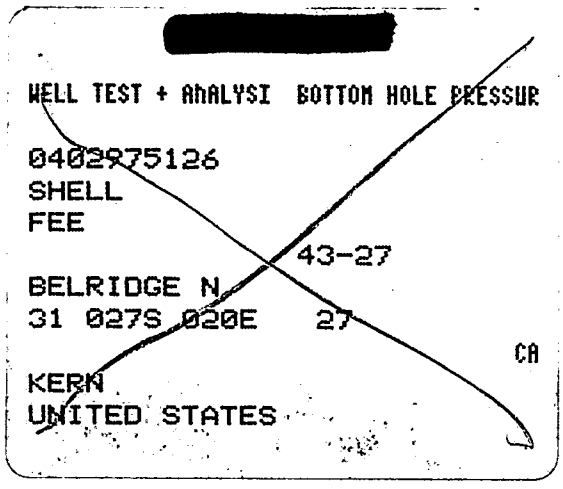
DEPTH	: 9681' 0"	K_a-est	= .65 MD
SAMPLE NO.	: 16	G.D. est	=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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR
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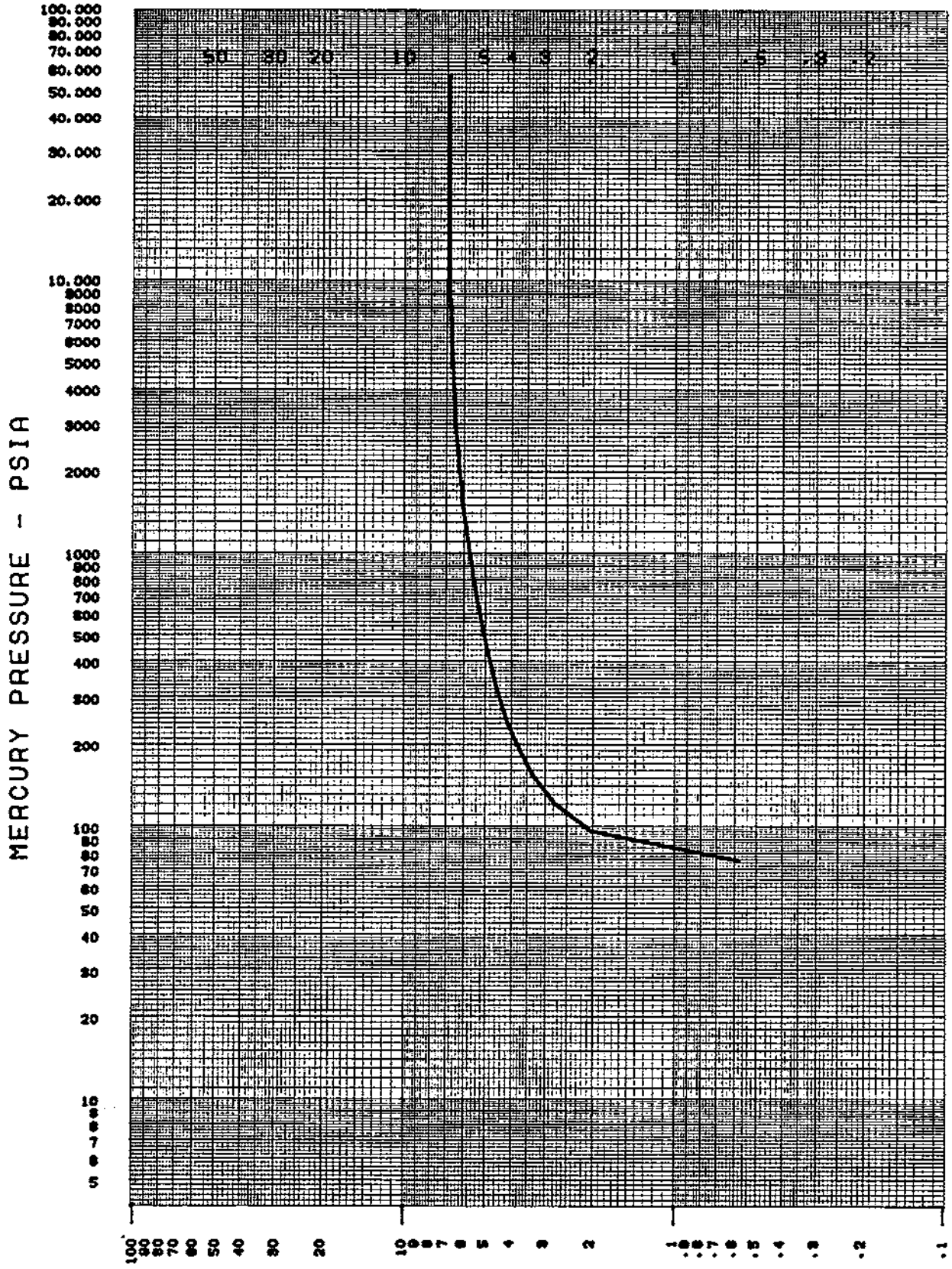
UNITED STATES

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



SAMPLE NO.	:16	LEASE	:
DEPTH	:9681' 0"	WELL NO.	:49-27
DATE	:DECEMBER 19, 1985	FIELD	:NORTH BELRIDGE

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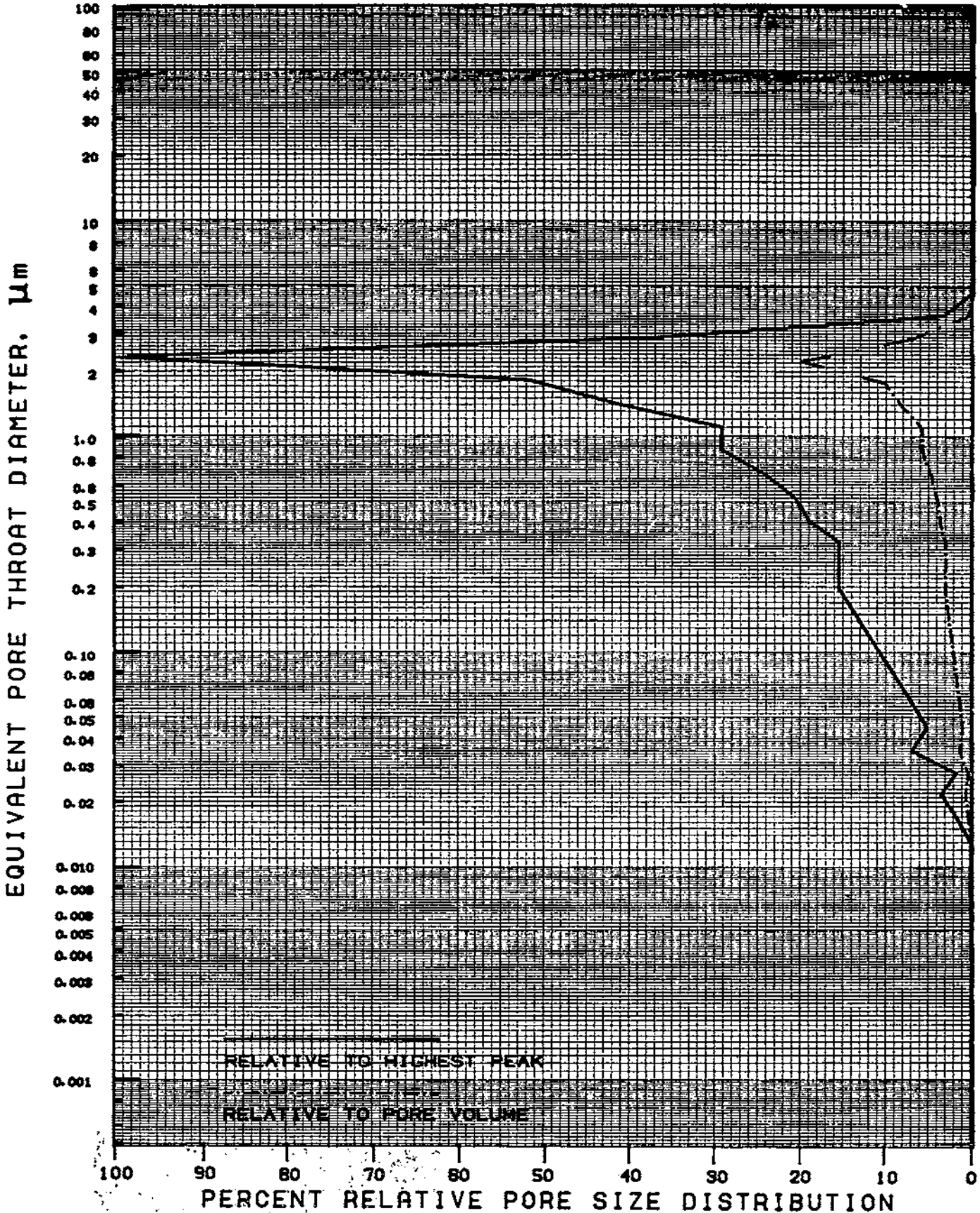
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION



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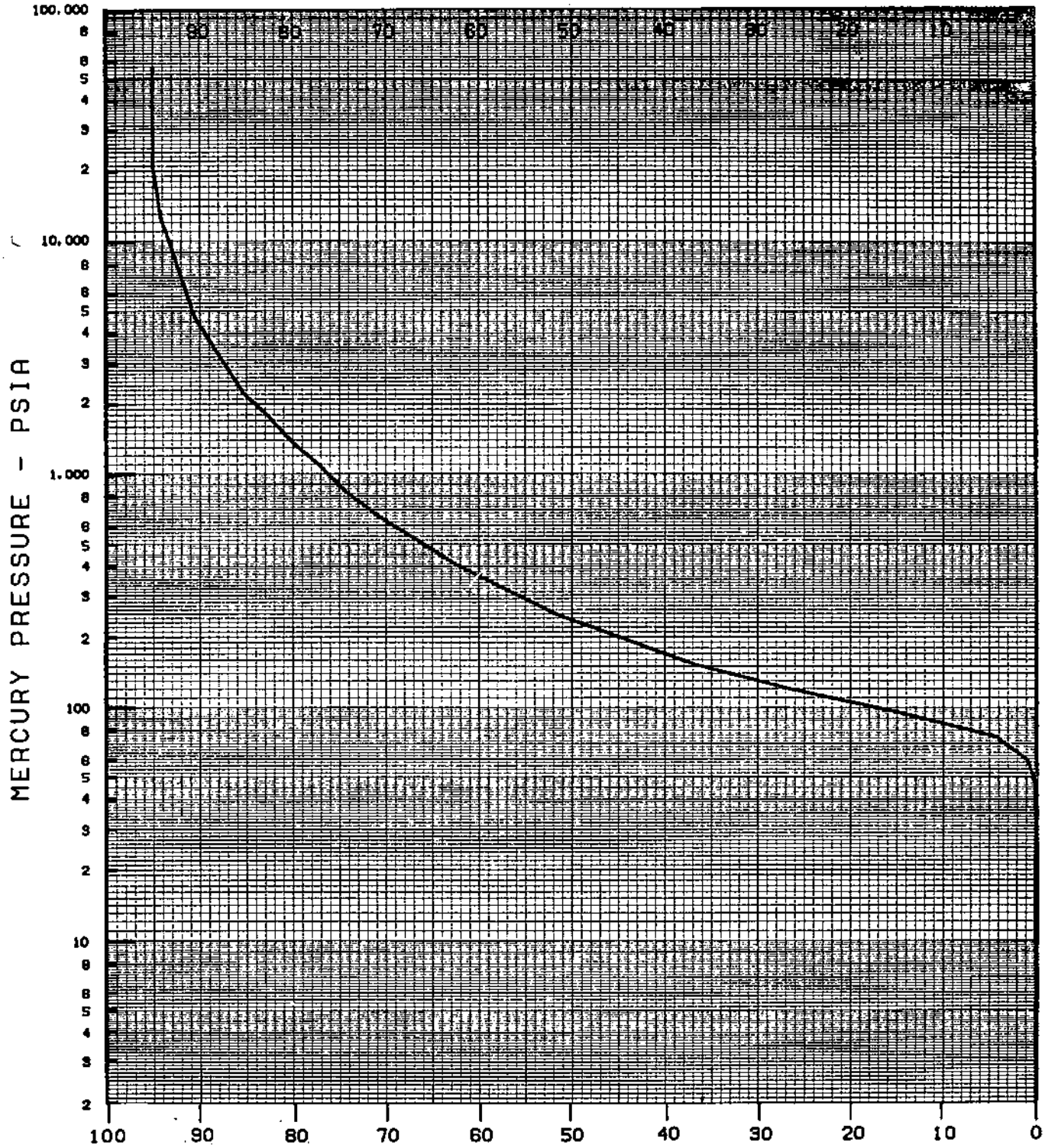
DEPTH	: 9681' 0"	WELL NO.	: 43-27
DATE	: DECEMBER 19, 1985	FIELD	: NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



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COMPANY	:SHELL CA. PROD. INC.	ϕ	= 5.8 %
LEASE	:	K_a	= 1.0 MD
WELL NO.	:43-27	G.D.	= 2.668 GMS/CC
FIELD	:NORTH BELRIDGE	VALUES EST. FROM CURVE	
STATE	:CALIFORNIA	ϕ	= 5.7 %
		K_w-est	= .05 MD
DEPTH	:9674' 0"	K_a-est	= .27 MD
SAMPLE NO.	:15	G.D. est	=

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0402975126
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SHELL DEVELOPMENT COMPANY
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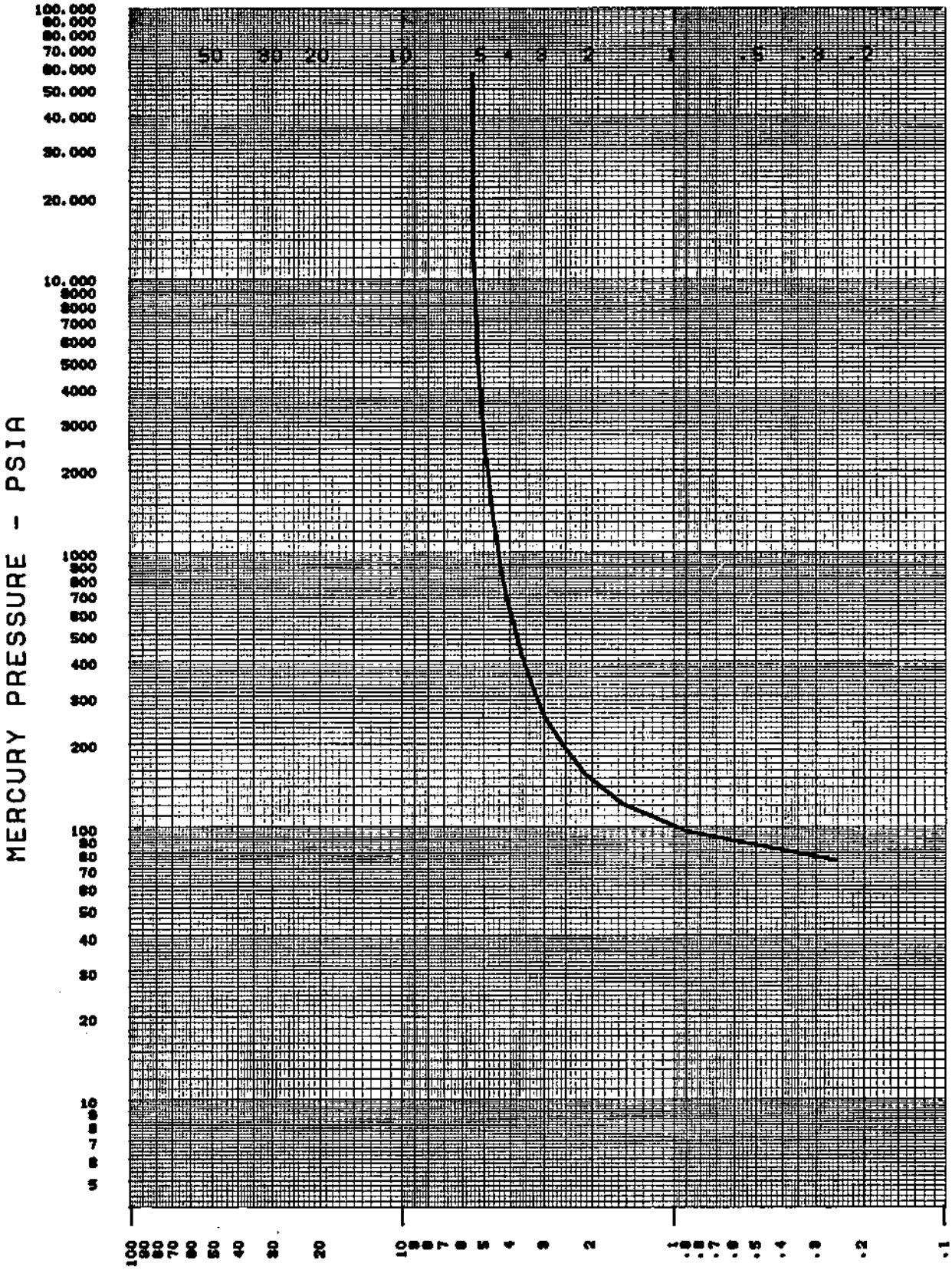
MERCURY CAPILLARY PRESSURE DATA



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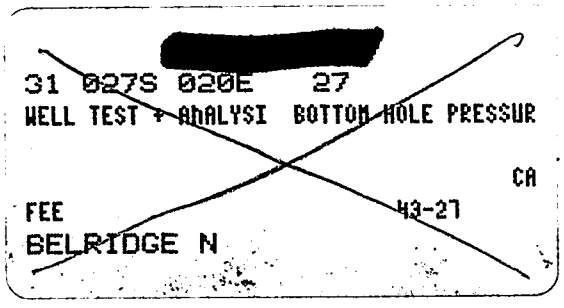
DEPTH	:9674' 0"	WELL NO.	:43-27
DATE	:DECEMBER 19, 1985	FIELD	:NORTH BELRIDGE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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR
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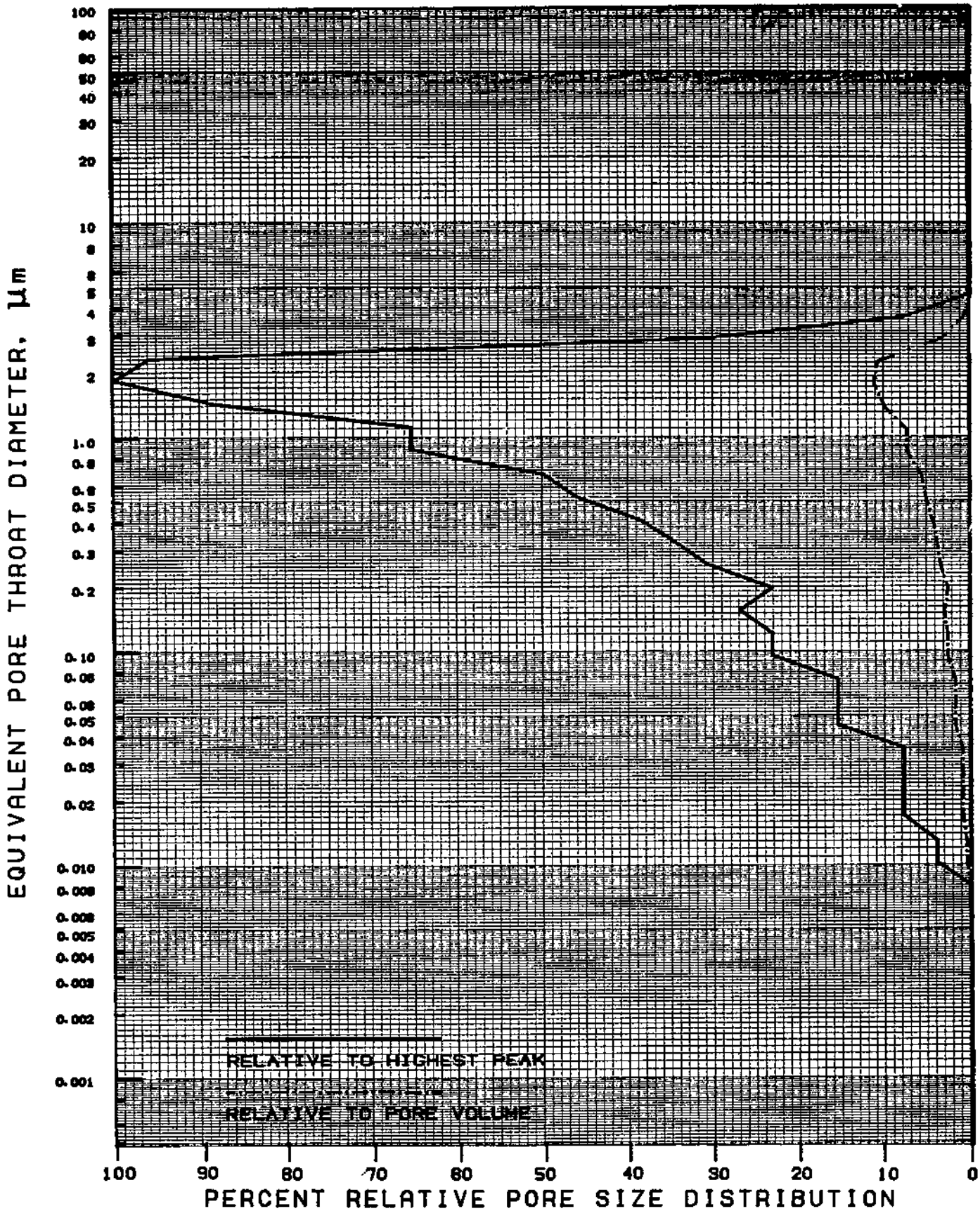
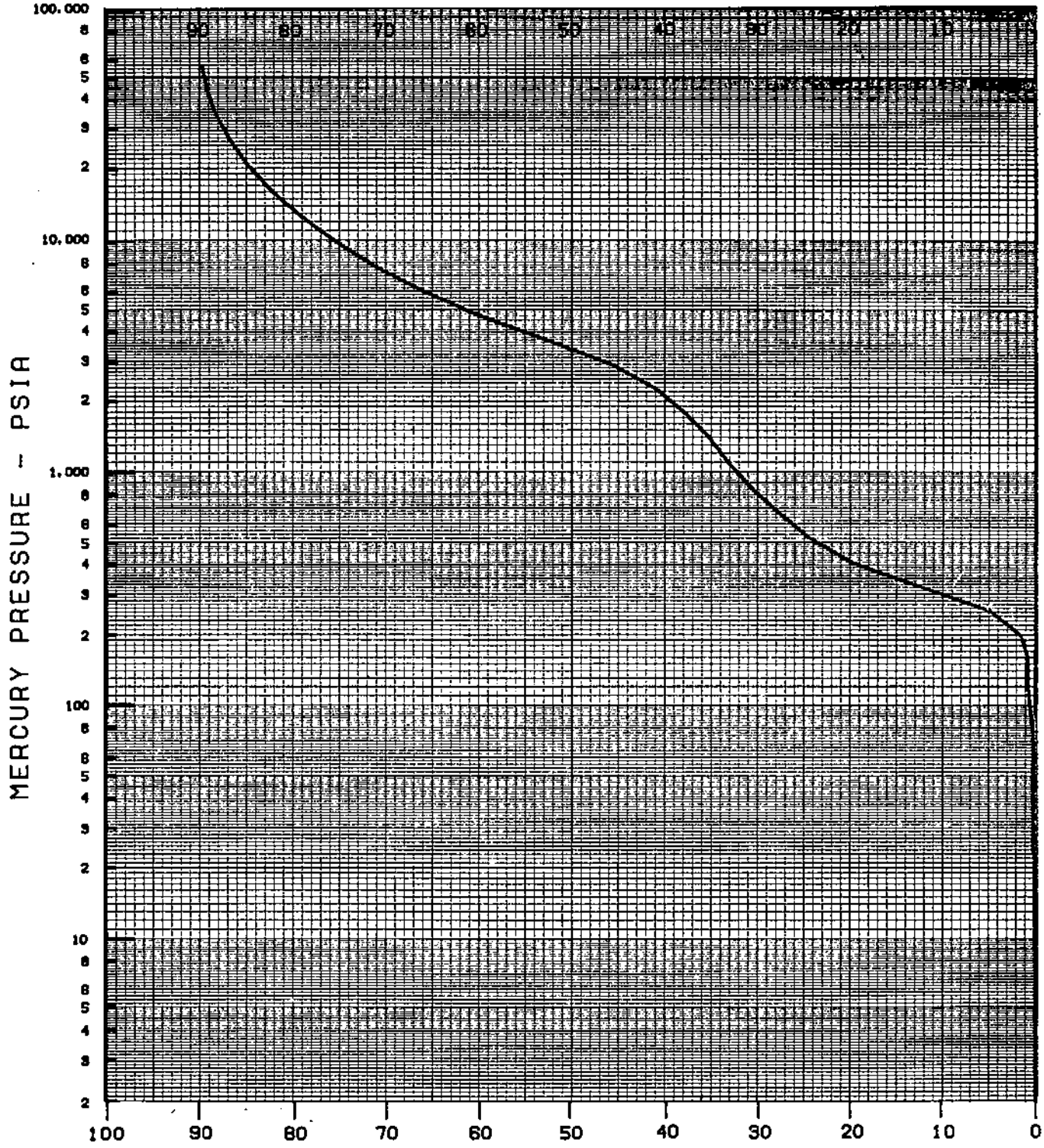
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION



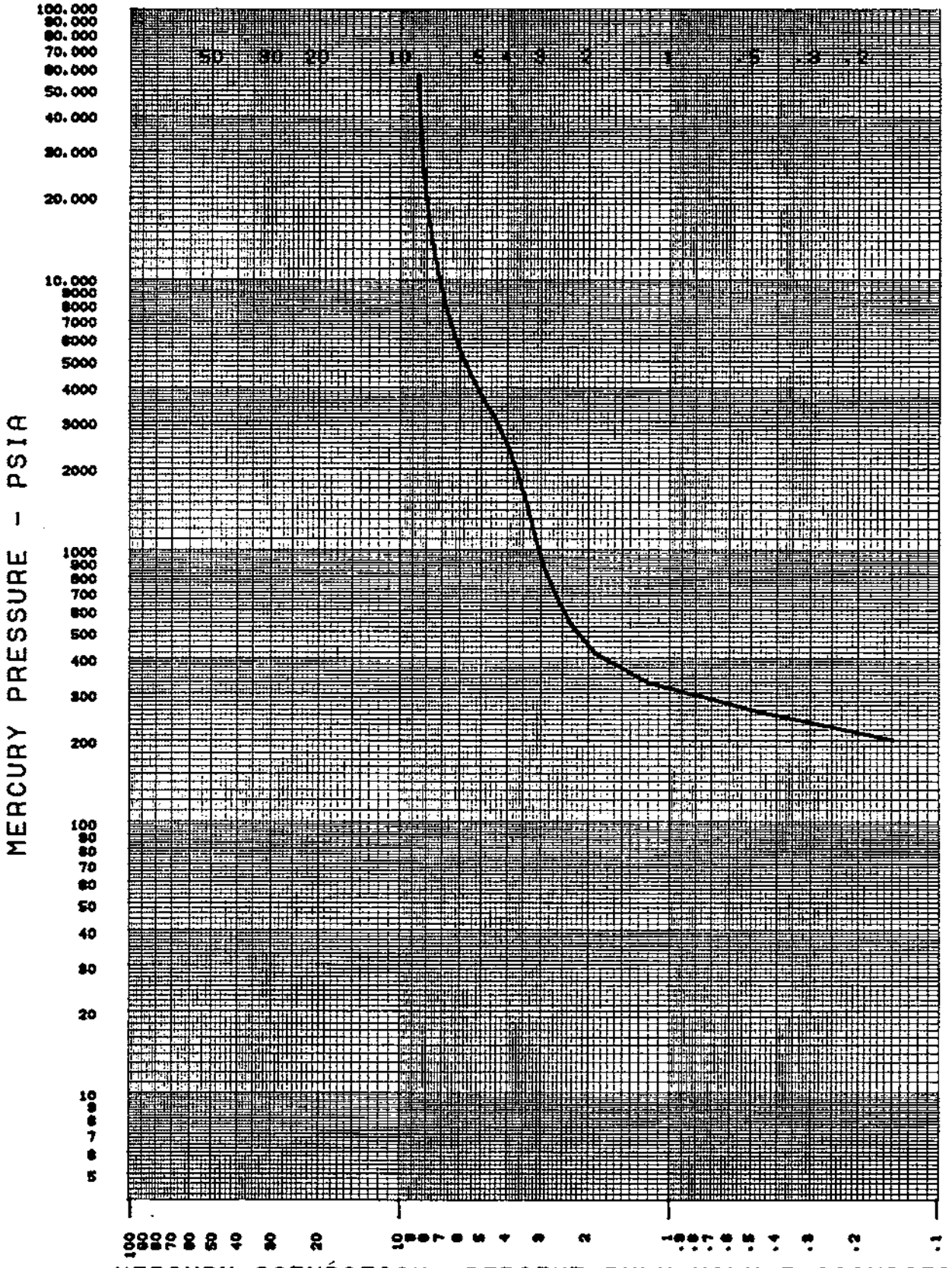
SAMPLE NO.	: 15	LEASE	:
DEPTH	: 9874' 0"	WELL NO.	: 43-27
DATE	: DECEMBER 19, 1985	FIELD	: NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



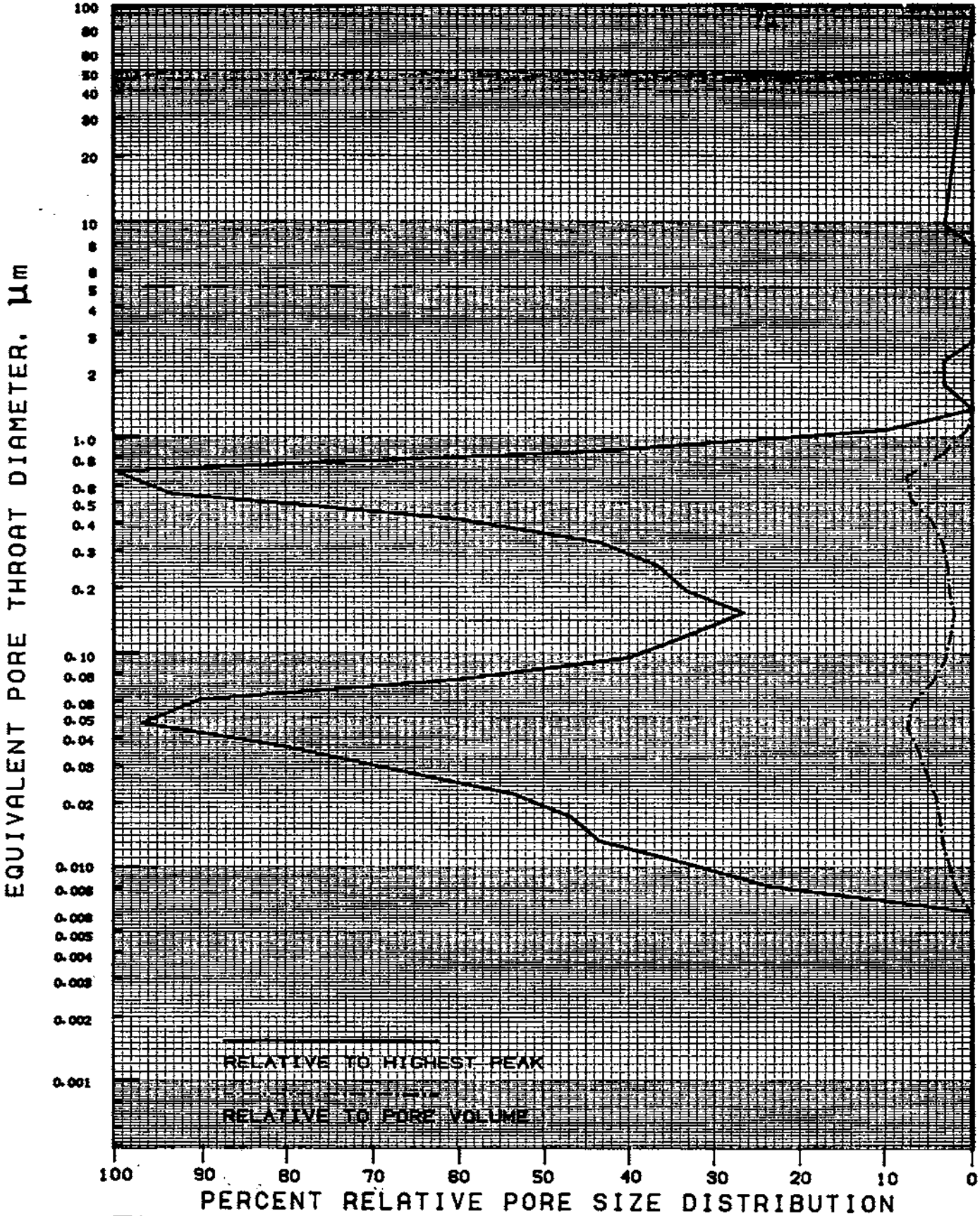
DATE	: DECEMBER 19, 1985	MEASURED VALUES	
COMPANY	: SHELL CA. PROD. INC.	ϕ	= 9.5 %
LEASE	:	K_a	= .15 MD
WELL NO.	: 43-27	G.D.	= 2.664 GMS/CC
FIELD	: NORTH BELRIDGE	VALUES EST. FROM CURVE	
STATE	: CALIFORNIA	ϕ	= 9.4 %
		$K_{w\text{-est}}$	=
DEPTH	: 9138' 0"	$K_{a\text{-est}}$	=
SAMPLE NO.	: 14	G.D. est	=

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



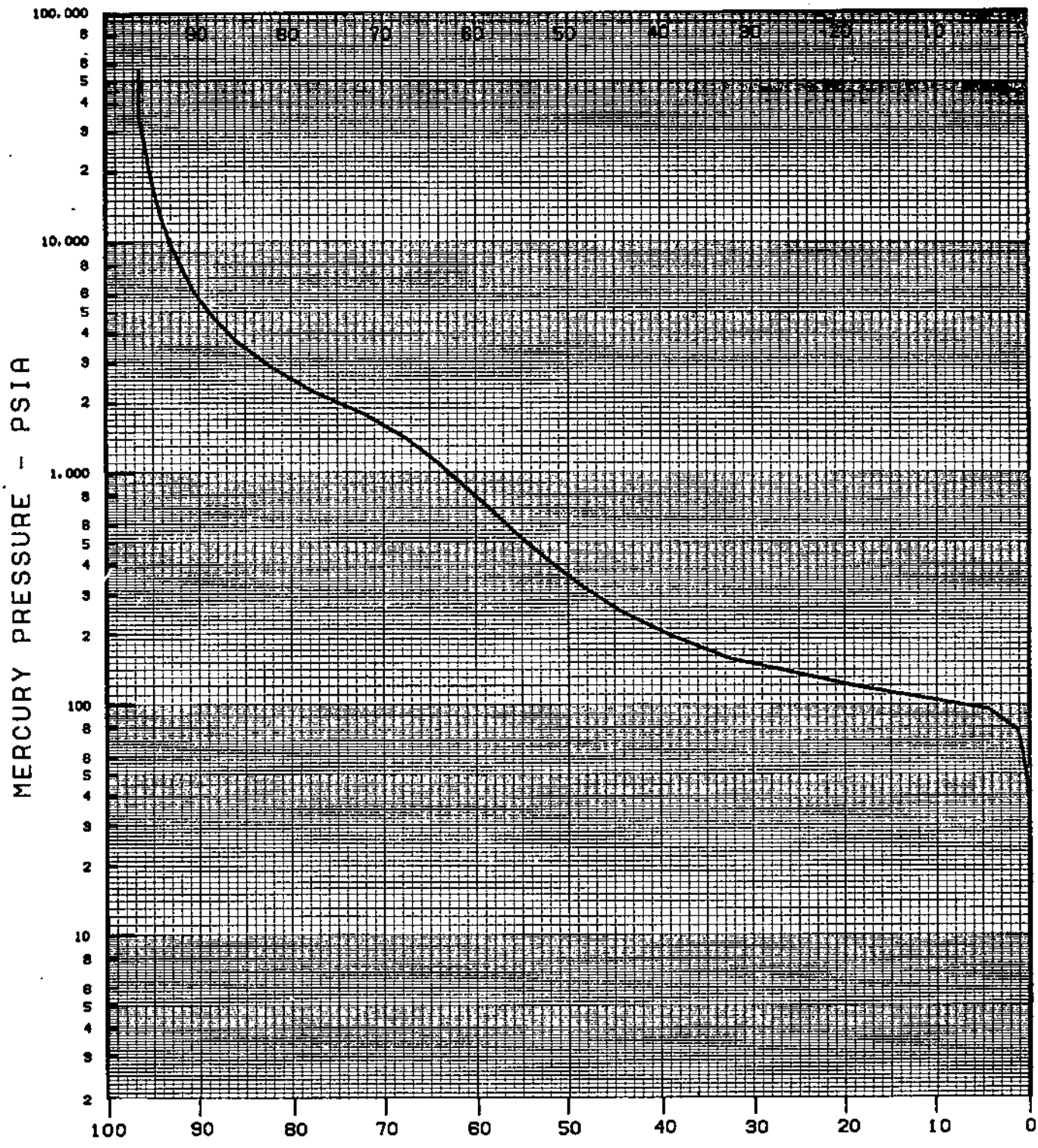
SAMPLE NO.	:14	LEASE	:
DEPTH	:9198' 0"	WELL NO.	:49-27
DATE	:DECEMBER 19, 1985	FIELD	:NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION

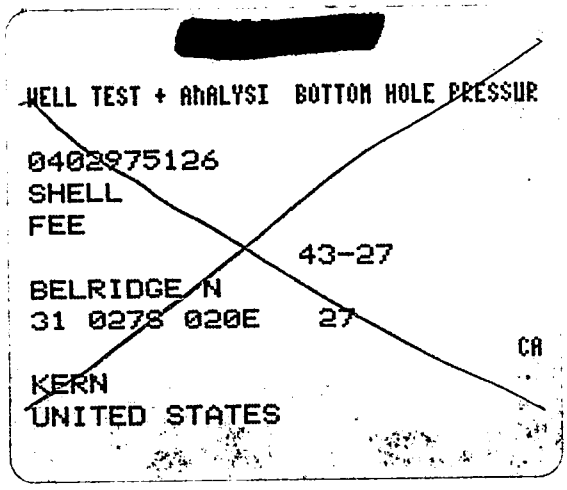


SAMPLE NO.	: 14	LEASE	:
DEPTH	: 9138' 0"	WELL NO.	: 43-27
DATE	: DECEMBER 19, 1985	FIELD	: NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



DATE	:DECEMBER 19, 1985	MEASURED VALUES
COMPANY	:SHELL CA. PROD. INC.	ϕ = 12.0 %
LEASE	:	K_a = .70 MD
WELL NO.	:43-27	G.D.= 2.634 GMS/CC
FIELD	:NORTH BELRIDGE	VALUES EST. FROM CURVE
STATE	:CALIFORNIA	ϕ = 11.7 %
		K_w-est = .17 MD
DEPTH	:9130'.0"	K_a-est = .73 MD
SAMPLE NO.	:13	G.D. est =


[redacted]
WELL TEST + ANALYSI BOTTOM HOLE PRESSUR
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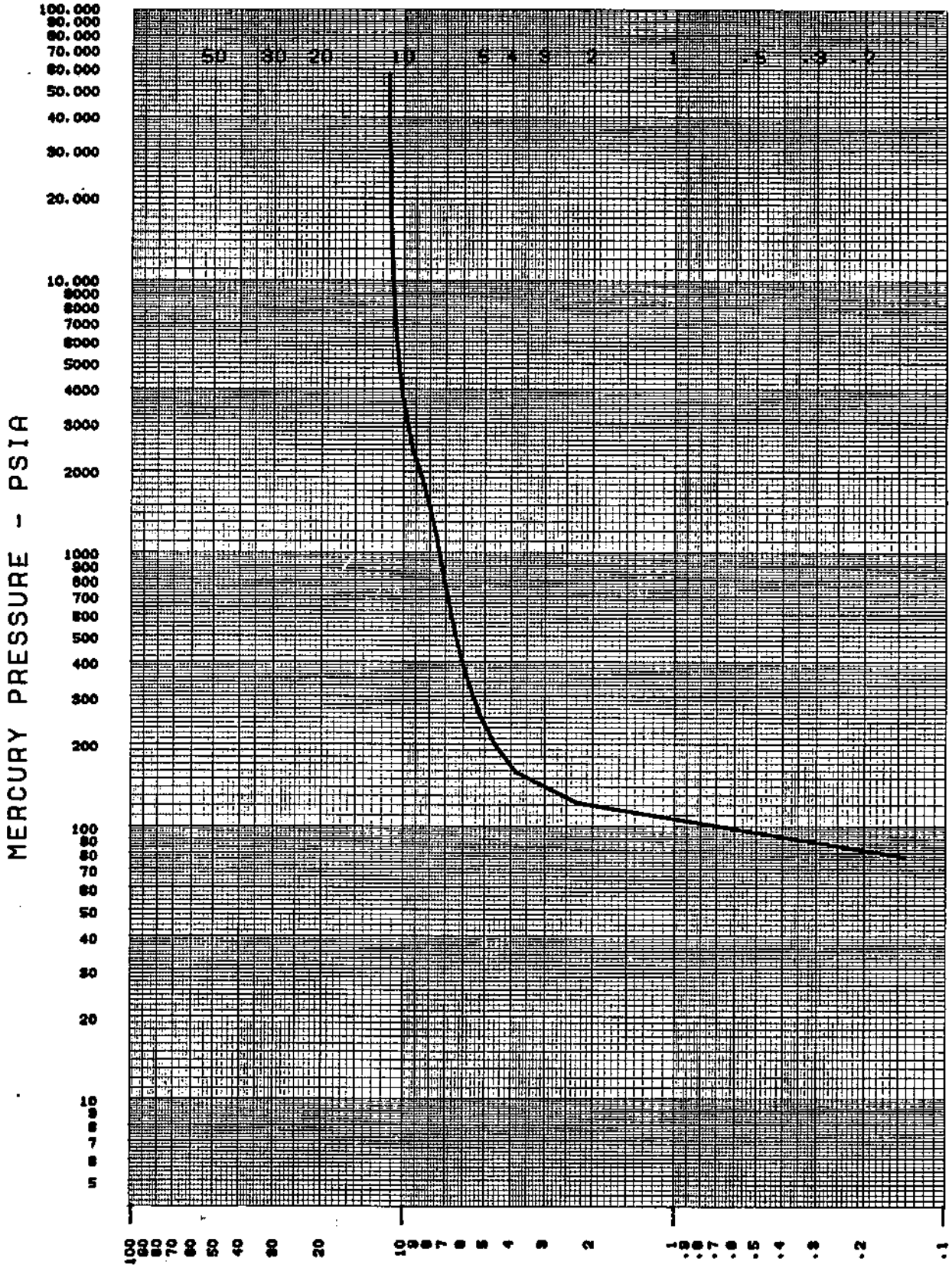
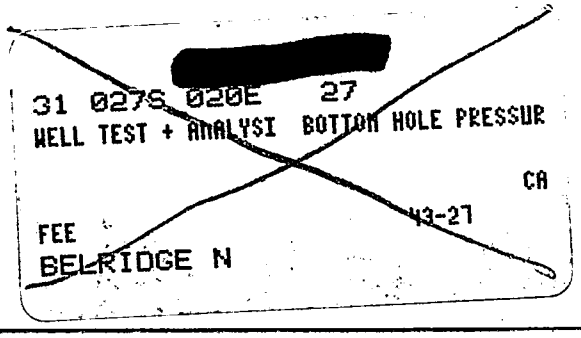
UNITED STATES

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



SAMPLE NO.	:19	LEASE	:
DEPTH	:9130' 0"	WELL NO.	:43-27
DATE	:DECEMBER 19, 1985	FIELD	:NORTH BELRIDGE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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR
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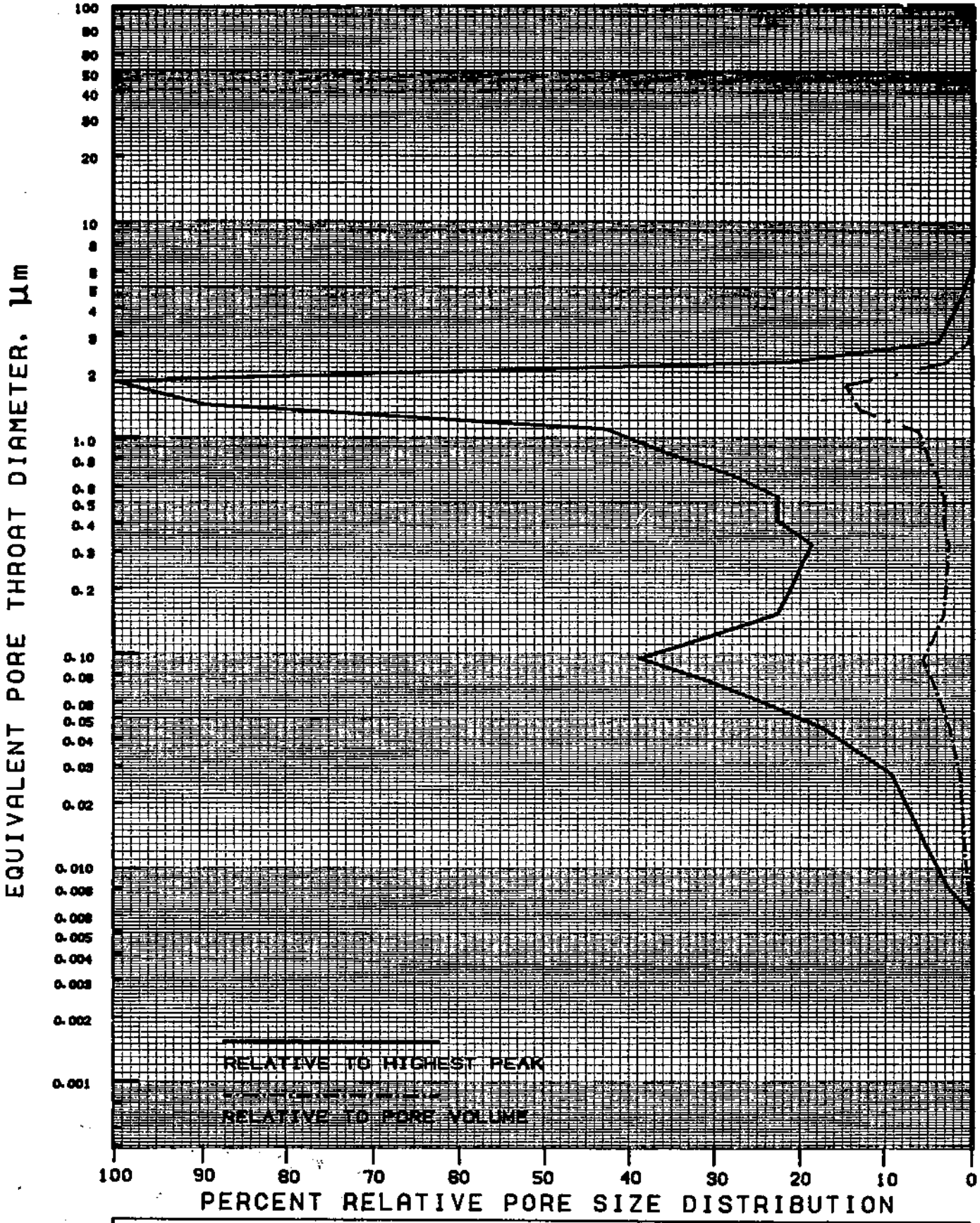
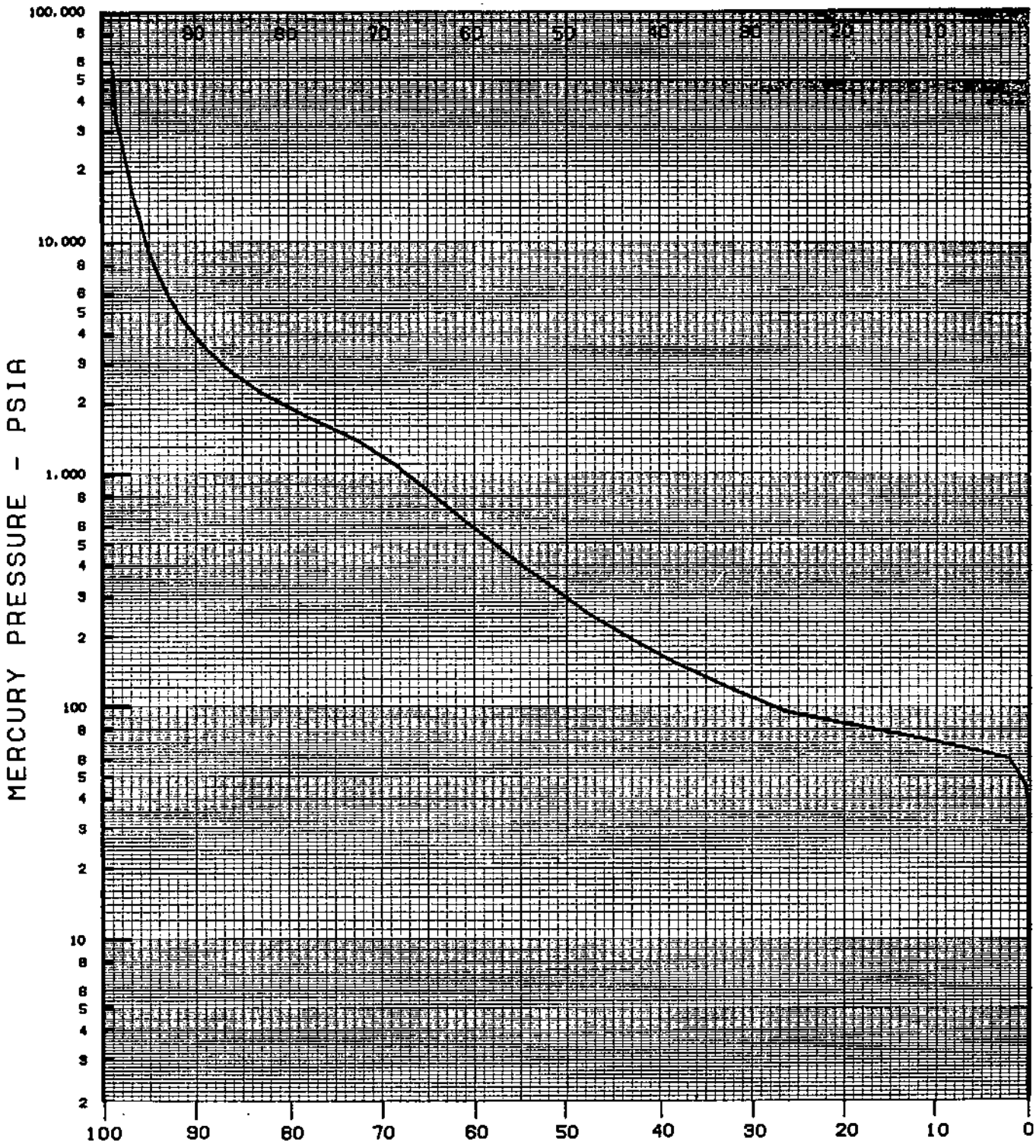
BELRIDGE N

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION

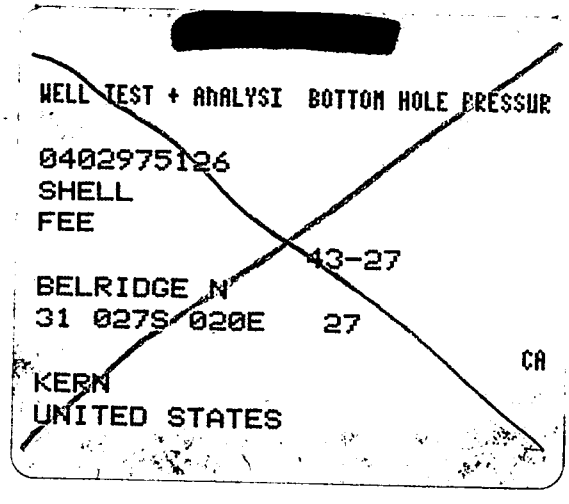


SAMPLE NO.	: 19	LEASE	:
DEPTH	: 9130' 0"	WELL NO.	: 43-27
DATE	: DECEMBER 19, 1985	FIELD	: NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



DATE	: DECEMBER 18, 1985	MEASURED VALUES	
COMPANY	: SHELL CA. PROD. INC.	ϕ	= 13.7 %
LEASE	:	K_a	= 1.2 MD
WELL NO.	: 43-27	G. D.	= 2.693 GMS/CC
FIELD	: NORTH BELRIDGE	VALUES EST. FROM CURVE	
STATE	: CALIFORNIA	ϕ	= 13.3 %
		K_w-est	= .4 MD
DEPTH	: 9119' 0"	K_a-est	= 1.5 MD
SAMPLE NO.	: 12	G. D. est	=


[redacted]
WELL TEST + ANALYSI BOTTOM HOLE PRESSUR
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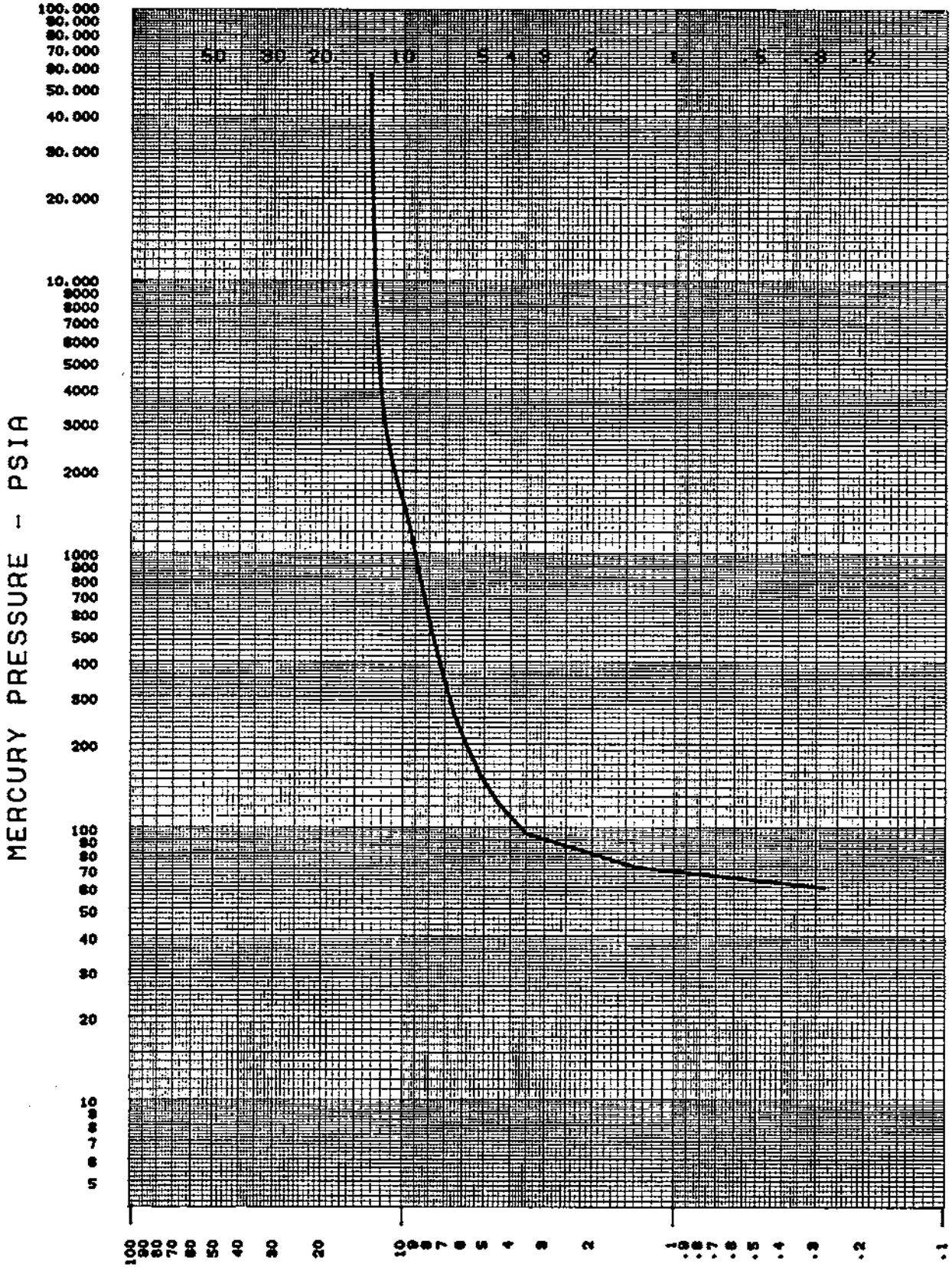
UNITED STATES

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



SAMPLE NO.	:12	LEASE	:
DEPTH	:9119' 0"	WELL NO.	:43-27
DATE	:DECEMBER 18, 1985	FIELD	:NORTH BELRIDGE

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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR
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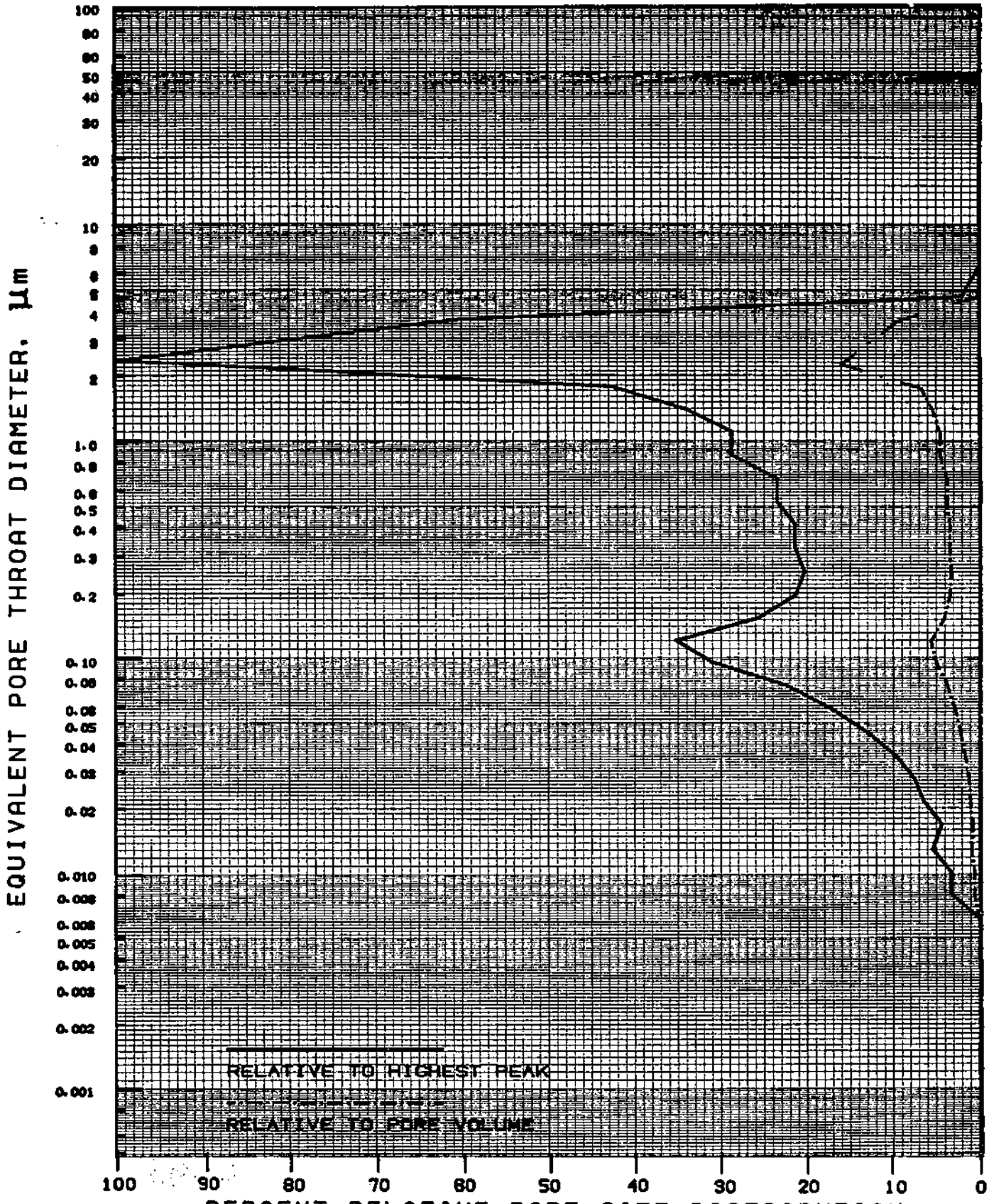
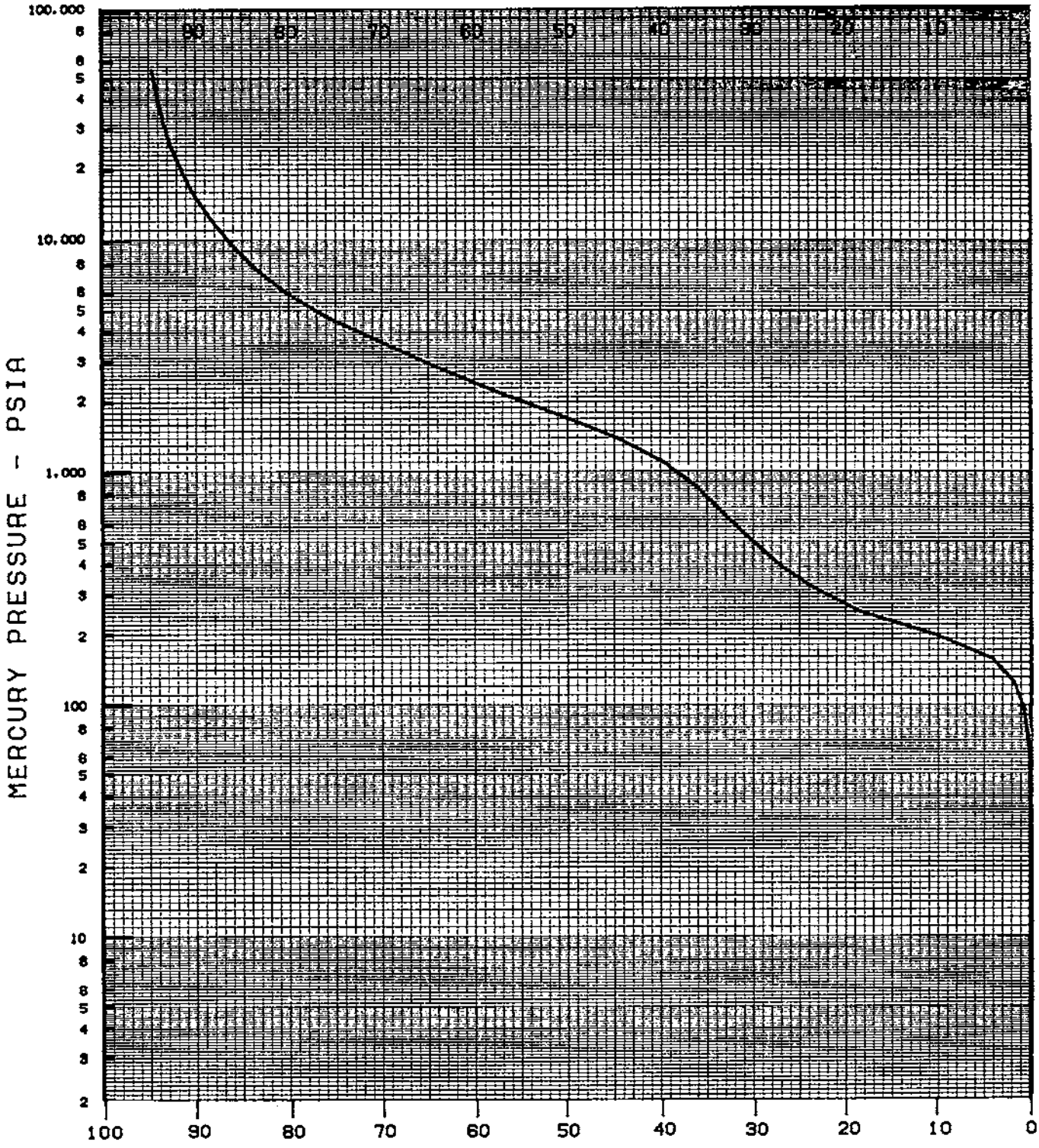
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION



SAMPLE NO.	: 12	LEASE	:
DEPTH	: 9119' 0"	WELL NO.	: 43-27
DATE	: DECEMBER 18, 1985	FIELD	: NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



DATE	: DECEMBER 18, 1985	MEASURED VALUES
COMPANY	: SHELL CA. PROD. INC.	ϕ = 14.5 %
LEASE	:	K_a = .34 MD
WELL NO.	: 43-27	G. D. = 2.651 GMS/CC
FIELD	: NORTH BELRIDGE	VALUES EST. FROM CURVE
STATE	: CALIFORNIA	ϕ = 14.2 %
		$K_{w\text{-est}}$ = .03 MD
DEPTH	: 8892' 0"	$K_{a\text{-est}}$ = .17 MD
SAMPLE NO.	: 11	G. D. est =

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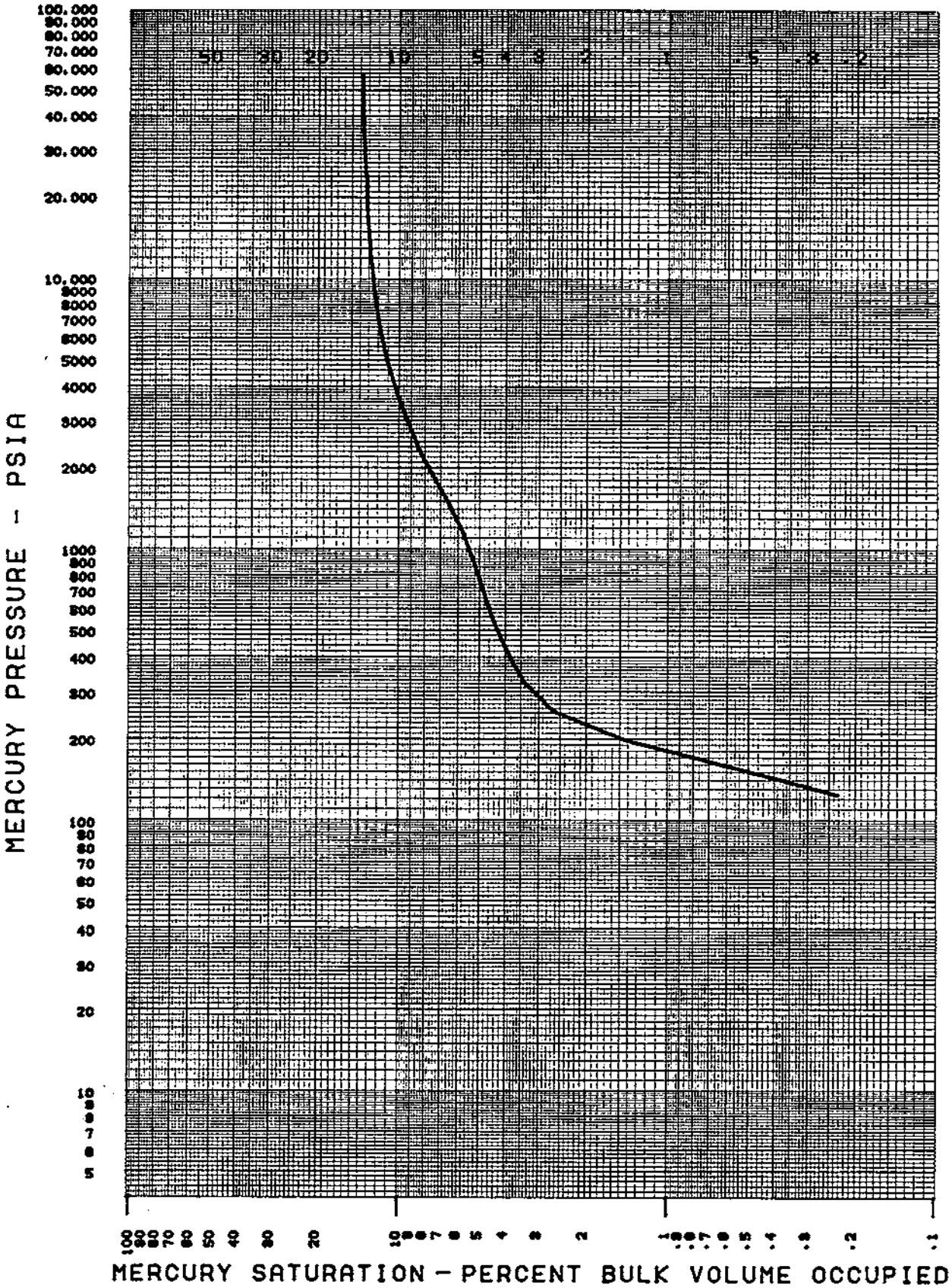
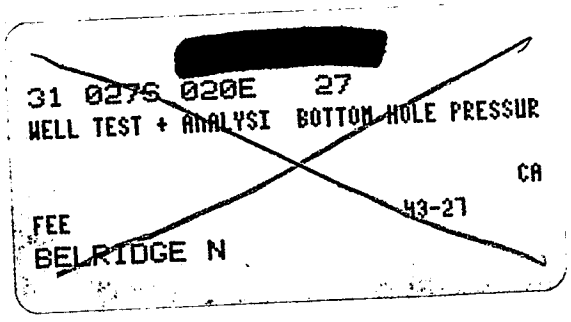
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



SAMPLE NO.	:11	LEASE	:
DEPTH	:8832' 0"	WELL NO.	:43-27
DATE	:DECEMBER 18, 1985	FIELD	:NORTH BELRIDGE


[redacted]
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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR
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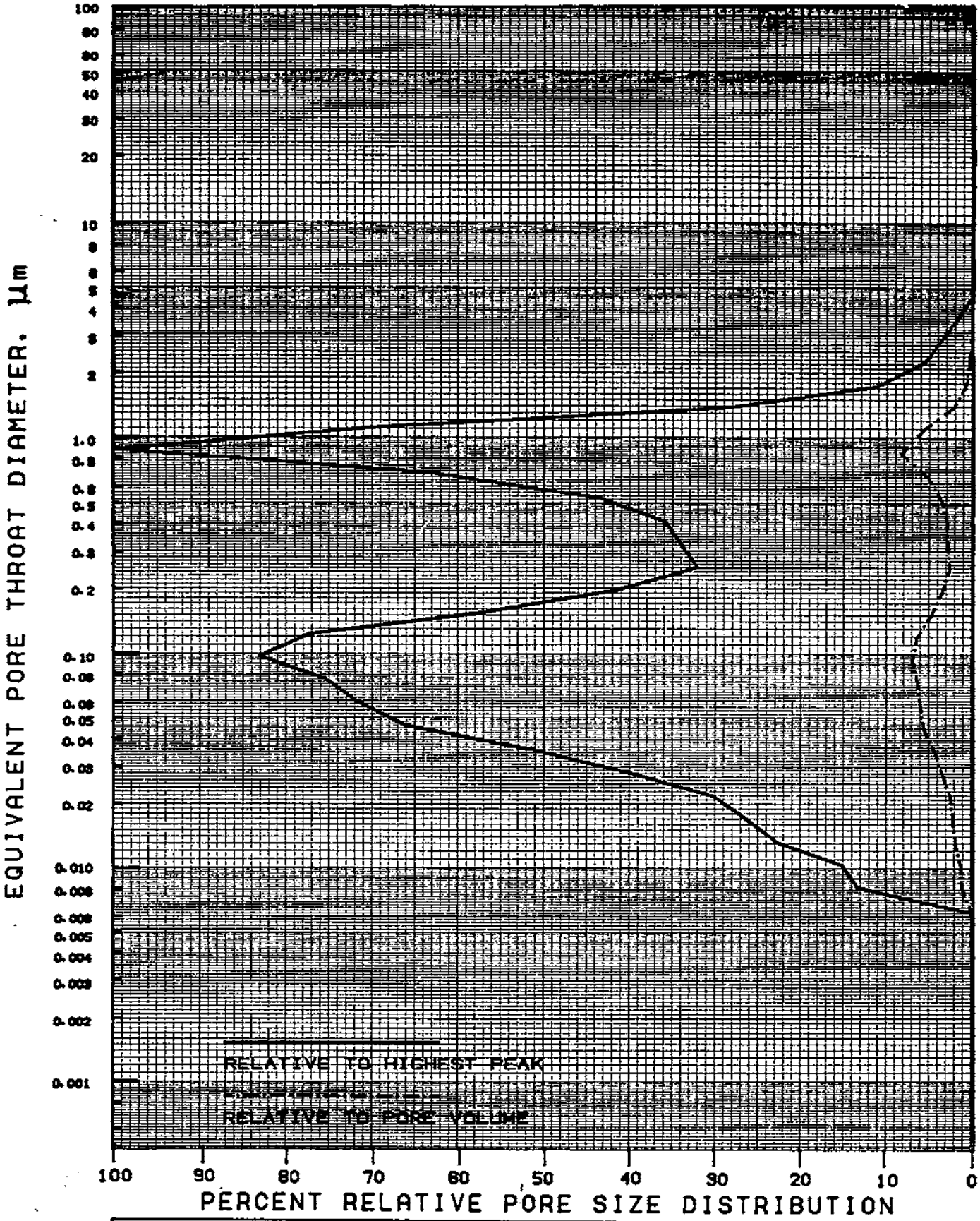
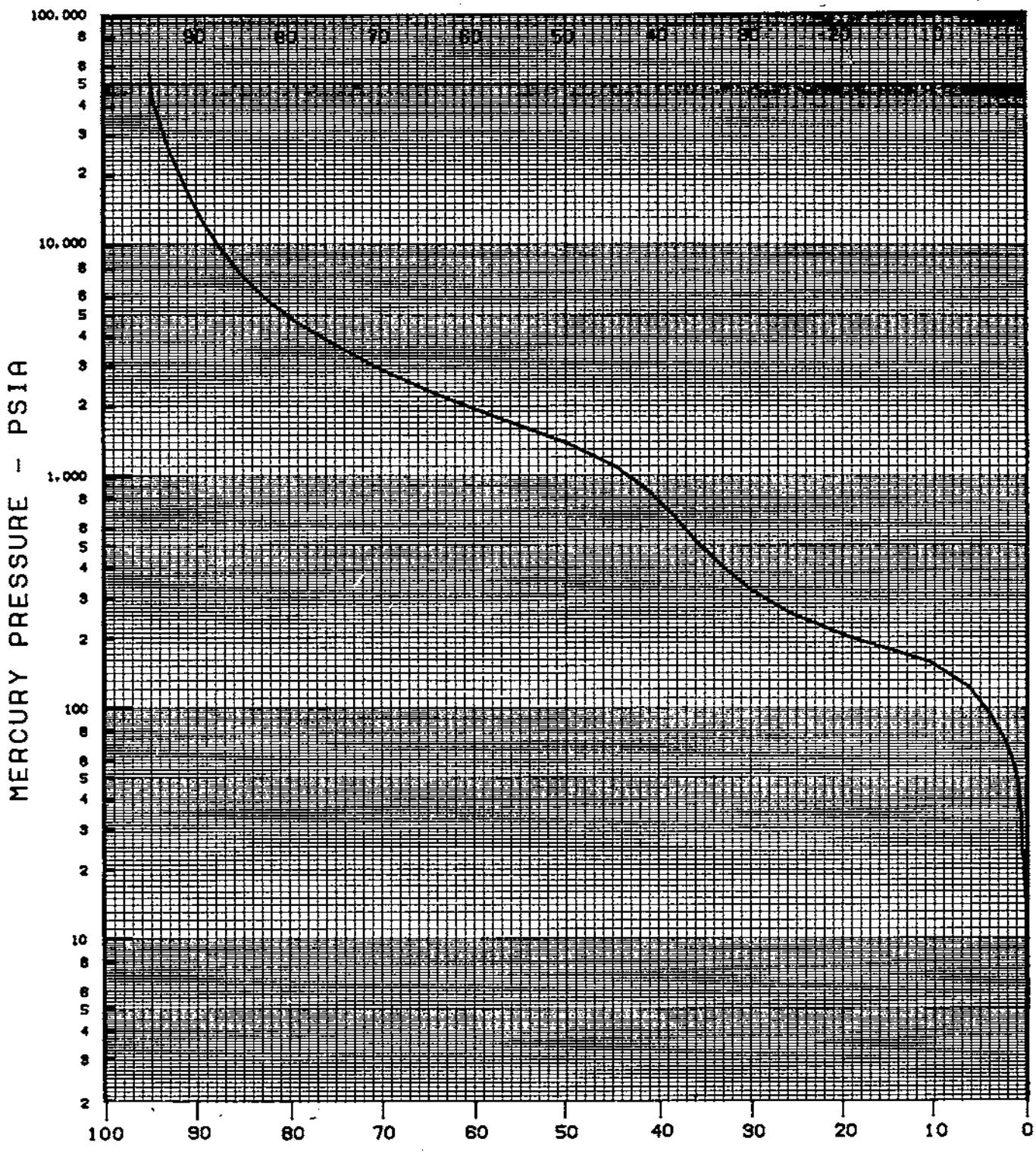
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION

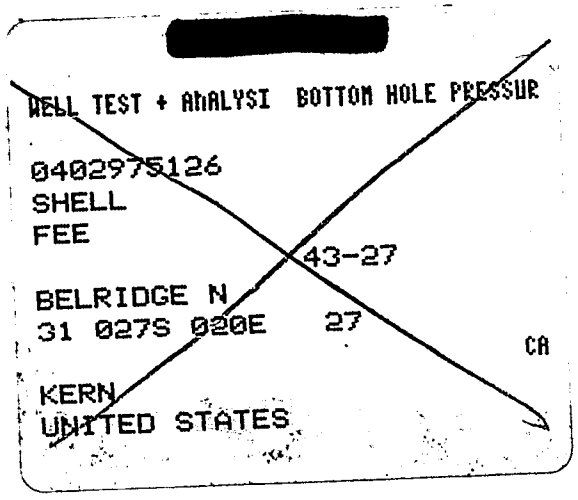


SAMPLE NO.	: 11	LEASE	:
DEPTH	: 8832' 0"	WELL NO.	: 43-27
DATE	: DECEMBER 18, 1985	FIELD	: NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



DATE	: DECEMBER 18, 1985	MEASURED VALUES	
COMPANY	: SHELL CA. PROD. INC.	ϕ	= 14.1 %
LEASE	:	K_a	= .40 MD
WELL NO.	: 43-27	G.D.	= 2.648 GMS/CC
FIELD	: NORTH BELRIDGE	VALUES EST. FROM CURVE	
STATE	: CALIFORNIA	ϕ	= 13.8 %
		K_w-est	=
DEPTH	: 8829', 11"	K_a-est	= .02 MD
SAMPLE NO.	: 10	G.D. est	=


[redacted]
WELL TEST + ANALYSI BOTTOM HOLE PRESSUR
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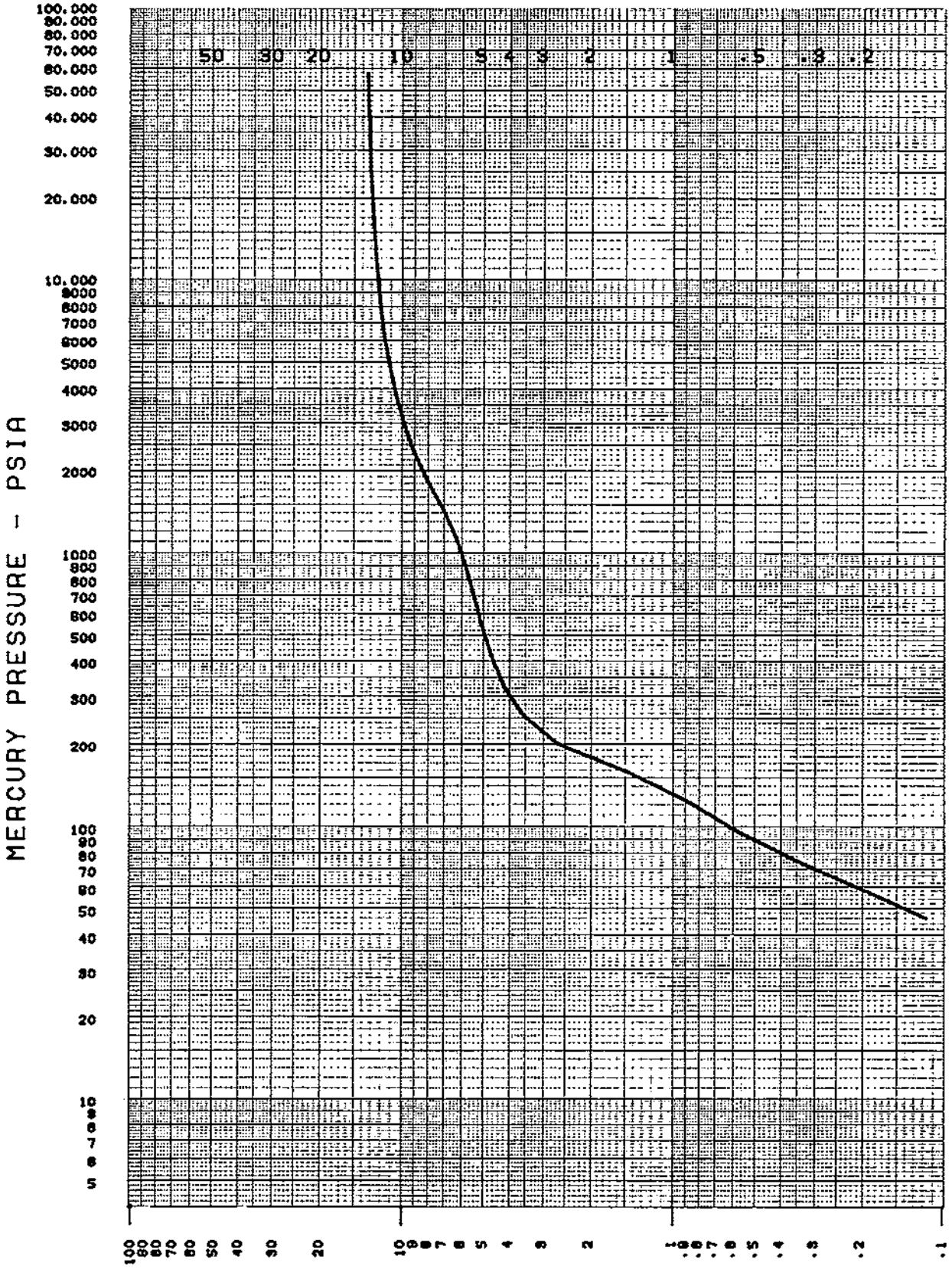
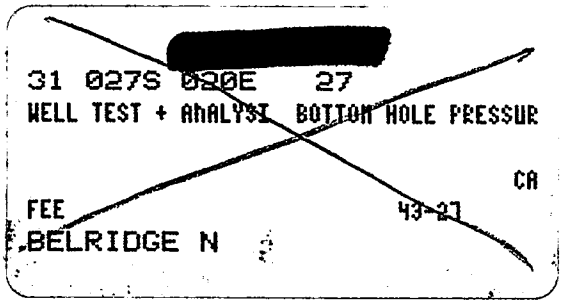
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



SAMPLE NO.	:10	LEASE	:
DEPTH	:8829' 11"	WELL NO.	:43-27
DATE	:DECEMBER 18, 1985	FIELD	:NORTH BELRIDGE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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR
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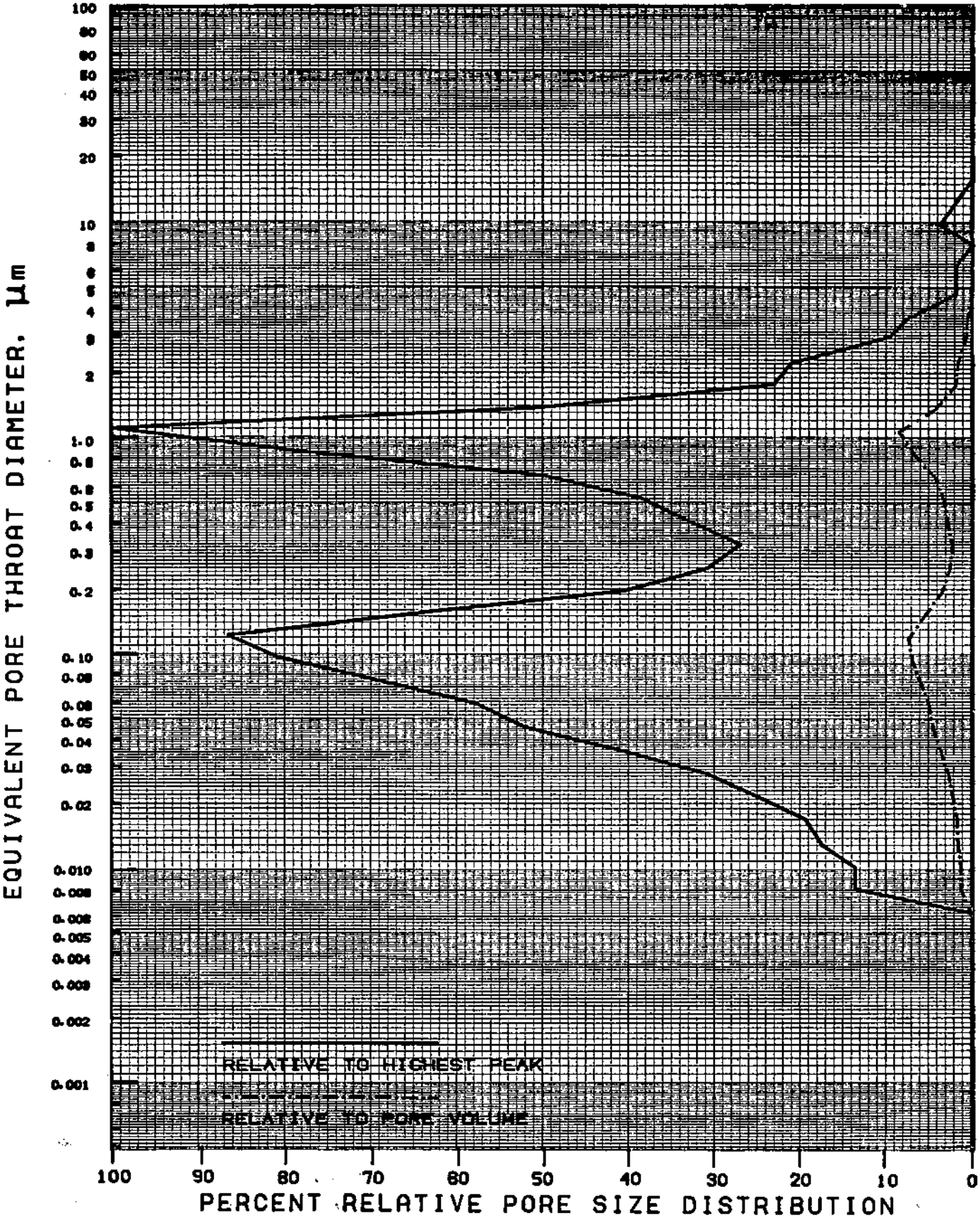
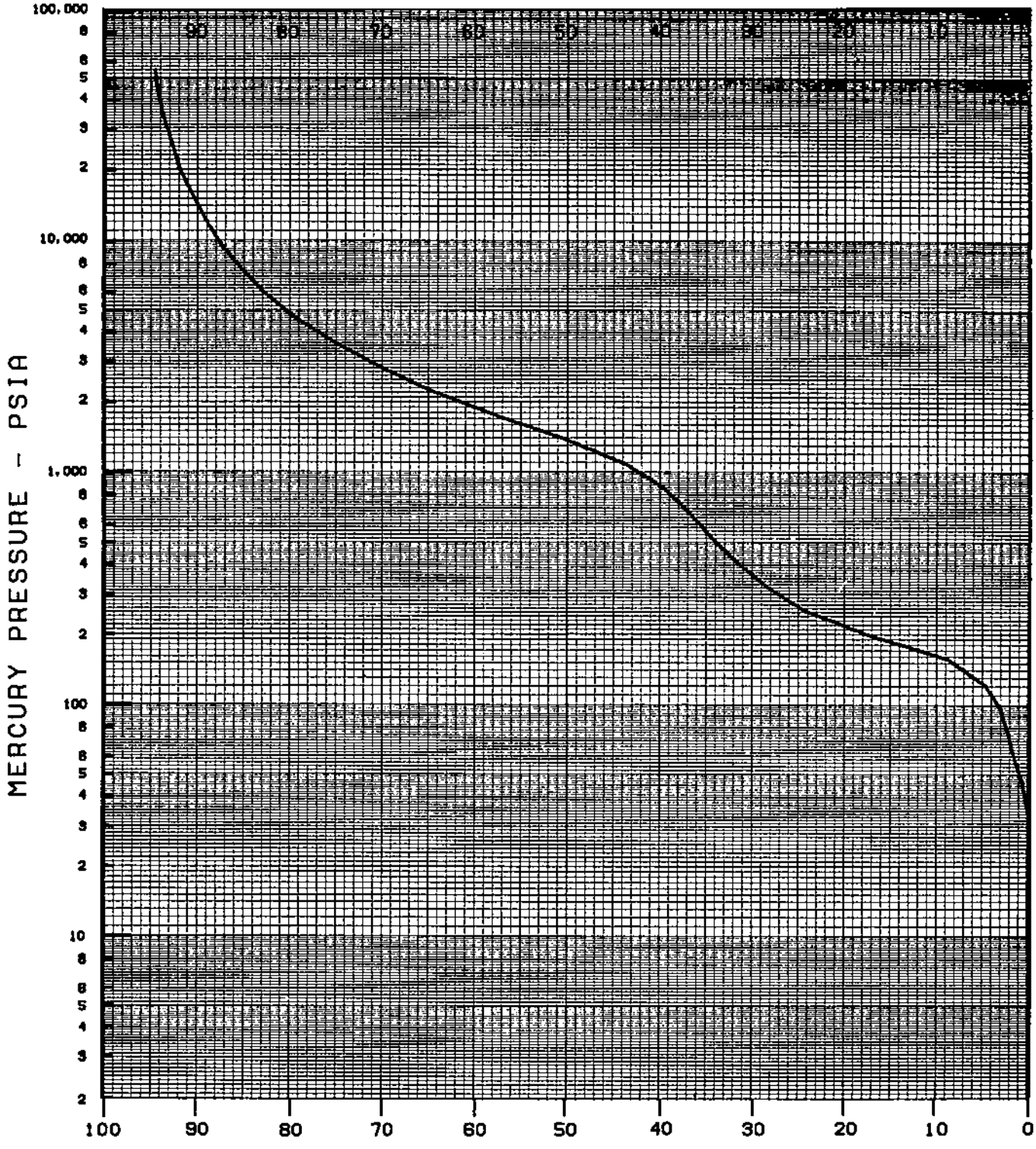
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION



SAMPLE NO.	: 10	LEASE	:
DEPTH	: 8829' 11"	WELL NO.	: 43-27
DATE	: DECEMBER 18, 1985	FIELD	: NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



DATE	: DECEMBER 18, 1985	MEASURED VALUES
COMPANY	: SHELL CA. PROD. INC.	ϕ = 14.7 %
LEASE	:	K_a = .41 MD
WELL NO.	: 43-27	G.D.= 2.648 GMS/CC
FIELD	: NORTH BELRIDGE	VALUES EST. FROM CURVE
STATE	: CALIFORNIA	ϕ = 14.5 %
		K_w-est = .05 MD
DEPTH	: 8728' 0"	K_a-est = .28 MD
SAMPLE NO.	: 9	G.D. est =

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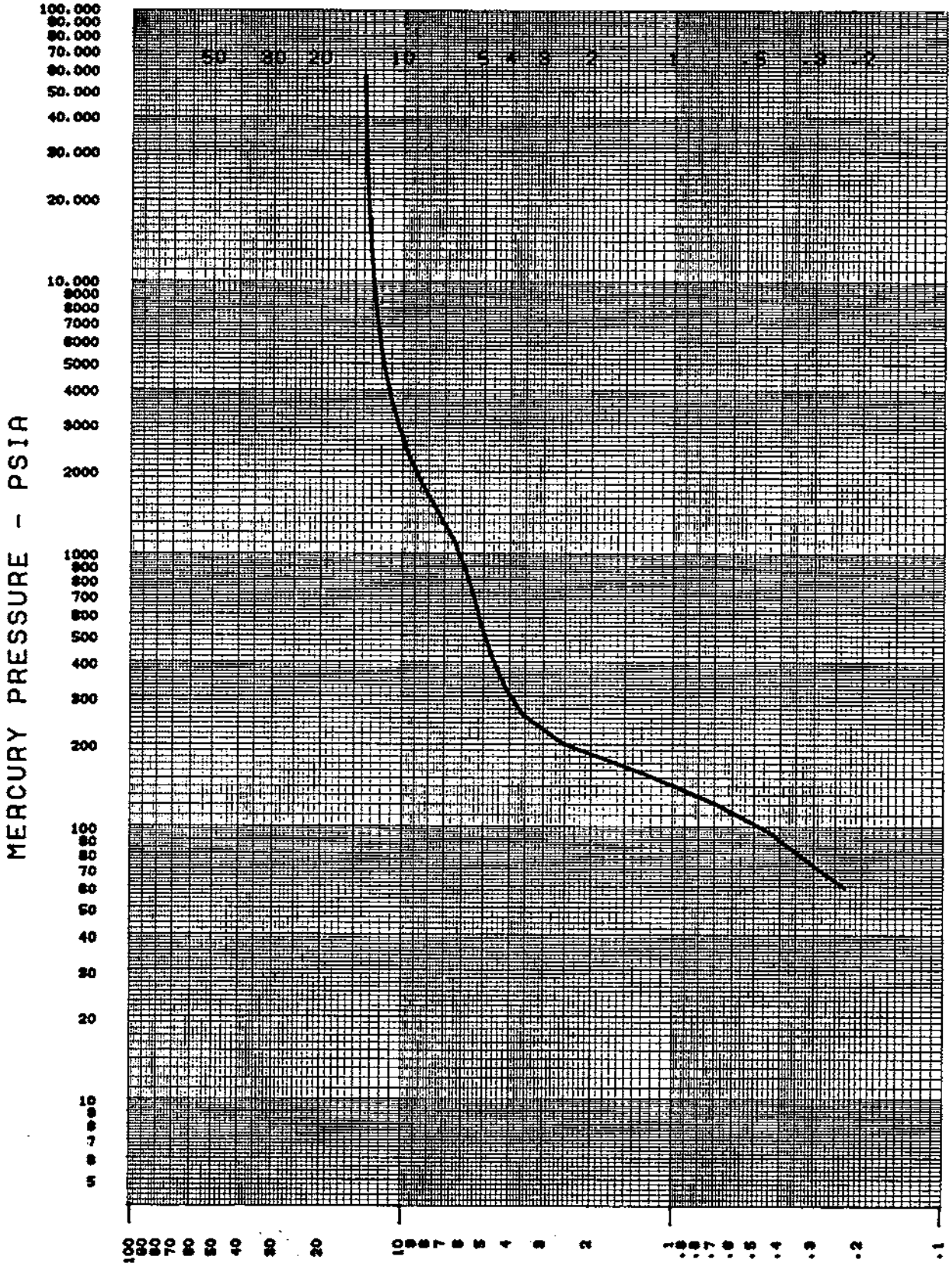
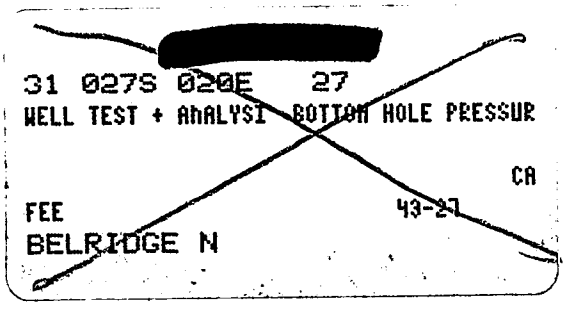
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



SAMPLE NO.	:9	LEASE	:
DEPTH	:8728' 0"	WELL NO.	:43-27
DATE	:DECEMBER 18, 1985	FIELD	:NORTH BELRIDGE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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR
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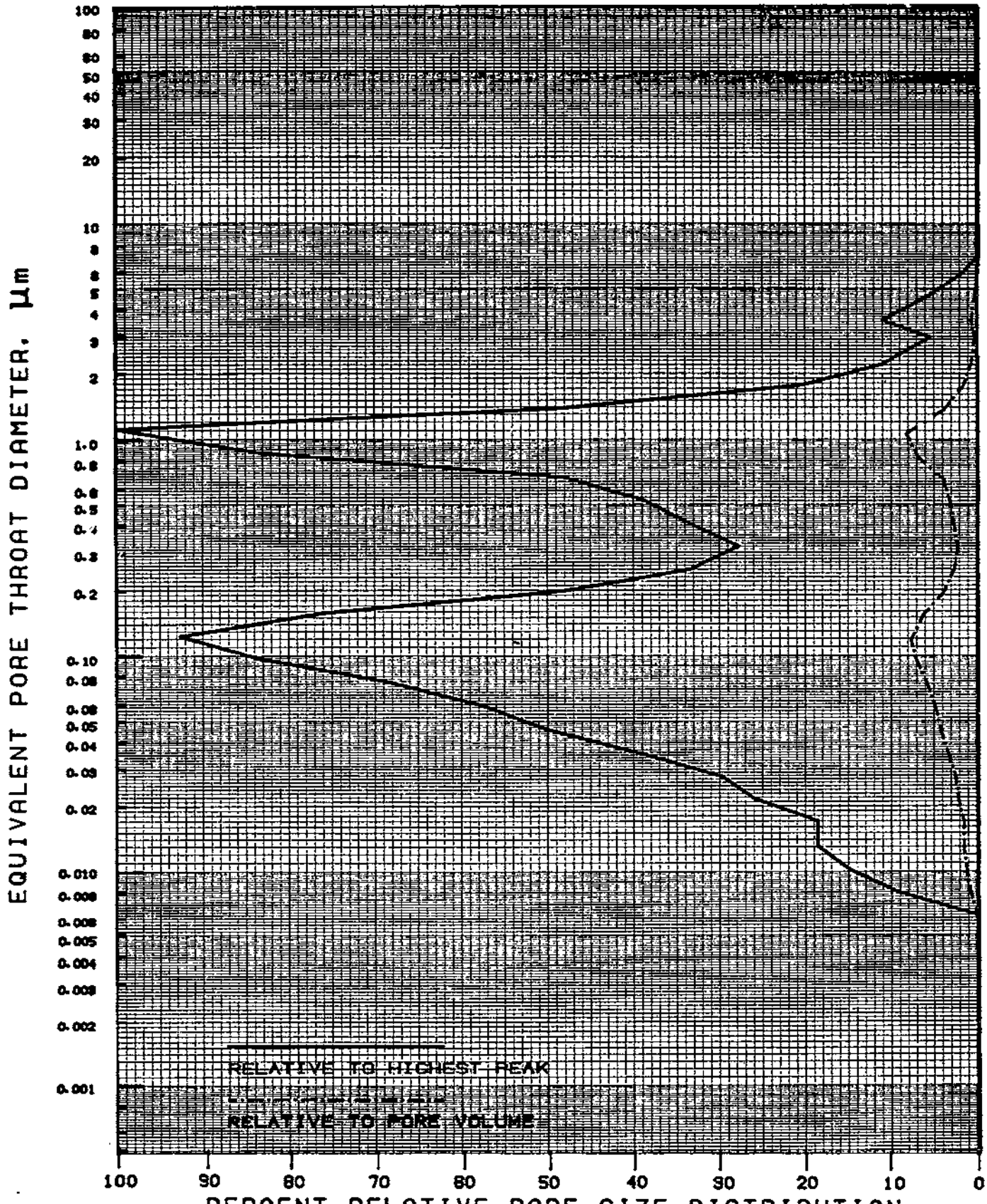
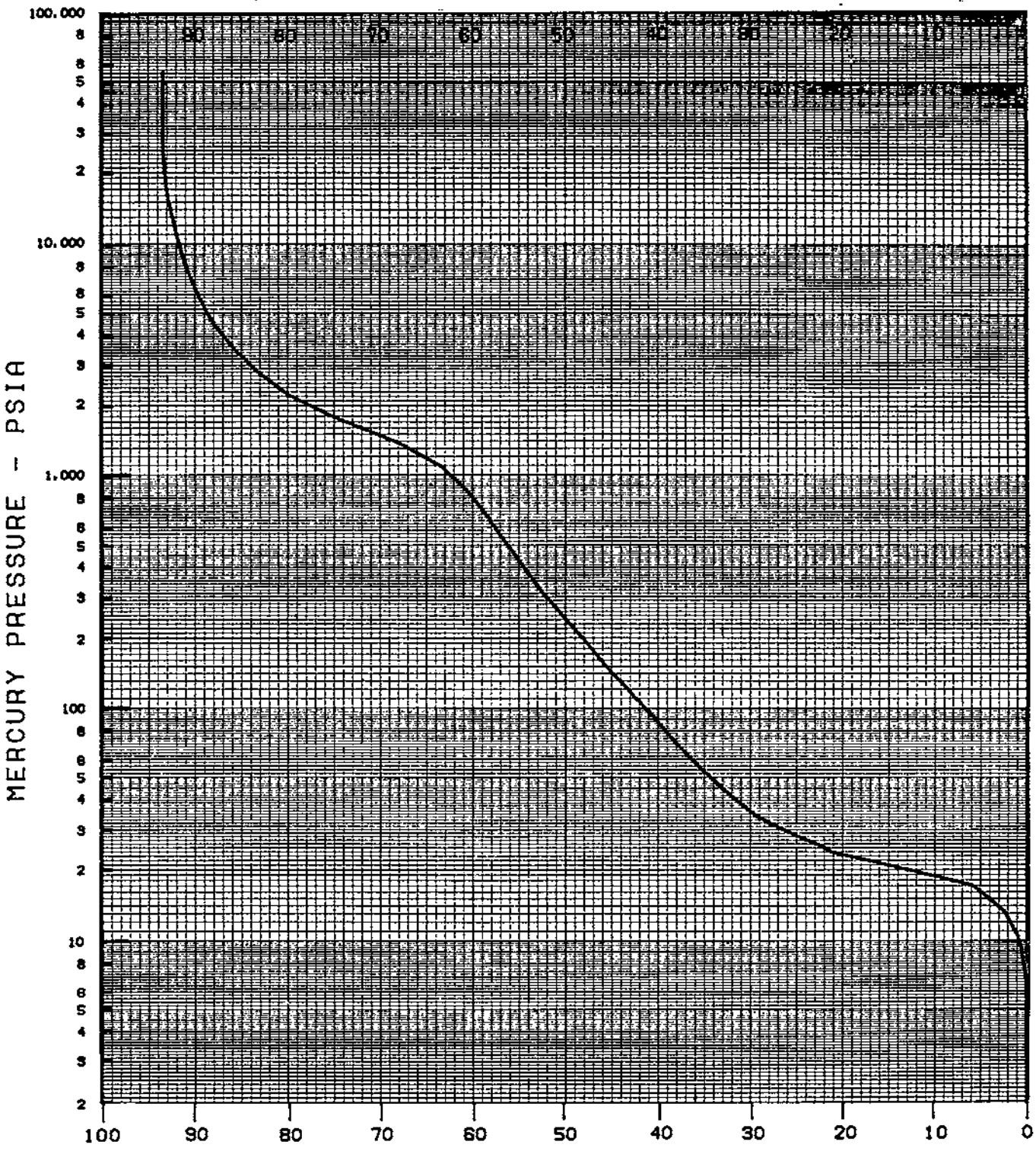
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION



SAMPLE NO.	: 9	LEASE	:
DEPTH	: 8728' Ø"	WELL NO.	: 43-27
DATE	: DECEMBER 18, 1985	FIELD	: NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



DATE	: DECEMBER 17, 1985	MEASURED VALUES	
COMPANY	: SHELL CA. PROD. INC.	ϕ	= 14.4 %
LEASE	:	K_a	= 11.0 MD
WELL NO.	: 43-27	G.D.	= 2.649 GMS/CC
FIELD	: NORTH BELRIDGE	VALUES EST. FROM CURVE	
STATE	: CALIFORNIA	ϕ	= 14.1 %
		K_w-est	= 5.2 MD
DEPTH	: 8718' 0"	K_a-est	= 11.5 MD
SAMPLE NO.	: 8	G.D. est	=

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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR

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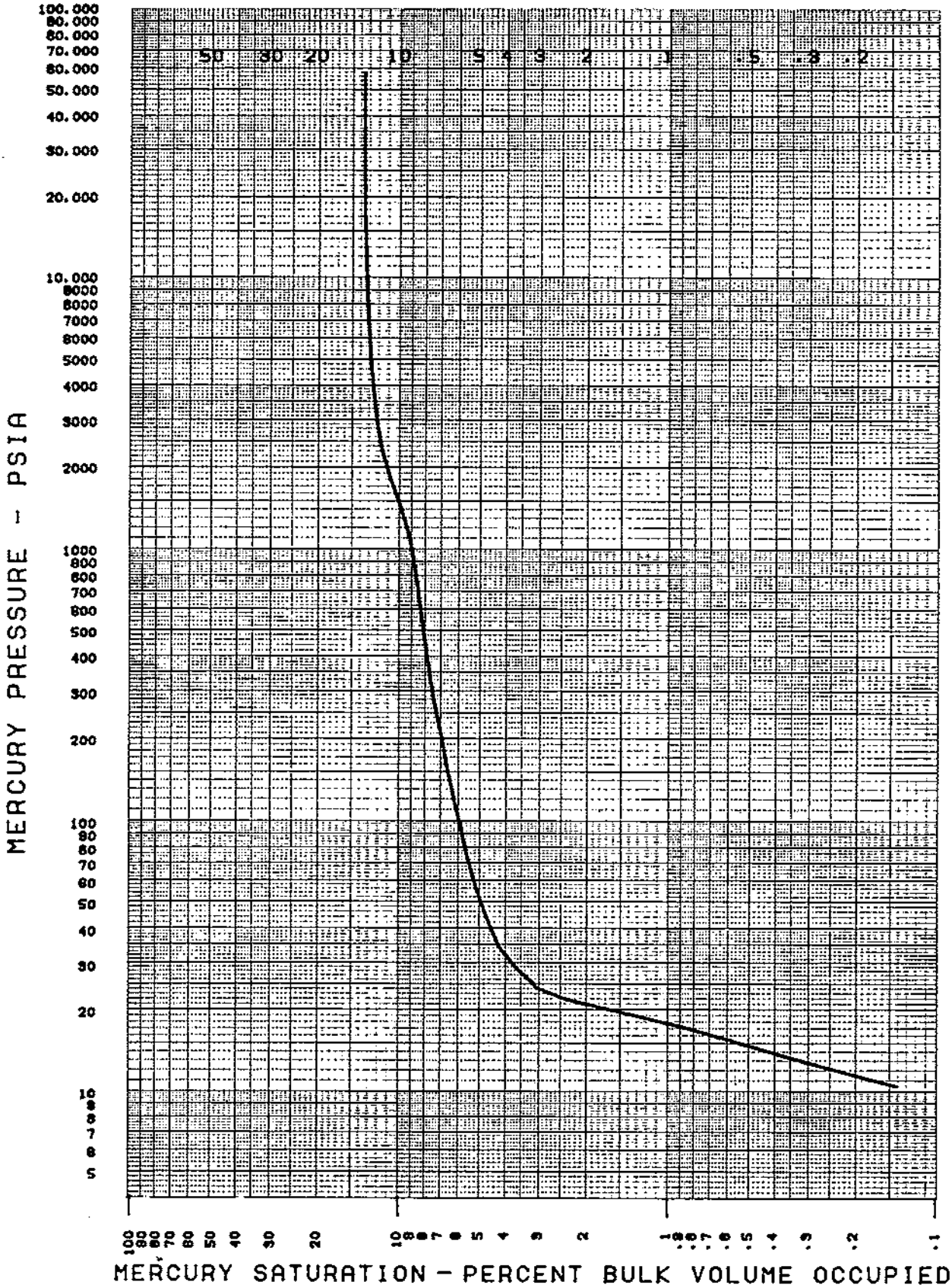
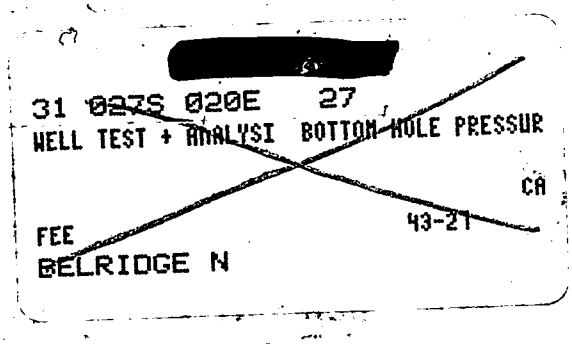
UNITED STATES

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



SAMPLE NO.	:8	LEASE	:
DEPTH	:8718' Ø"	WELL NO.	:43-27
DATE	:DECEMBER 17, 1985	FIELD	:NORTH BELRIDGE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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR
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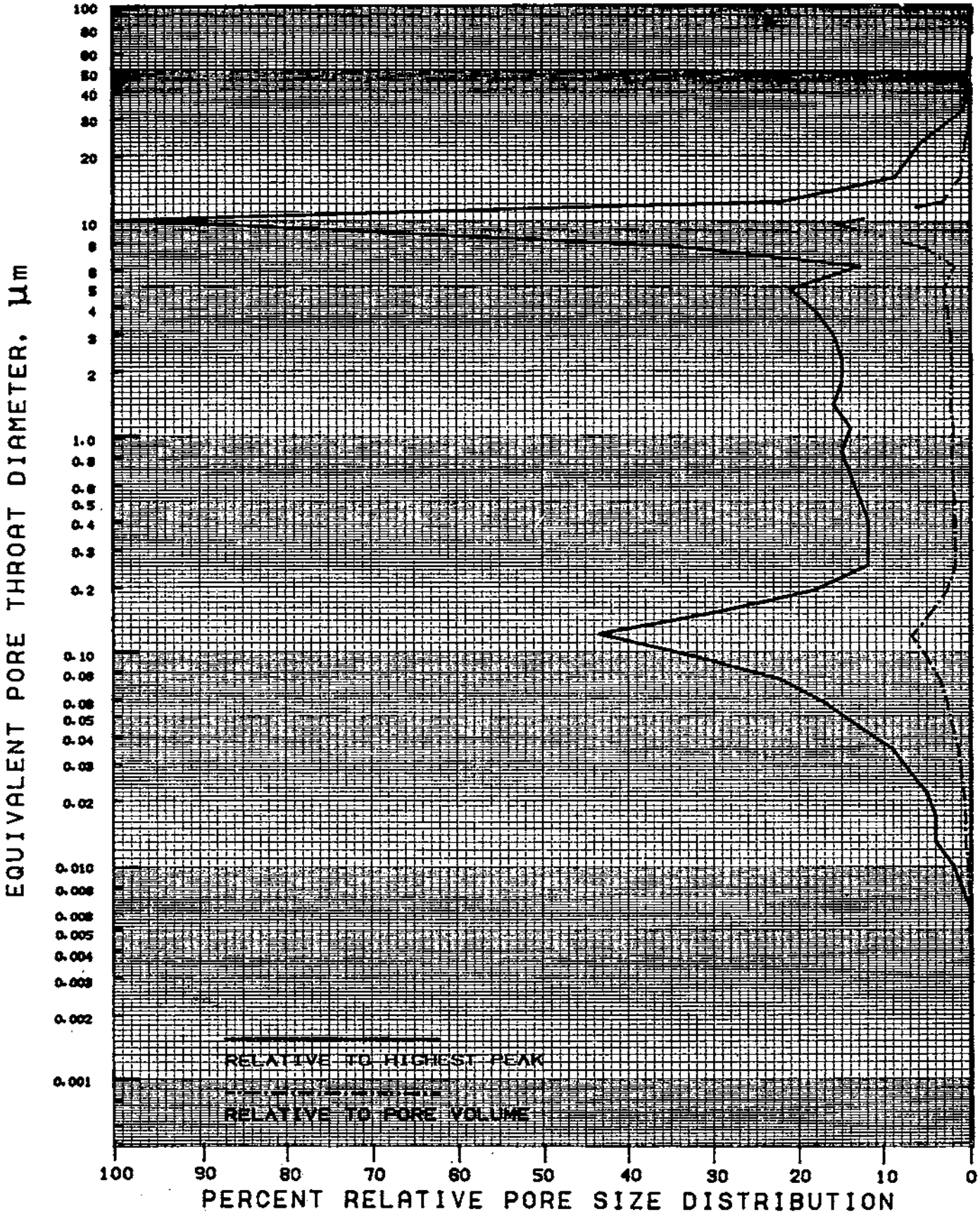
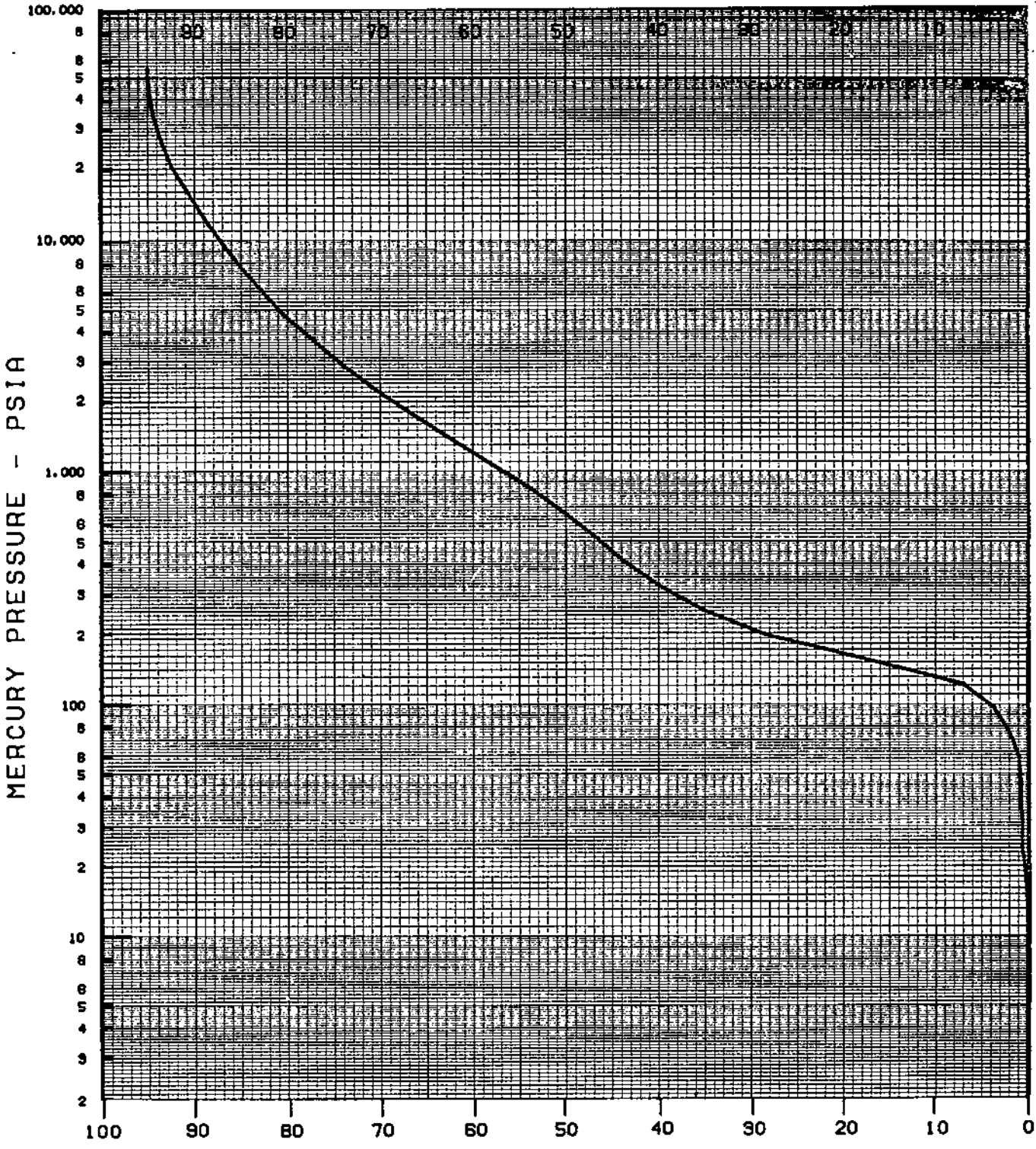
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION

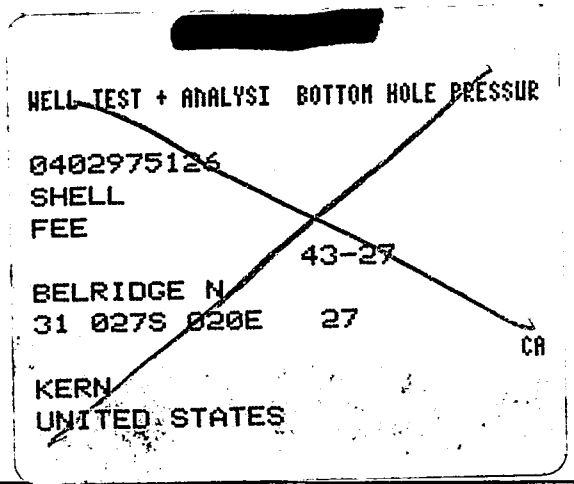


SAMPLE NO.	: 8	LEASE	:
DEPTH	: 8718' 0"	WELL NO.	: 43-27
DATE	: DECEMBER 17, 1985	FIELD	: NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



DATE	:DECEMBER 17, 1985	MEASURED VALUES	
COMPANY	:SHELL CA. PROD. INC.	ϕ	= 13.2 %
LEASE	:	K_a	= .61 MD
WELL NO.	:43-27	G.D.	= 2.645 GMS/CC
FIELD	:NORTH BELRIDGE	VALUES EST. FROM CURVE	
STATE	:CALIFORNIA	ϕ	= 12.9 %
		K_w-est	=
DEPTH	:8366', 0"	K_a-est	= .02 MD
SAMPLE NO.	:7	G.D. est	=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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR
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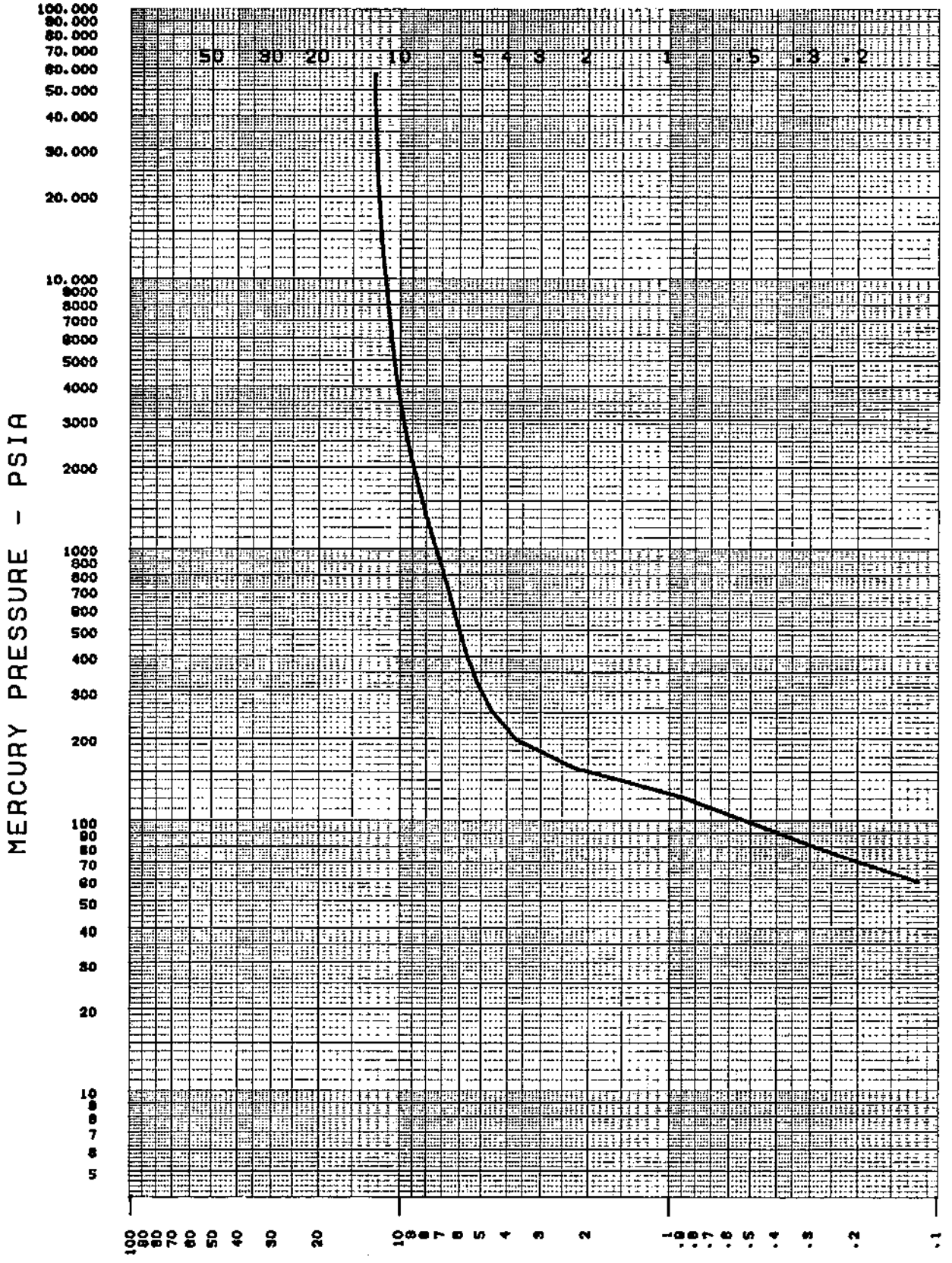
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



SAMPLE NO.	:7	LEASE	:
DEPTH	:8366' 0"	WELL NO.	:43-27
DATE	:DECEMBER 17, 1985	FIELD	:NORTH BELRIDGE

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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR

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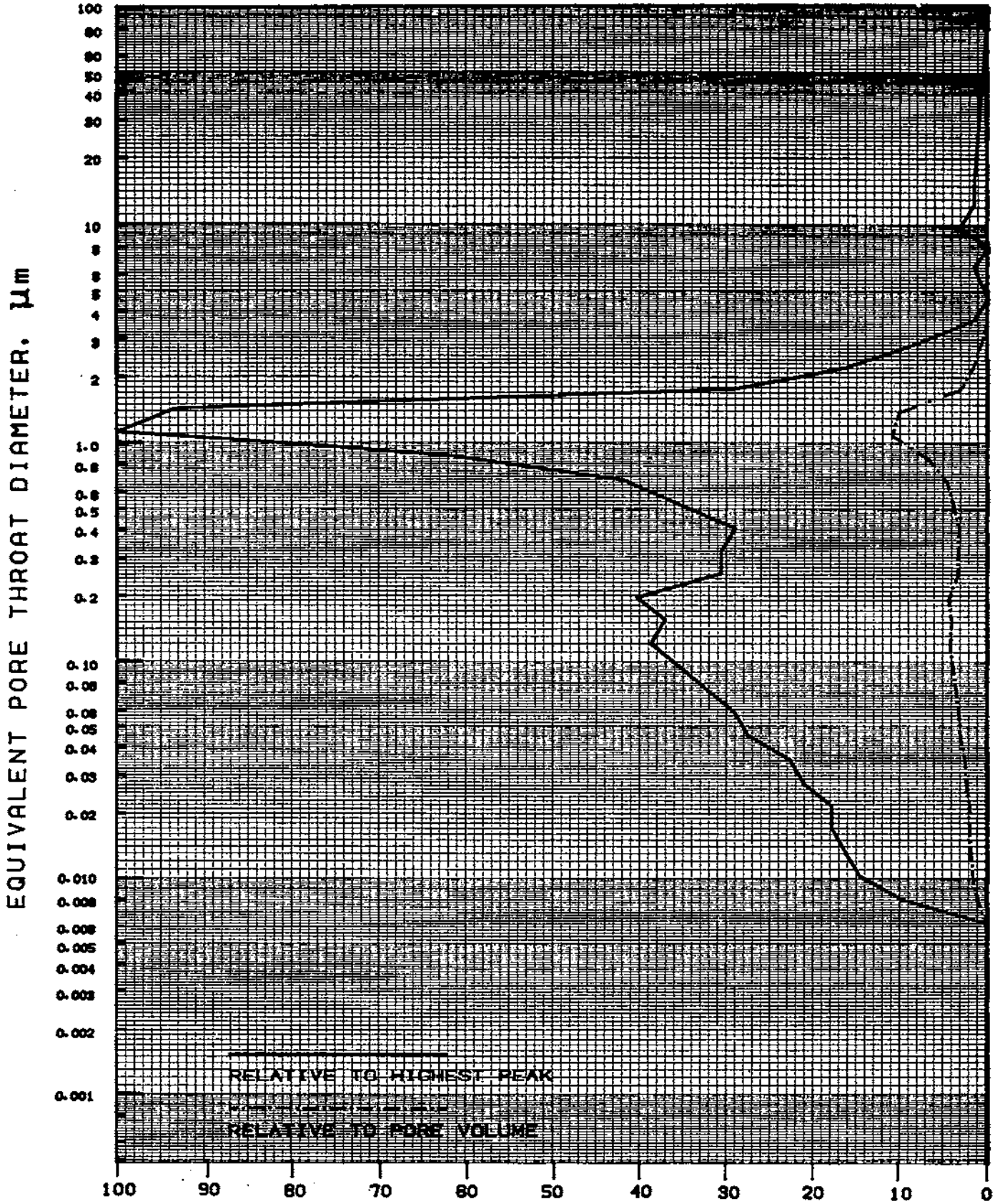
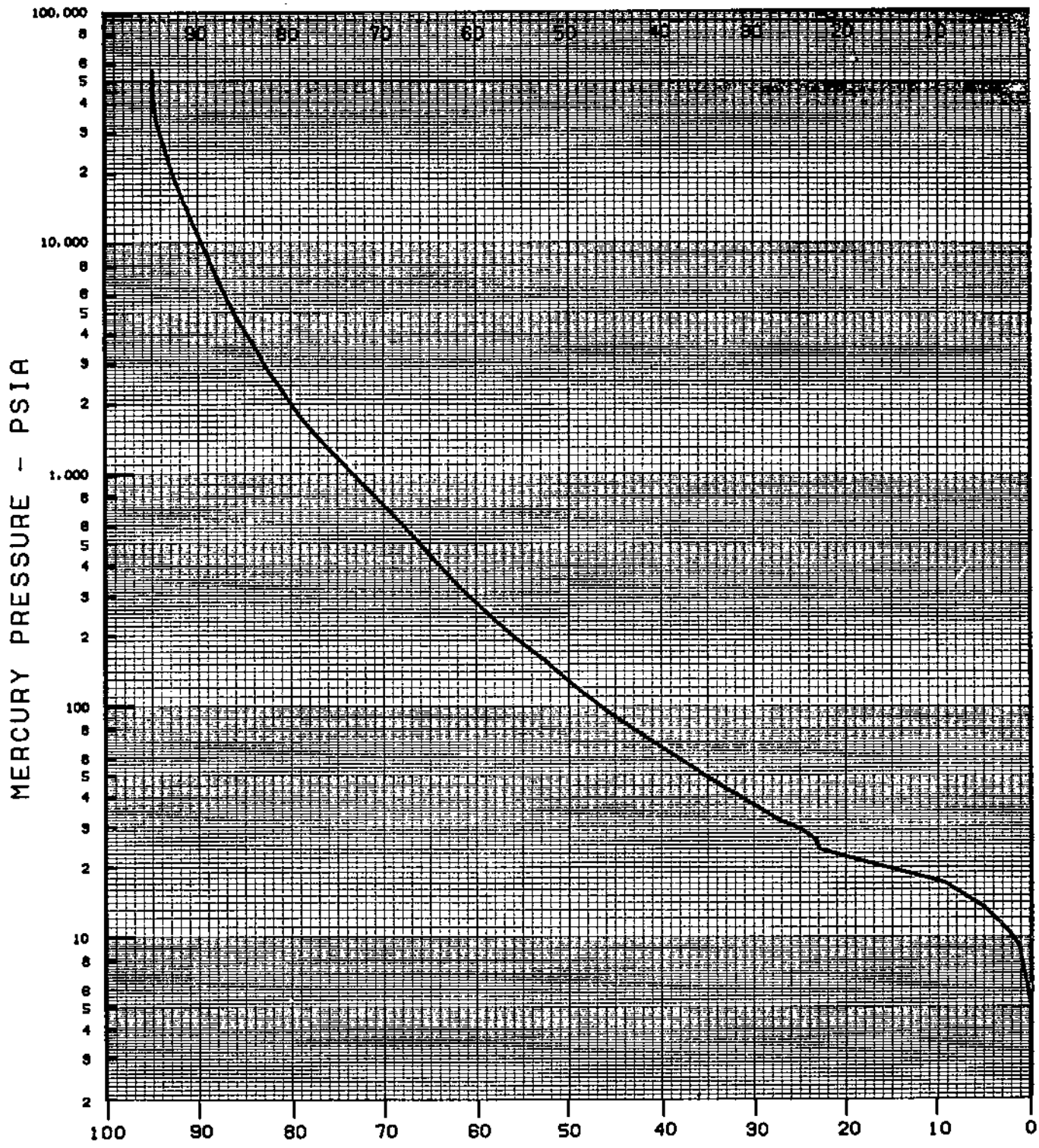
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION

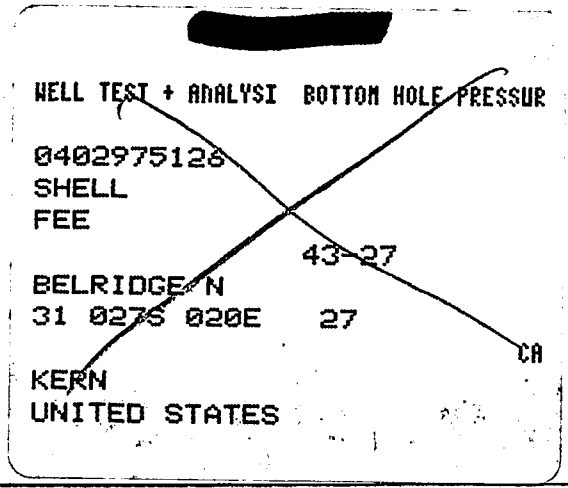


SAMPLE NO.	: 7	LEASE	:
DEPTH	: 8368' Ø"	WELL NO.	: 43-27
DATE	: DECEMBER 17, 1985	FIELD	: NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



DATE	:DECEMBER 17, 1985	MEASURED VALUES	
COMPANY	:SHELL CA. PROD. INC.	ϕ	= 13.9 %
LEASE	:	K_a	= 12.0 MD
WELL NO.	:43-27	G.D.	= 2.641 GMS/CC
FIELD	:NORTH BELRIDGE	VALUES EST. FROM CURVE	
STATE	:CALIFORNIA	ϕ	= 13.7 %
		K_w-est	= 5.7 MD
DEPTH	:8358' 0"	K_a-est	= 12.5 MD
SAMPLE NO.	:6	G.D. est	=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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR
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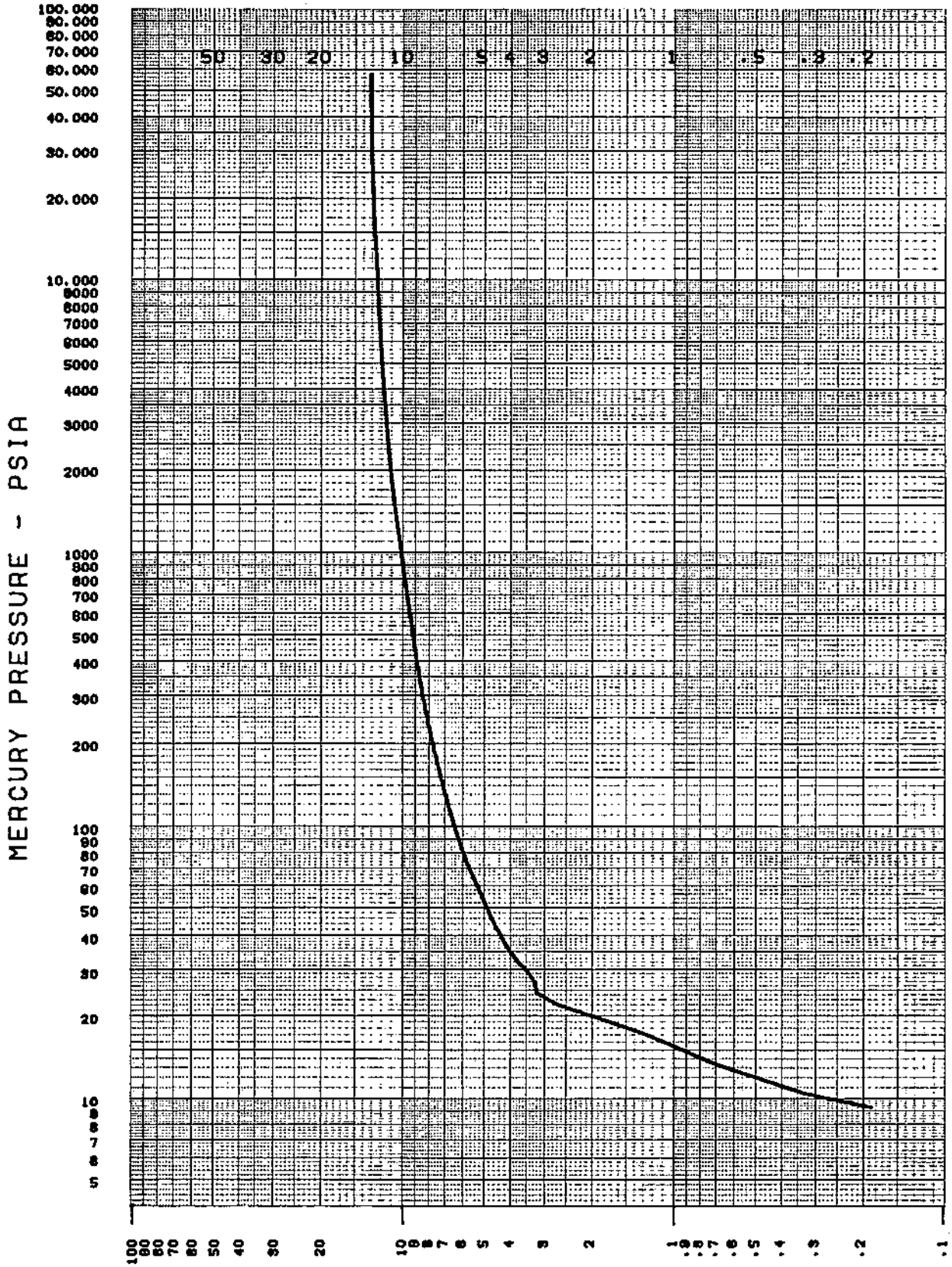
UNITED STATES

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



SAMPLE NO.	:6	LEASE	:
DEPTH	:8358' Ø"	WELL NO.	:43-27
DATE	:DECEMBER 17, 1985	FIELD	:NORTH BELRIDGE

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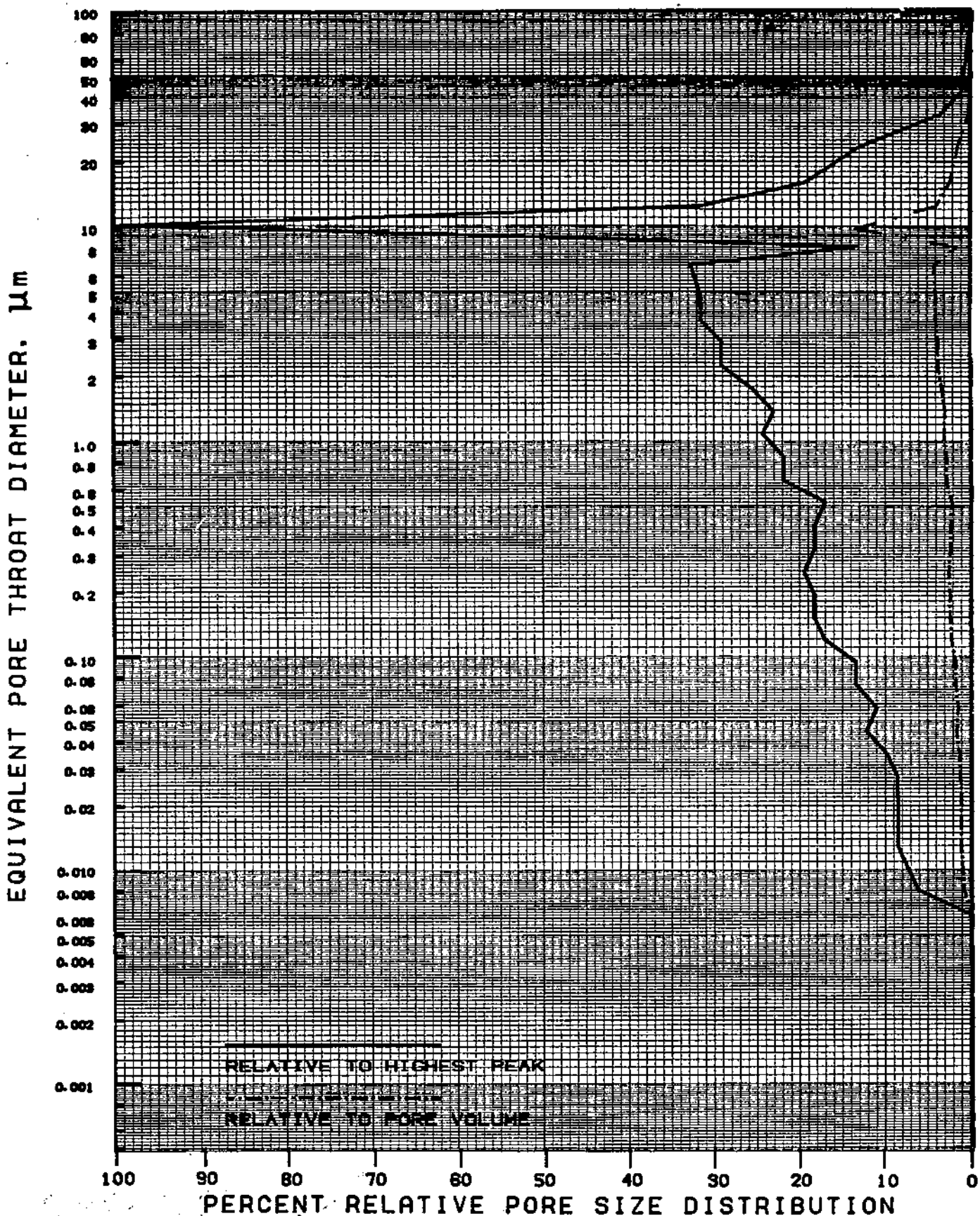
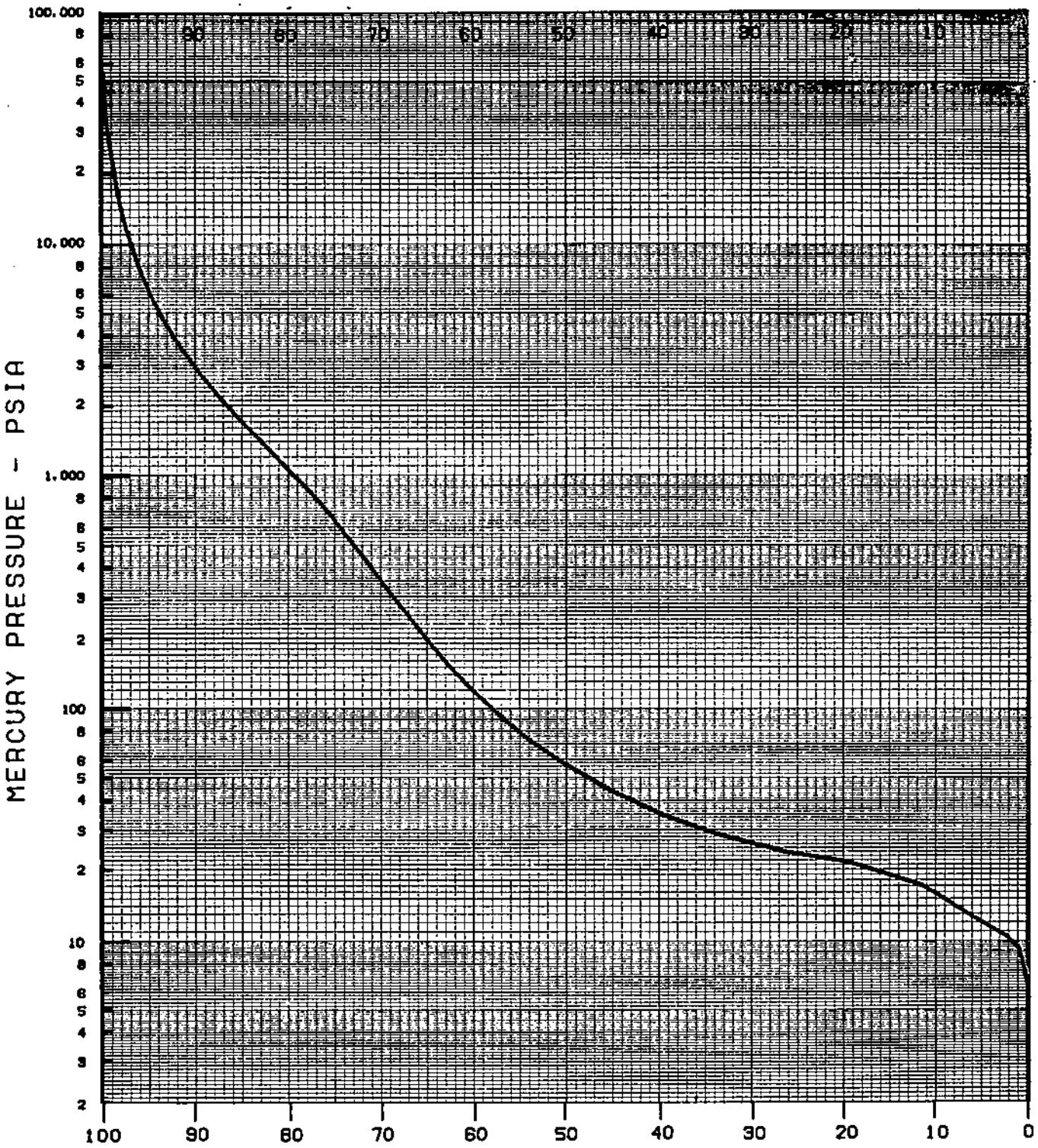
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION

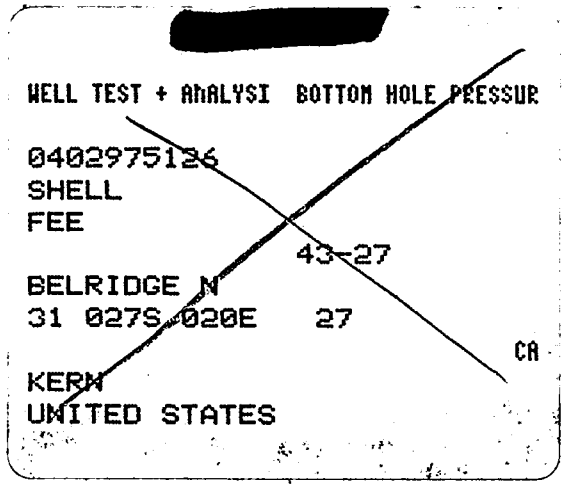


SAMPLE NO.	: 6	LEASE	:
DEPTH	: 8358' Ø"	WELL NO.	: 43-27
DATE	: DECEMBER 17, 1985	FIELD	: NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



DATE	:DECEMBER 17, 1985	MEASURED VALUES
COMPANY	:SHELL CA. PROD. INC.	ϕ = 23.4 %
LEASE	:	K_a = 38.0 MD
WELL NO.	:43-27	G.D.= 2.640 GMS/CC
FIELD	:NORTH BELRIDGE	VALUES EST. FROM CURVE
STATE	:CALIFORNIA	ϕ = 23.2 %
		K_w-est = 26.2 MD
DEPTH	:6049' 0"	K_a-est = 42.2 MD
SAMPLE NO.:	5	G.D. est =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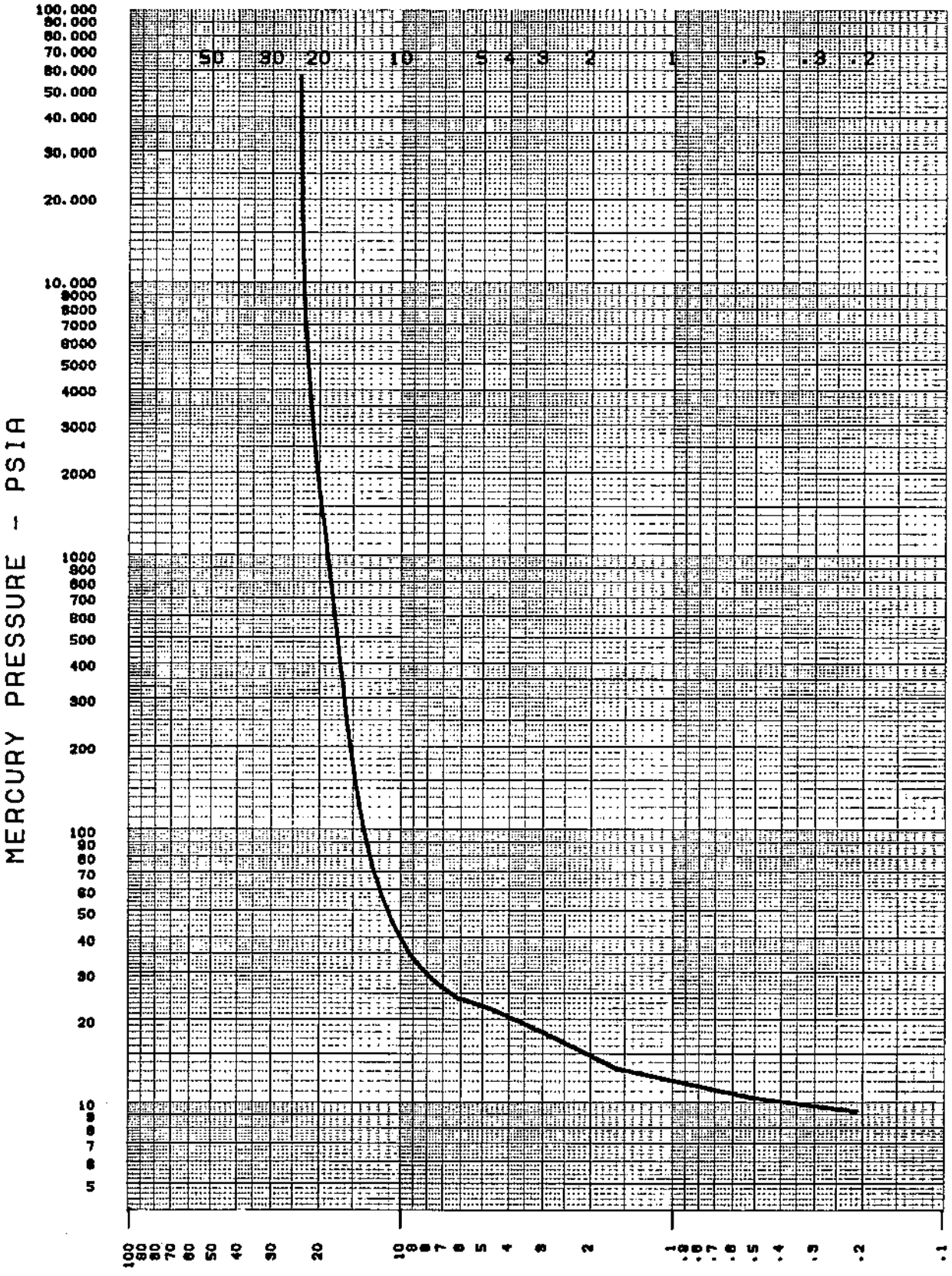
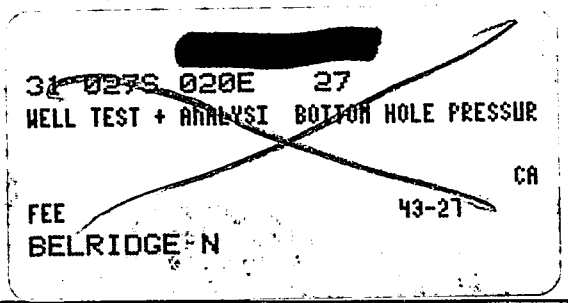
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



SAMPLE NO.	:5	LEASE	:
DEPTH	:6049' 0"	WELL NO.	:43-27
DATE	:DECEMBER 17, 1985	FIELD	:NORTH BELRIDGE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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR
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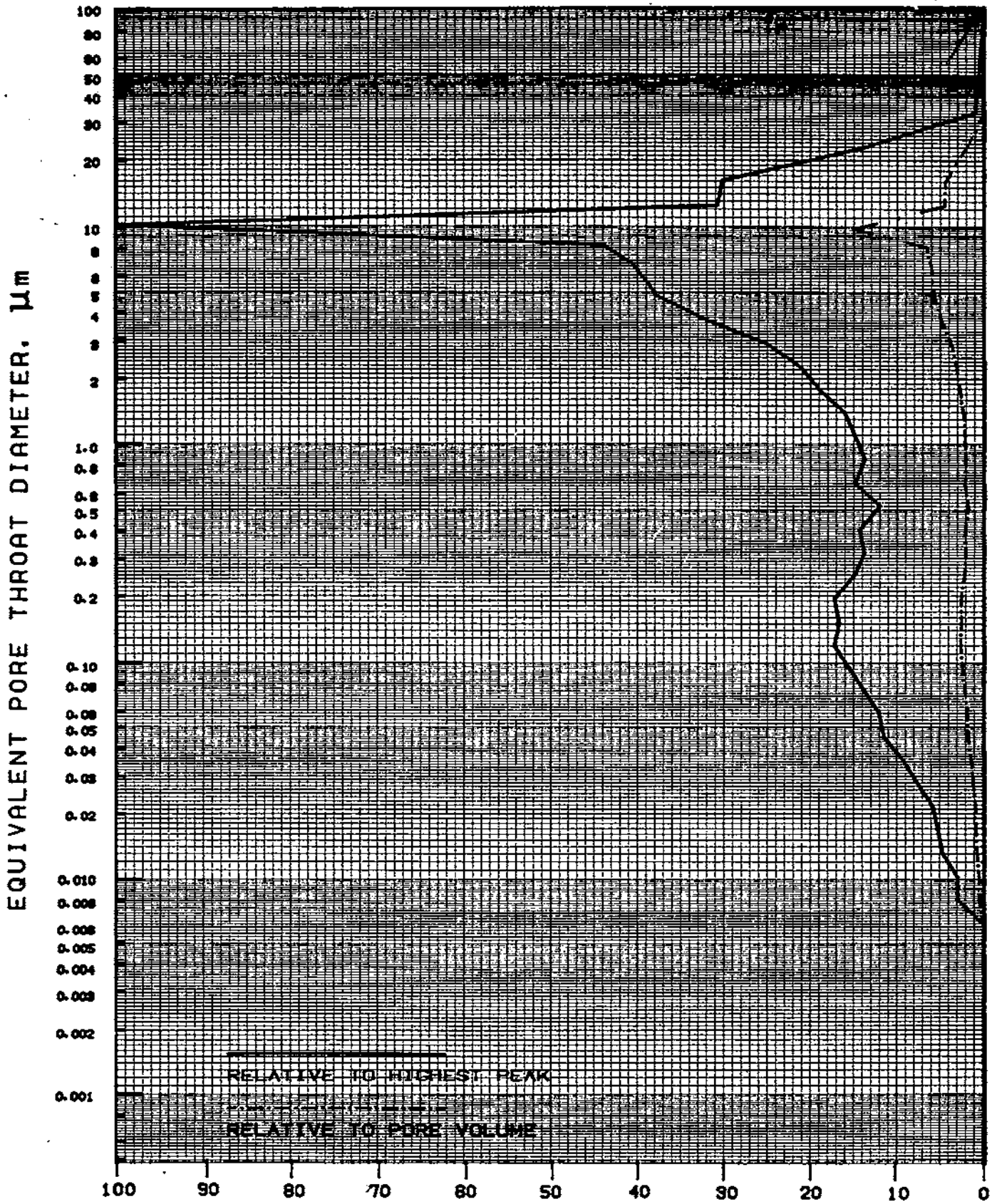
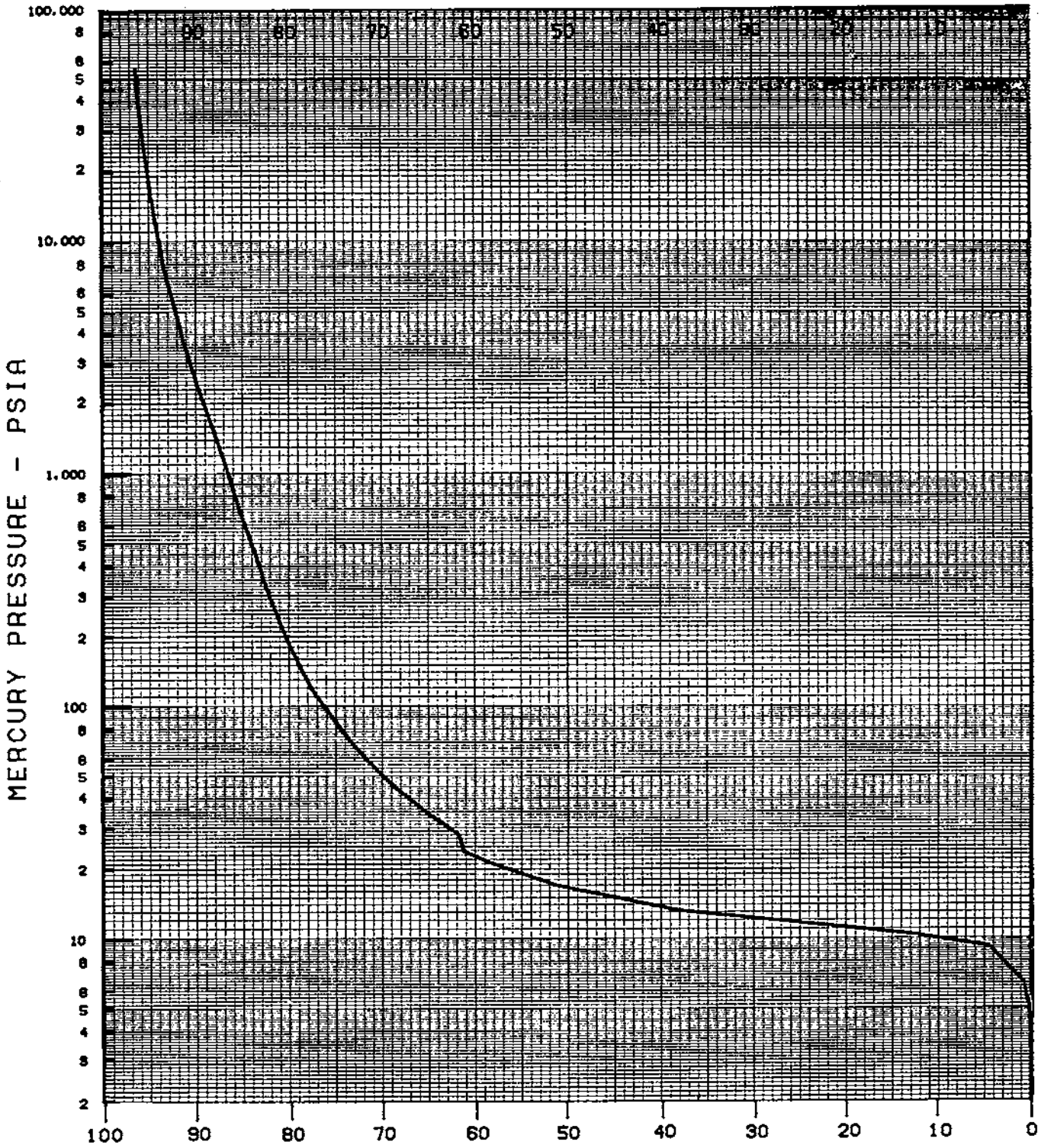
BELRIDGE N

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION



SAMPLE NO.	: 5	LEASE	:
DEPTH	: 6049' 0"	WELL NO.	: 43-27
DATE	: DECEMBER 17, 1985	FIELD	: NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



DATE	:DECEMBER 14, 1985	MEASURED VALUES
COMPANY	:SHELL CA. PROD. INC.	ϕ = 25.8 %
LEASE	:	K_a = 285 MD
WELL NO.	:43-27	G.D.= 2.624 GMS/CC
FIELD	:NORTH BELRIDGE	VALUES EST. FROM CURVE
STATE	:CALIFORNIA	ϕ = 25.6 %
		$K_{w\text{-est}}$ = 240 MD
DEPTH	:5977' 0"	$K_{a\text{-est}}$ = 250 MD
SAMPLE NO.	:4	G.D. est =

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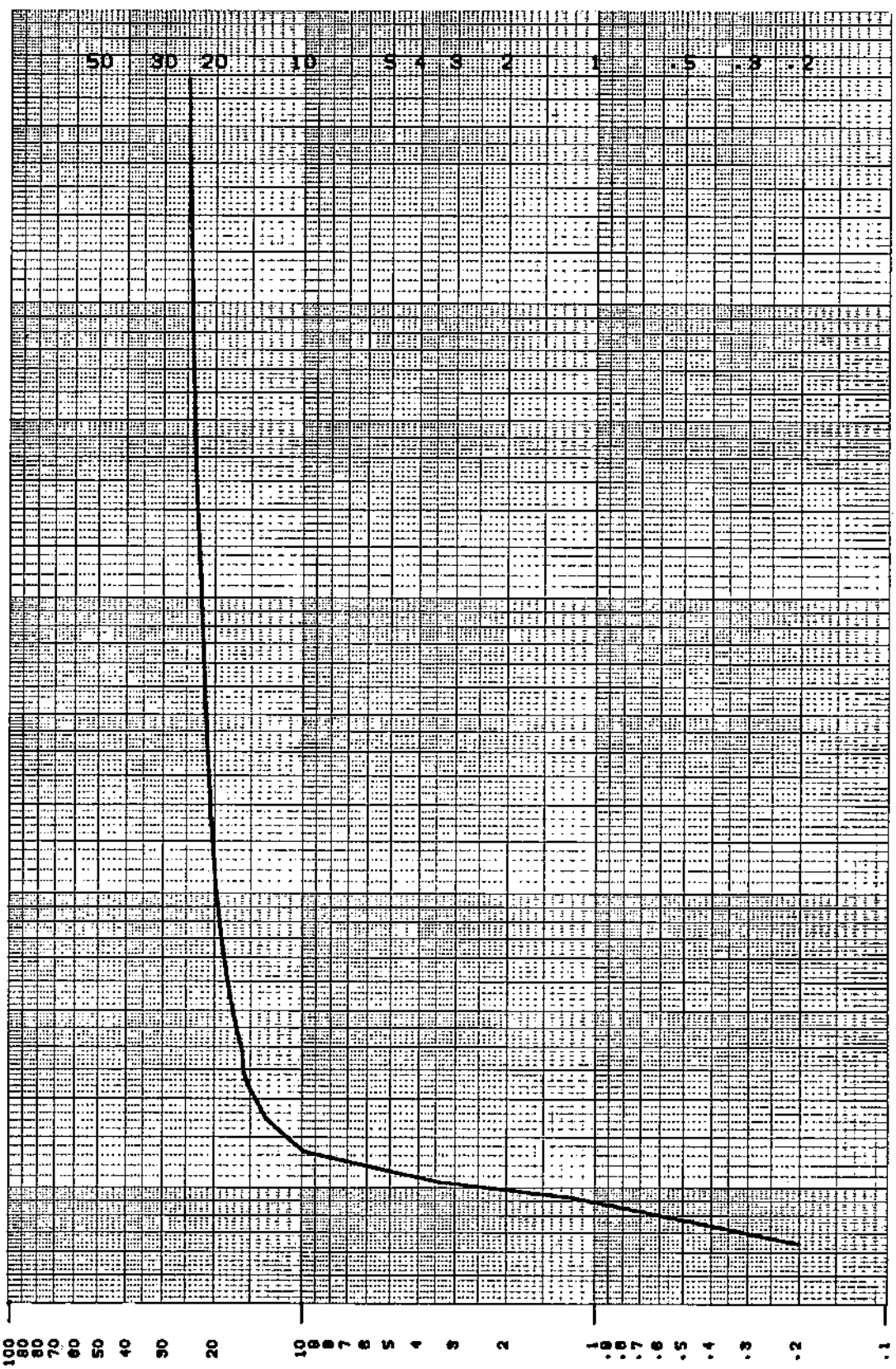
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



SAMPLE NO.	:4	LEASE	:
DEPTH	:5977' 0"	WELL NO.	:43-27
DATE	:DECEMBER 14, 1985	FIELD	:NORTH BELRIDGE

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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR

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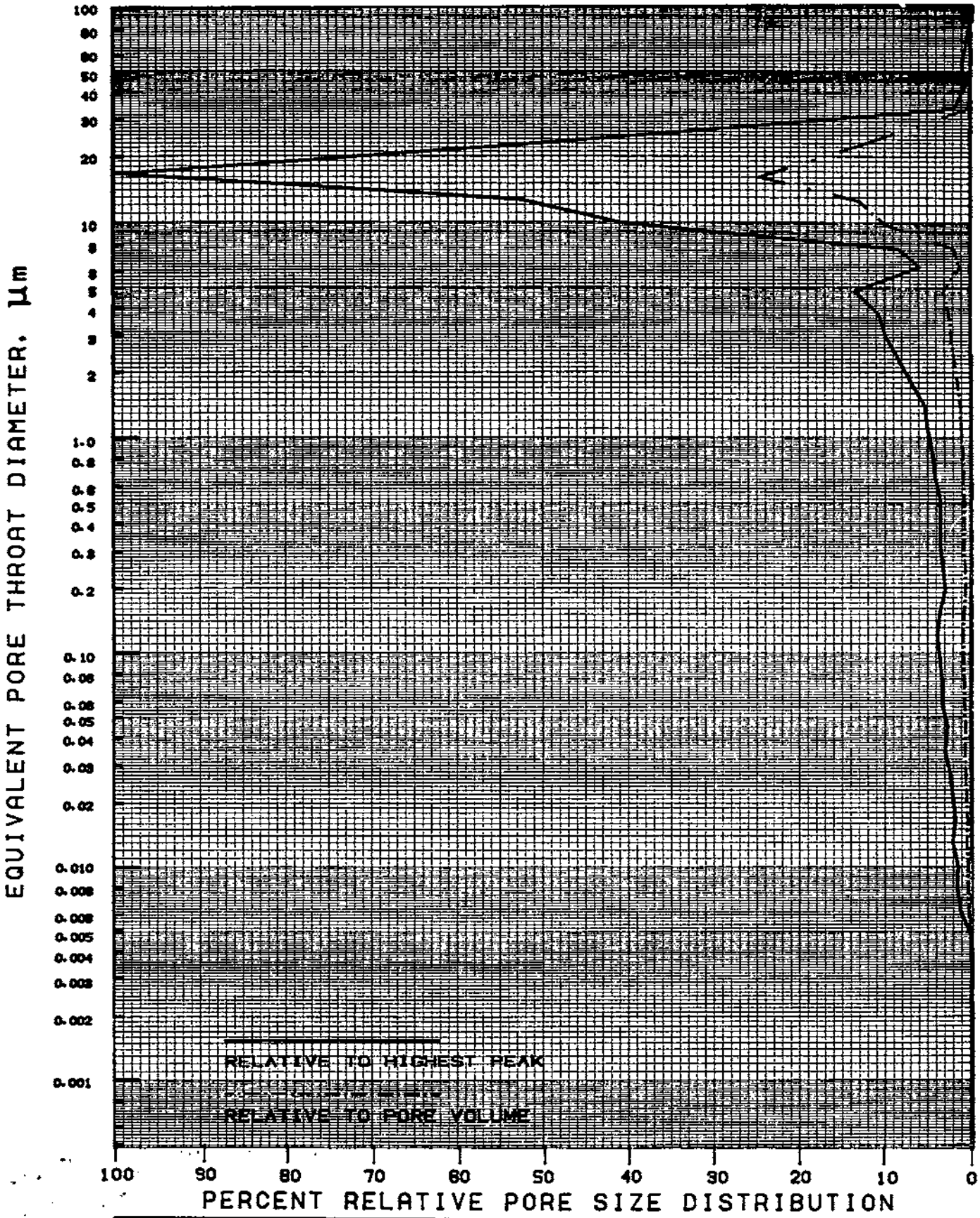
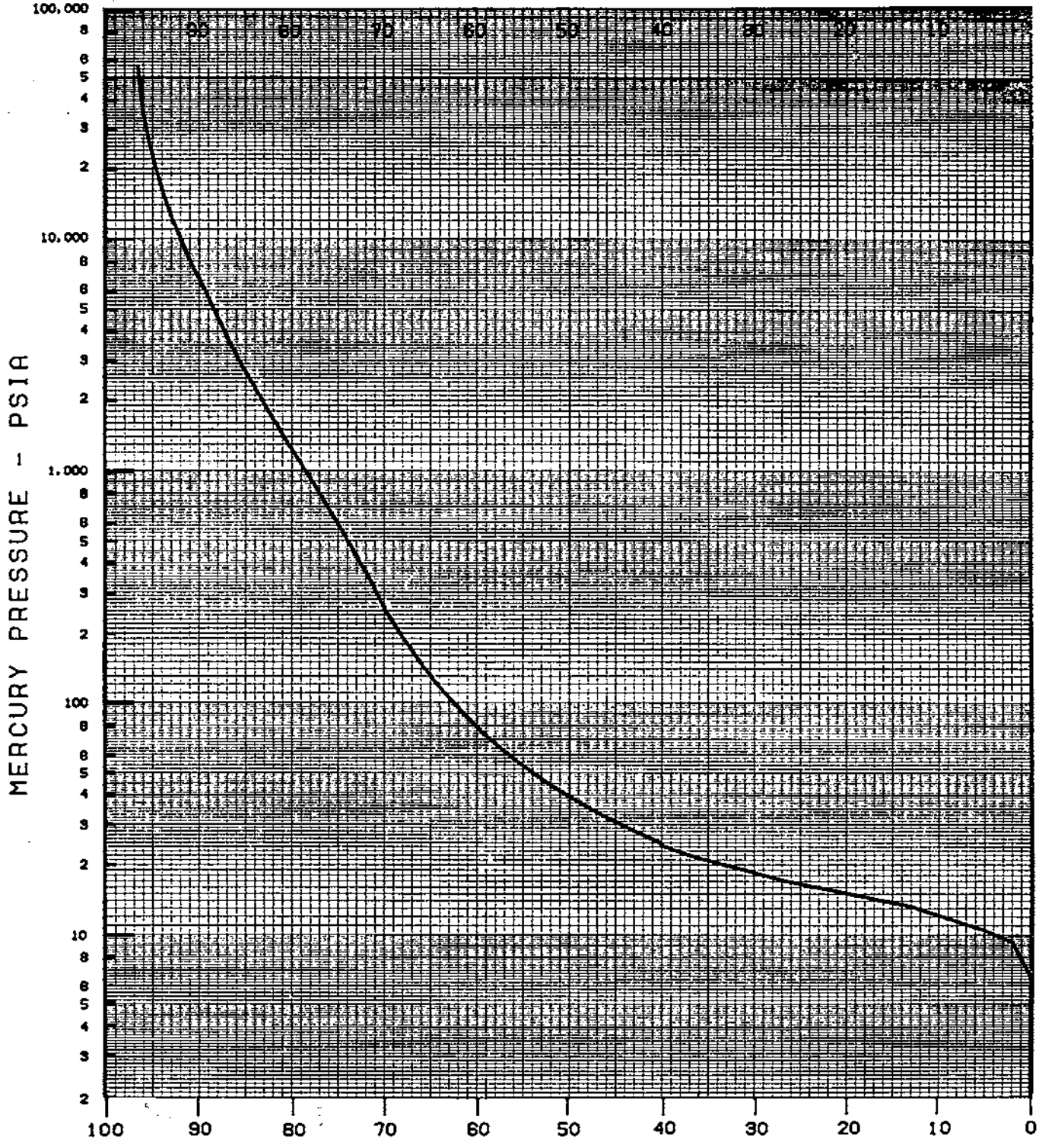
BELRIDGE N

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION



SAMPLE NO.	: 4	LEASE	:
DEPTH	: 5977' 8"	WELL NO.	: 43-27
DATE	: DECEMBER 14, 1985	FIELD	: NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



DATE	:DECEMBER 14, 1985	MEASURED VALUES	
COMPANY	:SHELL CA. PROD. INC.	ϕ	= 23.7 %
LEASE	:	K_a	= 180 MD
WELL NO.	:43-27	G.D.	= 2.844 GMS/CC
FIELD	:NORTH BELRIDGE	VALUES EST. FROM CURVE	
STATE	:CALIFORNIA	ϕ	= 23.3 %
		$K_{w\text{-est}}$	= 58.5 MD
DEPTH	:5782' 0"	$K_{a\text{-est}}$	= 80.4 MD
SAMPLE NO.	:3	G.D. est	=

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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR

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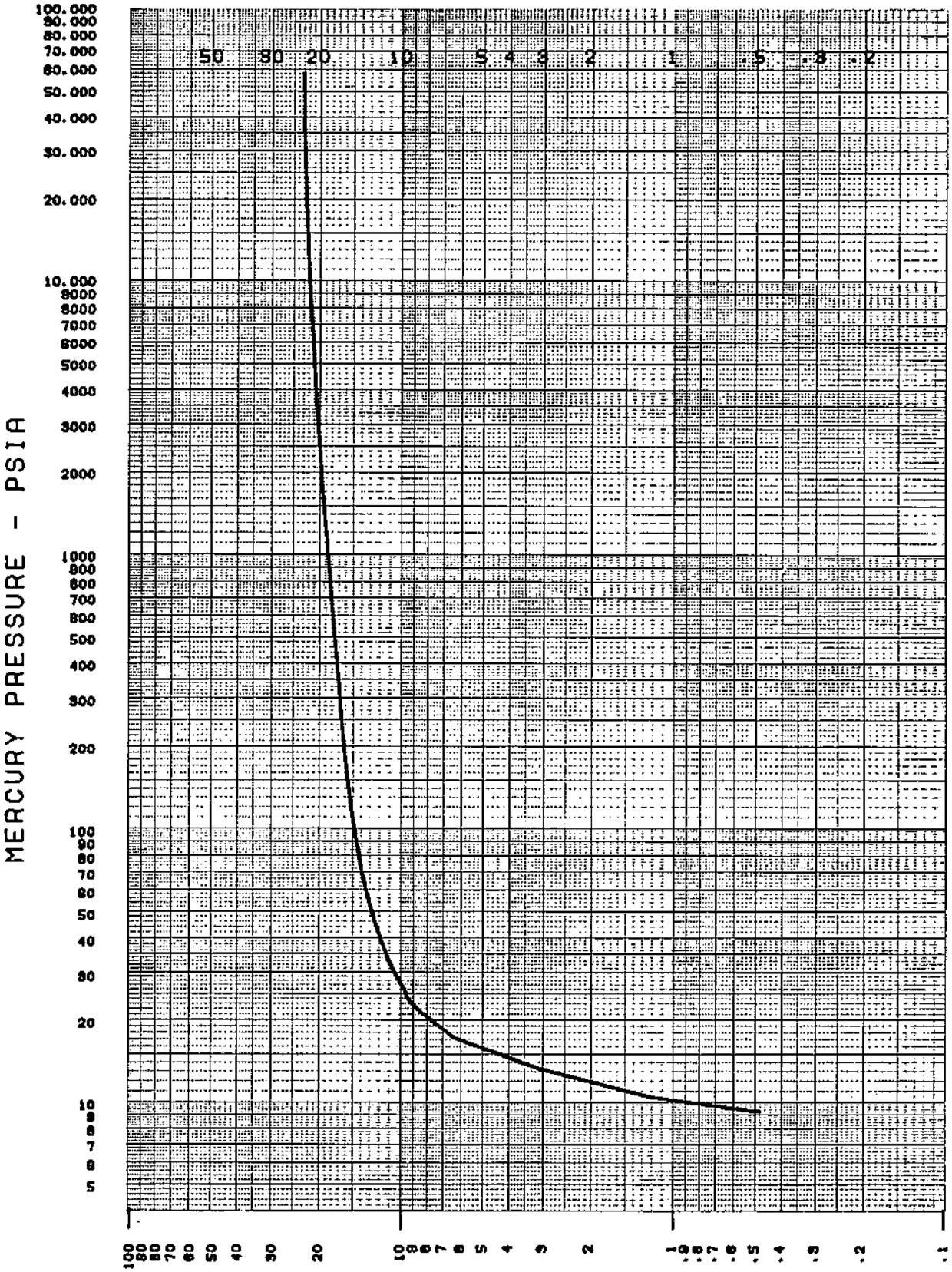
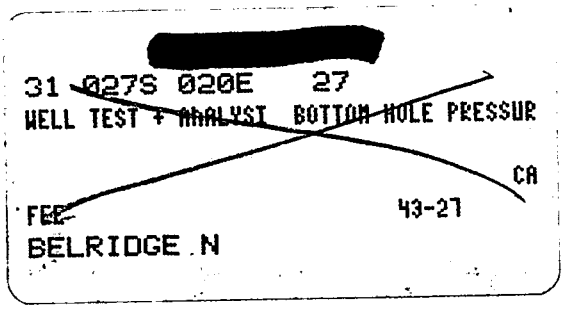
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



SAMPLE NO.	:3	LEASE	:
DEPTH	:5782' 0"	WELL NO.	:43-27
DATE	:DECEMBER 14, 1985	FIELD	:NORTH BELRIDGE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WELL TEST + ANALYST BOTTOM HOLE PRESSUR
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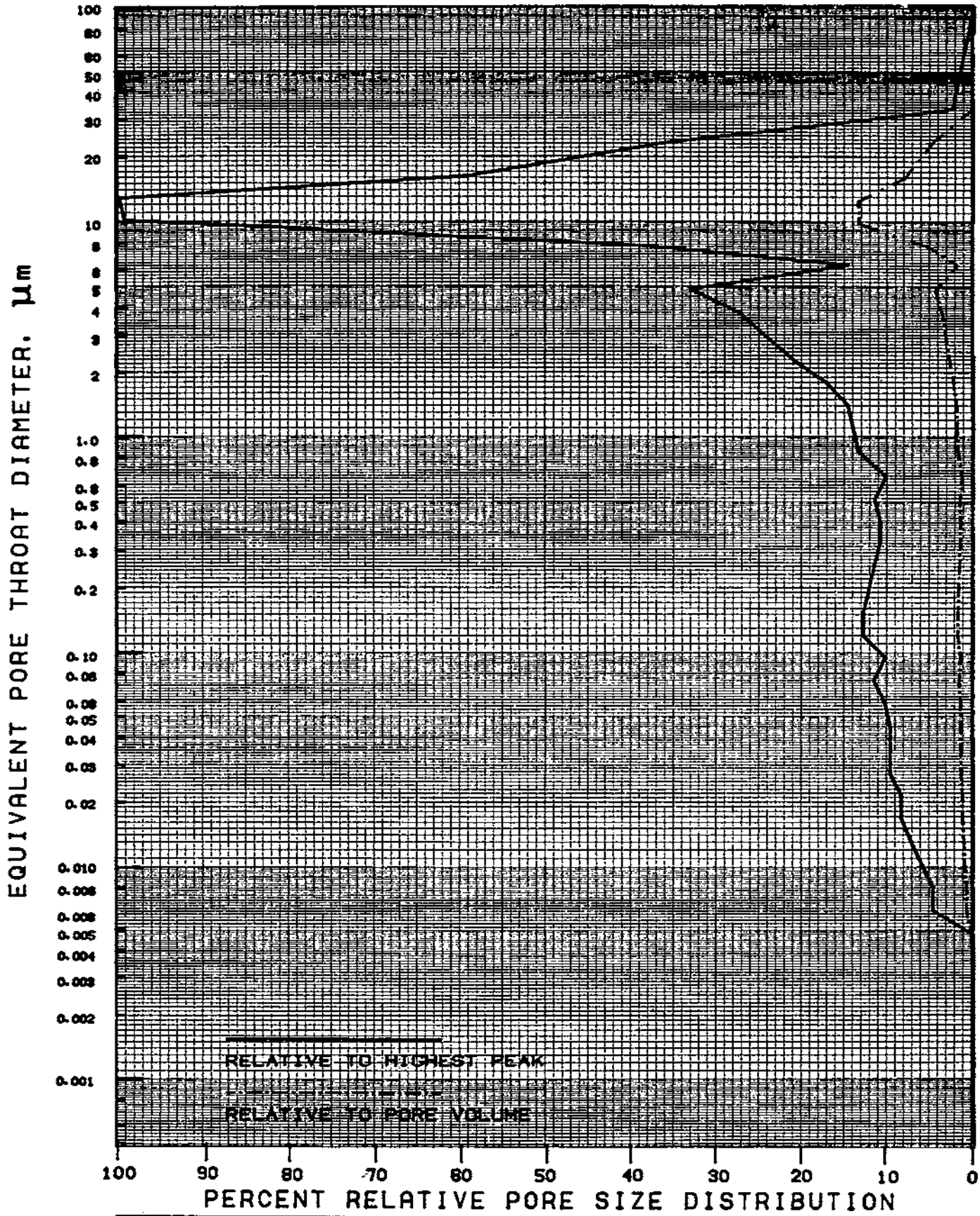
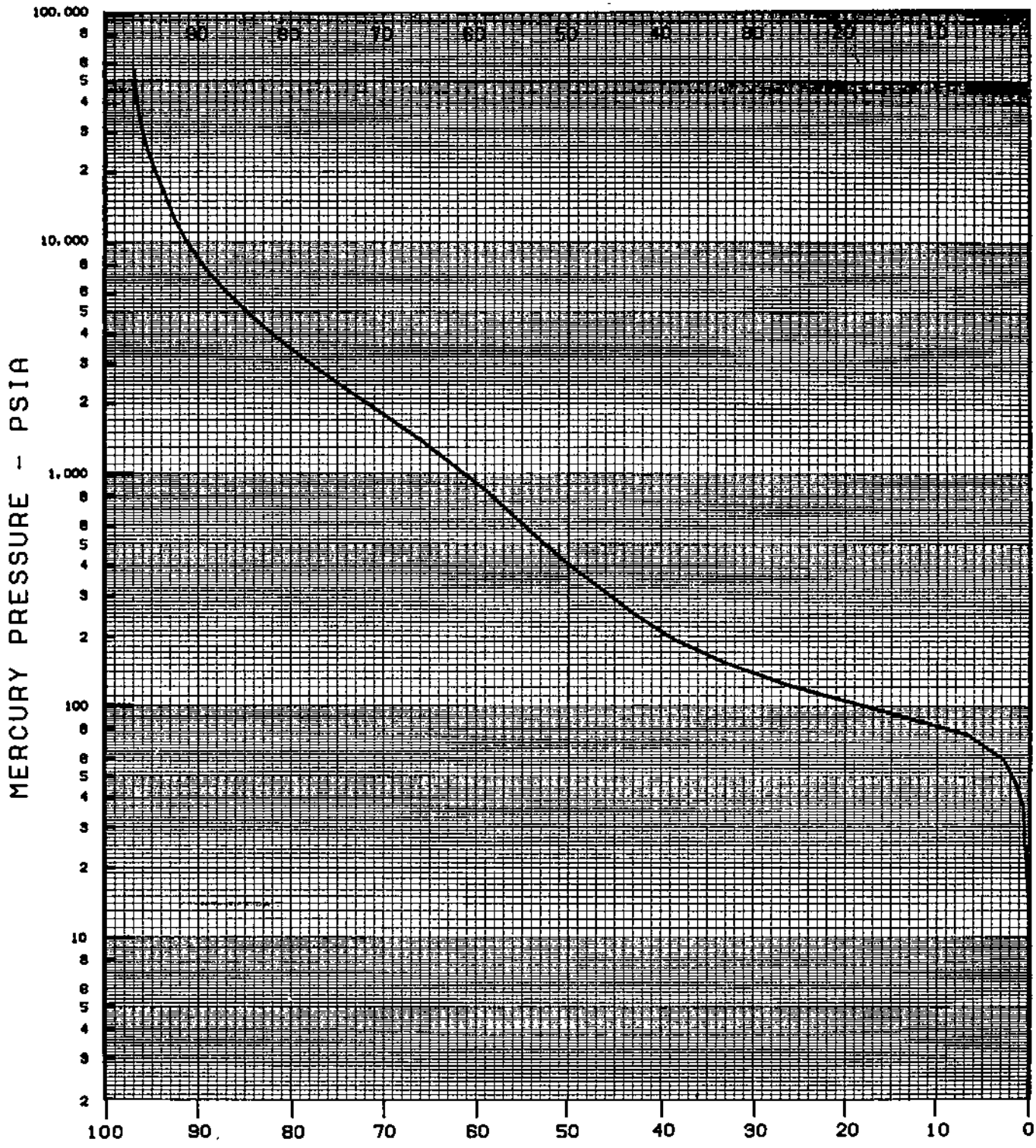
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION



SAMPLE NO.	:3	LEASE	:
DEPTH	:5782' Ø"	WELL NO.	:43-27
DATE	:DECEMBER 14, 1985	FIELD	:NORTH BELRIDGE

SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



DATE	:DECEMBER 14, 1985	MEASURED VALUES
COMPANY	:SHELL CA. PROD. INC.	ϕ = 21.1 %
LEASE	:	K_a = 2.1 MD
WELL NO.	:43-27	G.D.= 2.645 GMS/CC
FIELD	:NORTH BELRIDGE	VALUES EST. FROM CURVE
STATE	:CALIFORNIA	ϕ =20.9 %
		K_w-est =.6 MD
DEPTH	:5709' 0"	K_a-est =2 MD
SAMPLE NO.	:2	G.D. est =

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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR

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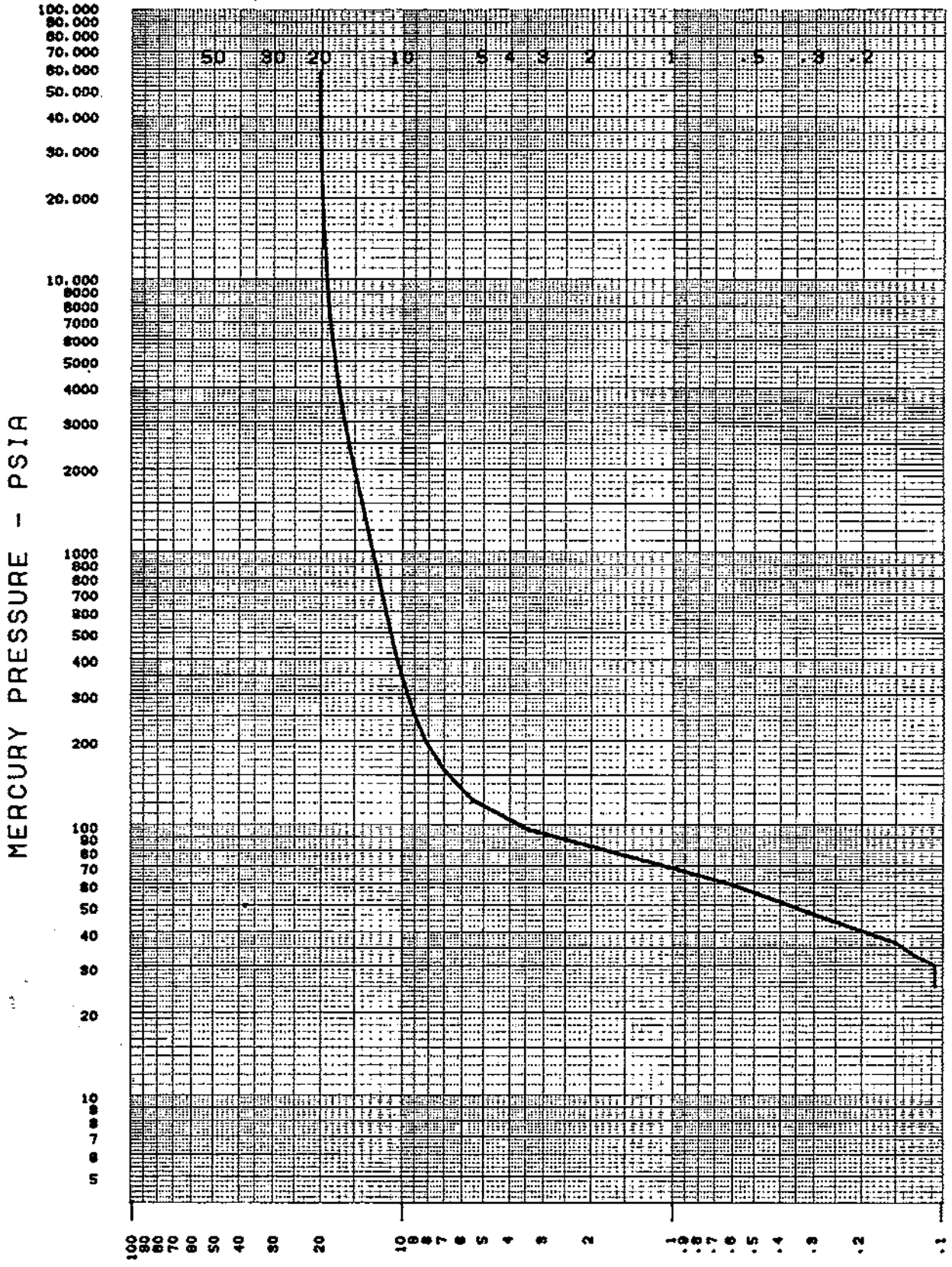
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
MERCURY CAPILLARY PRESSURE DATA



SAMPLE NO.	:2	LEASE	:
DEPTH	:5709' 0"	WELL NO.	:43-27
DATE	:DECEMBER 14, 1985	FIELD	:NORTH BELRIDGE

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WELL TEST + ANALYSI BOTTOM HOLE PRESSUR

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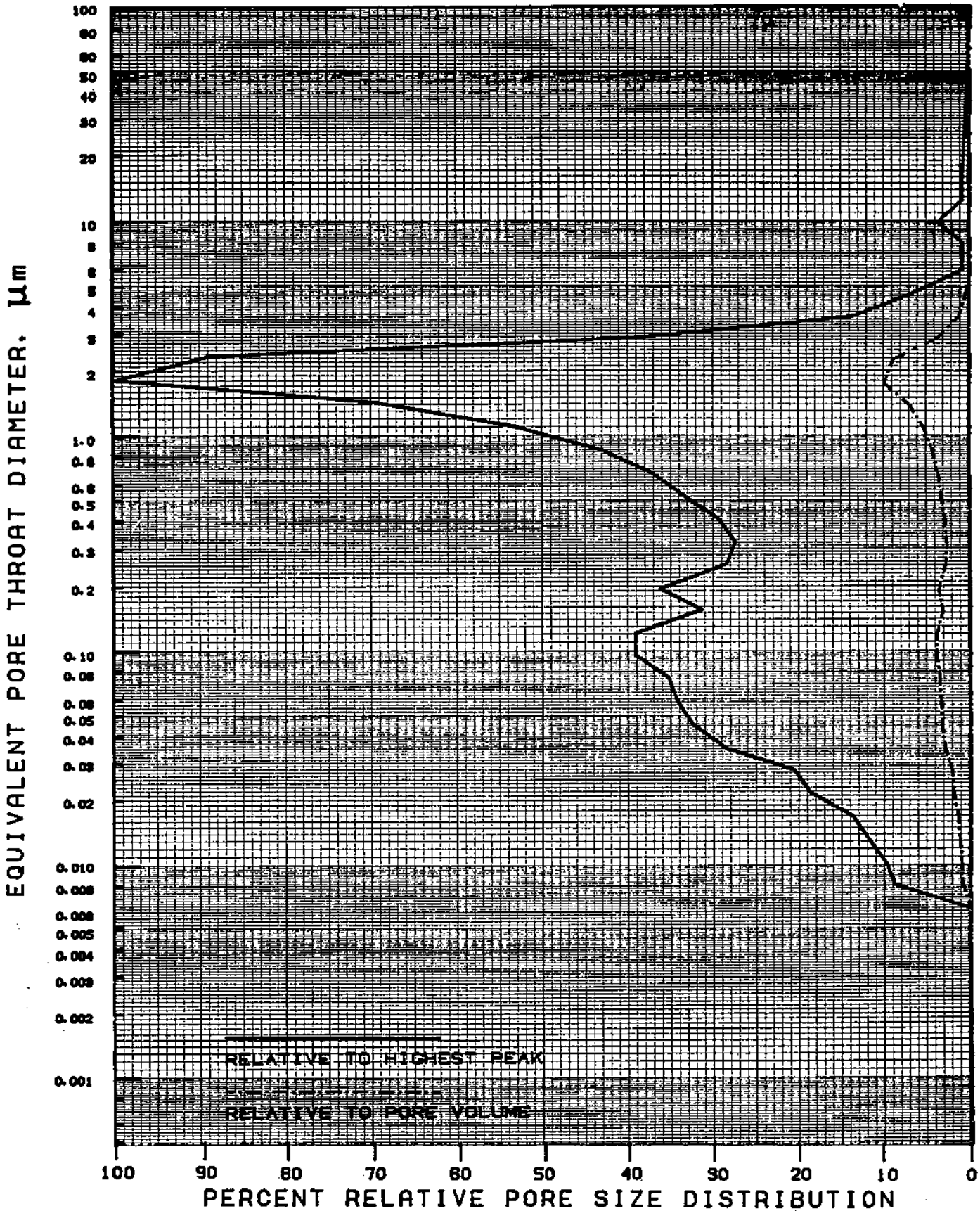
SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION



SAMPLE NO.	: 2	LEASE	:
DEPTH	: 5709' 0"	WELL NO.	: 49-27
DATE	: DECEMBER 14, 1985	FIELD	: NORTH BELRIDGE

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WELL TEST + ANALYSI CORE/CAPILLARY PRES

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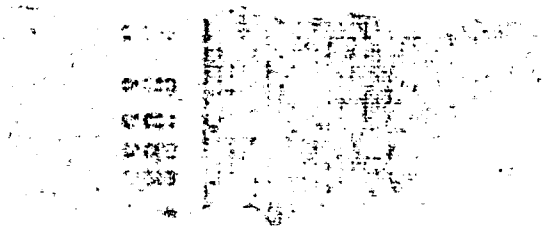
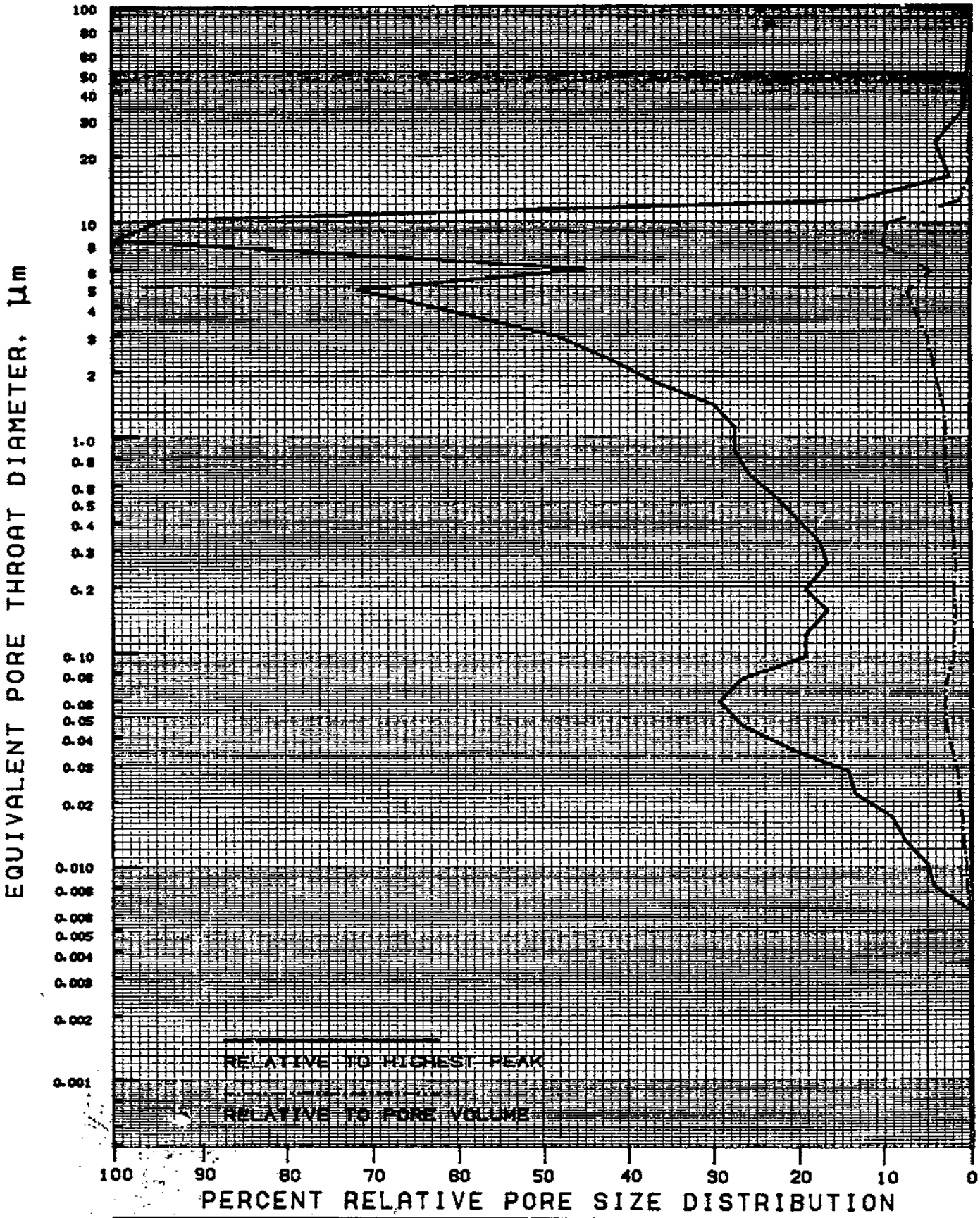


SHELL DEVELOPMENT COMPANY
PETROPHYSICAL SERVICES LABORATORY
PORE SIZE DISTRIBUTION



SAMPLE NO.	: 1	LEASE	:
DEPTH	: 5702' Ø"	WELL NO.	: 43-27
DATE	: DECEMBER 14, 1985	FIELD	: NORTH BELRIDGE

SEP 18 2009

Well Name:	43-27	Coding date:	01/00/1900
Well UWI:	402975126	This sheet coded by:	Lester Carcamo
Sec-Twp-Rge:	27T27SR20E	Vendor:	Shell Development Company
Central Files Barcode:	8000031989	Vendor file number	
Report Title:	PETROPHYSICAL CORE ANALYSIS	Report Date:	12/13/1985
		ANOTATED	NO

	Sample Type	Reservoir: a, b, c, d, e.
X	Conventional-Plug	Temblor
	Conventional-Whole	
	Sidewall	
	Cuttings	
	Mudlog Sample	
	Produced	Top Depth
	Surface	5701
	Geological Outcrop	Bottom Depth
	Other	9687

	Data containers Information	Scan Requested
	LIVE-LINK	
	Core DB	Y
	OpenWorks	Notes
	Binders	
	R:drive	
	LAS file	
	Ambient Pressure	
X	Stressed Pressure	

Check all pertaining to each report - submit sheet for each report

	Core Report Type	Core Report Subtype
	Routine Analysis	Description-UV Light
	Routine Analysis	Photography-White/UV
X	Routine Analysis	Density-Grain
	Routine Analysis	Routine Analysis - Other
X	Routine Analysis	Porosity-Other
	Routine Analysis	Natural-Spectral Gamma Ray
X	Routine Analysis	Permeability-Air
	Routine Analysis	Density-Matrix
	Routine Analysis	Fluid Saturation-PKS
	Routine Analysis	Sieve Analysis
	Routine Analysis	Description-Lithological

	Core Report Type	Core Report Subtype
	Petrophysical-Flow Study	Heat Transfer Coefficient
	Petrophysical-Flow Study	Fines Migration-Mobilization Velocity
	Petrophysical-Flow Study	Petrophysical-Flow Study - Other
	Petrophysical-Flow Study	Permeability-Oil
	Petrophysical-Flow Study	Rock Pore Preferred Wettability
	Petrophysical-Flow Study	Permeability-Toluene
	Petrophysical-Flow Study	Relative Permeability
	Petrophysical-Flow Study	Permeability-Brine
	Petrophysical-Flow Study	Permeability-Vertical
	Petrophysical-Flow Study	Permeability-Water

	Petrophysical	Formation Resistivity Factor
	Petrophysical	Cementation Factor
	Petrophysical	Luminosity Analysis
	Petrophysical	Oil Viscosity
	Petrophysical	Petrophysical - Other
	Petrophysical	Saturation Exponent
	Petrophysical	Tortuosity
	Petrophysical	Formation Resistivity Index
	Petrophysical	Model Evaluation
	Petrophysical	Oil Gravity-Density
	Petrophysical	Oil Pyrolysis
	Petrophysical	Formation Water Resistivity
	Petrophysical	Matrix Neutron Index
	Petrophysical	Oil Chromatography
	Petrophysical	Bulk PEF
	Petrophysical	CAT Scan
X	Petrophysical	Mercury Injection
X	Petrophysical	Capillary Pressure Analysis
	petrophysical	Cation Exchange Capacity
	Petrophysical	NMR Analysis
	Petrophysical	Pore Throat Analysis

	Geochemistry	Geochemistry - Other
	Geochemistry	Formation Water-Brine Chemical
	Geological Service	Description-Petrographic
	Geological Service	Formation-Rock Unit Identification
	Geological Service	Rock Age
	Geological Service	Mineralogy-XRD/FTIR
	Geological Service	Geological Service - Other
	Geological Service	Photography-Infra Red
	Geological Service	Paleontological Analysis
	Geological Service	Box Report
	Geological Service	Thin Section
	Geological Service	Description-Field Engineer Report
	Geological Service	Hydralic Unit Analysis
	Geological Service	Scanning Electron Microscopy

	Reservoir Fluid	Steamflood Analysis
	Reservoir Fluid	Produced Gas Analysis
	Reservoir Fluid	Reservoir Fluid - Other
	Reservoir Fluid	Produced Water Analysis
	Reservoir Fluid	Produced Oil Analysis
	Rock Mechanics	Rock Mechanics - Other
	Rock Mechanics	Rock Acoustic Velocity
	Rock Mechanics	Surface Area Per Unit Volume
	Rock Mechanics	Rock Compressibility Analysis
	Other	Other

Lester Carcamo 07/23/2009

SHELL CALIFORNIA PRODUCTION

SCPI WELL 43-27

cores 5-9

ANNOTATED

AUG 24 2010

Performed by:

Petrophysical Services
1500 Salado Drive
Mountain View, CA 94043
(415) 960-0964

Approved by: _____ for

Dr. Carol Tosaya
Director, Laboratory

August 1985

382/8I

PROCEDURES

The refrigerated whole core was received and gamma scanned. The gamma scan data appears as Figure 1.

Next the core was slabbed 1/3 to 2/3. The 1/3 slab was photographed in color and UV light. Horizontal 1-inch diameter plugs were taken from the 2/3 slab at 1-foot intervals. Fluid saturation by the Dean-Stark technique, helium porosity, and gas permeability were measured on each sample. These data are presented in Table 1. Oil content was calculated as the difference in preserved and dry weight minus the weight of water removed in the Dean-Stark apparatus. It is presented as a volume percent saturation in Table 1 assuming a specific gravity of 0.85 for the oil.

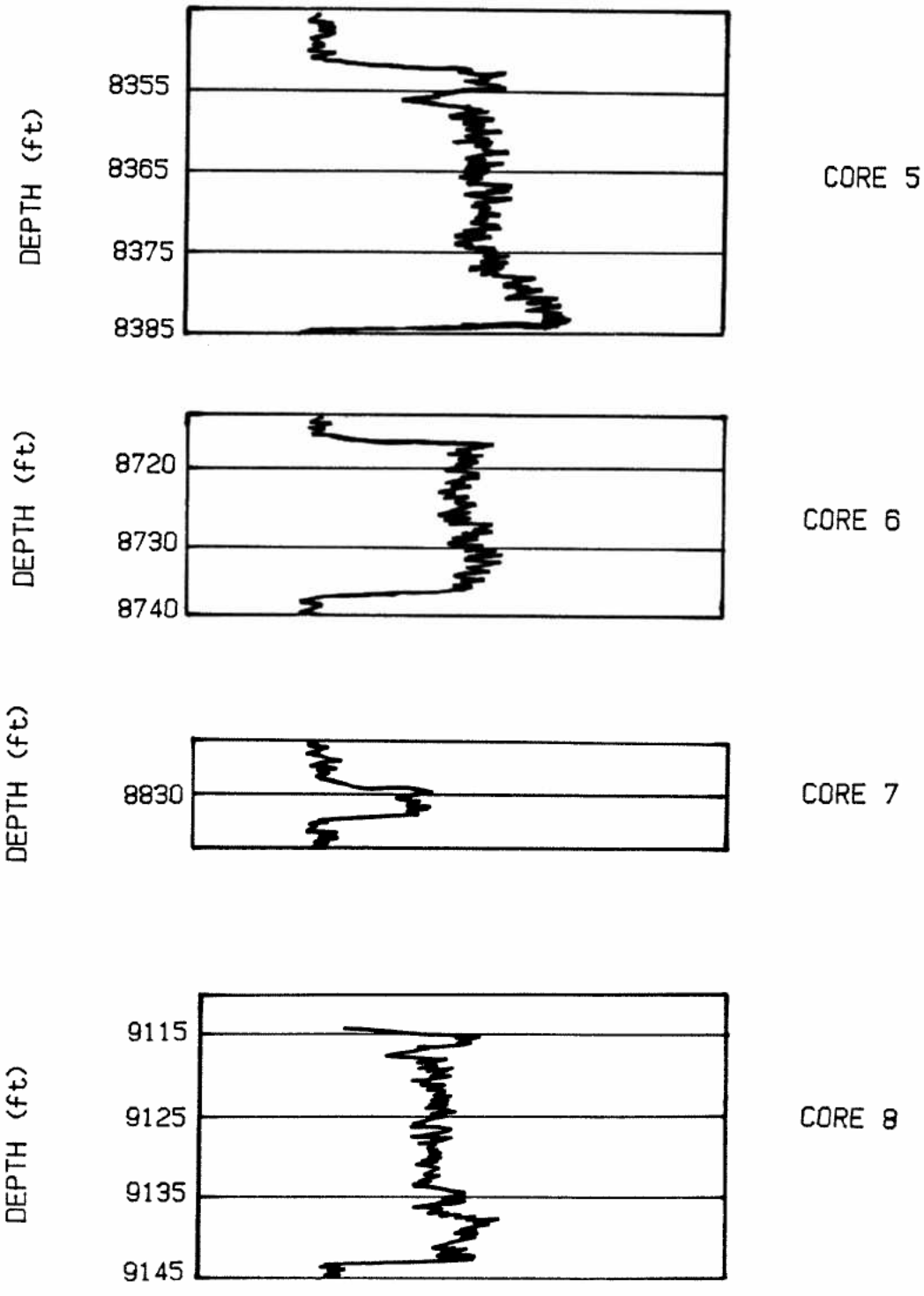
Gas permeability at elevated pressure, liquid pore volume compressibility, and CEC were measured on selected samples. These data are presented in Tables 2, 3, and 4. All permeabilities in this report were measured by a transient technique with helium. The values given are the Klinkenberg permeabilities at effectively infinite pore pressure.

Pore volume compressibility was measured on samples saturated with 4.0 weight-percent NaCl.

CEC values were determined by the ammonium acetate method.

Photographs are provided in a separate volume.

GAMMA SCAN


DEPTH (ft)
8355
8365
8375
8385
CORE 5
DEPTH (ft)
8720
8730
8740
CORE 6
DEPTH (ft)
8830
CORE 7
DEPTH (ft)
9115
9125
9135
9145
CORE 8

PETROPHYSICAL PROPERTIES OF THE SAMPLES
TABLE 1.a

SAMPLE DEPTH (ft)	HELIUM POROSITY	GRAIN DENSITY (g/cc)	k-gas (mD)	Sw	So	
8353.3	0.1274	2.643	0.128	0.76	0.08	
8354.0	0.1414	2.645	0.298	0.63	0.07	
8355.0	0.1309	2.639	0.161	0.68	0.08	
8356.2	0.1341	2.644	0.792	0.71	0.03	
8357.2	0.1231	2.639	2.480	0.71	0.00	
8358.0	0.1406	2.645	10.500	0.74	0.00	TS SEM
8359.0	0.1372	2.645	0.475	0.59	0.13	
8360.0	0.1390	2.641	0.726	0.61	0.12	
8361.0	0.1359	2.646	0.268	0.70	0.08	
8362.0	0.1327	2.643	0.266	0.67	0.07	
8363.0	0.1298	2.643	0.184	0.64	0.11	
8364.0	0.1332	2.645	0.250	0.64	0.08	
8365.0	0.1385	2.651	0.273	0.63	0.12	
8366.0	0.1310	2.640	0.241	0.66	0.11	TS
8367.0	0.1372	2.641	0.230	0.61	0.14	
8368.0	0.1275	2.649	0.641	0.70	0.15	
8369.0	0.1345	2.641	0.357	0.64	0.11	
8370.0	0.1366	2.640	0.481	0.73	0.05	
8371.0	0.1364	2.648	0.252	0.68	0.14	
8372.0	0.1327	2.642	0.358	0.68	0.08	
8373.0	0.1310	2.643	0.266	0.72	0.06	
8374.0	0.1281	2.639	0.175	0.82	0.00	
8375.0	0.1340	2.645	0.305	0.74	0.09	
8376.0	0.1263	2.634	0.265	0.74	0.09	
8377.0	0.1292	2.638	0.142	0.73	0.13	
8378.0	0.1298	2.639	0.176	0.75	0.09	
8379.0	0.1310	2.636	0.180	0.75	0.10	
8380.0	0.1261	2.636	0.092	0.81	0.09	
8381.0	0.1201	2.635	0.093	0.78	0.14	
8382.0	0.1142	2.636	0.082	0.82	0.11	
8383.0	0.1059	2.626	0.090	0.87	0.08	
8717.0	0.1242	2.636	1.150	0.58	0.12	
8718.0	0.1408	2.629	6.880	0.57	0.11	TS SEM
8719.0	0.1011	2.635	0.096	0.73	0.06	
8720.0	0.1010	2.645	0.088	0.73	0.10	

Core # 5

R Sand

Core # 6

PETROPHYSICAL PROPERTIES OF THE SAMPLE
TABLE 1.b

SAMPLE DEPTH (ft)	HELIUM POROSITY	GRAIN DENSITY (g/cc)	k-gas (mD)	Sw	So	
8721.0	0.0922	2.665	0.048	0.71	0.07	
8722.0	0.0906	2.654	0.048	0.81	0.07	
8723.0	0.0957	2.651	0.038	0.84	0.05	
8724.0	0.1142	2.652	0.086	0.74	0.08	
8725.0	0.1301	2.640	0.133	0.73	0.07	
8726.0	0.1313	2.638	0.348	0.62	0.12	
8727.0	0.1482	2.633	0.201	0.69	0.09	
8728.0	0.1481	2.632	0.174	0.74	0.07	TS SEM
8729.0	0.1463	2.635	0.185	0.78	0.08	
8730.0	0.1449	2.633	0.154	0.75	0.06	
8731.0	0.1482	2.632	0.135	0.80	0.05	
8732.2	0.1513	2.641	0.158	0.82	0.00	
8733.0	0.1523	2.638	0.162	0.80	0.06	
8734.0	0.1633	2.661	0.311	0.74	0.06	
8735.0	0.1528	2.643	0.129	0.71	0.06	
8829.3	0.1122	2.628	4.100	0.50	0.25	
8829.9	0.1126	2.626	4.090	0.48	0.23	TS SEM
8830.9	0.1052	2.626	2.540	0.43	0.22	
8832.0	0.1223	2.629	11.100	0.45	0.24	TS SEM
9115.0	0.1292	2.633	0.132	0.68	0.13	
9116.0	0.1355	2.632	0.197	0.69	0.11	TS SEM
9117.0	0.1329	2.626	0.307	0.71	0.05	
9118.0	0.1308	2.639	0.520	0.61	0.13	
9119.0	0.1357	2.623	0.626	0.64	0.11	TS SEM
9120.0	0.1339	2.620	0.374	0.64	0.08	
9121.0	0.1297	2.634	0.257	0.67	0.06	
9122.0	0.1285	2.620	0.292	0.68	0.07	
9123.0	0.1349	2.625	0.374	0.62	0.06	
9124.0	0.1292	2.633	0.277	0.65	0.05	
9125.0	0.1258	2.624	0.283	0.68	0.07	
9126.0	0.1284	2.624	0.296	0.68	0.06	
9127.0	0.1261	2.626	0.294	0.65	0.06	
9128.0	0.1224	2.622	0.314	0.66	0.06	
9129.0	0.1230	2.629	0.301	0.66	0.06	
9130.0	0.1222	2.630	0.328	0.63	0.10	TS SEM

U Sand (Upper 64)

Core #6

(Lower 64) Core #7 W Sand

Core #8

W Sand (Lower 64)

PETROPHYSICAL PROPERTIES OF THE SAMPLES
TABLE 1.c

	SAMPLE DEPTH	HELIUM POROSITY	GRAIN DENSITY	k-gas (mD)	Sw	So	
	9131.0	0.1218	2.625	0.3470	0.66	0.06	
	9132.0	0.1222	2.624	0.3010	0.64	0.09	
	9133.0	0.1255	2.627	0.2690	0.65	0.08	
Core	9134.0	0.1314	2.633	0.2530	0.62	0.06	
#8	9135.0	0.1278	2.629	0.2330	0.63	0.09	
	9136.0	0.1196	2.632	0.2140	0.63	0.09	
	9137.0	0.0581	2.650	0.0485	0.74	0.24	
	9138.0	0.0938	2.641	0.0565	0.80	0.12	TS SEM
	9139.0	0.0945	2.642	0.0650	0.76	0.24 *	
	9140.0	0.0991	2.636	0.1110	0.66	0.34 *	
	9141.0	0.1079	2.630	0.0685	0.78	0.22 *	
	9674.1	0.0602	2.754	12.7000	0.48	0.09	
	9675.0	0.0385	2.745	0.0699	0.50	0.14	TS SEM
	9675.9	0.0439	2.783	0.1200	0.49	0.15	
Core	9677.0	0.0373	2.729	0.0970	0.49	0.06	
#9	9678.1	0.0633	2.750	0.6200	0.39	0.04	
	9679.0	0.0624	2.666	0.4030	0.50	0.10	TS SEM
	9680.0	0.0420	2.656	0.1350	0.61	0.09	
	9681.0	0.0811	2.660	0.6240	0.46	0.13	TS SEM
	9682.0	0.0892	2.641	0.4490	0.44	0.22	
Y Sand	9683.0	0.0810	2.639	0.4240	0.47	0.23	
	9684.0	0.0745	2.640	0.3820	0.53	0.14	
	9685.0	0.0852	2.640	0.6680	0.53	0.10	
	9686.0	0.0890	2.643	0.7890	0.54	0.07	
	9687.0	0.1078	2.637	0.6030	0.56	0.08	
	9687.9	0.1103	2.637	1.0600	0.55	0.11	TS SEM
	9689.0	0.1083	2.637	0.7840	0.59	0.08	
	9690.0	0.1130	2.635	0.6110	0.56	0.11	
	9691.0	0.1112	2.636	0.8020	0.60	0.08	
	9692.0	0.1101	2.641	1.2000	0.53	0.12	
	9693.0	0.1118	2.642	0.5720	0.54	0.13	
	9694.0	0.1083	2.638	0.6900	0.49	0.22	
	9695.0	0.1309	2.650	0.7550	0.47	0.19	TS SEM

* The samples experienced a weight loss which based on a fluid specific gravity of 0.85, results in a calculated value of So greater than 1-Sw. The So values listed have be constrained such that Sw + So = 1.00

Table 2. Porosity at Elevated Confining Pressure

Depth (ft)	Porosity	
	Ambient	P_c = 5000/P_p = 1500 psi
5702	.2535	.2465
5969	.2614	.2542

Table 3. Permeability at Elevated Confining Pressure

Depth (ft)	Gas Permeability (mD)	
	P_c = 500	P_c = 3500
5702	24.9	17.4
5709	1.83	0.76
5779	452.0	414.0
5960	28.9	25.0
5969	113.0	101.0
6049	27.5	24.9

Table 4. Cation Exchange Capacity

Depth (ft)	CEC (meq/100 gms)
5702	4.1
5709	7.0
5779	1.7
5960	2.4
5969	1.8
6049	4.8
8366	2.2
8718	4.1
8728	4.3
8830	1.3
8832	1.0
9117	2.5
9130	3.6
9138	6.4

Standards (Clay Mineral Society)	Standard Value	Measured Value
STX-1	84.4	82-92
KGA-1	2.0	3.6-4.8

Shell Development Company
A Division of Shell Oil Company

Bellaire Research Center
P. O. Box 481
Houston, Texas 77001

3737 Bellaire Boulevard
Houston, Texas 77025

September 10, 1985

Mr. M. A. Kopacz, Mgr. Geology
Rocky Mountain Division
Shell Western E&P Inc.
P. O. Box 576
Houston, TX 77001

Dear Mr. Kopacz:

SCPI, NO. 43X-27, KERN CO., CALIFORNIA

Pursuant to research agreements between our companies, we transmit the results of geochemical analyses on the subject well, as requested by M. Tynan. We are including copies of the report for distribution within your organization.

Very truly yours,

A N Fuller

For: D. G. Nussmann
Manager Geology

ANF/smj

Attachment

8000031990
Test & Analysis
0402975126
North Belridge
27 T27S R20E
43-27



DATE: September 10, 1985

SUBJECT: RICHNESS REPORT
SCPI, NO. 43X-27
API #04-029-75126-00
SEC. 27-T27S-R20E
N. BELRIDGE FIELD,
SAN JOAQUIN BASIN
KERN CO., CALIFORNIA

REQUESTOR: M. C. TYNAN

				PYROLYSIS FID ANALYSIS				ORGANIC CARBON
Depth, ft	Lab no.	Sample Type Lithology	Form/Age	D/P Ratio	Total HC Yield wt%	LOM	VRE	NCC wt %
2600-10	CAL-S-2093 F033541001	PD, med brnsh gry shale	Not Given	0.014	0.169	<11.0	<1.05	1.02
2940-70	CAL-S-2094 F033542001	", med brnsh gry-dk gry shale	"	0.015	0.283	<11.0	<1.05	1.17
3240-70	CAL-S-2095 F033543001	", "	"	0.008	0.520	<11.0	<1.05	1.69
3540-70	CAL-S-2096 F033544001	", "	"	0.004	0.583	<11.0	<1.05	2.04
3780-3810	CAL-S-2097 F033545001	", med brnsh gry-med gry (micro lam) shale	"	0.012	2.807	<11.0	<1.05	4.71
3780-3810	CAL-S-2098 F033546001	", lt gry to med brn micro lam (altered chert shale	"	0.027	1.811	<11.0	<1.05	3.00
4080-4110	CAL-S-2099 F033547001	", med dk-gry brn shale	"	0.014	2.726	<11.0	<1.05	5.14
4350-80	CAL-S-2100 F033548001	", med dk brn gry shale	"	0.024	3.107	<11.0	<1.05	5.10
4350-80	CAL-S-2101 F033549001	", lt gry-med brn micro lam shale w-cht	"	0.031	1.417	<11.0	<1.05	3.18

DATE: September 10, 1985

SUBJECT: RICHNESS REPORT
SCPI, NO. 43X-27
API #04-029-75126-00
SEC. 27-T27S-R20E
N. BELRIDGE FIELD,
SAN JOAQUIN BASIN
KERN CO., CALIFORNIA

REQUESTOR: M. C. TYNAN

				PYROLYSIS FID ANALYSIS				ORGANIC CARBON
Depth, ft	Lab no.	Sample Type Lithology	Form/Age	D/P Ratio	Total HC Yield wt%	LOM	VRE	NCC wt %
4380-4410	CAL-S-2102 F033550001	PD, med dk brn gry shale	Not Given	0.021	2.750	<11.0	<1.05	5.36
4380-4410	CAL-S-2103 F033551001	", lt gry-blk shale w-micro lam	"	0.035	1.664	<11.0	<1.05	3.00
4620-30	CAL-S-2104 F033552001	", med dk brn gry shale	"	0.015	3.289	<11.0	<1.05	5.75
4730-40	CAL-S-2105 F033553001	", med dk brn gry-dk gry shale	"	0.017	2.982	<11.0	<1.05	5.79
4810-20	CAL-S-2106 F033554001	", med dk brn gry-dk gry shale	"	0.027	5.881	<11.0	<1.05	7.84
5060-70	CAL-S-2107 F033555001	", "	"	0.023	3.030	<11.0	<1.05	4.61
5280-90	CAL-S-2108 F033556001	", "	"	0.033	3.222	<11.0	<1.05	4.47
5380-90	CAL-S-2109 F033557001	", dk gry-blk shale	"	0.041	2.694	<11.0	<1.05	5.02
5420-30	CAL-S-2110 F033558001	", "	"	0.035	1.974	<11.0	<1.05	4.42
5480-90	CAL-S-2111 F033559001	", "	"	0.037	2.520	<11.0	<1.05	4.88

DATE: September 10, 1985

SUBJECT: RICHNESS REPORT
SCPI, NO. 43X-27
API #04-029-75126-00
SEC. 27-T27S-R20E
N. BELRIDGE FIELD,
SAN JOAQUIN BASIN
KERN CO., CALIFORNIA

REQUESTOR: M. C. TYNAN

				PYROLYSIS FID ANALYSIS				ORGANIC CARBON
Depth, ft	Lab no.	Sample Type Lithology	Form/Age	D/P Ratio	Total HC Yield wt%	LOM	VRE	NCC wt %
5710-20	CAL-S-2112 F033560001	PD, dk gry blk shale	Not Given	0.028	0.849	<11.0	<1.05	2.68
5790-5800	F033561001	", "	"	0.034	1.064	<11.0	<1.05	-
5790-5800	CAL-S-2114 F033562001	", lt gry-blk micro lam shale w-(altered chert)	"	0.028	1.778	<11.0	<1.05	*2.6 2.4
6260-70	CAL-S-2115 F033563001	", med dk gry shale	"	0.046	0.520	<11.0	<1.05	2.49
6420-30	CAL-S-2116 F033564001	", dk gry-blk shale	"	0.040	1.588	<11.0	<1.05	3.07

REFER TO BRC REQUEST NOS.: 32102,32103,32104 and 32155.

*The sample was limited so that elemental carbon was run rather than NCC. The analysis was run on the leached sample baut the data reported are on the basis of the original sample. The leaching factor was 0.8866.

ANF/MLW/HSZ:smj

SAMPLE TYPE

CO = Core
PD = Picked Ditch

SHELL DEV. PYROLYSIS FID ANALYSIS

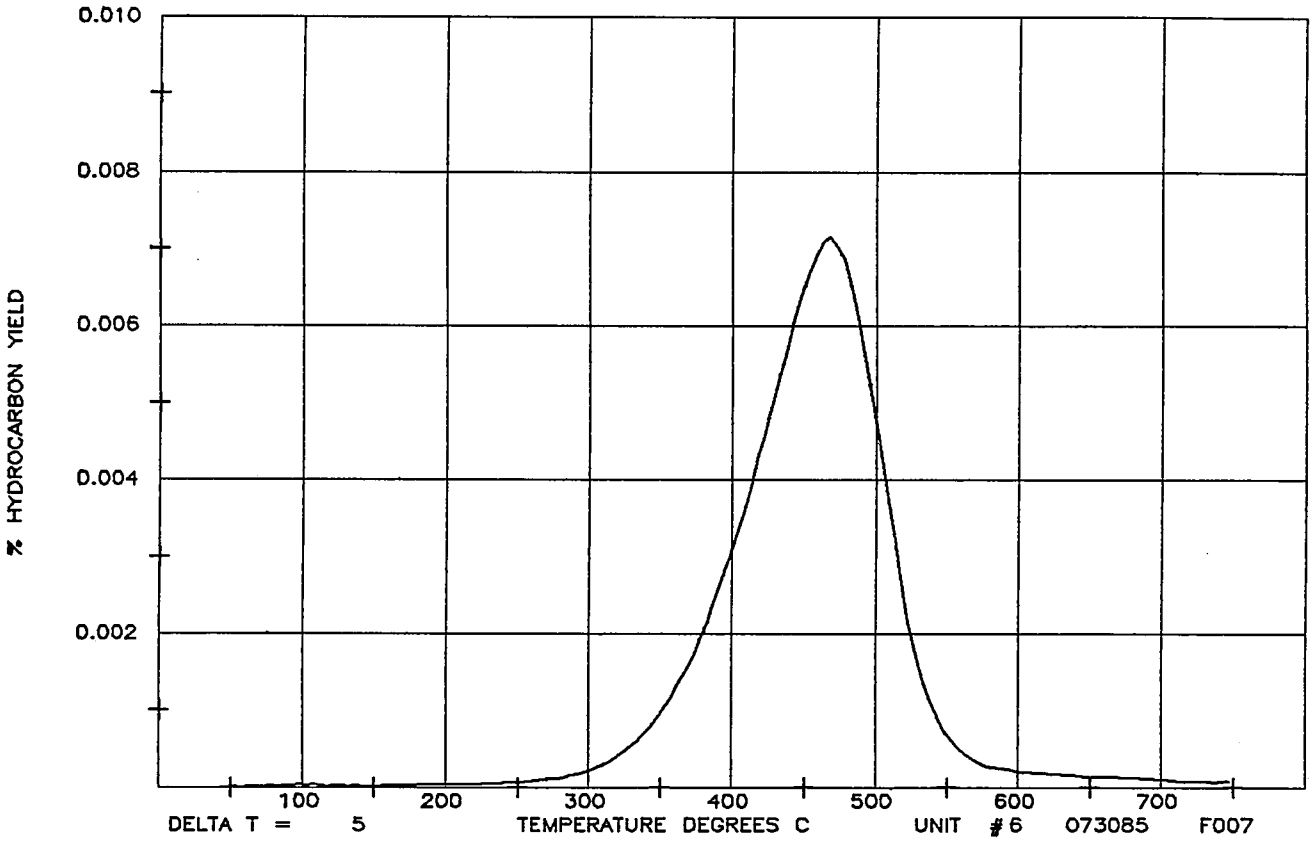
ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 02600.00 BOTTOM 02610.00 F

F033541001



CAL-S-2093 /PO$SHALE$ MED BRNISH GRY

HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.002	DIST.PEAK	0		
PYROLYZABLE (350-750C)	%	0.162	PYRO.PEAK 1	466	< 11.0	< 1.05
DIST./PYRO. RATIO		0.014				
PYRO./TOTAL HC RATIO		0.956				
YIELD 0-195 DEG. C	%	0.001				
YIELD 200-395 DEG. C	%	0.023				
YIELD 400+ DEG. C	%	0.146				
TOTAL HYDROCARBONS	%	0.169				

KEROGEN TYPING RESULTS

% LIPID 1	0.0
% LIPID 2	48.9
% HUMIC	51.1

PLFID VERSION 4.10

VMØ8 BR21GCS8 8/19/85 10:01:34 C.D.T. WAS THE ORIGIN**********

SHELL DEV. PYROLYSIS FID ANALYSIS

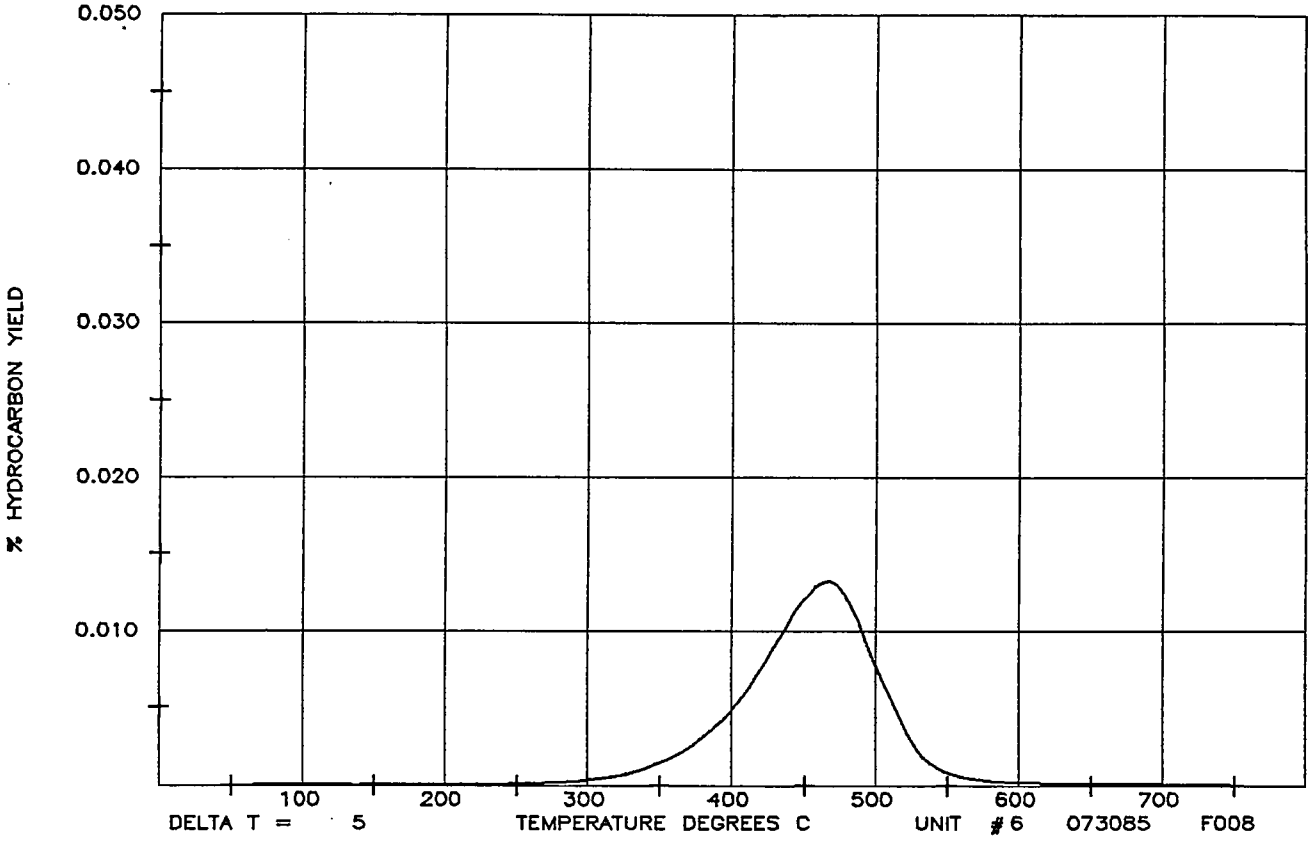
ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 02940.00 BOTTOM 02970.00 F

F033542001



CAL-S-2094 /PO$SHALE$ MED BRNSH GRY TO DRK GRY

HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.004	DIST.PEAK	0		
PYROLYZABLE (350-750C)	%	0.272	PYRO.PEAK 1	467	< 11.0	< 1.05
DIST./PYRO. RATIO		0.015				
PYRO./TOTAL HC RATIO		0.958				
YIELD 0-195 DEG. C	%	0.001				
YIELD 200-395 DEG. C	%	0.035				
YIELD 400+ DEG. C	%	0.247				
TOTAL HYDROCARBONS	%	0.283				

KEROGEN TYPING RESULTS

% LIPID 1	12.1
% LIPID 2	66.7
% HUMIC	21.3

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 03240.00 BOTTOM 03270.00 F

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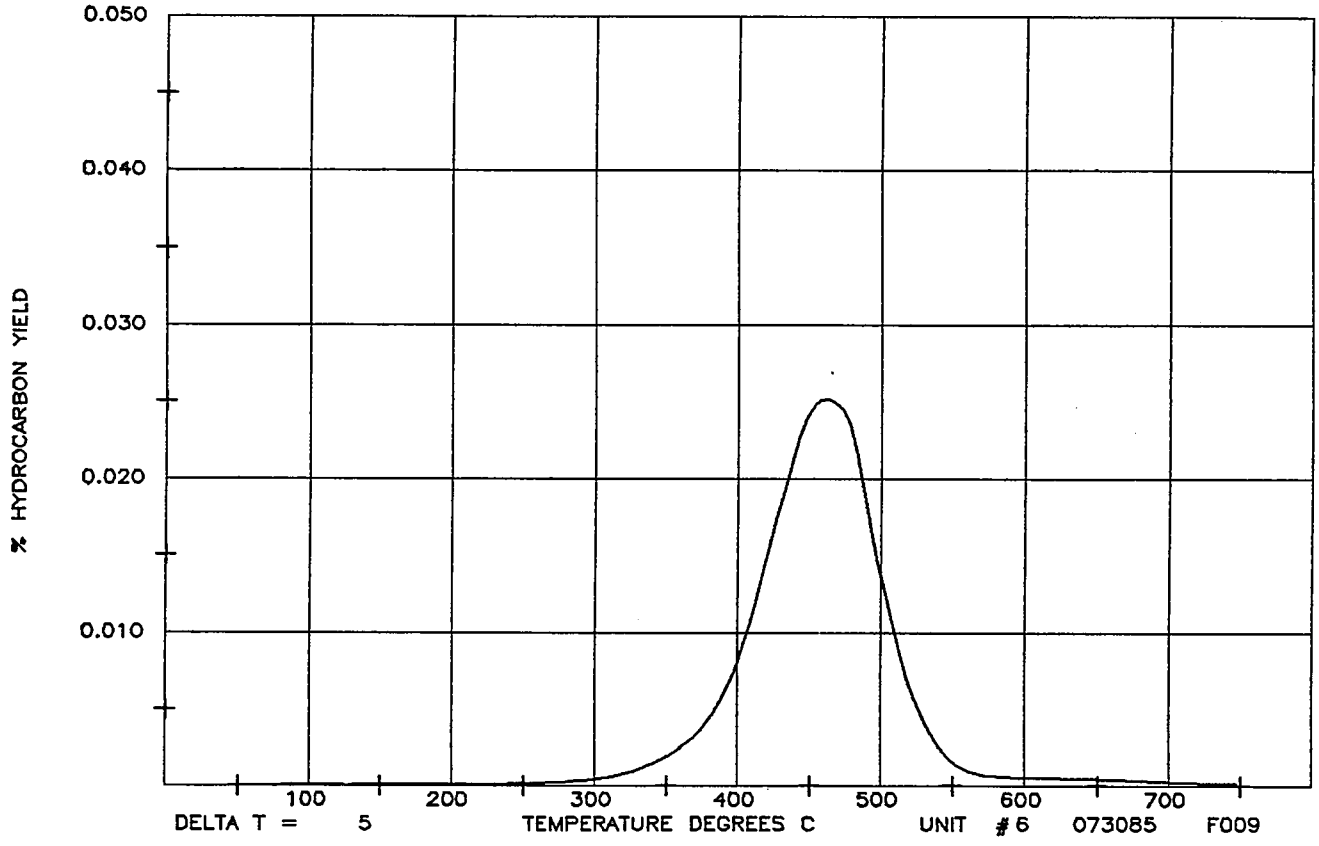


CAL-S-2095 /PO$SHALE$ MED BRNISH GRY TO DRK GRY

HYDROCARBON YIELD			PEAK	TEMP.DEG.C	LOM	VRE
DISTILLABLE (25-300C)	%	0.004	DIST.PEAK	0		
PYROLYZABLE (350-750C)	%	0.506	PYRO.PEAK 1	465	< 11.0	< 1.05
DIST./PYRO. RATIO		0.008				
PYRO./TOTAL HC RATIO		0.973				
YIELD 0-195 DEG. C	%	0.001				
YIELD 200-395 DEG. C	%	0.047				
YIELD 400+ DEG. C	%	0.472				
TOTAL HYDROCARBONS	%	0.520				

KEROGEN TYPING RESULTS

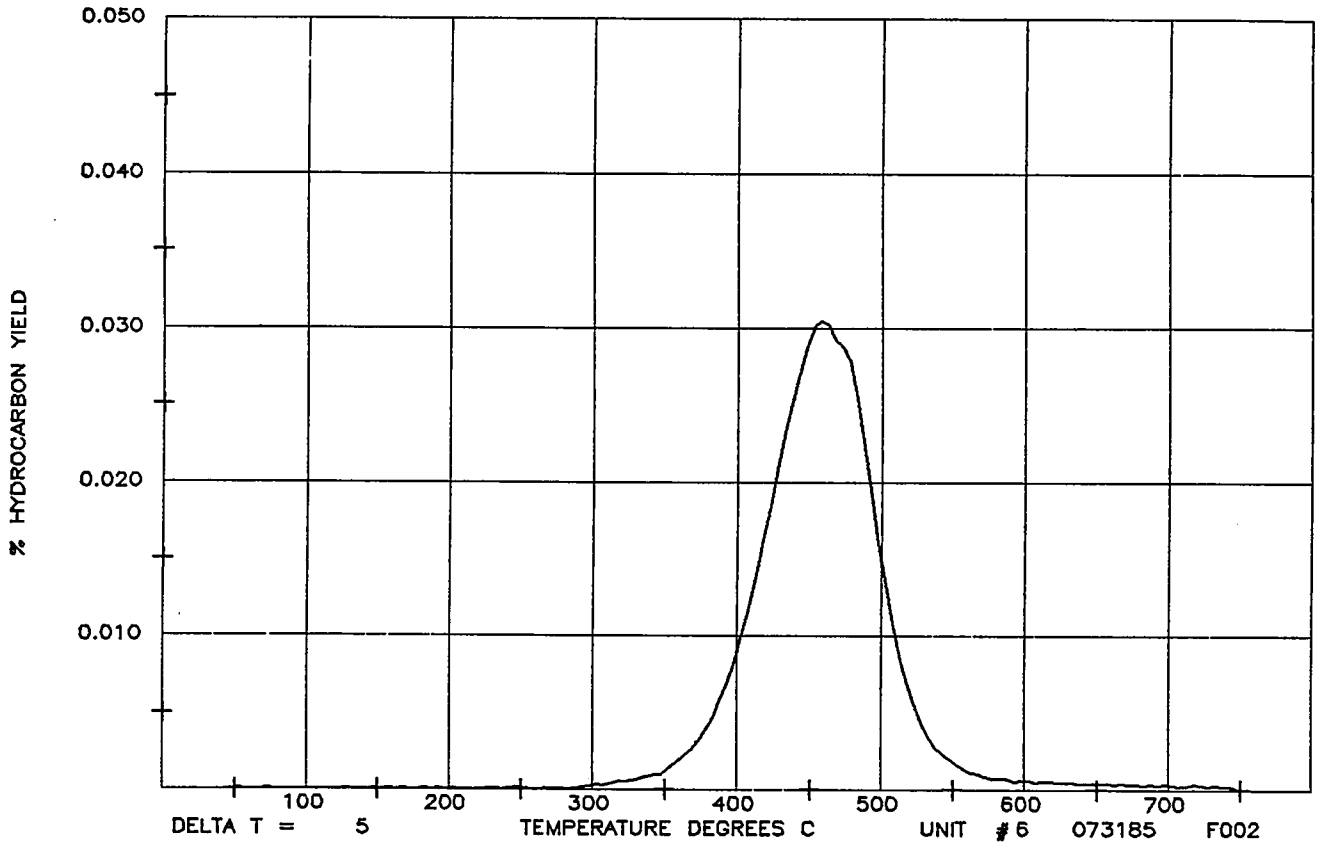
% LIPID 1	14.4
% LIPID 2	54.2
% HUMIC	31.5

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27
LOCATION 27 027S 020E CAL
DEPTH TOP 03540.00 BOTTOM 03570.00 F
F033544001



CAL-S-2096 /PO$SHALE$ MED BRN SH GRY TO DRK GRY

HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.002	DIST.PEAK	0		
PYROLYZABLE (350-750C)	%	0.575	PYRO.PEAK 1	457	< 11.0	< 1.05
DIST./PYRO. RATIO		0.004				
PYRO./TOTAL HC RATIO		0.986				
YIELD 0-195 DEG. C	%	0.001				
YIELD 200-395 DEG. C	%	0.039				
YIELD 400+ DEG. C	%	0.543				
TOTAL HYDROCARBONS	%	0.583				

KEROGEN TYPING RESULTS

% LIPID 1	21.4
% LIPID 2	49.1
% HUMIC	29.5

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 03780.00 BOTTOM 03810.00 F

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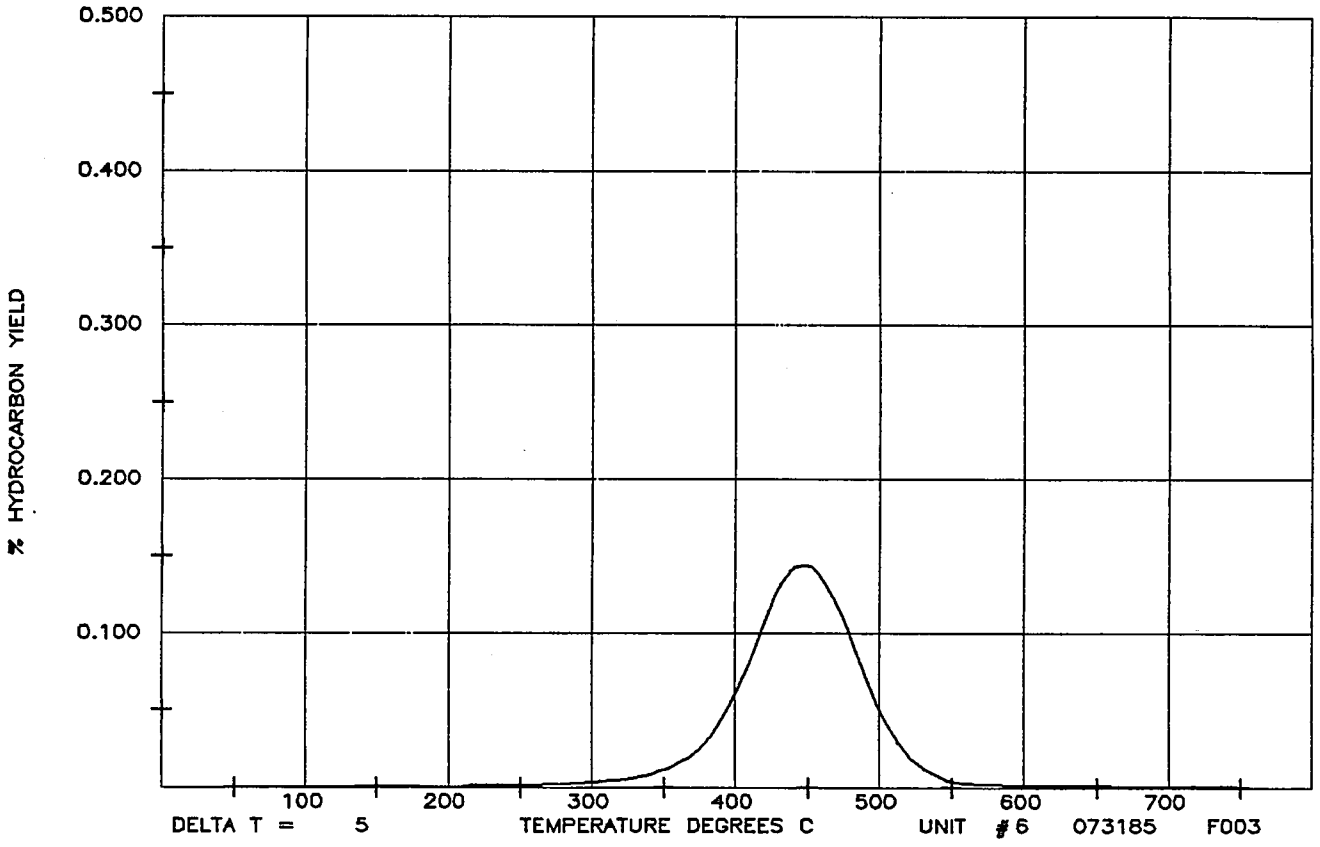

CAL-S-2097 /PO$SHALE$ MED BRN SH GRY TO MED GRY

HYDROCARBON YIELD		PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C) %	0.033	DIST.PEAK	0		
PYROLYZABLE (350-750C) %	2.713	PYRO.PEAK 1	451	< 11.0	< 1.05
DIST./PYRO. RATIO	0.012				
PYRO./TOTAL HC RATIO	0.966				
YIELD 0-195 DEG. C %	0.005				
YIELD 200-395 DEG. C %	0.323				
YIELD 400+ DEG. C %	2.478				
TOTAL HYDROCARBONS %	2.807				

KEROGEN TYPING RESULTS

% LIPID 1	0.0
% LIPID 2	96.3
% HUMIC	3.7

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 03780.00 BOTTOM 03810.00 F

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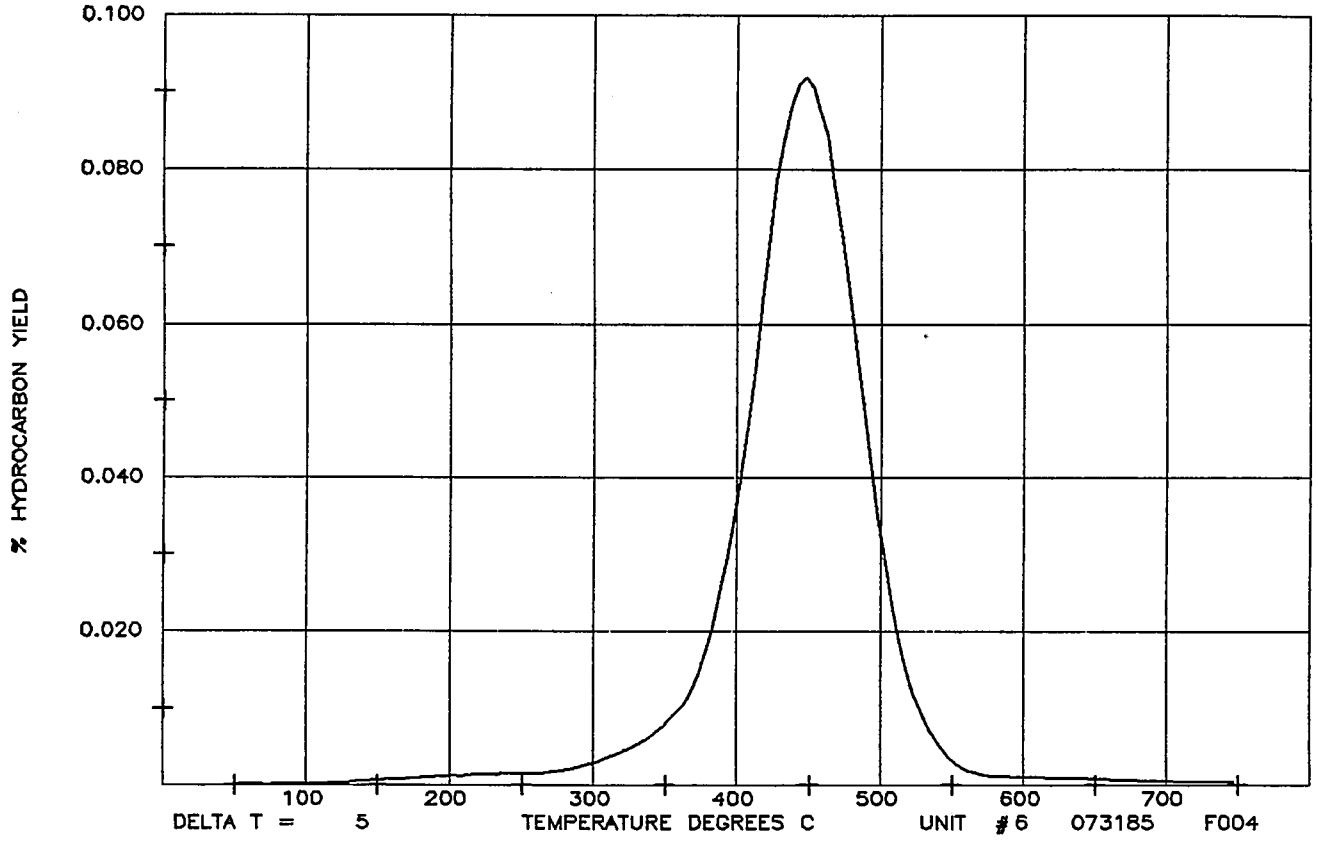


CAL-S-2098 /PO$SHALE$ LT GRY TO MED BRN

HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.046	DIST.PEAK	0		
PYROLYZABLE (350-750C)	%	1.717	PYRO.PEAK 1	450	< 11.0	< 1.05
DIST./PYRO. RATIO		0.027				
PYRO./TOTAL HC RATIO		0.948				
YIELD 0-195 DEG. C	%	0.012				
YIELD 200-395 DEG. C	%	0.229				
YIELD 400+ DEG. C	%	1.570				
TOTAL HYDROCARBONS	%	1.811				

KEROGEN TYPING RESULTS

% LIPID 1	0.0
% LIPID 2	91.5
% HUMIC	8.5

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

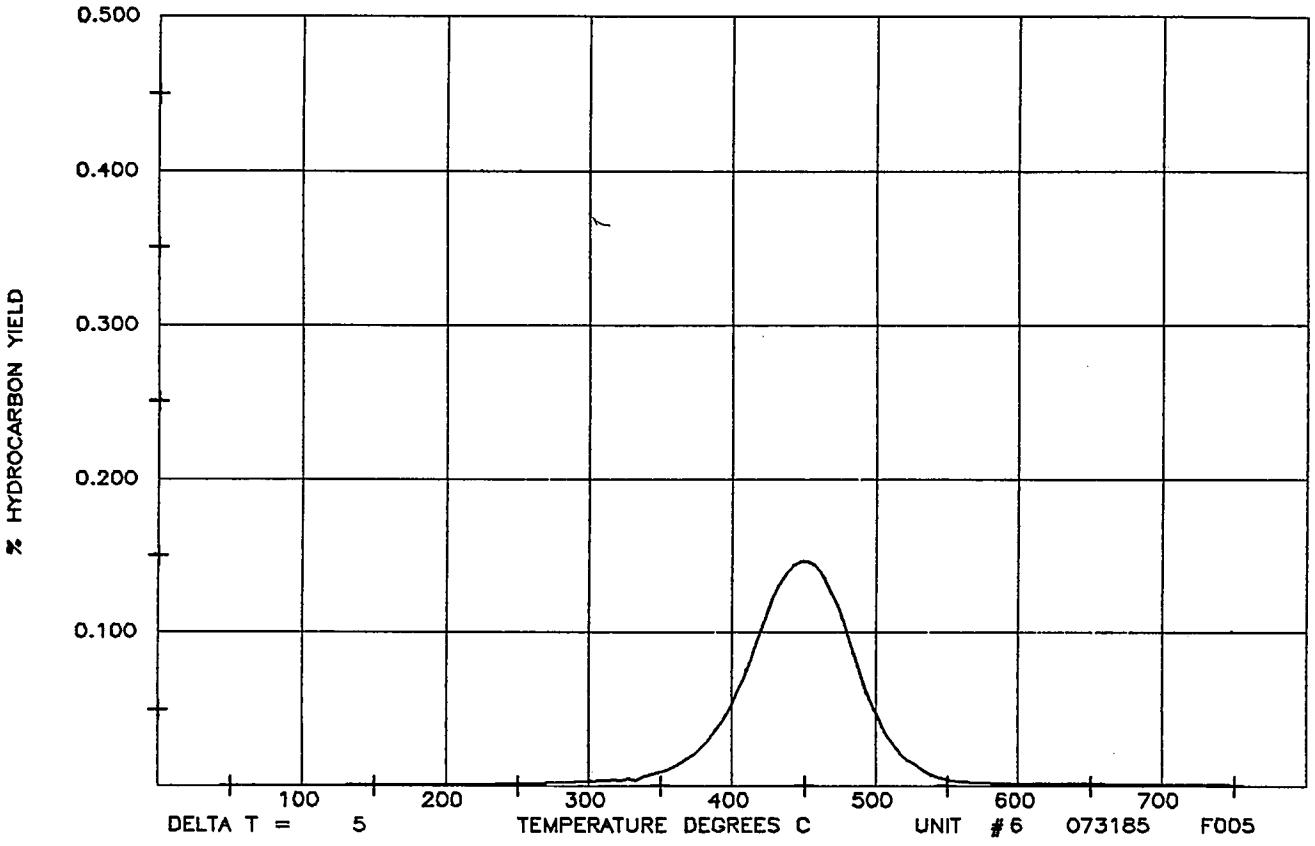
ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 04080.00 BOTTOM 04110.00 F

F033547001



CAL-S-2099 /PO$SHALE$ MED DRK TO GRY BRN

HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.037	DIST.PEAK	0		
PYROLYZABLE (350-750C)	%	2.645	PYRO.PEAK 1	451	< 11.0	< 1.05
DIST./PYRO. RATIO		0.014				
PYRO./TOTAL HC RATIO		0.970				
YIELD 0-195 DEG. C	%	0.010				
YIELD 200-395 DEG. C	%	0.275				
YIELD 400+ DEG. C	%	2.441				
TOTAL HYDROCARBONS	%	2.726				

KEROGEN TYPING RESULTS

% LIPID 1	0.0
% LIPID 2	95.4
% HUMIC	4.6

PLFID VERSION 4.10

VMØ8 BR21GCS8 8/19/85 1Ø:59:45 C.D.T. WAS THE ORIGIN**********

SHELL DEV. PYROLYSIS FID ANALYSIS

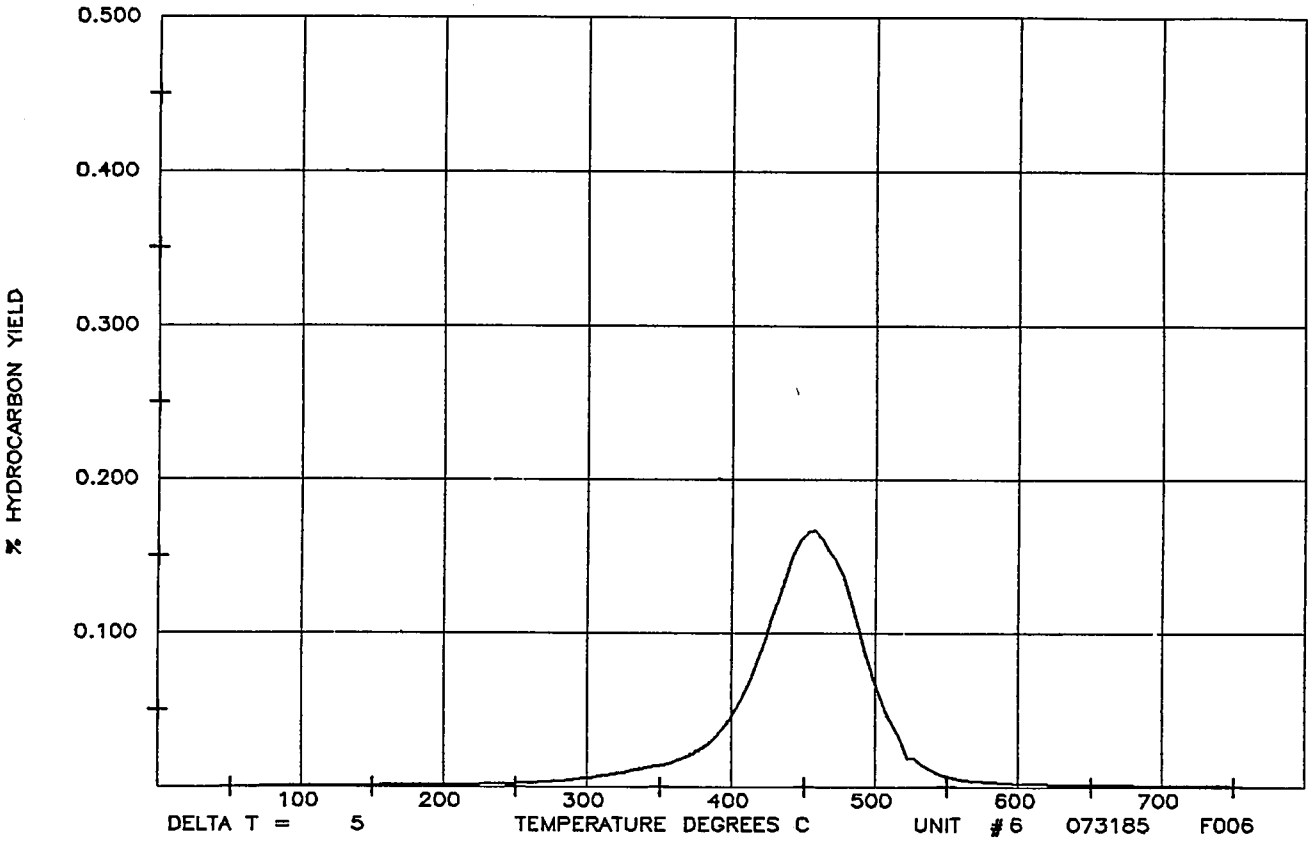
ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 04350.00 BOTTOM 04360.00 F

F033548001



CAL-S-2100 /PO$SHALE$MED DRK BRN GRY

HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.072	DIST.PEAK	0		
PYROLYZABLE (350-750C)	%	2.938	PYRO.PEAK 1	455	< 11.0	< 1.05
DIST./PYRO. RATIO		0.024				
PYRO./TOTAL HC RATIO		0.946				
YIELD 0-195 DEG. C	%	0.019				
YIELD 200-395 DEG. C	%	0.359				
YIELD 400+ DEG. C	%	2.729				
TOTAL HYDROCARBONS	%	3.107				

KEROGEN TYPING RESULTS

% LIPID 1	19.4
% LIPID 2	66.7
% HUMIC	13.9

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 04350.00 BOTTOM 04380.00 F

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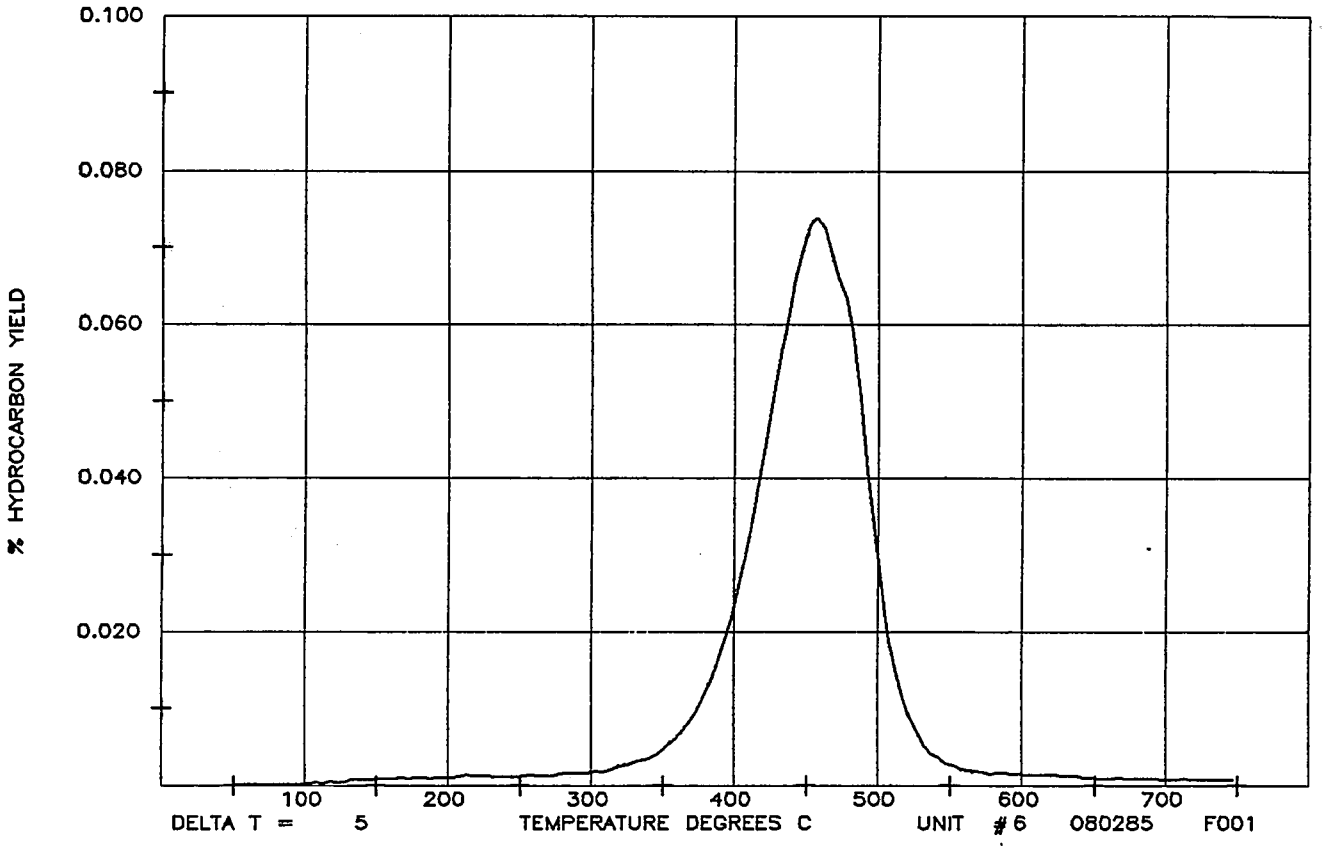

CAL-S-2101 /PO$SHALE$LT GRY TO MED BRN

HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.042	DIST.PEAK	0		
PYROLYZABLE (350-750C)	%	1.347	PYRO.PEAK 1	457	< 11.0	< 1.05
DIST./PYRO. RATIO		0.031				
PYRO./TOTAL HC RATIO		0.951				
YIELD 0-195 DEG. C	%	0.015				
YIELD 200-395 DEG. C	%	0.150				
YIELD 400+ DEG. C	%	1.253				
TOTAL HYDROCARBONS	%	1.417				

KEROGEN TYPING RESULTS

% LIPID 1	19.4
% LIPID 2	46.4
% HUMIC	34.2

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 04380.00 BOTTOM 04410.00 F

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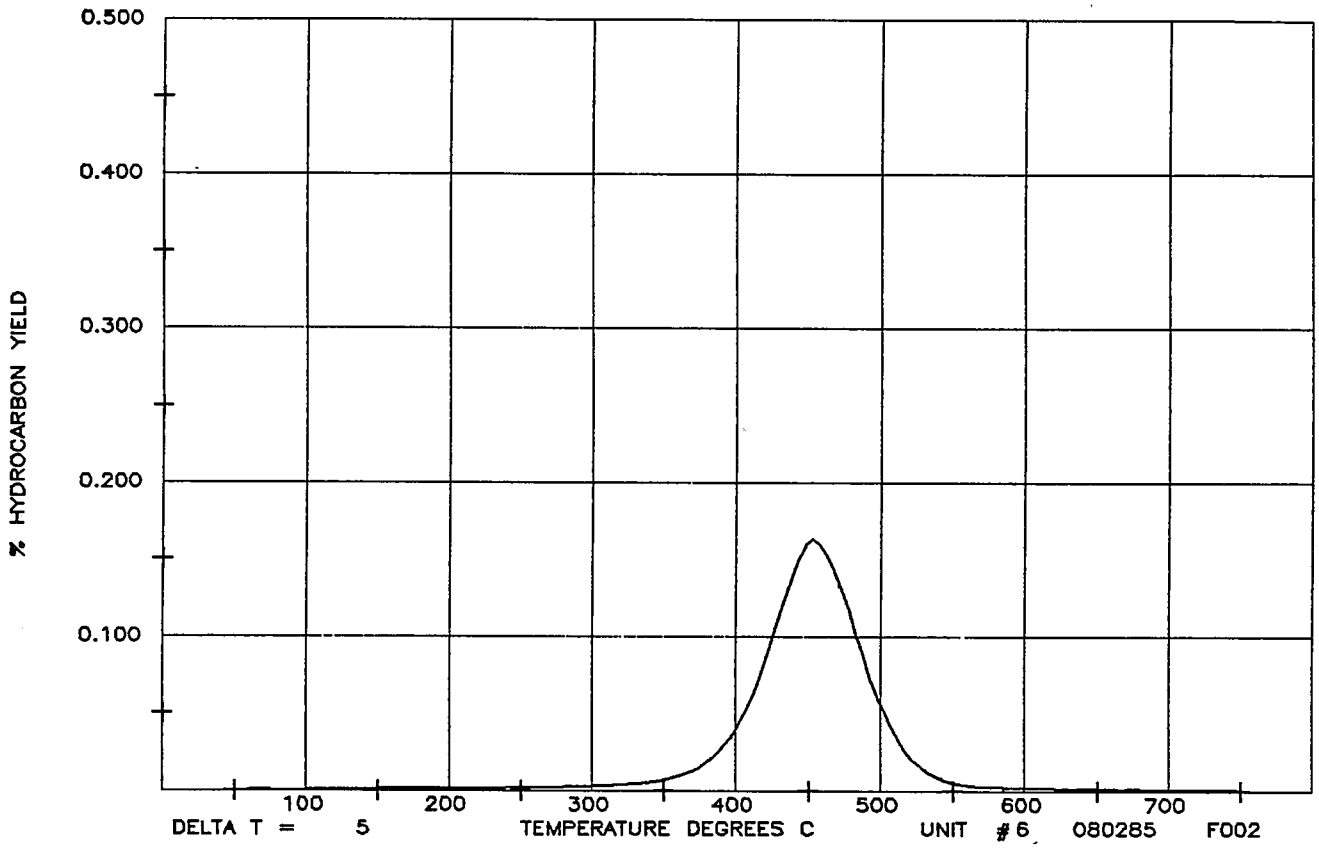

CAL-S-2102 /PO$SHALE$MED DRK BRN GRY

HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.056	DIST.PEAK	263		
PYROLYZABLE (350-750C)	%	2.650	PYRO.PEAK 1	452	< 11.0	< 1.05
DIST./PYRO. RATIO		0.021				
PYRO./TOTAL HC RATIO		0.964				
YIELD 0-195 DEG. C	%	0.019				
YIELD 200-395 DEG. C	%	0.225				
YIELD 400+ DEG. C	%	2.506				
TOTAL HYDROCARBONS	%	2.750				

KEROGEN TYPING RESULTS

% LIPID 1	19.1
% LIPID 2	67.1
% HUMIC	13.8

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 04380.00 BOTTOM 04410.00 F

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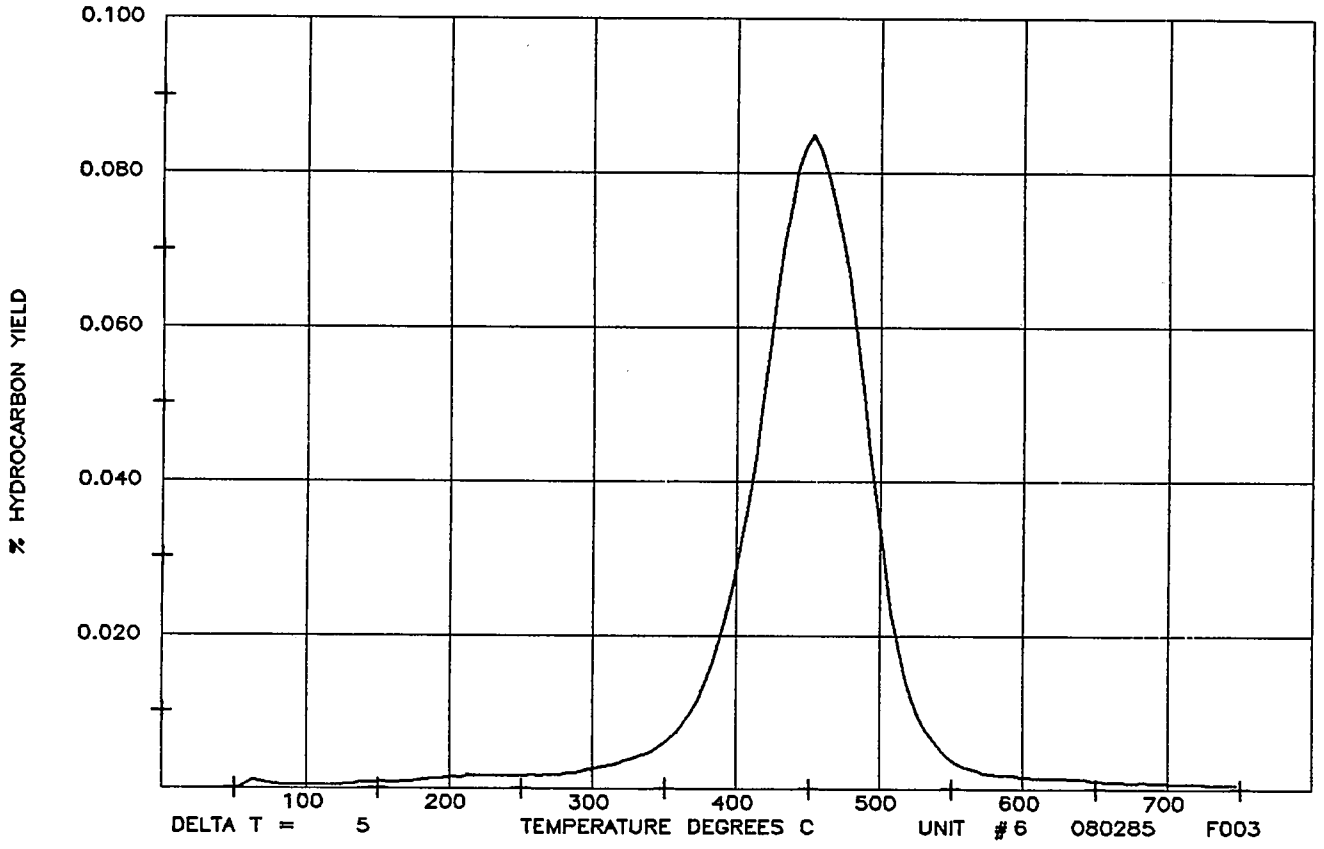

CAL-S-2103 /PO$SHALE$LT GRY TO BLK W/ MICRO LAM

HYDROCARBON YIELD		
DISTILLABLE (25-300C)	%	0.055
PYROLYZABLE (350-750C)	%	1.571
DIST./PYRO. RATIO		0.035
PYRO./TOTAL HC RATIO		0.944
YIELD 0-195 DEG. C	%	0.019
YIELD 200-395 DEG. C	%	0.190
YIELD 400+ DEG. C	%	1.455
TOTAL HYDROCARBONS	%	1.664

PEAK TEMP.DEG.C			LOM	VRE
DIST.PEAK		212		
PYRO.PEAK	1	452	< 11.0	< 1.05

KEROGEN TYPING RESULTS

% LIPID 1	6.4
% LIPID 2	66.3
% HUMIC	27.4

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 04620.00 BOTTOM 04630.00 F

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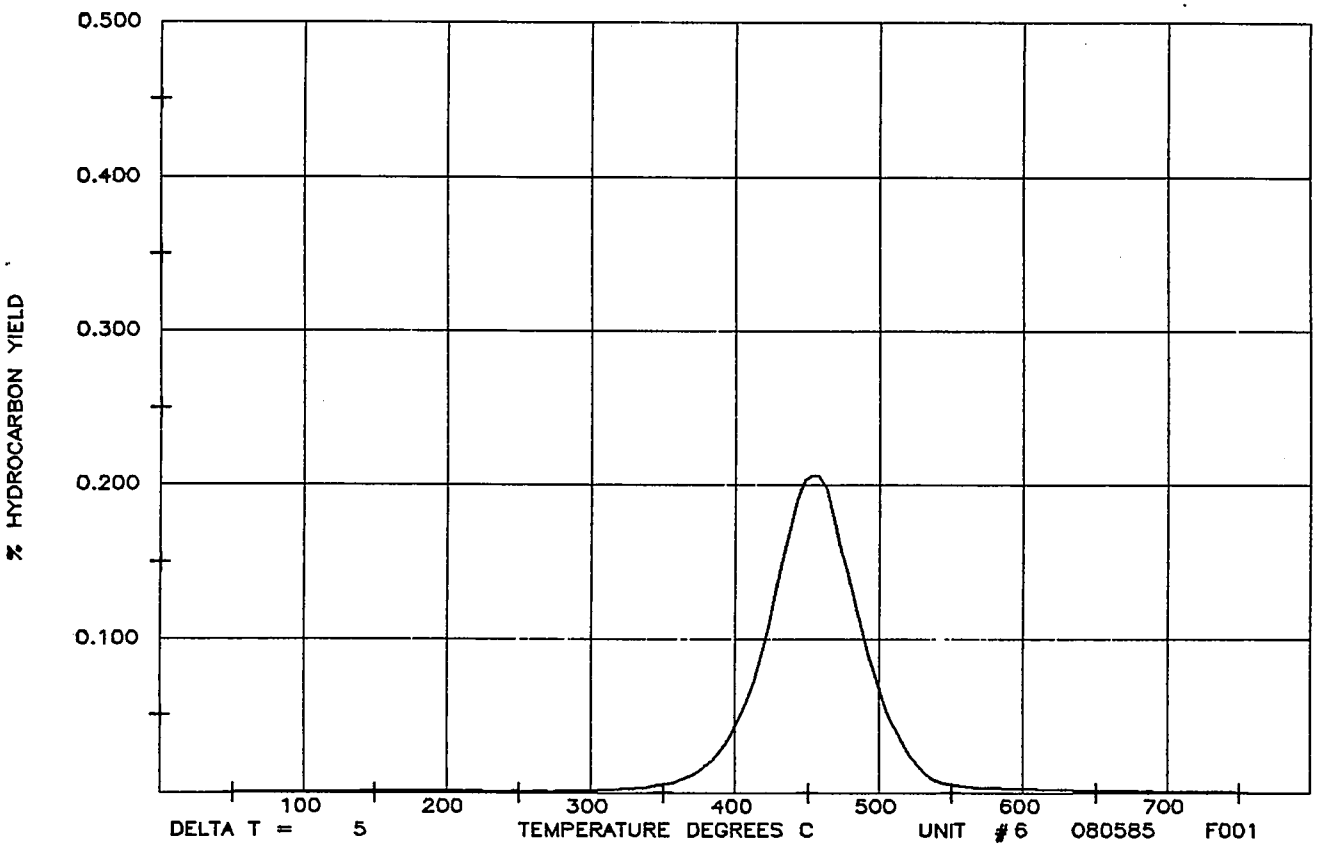


CAL-S-2104 /PO$SHALE$MED DRK BRN GRY

HYDROCARBON YIELD		
DISTILLABLE (25-300C)	%	0.047
PYROLYZABLE (350-750C)	%	3.215
DIST./PYRO. RATIO		0.015
PYRO./TOTAL HC RATIO		0.977
YIELD 0-195 DEG. C	%	0.024
YIELD 200-395 DEG. C	%	0.190
YIELD 400+ DEG. C	%	3.075
TOTAL HYDROCARBONS	%	3.289

PEAK	TEMP.DEG.C	LOM	VRE
DIST.PEAK	0		
PYRO.PEAK 1	457	< 11.0	< 1.05

KEROGEN TYPING RESULTS

% LIPID 1	26.0
% LIPID 2	61.6
% HUMIC	12.4

PLFID VERSION 4.10

SOIL DEV. PYROLYSIS FID ANALYSIS

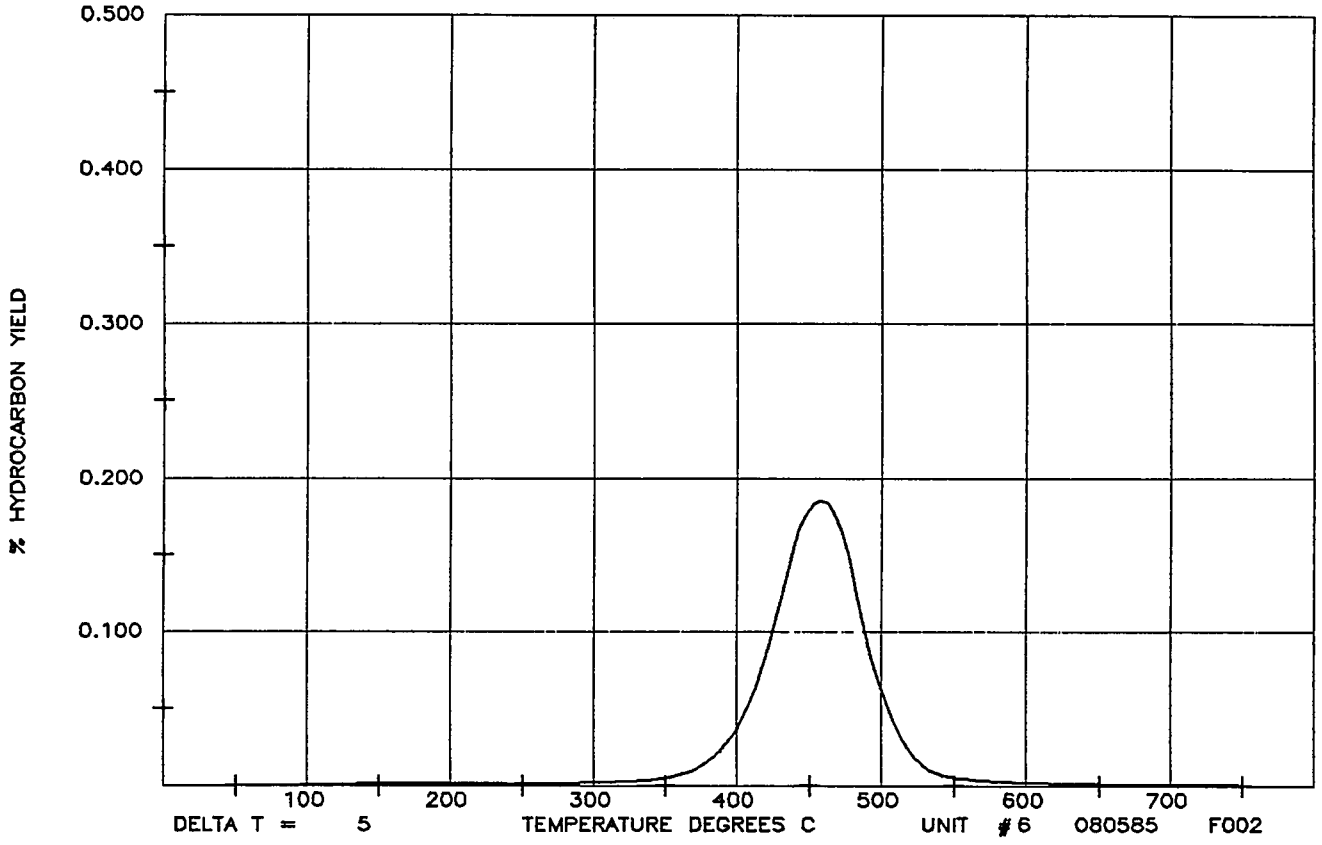
ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 04730.00 BOTTOM 04740.00 F

F033553001



CAL-S-2105 /PO$SHALE$DRK BRN GRY TO DRK GRY

HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.049	DIST.PEAK	0		
PYROLYZABLE (350-750C)	%	2.906	PYRO.PEAK 1	460	< 11.0	< 1.05
DIST./PYRO. RATIO		0.017				
PYRO./TOTAL HC RATIO		0.975				
YIELD 0-195 DEG. C	%	0.022				
YIELD 200-395 DEG. C	%	0.172				
YIELD 400+ DEG. C	%	2.788				
TOTAL HYDROCARBONS	%	2.982				

KEROGEN TYPING RESULTS

% LIPID 1	36.9
% LIPID 2	54.4
% HUMIC	8.7

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 04810.00 BOTTOM 04820.00 F

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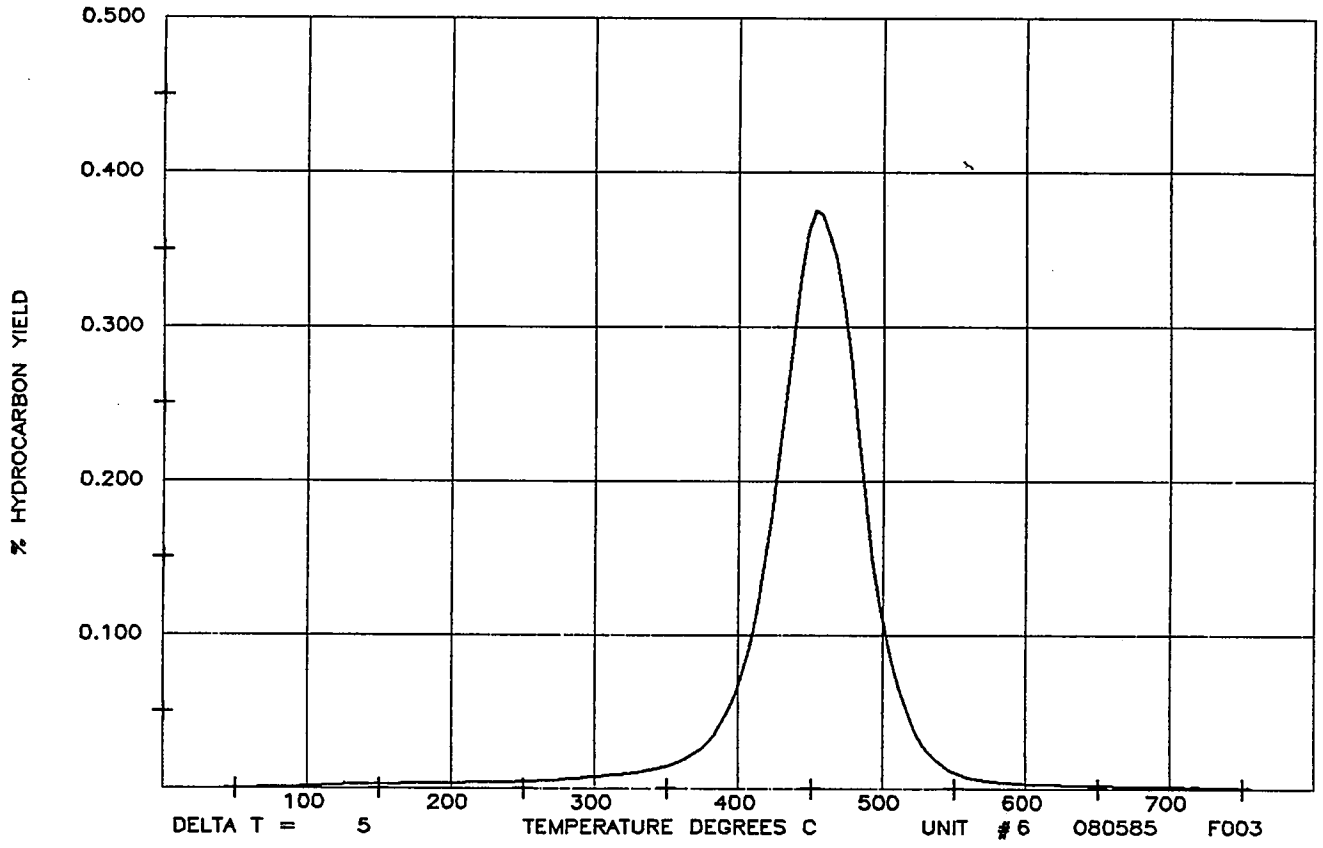

CAL-S-2106 /PO$SHALE$DRK BRN GRY TO DRK GRY

HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.149	DIST.PEAK	160		
PYROLYZABLE (350-750C)	%	5.630	PYRO.PEAK 1	455	< 11.0	< 1.05
DIST./PYRO. RATIO		0.027				
PYRO./TOTAL HC RATIO		0.957				
YIELD 0-195 DEG. C	%	0.052				
YIELD 200-395 DEG. C	%	0.455				
YIELD 400+ DEG. C	%	5.373				
TOTAL HYDROCARBONS	%	5.881				

KEROGEN TYPING RESULTS

% LIPID 1	35.3
% LIPID 2	60.7
% HUMIC	4.0

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 05060.00 BOTTOM 05070.00 F

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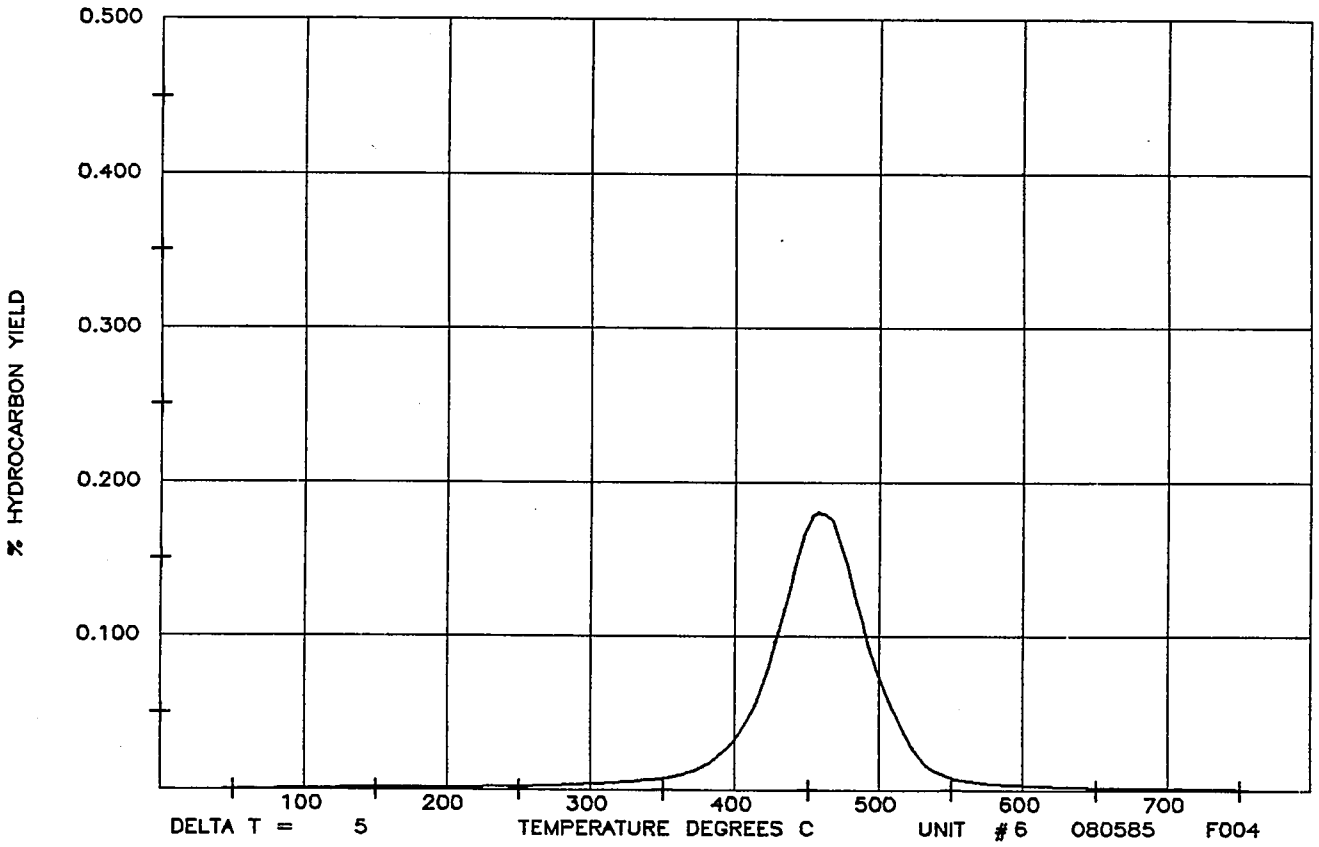

CAL-S-2107 /PO$SHALE$MED DRK BRN GRY TO DRK GRY

HYDROCARBON YIELD		
DISTILLABLE (25-300C)	%	0.068
PYROLYZABLE (350-750C)	%	2.910
DIST./PYRO. RATIO		0.023
PYRO./TOTAL HC RATIO		0.961
YIELD 0-195 DEG. C	%	0.024
YIELD 200-395 DEG. C	%	0.224
YIELD 400+ DEG. C	%	2.782
TOTAL HYDROCARBONS	%	3.030

PEAK	TEMP.DEG.C	LOM	VRE
DIST.PEAK	0		
PYRO.PEAK 1	456	< 11.0	< 1.05

KERODEN TYPING RESULTS

% LIPID 1	38.8
% LIPID 2	35.6
% HUMIC	25.6

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 05280.00 BOTTOM 05290.00 F

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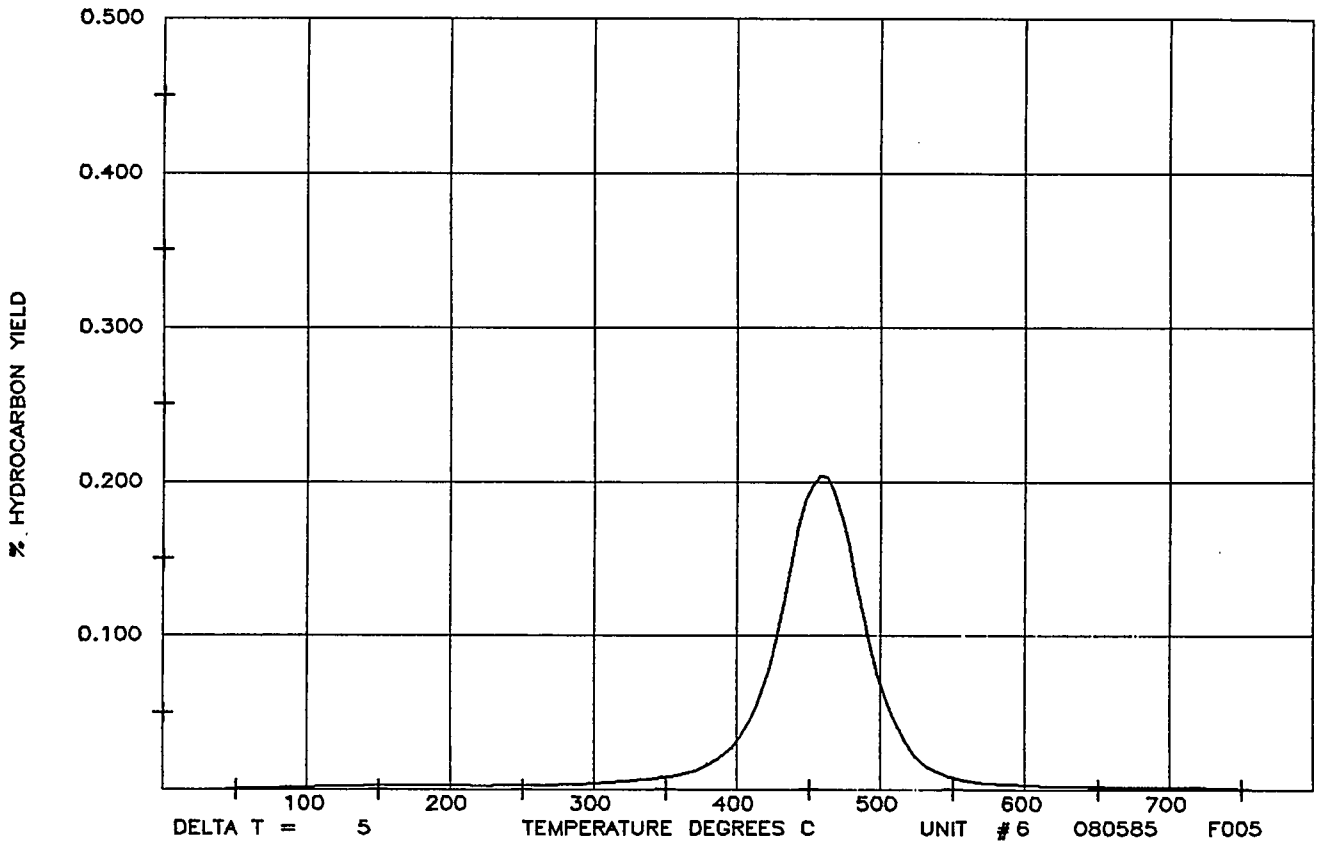

CAL-S-2108 /PO$SHALE$MED DRK BRN GRY TO DRK GRY

HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.102	DIST.PEAK	151		
PYROLYZABLE (350-750C)	%	3.064	PYRO.PEAK 1	459	< 11.0	< 1.05
DIST./PYRO. RATIO		0.033				
PYRO./TOTAL HC RATIO		0.951				
YIELD 0-195 DEG. C	%	0.049				
YIELD 200-395 DEG. C	%	0.236				
YIELD 400+ DEG. C	%	2.936				
TOTAL HYDROCARBONS	%	3.222				

KEROGEN TYPING RESULTS

% LIPID 1	46.5
% LIPID 2	31.3
% HUMIC	22.2

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 05380.00 BOTTOM 05390.00 F

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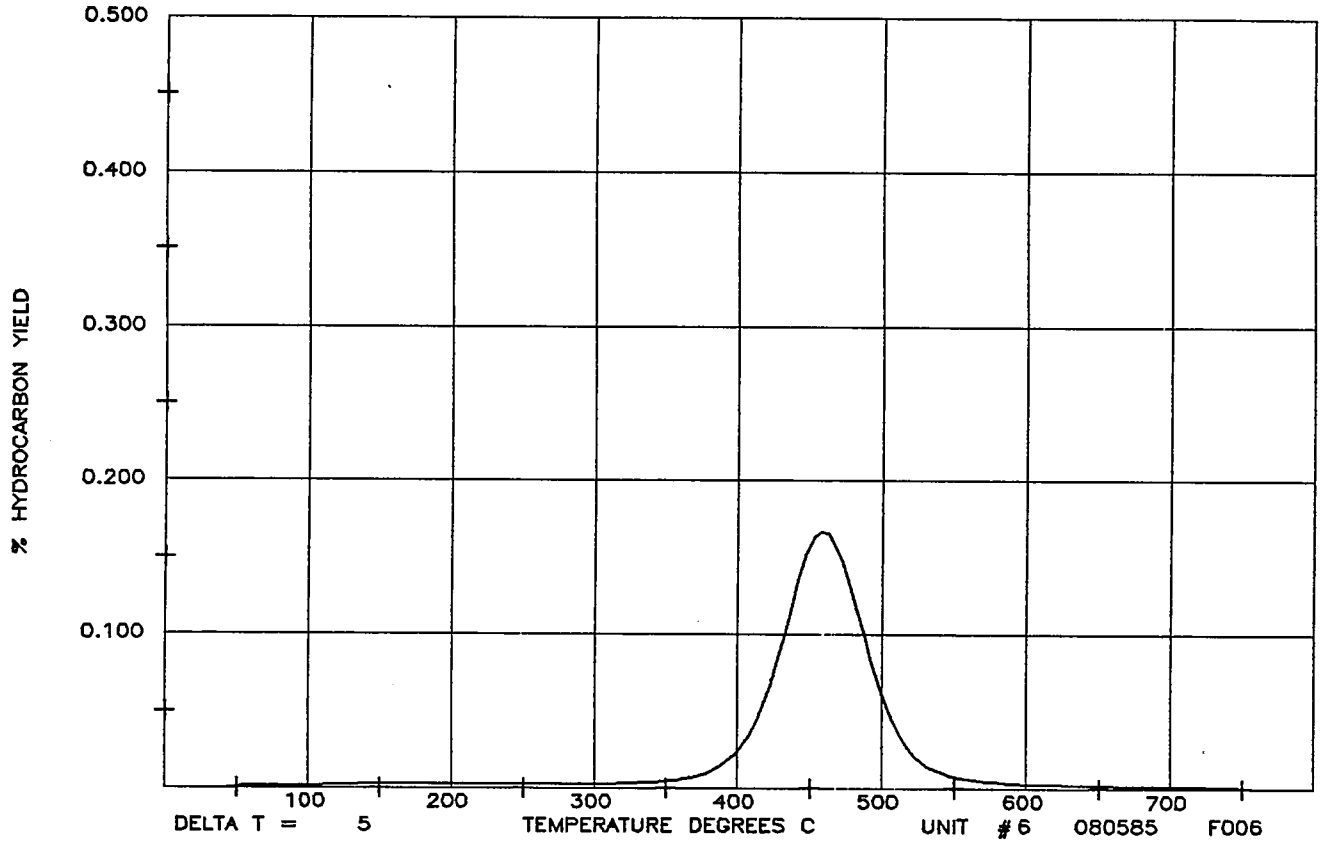

CAL-S-2109 /PO$SHALE$DK GRY TO BLK

HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.104	DIST.PEAK	0		
PYROLYZABLE (350-750C)	%	2.557	PYRO.PEAK 1	460	< 11.0	< 1.05
DIST./PYRO. RATIO		0.041				
PYRO./TOTAL HC RATIO		0.949				
YIELD 0-195 DEG. C	%	0.054				
YIELD 200-395 DEG. C	%	0.167				
YIELD 400+ DEG. C	%	2.473				
TOTAL HYDROCARBONS	%	2.694				

KEROGEN TYPING RESULTS

% LIPID 1	46.8
% LIPID 2	18.1
% HUMIC	35.2

PLFID VERSION 4.10

VM08 BR21GCS8 8/18/85 23:08:00 C.D.T. WAS THE ORIGIN**********

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 05420.00 BOTTOM 05430.00 F

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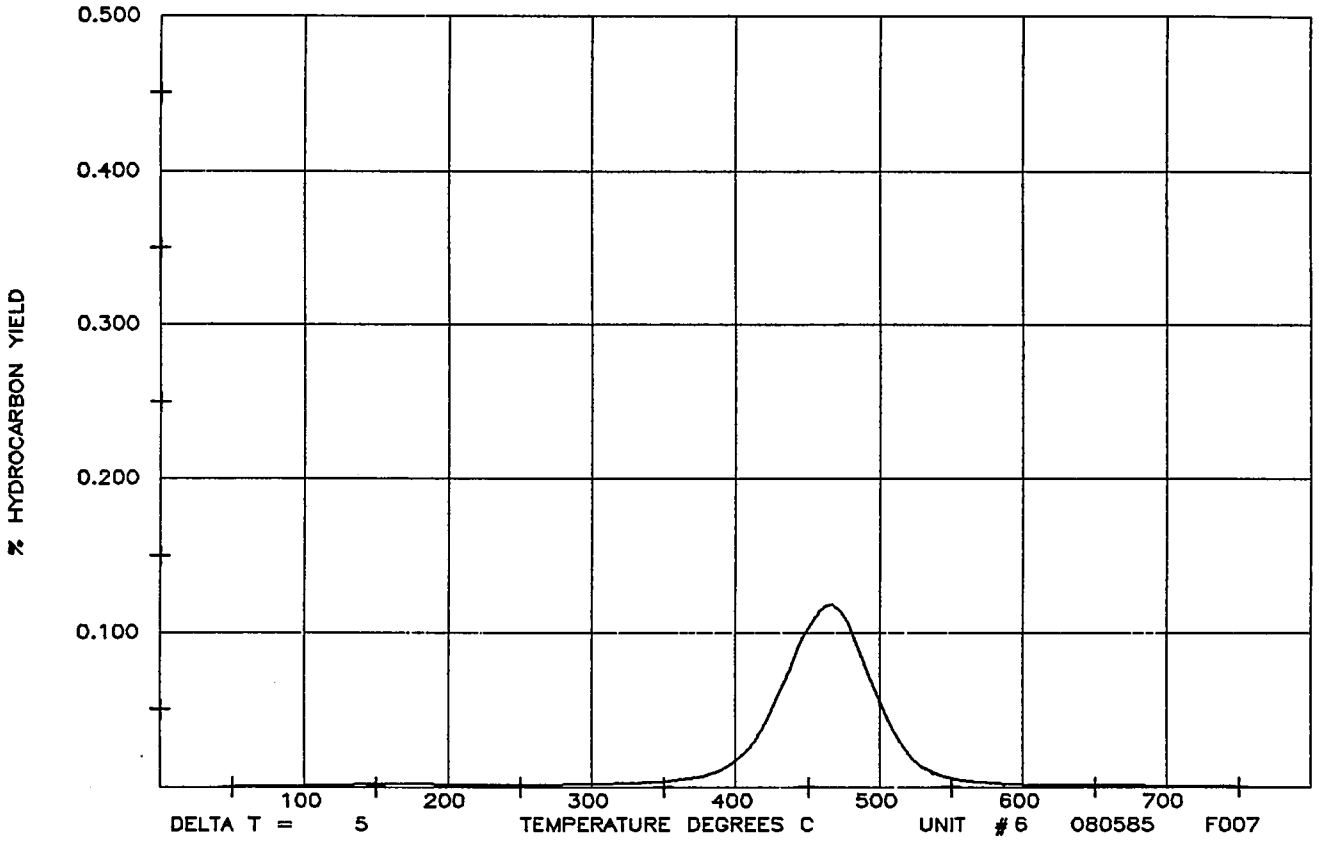

CAL-S-2110 /PO$SHALE$DRK GRY TO BLK

HYDROCARBON YIELD		PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C) %	0.066	DIST.PEAK	0		
PYROLYZABLE (350-750C) %	1.883	PYRO.PEAK 1	468	< 11.0	< 1.05
DIST./PYRO. RATIO	0.035				
PYRO./TOTAL HC RATIO	0.954				
YIELD 0-195 DEG. C %	0.035				
YIELD 200-395 DEG. C %	0.119				
YIELD 400+ DEG. C %	1.820				
TOTAL HYDROCARBONS %	1.974				

KEROGEN TYPING RESULTS

% LIPID 1	54.5
% LIPID 2	15.9
% HUMIC	29.6

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 05480.00 BOTTOM 05490.00 F

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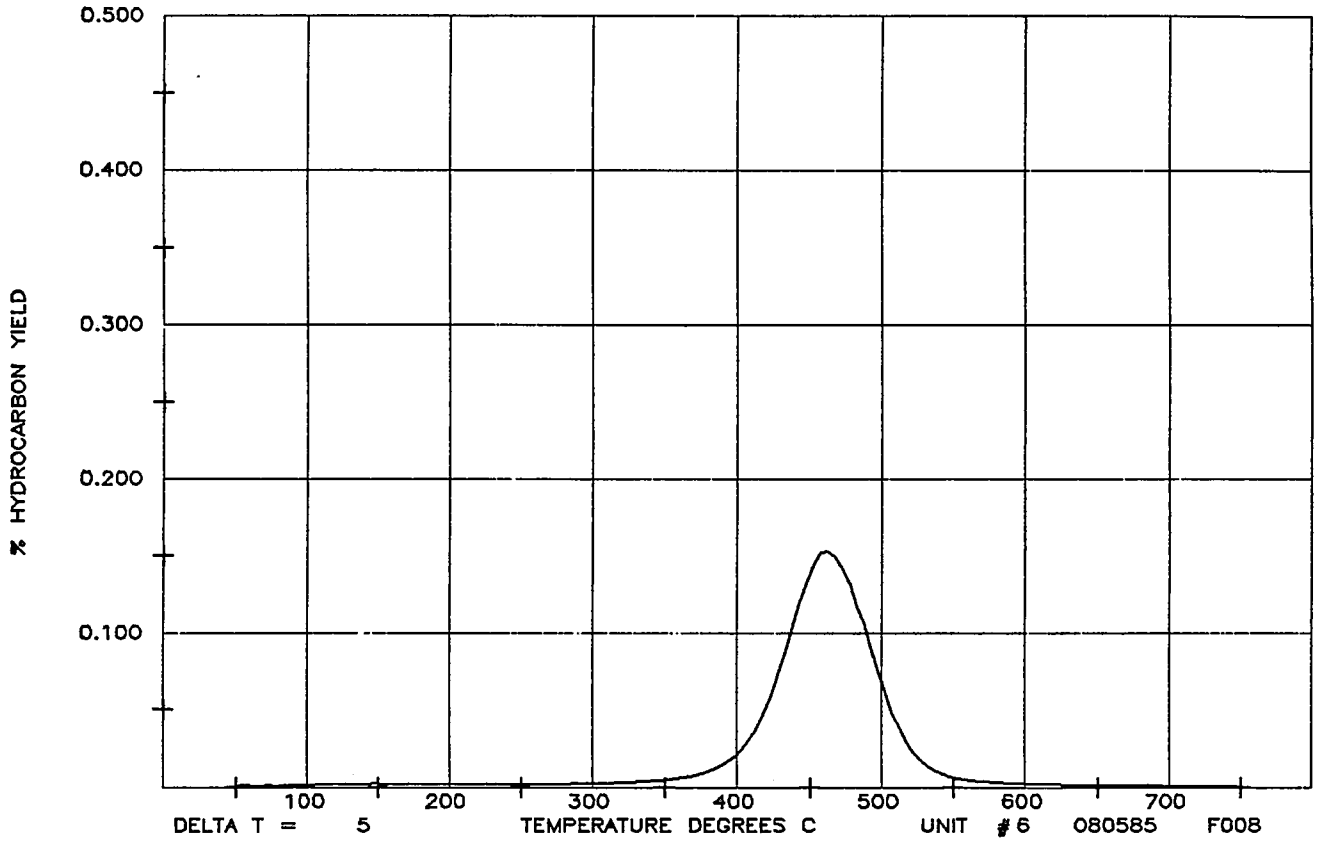

CAL-S-2111 /PO$SHALE$DRK GRY TO BLK

HYDROCARBON YIELD		PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C) %	0.089	DIST.PEAK	0		
PYROLYZABLE (350-750C) %	2.398	PYRO.PEAK 1	461	< 11.0	< 1.05
DIST./PYRO. RATIO	0.037				
PYRO./TOTAL HC RATIO	0.952				
YIELD 0-195 DEG. C %	0.048				
YIELD 200-395 DEG. C %	0.155				
YIELD 400+ DEG. C %	2.317				
TOTAL HYDROCARBONS %	2.520				

KEROGEN TYPING RESULTS

% LIPID 1	55.1
% LIPID 2	19.2
% HUMIC	25.7

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 05710.00 BOTTOM 05720.00 F

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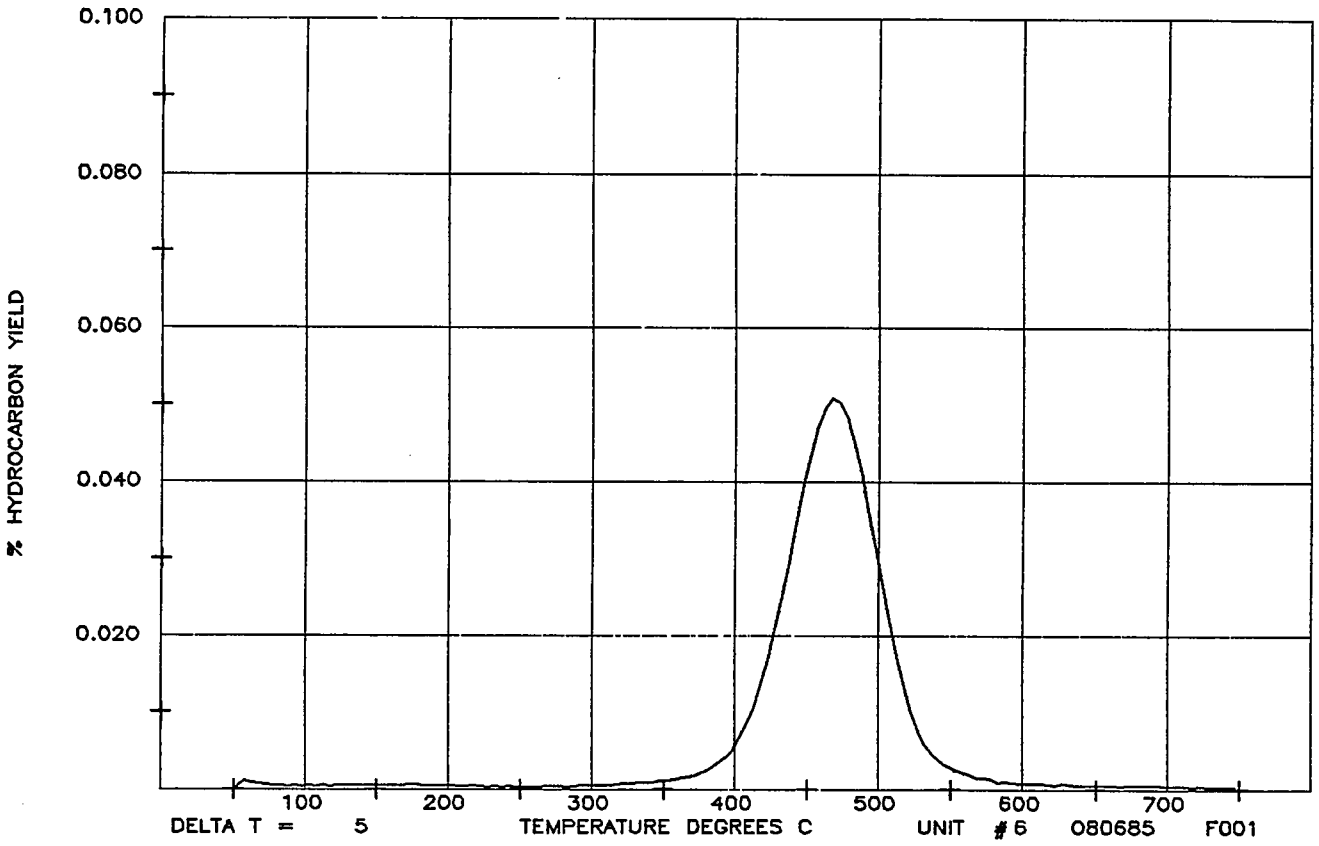

CAL-S-2112 /PO$SHALE$DK GRY TO BLK

HYDROCARBON YIELD		
DISTILLABLE (25-300C)	%	0.023
PYROLYZABLE (350-750C)	%	0.818
DIST./PYRO. RATIO		0.028
PYRO./TOTAL HC RATIO		0.964
YIELD 0-195 DEG. C	%	0.015
YIELD 200-395 DEG. C	%	0.035
YIELD 400+ DEG. C	%	0.798
TOTAL HYDROCARBONS	%	0.849

PEAK	TEMP.DEG.C	LOM	VRE
DIST.PEAK	0		
PYRO.PEAK 1	468	< 11.0	< 1.05

KERogen TYPING RESULTS

% LIPID 1	63.2
% LIPID 2	2.4
% HUMIC	34.4

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 05790.00 BOTTOM 05800.00 F

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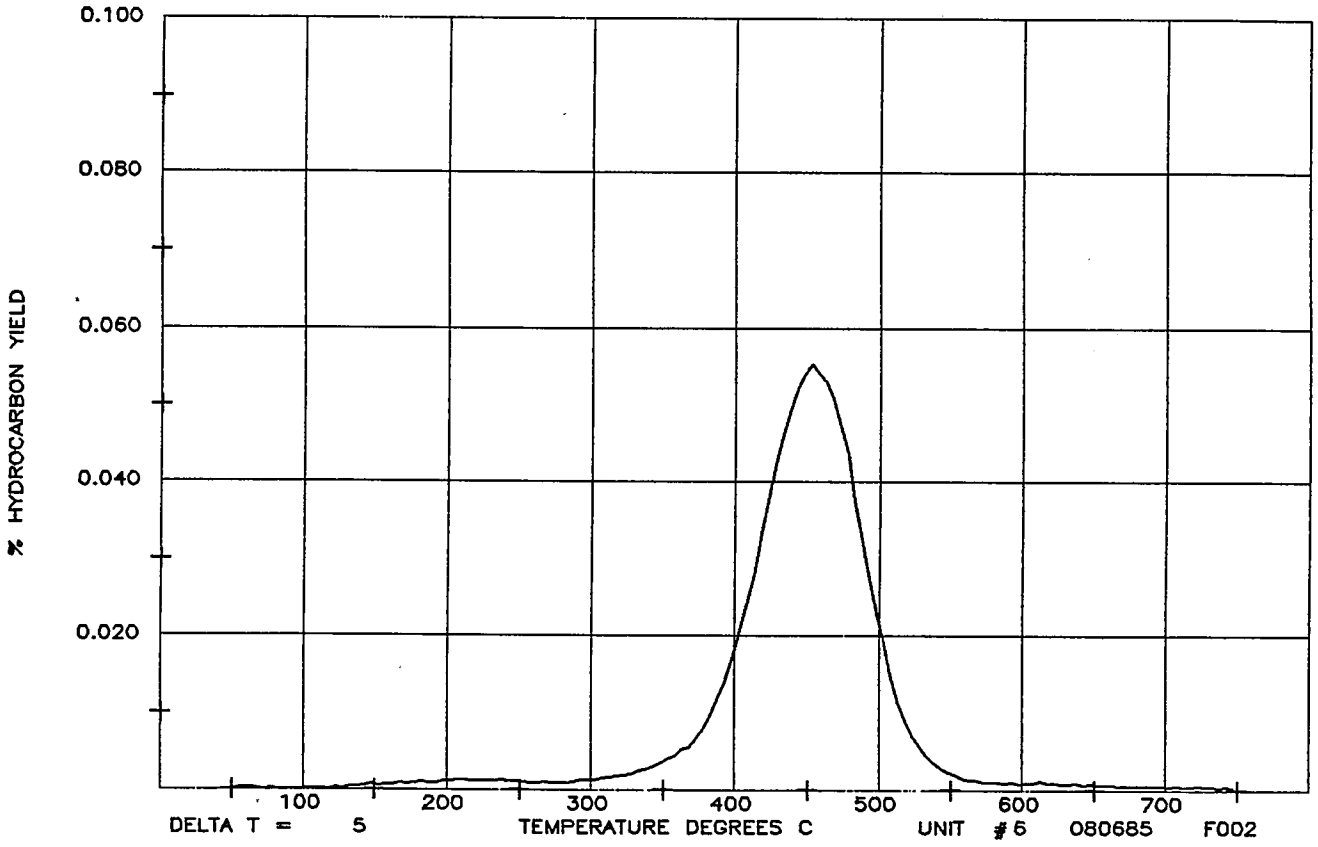

CAL-S-2113 /PO$SHALE$DRK GRY TO BLK

HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.034	DIST.PEAK	0		
PYROLYZABLE (350-750C)	%	1.009	PYRO.PEAK 1	455	< 11.0	< 1.05
DIST./PYRO. RATIO		0.034				
PYRO./TOTAL HC RATIO		0.948				
YIELD 0-195 DEG. C	%	0.011				
YIELD 200-395 DEG. C	%	0.114				
YIELD 400+ DEG. C	%	0.939				
TOTAL HYDROCARBONS	%	1.064				

KEROGEN TYPING RESULTS

% LIPID 1	8.1
% LIPID 2	68.0
% HUMIC	23.9

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 05790.00 BOTTOM 05800.00 F

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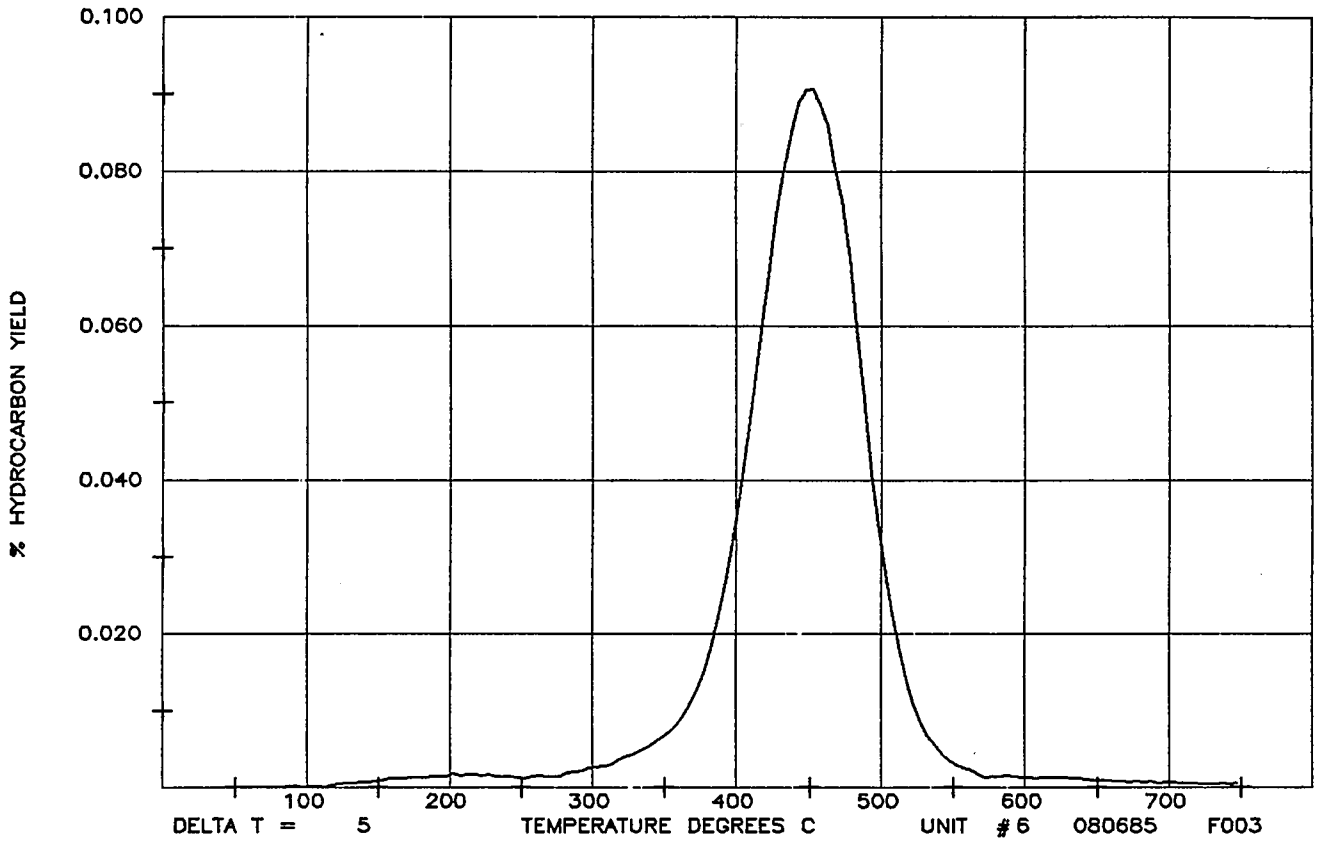

CAL-S-2114 /PO$SHALE$LT GRY TO BLK MICRO LAM

HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.048	DIST.PEAK	0		
PYROLYZABLE (350-750C)	%	1.688	PYRO.PEAK 1	455	< 11.0	< 1.05
DIST./PYRO. RATIO		0.028				
PYRO./TOTAL HC RATIO		0.949				
YIELD 0-195 DEG. C	%	0.015				
YIELD 200-395 DEG. C	%	0.206				
YIELD 400+ DEG. C	%	1.558				
TOTAL HYDROCARBONS	%	1.778				

KEROGEN TYPING RESULTS

% LIPID 1	0.0
% LIPID 2	84.1
% HUMIC	15.9

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 06260.00 BOTTOM 06270.00 F

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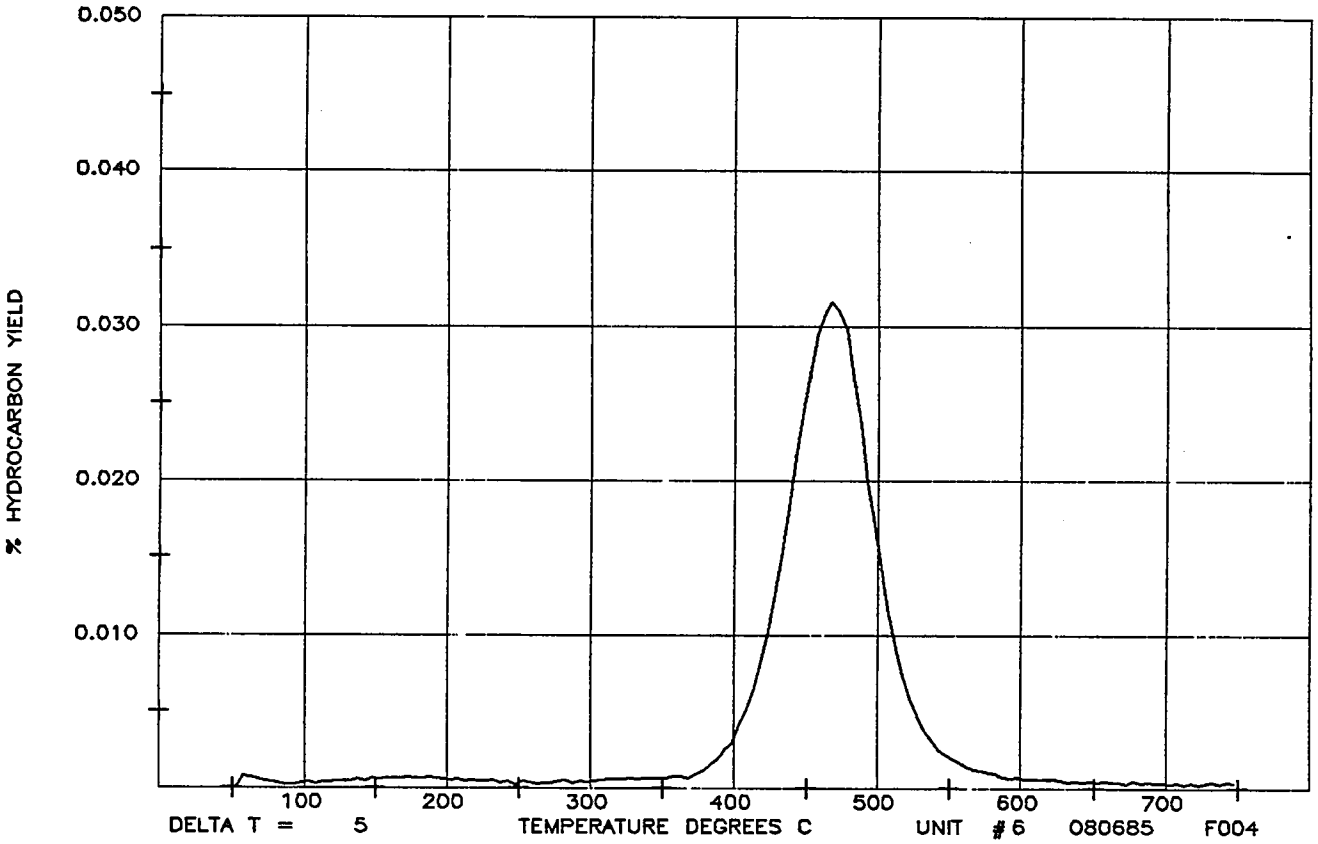

CAL-S-2115 /PO$SHALE$MED DRK GRY

HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.022	DIST.PEAK	0		
PYROLYZABLE (350-750C)	%	0.492	PYRO.PEAK 1	467	< 11.0	< 1.05
DIST./PYRO. RATIO		0.046				
PYRO./TOTAL HC RATIO		0.946				
YIELD 0-195 DEG. C	%	0.014				
YIELD 200-395 DEG. C	%	0.025				
YIELD 400+ DEG. C	%	0.482				
TOTAL HYDROCARBONS	%	0.520				

KEROGEN TYPING RESULTS

% LIPID 1	47.6
% LIPID 2	0.0
% HUMIC	52.4

PLFID VERSION 4.10

SHELL DEV. PYROLYSIS FID ANALYSIS

ID. NO. 04029751260000

SCPI 43X-27

LOCATION 27 027S 020E CAL

DEPTH TOP 06420.00 BOTTOM 06430.00 F

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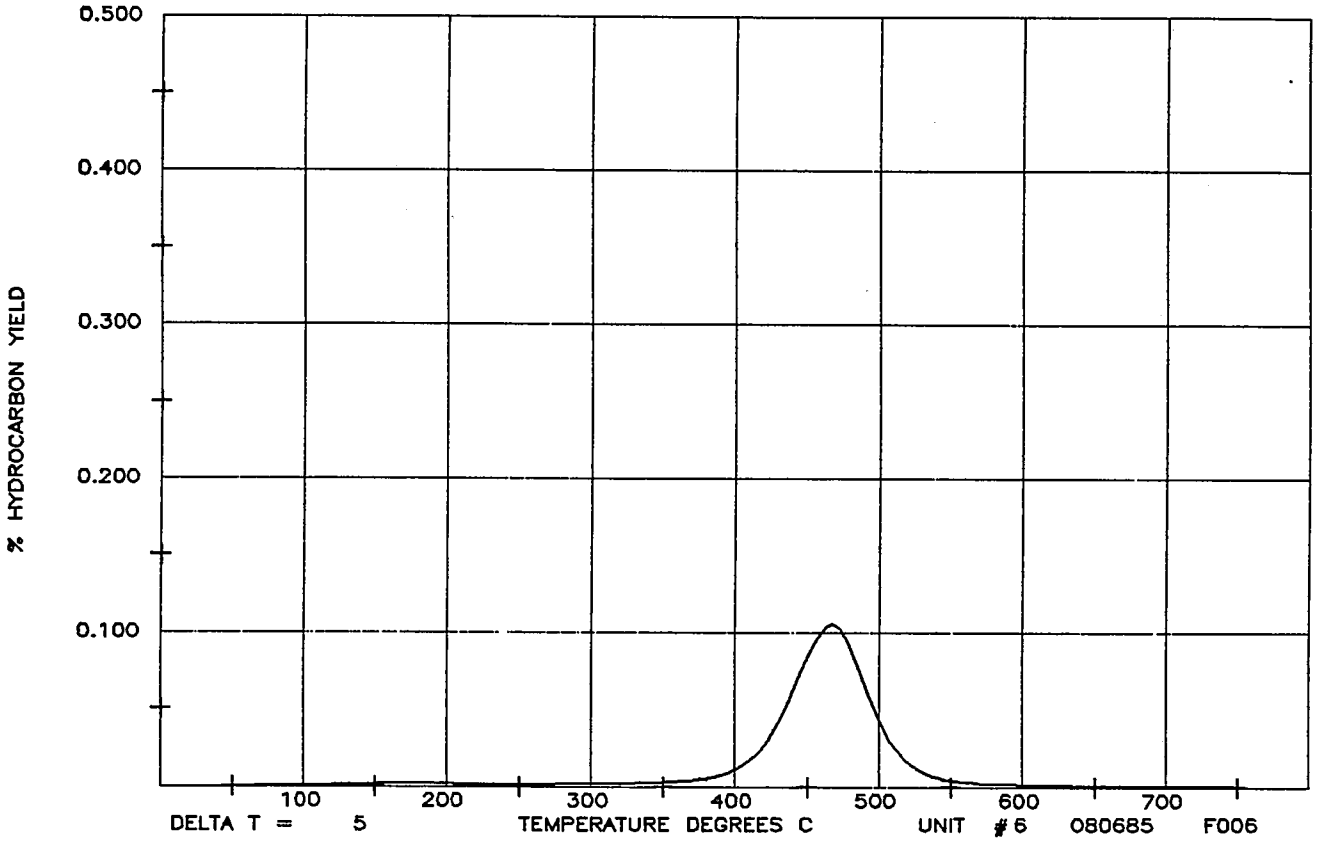


CAL-S-2116 /PO$SHALE$DRK GRY TO BLK

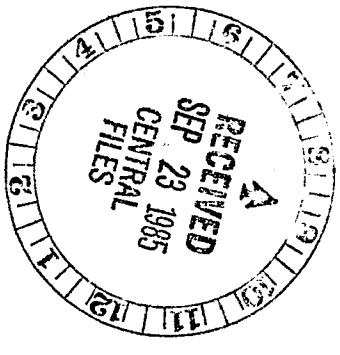
HYDROCARBON YIELD			PEAK TEMP.DEG.C		LOM	VRE
DISTILLABLE (25-300C)	%	0.060	DIST.PEAK	166		
PYROLYZABLE (350-750C)	%	1.506	PYRO.PEAK 1	467	< 11.0	< 1.05
DIST./PYRO. RATIO		0.040				
PYRO./TOTAL HC RATIO		0.948				
YIELD 0-195 DEG. C	%	0.029				
YIELD 200-395 DEG. C	%	0.098				
YIELD 400+ DEG. C	%	1.462				
TOTAL HYDROCARBONS	%	1.588				

KEROGEN TYPING RESULTS

% LIPID 1	71.0
% LIPID 2	0.0
% HUMIC	29.0

PLFID VERSION: 4.10

8000031990
31 027S 020E 27
WELL TEST + ANALYSI CORE ANALYSIS-OTHER
PYROLYSIS/FLAME IONIZATION
CA
FEE 43-27
BELRIDGE N



SEP 18 2009

Well Name:	43-27	Coding date:	01/00/1900
Well UWI:	0402975126	This sheet coded by:	Lester Carcamo
Sec-Twp-Rge:	27T27SR20E	Vendor:	Shell Development Company
Central Files Barcode:	8000031990	Vendor file number	UNKNOWN
Report Title:	PYROLYSIS FID ANALYSIS	Report Date:	09/10/1985
		ANOTATED	NO

Sample Type	Reservoir: a, b, c, d, e.
Conventional-Plug	Temblor
Conventional-Whole	
Sidewall	
Cuttings	
Mudlog Sample	
Produced	Top Depth
Surface	2600
Geological Outcrop	Bottom Depth
Other	6420

Data containers information	
LIVE-LINK	Scan Requested
Core DB	Y
OpenWorks	Notes
Binders	
R:drive	
LAS file	
Ambient Pressure	
Stressed Pressure	

Check all pertaining to each report - submit sheet for each report

	Core Report Type	Core Report Subtype
	Routine Analysis	Description-UV Light
	Routine Analysis	Photography-White/UV
	Routine Analysis	Density-Grain
	Routine Analysis	Routine Analysis - Other
	Routine Analysis	Porosity-Other
	Routine Analysis	Natural-Spectral Gamma Ray
	Routine Analysis	Permeability-Air
	Routine Analysis	Density-Matrix
	Routine Analysis	Fluid Saturation-PKS
	Routine Analysis	Sieve Analysis
	Routine Analysis	Description-Lithological
	Petrophysical	Formation Resistivity Factor
	Petrophysical	Cementation Factor
	Petrophysical	Luminosity Analysis
	Petrophysical	Oil Viscosity
	Petrophysical	Petrophysical - Other
	Petrophysical	Saturation Exponent
	Petrophysical	Tortuosity
	Petrophysical	Formation Resistivity Index
	Petrophysical	Model Evaluation
	Petrophysical	Oil Gravity-Density
x	Petrophysical	Oil Pyrolysis
	Petrophysical	Formation Water Resistivity
	Petrophysical	Matrix Neutron Index
	Petrophysical	Oil Chromatography
	Petrophysical	Bulk PEF
	Petrophysical	CAT Scan
	Petrophysical	Mercury Injection
	Petrophysical	Capillary Pressure Analysis
	petrophysical	Cation Exchange Capacity
	Petrophysical	NMR Analysis
	Petrophysical	Pore Throat Analysis

	Core Report Type	Core Report Subtype
	Petrophysical-Flow Study	Heat Transfer Coefficient
	Petrophysical-Flow Study	Fines Migration-Mobilization Velocity
	Petrophysical-Flow Study	Petrophysical-Flow Study - Other
	Petrophysical-Flow Study	Permeability-Oil
	Petrophysical-Flow Study	Rock Pore Preferred Wettability
	Petrophysical-Flow Study	Permeability-Toluene
	Petrophysical-Flow Study	Relative Permeability
	Petrophysical-Flow Study	Permeability-Brine
	Petrophysical-Flow Study	Permeability-Vertical
	Petrophysical-Flow Study	Permeability-Water
	Geochemistry	Geochemistry - Other
	Geochemistry	Formation Water-Brine Chemical
	Geological Service	Description-Petrographic
	Geological Service	Formation-Rock Unit Identification
	Geological Service	Rock Age
	Geological Service	Mineralogy-XRD/FTIR
	Geological Service	Geological Service - Other
	Geological Service	Photography-Infra Red
	Geological Service	Paleontological Analysis
	Geological Service	Box Report
	Geological Service	Thin Section
	Geological Service	Description-Field Engineer Report
	Geological Service	Hydratic Unit Analysis
	Geological Service	Scanning Electron Microscopy
	Reservoir Fluid	Steamflood Analysis
	Reservoir Fluid	Produced Gas Analysis
	Reservoir Fluid	Reservoir Fluid - Other
	Reservoir Fluid	Produced Water Analysis
	Reservoir Fluid	Produced Oil Analysis
	Rock Mechanics	Rock Mechanics - Other
	Rock Mechanics	Rock Acoustic Velocity
	Rock Mechanics	Surface Area Per Unit Volume
	Rock Mechanics	Rock Compressibility Analysis
	Other	Other

Lester Carcamo 07/23/2009

0000548511
Test & Analysis
0402975126
North Belridge
27 T27S R20E
43-27

SCANNED

PETROLEUM TESTING SERVICE, INC.

AERA CENTRAL FILES
0000548511

PETROLEUM TESTING SERVICE, INC.
5880 DISTRICT BLVD., SUITE 1
BAKERSFIELD, CA 93309

SHELL CALIFORNIA PRODUCTION INC.

WELL #43-27

SHALE SLOUGH

X-RAY DIFFRACTION ANALYSIS

AUGUST 1985 FILE #7825

AUG 24 2010

SCANNED

X-RAY DIFFRACTION RESULTS

Shale Slough: 9407-9471 feet. The shale consists primarily of clays. Tectosilicates are also present and include primarily quartz along with lesser amounts of plagioclase and potassium feldspars. Pyrite is also present as well as minor amounts of apatite and siderite.

The clay fraction consists primarily of mixed layer illite-smectite. The mixed layer clay is the random interstratified variety and contains 45% smectite (expandable) layers; therefore, the entire clay fraction contains about 32% expandible layers. Illite, kaolinite, and mixed amounts of chlorite are also present in the sample.

These results are semi-quantitative in nature because they are based on XRD peak intensity ratios. Variations in mineral chemistry (especially important in clays) cause variations in x-ray absorbance and consequent XRD peak intensities. Nevertheless, the results presented herein (shown on the following XRD table and pie charts) are significant.

XRD Table

WEIGHT PERCENTAGE OF MINERALS IN SAMPLE AS DETERMINED BY X-RAY DIFFRACTION

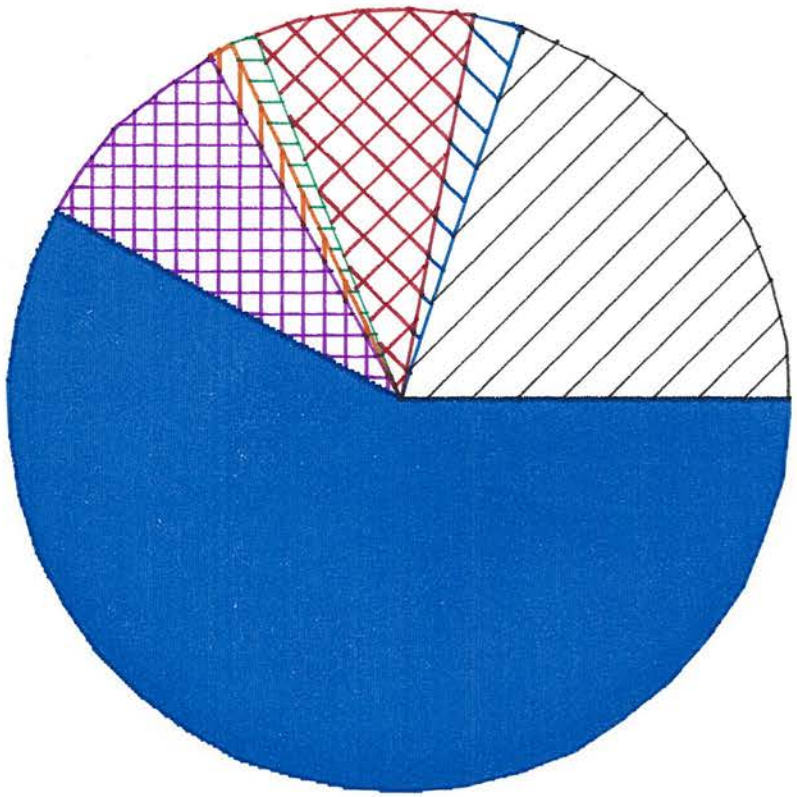
SHELL CALIFORNIA PRODUCION INC. #43-27 Whole Rock

Sample Depth	Qtz	K-Spar	Plag	Apatite	Sid	Pyr	Clay	Other
9403-9471	20	2	9	1	1	9	58	

Less than 5 Micron Fraction

Smec	Ill	Kaol	Chl	Mix Layer
	17	11	2	70

SHELL CALIFORNIA PRODUCTION INC. #43-27



DEPTH 9403-9471 FEET

20% QUARTZ

2% K-FELDSPAR

9% PLAGIOCLASE

1% APATITE

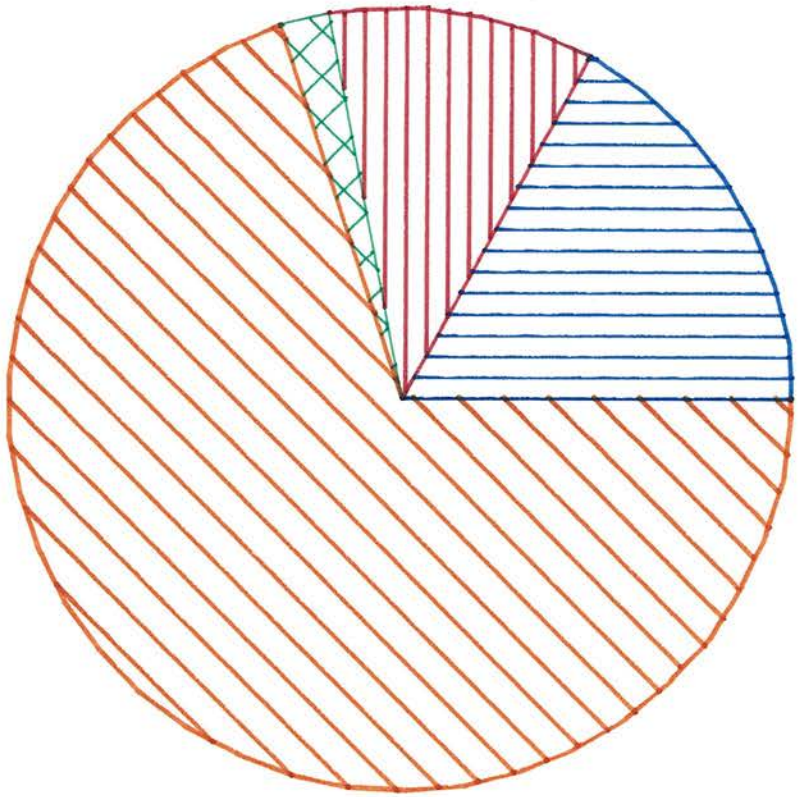
1% SIDERITE

9% PYRITE

58% CLAY

SHELL CALIFORNIA PRODUCTION INC. #43-27

CLAY FRACTION



0%
SMECTITE

17%
ILLITE

11%
KAOLINITE

2%
CHLORITE

70%
MIXED LAYER

DEPTH 9403-9471 FEET

46X-35N ST4

DOG

029-59189

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

BELRIDGE OIL COMPANY
#46X-35
NORTH BELRIDGE
KERN, CALIFORNIA

DATE : 18-APR-79
FORMATION :
DRLG. FLUID: WB
LOCATION :

FILE NO : BP-1-8193
LABORATORY: BAKERSFIELD
ANALYSTS : DK
ELEVAION :

RECEIVED
APR 29 1980
DIVISION OF OIL & GAS
BAKERSFIELD

SIDEWALL CORE ANALYSIS

REC IN	DEPTH	PERM MD	POR %	OIL% PORE	WTR% PORE	O/W RATIO	SAMPLE WEIGHT	DESCRIPTION
1.7	163.0	382.	31.6	0.0	86.1	0.00	11.35	SD;GY,VF-FGR/CLY INCLS,NO STN,NO FLU
1.6	188.0	538.	33.5	22.9	55.1	0.42	13.96	SD;BRN,F-CGR/CLY,DSTN,DGLD FLU
1.7	202.0	647.	39.3	44.2	45.9	0.96	14.13	SD;BRN,VF-FGR,SLTY,DSTN,DGLD FLU
1.5	237.0	1335.	30.1	15.5	61.5	0.25	12.43	SD;BRN,F-MGR/CLY,DSTN,DGLD FLU
1.5	288.0	246.	29.4	35.0	43.1	0.81	13.92	SD;BRN,F-CGR/CLY INCLS,DSTN,DGLD FLU
1.6	320.0	138.	36.3	27.8	58.9	0.47	9.56	SD;BRN,F-MGR/HVY CALC INCLS,DSTN,DGLD FLU
1.2	364.0	518.	30.2	32.1	45.9	0.70	13.35	SD;BRN,F-MGR/CLY INCLS,DSTN,DGLD FLU
1.7	391.0	187.	46.4	21.8	70.0	0.31	10.85	SD;BRN,FGR,CLY/DIAT,DSTN,DGLD FLU
1.7	409.0	1.7	48.4	0.8	92.6	0.01	7.61	DIAT;GY-TAN,VLSTN,VD FLU
1.6	530.0	3.6	44.0	1.4	93.0	0.02	9.65	SAME
1.7	557.0	5.8	48.6	23.1	66.4	0.35	9.11	DIAT;LT BRN,DSTN,DGLD FLU
1.7	570.0	1.0	44.9	5.3	86.5	0.06	8.59	SAME/SH INCLS
1.6	584.0	2.2	47.4	1.5	89.2	0.02	8.31	SAME
1.7	656.0	38.	40.2	24.4	65.6	0.37	9.85	SAME;SDY
1.7	664.0	31.	43.6	24.8	63.0	0.39	9.10	SAME;SDY
2.0	680.0	6.3	48.5	6.7	86.8	0.08	7.08	SAME
2.0	704.0	4.0	45.9	8.8	85.4	0.10	7.28	SAME
1.8	719.0	2.4	52.4	11.6	83.0	0.14	6.79	SAME
1.8	743.0	3.1	56.1	19.5	75.4	0.26	7.28	SAME
1.8	783.0	0.7	43.2	1.4	91.8	0.02	7.65	SAME
1.6	827.0	5.8	50.6	16.3	75.8	0.21	7.49	SAME
1.8	863.0	4.2	54.6	16.6	76.1	0.22	6.89	SAME
1.6	900.0	0.4	45.3	0.9	91.1	0.01	8.04	DIAT;GY-TAN/SHY,VLSTN,VD FLU
1.6	932.0	2.9	56.9	8.1	80.9	0.10	8.04	DIAT;LT BRN,DSTN,DGLD FLU
1.7	960.0	1.3	50.2	0.7	92.0	0.01	7.80	SAME
1.6	1013.0	3.3	58.9	18.5	75.9	0.24	7.60	SAME
1.6	1063.0	3.8	60.8	31.9	59.6	0.54	6.45	SAME
1.5	1090.0	2.0	62.4	25.6	66.2	0.39	7.10	SAME

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

BELRIDGE OIL COMPANY
#46X-35

DATE : 18-APR-79
FORMATION :

FILE NO : BP-1-8193
LABORATORY: BAKERSFIELD

SIDEWALL CORE ANALYSIS

RECEIVED
APR 29 1980
DIVISION OF OIL & GAS
BAKERSFIELD

REC IN	DEPTH	PERM MD	POR %	OIL% PORE	WTR% PORE	O/W RATIO	SAMPLE WEIGHT	DESCRIPTION
1.6	1123.0	4.1	62.2	21.4	70.7	0.30	7.95	SAME
1.6	1165.0	2.9	64.2	15.0	77.2	0.19	7.40	SAME
1.6	1187.0	3.5	58.2	20.8	69.8	0.30	8.81	SAME
1.6	1204.0	2.6	63.3	30.4	61.3	0.50	8.22	SAME
1.6	1245.0	1.8	57.7	11.9	76.5	0.16	5.90	SAME
1.7	1272.0	1.5	53.9	6.8	83.9	0.08	6.33	SAME
1.6	1295.0	0.6	54.0	18.9	69.3	0.27	6.87	SAME
1.6	1317.0	1.2	49.7	10.6	80.6	0.13	8.75	SAME
1.6	1353.0	0.8	50.7	15.0	77.3	0.19	8.26	SAME
1.6	1375.0	0.5	44.8	1.3	89.7	0.01	9.10	SAME
1.6	1387.0	2.2	49.5	20.1	67.6	0.30	8.01	SAME

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DOG

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

BELRIDGE OIL COMPANY
46X-35
NORTH BELRIDGE
KERN, CALIFORNIA

DATE : 15-JUN-79
FORMATION :
DRLG. FLUID: W.B.
LOCATION :

FILE NO : BP-1-8310
LABORATORY: BAKERSFIELD
ANALYSTS : DLK
ELEVAION :

RECEIVED
APR 29 1980
DIVISION OF OIL & GAS
BAKERSFIELD

029-59189

SIDEWALL CORE ANALYSIS

REC IN	DEPTH	PERM MD	POR %	OIL% PORE	WTR% PORE	O/W RATIO	SAMPLE WEIGHT	DESCRIPTION
0.1	8676.0	124.	22.3	8.7	43.5	0.20	2.24	SD;TAN,VF-MGR,SLTY,LSTN,YEL FLU
0.1	8679.0	29.	9.1	0.0	80.0	0.00	1.38	SD;GY,VF-FGR,SHLY,SLTY,NO STN,NO FLU
0.2	8681.0	197.	25.4	6.1	45.5	0.13	2.68	SD;TAN,VF-MGR,SLTY,LSTN,YEL FLU
0.3	8685.0	146.	24.5	6.0	34.0	0.18	4.28	SAME
0.2	8688.0	79.	23.0	8.7	30.4	0.29	2.08	SD;TAN,VF-FGR,VSLTY,CALC,LSTN,YEL FLU
0.2	8693.0	48.	28.9	15.4	38.5	0.40	0.89	SAME
0.3	8695.0	93.	20.1	6.2	31.2	0.20	3.22	SAME
0.3	8698.0	67.	20.5	4.2	27.1	0.15	4.82	SAME
0.3	8702.0	84.	20.8	6.5	39.1	0.17	4.80	SAME
0.3	8707.0	42.	16.8	8.1	32.4	0.25	4.80	SAME
0.3	8710.0	112.	19.9	4.8	28.6	0.17	4.52	SD;TAN,VF-MGR,SLTY,LSTN,YEL FLU
0.1	8713.0	264.	25.4	11.1	55.6	0.20	1.40	SAME
0.4	8716.0	132.	24.2	3.5	38.8	0.09	7.40	SAME

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Dog.

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

BELRIDGE OIL CO.
46X-35
BELRIDGE-NORTH
KERN COUNTY, CA.

DATE : 24-OCT-79
FORMATION :
DRLG. FLUID: WB
LOCATION : SEC. 35-T27S/R20E

FILE NO : BP-1-8572
LABORATORY: BAKERSFIELD
ANALYSTS : DK BB
ELEVAION : 657'KB

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APR 29 1980
DIVISION OF OIL & GAS
BAKERSFIELD

029-59189

SIDEWALL CORE ANALYSIS

REC IN	DEPTH	PERM MD	POR %	OIL% PORE	WTR% PORE	O/W RATIO	SAMPLE WEIGHT	DESCRIPTION
0.3	8622.0	38.	26.1	1.4	35.6	0.04	2.80	SD;LT TAN,VFGR,SLTY,LSN,GLD FLU
0.2	8625.0	53.	25.8	2.0	65.3	0.03	2.00	SAME
0.3	8628.0	65.	17.3	2.9	61.2	0.05	3.60	SAME/MGR
0.3	8634.0	51.	24.9	2.2	54.3	0.04	3.10	SAME/MGR
0.3	8642.0	79.	23.9	0.9	67.6	0.01	1.97	SAME/MGR
0.2	8665.0	44.	21.8	2.8	63.9	0.04	3.70	SAME,CALC
0.3	8740.0	88.	25.3	1.8	67.0	0.03	3.74	SAME/MGR
0.2	8748.0	59.	25.3	1.2	67.2	0.02	2.10	SAME
0.3	8747.0	43.	26.1	3.2	56.5	0.06	2.01	SAME
0.3	8752.0	33.	26.5	2.2	61.5	0.04	2.85	SAME
	8752.0							SAME
0.2	8757.0	25.	28.7	1.8	74.4	0.02	2.47	SAME,CALC
	8762.0							SAME
0.2	8762.0	31.	27.5	1.4	73.2	0.02	2.71	SAME
	8765.0							SAME
0.2	8770.0	89.	23.6	2.1	76.6	0.03	4.40	SD;LT TAN,VF-FGR,SLTY,LSTN,GLD FLU
0.2	8774.0	73.	23.7	1.9	75.5	0.02	2.46	SAME

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CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

P.O.B

BELRIDGE OIL COMPANY
#46X-35
NORTH BELRIDGE
KERN,CALIFORNIA

DATE : 22-MAY-79
FORMATION :
DRLG. FLUID: WB
LOCATION :

SIDEWALL CORE ANALYSIS

FILE NO : BP-1-8259
LABORATORY: BAKERSFIELD
ANALYSTS : DLK
ELEVAION :

RECEIVED
APR 29 1980
DIVISION OF OIL & GAS
BAKERSFIELD

029-59189

REC IN	DEPTH	PERM MD	POR %	OIL% PORE	WTR% PORE	O/W RATIO	SAMPLE WEIGHT	DESCRIPTION
1.2	2698.0	1.2	38.6	7.1	71.3	0.10	8.23	SH;BRN,SLTY/DIAT,DSTN,VDGLD FLU
1.0	3025.0	2.3	46.0	8.3	76.4	0.11	8.05	DIAT;BRN,VSHY,DSTN,VDGLD FLU
1.0	3080.0	0.6	43.1	14.3	68.6	0.21	6.35	SH;BRN/DIAT,DSTN,VDGLD FLU
1.5	3120.0	0.9	41.8	11.6	70.7	0.16	10.25	SAME
1.2	3181.0	1.4	38.4	9.0	72.1	0.12	10.50	SAME
1.0	3546.0	4.6	46.1	6.6	75.9	0.09	10.11	DIAT;BRN,SHY,DSTN,VDGLD FLU
1.2	3584.0	1.1	42.0	8.5	73.3	0.12	6.15	SH;BRN/DIAT,DSTN,VDGLD FLU
1.2	3615.0	0.5	43.8	5.8	84.5	0.07	8.53	SAME
1.3	4060.0	0.3	32.1	38.2	56.6	0.67	12.86	SH;BRN/FEW DIAT,DSTN,VDGLD FLU
1.2	4109.0	0.7	37.4	26.4	61.8	0.43	8.82	SAME
0.5	4212.0	0.8	32.1	28.9	65.8	0.44	4.62	SAME
1.5	4974.0	74.	26.3	0.0	83.7	0.00	10.85	SD;GY,VFGR,CLY,NO STN,NO FLU
1.2	4980.0	179.	28.4	0.0	86.6	0.00	8.28	SAME
1.2	4987.0	106.	27.2	0.0	82.3	0.00	12.72	SAME
1.2	5011.0	64.	26.7	0.0	87.3	0.00	9.82	SAME
1.5	5017.0	132.	26.7	0.0	84.0	0.00	13.60	SAME
1.0	5719.0	195.	26.6	0.0	84.9	0.00	13.72	SAME
0.9	5124.0	57.	28.8	0.0	84.4	0.00	11.36	SAME/CLY INCLS
1.4	5727.0	124.	28.0	0.0	72.9	0.00	10.71	SAME
1.2	5480.0	219.	31.1	12.1	68.4	0.18	12.43	SD;TAN,VF-FGR/F CLY INCLS,LSTN,WH FLU
0.6	5433.0	47.	25.2	3.0	74.6	0.04	5.70	SAME/HVY CALC INCLS
1.0	5436.0	59.	26.6	13.5	70.9	0.19	11.12	SAME;VCLY
1.2	5449.0	467.	27.9	15.6	74.5	0.21	10.66	SD;TAN,VF-FGR,LSTN,YEL-WH FLU
1.2	5453.0	388.	27.7	13.3	72.0	0.18	10.77	SAME
1.0	5458.0	264.	30.5	17.6	67.6	0.26	9.96	SAME/CALC LAM
1.2	5468.0	285.	26.3	18.7	65.5	0.29	11.31	SAME
1.2	5490.0	117.	30.0	15.3	64.5	0.24	8.59	SAME;VCLY
0.7	6646.0	75.	38.3	0.0	84.9	0.00	4.65	SD;GY,VF-FGR,CLY,NO STN,NO FLU

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

BELRIDGE OIL COMPANY
#46X-35

DATE : 22-MAY-79
FORMATION :

FILE NO : BF-1-8259
LABORATORY: BAKERSFIELD

SIDEWALL CORE ANALYSIS

RECEIVED
APR 29 1980
DIVISION OF OIL & GAS
BAKERSFIELD

REC IN	DEPTH	PERM MD	POR %	OIL% PORE	WTR% PORE	O/W RATIO	SAMPLE WEIGHT	DESCRIPTION
0.7	7295.0	4.3	28.4	21.4	71.4	0.30	6.09	SLTST;BRN,DSTN,VDGLD FLU
	7793.0							INSUFFICIENT SAMPLE
	7836.0							INSUFFICIENT SAMPLE
0.4	7840.0	38.	29.7	2.3	81.4	0.03	3.02	SD;GY,VFGR,SLTY,SL CALC,NO STN,WH SP FLU
0.6	7845.0	51.	31.2	1.4	88.6	0.02	4.51	SAME
0.3	7860.0	84.	26.8	3.3	82.0	0.04	4.76	SAME
0.3	7871.0	67.	29.7	2.1	93.6	0.02	3.28	SAME
0.3	7880.0	42.	32.0	2.1	95.7	0.02	3.03	SAME
	7890.0							INSUFFICIENT SAMPLE
	7907.0							INSUFFICIENT SAMPLE
0.3	7930.0	78.	29.6	2.1	87.2	0.02	3.24	SD;GY,VFGR,SLTY,SL CALC,NO STN,WH SP FLU
0.3	7940.0	59.	30.2	1.8	87.7	0.02	3.82	SAME
0.2	8108.0	90.	24.9	9.3	79.1	0.12	3.79	SAME
0.2	8110.0	3.2	33.2	17.4	79.7	0.22	4.29	SLTST;BRN,DSTN,VDGLD FLU
0.3	8112.0	1.6	34.9	24.0	69.8	0.34	3.74	SAME
1.2	8114.0	1.0	18.3	24.7	52.1	0.47	9.07	SH;BRN/CALC INCLS,DSTN,VDGLD FLU
0.6	8116.0	0.7	24.7	12.5	66.7	0.19	8.18	SAME
0.7	8118.0	19.	37.0	6.6	77.2	0.09	7.12	SD;GY,VF-FGR,VSHY,DSTN,VDGLD FLU

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511N-1N ST1

(B)

LABORATORY REPORT
CORE EVALUATION RECORD

FILE NO._____ DATE ~~October 15, 1940~~

Sheet No. 1

NAME OF WELL:— Belridge Oil Co., 8-1 Well

LOCATION:— Belridge Oil Field

Effective identical sample. Ocean specific form. Tel 5/19/44 GRP.

SAMPLE DEPTH OR NUMBER	POROSITY %	PERMEABILITY IN MILLIDARCY'S	RESIDUAL SATURATIONS % OF POROSITY		RESIDUAL WATER SALINITY — GR. PER GAL.	OIL — WATER RATIO	CONDUCTIVITY INDEX
			OIL	WATER			
7894	15.98	183.5	0.00	84.61	37		4720
7897	17.55	319.4	0.00	65.19	88		5260
7900	15.50	304.4	0.00	48.71	155		3860
7903	15.89	220.7	0.00	51.23	137		4070
7906	15.35	177.5	0.00	63.78	231		4940
7912	16.13	94.9	0.00	74.21	144		5120
7916	16.29	112.0	0.00	58.81	306		4720
7920	16.45	122.8	0.00	70.21	79		5180
7924	16.32	95.8	0.00	77.14	88		5230
7926	16.79	172.4	0.00	55.33	114		4410
7929	17.15	154.0	0.00	52.77	123		4310
7932	15.83	135.5	0.00	49.78	150		3970
7935	15.26	138.7	0.00	26.80	261		1940
7936	17.21	107.0	0.00	32.42	230		2460
7938	15.87	86.0	0.00	37.68	179		2900
7944	5.97	0.0	0.00	40.70	522		3170
7946	15.16	131.5	0.00	33.17	251		2520

REMARKS:

Aera Central Files
BOX: 029287
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Test & Analysis
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North Belridge 01 T28S R20E
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GRAYDON OLIVER
CONSULTING PETROLEUM ENGINEER
215 WEST SEVENTH STREET
LOS ANGELES, CALIF.

JA 3696

LABORATORY REPORT
CORE EVALUATION RECORD

FILE NO._____ DATE October 15, 1940

Sheet No. 2

NAME OF WELL:— Belridge Oil Co., 8-1 Well

LOCATION:— Belridge Oil Field

SAMPLE DEPTH OR NUMBER	POROSITY %	PERMEABILITY IN MILLIDARCY'S	RESIDUAL SATURATIONS % OF POROSITY		RESIDUAL WATER SALINITY — GR. PER GAL.	OIL—WATER RATIO	CONDUCTIVITY INDEX
			OIL	WATER			
7948	18.62	56.6	0.00	71.32	110		5100
7950	13.82	86.5	0.00	50.43	170		4020
7952	14.18	59.8	0.00	67.14	106		4820
7954	14.44	58.9	0.00	69.18	127		4760
7956	15.13	80.1	0.00	60.61	164		4810
7958	15.08	59.9	0.00	61.87	137		4840
7960	15.18	50.8	0.00	54.15	122		4330
7962	15.75	41.7	0.00	66.48	106		4720
7964	15.33	110.0	0.00	75.47	106		4810
7986	14.41	25.8	0.00	25.40	187		1830
7989	14.72	26.7	0.00	21.13	210		1420
7991	14.47	16.4	0.00	28.96	158		2130
7993	5.56	14.2	0.00	41.91	191		3290
7995	14.87	15.0	0.00	17.15	216		1060
7997	15.17	61.5	0.00	17.93	197		1110
7999	15.41	15.5	0.00	23.95	188		1660
8001	15.16	18.9	0.00	33.31	201		2530

REMARKS:

GRAYDON OLIVER
CONSULTING PETROLEUM ENGINEER
215 WEST SEVENTH STREET
LOS ANGELES, CALIF.

LABORATORY REPORT
CORE EVALUATION RECORD

FILE NO._____ DATE October 15, 1940

Sheet No. 3

NAME OF WELL:— Belridge Oil Co. 8-1 Well

LOCATION:— Belridge Oil Field.

SAMPLE DEPTH OR NUMBER	POROSITY %	PERMEABILITY IN MILLIDARCY'S	RESIDUAL SATURATIONS % OF POROSITY		RESIDUAL WATER SALINITY — GR. PER GAL.	OIL—WATER RATIO	CONDUCTIVITY INDEX
			OIL	WATER			
8003	14.74	14.5	6.45	39.21	224	0.093	3500
8005	15.53	17.3	6.37	39.92	227	0.093	3600
8007	14.98	13.0	4.87	39.59	210	0.070	3650
8009	15.11	10.9	4.83	39.51	205	0.069	3650
8011	16.38	19.5	4.09	35.35	195	0.060	3325
8013	15.51	17.3	5.93	36.23	183	0.087	3325
8015	15.58	12.0	5.39	42.30	155	0.077	3850
8017	14.50	15.6	6.62	44.76	167	0.096	3975
8019	16.29	19.4	0.00	6.81	1226		810
8021	13.25	9.1	0.00	8.08	1141		760
8023	3.72	0.0	0.00	10.17	1090		420
8033	12.26	11.7	0.00	7.01	1120		840
8035	13.54	17.1	0.00	37.30	261		2840
8037	14.41	35.9	0.00	37.82	195		2920
8039	14.50	19.7	0.00	19.45	535		1260
8041	14.54	20.4	0.00	2.61	1140		740
8043	14.26	12.8	0.00	24.05	509		1710
8045	14.82	15.7	0.00	58.23	159		4650

REMARKS:

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LOS ANGELES, CALIF.

LABORATORY REPORT
CORE EVALUATION RECORD

FILE NO._____ DATE October 15, 1940

Sheet No. 4

NAME OF WELL:— Belridge Oil Co. 8-1 Well

LOCATION:— Belridge Oil Field

SAMPLE DEPTH OR NUMBER	POROSITY %	PERMEABILITY IN MILLIDARCY'S	RESIDUAL SATURATIONS % OF POROSITY		RESIDUAL WATER SALINITY — GR. PER GAL.	OIL—WATER RATIO	CONDUCTIVITY INDEX
			OIL	WATER			
8047	15.10	9.9	0.00	52.78	267		4430
8049	14.41	10.0	0.00	43.58	305		3380
8051	15.33	11.7	0.00	46.84	215		3730
8053	14.54	12.3	0.00	40.44	282		3180
8055	18.23	15.0	0.00	65.33	136		5180
8057	14.76	20.0	6.23	82.93	173		6540
8059	14.20	9.3	0.00	42.18	294		3810
8064-A	15.23	6.6	5.32	79.58	144		4290
8064-B	15.23	6.6	4.92	46.62	225		4275
8065	15.24	12.0	5.12	35.24	397		3275
8066	15.26	14.7	4.46	37.09	238		3260
8067	14.06	9.4	5.19	37.20	334		3300
8068	15.07	9.4	4.18	31.72	346		3000
8069	15.03	7.2	4.92	33.40	299		3140
8070	13.19	11.0	5.23	34.65	337		3110
8071	15.03	8.2	4.32	35.33	348		3330
8073	15.13	9.5	4.63	29.41	279		2760

REMARKS:

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215 WEST SEVENTH STREET
LOS ANGELES, CALIF.

LABORATORY REPORT
CORE EVALUATION RECORD

FILE NO._____ DATE October 15, 1940

Sheet No. 5

NAME OF WELL:— Belridge Oil Co. 8-1 Well

LOCATION:— Belridge Oil Field

SAMPLE DEPTH OR NUMBER	POROSITY %	PERMEABILITY IN MILLIDARCY'S	RESIDUAL SATURATIONS % OF POROSITY		RESIDUAL WATER SALINITY — GR. PER GAL.	OIL—WATER RATIO	CONDUCTIVITY INDEX
			OIL	WATER			
8074	13.10	7.1	0.0	34.66	335		2640
8076	13.93	9.6	0.0	6.39	1140		810
8077	14.23	8.4	0.00	30.29	431		2770
8078	13.67	6.7	0.00	34.31	360		2570
8079	13.98	7.3	0.00	27.47	609		2030
8081	15.63	9.5	0.00	28.60	418		2120
8083	16.70	8.8	0.00	22.34	508		1540
8086	14.05	5.5	0.00	30.89	376		2340
8088	13.85	4.0	0.00	30.18	379		2270
8090	15.09	7.7	0.00	2.45	1080		840
8092	14.92	8.5	0.00	51.01	227		4060
8094	14.77	6.7	0.00	32.57	339		2450
8096	14.74	8.5	0.00	50.47	241		4010
8098	14.59	7.7	4.18	43.52	303	0.058	4080
8101	15.01	8.1	4.06	28.78	318	0.057	2720
8103	15.80	10.3	3.80	33.99	286	0.054	3300
8105	15.91	7.9	0.00	25.02	463		1770
8107	14.50	6.3	0.00	27.31	377		1960

REMARKS:

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215 WEST SEVENTH STREET
LOS ANGELES, CALIF.

LABORATORY REPORT
CORE EVALUATION RECORD

FILE NO._____ DATE ~~October 15, 1940~~

Sheet No. 6

NAME OF WELL:— Belridge Oil Co. 8-1 Well

LOCATION:— Belridge Oil Field

SAMPLE DEPTH OR NUMBER	POROSITY %	PERMEABILITY IN MILLIDARCY'S	RESIDUAL SATURATIONS % OF POROSITY		RESIDUAL WATER SALINITY — GR. PER GAL.	OIL—WATER RATIO	CONDUCTIVITY INDEX
			OIL	WATER			
8109	13.21	6.4	0.00	26.95	568		1960
8111	14.67	8.1	0.00	27.47	384		1970
8113	14.73	7.5	6.25	35.57	284	0.087	3240
8115	15.05	7.3	6.25	30.17	427	0.087	2820
8117	15.35	10.5	5.60	28.99	319	0.080	2670
8119	14.67	6.7	5.93	25.15	474	0.083	2350
8120	14.96	8.4	0.00	33.89	1080		2570
8123	14.97	6.2	0.00	24.38	499		1720
8128	14.75	7.7	0.00	33.63	419		2550
8130	15.79	8.3	0.00	25.14	505		1800
8132	15.30	9.9	0.00	3.53	1120		840
8134	15.07	8.4	0.00	31.79	310		2410
8136	13.34	7.0	0.00	9.90	1278		420
8138	14.78	7.7	0.00	16.78	612		980
8140	15.78	7.1	0.00	43.22	220		3400
8142	13.54	5.9	0.00	31.98	370		2420
8146	14.96	9.9	0.00	36.10	1140		2770

REMARKS:

GRAYDON OLIVER
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215 WEST SEVENTH STREET
LOS ANGELES, CALIF.

LABORATORY REPORT
CORE EVALUATION RECORD

FILE NO._____ DATE October 15, 1940

Sheet No. 7

NAME OF WELL:— Belridge Oil Co. 8-1 Well

LOCATION:— Belridge Oil Field

SAMPLE DEPTH OR NUMBER	POROSITY %	PERMEABILITY IN MILLIDARCY'S	RESIDUAL SATURATIONS % OF POROSITY		RESIDUAL WATER SALINITY — GR. PER GAL.	OIL—WATER RATIO	CONDUCTIVITY INDEX
			OIL	WATER			
8149	13.97	7.2	0.00	6.59	1878		870
8151	13.90	8.0	0.00	31.22	442		2340
8153	6.86	0.4	0.00	59.33	1061		4960
8155	14.63	10.2	20.93	45.69	248	0.296	3040
8157	14.48	14.9	17.96	39.71	280	0.260	2880
8158	15.32	8.5	16.64	36.10	299	0.233	2750
8159	13.03	5.0	17.04	53.72	255	0.233	3660
8160	14.16	10.0	17.87	49.86	259	0.253	3400
8161	14.76	7.0	13.82	47.22	244	0.192	3600
8162	15.42	6.7	15.11	30.16	308	0.209	2400
8175	11.61	4.1	15.85	70.54	287	0.214	4425
8176	13.32	6.3	10.96	57.88	328	0.151	4490
8177	12.88	8.8	20.96	67.31	140	0.294	3750
8178	14.36	4.1	15.60	69.15	286	0.210	4400
8179	13.79	9.4	18.56	65.70	274	0.262	3960
8180	14.76	14.4	16.80	51.56	326	0.243	3600
8181	13.12	6.0	21.19	69.74	374	0.291	3770

REMARKS:

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215 WEST SEVENTH STREET
LOS ANGELES, CALIF.

LABORATORY REPORT
CORE EVALUATION RECORD

FILE NO._____ DATE October 15, 1940

Sheet No. 8

NAME OF WELL:— Belridge Oil Co. 8-1 Well

LOCATION:— Belridge Oil Field

SAMPLE DEPTH OR NUMBER	POROSITY %	PERMEABILITY IN MILLIDARCY'S	RESIDUAL SATURATIONS % OF POROSITY		RESIDUAL WATER SALINITY — GR. PER GAL.	OIL—WATER RATIO	CONDUCTIVITY INDEX
			OIL	WATER			
8193	15.06	10.3	16.27	48.34	179	0.231	3500
8194	12.34	12.6	11.18	45.46	264	0.160	3650
8195	11.64	2.9	11.17	1.72	1070	0.149	100
8196	11.62	2.8	12.39	64.11	202	0.164	4640
8198	12.30	4.1	17.15	61.30	199	0.231	4020
8199	11.49	11.1	9.92	5.40	1110	0.141	460
8204	12.18	2.9	12.48	63.14	170	0.165	4580
8206	12.51	2.5	12.15	65.63	189	0.160	4750
8208	12.85	5.6	20.62	68.25	147	0.283	3800
8210	13.51	4.1	14.36	70.32	189	0.194	4600
8211	11.78	4.9	13.75	68.59	346	0.187	4560
8212	8.78	0.0	20.73	79.27	283	0.255	3900

REMARKS:

GRAYDON OLIVER
CONSULTING PETROLEUM ENGINEER
215 WEST SEVENTH STREET
LOS ANGELES, CALIF.

8

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CORE ANALYSIS PHI PCT	CORE ANALYSIS KHOR MD	CORE ANALYSIS SO PCT
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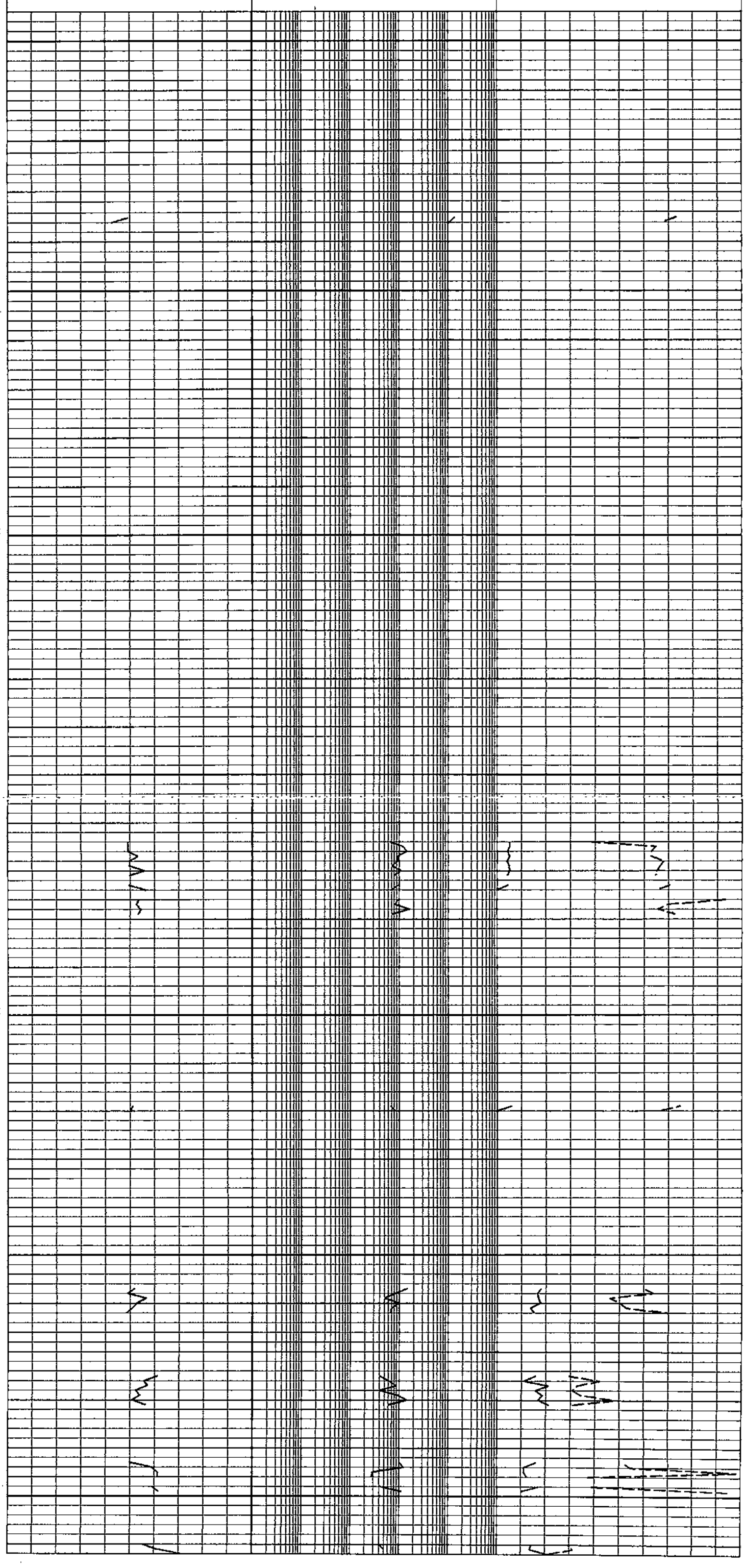
CORE ANALYSIS SW PCT

100. 0.

DEPTH FT



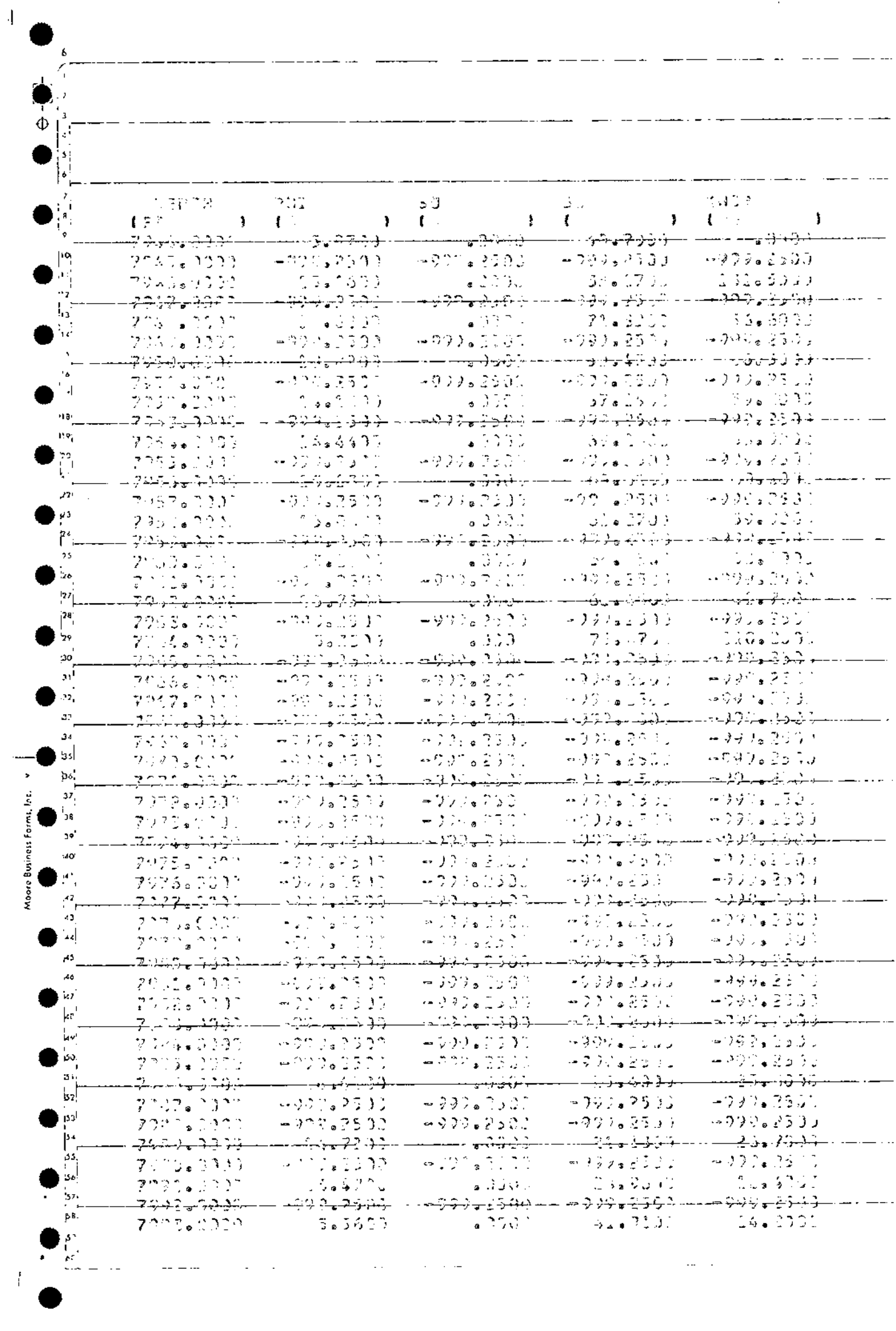
Well 8-1

LPP — Mobil #8

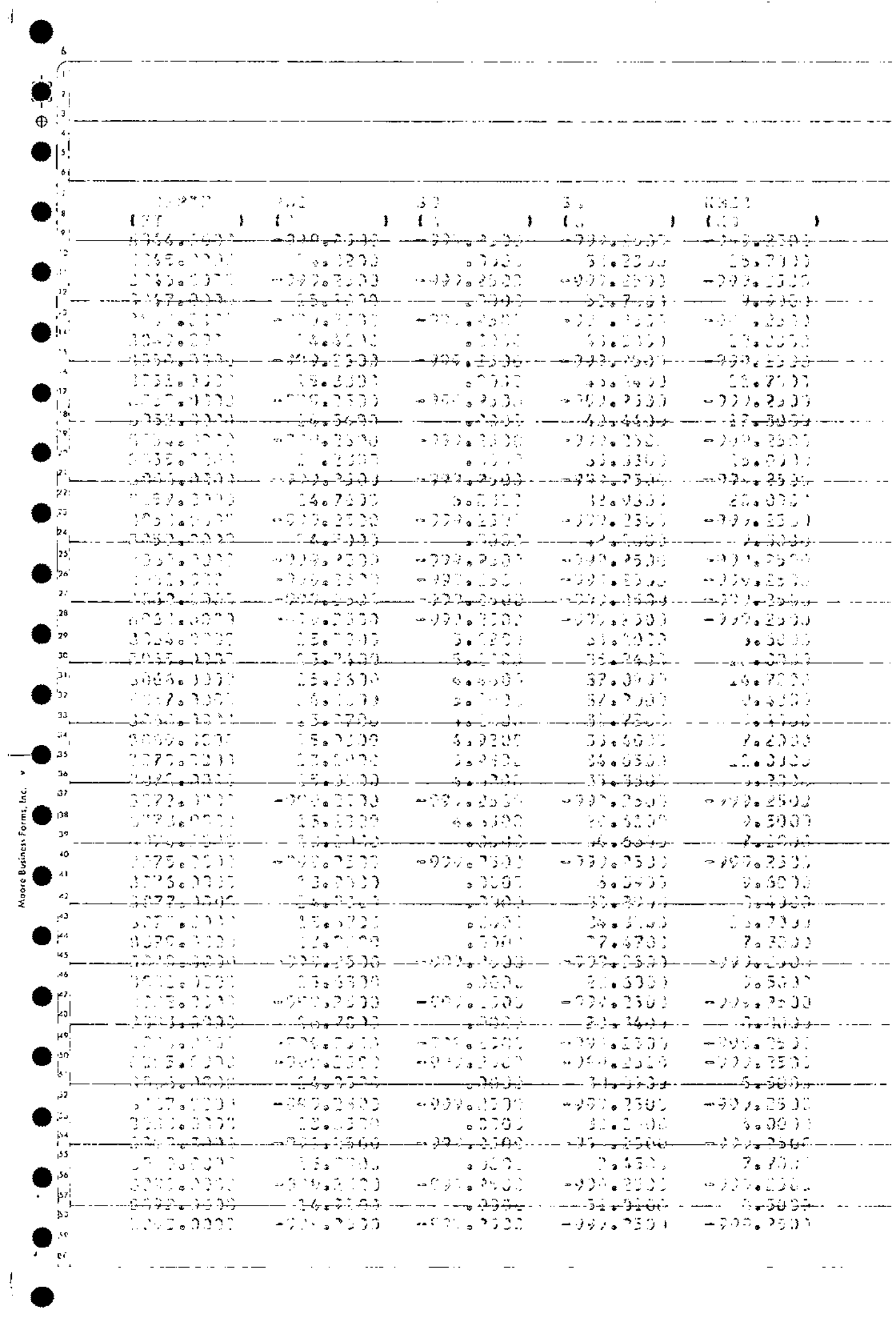
Core data

mnlid '8'

servid 'Core Analysis'



DEPTH (FT)	PHI (V/V)	SO (V/V)	SW (V/V)	KHOR (MD)
7994.0000	-999.2500	-999.2500	-999.2500	-999.2500
7995.0000	14.3700	.0000	17.3500	15.0000
7996.0000	-999.2500	-999.2500	-999.2500	-999.2500
7997.0000	15.1700	.0000	17.9300	16.5000
7998.0000	-999.2500	-999.2500	-999.2500	-999.2500
7999.0000	15.4200	.0000	18.0500	15.5000
8000.0000	-999.2500	-999.2500	-999.2500	-999.2500
8001.0000	15.1600	.0000	33.3100	18.9000
8002.0000	-999.2500	-999.2500	-999.2500	-999.2500
8003.0000	14.7400	6.4500	39.2100	14.5000
8004.0000	-999.2500	-999.2500	-999.2500	-999.2500
8005.0000	15.5300	6.3700	39.9200	17.3000
8006.0000	-999.2500	-999.2500	-999.2500	-999.2500
8007.0000	14.9800	4.8700	37.5900	13.0000
8008.0000	-999.2500	-999.2500	-999.2500	-999.2500
8009.0000	14.1100	4.3300	39.5100	10.9000
8010.0000	-999.2500	-999.2500	-999.2500	-999.2500
8011.0000	16.3000	4.0900	35.3500	19.5000
8012.0000	-999.2500	-999.2500	-999.2500	-999.2500
8013.0000	15.5100	5.9500	36.2300	17.3000
8014.0000	-999.2500	-999.2500	-999.2500	-999.2500
8015.0000	15.5000	5.3900	42.2000	12.0000
8016.0000	-999.2500	-999.2500	-999.2500	-999.2500
8017.0000	14.5000	5.6200	44.7600	15.6000
8018.0000	-999.2500	-999.2500	-999.2500	-999.2500
8019.0000	16.2200	.0000	5.6100	19.6000
8020.0000	-999.2500	-999.2500	-999.2500	-999.2500
8021.0000	14.2500	.0000	6.0300	9.1000
8022.0000	-999.2500	-999.2500	-999.2500	-999.2500
8023.0000	3.7200	.2000	10.1700	.0000
8024.0000	-999.2500	-999.2500	-999.2500	-999.2500
8025.0000	-999.2500	-999.2500	-999.2500	-999.2500
8026.0000	-999.2500	-999.2500	-999.2500	-999.2500
8027.0000	-999.2500	-999.2500	-999.2500	-999.2500
8028.0000	-999.2500	-999.2500	-999.2500	-999.2500
8029.0000	-999.2500	-999.2500	-999.2500	-999.2500
8030.0000	-999.2500	-999.2500	-999.2500	-999.2500
8031.0000	-999.2500	-999.2500	-999.2500	-999.2500
8032.0000	-999.2500	-999.2500	-999.2500	-999.2500
8033.0000	12.2600	.0000	7.0100	11.7000
8034.0000	-999.2500	-999.2500	-999.2500	-999.2500
8035.0000	13.5400	.0000	37.3000	17.1000
8036.0000	-999.2500	-999.2500	-999.2500	-999.2500
8037.0000	14.4100	.0000	37.9200	35.9000
8038.0000	-999.2500	-999.2500	-999.2500	-999.2500
8039.0000	16.5300	.0000	39.4500	18.7000
8040.0000	-999.2500	-999.2500	-999.2500	-999.2500
8041.0000	14.5400	.0000	2.0300	10.4000
8042.0000	-999.2500	-999.2500	-999.2500	-999.2500
8043.0000	14.2500	.0000	24.0500	12.6000



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DEPTH (FT)	PHI (-)	SO (-)	SJ (-)	KINF (-)
2566.3330	-999.2500	-999.2500	-999.2500	-999.2500
2565.8330	-999.2500	-999.2500	-999.2500	-999.2500
2566.3330	16.0000	.0000	56.1000	9.0000
2567.3330	-999.2500	-999.2500	-999.2500	-999.2500
2568.3330	-999.2500	-999.2500	-999.2500	-999.2500
2569.3330	15.8700	.0000	.0000	7.6300
2570.3330	-999.2500	-999.2500	-999.2500	-999.2500
2571.3330	13.8000	.0000	54.2400	.0000
2572.3330	-999.2500	-999.2500	-999.2500	-999.2500
2573.3330	.0000	.0000	.0000	.0000
2574.3330	-999.2500	-999.2500	-999.2500	-999.2500
2575.3330	14.0000	.0000	55.1000	7.6300
2576.3330	-999.2500	-999.2500	-999.2500	-999.2500
2577.3330	14.6300	.0000	57.4300	7.6300
2578.3330	15.3200	.0000	60.1900	.0000
2579.3330	14.9300	.0000	58.6400	.0000
2580.3330	14.9000	.0000	58.5200	.0000
2581.3330	14.7800	.0000	58.0500	.0000
2582.3330	14.4400	.0000	56.7100	.0000
2583.3330	-999.2500	-999.2500	-999.2500	-999.2500
2584.3330	-999.2500	-999.2500	-999.2500	-999.2500
2585.3330	-999.2500	-999.2500	-999.2500	-999.2500
2586.3330	-999.2500	-999.2500	-999.2500	-999.2500
2587.3330	-999.2500	-999.2500	-999.2500	-999.2500
2588.3330	-999.2500	-999.2500	-999.2500	-999.2500
2589.3330	-999.2500	-999.2500	-999.2500	-999.2500
2590.3330	-999.2500	-999.2500	-999.2500	-999.2500
2591.3330	-999.2500	-999.2500	-999.2500	-999.2500
2592.3330	11.0000	15.0000	70.5600	9.2000
2593.3330	11.0000	15.0000	57.8400	8.3000
2594.3330	10.2000	14.5000	57.5600	8.6000
2595.3330	10.3000	14.0000	57.0500	9.1000
2596.3330	11.2000	15.3000	58.7100	8.6000
2597.3330	11.2000	15.0000	58.8000	8.8100
2598.3330	-999.2500	-999.2500	-999.2500	-999.2500
2599.3330	-999.2500	-999.2500	-999.2500	-999.2500
2600.3330	-999.2500	-999.2500	-999.2500	-999.2500
2601.3330	-999.2500	-999.2500	-999.2500	-999.2500
2602.3330	-999.2500	-999.2500	-999.2500	-999.2500
2603.3330	-999.2500	-999.2500	-999.2500	-999.2500
2604.3330	-999.2500	-999.2500	-999.2500	-999.2500
2605.3330	-999.2500	-999.2500	-999.2500	-999.2500
2606.3330	-999.2500	-999.2500	-999.2500	-999.2500
2607.3330	-999.2500	-999.2500	-999.2500	-999.2500
2608.3330	13.8000	15.9700	63.4700	6.8100

Moore Business Forms, Inc.

DEPTH (FT)	PHI ( )	SO ( )	SL ( )	RMOR (MO)
8194.0000	12.3400	11.1600	45.4600	12.6000
8195.0000	11.6400	11.1700	1.7200	2.9000
8196.0000	11.6200	12.3700	64.1100	2.8000
8197.0000	-999.2500	-999.2500	-999.2500	-999.2500
8198.0000	12.3000	17.1500	61.8000	4.1000
8199.0000	11.4900	9.9000	5.6000	11.1000
8200.0000	-999.2500	-999.2500	-999.2500	-999.2500
8201.0000	-999.2500	-999.2500	-999.2500	-999.2500
8202.0000	-999.2500	-999.2500	-999.2500	-999.2500
8203.0000	-999.2500	-999.2500	-999.2500	-999.2500
8204.0000	12.1300	12.6400	65.1400	2.9000
8205.0000	-999.2500	-999.2500	-999.2500	-999.2500
8206.0000	12.5100	12.1500	45.6500	2.5000
8207.0000	-999.2500	-999.2500	-999.2500	-999.2500
8208.0000	12.7500	20.6200	63.2500	5.6000
8209.0000	-999.2500	-999.2500	-999.2500	-999.2500
8210.0000	13.5100	14.3400	72.3200	4.1000
8211.0000	11.7300	13.7500	68.5900	4.9000
8212.0000	6.7300	20.7300	79.2700	.0000

SHIDELER 1-28

HALLIBURTON

SIDEWALL CORE REPORT 5"=100'

COMPANY	**VALLEY RESOURCES**
WELL	**SHIDELER 1-28**
FIELD	**NORTH BELRIDGE**
COUNTY	**KERN**
STATE	**CA**

Location 28929' W AND 262' S
FROM THE NE COR. SEC 28-T27S/R20E MDB&M.
X(E):1457491.96 Y(N):753262.91 CA ZONE V, NAD 27
X(E):6018883.51 Y(N):2393692.07 CA ZONE V, NAD 83

Elevations: K.B. 717.0 ft D.F. G.L. 703.0 ft

Date Processed	11-Dec-19	Logs Processed	SWC
Job Number	906169144	Date Logged	11-Dec-19
Interval Processed	8664'-9550'	Type Fluid in Hole	LSND
Processed By	T.FOSTER	Location	BAKERSFIELD
Processed At	WELLSITE		

COMPUTER PROCESSED PRODUCT

Fold here

Service Ticket No.: 906169144 API No.: 04030671010000 PGM Version: WL INSITE R6.2.1 (Build 2)

Logs Processed: Date Logged: Type Fluid In Hole:

DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

Remarks:

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA. CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

HALLIBURTON

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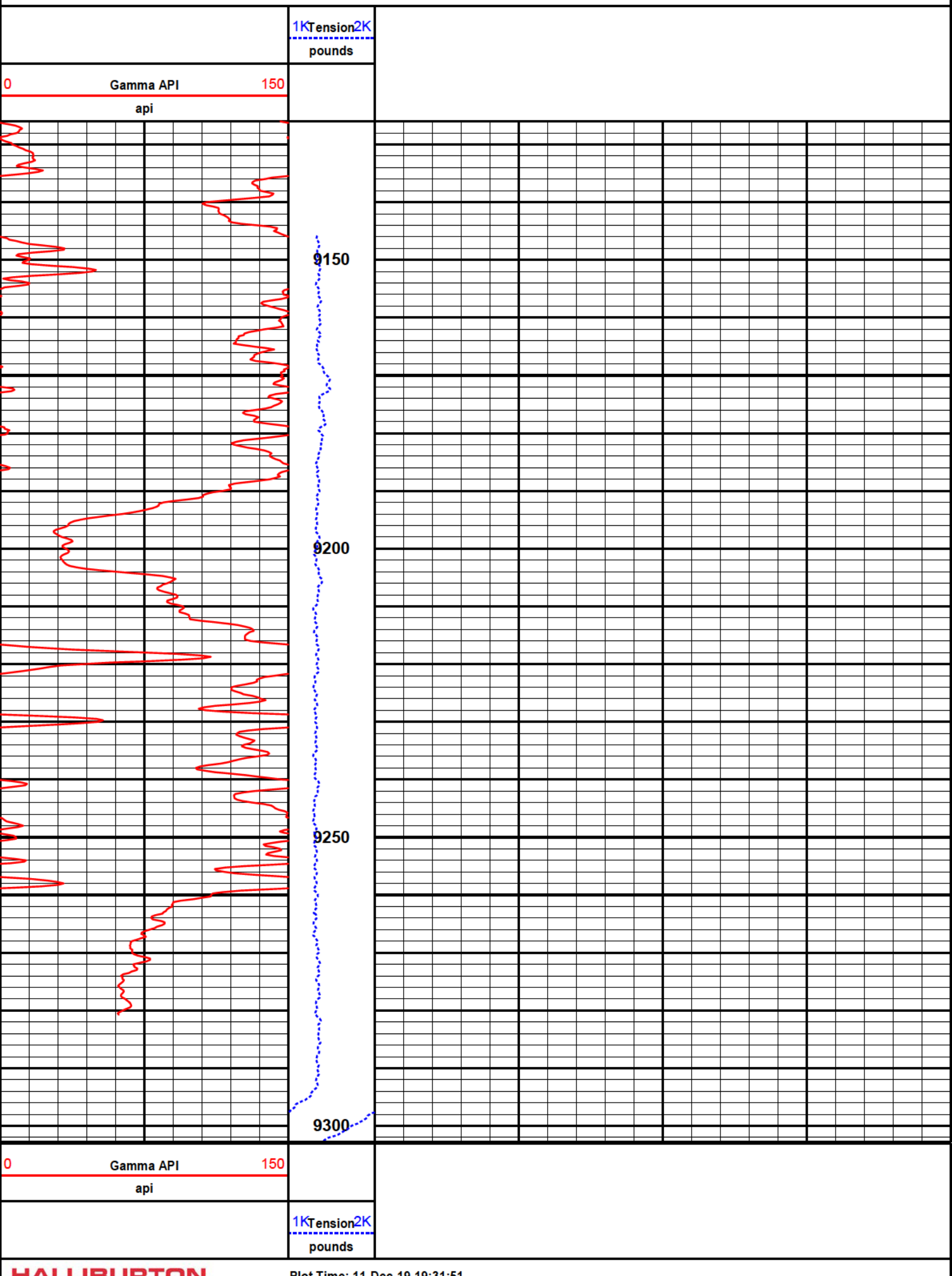
CORE GUN REPORT

Company: VALLEY RESOURCES
Well: SHIDELER 1-28
Tool Name: Digital Core Gun - Gearhart Gun
Serial Number: 11321668
Cores Requested: 24
Barrel Type: 1 inch OD Long Barrel
Cores Attempted: 24
Charge Type:
Cores Recovered: 15
Release Ring: Flat
Misfires: 0
Core Diameter: 1.00
Shoot Offs: 0
No Of Set Screws Used: 2
Pull Offs: 0

Core #	Depth	Shot Fire/Flagged	Gun ID	Shot #	Status	Drift	Tool Face	Core Length	Comment
1	9,550.0	11-Dec-19 16:53:50.000	DCGS-G	1	OK	0.00	0.00	1.00	
2	9,524.0	11-Dec-19 16:55:11.000	DCGS-G	2	OK	0.00	0.00	1.00	
3	9,500.0	11-Dec-19 16:55:54.000	DCGS-G	3	OK	0.00	0.00	1.00	
4	9,414.0	11-Dec-19 16:57:53.000	DCGS-G	4	OK	0.00	0.00	1.00	
5	9,392.0	11-Dec-19 16:58:45.000	DCGS-G	5	OK	0.00	0.00	1.00	
6	9,350.0	11-Dec-19 16:59:49.000	DCGS-G	6	Empty Barrel	0.00	0.00	1.00	
7	9,330.0	11-Dec-19 17:00:37.000	DCGS-G	7	Empty Barrel	0.00	0.00	1.00	
8	9,298.0	11-Dec-19 17:01:29.000	DCGS-G	8	OK	0.00	0.00	1.00	
9	9,273.0	11-Dec-19 17:02:26.000	DCGS-G	9	OK	0.00	0.00	1.00	
10	9,221.0	11-Dec-19 17:03:39.000	DCGS-G	10	OK	0.00	0.00	1.00	
11	9,198.0	11-Dec-19 17:04:21.000	DCGS-G	11	Empty Barrel	0.00	0.00	1.00	
12	9,083.0	11-Dec-19 17:06:28.000	DCGS-G	12	Empty Barrel	0.00	0.00	1.00	
13	9,027.0	11-Dec-19 17:07:43.000	DCGS-G	13	OK	0.00	0.00	1.00	
14	9,014.0	11-Dec-19 17:08:13.000	DCGS-G	14	OK	0.00	0.00	1.00	
15	8,975.0	11-Dec-19 17:09:14.000	DCGS-G	15	OK	0.00	0.00	1.00	
16	8,923.0	11-Dec-19 17:10:29.000	DCGS-G	16	OK	0.00	0.00	1.00	
17	8,881.0	11-Dec-19 17:11:55.000	DCGS-G	17	OK	0.00	0.00	1.00	
18	8,850.0	11-Dec-19 17:13:05.000	DCGS-G	18	Empty Barrel	0.00	0.00	1.00	
19	8,828.0	11-Dec-19 17:14:00.000	DCGS-G	19	Empty Barrel	0.00	0.00	1.00	
20	8,796.0	11-Dec-19 17:14:53.000	DCGS-G	20	OK	0.00	0.00	1.00	
21	8,774.0	11-Dec-19 17:15:55.000	DCGS-G	21	Empty Barrel	0.00	0.00	1.00	
22	8,747.0	11-Dec-19 17:16:59.000	DCGS-G	22	OK	0.00	0.00	1.00	
23	8,718.0	11-Dec-19 17:17:51.000	DCGS-G	23	Empty Barrel	0.00	0.00	1.00	
24	8,664.0	11-Dec-19 17:19:09.000	DCGS-G	24	Empty Barrel	0.00	0.00	1.00	



HALLIBURTON

Plot Time: 11-Dec-19 19:31:51
Plot Range: 9126 ft to 9302.75 ft
Data: SHIDELER 1-28\Well Based\DAQ-0003-002\
Plot File: \\-LOCAL-\SHIDELER 1-28\0003 SWC\SWC\Gamma Tie-In

COMPANY	**VALLEY RESOURCES**		
WELL	**SHIDELER 1-28**		
FIELD	**NORTH BELRIDGE**		
COUNTY	**KERN**	STATE	**CA**

HALLIBURTON

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
		Ø 2.310 in		Fishing Neck @ 27.96 ft		28.84 ft
RWCH-11420838 135.00 lbs		Ø 3.625 in		Load Cell @ 25.16 ft BH Temperature @ 24.59 ft	6.25 ft	
	Weak Point 9000 lbs- 12345678 0.01 lbs	Ø 0.010 in*				22.59 ft
				GammaRay @ 20.91 ft		
D4TGX-10320984 221.00 lbs		Ø 3.625 in			9.63 ft	
				Z-Accelerometer @ 14.18 ft		12.96 ft
		Ø 4.060 in				
DCGS-G-11321668 430.00 lbs		Ø 4.060 in		Top Core Barrel @ 6.29 ft	12.96 ft	
				Bottom Core Barrel @ 0.54 ft		0.00 ft

Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	11420838	135.00	6.25		22.59	300.00
WP9K	Weak Point 9000 lbs	12345678	0.01	0.01	*	23.39	300.00
D4TGX	DITS Telemetry Gamma - Gibraltar Class	10320984	221.00	9.63		12.96	60.00
DCGS	Digital Core Gun - Gearhart Gun w/o Centralizer	11321668	430.00	12.96		0.00	300.00
Total			**786.01**	**28.84**			

* Not included in Total Length and Length Accumulation.

Data: SHIDELER 1-28\0003 SWC\IDLE

Date: 11-Dec-19 15:28:45

HALLIBURTON

SIDEWALL CORE REPORT 5"=100'

COMPANY	**VALLEY RESOURCES**
WELL	**SHIDELER 1-28**
FIELD	**NORTH BELRIDGE**
COUNTY	**KERN**
STATE	**CA**

Location 28929' W AND 262' S
FROM THE NE COR. SEC 28-T27S/R20E MDB&M.
X(E):1457491.96 Y(N):753262.91 CA ZONE V, NAD 27
X(E):6018883.51 Y(N):2393692.07 CA ZONE V, NAD 83

Elevations: K.B. 717.0 ft D.F. G.L. 703.0 ft

Date Processed	11-Dec-19	Logs Processed	SWC
Job Number	906169144	Date Logged	11-Dec-19
Interval Processed	1221'-2211'	Type Fluid in Hole	LSND
Processed By	T.FOSTER	Location	BAKERSFIELD
Processed At	WELLSITE		

COMPUTER PROCESSED PRODUCT

Fold here

Service Ticket No.: 906169144 API No.: 04030671010000 PGM Version: WL INSITE R6.2.1 (Build 2)

Logs Processed: Date Logged: Type Fluid In Hole:

DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

Remarks:

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA. CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

HALLIBURTON

HALLIBURTON

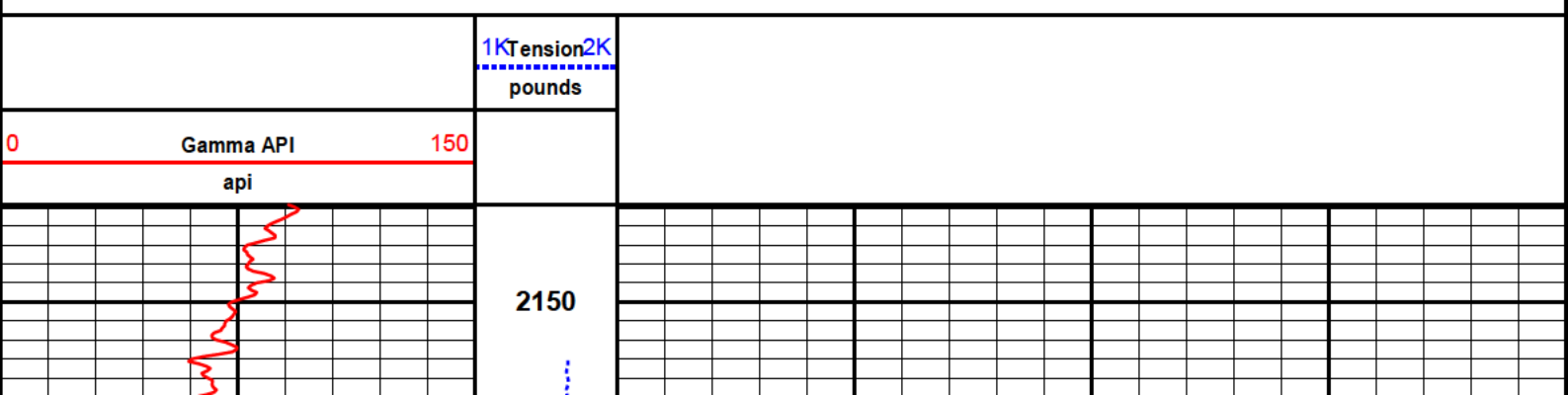
CORE GUN REPORT

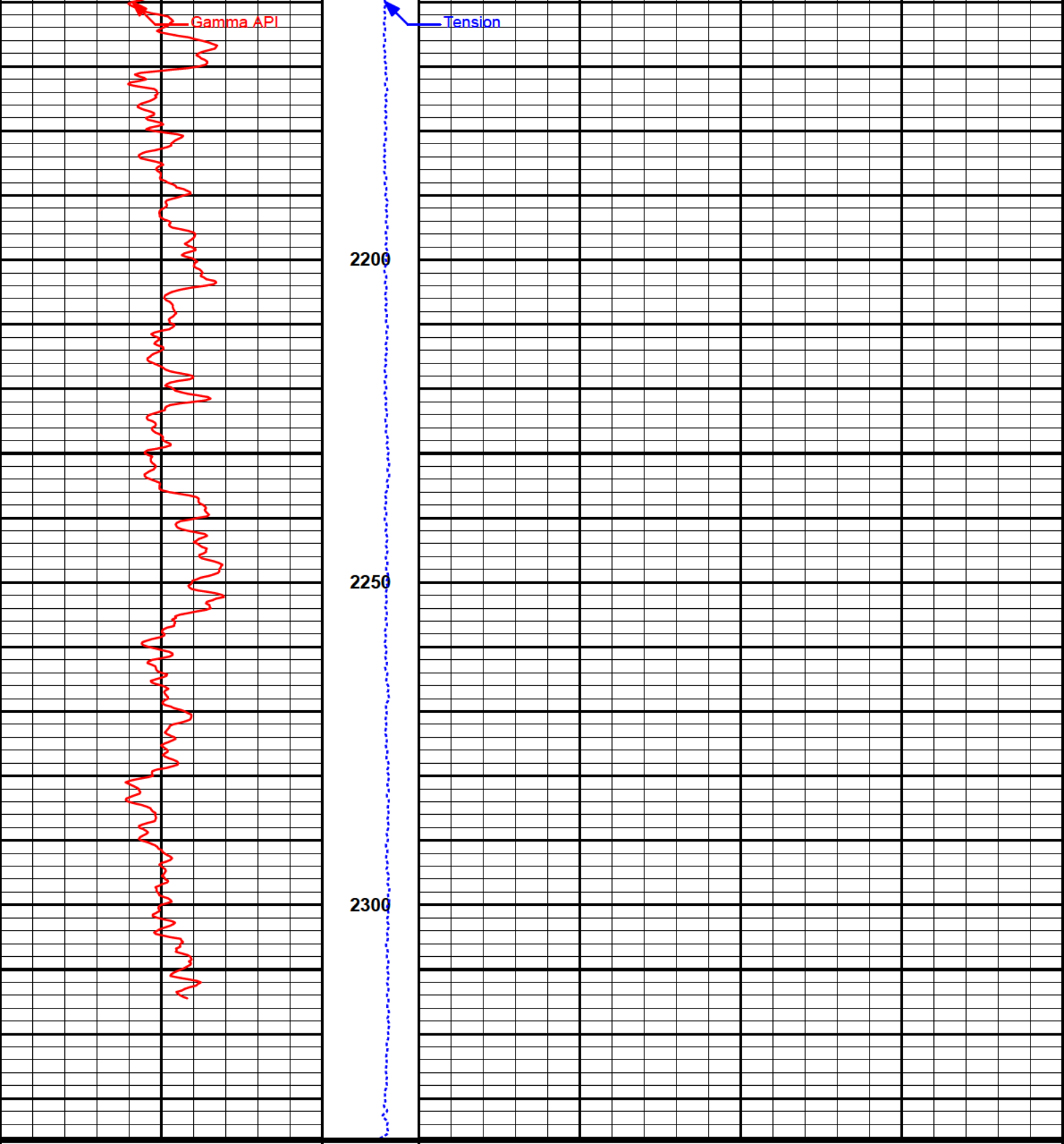
Company: VALLEY RESOURCES
Well: SHIDELER 1-28
Tool Name: Digital Core Gun - Gearhart Gun
Serial Number: 11321668
Cores Requested: 18
Barrel Type: 1 inch OD Long Barrel
Cores Attempted: 18
Charge Type:
Cores Recovered: 18
Release Ring: Flat
Misfires: 0
Core Diameter: 1.00
Shoot Offs: 0
No Of Set Screws Used: 2
Pull Offs: 0

Core #	Depth	Shot Fire/Flagged	Gun ID	Shot #	Status	Drift	Tool Face	Core Length	Comment
1	2,211.0	11-Dec-19 19:21:04.000	DCGS-G	1	OK	0.00	0.00	1.00	
2	1,947.0	11-Dec-19 19:25:06.000	DCGS-G	2	OK	0.00	0.00	1.00	
3	1,777.0	11-Dec-19 19:27:55.000	DCGS-G	3	OK	0.00	0.00	1.00	
4	1,710.0	11-Dec-19 19:29:22.000	DCGS-G	4	OK	0.00	0.00	1.00	
5	1,664.0	11-Dec-19 19:30:37.000	DCGS-G	5	OK	0.00	0.00	1.00	
6	1,635.0	11-Dec-19 19:31:20.000	DCGS-G	6	OK	0.00	0.00	1.00	
7	1,556.0	11-Dec-19 19:32:55.000	DCGS-G	7	OK	0.00	0.00	1.00	
8	1,518.0	11-Dec-19 19:33:56.000	DCGS-G	8	OK	0.00	0.00	1.00	
9	1,500.0	11-Dec-19 19:34:35.000	DCGS-G	9	OK	0.00	0.00	1.00	
10	1,436.0	11-Dec-19 19:35:56.000	DCGS-G	10	OK	0.00	0.00	1.00	
11	1,390.0	11-Dec-19 19:36:56.000	DCGS-G	11	OK	0.00	0.00	1.00	
12	1,372.0	11-Dec-19 19:37:36.000	DCGS-G	12	OK	0.00	0.00	1.00	
13	1,351.0	11-Dec-19 19:38:16.000	DCGS-G	13	OK	0.00	0.00	1.00	
14	1,331.0	11-Dec-19 19:38:53.000	DCGS-G	14	OK	0.00	0.00	1.00	
15	1,313.0	11-Dec-19 19:39:26.000	DCGS-G	15	OK	0.00	0.00	1.00	
16	1,296.0	11-Dec-19 19:40:13.000	DCGS-G	16	OK	0.00	0.00	1.00	
17	1,251.0	11-Dec-19 19:41:15.000	DCGS-G	17	OK	0.00	0.00	1.00	
18	1,221.0	11-Dec-19 19:41:51.000	DCGS-G	18	OK	0.00	0.00	1.00	

HALLIBURTON

Plot Time: 11-Dec-19 20:20:33
Plot Range: 2139.75 ft to 2336.33 ft
Data: SHIDELER 1-28\Well Based\DAQ-0004-002\
Plot File: \\-LOCAL-\SHIDELER 1-28\0004 SWC\SWC\Gamma Tie-In





0	Gamma API	150
	api	

1K	Tension	2K
	pounds	

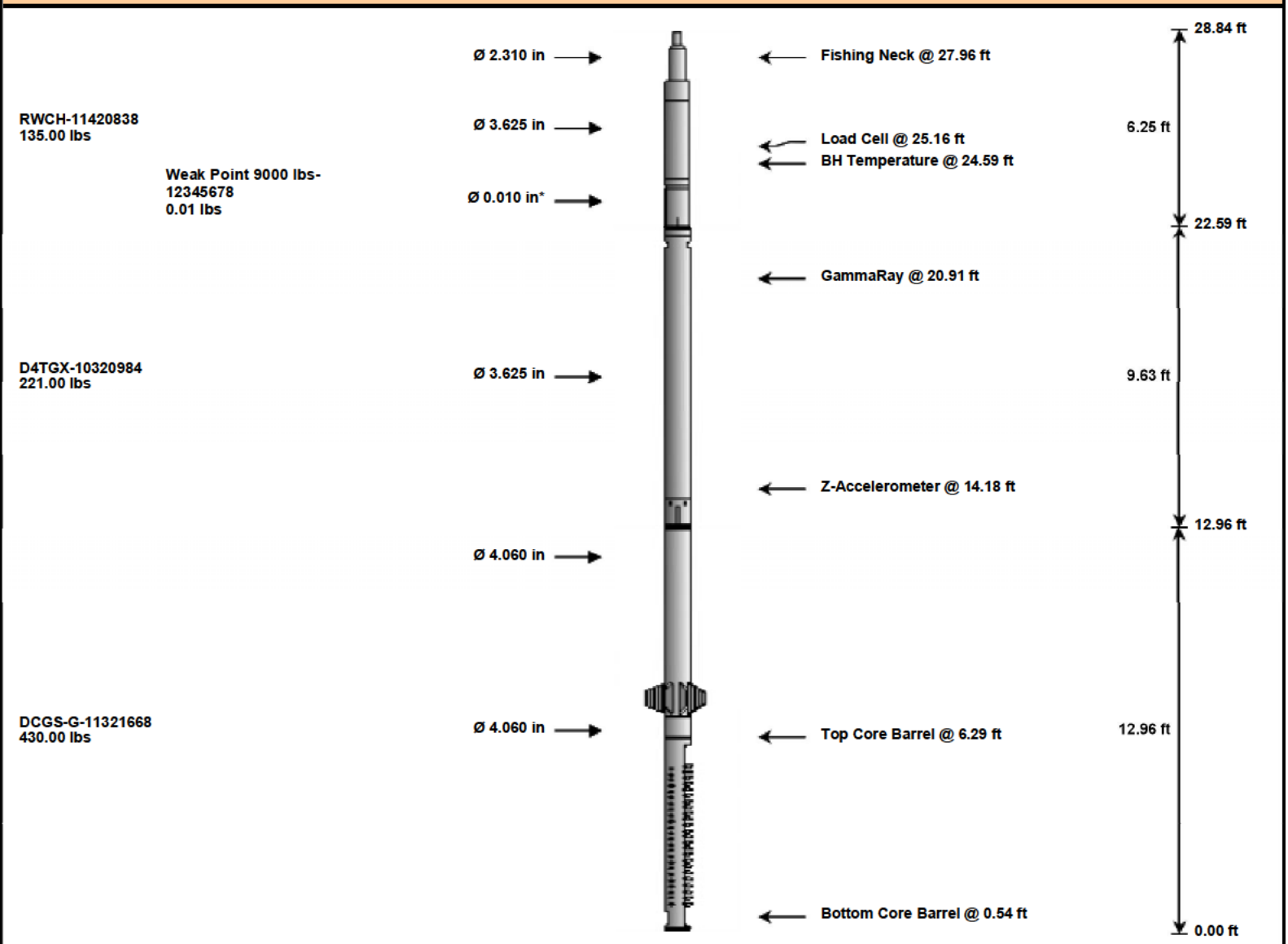
HALLIBURTON

Plot Time: 11-Dec-19 20:20:33
Plot Range: 2139.75 ft to 2336.33 ft
Data: SHIDELER 1-28\Well Based\DAQ-0004-002\
Plot File: \\-LOCAL-\SHIDELER 1-28\0004 SWC\SWC\Gamma Tie-In

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	11420838	135.00	6.25		22.59	300.00
WP9K	Weak Point 9000 lbs	12345678	0.01	0.01	*	23.39	300.00
D4TGX	DITS Telemetry Gamma - Gibraltar Class	10320984	221.00	9.63		12.96	60.00
DCGS	Digital Core Gun - Gearhart Gun w/o Centralizer	11321668	430.00	12.96		0.00	300.00
Total			**786.01**	**28.84**			

* Not included in Total Length and Length Accumulation.

Data: SHIDELER 1-28\0003 SWC\IDLE

Date: 11-Dec-19 15:28:45

COMPANY	**VALLEY RESOURCES**		
WELL	**SHIDELER 1-28**		
FIELD	**NORTH BELRIDGE**		
COUNTY	**KERN**	STATE	**CA**

HALLIBURTON

Appendix 2C
Faults and Fractures Supporting Data

Contents

XRMI Dip Log – 1-28

OBMI Dip Log – 888N-12

64 Zone Pressure Data

Agua Sandstone Pressure Data

Appendix 2C
Faults and Fractures Supporting Data

XRMI Dip Log – 1-28

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
5665.6177	BED	37.56	227.86	1	9.34	E	Bed Boundary
5665.8589	BED	34.13	213.67	2	9.47	G	Bed Boundary
5667.2026	BED	44.52	222.52	2	10.62	G	Bed Boundary
5679.9829	FRAC	78.55	210.1	1	10.65	E	Induced Fracture
5692.8848	BED	32.81	233.5	1	8.76	E	Bed Boundary
5693.3945	BED	25.46	231.28	1	8.92	E	Bed Boundary
5699.252	BED	26	234.83	1	10.26	E	Bed Boundary
5699.4653	BED	29.08	234.38	1	10.32	E	Bed Boundary
5752.9219	BED	24.36	138.76	1	8.91	E	Bed Boundary
5753.6543	BED	20.53	274.29	1	8.72	E	Bed Boundary
5757.7183	FRAC	33.37	226.04	1	9.28	E	Conductive Fracture
5757.894	FRAC	36.39	316.26	1	9.24	E	Conductive Fracture
5788.8394	FRAC	22.22	186.86	1	12.48	E	Conductive Fracture
5795.6978	BED	30.21	229.02	3	9.79	F	Bed Boundary
5796.0962	BED	25.69	234.37	3	9.58	F	Bed Boundary
5796.3374	BED	29.12	238.97	3	9.54	F	Bed Boundary
5797.6904	BED	28.73	248.28	3	9.72	F	Bed Boundary
5798.2925	BED	31.45	239.95	3	9.59	F	Bed Boundary
5798.5986	BED	25.74	243.03	3	9.54	F	Bed Boundary
5799.0898	BED	27.64	228.33	3	9.5	F	Bed Boundary
5800.3501	BED	32.17	225.49	3	9.66	F	Bed Boundary
5802.1992	BED	24.53	23.7	3	9.75	F	Bed Boundary
5805.3872	BED	33.39	223.46	3	8.88	F	Bed Boundary
5805.6143	BED	31.11	228.13	3	8.81	F	Bed Boundary
5805.7627	BED	28.52	226.66	1	8.79	E	Bed Boundary
5806.1519	BED	31.75	232.26	3	8.86	F	Bed Boundary
5806.9023	BED	26.52	233.55	3	8.87	F	Bed Boundary
5807.4028	BED	31.11	226.65	1	8.83	E	Bed Boundary
5807.4761	FRAC	45.6	5.17	1	8.84	E	Conductive Fracture
5807.8511	FRAC	38.88	22.18	1	8.78	E	Conductive Fracture
5808.7422	BED	33.71	240.15	1	8.73	E	Bed Boundary
5810.2808	BED	37.01	227.58	2	8.68	G	Bed Boundary
5810.4473	BED	39.05	230.87	1	8.73	E	Bed Boundary
5810.605	BED	39.01	222.43	1	8.76	E	Bed Boundary
5810.7534	BED	37.52	224.01	1	8.78	E	Bed Boundary
5811.6245	BED	26.93	217.12	2	8.77	G	Bed Boundary
5812.3657	BED	34.21	234.83	1	8.89	E	Bed Boundary
5813.9463	BED	29.92	229.79	1	8.98	E	Bed Boundary
5814.2798	BED	31.64	230.63	1	8.96	E	Bed Boundary
5814.6597	BED	33.4	229.37	1	8.9	E	Bed Boundary
5814.9102	BED	31.95	226.44	1	8.84	E	Bed Boundary
5815.2344	BED	27.74	227.68	2	8.78	G	Bed Boundary
5815.3828	BED	27.69	222.77	2	8.83	G	Bed Boundary
5815.8462	BED	30.13	227.18	1	8.9	E	Bed Boundary
5815.9756	BED	27.53	235.74	2	8.88	G	Bed Boundary
5816.124	BED	21.7	241.52	2	8.92	G	Bed Boundary
5816.2446	BED	23.55	245.95	2	8.96	G	Bed Boundary
5816.7358	BED	29.82	235.34	1	9.01	E	Bed Boundary
5817.0322	BED	30.07	241.88	1	8.92	E	Bed Boundary
5817.5049	BED	21.74	251.41	2	8.92	G	Bed Boundary
5817.8569	BED	28.5	237.6	1	8.85	E	Bed Boundary
5819.1084	BED	33.67	231.37	2	8.81	G	Bed Boundary
5820.2715	BED	36.35	222.86	1	8.7	E	Bed Boundary
5820.7627	BED	32.43	227.37	1	8.68	E	Bed Boundary
5821.1333	BED	33.2	233.81	1	8.68	E	Bed Boundary
5821.2725	BED	30.65	231.48	1	8.69	E	Bed Boundary
5821.3745	BED	32.37	226.94	1	8.7	E	Bed Boundary
5821.5225	BED	34.08	224.36	1	8.69	E	Bed Boundary
5821.7729	BED	34.82	223.81	1	8.7	E	Bed Boundary
5822.2085	BED	35.69	226.33	3	8.66	F	Bed Boundary
5822.542	BED	35.62	240.73	1	8.66	E	Bed Boundary
5822.9404	BED	30.76	233.75	1	8.67	E	Bed Boundary
5823.126	BED	35.6	226.64	2	8.7	G	Bed Boundary
5823.3667	BED	32.39	231.57	1	8.71	E	Bed Boundary
5823.478	BED	34.74	234.96	1	8.71	E	Bed Boundary
5824.0664	BED	36.41	224.93	1	8.7	E	Bed Boundary
5824.229	BED	34.09	217.41	2	8.71	G	Bed Boundary
5824.3447	BED	34.89	217.04	1	8.71	E	Bed Boundary
5825.0488	BED	37.09	244.04	1	8.71	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
5825.2715	BED	37.8	230.63	1	8.71	E	Bed Boundary
5826.4946	BED	38.27	217.53	1	8.84	E	Bed Boundary
5827.2827	BED	29.08	296.88	1	8.96	E	Bed Boundary
5827.8384	BED	29.23	252.25	2	9.36	G	Bed Boundary
5828.061	BED	21.7	250.35	2	9.53	G	Bed Boundary
5829.0991	BED	29.5	238.31	4	9.21	P	Bed Boundary
5832.4492	BED	14.11	250.76	4	9.29	P	Bed Boundary
5833.7007	BED	33.12	231.57	2	9.11	G	Bed Boundary
5834.2983	BED	29.73	237.49	2	9.15	G	Bed Boundary
5834.5762	BED	31.53	217.06	2	9.16	G	Bed Boundary
5835.9019	BED	31.58	241.84	2	9.09	G	Bed Boundary
5836.0776	BED	33.96	237.93	1	9.1	E	Bed Boundary
5836.3281	BED	31.68	237.15	1	9.05	E	Bed Boundary
5836.7451	BED	30.56	242.54	3	9.18	F	Bed Boundary
5837.1157	BED	30.71	227.91	1	9.12	E	Bed Boundary
5837.8569	BED	31.34	228.27	1	8.89	E	Bed Boundary
5838.0703	BED	28.67	237.2	1	8.89	E	Bed Boundary
5838.228	BED	29.51	224.32	1	8.93	E	Bed Boundary
5838.4873	BED	28.71	232.54	1	8.9	E	Bed Boundary
5838.6494	BED	31.28	235.84	1	8.91	E	Bed Boundary
5838.8721	BED	31.99	235.65	1	8.94	E	Bed Boundary
5839.0293	BED	32	228.41	1	8.97	E	Bed Boundary
5839.2891	BED	28.49	231.46	1	8.99	E	Bed Boundary
5839.5112	BED	32.97	227.4	1	8.91	E	Bed Boundary
5839.6318	BED	32.99	230.06	1	8.9	E	Bed Boundary
5839.9287	BED	33.84	228.28	1	8.87	E	Bed Boundary
5840.1138	BED	33.98	226.31	1	8.84	E	Bed Boundary
5840.3457	BED	30.72	218.34	1	8.82	E	Bed Boundary
5840.6699	BED	24.14	215.54	3	8.93	F	Bed Boundary
5841.3838	BED	30.55	238.33	1	8.87	E	Bed Boundary
5841.7544	BED	30.64	234.08	1	8.84	E	Bed Boundary
5842.3564	BED	27.27	232.44	1	8.78	E	Bed Boundary
5842.6069	BED	33.27	231.85	1	8.8	E	Bed Boundary
5842.7622	BED	29.66	236.84	1	8.79	E	Bed Boundary
5842.9453	BED	30.01	234.72	1	8.72	E	Bed Boundary
5843.6123	BED	33.44	225.09	1	8.78	E	Bed Boundary
5843.9463	BED	26.29	230.99	1	8.8	E	Bed Boundary
5844.0757	BED	25.37	235.16	1	8.8	E	Bed Boundary
5844.3911	BED	24.32	242.85	3	8.82	F	Bed Boundary
5844.5298	BED	24.37	242.93	3	8.83	F	Bed Boundary
5844.7339	BED	25.45	249.74	3	8.78	F	Bed Boundary
5845.0767	BED	25.58	265.94	1	8.78	E	Bed Boundary
5845.687	BED	26.8	222.73	1	8.7	E	Bed Boundary
5846.7729	BED	26.46	224.01	1	8.76	E	Bed Boundary
5848.3574	BED	22.64	242.29	1	8.73	E	Bed Boundary
5848.5708	BED	26.51	247.92	1	8.74	E	Bed Boundary
5848.7378	BED	27.46	243.7	1	8.73	E	Bed Boundary
5849.1733	BED	29.31	226.78	1	8.74	E	Bed Boundary
5849.3491	BED	27.53	226.32	1	8.74	E	Bed Boundary
5851.124	BED	26.75	220.19	1	8.7	E	Bed Boundary
5851.2261	BED	25.69	222.43	1	8.72	E	Bed Boundary
5851.4854	BED	23.74	223.41	2	8.73	G	Bed Boundary
5851.5952	BED	24.3	229.94	4	8.74	P	Bed Boundary
5851.7705	BED	30.47	233.31	2	8.78	G	Bed Boundary
5851.8623	BED	30.53	229.77	1	8.79	E	Bed Boundary
5852.1343	BED	25.63	230.07	2	8.73	G	Bed Boundary
5852.709	BED	28.39	237.27	1	8.76	E	Bed Boundary
5852.8198	BED	25.66	231.62	1	8.75	E	Bed Boundary
5852.937	BED	29.62	234.47	2	8.74	G	Bed Boundary
5853.0796	BED	30.25	228.37	1	8.74	E	Bed Boundary
5853.2559	BED	31.98	227.66	1	8.75	E	Bed Boundary
5853.4785	BED	25.38	230.41	1	8.73	E	Bed Boundary
5853.5703	BED	25.57	224.1	1	8.72	E	Bed Boundary
5853.8164	BED	29.38	227.96	1	8.74	E	Bed Boundary
5853.9092	BED	28.49	230.55	1	8.73	E	Bed Boundary
5854.0293	BED	25.76	238.92	2	8.71	G	Bed Boundary
5854.1221	BED	27.68	241.33	2	8.7	G	Bed Boundary
5854.2036	BED	28.91	242.61	4	8.7	P	Bed Boundary
5854.3623	BED	30.19	234.98	4	8.71	P	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
5854.4785	BED	28.43	229.18	1	8.72	E	Bed Boundary
5854.5786	BED	30.35	236.76	1	8.72	E	Bed Boundary
5854.7036	BED	28.24	243.48	3	8.71	F	Bed Boundary
5854.8037	BED	28.19	249.06	1	8.71	E	Bed Boundary
5854.9565	BED	31.14	257.1	1	8.76	E	Bed Boundary
5855.1035	BED	32.02	240.01	1	8.83	E	Bed Boundary
5855.2456	BED	32.94	225.22	1	8.84	E	Bed Boundary
5855.5679	BED	32.05	202.3	1	8.84	E	Bed Boundary
5855.6885	BED	32.72	212.18	1	8.84	E	Bed Boundary
5856.1704	BED	29.51	211.44	2	8.75	G	Bed Boundary
5856.4761	BED	31.06	222.74	1	8.82	E	Bed Boundary
5856.9951	BED	35.14	223.84	1	9.14	E	Bed Boundary
5857.2456	BED	25.84	245.19	3	9.12	F	Bed Boundary
5858.3389	BED	32.71	249.44	2	8.84	G	Bed Boundary
5858.6636	BED	30.26	243.86	2	8.77	G	Bed Boundary
5859.2104	BED	34.67	234.97	2	8.69	G	Bed Boundary
5859.5391	BED	35.51	243.9	2	8.69	G	Bed Boundary
5860.2251	BED	28.66	240.1	2	8.7	G	Bed Boundary
5860.7905	BED	33.8	241.33	1	8.72	E	Bed Boundary
5860.9849	BED	33.65	242.63	1	8.8	E	Bed Boundary
5861.2725	BED	31.03	225.41	3	8.84	F	Bed Boundary
5861.9487	BED	33.97	233.4	1	8.68	E	Bed Boundary
5862.1714	BED	33.85	238.78	1	8.71	E	Bed Boundary
5862.5327	BED	32.64	247.44	1	8.88	E	Bed Boundary
5862.7925	BED	34.26	236.43	2	8.87	G	Bed Boundary
5863.0146	BED	30.16	231.61	2	8.86	G	Bed Boundary
5863.3203	BED	28.64	239.57	2	8.75	G	Bed Boundary
5863.6772	BED	32.17	249.97	1	8.76	E	Bed Boundary
5863.9834	BED	30.41	239.21	2	8.75	G	Bed Boundary
5864.2148	BED	28.68	234.56	2	8.74	G	Bed Boundary
5864.4834	BED	28.73	234.97	2	8.72	G	Bed Boundary
5865.5215	BED	34.94	262.61	1	8.72	E	Bed Boundary
5867.1807	BED	14.21	255.41	1	8.75	E	Bed Boundary
5867.4492	BED	20.8	228.41	2	8.75	G	Bed Boundary
5867.7461	BED	21.81	228.41	2	8.74	G	Bed Boundary
5868.061	BED	26.86	226.61	1	8.75	E	Bed Boundary
5868.5151	BED	34.83	226.61	1	8.74	E	Bed Boundary
5870.123	BED	21.64	250.01	1	8.86	E	Bed Boundary
5870.2808	BED	25.77	253.61	1	8.78	E	Bed Boundary
5870.438	BED	27.8	246.41	1	8.76	E	Bed Boundary
5870.6606	BED	25.92	242.81	2	8.74	G	Bed Boundary
5870.7813	BED	28.75	253.61	1	8.73	E	Bed Boundary
5871.0962	BED	31.54	244.61	1	8.72	E	Bed Boundary
5871.4204	BED	25.88	244.61	1	8.75	E	Bed Boundary
5871.6245	BED	26.8	241.01	1	8.78	E	Bed Boundary
5872.0693	BED	30.16	239.21	1	8.93	E	Bed Boundary
5872.3198	BED	26.4	233.81	4	8.94	P	Bed Boundary
5872.5234	BED	29.3	233.81	3	8.91	F	Bed Boundary
5873.2095	BED	30.18	237.41	3	8.9	F	Bed Boundary
5873.9741	BED	34.43	246.41	1	8.9	E	Bed Boundary
5874.2056	BED	31.14	233.81	1	8.89	E	Bed Boundary
5874.4097	BED	27.57	237.41	2	8.84	G	Bed Boundary
5875.123	BED	22.36	242.81	3	9.03	F	Bed Boundary
5875.6523	FRAC	79.78	41.21	1	9.47	E	Induced Fracture
5876.0127	BED	25.66	239.21	3	9.32	F	Bed Boundary
5876.5132	BED	21.47	233.81	3	8.95	F	Bed Boundary
5876.8838	BED	23.62	233.81	3	8.89	F	Bed Boundary
5877.3105	BED	25.67	235.61	3	8.83	F	Bed Boundary
5877.5977	BED	23.79	237.41	3	8.81	F	Bed Boundary
5877.894	BED	24.85	230.21	3	8.78	F	Bed Boundary
5878.2095	BED	24.59	224.81	3	8.88	F	Bed Boundary
5878.4644	BED	30.18	237.41	1	8.9	E	Bed Boundary
5878.6494	BED	29.29	235.61	1	8.92	E	Bed Boundary
5878.8164	BED	31.91	241.01	1	8.91	E	Bed Boundary
5879.3818	BED	29.44	224.81	1	8.83	E	Bed Boundary
5880.8184	BED	28.18	224.81	1	9.4	E	Bed Boundary
5881.0498	BED	26.54	235.61	1	9.79	E	Bed Boundary
5882.0879	BED	27.5	230.21	2	9.32	G	Bed Boundary
5882.3564	BED	27.82	232.01	3	9.17	F	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
5882.6162	BED	26.35	242.81	2	8.96	G	Bed Boundary
5882.7646	BED	26.47	233.81	2	8.91	G	Bed Boundary
5882.8477	BED	26.55	228.41	1	8.9	E	Bed Boundary
5883.0239	BED	24.67	228.41	2	8.86	G	Bed Boundary
5883.2188	BED	25.68	228.41	2	8.83	G	Bed Boundary
5883.4038	BED	22.78	228.41	2	8.81	G	Bed Boundary
5883.9507	BED	28.68	235.61	4	8.78	P	Bed Boundary
5884.0898	BED	28.63	232.01	2	8.78	G	Bed Boundary
5884.2471	BED	29.61	228.41	2	8.78	G	Bed Boundary
5884.4927	BED	30.45	228.41	1	8.81	E	Bed Boundary
5887.1436	BED	30.7	232.01	2	9.43	G	Bed Boundary
5887.292	BED	32.38	232.01	2	9.42	G	Bed Boundary
5887.6348	BED	28.96	230.21	2	9.44	G	Bed Boundary
5888.0981	BED	32.9	237.41	2	9.2	G	Bed Boundary
5888.2744	BED	33.96	237.41	2	9.09	G	Bed Boundary
5888.5845	BED	35.13	232.01	1	8.96	E	Bed Boundary
5888.96	BED	28.51	250.01	2	8.86	G	Bed Boundary
5889.4653	BED	30.41	253.61	2	8.8	G	Bed Boundary
5890.4292	BED	28.58	226.61	2	8.8	G	Bed Boundary
5890.8184	BED	22.77	232.01	3	8.78	F	Bed Boundary
5891.0962	BED	29.6	224.81	1	8.78	E	Bed Boundary
5891.3652	BED	26.7	230.21	2	8.8	G	Bed Boundary
5891.8564	BED	31.34	233.81	1	8.78	E	Bed Boundary
5894.1035	BED	30.4	232.01	1	8.83	E	Bed Boundary
5894.2891	BED	31.25	223.01	1	8.82	E	Bed Boundary
5894.6689	BED	23.75	233.81	3	8.82	F	Bed Boundary
5894.9473	BED	29.43	224.81	3	8.83	F	Bed Boundary
5895.2993	BED	25.74	215.81	4	8.8	P	Bed Boundary
5895.772	BED	27.74	232.01	3	8.76	F	Bed Boundary
5896.1333	BED	30.48	235.61	3	8.77	F	Bed Boundary
5896.3745	BED	31.26	228.41	1	8.82	E	Bed Boundary
5897.2456	BED	28.31	241.01	1	8.92	E	Bed Boundary
5898.0146	BED	28.75	232.01	1	9.16	E	Bed Boundary
5898.8672	BED	30.96	242.81	1	8.96	E	Bed Boundary
5901.4438	BED	33.46	235.61	4	8.96	P	Bed Boundary
5901.606	BED	30.13	235.61	1	8.92	E	Bed Boundary
5902.4307	BED	29.78	226.61	2	8.71	G	Bed Boundary
5902.7646	BED	29.75	228.41	1	8.7	E	Bed Boundary
5902.9497	BED	33.3	235.61	2	8.71	G	Bed Boundary
5903.4688	BED	30.61	246.41	3	8.74	F	Bed Boundary
5903.645	BED	29.71	239.21	3	8.71	F	Bed Boundary
5903.8022	BED	36.56	235.61	3	8.71	F	Bed Boundary
5903.9287	BED	34.6	237.33	3	8.72	F	Bed Boundary
5904.3677	BED	28.85	232.01	2	8.71	G	Bed Boundary
5904.5625	BED	32.39	239.21	2	8.71	G	Bed Boundary
5905.0786	BED	32.45	235.81	3	8.71	F	Bed Boundary
5905.1704	BED	31.7	230.44	1	8.71	E	Bed Boundary
5905.312	BED	33.73	234.83	1	8.71	E	Bed Boundary
5905.5493	BED	31.62	228.41	1	8.69	E	Bed Boundary
5905.8091	BED	32.48	235.61	1	8.67	E	Bed Boundary
5906.1797	BED	22.97	232.01	3	8.71	F	Bed Boundary
5906.6245	BED	29.6	226.61	3	8.76	F	Bed Boundary
5906.9395	BED	31.43	241.01	3	8.77	F	Bed Boundary
5908.7563	BED	26.88	223.01	2	8.72	G	Bed Boundary
5909.3398	BED	37.33	228.41	2	8.71	G	Bed Boundary
5909.7017	BED	33.28	233.81	3	8.7	F	Bed Boundary
5910.1123	BED	33.45	232.89	1	8.67	E	Bed Boundary
5910.2954	BED	33.57	235.19	1	8.7	E	Bed Boundary
5910.4751	BED	33.23	224.81	2	8.73	G	Bed Boundary
5910.7534	BED	31.93	228.41	2	8.9	G	Bed Boundary
5911.9023	BED	31.88	228.41	2	9.3	G	Bed Boundary
5912.4028	BED	28.01	228.41	1	9.08	E	Bed Boundary
5912.9868	BED	27.8	235.61	1	8.76	E	Bed Boundary
5913.5869	BED	32.32	225.71	3	8.71	F	Bed Boundary
5913.7036	BED	33.52	229.58	1	8.71	E	Bed Boundary
5914.2119	BED	30.47	229.63	1	8.7	E	Bed Boundary
5914.3623	BED	29.78	231.56	1	8.72	E	Bed Boundary
5914.5947	BED	30.68	228.41	1	8.71	E	Bed Boundary
5914.7036	BED	31.31	230.66	1	8.71	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
5915.1602	BED	31.56	224.81	1	8.71	E	Bed Boundary
5915.2437	BED	28.78	226.61	1	8.72	E	Bed Boundary
5915.6606	BED	28.86	226.61	4	8.71	P	Bed Boundary
5915.8926	BED	32.4	223.01	3	8.71	F	Bed Boundary
5916.0313	BED	32.45	228.41	1	8.7	E	Bed Boundary
5916.6152	BED	33.29	232.01	1	8.69	E	Bed Boundary
5916.6895	BED	31.55	233.81	1	8.7	E	Bed Boundary
5917.3013	BED	34.12	239.21	3	8.7	F	Bed Boundary
5917.7739	BED	26.9	242.81	3	8.71	F	Bed Boundary
5918.8672	BED	30.64	226.61	3	8.72	F	Bed Boundary
5919.6689	BED	28.78	233.81	3	8.74	F	Bed Boundary
5919.9565	BED	28.74	226.61	3	8.73	F	Bed Boundary
5920.6885	BED	20.84	233.81	3	8.73	F	Bed Boundary
5921.6616	BED	31.48	230.21	1	8.73	E	Bed Boundary
5921.7637	BED	30.61	228.41	1	8.72	E	Bed Boundary
5923.2188	BED	23.88	230.21	3	8.74	F	Bed Boundary
5923.4688	BED	24.97	241.01	3	8.72	F	Bed Boundary
5923.8208	BED	24.9	233.81	3	8.75	F	Bed Boundary
5924.0293	BED	27.82	232.01	1	8.75	E	Bed Boundary
5924.2334	BED	25.9	233.81	2	8.75	G	Bed Boundary
5924.4282	BED	31.41	233.81	1	8.76	E	Bed Boundary
5924.6226	BED	31.44	235.61	2	8.76	G	Bed Boundary
5924.7153	BED	29.59	228.41	1	8.76	E	Bed Boundary
5924.9287	BED	21.78	230.21	1	8.76	E	Bed Boundary
5925.1323	BED	24.91	224.81	2	8.75	G	Bed Boundary
5925.6328	BED	31.35	233.81	1	8.8	E	Bed Boundary
5925.8462	BED	26.6	228.41	1	8.85	E	Bed Boundary
5926.0127	BED	28.37	235.61	1	8.92	E	Bed Boundary
5926.189	BED	25.53	228.41	1	8.9	E	Bed Boundary
5926.8745	BED	23.77	226.61	2	8.82	G	Bed Boundary
5927.2456	BED	22.7	230.21	2	8.82	G	Bed Boundary
5927.5234	BED	25.77	232.01	2	8.81	G	Bed Boundary
5927.8569	BED	26.66	230.21	2	8.84	G	Bed Boundary
5928.1631	BED	27.51	223.01	2	8.87	G	Bed Boundary
5929.0063	BED	27.45	233.81	2	8.92	G	Bed Boundary
5929.6274	BED	28.33	237.41	3	8.92	F	Bed Boundary
5930.772	BED	26.95	235.61	1	8.69	E	Bed Boundary
5931.1704	BED	19.8	237.41	2	8.71	G	Bed Boundary
5931.7822	BED	19.37	241.01	3	8.93	F	Bed Boundary
5933.543	BED	35.02	221.21	1	9.31	E	Bed Boundary
5934.0386	BED	41.87	232.01	1	9.38	E	Bed Boundary
5934.604	BED	32.32	235.61	1	9.11	E	Bed Boundary
5935.3921	BED	33.15	226.61	1	8.75	E	Bed Boundary
5935.6885	BED	34.04	226.61	2	8.73	G	Bed Boundary
5936.2446	BED	35.8	226.61	1	8.68	E	Bed Boundary
5936.4204	BED	38.82	226.61	1	8.72	E	Bed Boundary
5936.9023	BED	23.91	237.41	3	8.75	F	Bed Boundary
5937.125	BED	24.91	241.01	3	8.75	F	Bed Boundary
5937.2734	BED	26.86	232.01	3	8.73	F	Bed Boundary
5937.6069	BED	24.93	230.21	3	8.74	F	Bed Boundary
5937.8198	BED	24.94	232.01	2	8.73	G	Bed Boundary
5938.1631	BED	30.54	219.41	2	8.75	G	Bed Boundary
5938.96	BED	21.84	242.81	4	8.76	P	Bed Boundary
5940.0537	BED	33.99	226.61	1	8.75	E	Bed Boundary
5940.6143	BED	29.08	223.01	1	8.61	E	Bed Boundary
5940.8462	BED	24.88	221.21	3	8.74	F	Bed Boundary
5941.6709	BED	23.98	235.61	3	8.69	F	Bed Boundary
5942.2642	BED	25.95	226.61	2	8.7	G	Bed Boundary
5942.5698	BED	26.01	215.81	4	8.69	P	Bed Boundary
5942.7554	BED	31.61	228.41	1	8.67	E	Bed Boundary
5943.2466	BED	29.77	233.81	4	8.69	P	Bed Boundary
5943.4316	BED	31.59	217.61	2	8.7	G	Bed Boundary
5943.7378	BED	30.6	228.41	2	8.72	G	Bed Boundary
5945.4473	BED	27.03	235.61	2	8.68	G	Bed Boundary
5945.9478	BED	30.74	233.81	2	8.69	G	Bed Boundary
5946.6245	BED	26.98	233.81	2	8.7	G	Bed Boundary
5947.1621	BED	29.66	239.21	1	8.74	E	Bed Boundary
5947.9775	BED	34.99	244.61	1	8.7	E	Bed Boundary
5948.2036	BED	30.7	236.07	1	8.74	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
5948.9043	BED	28.77	233.81	2	8.74	G	Bed Boundary
5949.002	BED	27.81	235.61	2	8.73	G	Bed Boundary
5949.2705	BED	26.87	239.21	2	8.72	G	Bed Boundary
5949.4653	BED	27.82	228.41	2	8.72	G	Bed Boundary
5949.6226	BED	23.96	226.61	2	8.72	G	Bed Boundary
5949.7432	BED	25.96	228.41	2	8.72	G	Bed Boundary
5949.9565	BED	27.66	236.85	2	8.75	G	Bed Boundary
5950.0674	BED	29.54	233.87	2	8.76	G	Bed Boundary
5950.1694	BED	33.95	239.46	2	8.78	G	Bed Boundary
5950.3921	BED	32.26	237	1	8.78	E	Bed Boundary
5950.7163	BED	29.64	246.04	3	8.75	F	Bed Boundary
5950.9941	BED	31.69	249.19	1	8.69	E	Bed Boundary
5951.1538	BED	33.34	244.62	1	8.68	E	Bed Boundary
5951.2954	BED	32.08	245.4	3	8.69	F	Bed Boundary
5951.6709	BED	28.69	230.62	3	8.71	F	Bed Boundary
5951.9395	BED	27.88	243.63	3	8.72	F	Bed Boundary
5952.375	BED	27.63	240.83	3	8.83	F	Bed Boundary
5953.2456	BED	31.61	226.84	4	8.77	P	Bed Boundary
5953.3369	BED	32.2	231.65	1	8.75	E	Bed Boundary
5953.4536	BED	31.12	233.35	2	8.72	G	Bed Boundary
5954.3262	BED	31.68	240.1	1	8.68	E	Bed Boundary
5955.3828	BED	27.79	231.62	2	8.73	G	Bed Boundary
5955.7256	BED	31.35	219.02	2	8.73	G	Bed Boundary
5955.9287	BED	29.82	216.04	2	8.72	G	Bed Boundary
5956.0371	BED	29.9	211.55	1	8.73	E	Bed Boundary
5956.1982	BED	29.57	222.71	1	8.74	E	Bed Boundary
5956.3188	BED	31.46	226.79	1	8.73	E	Bed Boundary
5957.3291	BED	35.04	224.24	1	8.68	E	Bed Boundary
5957.4771	BED	34.27	224.8	1	8.67	E	Bed Boundary
5957.6953	BED	33.89	225.08	2	8.68	G	Bed Boundary
5958.0518	BED	32.31	217.08	4	8.71	P	Bed Boundary
5960.2539	BED	37.62	244.24	2	8.72	G	Bed Boundary
5961.7925	BED	31.39	222.43	1	8.78	E	Bed Boundary
5962.3369	BED	30.83	228.89	2	8.77	G	Bed Boundary
5962.5107	BED	38.1	225.44	1	8.78	E	Bed Boundary
5962.8623	BED	34.1	243.28	1	8.83	E	Bed Boundary
5962.9873	BED	30.83	243.04	1	8.84	E	Bed Boundary
5963.0952	BED	29.05	231.19	3	8.84	F	Bed Boundary
5963.2202	BED	32.43	228.96	3	8.84	F	Bed Boundary
5963.3623	BED	32.12	230.73	1	8.8	E	Bed Boundary
5963.5947	BED	35.12	228.25	1	8.73	E	Bed Boundary
5963.7373	BED	31.86	226.36	1	8.68	E	Bed Boundary
5963.8789	BED	30.89	225.68	1	8.65	E	Bed Boundary
5964.0288	BED	28.31	224.6	1	8.63	E	Bed Boundary
5964.9849	BED	34.47	237.73	3	8.71	F	Bed Boundary
5965.1519	BED	29.04	231.42	3	8.7	F	Bed Boundary
5965.4854	BED	30.1	234.27	3	8.67	F	Bed Boundary
5965.7822	BED	27.02	225.56	3	8.68	F	Bed Boundary
5966.3657	BED	29.86	219.9	3	8.69	F	Bed Boundary
5967.0889	BED	29.99	241.91	3	8.74	F	Bed Boundary
5968.1592	BED	31.67	222.1	1	8.72	E	Bed Boundary
5968.3169	BED	26.95	222.5	1	8.71	E	Bed Boundary
5968.8081	BED	31.75	229.87	1	8.72	E	Bed Boundary
5969.1787	BED	25.01	222.23	1	8.72	E	Bed Boundary
5969.3828	BED	28.94	229.31	1	8.74	E	Bed Boundary
5969.4937	BED	28.98	227.36	1	8.74	E	Bed Boundary
5969.7905	BED	25.23	241.68	2	8.71	G	Bed Boundary
5970.124	BED	28.24	239.19	2	8.71	G	Bed Boundary
5970.3838	BED	26.24	240.42	2	8.71	G	Bed Boundary
5970.6338	BED	21.88	226.83	2	8.78	G	Bed Boundary
5970.8379	BED	22.93	235.59	1	8.81	E	Bed Boundary
5971.0322	BED	28.68	230.81	1	8.91	E	Bed Boundary
5971.1436	BED	24.62	225.64	2	8.96	G	Bed Boundary
5971.2734	BED	25.63	227.44	1	8.94	E	Bed Boundary
5971.375	BED	28.57	225.98	1	8.92	E	Bed Boundary
5971.4873	BED	29.8	229.19	3	8.9	F	Bed Boundary
5971.6455	BED	30.54	235.39	1	8.86	E	Bed Boundary
5971.8037	BED	28.47	236.98	1	8.81	E	Bed Boundary
5971.8955	BED	30.02	241.36	4	8.79	P	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
5972.0039	BED	33.08	239.05	1	8.78	E	Bed Boundary
5972.0952	BED	33.1	237.8	1	8.76	E	Bed Boundary
5972.187	BED	30.24	229.68	3	8.76	F	Bed Boundary
5972.3203	BED	34.59	233.44	1	8.76	E	Bed Boundary
5972.4287	BED	32.46	232.41	4	8.76	P	Bed Boundary
5972.5703	BED	33.27	237.95	2	8.78	G	Bed Boundary
5972.6621	BED	33.27	236.44	4	8.79	P	Bed Boundary
5972.8628	BED	32.76	238.39	1	8.75	E	Bed Boundary
5973.0454	BED	32.44	240.64	4	8.74	P	Bed Boundary
5973.2148	BED	31.97	242.84	1	8.75	E	Bed Boundary
5973.4038	BED	32.65	228.38	1	8.75	E	Bed Boundary
5973.5869	BED	30.54	237.96	1	8.75	E	Bed Boundary
5973.8535	BED	33.73	230.92	2	8.73	G	Bed Boundary
5973.9873	BED	34.1	231.93	2	8.71	G	Bed Boundary
5974.0952	BED	33.62	233.5	1	8.7	E	Bed Boundary
5974.4199	BED	33.73	226.01	2	8.66	G	Bed Boundary
5974.8833	BED	31.22	239.31	1	8.67	E	Bed Boundary
5975.0498	BED	28.35	232.36	1	8.68	E	Bed Boundary
5975.7036	BED	27.19	225.75	1	8.64	E	Bed Boundary
5975.7954	BED	27.09	228.09	5	8.65	P	Bed Boundary
5976.1714	BED	29.23	222.14	1	8.63	E	Bed Boundary
5977.5059	BED	33.97	236.89	1	8.66	E	Bed Boundary
5977.9136	BED	28.9	207.1	1	8.67	E	Bed Boundary
5978.1177	BED	26.63	197.25	1	8.69	E	Bed Boundary
5978.8867	BED	38.32	175.28	2	8.64	G	Bed Boundary
5980.3652	BED	35.29	226.56	1	8.78	E	Bed Boundary
5980.7266	BED	29.92	223.22	2	8.79	G	Bed Boundary
5980.8745	BED	31.82	219.4	2	8.75	G	Bed Boundary
5981.1157	BED	32.75	220.12	1	8.72	E	Bed Boundary
5981.4399	BED	30.25	228.04	2	8.71	G	Bed Boundary
5981.7925	BED	32.32	242.51	2	8.68	G	Bed Boundary
5981.959	BED	36.6	243.37	2	8.7	G	Bed Boundary
5982.0889	BED	38.09	245.82	2	8.74	G	Bed Boundary
5982.8115	BED	32.11	229.08	2	8.72	G	Bed Boundary
5983.0527	BED	37.86	228.27	1	8.75	E	Bed Boundary
5983.2563	BED	31.92	225.55	2	8.78	G	Bed Boundary
5983.4233	BED	29.1	227.05	2	8.82	G	Bed Boundary
5983.646	BED	26.96	222.83	3	8.86	F	Bed Boundary
5983.7754	BED	30.88	228.32	3	8.86	F	Bed Boundary
5983.9565	BED	30.08	232.16	2	8.82	G	Bed Boundary
5984.2808	BED	32.78	227.03	2	8.79	G	Bed Boundary
5984.3921	BED	34.57	229.38	1	8.78	E	Bed Boundary
5984.5771	BED	30.98	223.04	1	8.78	E	Bed Boundary
5984.7349	BED	30.94	224.65	2	8.8	G	Bed Boundary
5984.8555	BED	30.81	217.69	2	8.79	G	Bed Boundary
5985.1147	BED	32.9	227.96	2	8.77	G	Bed Boundary
5985.2354	BED	33.75	226.63	1	8.75	E	Bed Boundary
5985.5039	BED	27.53	231.42	3	8.7	F	Bed Boundary
5985.6709	BED	30.35	230.73	2	8.7	G	Bed Boundary
5985.8931	BED	30.19	219.5	2	8.71	G	Bed Boundary
5986.0879	BED	33.11	235.41	1	8.72	E	Bed Boundary
5986.2827	BED	34.59	222.85	1	8.74	E	Bed Boundary
5986.5049	BED	34.47	215.89	1	8.75	E	Bed Boundary
5986.6904	BED	30.68	207.39	1	8.76	E	Bed Boundary
5986.7646	BED	27.95	211.21	1	8.76	E	Bed Boundary
5986.9033	BED	27.19	216.42	1	8.74	E	Bed Boundary
5987.0703	BED	27.4	225.06	1	8.74	E	Bed Boundary
5987.2939	BED	32.26	221.62	1	8.74	E	Bed Boundary
5987.3853	BED	31.94	214.97	2	8.71	G	Bed Boundary
5987.9092	BED	29.44	224.22	1	8.67	E	Bed Boundary
5988.0664	BED	26.62	227.94	1	8.67	E	Bed Boundary
5988.1963	BED	30.52	230.85	1	8.68	E	Bed Boundary
5988.2983	BED	30.34	223.69	1	8.68	E	Bed Boundary
5988.4961	FRAC	31.44	35.88	1	8.65	E	Conductive Fracture
5988.584	BED	31.78	216.66	1	8.65	E	Bed Boundary
5988.6836	BED	31.11	213.31	1	8.66	E	Bed Boundary
5988.8838	BED	31.79	219.67	1	8.67	E	Bed Boundary
5989.0708	BED	26.85	227.62	2	8.7	G	Bed Boundary
5989.2461	BED	30.61	226.56	1	8.73	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
5989.3896	BED	28.52	218.64	1	8.73	E	Bed Boundary
5989.5029	BED	26.54	226.75	2	8.72	G	Bed Boundary
5989.7144	BED	32.59	232.49	2	8.71	G	Bed Boundary
5989.9707	BED	22.18	243.56	1	8.68	E	Bed Boundary
5990.1206	BED	22.2	242.29	1	8.67	E	Bed Boundary
5990.2705	BED	23.51	231.48	1	8.67	E	Bed Boundary
5990.4204	BED	24.79	229.34	1	8.7	E	Bed Boundary
5990.564	BED	24.19	236.78	1	8.73	E	Bed Boundary
5990.7886	BED	19.86	237.6	1	8.74	E	Bed Boundary
5991.001	BED	21.85	231.09	1	8.82	E	Bed Boundary
5991.2012	BED	27.37	232.37	2	8.78	G	Bed Boundary
5991.5581	BED	31.96	234.04	1	8.76	E	Bed Boundary
5991.708	BED	28.75	229.27	1	8.77	E	Bed Boundary
5991.9082	BED	32.43	230.5	1	8.78	E	Bed Boundary
5992.0894	BED	28.59	227.74	1	8.81	E	Bed Boundary
5992.2266	BED	31.16	225.08	1	8.78	E	Bed Boundary
5994.0317	BED	24.91	235.06	2	8.74	G	Bed Boundary
5994.4253	BED	24.35	238.25	2	8.69	G	Bed Boundary
5994.5938	BED	25.04	234.15	2	8.68	G	Bed Boundary
5994.7373	BED	21.42	228.93	3	8.67	F	Bed Boundary
5994.981	BED	28.44	234.89	2	8.67	G	Bed Boundary
5995.3525	BED	21.54	240.31	1	8.7	E	Bed Boundary
5995.5278	BED	25.07	245.37	1	8.71	E	Bed Boundary
5995.6401	BED	18.55	242.14	1	8.71	E	Bed Boundary
5995.7397	BED	19.4	244.59	2	8.71	G	Bed Boundary
5995.8149	BED	22.32	245.49	1	8.71	E	Bed Boundary
5995.9712	BED	24.44	244.37	1	8.7	E	Bed Boundary
5996.0962	BED	21.59	247.13	2	8.69	G	Bed Boundary
5996.1836	BED	20.82	238.43	2	8.69	G	Bed Boundary
5996.271	BED	20.77	234.55	2	8.69	G	Bed Boundary
5997.0015	BED	32.03	220.9	2	8.68	G	Bed Boundary
5997.2017	BED	36.2	221.71	1	8.64	E	Bed Boundary
5997.2891	BED	37.15	216.88	1	8.65	E	Bed Boundary
5997.4204	BED	33.72	216.6	1	8.66	E	Bed Boundary
5997.52	BED	32.31	206.95	1	8.65	E	Bed Boundary
5997.645	BED	28.79	212.88	2	8.64	G	Bed Boundary
5997.7886	BED	25.77	227.59	2	8.64	G	Bed Boundary
5997.9199	BED	25.19	236.68	2	8.66	G	Bed Boundary
5998.0137	BED	25	226.79	2	8.67	G	Bed Boundary
5998.1758	BED	27.02	228.68	2	8.69	G	Bed Boundary
5998.3945	BED	22.75	222.5	2	8.68	G	Bed Boundary
5998.4946	BED	25.6	225.82	2	8.69	G	Bed Boundary
5998.6133	BED	29.53	225.51	1	8.71	E	Bed Boundary
5998.8755	BED	27.04	229.85	3	8.7	F	Bed Boundary
5999.1318	BED	29.67	224.3	1	8.64	E	Bed Boundary
5999.3003	BED	29.07	227.39	1	8.65	E	Bed Boundary
6002.6699	BED	22.33	230.39	3	9.08	F	Bed Boundary
6002.8574	BED	23.82	238.35	3	9.07	F	Bed Boundary
6003.0073	BED	24.57	239.04	3	9.05	F	Bed Boundary
6003.2134	BED	31.74	238.57	1	8.98	E	Bed Boundary
6003.5757	BED	35.97	231.39	1	8.85	E	Bed Boundary
6003.7632	BED	33.8	231.77	1	8.82	E	Bed Boundary
6003.9507	BED	32.61	230.61	1	8.81	E	Bed Boundary
6004.5	BED	33.95	245.04	1	8.83	E	Bed Boundary
6005.2744	BED	32.93	234.01	1	8.72	E	Bed Boundary
6005.3994	BED	30.34	227.59	1	8.71	E	Bed Boundary
6008.1074	BED	36.95	228.7	1	8.68	E	Bed Boundary
6008.251	BED	34.12	227.06	2	8.67	G	Bed Boundary
6008.5132	BED	31.17	234.43	1	8.7	E	Bed Boundary
6008.6758	BED	29.82	230.3	1	8.69	E	Bed Boundary
6008.8506	BED	28.06	237.07	1	8.67	E	Bed Boundary
6008.9692	BED	27.37	237.8	1	8.68	E	Bed Boundary
6009.2129	BED	31.69	229.53	1	8.71	E	Bed Boundary
6009.3438	BED	30.58	232.55	3	8.69	F	Bed Boundary
6009.4565	BED	28.07	238.2	3	8.68	F	Bed Boundary
6009.7935	BED	31.29	236.24	3	8.67	F	Bed Boundary
6010.1436	BED	27.32	234.39	2	8.69	G	Bed Boundary
6010.3682	BED	38.27	245.36	1	8.72	E	Bed Boundary
6010.8589	BED	37.58	240.25	1	8.95	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6011.0337	BED	30.03	256.58	2	9.03	G	Bed Boundary
6011.1587	BED	26.71	248.4	2	9.08	G	Bed Boundary
6011.2461	BED	27.46	247.3	2	9.03	G	Bed Boundary
6011.3833	BED	24.23	244.21	1	8.96	E	Bed Boundary
6011.5581	BED	26.94	237.2	1	8.9	E	Bed Boundary
6011.6768	BED	29.61	235.23	1	8.87	E	Bed Boundary
6011.8267	BED	31.55	240.09	1	8.87	E	Bed Boundary
6011.9644	BED	28.88	237.45	1	8.91	E	Bed Boundary
6012.0454	BED	26.87	239.81	1	8.96	E	Bed Boundary
6012.1328	BED	28.06	238.61	1	9.02	E	Bed Boundary
6012.208	BED	29.99	241.77	1	9.02	E	Bed Boundary
6012.3828	BED	29.92	233.12	1	8.99	E	Bed Boundary
6012.4702	BED	31.09	233.84	1	9.03	E	Bed Boundary
6012.5449	BED	29.11	229.85	1	9.07	E	Bed Boundary
6012.7388	BED	29.52	228.43	2	9.14	G	Bed Boundary
6012.9824	BED	28.95	233.27	1	9.16	E	Bed Boundary
6013.2822	BED	26.25	225.31	2	9.15	G	Bed Boundary
6013.5884	BED	24.75	217.86	2	9.14	G	Bed Boundary
6015.0435	BED	32.46	232.08	3	8.72	F	Bed Boundary
6015.209	BED	33.28	243.16	2	8.68	G	Bed Boundary
6015.4214	BED	38.4	234.26	1	8.63	E	Bed Boundary
6015.6523	BED	26.77	237.96	1	8.73	E	Bed Boundary
6015.7524	BED	26.56	231.59	1	8.75	E	Bed Boundary
6015.9399	BED	31.7	232.7	1	8.79	E	Bed Boundary
6016.0771	BED	29.78	229.19	1	8.79	E	Bed Boundary
6016.2085	BED	32.29	232.22	1	8.78	E	Bed Boundary
6016.502	BED	26.62	236.79	3	8.78	F	Bed Boundary
6016.6206	BED	24.35	224.74	3	8.78	F	Bed Boundary
6016.7705	BED	23.19	233.94	3	8.77	F	Bed Boundary
6016.8828	BED	21.68	230.44	3	8.76	F	Bed Boundary
6021.8892	BED	21.39	259.96	2	8.74	G	Bed Boundary
6022.5015	BED	18.34	235.89	3	8.69	F	Bed Boundary
6022.6699	BED	16.94	246.55	3	8.68	F	Bed Boundary
6026.0396	BED	32.11	229.82	1	8.7	E	Bed Boundary
6026.2646	BED	28.95	232.72	1	8.72	E	Bed Boundary
6026.4209	BED	29.44	228.96	1	8.74	E	Bed Boundary
6026.5396	BED	31.48	232.21	1	8.73	E	Bed Boundary
6026.6958	BED	25.67	237.8	1	8.7	E	Bed Boundary
6026.7832	BED	25.62	231.39	1	8.7	E	Bed Boundary
6026.8643	BED	26.33	231.44	2	8.7	G	Bed Boundary
6026.9956	BED	23.57	235.58	1	8.7	E	Bed Boundary
6027.1455	BED	23.61	237.71	2	8.7	G	Bed Boundary
6027.2329	BED	23.56	234.43	2	8.7	G	Bed Boundary
6027.4326	BED	33.29	226.41	1	8.69	E	Bed Boundary
6027.5449	BED	32.73	227.49	1	8.7	E	Bed Boundary
6027.645	BED	28.89	227.67	1	8.72	E	Bed Boundary
6027.7139	BED	28.29	231.59	1	8.73	E	Bed Boundary
6028.0571	BED	32.85	234.31	1	8.72	E	Bed Boundary
6028.1885	BED	30.31	233.05	2	8.71	G	Bed Boundary
6028.2886	BED	29.64	231.68	2	8.7	G	Bed Boundary
6028.5195	BED	31.05	233.57	1	8.68	E	Bed Boundary
6028.6196	BED	29.74	233.74	1	8.68	E	Bed Boundary
6028.7754	BED	28.95	226.52	2	8.69	G	Bed Boundary
6028.894	BED	31.41	224.18	2	8.7	G	Bed Boundary
6029.1787	BED	34.2	232.14	1	8.7	E	Bed Boundary
6029.4277	BED	25.93	245.03	1	8.68	E	Bed Boundary
6029.5313	BED	26.65	246.23	2	8.68	G	Bed Boundary
6029.6465	BED	26.51	238.14	2	8.68	G	Bed Boundary
6029.8335	BED	32.35	233.37	1	8.67	E	Bed Boundary
6029.9585	BED	28.52	234.46	2	8.67	G	Bed Boundary
6030.0396	BED	28.98	225.06	1	8.67	E	Bed Boundary
6030.2148	BED	31.55	227.98	1	8.7	E	Bed Boundary
6030.5332	BED	32.26	230.56	1	8.69	E	Bed Boundary
6030.8647	BED	22.22	233.28	3	8.69	F	Bed Boundary
6031.1265	BED	20.96	242.26	3	8.68	F	Bed Boundary
6031.3579	BED	21.57	236.68	3	8.68	F	Bed Boundary
6031.6074	BED	34.2	236.91	3	8.69	F	Bed Boundary
6031.7686	BED	30.59	240.84	3	8.69	F	Bed Boundary
6031.9624	BED	26.61	243.36	3	8.68	F	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6032.4243	BED	31.64	231.61	3	8.71	F	Bed Boundary
6032.6494	BED	23.74	237.6	3	8.69	F	Bed Boundary
6032.8931	BED	24.49	240.22	3	8.7	F	Bed Boundary
6033.1445	BED	25.13	237.05	3	8.71	F	Bed Boundary
6034.4629	BED	28.81	222.34	3	8.72	F	Bed Boundary
6034.7124	BED	31.49	226.43	3	8.74	F	Bed Boundary
6035.0313	BED	26.32	237.28	3	8.81	F	Bed Boundary
6035.3457	BED	21.03	250.09	2	8.73	G	Bed Boundary
6035.4585	BED	21.74	263.03	2	8.71	G	Bed Boundary
6035.6084	BED	18.04	260.41	2	8.7	G	Bed Boundary
6035.833	BED	13.97	275.51	1	8.69	E	Bed Boundary
6036.064	BED	17.16	299	1	8.68	E	Bed Boundary
6036.6201	BED	25.21	233.11	3	8.67	F	Bed Boundary
6036.9448	BED	30.03	235.83	3	8.64	F	Bed Boundary
6037.4443	BED	30.03	237.51	2	8.65	G	Bed Boundary
6037.582	BED	28.04	236.21	2	8.66	G	Bed Boundary
6037.7632	BED	28.7	234.08	2	8.65	G	Bed Boundary
6039.1499	BED	32.39	224.83	3	8.62	F	Bed Boundary
6039.5962	BED	28.19	212.94	1	8.62	E	Bed Boundary
6039.9087	BED	25.79	234.14	1	8.77	E	Bed Boundary
6040.2583	BED	30.64	230.52	1	8.93	E	Bed Boundary
6040.4644	BED	26.49	217.58	3	8.89	F	Bed Boundary
6040.7642	BED	29.14	230.43	1	8.75	E	Bed Boundary
6040.9082	BED	25.74	227.21	1	8.7	E	Bed Boundary
6041.0327	BED	27.39	234.54	1	8.68	E	Bed Boundary
6041.4951	BED	21.46	226.18	1	8.71	E	Bed Boundary
6041.7515	BED	20.08	230.32	2	8.71	G	Bed Boundary
6041.9761	BED	19.93	225.07	2	8.71	G	Bed Boundary
6042.1011	BED	19.99	228.31	2	8.73	G	Bed Boundary
6042.3135	BED	22.45	234.66	2	8.7	G	Bed Boundary
6042.4321	BED	26.45	225.55	2	8.68	G	Bed Boundary
6042.5942	BED	27.87	224.15	2	8.67	G	Bed Boundary
6043.0693	BED	29.81	231.01	2	8.75	G	Bed Boundary
6043.3501	BED	25.72	224.7	2	8.72	G	Bed Boundary
6043.4629	BED	29.64	222.17	2	8.72	G	Bed Boundary
6043.5908	BED	22.96	227.73	1	8.71	E	Bed Boundary
6043.7124	BED	25.26	232.92	1	8.71	E	Bed Boundary
6043.9902	BED	29.86	228.02	1	8.72	E	Bed Boundary
6044.1279	BED	30.92	222.63	1	8.74	E	Bed Boundary
6044.334	BED	27.8	225.8	1	8.72	E	Bed Boundary
6044.709	BED	32.39	230.35	1	8.72	E	Bed Boundary
6045.021	BED	26.8	212.27	1	8.66	E	Bed Boundary
6045.1147	BED	24.03	211.61	1	8.65	E	Bed Boundary
6045.2896	BED	24.76	211.96	1	8.65	E	Bed Boundary
6045.4956	BED	26.31	216.36	1	8.67	E	Bed Boundary
6045.583	BED	28.27	215.75	1	8.68	E	Bed Boundary
6046.0952	BED	26.57	204.32	1	8.65	E	Bed Boundary
6046.2515	BED	25.93	224.53	2	8.65	G	Bed Boundary
6046.6074	BED	31.88	229.71	2	8.71	G	Bed Boundary
6046.8511	BED	30.12	215.95	2	8.74	G	Bed Boundary
6048.209	FRAC	48.17	208.27	1	8.76	E	Conductive Fracture
6049.5771	BED	26.76	228.77	3	8.73	F	Bed Boundary
6049.9453	FRAC	49.62	245.28	1	8.73	E	Conductive Fracture
6049.9492	BED	33.42	218.98	4	8.73	P	Bed Boundary
6050.2383	BED	25.56	216.97	2	8.75	G	Bed Boundary
6050.8257	BED	37.49	238.28	1	8.69	E	Bed Boundary
6051.1255	BED	35.03	229.05	1	8.69	E	Bed Boundary
6051.2378	BED	32.45	222.06	1	8.69	E	Bed Boundary
6051.3657	BED	33.21	226.44	1	8.69	E	Bed Boundary
6051.5972	BED	30.62	226.67	2	8.71	G	Bed Boundary
6051.7783	BED	28.78	234.97	2	8.74	G	Bed Boundary
6052.4595	BED	29.02	235.42	2	8.71	G	Bed Boundary
6052.6089	BED	26.36	247.63	2	8.71	G	Bed Boundary
6052.7339	BED	26.21	238.08	2	8.71	G	Bed Boundary
6052.9399	BED	23.45	241.57	1	8.71	E	Bed Boundary
6053.0459	BED	24.11	233.67	1	8.71	E	Bed Boundary
6053.2397	BED	23.85	223.81	1	8.68	E	Bed Boundary
6053.396	BED	21.98	232.98	2	8.65	G	Bed Boundary
6053.502	BED	22.08	238.35	2	8.66	G	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6053.6768	BED	20.39	227.25	1	8.66	E	Bed Boundary
6054.1079	BED	30.61	223.21	1	8.7	E	Bed Boundary
6054.314	BED	28.54	219.37	1	8.71	E	Bed Boundary
6054.5078	BED	22.42	225.51	2	8.71	G	Bed Boundary
6054.8389	BED	27.43	228.61	2	8.72	G	Bed Boundary
6055.1885	BED	26.77	228.79	1	8.71	E	Bed Boundary
6055.6694	BED	29.86	222	1	8.75	E	Bed Boundary
6055.8379	BED	27.36	224.41	2	8.74	G	Bed Boundary
6056.1631	BED	33.98	232.53	1	8.71	E	Bed Boundary
6056.6128	BED	31.64	236.12	3	8.69	F	Bed Boundary
6058.1782	BED	33.33	227.59	1	8.72	E	Bed Boundary
6058.8716	BED	36.51	229.08	2	8.65	G	Bed Boundary
6059.3525	BED	31.55	223.61	1	8.63	E	Bed Boundary
6059.5776	BED	31.37	220.11	2	8.67	G	Bed Boundary
6060.1074	BED	26.78	227.59	3	8.75	F	Bed Boundary
6060.3447	BED	32.39	219.16	3	8.75	F	Bed Boundary
6060.7505	BED	33.27	213.38	3	8.82	F	Bed Boundary
6061.2451	BED	31.27	211.6	3	8.87	F	Bed Boundary
6062.0249	BED	30.52	219.81	3	8.77	F	Bed Boundary
6062.7319	BED	34.35	221.93	1	8.76	E	Bed Boundary
6063.4907	BED	33.86	223.08	1	8.73	E	Bed Boundary
6063.647	BED	29.53	225.4	1	8.74	E	Bed Boundary
6063.7749	BED	29.49	225.06	2	8.75	G	Bed Boundary
6064.8774	BED	27.62	225.79	1	8.7	E	Bed Boundary
6065.1836	BED	29.47	226.48	1	8.77	E	Bed Boundary
6066.1577	BED	31.14	231.86	1	8.96	E	Bed Boundary
6067.3945	BED	23.06	224.11	2	8.94	G	Bed Boundary
6067.6445	BED	17.56	236.18	2	8.85	G	Bed Boundary
6067.7568	BED	18.35	242.15	1	8.89	E	Bed Boundary
6067.8442	BED	18.32	242.28	1	8.91	E	Bed Boundary
6067.9253	BED	19.77	239.07	1	8.94	E	Bed Boundary
6068.019	BED	21.14	234.23	1	8.96	E	Bed Boundary
6068.188	BED	27.89	227.21	1	8.96	E	Bed Boundary
6068.2153	FRAC	75.11	169.71	1	8.96	E	Induced Fracture
6068.4189	BED	25.45	242.33	1	8.96	E	Bed Boundary
6068.5249	BED	26.78	238	1	8.97	E	Bed Boundary
6068.6377	BED	26.72	238.32	1	8.97	E	Bed Boundary
6068.9873	BED	30.55	226.67	1	8.92	E	Bed Boundary
6069.2061	BED	26.76	240.34	1	8.96	E	Bed Boundary
6069.3247	BED	26.83	237.89	1	8.92	E	Bed Boundary
6069.4058	BED	26.91	235.38	2	8.89	G	Bed Boundary
6069.4746	BED	28.94	235.61	1	8.86	E	Bed Boundary
6069.6558	BED	34.71	241.59	1	8.82	E	Bed Boundary
6069.7808	BED	34.18	238.66	1	8.78	E	Bed Boundary
6069.9712	BED	36.64	237.93	1	8.73	E	Bed Boundary
6071.0703	BED	22.59	215.42	1	8.66	E	Bed Boundary
6071.2139	BED	18.1	216.3	2	8.66	G	Bed Boundary
6071.3325	BED	18.78	213.85	2	8.67	G	Bed Boundary
6071.4575	BED	16.79	222.15	2	8.67	G	Bed Boundary
6071.5576	BED	17.55	223.27	2	8.68	G	Bed Boundary
6071.6577	BED	16.64	219.69	2	8.68	G	Bed Boundary
6071.7637	BED	17.46	220.99	3	8.7	F	Bed Boundary
6071.8638	BED	21.96	220.44	3	8.71	F	Bed Boundary
6071.9448	FRAC	48.27	104.9	1	8.72	E	Conductive Fracture
6072.001	BED	23.47	222.81	3	8.73	F	Bed Boundary
6072.0947	BED	21.35	227.12	3	8.75	F	Bed Boundary
6072.2134	BED	24.83	223.24	2	8.76	G	Bed Boundary
6072.6133	BED	26.46	232.17	3	8.76	F	Bed Boundary
6073.0566	BED	29.66	223.75	1	8.75	E	Bed Boundary
6073.3188	BED	30.44	230.3	1	8.77	E	Bed Boundary
6073.5	BED	24.32	230.71	1	8.79	E	Bed Boundary
6073.6064	BED	24.96	230.44	1	8.8	E	Bed Boundary
6073.8501	BED	26.39	233.4	1	8.79	E	Bed Boundary
6075.0146	BED	24.73	219.08	1	8.8	E	Bed Boundary
6075.146	BED	19.93	229.57	2	8.79	G	Bed Boundary
6075.2397	BED	21.32	226.4	2	8.78	G	Bed Boundary
6075.4082	BED	17	231.92	3	8.76	F	Bed Boundary
6075.502	BED	18.27	222.64	3	8.75	F	Bed Boundary
6075.7842	BED	26.57	230.78	1	8.71	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6076.1968	BED	19.9	226.55	1	8.73	E	Bed Boundary
6076.4092	BED	28.53	226.68	1	8.7	E	Bed Boundary
6076.584	BED	27.8	226.49	2	8.73	G	Bed Boundary
6076.6523	BED	27.11	225.76	2	8.74	G	Bed Boundary
6077.1509	BED	15.46	230.38	2	8.73	G	Bed Boundary
6077.251	BED	18.4	226.02	2	8.75	G	Bed Boundary
6077.3945	BED	21.38	225.89	2	8.76	G	Bed Boundary
6077.7144	BED	25.74	225.17	2	8.73	G	Bed Boundary
6077.877	BED	26.48	228.04	2	8.72	G	Bed Boundary
6078.1768	BED	20.04	229.15	3	8.71	F	Bed Boundary
6078.3076	BED	23.07	228.61	3	8.69	F	Bed Boundary
6078.4575	BED	32.44	222.64	1	8.67	E	Bed Boundary
6078.5703	BED	31.94	227.56	1	8.66	E	Bed Boundary
6078.7515	BED	25.75	222.24	2	8.66	G	Bed Boundary
6078.9014	BED	28.33	216.5	2	8.67	G	Bed Boundary
6079.0513	BED	25.84	226.64	2	8.68	G	Bed Boundary
6079.2012	BED	30.38	219.86	1	8.69	E	Bed Boundary
6079.376	BED	28.61	226.72	3	8.69	F	Bed Boundary
6079.6509	BED	27.14	223.68	2	8.7	G	Bed Boundary
6079.8379	BED	20.42	214.49	2	8.7	G	Bed Boundary
6079.9941	BED	22.75	217.77	2	8.7	G	Bed Boundary
6080.1191	BED	21.74	237.7	2	8.7	G	Bed Boundary
6080.2251	BED	23.74	227.1	2	8.71	G	Bed Boundary
6080.3188	BED	22.86	222.95	2	8.73	G	Bed Boundary
6080.4063	BED	25.68	222.79	2	8.74	G	Bed Boundary
6080.5249	BED	25.56	218.51	2	8.73	G	Bed Boundary
6080.6313	BED	26.27	218.52	2	8.73	G	Bed Boundary
6080.7251	BED	24.14	218.76	2	8.73	G	Bed Boundary
6080.8501	BED	26.26	219.78	2	8.73	G	Bed Boundary
6080.9624	BED	26.42	223	1	8.73	E	Bed Boundary
6081.0874	BED	22.61	214.35	1	8.71	E	Bed Boundary
6081.2363	BED	22.74	213.85	2	8.69	G	Bed Boundary
6081.437	BED	27.79	220.19	1	8.67	E	Bed Boundary
6081.6118	BED	25.72	219.11	1	8.67	E	Bed Boundary
6081.7808	BED	27.88	222.74	2	8.67	G	Bed Boundary
6082.0303	BED	28.61	221.11	2	8.63	G	Bed Boundary
6082.1616	BED	30.97	213.87	2	8.64	G	Bed Boundary
6082.2739	BED	34.73	215.54	1	8.66	E	Bed Boundary
6082.5083	BED	36.53	217.63	1	8.66	E	Bed Boundary
6082.6895	BED	37.34	224.59	1	8.65	E	Bed Boundary
6083.6011	BED	26.83	233.08	2	8.66	G	Bed Boundary
6083.8325	BED	25.95	224.55	2	8.65	G	Bed Boundary
6083.9072	BED	27.49	229.01	1	8.64	E	Bed Boundary
6084.1445	BED	30.13	226.45	2	8.64	G	Bed Boundary
6084.3447	BED	31.4	226.84	2	8.64	G	Bed Boundary
6084.5259	BED	29.14	216.96	2	8.65	G	Bed Boundary
6084.6382	BED	30.77	230.01	2	8.66	G	Bed Boundary
6084.7944	BED	28.02	226.89	2	8.68	G	Bed Boundary
6085.0439	BED	32.62	232.32	1	8.72	E	Bed Boundary
6085.2754	BED	33.58	224.13	2	8.75	G	Bed Boundary
6085.5659	BED	29.48	232.03	2	8.69	G	Bed Boundary
6085.8032	BED	31.51	232.32	1	8.65	E	Bed Boundary
6086.2715	BED	31.41	229.74	2	8.68	G	Bed Boundary
6086.6274	BED	32.12	231.27	2	8.66	G	Bed Boundary
6092.7329	BED	25.88	226.08	2	8.79	G	Bed Boundary
6092.9204	BED	28.1	231.28	2	8.78	G	Bed Boundary
6093.0767	BED	26.88	237.18	2	8.74	G	Bed Boundary
6093.208	BED	27.59	236.7	1	8.71	E	Bed Boundary
6093.4824	BED	26.29	233.14	2	8.66	G	Bed Boundary
6093.6201	BED	24.8	231.69	2	8.67	G	Bed Boundary
6093.9761	BED	28.22	227.23	1	8.66	E	Bed Boundary
6094.7383	BED	40.35	231.97	1	8.69	E	Bed Boundary
6094.9507	BED	27.67	233	1	8.66	E	Bed Boundary
6095.0439	BED	29.78	234.91	1	8.65	E	Bed Boundary
6095.1689	BED	31.01	230.35	1	8.67	E	Bed Boundary
6095.3188	BED	30.32	230.64	1	8.68	E	Bed Boundary
6095.5625	BED	26.88	228.56	1	8.7	E	Bed Boundary
6095.6812	BED	24.21	237.7	2	8.7	G	Bed Boundary
6095.7969	BED	24.7	226.49	2	8.69	G	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6096.0029	BED	22.1	212.97	1	8.69	E	Bed Boundary
6096.2529	BED	39.96	243.99	1	8.68	E	Bed Boundary
6096.415	BED	40.56	241.39	2	8.66	G	Bed Boundary
6096.5337	BED	40.64	241.61	2	8.64	G	Bed Boundary
6096.6401	BED	37.25	240.15	2	8.66	G	Bed Boundary
6096.7148	BED	35.51	243.5	2	8.67	G	Bed Boundary
6096.8149	BED	32.33	233.98	2	8.68	G	Bed Boundary
6096.9961	BED	28.3	233.26	2	8.71	G	Bed Boundary
6097.1274	BED	23.92	226.79	2	8.74	G	Bed Boundary
6097.2583	BED	26.07	227.34	2	8.75	G	Bed Boundary
6097.4082	BED	26.26	241.17	2	8.76	G	Bed Boundary
6097.583	BED	28.92	230.43	2	8.75	G	Bed Boundary
6097.7017	BED	26.15	229.4	2	8.74	G	Bed Boundary
6097.877	BED	28.11	228.11	2	8.76	G	Bed Boundary
6098.3638	BED	9.56	250.83	3	8.81	F	Bed Boundary
6099.707	BED	20.36	237.26	3	8.83	F	Bed Boundary
6099.8628	BED	21.3	242.26	3	8.78	F	Bed Boundary
6099.9756	BED	18.96	234.71	3	8.77	F	Bed Boundary
6100.3379	BED	16.53	240.35	3	8.91	F	Bed Boundary
6103.9199	BED	36.34	242.75	1	9.1	E	Bed Boundary
6104.1948	BED	35.24	233.15	1	9.05	E	Bed Boundary
6105.6377	BED	27.55	228.41	1	8.79	E	Bed Boundary
6105.7373	BED	26.96	232.44	1	8.8	E	Bed Boundary
6105.8594	BED	28.05	222.55	1	8.8	E	Bed Boundary
6106.6338	BED	37.24	242.82	1	8.75	E	Bed Boundary
6107.0273	BED	30.53	237.78	3	8.74	F	Bed Boundary
6107.2583	BED	24.21	242.07	3	8.85	F	Bed Boundary
6107.4956	BED	26.07	230.64	3	8.9	F	Bed Boundary
6107.6519	BED	24.05	232.5	3	8.89	F	Bed Boundary
6109.6509	BED	28.11	218.48	1	9.07	E	Bed Boundary
6109.8691	BED	25.67	225.65	1	9.07	E	Bed Boundary
6113.0078	BED	32.74	233.52	1	8.9	E	Bed Boundary
6113.6577	BED	39.49	228.77	1	8.92	E	Bed Boundary
6114.4385	BED	34.81	210.7	1	8.98	E	Bed Boundary
6114.894	BED	23.81	226.39	3	9	F	Bed Boundary
6115.6812	BED	29.31	231.66	3	9.03	F	Bed Boundary
6115.856	BED	31.91	235.64	3	9.05	F	Bed Boundary
6116.4307	BED	30.05	243.52	4	9.37	P	Bed Boundary
6117.8735	BED	24.11	233.22	2	9.76	G	Bed Boundary
6118.7822	BED	35.91	223.31	1	9.25	E	Bed Boundary
6119.8379	BED	33.14	231.05	1	9.02	E	Bed Boundary
6120.1816	BED	23.44	222.89	1	9.15	E	Bed Boundary
6120.3315	BED	28.2	226.26	1	9.2	E	Bed Boundary
6120.4814	BED	24.87	229.55	2	9.25	G	Bed Boundary
6120.5938	BED	20.09	234.76	2	9.27	G	Bed Boundary
6120.7251	BED	24.21	231.79	2	9.26	G	Bed Boundary
6120.8872	BED	28.93	234.59	2	9.27	G	Bed Boundary
6121.1685	BED	37.98	243.73	1	9.23	E	Bed Boundary
6121.5337	BED	31.87	231.18	1	9.03	E	Bed Boundary
6121.7651	BED	21.09	231.01	3	8.99	F	Bed Boundary
6121.9087	BED	22.67	237.14	2	9	G	Bed Boundary
6122.1709	BED	22.72	238.9	2	8.98	G	Bed Boundary
6122.3022	BED	23.33	230.92	3	8.96	F	Bed Boundary
6122.4707	BED	22.64	232.04	3	8.96	F	Bed Boundary
6122.6895	BED	26.85	232.25	4	8.96	P	Bed Boundary
6122.8892	BED	31.41	233.81	1	9	E	Bed Boundary
6123.1206	BED	28.65	231.18	1	9.05	E	Bed Boundary
6123.5718	BED	31.39	226.1	1	8.93	E	Bed Boundary
6123.7969	BED	31.35	227.27	1	8.94	E	Bed Boundary
6129.6621	BED	35.39	222.11	1	9.21	E	Bed Boundary
6129.8774	BED	32.85	221.91	1	9.05	E	Bed Boundary
6131.7324	BED	30.36	225.62	2	8.82	G	Bed Boundary
6132.126	BED	30.01	235.6	2	8.8	G	Bed Boundary
6132.4194	BED	33.03	229.39	1	8.81	E	Bed Boundary
6132.7695	BED	41.52	230.67	1	8.81	E	Bed Boundary
6139.896	BED	25.49	222.94	2	8.84	G	Bed Boundary
6140.0024	BED	24.09	223.68	1	8.83	E	Bed Boundary
6140.3022	BED	24.71	241.31	1	8.77	E	Bed Boundary
6140.583	BED	24.05	240.93	2	8.77	G	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6140.7583	BED	22.5	234.19	2	8.72	G	Bed Boundary
6140.9424	BED	21.79	235.41	3	8.71	F	Bed Boundary
6141.1328	BED	24.68	231.8	2	8.71	G	Bed Boundary
6141.3838	BED	32.19	232.45	1	8.71	E	Bed Boundary
6141.7026	BED	32.8	218.53	1	8.76	E	Bed Boundary
6142.1958	BED	25.51	243.59	1	8.8	E	Bed Boundary
6142.3145	BED	28.3	247.11	2	8.81	G	Bed Boundary
6142.5269	BED	29.62	242.88	1	8.78	E	Bed Boundary
6142.7769	BED	24.03	239.6	1	8.79	E	Bed Boundary
6142.8828	BED	26.09	233.29	1	8.77	E	Bed Boundary
6143.0269	BED	23.95	234.98	1	8.74	E	Bed Boundary
6143.189	BED	23.4	241.21	2	8.74	G	Bed Boundary
6143.3325	BED	25.38	232.03	2	8.74	G	Bed Boundary
6143.5015	BED	22.77	244.99	3	8.71	F	Bed Boundary
6143.6699	BED	25.96	229.14	3	8.74	F	Bed Boundary
6143.7949	BED	25.5	219.66	3	8.77	F	Bed Boundary
6143.9375	BED	25.54	220.65	4	8.77	P	Bed Boundary
6145.8374	BED	33.96	183.66	2	8.81	G	Bed Boundary
6146.2246	BED	32.28	212.41	2	8.85	G	Bed Boundary
6147.583	BED	27.4	215.63	1	9.12	E	Bed Boundary
6148.7573	BED	25.47	277.9	2	9.35	G	Bed Boundary
6149.8379	BED	24.2	234.01	1	9.08	E	Bed Boundary
6150.4004	BED	36.7	218.32	1	8.88	E	Bed Boundary
6150.7627	BED	22.29	217.89	3	8.93	F	Bed Boundary
6151.8555	BED	16.37	249.1	3	9.19	F	Bed Boundary
6152.355	BED	27.87	236.88	2	9.38	G	Bed Boundary
6152.6704	BED	29.14	238.08	1	9.39	E	Bed Boundary
6152.9707	BED	31.34	229.57	1	9.4	E	Bed Boundary
6154.6133	BED	33.74	235.84	1	9.23	E	Bed Boundary
6154.9629	BED	31.78	238.98	1	9.04	E	Bed Boundary
6155.3438	BED	34.09	232.18	1	9.04	E	Bed Boundary
6155.5439	BED	27.3	223.9	3	9.06	F	Bed Boundary
6157.1646	BED	27.77	214.59	3	9.26	F	Bed Boundary
6157.7642	BED	28.18	230.5	2	9.14	G	Bed Boundary
6158.1953	BED	31.25	223.65	1	9.05	E	Bed Boundary
6158.395	BED	28.74	225.15	1	9.05	E	Bed Boundary
6158.5015	BED	29.74	230.83	1	9.01	E	Bed Boundary
6158.7637	BED	31.41	236.18	1	8.92	E	Bed Boundary
6159.6318	BED	29.9	210.2	2	9.03	G	Bed Boundary
6160.7749	BED	18.17	243.24	2	8.96	G	Bed Boundary
6161.4556	BED	23.2	233.14	3	8.86	F	Bed Boundary
6163.1392	BED	34.61	217.92	1	9.57	E	Bed Boundary
6163.5762	BED	25.54	223.81	1	9.7	E	Bed Boundary
6163.9761	BED	26.21	184.48	3	9.54	F	Bed Boundary
6167.6396	BED	35.08	229.02	1	9.1	E	Bed Boundary
6168.1265	BED	26.18	209.13	1	8.87	E	Bed Boundary
6168.7139	BED	11.98	251.61	2	9.23	G	Bed Boundary
6169.4258	BED	24.87	208.48	2	10.29	G	Bed Boundary
6175.3936	BED	21.86	228.17	3	10.09	F	Bed Boundary
6175.6055	BED	25.95	230.72	3	9.68	F	Bed Boundary
6176	BED	16.31	228.14	3	9.47	F	Bed Boundary
6176.3335	BED	27.61	221.26	3	9.56	F	Bed Boundary
6176.5684	BED	21.94	219.19	3	9.25	F	Bed Boundary
6177.1899	BED	42.98	223.89	1	8.87	E	Bed Boundary
6177.377	BED	41.46	219.73	2	8.8	G	Bed Boundary
6177.6831	BED	31.44	223.38	1	8.71	E	Bed Boundary
6178.0391	BED	28.64	224.14	4	9.11	P	Bed Boundary
6181.9819	BED	15.46	51.12	3	11.22	F	Bed Boundary
6182.3252	BED	12.93	7.58	3	11.57	F	Bed Boundary
6183.4263	FRAC	53.39	199.48	1	11.88	E	Conductive Fracture
6183.5449	FRAC	27.4	213.48	1	11.8	E	Conductive Fracture
6183.6323	FRAC	20.45	83.2	1	11.71	E	Conductive Fracture
6184.7173	BED	27.64	198.06	4	11.32	P	Bed Boundary
6186.3369	FRAC	13.97	47.76	1	11.92	E	Conductive Fracture
6186.8682	FRAC	27.41	207.46	1	11.57	E	Conductive Fracture
6187.7393	BED	24.82	217.61	2	10.38	G	Bed Boundary
6188.3638	BED	26.06	234.39	1	9.37	E	Bed Boundary
6188.7764	BED	28.43	218.14	1	9.09	E	Bed Boundary
6189.1821	BED	21.44	204.42	2	9.41	G	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6198.064	BED	30.41	230.83	1	9.53	E	Bed Boundary
6198.3267	BED	30.82	222.69	1	9.41	E	Bed Boundary
6200.1689	BED	31.54	231.38	1	9.32	E	Bed Boundary
6200.3813	BED	32.3	225.71	1	9.4	E	Bed Boundary
6205.9248	BED	33	221.76	1	9.55	E	Bed Boundary
6206.2061	BED	33.16	224.52	1	9.53	E	Bed Boundary
6207.4209	BED	28.77	235.12	1	9.54	E	Bed Boundary
6207.5518	BED	25.08	237.34	1	9.46	E	Bed Boundary
6207.7207	BED	25.12	235.15	1	9.35	E	Bed Boundary
6208.0767	BED	21.86	237.53	1	9.25	E	Bed Boundary
6208.2642	BED	20.88	230.81	1	9.21	E	Bed Boundary
6208.3765	BED	17.98	232.27	2	9.23	G	Bed Boundary
6209.3818	BED	20.29	231.11	2	9.13	G	Bed Boundary
6209.7754	BED	23.81	230.52	1	9.17	E	Bed Boundary
6210.1128	BED	28.21	223.05	1	9.17	E	Bed Boundary
6217.9644	BED	31.28	234.19	3	9.46	F	Bed Boundary
6218.1641	BED	29.14	234.6	1	9.28	E	Bed Boundary
6218.3828	BED	19.5	234.65	1	9.23	E	Bed Boundary
6221.3838	BED	25.13	229.16	1	9.54	E	Bed Boundary
6221.7275	BED	23.19	240.41	1	9.33	E	Bed Boundary
6225.7686	BED	10.66	255.58	3	10.16	F	Bed Boundary
6227.7583	BED	29.96	203.66	1	9.6	E	Bed Boundary
6228.083	BED	30.47	219.96	1	9.42	E	Bed Boundary
6230.1255	BED	24.27	226.01	3	9.04	F	Bed Boundary
6230.4751	BED	27.23	221.54	1	9.17	E	Bed Boundary
6231.3027	BED	24.75	229.07	3	9.29	F	Bed Boundary
6231.459	BED	25.24	225.54	3	9.27	F	Bed Boundary
6231.9834	BED	24.91	228.75	2	9.21	G	Bed Boundary
6232.2148	BED	26.85	222.01	2	9.35	G	Bed Boundary
6247.7549	BED	38.07	245.29	3	9.78	F	Bed Boundary
6248.3267	BED	34.78	234.96	1	9.3	E	Bed Boundary
6248.5513	BED	35.57	242.33	1	9.37	E	Bed Boundary
6248.8887	BED	29.98	225.59	3	9.28	F	Bed Boundary
6254.7441	BED	29.51	222.76	2	10.05	G	Bed Boundary
6258.7886	BED	32.04	237.07	1	9.26	E	Bed Boundary
6259.1011	BED	31.62	214.94	1	9.27	E	Bed Boundary
6264.9629	BED	17.15	251.99	3	9.6	F	Bed Boundary
6266.6401	BED	16.49	243.04	3	9.87	F	Bed Boundary
6269.0322	BED	13.97	264.4	1	9.21	E	Bed Boundary
6269.332	BED	15.43	249.07	1	8.93	E	Bed Boundary
6269.6196	BED	26.98	251.59	2	8.76	G	Bed Boundary
6272.271	BED	26.7	211.87	1	8.93	E	Bed Boundary
6272.8828	BED	30.7	244.76	1	8.88	E	Bed Boundary
6273.6274	BED	17.59	154.17	1	8.59	E	Bed Boundary
6275.8638	BED	27.34	229.57	3	8.71	F	Bed Boundary
6276.0947	BED	20.59	228.55	3	8.7	F	Bed Boundary
6276.5132	BED	26.86	222.93	3	8.67	F	Bed Boundary
6276.8193	BED	30.4	223.51	1	8.65	E	Bed Boundary
6276.938	BED	28.29	231.54	1	8.65	E	Bed Boundary
6277.3159	BED	25.67	225.75	1	8.64	E	Bed Boundary
6277.397	BED	26.36	225.15	1	8.64	E	Bed Boundary
6277.856	BED	29.54	220.8	2	8.64	G	Bed Boundary
6278.4028	BED	27.77	234.6	1	8.65	E	Bed Boundary
6278.6465	BED	33.32	227.68	1	8.66	E	Bed Boundary
6280.6323	BED	15.53	200.36	1	9.05	E	Bed Boundary
6280.9136	BED	36.12	226.68	2	8.99	G	Bed Boundary
6281.0635	BED	33.25	219.07	1	8.93	E	Bed Boundary
6281.3511	BED	25.55	219.4	2	8.79	G	Bed Boundary
6281.7568	BED	23.27	238.34	1	8.87	E	Bed Boundary
6281.9819	BED	22.23	233.99	1	8.86	E	Bed Boundary
6282.2065	BED	27.71	220.42	1	8.83	E	Bed Boundary
6282.3438	BED	28.07	216.17	2	8.8	G	Bed Boundary
6282.5127	BED	29.03	225.91	2	8.73	G	Bed Boundary
6282.6689	BED	23.06	214.85	1	8.69	E	Bed Boundary
6283.0249	BED	29.96	227.1	1	8.66	E	Bed Boundary
6283.0996	BED	28.54	218.05	1	8.66	E	Bed Boundary
6283.5024	BED	31.47	208.14	1	8.7	E	Bed Boundary
6283.9775	BED	30.02	227.75	1	8.67	E	Bed Boundary
6284.1211	BED	30.89	229.8	1	8.66	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6284.4897	BED	34.81	229.51	2	8.61	G	Bed Boundary
6284.8145	BED	36.96	246.46	1	8.64	E	Bed Boundary
6285.0454	BED	33.44	239.85	2	8.68	G	Bed Boundary
6285.2202	BED	31.85	235.3	2	8.7	G	Bed Boundary
6285.6636	BED	23.9	243.89	3	8.73	F	Bed Boundary
6285.9697	BED	32.05	241.49	2	8.78	G	Bed Boundary
6286.4634	BED	26.72	235.4	2	8.87	G	Bed Boundary
6286.688	BED	30.96	228.76	2	8.9	G	Bed Boundary
6286.8882	BED	27.97	245.93	2	8.89	G	Bed Boundary
6287.0879	BED	28.61	244.63	2	8.9	G	Bed Boundary
6287.2505	BED	23.8	248.3	2	8.89	G	Bed Boundary
6290.7261	BED	28.05	239.19	1	9.42	E	Bed Boundary
6290.8447	BED	30.63	237.3	1	9.36	E	Bed Boundary
6291.7944	BED	30.18	220.62	4	9.56	P	Bed Boundary
6293.3027	BED	21.6	233.64	2	9.31	G	Bed Boundary
6293.4712	BED	24.77	237.22	2	9.3	G	Bed Boundary
6293.709	BED	30.24	230.26	2	9.3	G	Bed Boundary
6293.8086	BED	32.04	227.6	2	9.26	G	Bed Boundary
6294.396	BED	29.03	206.89	3	9.46	F	Bed Boundary
6294.7393	BED	28.49	199.98	1	9.39	E	Bed Boundary
6295.064	BED	25.87	211.81	1	9.73	E	Bed Boundary
6300.6387	BED	28.3	225.62	1	9.13	E	Bed Boundary
6300.9634	BED	21.04	239.19	1	8.97	E	Bed Boundary
6301.1758	BED	39.32	232.51	1	8.82	E	Bed Boundary
6301.9131	BED	38	247.93	1	8.77	E	Bed Boundary
6302.2441	BED	29.79	227.24	1	8.77	E	Bed Boundary
6302.8374	BED	29.13	218.25	2	9.02	G	Bed Boundary
6305.1826	BED	30.65	236.2	1	8.97	E	Bed Boundary
6305.6514	BED	22.16	201.78	1	8.78	E	Bed Boundary
6306.9756	BED	40.08	236.45	1	8.8	E	Bed Boundary
6307.269	BED	28.32	227.82	1	8.81	E	Bed Boundary
6310.7451	BED	25.06	220.01	1	8.99	E	Bed Boundary
6310.9385	BED	25.97	212.97	1	8.89	E	Bed Boundary
6311.0708	BED	24.22	222.68	1	8.81	E	Bed Boundary
6311.2271	BED	28.87	218.62	1	8.75	E	Bed Boundary
6311.5444	BED	30.12	234.3	2	8.77	G	Bed Boundary
6312.2451	BED	34.06	230.74	1	8.64	E	Bed Boundary
6312.7886	BED	39.49	226.87	1	8.71	E	Bed Boundary
6313.126	BED	25.7	222.67	1	8.73	E	Bed Boundary
6316.9331	BED	25.48	219.85	1	9.03	E	Bed Boundary
6317.2764	BED	27.14	242.99	1	8.74	E	Bed Boundary
6317.5752	BED	31.48	232.85	1	8.62	E	Bed Boundary
6317.7998	BED	24.58	225.58	1	8.63	E	Bed Boundary
6318.2183	BED	27.07	225.88	1	8.84	E	Bed Boundary
6318.4307	BED	29.32	229.93	1	8.89	E	Bed Boundary
6318.6309	BED	25.45	190.7	1	8.83	E	Bed Boundary
6319.1772	BED	26.91	222.57	2	8.75	G	Bed Boundary
6319.7485	BED	24.21	220.06	3	8.93	F	Bed Boundary
6320.0327	BED	29.34	242	3	8.99	F	Bed Boundary
6320.5293	BED	33.03	225.58	3	9.08	F	Bed Boundary
6320.6636	FRAC	80.68	198.17	1	9.08	E	Induced Fracture
6320.7949	BED	33.82	227.4	2	9.07	G	Bed Boundary
6325.0269	BED	30.33	221.1	1	8.93	E	Bed Boundary
6325.77	BED	50.11	217.94	2	8.85	G	Bed Boundary
6326.332	BED	25.11	241.79	3	8.98	F	Bed Boundary
6326.457	BED	29.06	239.36	3	8.98	F	Bed Boundary
6326.688	BED	29.2	223.77	3	8.96	F	Bed Boundary
6326.9756	BED	30.46	223.42	3	8.96	F	Bed Boundary
6328.6631	BED	28.11	216.36	3	8.81	F	Bed Boundary
6330.8896	BED	30.1	227.47	1	9.31	E	Bed Boundary
6331.1523	BED	32.78	230.46	1	9.59	E	Bed Boundary
6335.5776	BED	38.9	236.28	1	10.22	E	Bed Boundary
6338.8818	BED	35.29	221.88	1	8.95	E	Bed Boundary
6339.0923	BED	27.28	244.5	1	8.86	E	Bed Boundary
6340.4995	BED	23.83	232.76	2	8.88	G	Bed Boundary
6346.3804	BED	32.95	217.62	2	9.76	G	Bed Boundary
6346.8955	BED	46.48	221.9	1	9.89	E	Bed Boundary
6347.5576	BED	40.73	216.96	1	10.12	E	Bed Boundary
6347.9634	BED	6.69	267.76	1	10.21	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6355.6924	BED	27.95	230.08	4	9.19	P	Bed Boundary
6356.8457	BED	26.7	223.45	3	9.4	F	Bed Boundary
6367.6699	BED	34.04	231.87	3	9.71	F	Bed Boundary
6367.9697	BED	30.03	241.37	3	9.69	F	Bed Boundary
6369.1255	BED	28.83	229.58	2	10.17	G	Bed Boundary
6369.6187	BED	31.02	230.22	4	10.29	P	Bed Boundary
6374.7627	BED	14.85	224.5	3	9.63	F	Bed Boundary
6377.5293	BED	26.75	231.97	1	9.67	E	Bed Boundary
6378.001	BED	29.66	238.26	2	9.37	G	Bed Boundary
6378.9194	BED	23.37	212.12	1	9.44	E	Bed Boundary
6379.269	BED	21.71	242.35	2	9.4	G	Bed Boundary
6379.8936	BED	25.37	250.15	2	9.16	G	Bed Boundary
6380.0781	BED	25.22	244.54	1	9.04	E	Bed Boundary
6380.7339	BED	33.03	228.76	1	8.64	E	Bed Boundary
6381.9829	BED	21.67	237.91	3	9.19	F	Bed Boundary
6382.1641	BED	24.92	235.19	3	9.24	F	Bed Boundary
6382.3638	BED	25.66	226.54	3	9.23	F	Bed Boundary
6382.6577	BED	30.2	231.58	2	9.11	G	Bed Boundary
6382.9634	BED	32.38	233.84	2	9.06	G	Bed Boundary
6383.0571	BED	34.66	232.95	2	9.09	G	Bed Boundary
6383.3511	BED	28.87	231.35	2	9.1	G	Bed Boundary
6383.627	BED	29.36	227.66	2	9.07	G	Bed Boundary
6383.8145	BED	32.67	228.22	1	9	E	Bed Boundary
6383.9956	BED	33.81	224.83	1	8.93	E	Bed Boundary
6384.9697	BED	31.92	246.61	1	8.75	E	Bed Boundary
6385.2759	BED	33.89	236.26	1	8.73	E	Bed Boundary
6385.5884	BED	33.88	238.43	1	8.77	E	Bed Boundary
6386.3501	BED	31.22	221.52	1	8.84	E	Bed Boundary
6387.0029	BED	27.28	223.17	1	8.89	E	Bed Boundary
6387.4399	BED	31.09	229.3	1	8.9	E	Bed Boundary
6388.9204	BED	26.51	221.96	1	8.87	E	Bed Boundary
6389.5449	BED	34.49	224.74	1	8.83	E	Bed Boundary
6390.6382	BED	29.82	223.6	1	8.63	E	Bed Boundary
6390.9316	BED	31.25	225.59	1	8.66	E	Bed Boundary
6391.1938	BED	30.15	220.43	1	8.66	E	Bed Boundary
6391.4004	BED	35.3	223.09	1	8.66	E	Bed Boundary
6391.5781	BED	32.99	224.97	1	8.69	E	Bed Boundary
6394.1514	BED	32.78	230.64	3	8.67	F	Bed Boundary
6394.4204	BED	30.6	227.32	1	8.65	E	Bed Boundary
6394.5513	BED	29.2	217.64	1	8.63	E	Bed Boundary
6396.0068	BED	29.01	223.71	2	8.62	G	Bed Boundary
6396.269	BED	31.74	233.7	1	8.63	E	Bed Boundary
6396.3501	BED	31.97	227.98	1	8.63	E	Bed Boundary
6397.2026	BED	30.2	240.42	1	8.64	E	Bed Boundary
6397.3525	BED	29.82	235.84	1	8.67	E	Bed Boundary
6397.459	BED	28.18	232.92	2	8.69	G	Bed Boundary
6397.7524	BED	30.03	221.88	1	8.68	E	Bed Boundary
6397.918	BED	32.06	223.01	2	8.67	G	Bed Boundary
6398.877	BED	31.63	226.24	1	8.69	E	Bed Boundary
6399.4888	BED	26.85	231.97	1	8.62	E	Bed Boundary
6402.2495	BED	30.19	230.49	3	8.88	F	Bed Boundary
6402.6431	BED	26.14	222.29	1	8.89	E	Bed Boundary
6402.8433	BED	28.31	231.01	1	8.83	E	Bed Boundary
6403.1743	BED	27.77	215.39	3	8.76	F	Bed Boundary
6403.7925	BED	26.48	230.68	3	8.7	F	Bed Boundary
6404.1484	BED	24.53	215.66	3	8.67	F	Bed Boundary
6404.4263	BED	24.39	229.65	1	8.63	E	Bed Boundary
6404.564	BED	24.45	231.08	1	8.63	E	Bed Boundary
6404.7324	BED	27.65	226.78	1	8.63	E	Bed Boundary
6404.9824	BED	30.86	225.02	1	8.63	E	Bed Boundary
6405.1465	BED	29.69	226.63	1	8.63	E	Bed Boundary
6405.2842	BED	28.62	230.94	1	8.65	E	Bed Boundary
6408.1777	BED	22.9	222.8	2	8.68	G	Bed Boundary
6408.6729	BED	25.23	237.58	3	8.64	F	Bed Boundary
6409.4565	BED	26.57	223.39	3	8.63	F	Bed Boundary
6410.4556	BED	27.87	221.89	2	8.64	G	Bed Boundary
6410.6826	BED	28.55	222.57	2	8.64	G	Bed Boundary
6410.8994	BED	32.01	234.08	1	8.67	E	Bed Boundary
6411.5259	BED	26.9	239.64	1	8.72	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6411.6694	BED	26.19	229.68	1	8.74	E	Bed Boundary
6411.894	BED	17.79	227.21	2	8.72	G	Bed Boundary
6412.0068	BED	19.45	219.41	2	8.7	G	Bed Boundary
6412.8887	BED	27.92	232.17	1	8.64	E	Bed Boundary
6413.1758	BED	28.61	217.11	1	8.7	E	Bed Boundary
6413.582	BED	32.82	222.47	1	8.72	E	Bed Boundary
6413.7632	BED	33.79	226.31	1	8.71	E	Bed Boundary
6413.9507	BED	30.95	221.49	1	8.69	E	Bed Boundary
6414.3691	BED	29.51	227.85	1	8.68	E	Bed Boundary
6414.7124	BED	31.52	228.28	1	8.68	E	Bed Boundary
6415.0435	BED	27.12	231.85	2	8.7	G	Bed Boundary
6415.356	BED	31.24	226.95	1	8.75	E	Bed Boundary
6415.4712	BED	25.66	224.09	1	8.76	E	Bed Boundary
6415.6777	BED	29.67	223.77	2	8.75	G	Bed Boundary
6416.1147	BED	35.69	227.15	2	8.7	G	Bed Boundary
6416.8579	BED	30.46	229.82	1	8.64	E	Bed Boundary
6420.4497	BED	33.05	239.99	2	8.68	G	Bed Boundary
6420.5869	BED	30.55	232	2	8.69	G	Bed Boundary
6420.771	BED	30.88	227.8	1	8.69	E	Bed Boundary
6421.0835	BED	27.85	215.09	1	8.65	E	Bed Boundary
6421.5459	BED	29.44	234.05	3	8.66	F	Bed Boundary
6421.9707	BED	30.31	229.85	1	8.71	E	Bed Boundary
6422.0703	BED	32.82	229.76	1	8.74	E	Bed Boundary
6422.5889	BED	34.11	233.08	1	8.81	E	Bed Boundary
6423.0884	BED	33.55	225.83	2	8.83	G	Bed Boundary
6423.7192	BED	35.42	233.89	2	8.8	G	Bed Boundary
6424.0693	BED	31.42	228.64	2	8.76	G	Bed Boundary
6424.3564	BED	34.65	221.93	1	8.73	E	Bed Boundary
6425.4185	BED	39.35	238.17	3	8.71	F	Bed Boundary
6425.6089	BED	32.64	242.18	1	8.67	E	Bed Boundary
6425.7773	BED	32.35	245.49	1	8.62	E	Bed Boundary
6425.9336	BED	34.39	238.24	1	8.62	E	Bed Boundary
6427.4014	BED	32.36	226.96	1	8.87	E	Bed Boundary
6430.8423	BED	31.27	242.96	3	8.78	F	Bed Boundary
6432.2754	BED	27.8	233.52	3	8.8	F	Bed Boundary
6432.4063	BED	27.68	239.11	3	8.75	F	Bed Boundary
6432.6436	BED	31.18	242.39	3	8.78	F	Bed Boundary
6432.8843	BED	27.74	239.25	1	8.73	E	Bed Boundary
6434.146	BED	37.79	250.91	1	8.75	E	Bed Boundary
6437.9404	BED	26.22	228.34	2	8.71	G	Bed Boundary
6438.3467	BED	32.28	235.63	1	8.63	E	Bed Boundary
6438.7461	BED	31.3	230.28	1	8.62	E	Bed Boundary
6439.0273	BED	31.4	233.04	1	8.65	E	Bed Boundary
6439.2397	BED	27.15	230.6	1	8.66	E	Bed Boundary
6439.5396	BED	33.57	237.17	1	8.67	E	Bed Boundary
6439.752	BED	33.02	229.9	1	8.66	E	Bed Boundary
6440.895	BED	30.3	228.78	1	8.69	E	Bed Boundary
6441.126	BED	33.97	229.6	1	8.77	E	Bed Boundary
6441.5508	BED	35.95	231.34	1	8.97	E	Bed Boundary
6442.1851	BED	26.52	226.22	3	8.79	F	Bed Boundary
6443.9785	BED	24.16	242.88	3	8.73	F	Bed Boundary
6444.2554	BED	30.66	236.5	1	8.78	E	Bed Boundary
6444.5957	BED	34.93	228.33	1	8.83	E	Bed Boundary
6444.7207	BED	33.24	229.45	1	8.81	E	Bed Boundary
6445.2622	BED	33.42	245.24	2	8.8	G	Bed Boundary
6448.7588	FRAC	37.08	179.95	1	8.91	E	Partial Conductive Fracture
6449.1587	FRAC	31.8	349.59	1	8.88	E	Partial Conductive Fracture
6451.0947	BED	41.1	226.9	3	8.73	F	Bed Boundary
6454.5269	BED	34.45	227.98	1	8.78	E	Bed Boundary
6454.9141	BED	29.7	232.57	1	8.81	E	Bed Boundary
6455.4326	BED	24.34	232.17	1	8.7	E	Bed Boundary
6455.6265	BED	30.74	226.48	1	8.72	E	Bed Boundary
6457.6563	BED	38.42	243.89	1	8.52	E	Bed Boundary
6458.3745	BED	35.84	232.51	2	8.59	G	Bed Boundary
6458.5591	BED	32.06	231.06	1	8.58	E	Bed Boundary
6458.8647	BED	27.27	238.18	1	8.53	E	Bed Boundary
6459.1709	BED	26.88	232.65	1	8.54	E	Bed Boundary
6459.3022	BED	29.74	235.11	1	8.57	E	Bed Boundary
6459.4521	BED	27.5	235.45	1	8.65	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6459.6396	BED	28.14	235.53	1	8.68	E	Bed Boundary
6459.7207	BED	29.07	239.43	1	8.68	E	Bed Boundary
6460.083	BED	26.96	236.23	1	8.62	E	Bed Boundary
6460.1768	BED	26.22	235.83	1	8.62	E	Bed Boundary
6460.5449	BED	25.8	220.01	2	8.61	G	Bed Boundary
6461.0947	BED	28.62	230.25	1	8.62	E	Bed Boundary
6461.376	BED	27.59	235.59	2	8.62	G	Bed Boundary
6461.707	BED	27.3	231	1	8.61	E	Bed Boundary
6461.9067	BED	22.93	229.84	1	8.62	E	Bed Boundary
6464.5693	BED	34.13	238.61	2	8.79	G	Bed Boundary
6465.3765	BED	36.57	232.32	1	8.77	E	Bed Boundary
6465.7388	BED	37.9	209.58	1	8.68	E	Bed Boundary
6466.2197	BED	36.18	220.99	1	8.61	E	Bed Boundary
6466.5508	BED	37.74	235.61	1	8.62	E	Bed Boundary
6470.4697	BED	35.61	211.3	1	8.78	E	Bed Boundary
6471.2793	BED	45.64	192.85	1	8.78	E	Bed Boundary
6471.5566	FRAC	47.27	220.82	1	8.73	E	Conductive Fracture
6471.8164	BED	46.03	244.07	1	8.75	E	Bed Boundary
6472.4785	FRAC	61.92	61.55	1	8.76	E	Conductive Fracture
6472.5781	BED	29.84	232.36	1	8.79	E	Bed Boundary
6472.7905	BED	30.15	226.01	1	8.75	E	Bed Boundary
6478.5332	BED	31.62	207.24	1	8.84	E	Bed Boundary
6479.0581	BED	30.56	230.71	1	8.69	E	Bed Boundary
6479.876	BED	32.33	229.48	1	8.73	E	Bed Boundary
6480.3818	BED	33.3	223.19	1	8.66	E	Bed Boundary
6482.5938	BED	25.19	233.5	2	8.73	G	Bed Boundary
6482.7813	BED	29.05	228.03	2	8.69	G	Bed Boundary
6483.1621	BED	26.42	228.74	2	8.67	G	Bed Boundary
6483.3057	BED	26.62	231.58	2	8.66	G	Bed Boundary
6483.5083	BED	31.48	233.78	2	8.65	G	Bed Boundary
6483.7144	BED	27.93	230.6	2	8.65	G	Bed Boundary
6484.6323	BED	28.12	233.51	2	8.67	G	Bed Boundary
6486.2251	BED	28.73	226.59	1	8.78	E	Bed Boundary
6486.7935	BED	22.87	240.84	1	8.63	E	Bed Boundary
6487.1997	BED	29.77	227.93	1	8.65	E	Bed Boundary
6489.5908	BED	32.54	229.25	2	8.75	G	Bed Boundary
6490.5571	BED	32.37	225.02	1	8.8	E	Bed Boundary
6490.8193	BED	34.95	231.34	1	8.91	E	Bed Boundary
6491.2461	BED	28.93	229.44	2	8.88	G	Bed Boundary
6491.5781	BED	29.3	224.72	2	8.75	G	Bed Boundary
6491.9028	BED	28.09	224.2	1	8.66	E	Bed Boundary
6492.4126	BED	21.55	231.38	3	8.58	F	Bed Boundary
6492.8311	BED	34.15	233.24	3	8.55	F	Bed Boundary
6493.2021	BED	30.41	236.44	1	8.58	E	Bed Boundary
6493.3521	BED	27.31	230.54	2	8.6	G	Bed Boundary
6493.4707	BED	28.37	226.76	1	8.62	E	Bed Boundary
6493.771	BED	34.44	230.24	2	8.61	G	Bed Boundary
6494.3613	BED	31.71	212.73	2	8.59	G	Bed Boundary
6494.4771	BED	31.66	208.36	2	8.59	G	Bed Boundary
6494.8232	BED	27.3	214.24	2	8.59	G	Bed Boundary
6495.0366	BED	30.88	232.2	2	8.58	G	Bed Boundary
6496.144	BED	28.23	231.32	3	8.71	F	Bed Boundary
6497.2715	BED	23.93	228.62	2	8.78	G	Bed Boundary
6497.4087	BED	19.14	233.94	2	8.76	G	Bed Boundary
6497.6836	BED	24.9	211.31	1	8.74	E	Bed Boundary
6497.7524	BED	25.82	205.56	1	8.73	E	Bed Boundary
6497.9399	BED	23.18	214.54	2	8.63	G	Bed Boundary
6498.3833	BED	29.63	237.62	1	8.64	E	Bed Boundary
6498.5205	BED	29.45	233.63	1	8.61	E	Bed Boundary
6498.7642	BED	29.94	220.34	1	8.61	E	Bed Boundary
6499.2891	BED	26.94	218.45	1	8.67	E	Bed Boundary
6499.4077	BED	25.65	218.99	1	8.66	E	Bed Boundary
6499.8389	BED	21.49	245.05	1	8.59	E	Bed Boundary
6503.9985	BED	30.26	223.92	2	8.84	G	Bed Boundary
6504.8667	BED	34.96	221.09	2	8.85	G	Bed Boundary
6505.3135	BED	29.31	215.66	1	8.72	E	Bed Boundary
6505.4443	BED	29.92	221.99	2	8.66	G	Bed Boundary
6506.2192	BED	22.13	220.27	2	8.63	G	Bed Boundary
6506.3628	BED	18.81	226.96	2	8.65	G	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6506.5127	BED	24.89	229.64	2	8.67	G	Bed Boundary
6506.6406	BED	27.91	222.67	1	8.68	E	Bed Boundary
6506.7095	BED	29.86	222.37	1	8.68	E	Bed Boundary
6506.9966	BED	31.96	235.56	1	8.68	E	Bed Boundary
6507.1089	BED	34.31	232.01	1	8.67	E	Bed Boundary
6507.4277	BED	30.53	232.75	1	8.66	E	Bed Boundary
6507.5527	BED	30.28	229.01	1	8.68	E	Bed Boundary
6507.6836	BED	30.83	227.23	1	8.7	E	Bed Boundary
6507.9521	BED	32.45	232.25	2	8.66	G	Bed Boundary
6508.2832	BED	30.19	228.15	1	8.72	E	Bed Boundary
6508.415	BED	29.37	225.03	2	8.7	G	Bed Boundary
6508.6465	FRAC	37.54	100.26	1	8.7	E	Partial Conductive Fracture
6508.9268	BED	28.95	230.18	1	8.72	E	Bed Boundary
6509.3325	BED	21.1	243.83	2	8.77	G	Bed Boundary
6509.439	BED	23.81	240.1	1	8.76	E	Bed Boundary
6510.2632	BED	24.83	228.08	1	8.67	E	Bed Boundary
6510.501	BED	27.36	225.02	1	8.67	E	Bed Boundary
6510.7256	BED	29.91	224.59	1	8.73	E	Bed Boundary
6511.4189	FRAC	47.46	136.79	1	8.88	E	Partial Conductive Fracture
6512.3091	BED	26.42	231.37	1	8.98	E	Bed Boundary
6512.4214	BED	25.77	219.31	2	8.95	G	Bed Boundary
6512.584	BED	19.52	212.78	3	8.99	F	Bed Boundary
6512.8022	BED	25.64	219.45	1	9.02	E	Bed Boundary
6513.1333	BED	26.18	237.16	1	8.93	E	Bed Boundary
6513.6333	BED	33.86	224.98	2	8.9	G	Bed Boundary
6513.8081	BED	35.15	212.32	1	8.97	E	Bed Boundary
6519.0391	BED	23	236.68	1	8.71	E	Bed Boundary
6519.1328	BED	21.53	236.75	1	8.69	E	Bed Boundary
6519.3701	BED	29.08	220.31	1	8.67	E	Bed Boundary
6519.5078	BED	27.6	208.77	1	8.67	E	Bed Boundary
6519.6636	BED	28.39	219.44	1	8.65	E	Bed Boundary
6520.2695	BED	25.67	222.48	1	8.74	E	Bed Boundary
6520.563	BED	29	229.11	1	8.64	E	Bed Boundary
6520.832	BED	27.15	232.95	2	8.64	G	Bed Boundary
6521.019	BED	25.86	221.58	2	8.62	G	Bed Boundary
6522.2754	BED	16.44	230.74	4	8.82	P	Bed Boundary
6522.3813	BED	17.58	225.46	4	8.85	P	Bed Boundary
6522.6626	BED	22.65	234.45	4	8.84	P	Bed Boundary
6522.9492	BED	27.84	226.35	3	8.79	F	Bed Boundary
6523.6191	BED	24.55	233.45	3	8.75	F	Bed Boundary
6524.231	BED	31.17	225.57	1	8.69	E	Bed Boundary
6525.2407	BED	16.9	233.64	3	8.69	F	Bed Boundary
6525.5737	BED	16.96	235.39	3	8.72	F	Bed Boundary
6525.9263	BED	18.69	226.48	4	8.66	P	Bed Boundary
6526.3818	BED	14.83	228.67	4	8.64	P	Bed Boundary
6526.5942	BED	17.64	223.26	3	8.65	F	Bed Boundary
6527.063	BED	16.26	225.26	4	8.68	P	Bed Boundary
6527.2378	BED	14.91	217.36	4	8.65	P	Bed Boundary
6528.9141	BED	38.4	233.13	1	8.64	E	Bed Boundary
6529.1768	BED	28.94	239.62	1	8.61	E	Bed Boundary
6529.5015	BED	30.03	228.95	2	8.48	G	Bed Boundary
6529.8701	BED	32.16	231.97	1	8.48	E	Bed Boundary
6530.1885	BED	25.88	230.94	2	8.54	G	Bed Boundary
6530.5195	BED	30.74	213.45	3	8.59	F	Bed Boundary
6530.8208	BED	33.99	233.93	2	8.62	G	Bed Boundary
6531.7876	FRAC	85.18	218.78	1	8.58	E	Induced Fracture
6531.7998	BED	28.54	242.81	1	8.58	E	Bed Boundary
6532.9023	BED	29.95	235.72	1	8.7	E	Bed Boundary
6533.2593	BED	24.37	226.11	1	8.63	E	Bed Boundary
6533.4634	BED	26.67	224.78	2	8.66	G	Bed Boundary
6533.8872	BED	21.83	237.56	1	8.6	E	Bed Boundary
6534.6636	BED	24.14	231.76	2	8.77	G	Bed Boundary
6535.3926	BED	26.61	235.92	1	8.7	E	Bed Boundary
6535.7739	BED	34.68	232.95	1	8.76	E	Bed Boundary
6536.2271	BED	32.02	218.11	1	8.74	E	Bed Boundary
6538.7568	BED	15.77	243.32	1	8.74	E	Bed Boundary
6539.0879	BED	24.83	215.15	1	8.58	E	Bed Boundary
6539.3066	BED	29.5	223.34	1	8.58	E	Bed Boundary
6539.4565	BED	23.63	231.76	1	8.65	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6549.0313	FRAC	39.68	72.65	1	8.82	E	Partial Conductive Fracture
6549.3809	FRAC	29.25	52.78	1	8.78	E	Partial Conductive Fracture
6549.5308	FRAC	37.24	59.68	1	8.76	E	Partial Conductive Fracture
6553.8628	BED	32.97	227.82	1	8.74	E	Bed Boundary
6554.1377	BED	30.97	219.24	1	8.79	E	Bed Boundary
6557.3516	BED	25.36	224.63	1	8.82	E	Bed Boundary
6557.4639	BED	28.45	228.68	1	8.79	E	Bed Boundary
6557.7158	BED	29.34	230.64	1	8.76	E	Bed Boundary
6557.8779	BED	33.16	229.65	1	8.75	E	Bed Boundary
6558.415	BED	26.57	229.25	1	8.75	E	Bed Boundary
6558.6509	BED	23.38	235.54	3	8.74	F	Bed Boundary
6559.0522	BED	30.38	227.58	3	8.81	F	Bed Boundary
6559.3833	BED	29.35	231.67	1	8.81	E	Bed Boundary
6559.4707	BED	27.21	229.3	1	8.79	E	Bed Boundary
6559.708	BED	28.06	222.09	1	8.77	E	Bed Boundary
6559.8081	BED	27.01	217.41	1	8.76	E	Bed Boundary
6559.9766	BED	23.68	210.94	4	8.76	P	Bed Boundary
6560.6387	BED	27.5	227.72	1	8.61	E	Bed Boundary
6561.4443	BED	31.18	231.23	1	8.59	E	Bed Boundary
6563.9648	BED	39.54	212.26	3	8.89	F	Bed Boundary
6564.3145	BED	41.42	215.9	3	8.86	F	Bed Boundary
6564.5645	BED	48.07	219.31	3	8.83	F	Bed Boundary
6567.0439	BED	56.24	181.42	3	8.84	F	Bed Boundary
6568.5215	BED	29.57	223.16	3	8.8	F	Bed Boundary
6577.9126	BED	23.97	270.25	2	8.99	G	Bed Boundary
6578.3247	BED	17.86	240.43	3	8.92	F	Bed Boundary
6597.4004	BED	7.08	225.24	1	8.76	E	Bed Boundary
6598.1216	BED	38.45	232.23	1	8.67	E	Bed Boundary
6598.4058	BED	43.89	226.25	3	8.66	F	Bed Boundary
6629.0522	BED	34.41	142.98	1	9.43	E	Bed Boundary
6660.6553	BED	35.2	314.5	2	8.97	G	Bed Boundary
6661.3701	BED	33.62	190.64	2	8.96	G	Bed Boundary
6673.5376	BED	27.8	214.13	1	9.17	E	Bed Boundary
6675.5332	BED	54.55	217.19	2	8.95	G	Bed Boundary
6701.5015	BED	18.1	244.9	3	11.87	F	Bed Boundary
6702.8691	BED	15.67	247.92	2	10.62	G	Bed Boundary
6703.3501	BED	12.06	238.68	2	10.26	G	Bed Boundary
6703.7876	FRAC	43.3	306.85	1	10.25	E	Conductive Fracture
6704.0625	FRAC	23.64	239.2	1	10.62	E	Conductive Fracture
6704.6963	BED	35.27	247.17	1	11.1	E	Bed Boundary
6705.146	BED	25.36	211.62	1	10.74	E	Bed Boundary
6706.5762	FRAC	34.59	139.18	1	10.44	E	Conductive Fracture
6707.3511	BED	21.19	228.14	1	11.5	E	Bed Boundary
6707.6382	BED	12.83	259.15	3	12.35	F	Bed Boundary
6707.9316	FRAC	39.74	261.89	1	13.24	E	Resistive Fracture
6714.1997	BED	10.46	232.05	2	10.88	G	Bed Boundary
6719.2559	BED	20.52	232.29	3	9.87	F	Bed Boundary
6719.5557	BED	36.1	207.62	1	9.66	E	Bed Boundary
6721.8262	BED	28.68	222.86	1	10.64	E	Bed Boundary
6722.1699	BED	31.1	216.42	1	10.28	E	Bed Boundary
6722.3818	BED	27.33	213.89	1	10.08	E	Bed Boundary
6726.2329	BED	23.53	230.92	3	9.65	F	Bed Boundary
6726.6636	BED	20.2	241.96	3	10.08	F	Bed Boundary
6726.8638	BED	23.04	233.47	2	10.06	G	Bed Boundary
6729.6118	BED	26.37	236.13	2	10.44	G	Bed Boundary
6732.9004	BED	29.61	230.94	2	11.04	G	Bed Boundary
6735.1553	BED	24.14	233.87	3	11.03	F	Bed Boundary
6736.0527	BED	32.26	243.82	1	10.88	E	Bed Boundary
6736.689	BED	21.69	248.42	2	11.66	G	Bed Boundary
6736.9014	BED	27.17	245.15	2	12.02	G	Bed Boundary
6739.4634	BED	9.23	240.1	1	10.34	E	Bed Boundary
6743.7139	BED	29.76	255.08	2	11.32	G	Bed Boundary
6744.0073	BED	27.39	228.5	1	11.34	E	Bed Boundary
6744.5757	BED	27.05	222.87	1	10.97	E	Bed Boundary
6746.8491	BED	14.6	224.44	2	11.18	G	Bed Boundary
6747.2832	BED	19.96	235.25	2	11.07	G	Bed Boundary
6748.9824	BED	28.92	232.96	2	10.28	G	Bed Boundary
6751.562	BED	25.48	242.19	2	9.72	G	Bed Boundary
6752.6084	BED	22.33	242.05	1	9.56	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6752.9019	BED	16.75	246.92	2	9.7	G	Bed Boundary
6753.6265	BED	19.4	307.54	3	9.97	F	Bed Boundary
6753.9824	BED	15.6	299.12	3	10.04	F	Bed Boundary
6754.2822	BED	10.62	274.47	3	10.1	F	Bed Boundary
6755.2192	BED	16.79	249.48	2	10.45	G	Bed Boundary
6755.5127	BED	22.87	242.25	2	10.54	G	Bed Boundary
6757.6143	BED	26.36	235.9	1	10.45	E	Bed Boundary
6760.4316	BED	16.74	240.19	3	10.7	F	Bed Boundary
6761.4463	BED	27.88	224.64	1	10.85	E	Bed Boundary
6764.5444	BED	31.71	217.03	3	11.11	F	Bed Boundary
6765.3315	BED	27.69	238.36	1	10.83	E	Bed Boundary
6771.9897	BED	43.98	236.95	2	10.76	G	Bed Boundary
6772.7271	BED	36.84	228.36	1	9.38	E	Bed Boundary
6773.2827	BED	31.33	244.39	1	9.13	E	Bed Boundary
6774.02	BED	42.2	199.23	2	9.12	G	Bed Boundary
6774.6318	BED	42.49	236.95	1	9.56	E	Bed Boundary
6775.6812	BED	23.4	245.93	3	11.31	F	Bed Boundary
6779.376	BED	32.44	185.2	3	10.75	F	Bed Boundary
6782.2397	BED	38.24	216.94	2	11.26	G	Bed Boundary
6787.502	BED	33.91	216.63	1	9.84	E	Bed Boundary
6789.4443	BED	27.91	236.25	1	9.35	E	Bed Boundary
6791.2715	BED	43.79	226.96	1	9.52	E	Bed Boundary
6792.7456	BED	42.41	213.92	1	10.07	E	Bed Boundary
6793.3638	BED	39.44	222.83	1	10.07	E	Bed Boundary
6797.1211	BED	34.83	215.98	1	9.18	E	Bed Boundary
6797.7896	BED	22.65	216.93	1	9.73	E	Bed Boundary
6798.645	BED	17.75	236.65	1	11.52	E	Bed Boundary
6800.1567	BED	35.51	218.26	1	9.9	E	Bed Boundary
6800.4814	BED	39.37	217.27	1	9.74	E	Bed Boundary
6819.9067	BED	29.82	238.17	1	9.02	E	Bed Boundary
6820.3438	BED	22.71	240.38	2	8.83	G	Bed Boundary
6820.5874	BED	43.01	230.29	1	8.79	E	Bed Boundary
6822.958	BED	22.82	235.49	1	9.07	E	Bed Boundary
6823.1265	BED	22.54	228.63	1	9.03	E	Bed Boundary
6833.4702	BED	34.2	209.04	1	8.78	E	Bed Boundary
6833.9512	BED	21.07	209.45	1	8.67	E	Bed Boundary
6845.0747	BED	29.05	211.86	3	8.94	F	Bed Boundary
6845.5591	BED	32.62	223.78	1	8.77	E	Bed Boundary
6846.0586	BED	26.39	194.03	1	8.65	E	Bed Boundary
6851.7329	FRAC	84.6	202.63	1	9	E	Borehole Breakout
6857.9072	BED	26.25	221.72	1	8.92	E	Bed Boundary
6858.1636	BED	19.39	227.23	1	8.9	E	Bed Boundary
6858.3882	BED	26.21	230.42	2	8.82	G	Bed Boundary
6859.6748	BED	16.57	248.41	2	8.87	G	Bed Boundary
6860.1123	BED	24.18	221.11	2	8.87	G	Bed Boundary
6860.812	BED	37.04	222.53	3	9.01	F	Bed Boundary
6861.583	BED	53.04	234.12	4	9.19	P	Bed Boundary
6861.9141	BED	51.71	250.57	4	9.37	P	Bed Boundary
6863.3818	BED	53.04	215.7	4	9.32	P	Bed Boundary
6865.0996	BED	27.55	205.79	2	9.39	G	Bed Boundary
6867.437	BED	22.78	206.04	3	10.28	F	Bed Boundary
6871.6748	BED	24.12	225.2	3	9.78	F	Bed Boundary
6873.4614	BED	22.35	220.66	3	10.32	F	Bed Boundary
6874.4688	BED	21.75	230.2	4	10.22	P	Bed Boundary
6875.437	BED	35.94	233.78	3	10.15	F	Bed Boundary
6875.9932	BED	28.92	232.15	4	10.05	P	Bed Boundary
6876.6113	BED	33.94	218.37	3	10	F	Bed Boundary
6877.6377	BED	37.24	211.69	1	9.3	E	Bed Boundary
6878.0313	BED	36.7	216.72	1	9.21	E	Bed Boundary
6879.2739	BED	46.85	220.82	2	9.65	G	Bed Boundary
6880.064	BED	29.16	210.49	3	9.31	F	Bed Boundary
6881.02	BED	42.61	227.09	1	9.08	E	Bed Boundary
6881.8818	BED	50.05	225.64	1	9.22	E	Bed Boundary
6883.0435	BED	29.03	230.15	4	9.02	P	Bed Boundary
6884.8984	BED	37.68	238.65	4	9.05	P	Bed Boundary
6885.4263	BED	30.2	217.46	2	9.01	G	Bed Boundary
6886.332	BED	31.61	230.11	4	9.27	P	Bed Boundary
6886.832	BED	38.39	232.94	1	9.3	E	Bed Boundary
6887.188	BED	38.8	232.92	1	9.35	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6887.4502	BED	41.46	226.33	1	9.34	E	Bed Boundary
6888.0029	BED	45.72	220.1	1	9.42	E	Bed Boundary
6888.4087	BED	32.31	227.01	1	9.43	E	Bed Boundary
6888.7275	BED	33.97	223.31	1	9.36	E	Bed Boundary
6888.9492	BED	41.19	217.09	4	9.23	P	Bed Boundary
6890.3638	BED	29.24	235.95	1	9.08	E	Bed Boundary
6890.8135	BED	31.52	228.21	1	9.28	E	Bed Boundary
6892.5376	BED	39.92	234.67	2	9.37	G	Bed Boundary
6893.0811	BED	29.84	219.45	3	9.53	F	Bed Boundary
6893.3623	BED	28.83	214.35	3	9.55	F	Bed Boundary
6893.5371	BED	27.23	219.8	2	9.6	G	Bed Boundary
6894.3364	BED	34.05	226.99	4	9.69	P	Bed Boundary
6895.7573	BED	30.39	231.9	1	9.07	E	Bed Boundary
6900.3452	BED	30.63	224.07	1	8.75	E	Bed Boundary
6900.6323	BED	27.72	220.12	3	8.78	F	Bed Boundary
6901.8506	BED	26.89	240.29	3	8.78	F	Bed Boundary
6902.313	BED	25.84	231.93	3	8.69	F	Bed Boundary
6902.4751	BED	21.72	223.62	2	8.69	G	Bed Boundary
6902.6748	BED	19.13	219.22	3	8.7	F	Bed Boundary
6902.8062	BED	26.04	213.78	3	8.7	F	Bed Boundary
6903.2402	BED	31.49	217.15	2	8.74	G	Bed Boundary
6903.4839	BED	30.58	223.08	1	8.75	E	Bed Boundary
6904.2646	BED	24.97	211.81	2	8.81	G	Bed Boundary
6912.7373	BED	18.11	203.94	3	8.56	F	Bed Boundary
6914.3647	BED	23.97	232.21	1	8.66	E	Bed Boundary
6914.7739	BED	27.67	184.65	3	8.67	F	Bed Boundary
6915.1768	BED	13.58	254.08	2	8.62	G	Bed Boundary
6920.7764	BED	27.33	234.7	1	8.54	E	Bed Boundary
6921.0698	BED	28.19	225.29	1	8.5	E	Bed Boundary
6921.3071	BED	19.48	209.22	1	8.5	E	Bed Boundary
6921.894	BED	29.6	236.96	3	8.57	F	Bed Boundary
6922.6128	BED	33.84	297.92	1	8.62	E	Bed Boundary
6924.1958	BED	40.6	222.38	1	8.59	E	Bed Boundary
6924.5957	BED	39.13	234.53	1	8.65	E	Bed Boundary
6924.8643	BED	41.39	221.16	1	8.66	E	Bed Boundary
6925.4077	BED	40.8	226.34	1	8.63	E	Bed Boundary
6925.7075	BED	28.23	218.57	1	8.6	E	Bed Boundary
6926.5508	BED	21.13	232.15	3	8.71	F	Bed Boundary
6926.9131	BED	24.73	228.88	1	8.64	E	Bed Boundary
6927.3379	BED	29.27	230.46	1	8.55	E	Bed Boundary
6928.668	BED	28.29	219.86	3	8.67	F	Bed Boundary
6930.9321	BED	35.21	227.5	1	8.45	E	Bed Boundary
6931.2446	BED	27.84	217.35	1	8.44	E	Bed Boundary
6931.3882	BED	28.47	224.62	1	8.45	E	Bed Boundary
6931.6758	BED	31.14	217.02	1	8.47	E	Bed Boundary
6931.813	BED	33.43	230.16	1	8.49	E	Bed Boundary
6932.1191	BED	30.69	220.31	1	8.5	E	Bed Boundary
6932.3877	BED	34.11	230.91	1	8.5	E	Bed Boundary
6933.4058	BED	26.48	228.32	1	8.52	E	Bed Boundary
6933.7056	BED	33.13	203.91	1	8.5	E	Bed Boundary
6934.5332	BED	43.19	220.63	1	8.58	E	Bed Boundary
6934.877	BED	32.37	213.35	1	8.65	E	Bed Boundary
6935.083	BED	32.18	220.42	1	8.73	E	Bed Boundary
6935.3452	BED	34.87	226.64	1	8.82	E	Bed Boundary
6935.9634	BED	32.77	222.8	2	8.84	G	Bed Boundary
6936.1758	BED	27.6	206.78	1	8.8	E	Bed Boundary
6936.9507	BED	23.75	238.85	1	8.82	E	Bed Boundary
6937.7373	BED	29.96	201.77	1	8.72	E	Bed Boundary
6938.9521	BED	35.21	229.95	3	9.05	F	Bed Boundary
6940.0581	BED	48.41	231.96	3	8.95	F	Bed Boundary
6940.7324	BED	48.75	227.77	3	8.88	F	Bed Boundary
6941.7256	BED	54.46	256.62	3	9.06	F	Bed Boundary
6942.5	BED	32.59	215.17	2	8.95	G	Bed Boundary
6943.2935	BED	33.42	247.68	3	8.98	F	Bed Boundary
6944.5205	BED	45.98	240.57	3	9.12	F	Bed Boundary
6945.1392	BED	44.32	234.29	2	9.09	G	Bed Boundary
6945.5513	BED	28.61	243.94	3	9.06	F	Bed Boundary
6946.7881	BED	44.87	230.29	2	9.15	G	Bed Boundary
6947.4502	BED	50.82	227.72	3	9.43	F	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
6948.0938	BED	37.13	233.66	2	9.35	G	Bed Boundary
6948.3525	BED	36.8	237.71	2	9.37	G	Bed Boundary
6948.8838	BED	39.38	226.46	3	9.52	F	Bed Boundary
6950.2954	BED	42.16	220.87	3	9.61	F	Bed Boundary
6950.8701	BED	53.07	208.25	3	9.53	F	Bed Boundary
6953.5024	BED	38.07	232.74	2	8.96	G	Bed Boundary
6953.8525	BED	41.81	221.97	2	9.04	G	Bed Boundary
6954.3647	BED	34.89	221.61	2	9.23	G	Bed Boundary
6954.8145	BED	37.66	229.95	2	9.28	G	Bed Boundary
6955.2705	BED	32.07	218.49	2	9.33	G	Bed Boundary
6955.5264	BED	32.46	221.62	2	9.27	G	Bed Boundary
6955.7388	BED	27.12	230.45	2	9.46	G	Bed Boundary
6956.1011	BED	41.12	235.28	3	9.48	F	Bed Boundary
6958.7773	BED	36.51	234.34	2	9.21	G	Bed Boundary
6959.502	BED	41.91	242.91	2	9.34	G	Bed Boundary
6959.752	BED	42.32	250.38	2	9.31	G	Bed Boundary
6960.0078	BED	41.4	244.18	2	9.18	G	Bed Boundary
6960.3828	BED	38.46	265.03	3	9.09	F	Bed Boundary
6966.0356	BED	11.33	250.1	3	9.07	F	Bed Boundary
6966.4194	BED	21.52	205.79	2	9.13	G	Bed Boundary
6966.5942	BED	22.93	212.95	1	9.14	E	Bed Boundary
6966.7754	BED	19.21	211.77	1	9.11	E	Bed Boundary
6975.9854	BED	32.66	237.99	4	9.33	P	Bed Boundary
6976.5132	BED	44.29	240.32	3	9.26	F	Bed Boundary
6977.0693	BED	48.12	252.96	3	9.36	F	Bed Boundary
6977.5	BED	48.5	255.52	3	9.42	F	Bed Boundary
6977.875	BED	42	244.48	2	9.5	G	Bed Boundary
6978.3184	BED	33.21	226.18	2	9.53	G	Bed Boundary
6978.6948	BED	26.86	225.99	2	10	G	Bed Boundary
6979.0054	BED	25.14	222.3	2	10.06	G	Bed Boundary
6979.2134	BED	20.39	220.91	2	10.02	G	Bed Boundary
6979.7383	BED	31.9	214.53	2	9.95	G	Bed Boundary
6983.0952	BED	58.89	267.82	1	9.04	E	Bed Boundary
6996.9399	BED	36.34	205.59	1	8.54	E	Bed Boundary
6998.0327	BED	44.45	214.69	1	8.82	E	Bed Boundary
6998.2329	BED	42.59	210.3	1	8.98	E	Bed Boundary
7004.8628	BED	52.68	242.93	1	9.21	E	Bed Boundary
7019.4507	BED	17.31	237.04	4	8.75	P	Bed Boundary
7020.4458	BED	29.2	224.87	2	8.99	G	Bed Boundary
7020.8579	BED	33.08	227.72	2	9.08	G	Bed Boundary
7024.1904	BED	3.31	290.82	3	10.06	F	Bed Boundary
7028.3379	BED	36.48	233.46	3	10.8	F	Bed Boundary
7043.4282	BED	18.89	256.36	1	8.95	E	Bed Boundary
7044.2026	BED	8.02	263.1	2	8.94	G	Bed Boundary
7044.4756	BED	8.04	263.86	3	8.92	F	Bed Boundary
7046.3379	FRAC	24.85	202.5	1	9.36	E	Conductive Fracture
7056.0767	BED	26.39	226.53	3	8.75	F	Bed Boundary
7063.6699	BED	13.69	218.63	3	8.67	F	Bed Boundary
7063.9634	BED	17.87	235.09	3	8.81	F	Bed Boundary
7064.2808	BED	23.32	248.31	3	8.86	F	Bed Boundary
7076.7822	BED	38.43	206.88	3	9.67	F	Bed Boundary
7078.875	BED	38.04	198.99	2	9.65	G	Bed Boundary
7079.2217	BED	35.85	214.17	2	9.76	G	Bed Boundary
7079.9961	BED	39.37	226.03	3	9.62	F	Bed Boundary
7080.5205	BED	38.05	235	2	9.6	G	Bed Boundary
7080.8643	BED	36.24	235.66	2	9.69	G	Bed Boundary
7088.2314	BED	21.4	199.34	3	9.26	F	Bed Boundary
7098.2441	BED	20.97	55.01	3	8.34	F	Bed Boundary
7100.6582	BED	4.42	261.94	3	8.4	F	Bed Boundary
7106.8511	BED	32.99	219.11	2	8.67	G	Bed Boundary
7110.7705	FRAC	44.68	349.79	1	8.7	E	Conductive Fracture
7111.0205	BED	24.1	185.67	1	8.71	E	Bed Boundary
7111.5889	FRAC	81.12	303.27	1	8.78	E	Induced Fracture
7112.2573	BED	12.36	258.43	2	8.78	G	Bed Boundary
7118.4629	BED	16.65	29.44	2	8.68	G	Bed Boundary
7120.0146	BED	25.68	196.58	2	8.65	G	Bed Boundary
7124.8276	BED	27.23	233.08	3	8.73	F	Bed Boundary
7129.6196	BED	55.68	228.38	3	8.56	F	Bed Boundary
7135.0698	FRAC	86.38	294.68	1	8.72	E	Induced Fracture

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7136.8999	FRAC	26.83	318.74	1	8.55	E	Conductive Fracture
7137.3032	BED	21.82	133.11	1	8.52	E	Bed Boundary
7139.8018	BED	7.82	278.48	3	8.53	F	Bed Boundary
7142.1377	BED	41.26	194.95	1	8.5	E	Bed Boundary
7142.772	BED	35.14	179.02	1	8.34	E	Bed Boundary
7144.9204	BED	31.66	222.41	1	8.44	E	Bed Boundary
7145.5449	BED	18.3	204.95	2	8.55	G	Bed Boundary
7146.4131	BED	6.26	63.15	2	8.49	G	Bed Boundary
7146.7256	BED	8.48	192.03	2	8.42	G	Bed Boundary
7147.7437	FRAC	86.54	321.93	1	8.37	E	Induced Fracture
7149.0303	BED	17.94	214.06	2	8.59	G	Bed Boundary
7149.9985	BED	21.78	190.7	3	8.51	F	Bed Boundary
7150.4575	BED	28.33	214.58	1	8.55	E	Bed Boundary
7151.1699	FRAC	40.71	86.02	1	8.51	E	Conductive Fracture
7151.4258	BED	21.42	242.69	1	8.41	E	Bed Boundary
7151.6445	BED	17.83	222.12	1	8.35	E	Bed Boundary
7152.0283	BED	22.01	215.25	1	8.33	E	Bed Boundary
7152.4595	BED	12.63	243.77	2	8.42	G	Bed Boundary
7153.2842	BED	24.16	216.06	1	8.49	E	Bed Boundary
7153.9463	BED	37.86	220.78	1	8.47	E	Bed Boundary
7154.5708	BED	11.29	291.11	2	8.44	G	Bed Boundary
7155.1641	BED	29.29	240.04	2	8.28	G	Bed Boundary
7155.9512	BED	33.34	189.28	2	8.44	G	Bed Boundary
7156.563	BED	35.71	222.36	1	8.48	E	Bed Boundary
7157.603	BED	15.06	262.86	2	8.32	G	Bed Boundary
7157.772	BED	5.75	308.24	2	8.33	G	Bed Boundary
7161.6152	BED	22.73	214.91	2	8.35	G	Bed Boundary
7164.207	FRAC	71.6	150.25	1	8.4	E	Fault
7165.9746	BED	24.41	167.56	2	8.36	G	Bed Boundary
7166.2373	BED	21.32	146	3	8.26	F	Bed Boundary
7167.5122	BED	29.03	231.4	3	8.02	F	Bed Boundary
7168.2051	BED	31.75	225.51	2	8.42	G	Bed Boundary
7169.1938	FRAC	56.89	286.81	1	8.62	E	Conductive Fracture
7169.3188	FRAC	57.39	297.9	1	8.61	E	Conductive Fracture
7170.4819	BED	29.11	230.45	2	8.66	G	Bed Boundary
7170.7192	BED	27.31	222.51	2	8.62	G	Bed Boundary
7171.1646	BED	23.93	231.25	2	8.7	G	Bed Boundary
7171.3896	BED	24.63	231	2	8.69	G	Bed Boundary
7171.6084	BED	27.22	228.51	2	8.73	G	Bed Boundary
7172.0142	BED	30.39	229.42	2	8.65	G	Bed Boundary
7172.2578	BED	32.13	226.49	2	8.63	G	Bed Boundary
7172.4653	BED	25.04	233.36	1	8.65	E	Bed Boundary
7172.6152	BED	25.44	220.67	1	8.65	E	Bed Boundary
7173.48	BED	29.78	221.07	4	8.7	P	Bed Boundary
7173.9893	BED	30.36	214.35	3	8.62	F	Bed Boundary
7176.5376	BED	16.62	232.14	4	8.56	P	Bed Boundary
7176.8311	BED	24.16	236.39	4	8.54	P	Bed Boundary
7177.0625	BED	23.66	233.4	4	8.55	P	Bed Boundary
7179.2578	BED	38.49	228.42	1	8.76	E	Bed Boundary
7179.4824	BED	22.65	228.13	1	8.75	E	Bed Boundary
7179.6074	FRAC	43.46	72.94	1	8.72	E	Conductive Fracture
7179.8076	BED	24.31	223.54	1	8.69	E	Bed Boundary
7180.1445	FRAC	39.46	94.21	1	8.66	E	Conductive Fracture
7180.2319	FRAC	57.7	288.47	1	8.63	E	Conductive Fracture
7180.9194	FRAC	66.25	349.35	1	8.55	E	Conductive Fracture
7181.1411	BED	24.6	213.79	1	8.54	E	Bed Boundary
7181.8403	BED	30.87	228.9	1	8.79	E	Bed Boundary
7182.3467	BED	20.95	233.46	2	8.79	G	Bed Boundary
7182.4214	BED	22.74	234.41	2	8.78	G	Bed Boundary
7182.6963	BED	30.16	206.08	1	8.72	E	Bed Boundary
7182.9834	BED	23.78	225.28	2	8.74	G	Bed Boundary
7183.3271	BED	15.4	221.58	3	8.78	F	Bed Boundary
7187.1685	BED	24.77	237.07	2	8.71	G	Bed Boundary
7194.1641	BED	6.93	279.8	3	8.72	F	Bed Boundary
7196.4346	BED	25.66	219.72	1	8.55	E	Bed Boundary
7197.0781	BED	27.22	217.08	1	8.67	E	Bed Boundary
7197.8462	BED	24.26	211.29	1	8.55	E	Bed Boundary
7198.2832	BED	25.24	228.27	3	8.68	F	Bed Boundary
7200.2197	FRAC	48.72	344.9	1	8.71	E	Conductive Fracture

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7202.1392	BED	30.59	243.75	1	8.48	E	Bed Boundary
7202.4121	FRAC	81.68	290.49	1	8.46	E	Conductive Fracture
7203.5508	BED	53.17	228.95	1	8.62	E	Bed Boundary
7211.6455	BED	18.7	284.65	2	8.7	G	Bed Boundary
7213.7319	FRAC	63.8	351.29	1	8.66	E	Conductive Fracture
7215.645	FRAC	56.6	5.89	1	8.65	E	Resistive Fracture
7216.3071	BED	28.21	213.1	1	8.63	E	Bed Boundary
7217.9126	BED	21.53	220.59	3	8.76	F	Bed Boundary
7219.938	FRAC	43.04	343.09	1	8.69	E	Resistive Fracture
7222.0649	BED	25.11	225.93	2	8.62	G	Bed Boundary
7222.5396	BED	24.47	213.81	2	8.68	G	Bed Boundary
7222.9268	BED	27.61	222.93	2	8.67	G	Bed Boundary
7223.1846	BED	24.98	235.25	2	8.65	G	Bed Boundary
7224.415	BED	27.89	211.31	2	8.65	G	Bed Boundary
7226.0894	BED	25.51	202.75	2	8.66	G	Bed Boundary
7226.6011	BED	28.43	214.35	2	8.66	G	Bed Boundary
7226.8076	BED	26.52	199.86	2	8.64	G	Bed Boundary
7227.1572	BED	22.38	215.12	2	8.66	G	Bed Boundary
7229.2026	FRAC	24.67	24.15	1	8.75	E	Conductive Fracture
7230.1646	FRAC	13.86	12.36	1	8.71	E	Resistive Fracture
7235.8267	BED	23.75	186.66	3	8.76	F	Bed Boundary
7237.7754	BED	30.23	204.43	4	8.63	P	Bed Boundary
7239.0498	BED	29.83	199.65	1	8.68	E	Bed Boundary
7239.7588	BED	27.75	203	1	8.65	E	Bed Boundary
7242.0698	BED	22.78	239.81	2	8.63	G	Bed Boundary
7242.4072	BED	21.3	218.06	2	8.64	G	Bed Boundary
7242.9399	BED	15.39	238.92	1	8.65	E	Bed Boundary
7248.8179	FRAC	48.6	10.09	1	8.91	E	Conductive Fracture
7250.6299	BED	11.34	243.17	3	8.72	F	Bed Boundary
7251.9531	BED	19.69	215.79	2	8.77	G	Bed Boundary
7252.9521	BED	30.6	218.42	1	8.7	E	Bed Boundary
7253.1147	BED	25.93	217.19	3	8.69	F	Bed Boundary
7253.2461	BED	28.15	217.02	1	8.69	E	Bed Boundary
7253.8457	BED	25.98	213.41	4	8.69	P	Bed Boundary
7254.6948	BED	27.01	211.04	2	8.7	G	Bed Boundary
7255.0947	BED	16.47	238.99	3	8.71	F	Bed Boundary
7255.4507	BED	14.18	234.29	2	8.71	G	Bed Boundary
7256.8247	BED	27.45	209.36	3	8.69	F	Bed Boundary
7257.0186	BED	27.04	215.04	2	8.7	G	Bed Boundary
7257.2026	BED	29.87	211.08	1	8.72	E	Bed Boundary
7257.79	BED	26.08	218	2	8.71	G	Bed Boundary
7258.0864	BED	21.83	213.1	3	8.71	F	Bed Boundary
7258.6021	BED	28.32	234.17	2	8.7	G	Bed Boundary
7258.8018	BED	23.31	224.16	2	8.71	G	Bed Boundary
7258.9082	BED	21.89	221.37	2	8.7	G	Bed Boundary
7259.2451	BED	28.87	224.42	1	8.71	E	Bed Boundary
7259.7012	BED	29.4	219.29	2	8.68	G	Bed Boundary
7259.9448	BED	25.69	219.44	2	8.66	G	Bed Boundary
7260.3384	BED	31.52	223.44	1	8.73	E	Bed Boundary
7260.4756	BED	29.27	215.12	1	8.73	E	Bed Boundary
7260.6694	BED	29.81	226.03	1	8.73	E	Bed Boundary
7261.8687	BED	30.34	216.77	3	8.7	F	Bed Boundary
7262.2686	BED	30.16	219.8	3	8.72	F	Bed Boundary
7265.0122	BED	19.42	234.53	2	8.71	G	Bed Boundary
7265.2871	BED	21.59	241.09	2	8.72	G	Bed Boundary
7266.9082	BED	26.08	226.01	1	8.74	E	Bed Boundary
7270.1592	BED	30.48	232.78	2	8.69	G	Bed Boundary
7271.2363	BED	36.39	230.19	2	8.63	G	Bed Boundary
7272.9575	BED	21.47	227.93	1	8.78	E	Bed Boundary
7273.1323	BED	21.5	227.75	1	8.78	E	Bed Boundary
7273.6382	BED	29.3	223.25	1	8.8	E	Bed Boundary
7276.2241	BED	30.21	219.4	1	9.02	E	Bed Boundary
7277.3389	BED	29.8	216.53	1	8.96	E	Bed Boundary
7277.4951	BED	26.67	211.85	2	8.97	G	Bed Boundary
7277.7261	BED	30.39	219.57	1	8.97	E	Bed Boundary
7278.0259	BED	26.37	229.2	1	8.98	E	Bed Boundary
7278.2759	BED	27.72	221.17	1	9.03	E	Bed Boundary
7278.4009	BED	26.19	217.55	1	9.05	E	Bed Boundary
7278.7256	BED	30.2	223.38	1	9.07	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7279.5898	BED	30.13	205.78	1	9.07	E	Bed Boundary
7279.8374	BED	27.67	207.42	1	9.08	E	Bed Boundary
7280.1084	BED	27.32	206.3	1	9.12	E	Bed Boundary
7282.9507	BED	11.55	233.19	3	9.13	F	Bed Boundary
7285.0586	BED	31.31	226.26	1	9.18	E	Bed Boundary
7286.189	BED	27.52	222.92	2	8.97	G	Bed Boundary
7286.2827	BED	27.22	225.13	1	8.96	E	Bed Boundary
7286.5327	BED	27.08	217.34	2	9	G	Bed Boundary
7286.6948	BED	26.57	230.42	2	9.07	G	Bed Boundary
7286.8823	BED	29.19	221.87	1	9.12	E	Bed Boundary
7287.0259	BED	30.17	212.78	1	9.11	E	Bed Boundary
7287.5444	BED	26.61	215.68	1	9.06	E	Bed Boundary
7287.7007	BED	28.51	221.38	1	9.05	E	Bed Boundary
7287.9819	BED	30.73	225.7	2	9.09	G	Bed Boundary
7288.2065	BED	28	225.78	1	9.04	E	Bed Boundary
7288.4004	BED	28.3	223.3	1	8.99	E	Bed Boundary
7288.5127	BED	29.2	224.01	1	8.98	E	Bed Boundary
7288.7061	BED	31.98	223.66	1	9	E	Bed Boundary
7288.8999	BED	30.39	222.93	1	9.02	E	Bed Boundary
7289.3745	BED	26.92	216.91	2	9.05	G	Bed Boundary
7289.8555	BED	24.99	225.73	2	9.04	G	Bed Boundary
7289.9834	BED	25.97	212.15	2	9.02	G	Bed Boundary
7290.0649	BED	23.91	216.98	2	9	G	Bed Boundary
7290.1836	BED	24.81	220.84	2	8.98	G	Bed Boundary
7290.3394	BED	23.4	217.6	2	8.94	G	Bed Boundary
7290.4897	BED	26.8	226.19	3	8.95	F	Bed Boundary
7290.5957	BED	25.02	229.53	3	9.03	F	Bed Boundary
7290.8892	BED	29.15	219.83	1	9.01	E	Bed Boundary
7290.9902	BED	27.78	216.73	1	9	E	Bed Boundary
7291.3525	BED	27.19	216.43	1	9.26	E	Bed Boundary
7291.6011	BED	24.22	220.61	2	9.31	G	Bed Boundary
7292.2832	BED	27.63	214.09	1	9.17	E	Bed Boundary
7292.582	BED	25.49	217.85	2	9.14	G	Bed Boundary
7292.8892	BED	25.49	228.76	1	9.16	E	Bed Boundary
7295.6748	BED	30.48	237.28	1	8.97	E	Bed Boundary
7296.209	BED	29.65	219.43	1	9.11	E	Bed Boundary
7296.5278	BED	27.47	212.16	2	9.05	G	Bed Boundary
7297.0835	BED	29.11	221.99	1	8.96	E	Bed Boundary
7297.7954	BED	31.05	220.79	1	8.95	E	Bed Boundary
7298.2642	BED	32.4	231.53	1	8.97	E	Bed Boundary
7298.7388	BED	30.27	218.9	1	8.81	E	Bed Boundary
7298.9634	BED	22.12	209.66	1	8.72	E	Bed Boundary
7299.1953	BED	23.49	210.16	4	8.74	P	Bed Boundary
7299.6255	BED	25.15	206.18	3	8.84	F	Bed Boundary
7300.1318	BED	27.8	226.55	2	9.01	G	Bed Boundary
7300.4502	BED	27.85	212.93	3	9	F	Bed Boundary
7302.146	BED	29.58	208.33	4	9.06	P	Bed Boundary
7305.75	BED	22.91	215.73	3	9.14	F	Bed Boundary
7307.603	BED	27.24	212.87	1	9.02	E	Bed Boundary
7308.0747	BED	24.89	218.8	2	8.94	G	Bed Boundary
7308.334	BED	32.87	211.56	1	8.9	E	Bed Boundary
7308.8774	BED	21.53	238.45	2	9.05	G	Bed Boundary
7309.0649	BED	24.33	231.43	2	9	G	Bed Boundary
7309.1958	BED	26.11	224.43	2	8.98	G	Bed Boundary
7309.3896	BED	24.22	226.8	1	8.96	E	Bed Boundary
7310.52	FRAC	75.54	292.15	1	8.87	E	Conductive Fracture
7312.1318	BED	28.89	239.31	1	9.06	E	Bed Boundary
7312.397	BED	30.24	225.91	1	8.98	E	Bed Boundary
7312.625	BED	26.72	230.6	1	8.96	E	Bed Boundary
7313.0684	BED	25.65	225	2	8.89	G	Bed Boundary
7313.2998	BED	26.34	217.74	2	8.9	G	Bed Boundary
7314.0806	BED	23.05	228.96	3	8.97	F	Bed Boundary
7314.271	BED	21.64	230.3	3	8.99	F	Bed Boundary
7314.6455	BED	17.03	238.56	3	9.01	F	Bed Boundary
7314.8892	BED	21.05	239.28	3	9	F	Bed Boundary
7315.0967	BED	20.55	237.14	1	9.02	E	Bed Boundary
7315.2964	BED	22.26	237.16	2	9.03	G	Bed Boundary
7315.8135	BED	20.39	218.85	2	9.11	G	Bed Boundary
7316.5708	BED	14.33	183.21	1	9	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7317.5825	BED	8.12	150.6	1	8.99	E	Bed Boundary
7317.856	FRAC	30.57	108.25	1	8.89	E	Conductive Fracture
7318.9507	BED	33.12	204.87	1	8.77	E	Bed Boundary
7319.1626	BED	32.79	211.88	1	8.76	E	Bed Boundary
7319.4907	BED	41.78	209.14	1	8.79	E	Bed Boundary
7320.1655	BED	36.51	252.91	1	8.71	E	Bed Boundary
7326.1821	BED	37.9	208.03	1	8.95	E	Bed Boundary
7326.4194	BED	32.35	199.2	1	8.9	E	Bed Boundary
7326.6255	BED	29.44	191.94	1	8.86	E	Bed Boundary
7327.0381	BED	36.08	210.1	1	8.67	E	Bed Boundary
7329.5459	BED	28.38	210.13	1	8.74	E	Bed Boundary
7339.6704	BED	30.16	213.71	1	8.49	E	Bed Boundary
7342.625	BED	26.14	210.04	4	8.49	P	Bed Boundary
7342.8247	BED	29.37	215.45	3	8.38	F	Bed Boundary
7343.334	BED	27.73	211.64	1	8.34	E	Bed Boundary
7343.665	BED	27.58	218.14	1	8.38	E	Bed Boundary
7343.8398	BED	26.25	216.28	1	8.43	E	Bed Boundary
7348.5059	BED	23.57	235.47	2	8.62	G	Bed Boundary
7348.7632	BED	20.06	244.73	1	8.65	E	Bed Boundary
7349.9717	BED	29.53	214.16	1	8.58	E	Bed Boundary
7350.1499	BED	28.92	218.45	1	8.61	E	Bed Boundary
7350.2715	BED	26.08	213.79	2	8.63	G	Bed Boundary
7352.5327	BED	29.06	225.83	1	8.61	E	Bed Boundary
7352.8511	BED	31.23	219.28	1	8.72	E	Bed Boundary
7355.8994	BED	26.77	224.41	2	8.81	G	Bed Boundary
7356.4614	BED	27.16	229.1	2	8.77	G	Bed Boundary
7356.7988	BED	25.8	226.36	2	8.71	G	Bed Boundary
7357.3452	BED	27.52	229.02	2	8.57	G	Bed Boundary
7357.5015	BED	26.58	217.93	2	8.54	G	Bed Boundary
7357.7075	BED	26.94	219.02	1	8.52	E	Bed Boundary
7357.8022	BED	31.26	224.01	1	8.52	E	Bed Boundary
7358.0571	BED	27.57	228.91	2	8.53	G	Bed Boundary
7358.6694	BED	25.76	236.04	2	8.54	G	Bed Boundary
7359.2764	BED	25.8	217.92	2	8.55	G	Bed Boundary
7359.6763	BED	25.21	219.75	2	8.64	G	Bed Boundary
7360.0386	BED	21.84	231.79	2	8.71	G	Bed Boundary
7360.332	BED	21.94	221.39	2	8.71	G	Bed Boundary
7361.1816	BED	25.95	226.38	2	8.66	G	Bed Boundary
7361.9497	BED	24.86	225.41	2	8.69	G	Bed Boundary
7362.8574	BED	35.74	222.45	1	8.63	E	Bed Boundary
7363.02	BED	36.7	217.45	1	8.61	E	Bed Boundary
7363.6069	BED	27.76	237.44	1	8.5	E	Bed Boundary
7363.7695	BED	31.46	231.86	1	8.49	E	Bed Boundary
7368.4028	BED	30.72	219.49	1	8.68	E	Bed Boundary
7371.0493	BED	28.75	243.06	2	8.54	G	Bed Boundary
7371.2114	BED	23.49	232.64	2	8.52	G	Bed Boundary
7371.3945	BED	25.9	231.61	2	8.5	G	Bed Boundary
7371.7695	BED	19.05	246.45	1	8.53	E	Bed Boundary
7371.9507	BED	23.16	239.62	1	8.52	E	Bed Boundary
7372.2939	BED	27.34	223.48	2	8.53	G	Bed Boundary
7372.562	BED	33.56	214.65	1	8.52	E	Bed Boundary
7373.3213	BED	27.67	220.82	1	8.47	E	Bed Boundary
7374.3145	BED	34.32	224.87	1	8.63	E	Bed Boundary
7374.6206	BED	24.32	232.96	1	8.6	E	Bed Boundary
7375.3892	BED	18.77	245.04	4	8.48	P	Bed Boundary
7380.9634	BED	23.67	225.65	2	8.5	G	Bed Boundary
7383.1084	BED	28	223.22	1	8.64	E	Bed Boundary
7383.4521	BED	24.63	233.68	1	8.61	E	Bed Boundary
7383.8145	BED	28.77	233.1	1	8.59	E	Bed Boundary
7384.1865	BED	29.81	220.21	2	8.57	G	Bed Boundary
7385.8691	BED	20.74	229.83	1	8.67	E	Bed Boundary
7386.1895	BED	25.85	239.18	1	8.7	E	Bed Boundary
7386.9453	BED	26.59	234.46	2	8.63	G	Bed Boundary
7387.6265	BED	26.81	239.48	1	8.6	E	Bed Boundary
7387.9009	BED	29.33	232.1	1	8.65	E	Bed Boundary
7388.1445	BED	27.74	221.81	1	8.61	E	Bed Boundary
7389.1191	BED	28.17	223.9	2	8.67	G	Bed Boundary
7389.2974	BED	28.43	219.07	1	8.7	E	Bed Boundary
7389.5127	BED	24.91	231.45	2	8.71	G	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7390.0215	BED	25.7	242.03	2	8.68	G	Bed Boundary
7390.3838	BED	28.8	226.16	2	8.65	G	Bed Boundary
7390.687	BED	30.48	220.23	3	8.61	F	Bed Boundary
7391.5645	BED	28.95	220.48	2	8.64	G	Bed Boundary
7391.8716	BED	30.64	227.05	1	8.66	E	Bed Boundary
7392.0654	BED	34.14	223.26	1	8.68	E	Bed Boundary
7392.2578	BED	27.8	225.75	2	8.69	G	Bed Boundary
7392.5264	BED	27.19	229.72	2	8.66	G	Bed Boundary
7392.8823	BED	28.87	237.13	2	8.67	G	Bed Boundary
7393.1133	BED	24.87	227.25	2	8.65	G	Bed Boundary
7393.8516	BED	30.04	230.24	2	8.56	G	Bed Boundary
7394.1953	BED	28.24	226.21	2	8.55	G	Bed Boundary
7395.0762	BED	30.1	225.14	2	8.7	G	Bed Boundary
7395.3198	BED	30.34	239.72	2	8.64	G	Bed Boundary
7395.6445	BED	31.6	225.15	2	8.74	G	Bed Boundary
7396.0693	BED	25.81	223.86	2	8.6	G	Bed Boundary
7396.4814	BED	23.18	218.09	1	8.59	E	Bed Boundary
7396.6846	BED	32.42	217.95	1	8.58	E	Bed Boundary
7396.9468	BED	31.73	221.09	1	8.57	E	Bed Boundary
7397.228	BED	33.03	229.58	1	8.56	E	Bed Boundary
7397.4463	BED	31.43	219.68	1	8.57	E	Bed Boundary
7397.8872	BED	36.03	215.64	1	8.59	E	Bed Boundary
7397.9956	BED	35.93	214.67	1	8.6	E	Bed Boundary
7398.1587	BED	32.08	225.69	2	8.59	G	Bed Boundary
7398.4644	BED	28.97	222.16	2	8.55	G	Bed Boundary
7398.5581	BED	30.35	230.82	2	8.55	G	Bed Boundary
7398.7642	BED	22.88	243.29	2	8.55	G	Bed Boundary
7398.9331	BED	25.2	237.68	2	8.55	G	Bed Boundary
7399.0518	BED	19.42	238.32	1	8.54	E	Bed Boundary
7399.4204	BED	20.81	239.28	2	8.58	G	Bed Boundary
7399.5952	BED	18.07	238.62	2	8.71	G	Bed Boundary
7400.5444	BED	27.06	244.8	2	8.97	G	Bed Boundary
7403.7705	BED	24.15	227.46	2	8.69	G	Bed Boundary
7405.6133	BED	25.43	246.99	3	8.74	F	Bed Boundary
7407.3794	FRAC	87.3	219.44	1	8.77	E	Borehole Breakout
7409.1514	BED	23.61	241.43	3	8.63	F	Bed Boundary
7411.7373	BED	26.49	219.13	2	8.61	G	Bed Boundary
7412.5024	BED	28.3	224.89	2	8.57	G	Bed Boundary
7413.0522	BED	30.89	225.65	2	8.6	G	Bed Boundary
7413.8579	BED	26.53	237.51	3	8.54	F	Bed Boundary
7414.6074	BED	28.4	234.82	2	8.6	G	Bed Boundary
7415.7881	BED	23.03	241.59	1	8.52	E	Bed Boundary
7418.6768	BED	30.52	207.77	2	8.66	G	Bed Boundary
7420.02	BED	27.03	204.05	2	8.64	G	Bed Boundary
7423.3179	BED	29.19	233.49	2	8.57	G	Bed Boundary
7423.8145	BED	29.65	231.85	2	8.57	G	Bed Boundary
7423.9644	BED	28.53	234.17	3	8.58	F	Bed Boundary
7424.083	BED	28.98	232.6	2	8.58	G	Bed Boundary
7424.167	BED	28.3	223.71	1	8.58	E	Bed Boundary
7424.2451	BED	28.3	229.63	1	8.57	E	Bed Boundary
7424.5703	BED	29.79	235.81	2	8.58	G	Bed Boundary
7424.689	BED	29.91	232.76	1	8.58	E	Bed Boundary
7424.7822	BED	29.87	232.54	1	8.57	E	Bed Boundary
7424.8447	BED	28.55	233.75	1	8.56	E	Bed Boundary
7424.9448	BED	27.56	233.34	1	8.57	E	Bed Boundary
7425.0513	BED	29.37	221.61	1	8.58	E	Bed Boundary
7425.251	BED	28.64	227.91	1	8.59	E	Bed Boundary
7425.6943	BED	27.56	236.91	1	8.6	E	Bed Boundary
7425.8691	BED	29.87	239.63	2	8.61	G	Bed Boundary
7426.0317	BED	27.36	236.21	1	8.63	E	Bed Boundary
7426.188	BED	28.15	232.66	1	8.62	E	Bed Boundary
7426.3315	BED	30.1	233.45	1	8.6	E	Bed Boundary
7426.5	BED	29.6	237.87	1	8.57	E	Bed Boundary
7426.6626	BED	30.73	243.52	1	8.54	E	Bed Boundary
7426.8125	BED	33.02	254.16	1	8.54	E	Bed Boundary
7427.7788	BED	35.03	211.95	4	8.57	P	Bed Boundary
7428.3203	BED	40.11	202.97	1	8.53	E	Bed Boundary
7428.8457	BED	36.21	204.18	1	8.65	E	Bed Boundary
7429.1953	BED	29.99	210.04	2	8.64	G	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7429.3389	BED	32.93	206.57	1	8.6	E	Bed Boundary
7429.9888	BED	23.79	211.27	1	8.48	E	Bed Boundary
7433.8081	BED	31.37	220.6	1	8.78	E	Bed Boundary
7434.0703	BED	27.7	227.75	1	8.74	E	Bed Boundary
7434.6699	BED	32.22	231	1	8.58	E	Bed Boundary
7435.3818	BED	30.1	240.04	2	8.68	G	Bed Boundary
7435.8257	BED	31.08	237.61	2	8.72	G	Bed Boundary
7437.1841	BED	31.77	229.81	1	8.66	E	Bed Boundary
7437.8525	BED	31.93	228.29	3	8.79	F	Bed Boundary
7438.4834	BED	27.54	235.05	3	9.03	F	Bed Boundary
7439.1265	BED	29.45	229.35	3	9	F	Bed Boundary
7439.3765	BED	36.91	238.9	3	8.93	F	Bed Boundary
7439.5825	BED	34.77	225.35	2	8.87	G	Bed Boundary
7439.8013	BED	32.92	220.44	2	8.78	G	Bed Boundary
7440.2319	BED	22.95	220.27	3	8.56	F	Bed Boundary
7440.5581	BED	31.08	232.78	1	8.61	E	Bed Boundary
7440.8818	BED	32.87	226.79	2	8.56	G	Bed Boundary
7441.064	BED	32.53	227.34	1	8.44	E	Bed Boundary
7441.6201	BED	31.79	234.11	1	8.43	E	Bed Boundary
7443.8091	BED	32.66	236.45	2	8.67	G	Bed Boundary
7444.0903	BED	28.22	234.15	2	8.58	G	Bed Boundary
7444.4653	BED	21.3	233.37	3	8.53	F	Bed Boundary
7449.4556	BED	33.87	210.89	3	8.86	F	Bed Boundary
7450.8066	BED	33.93	244.08	4	8.79	P	Bed Boundary
7450.9409	BED	32.36	231.38	1	8.68	E	Bed Boundary
7451.0596	BED	33.25	224.94	1	8.58	E	Bed Boundary
7451.272	BED	32.99	223.67	2	8.55	G	Bed Boundary
7451.5815	BED	36.21	216.67	2	8.58	G	Bed Boundary
7455.2695	BED	43.9	214.47	3	8.86	F	Bed Boundary
7456.2002	BED	44.53	224.98	2	8.94	G	Bed Boundary
7456.4814	BED	46.82	226.71	2	8.85	G	Bed Boundary
7456.8203	BED	40.72	212.88	2	8.8	G	Bed Boundary
7457.0078	BED	36.25	223.7	1	8.81	E	Bed Boundary
7457.1704	BED	37.14	213.69	1	8.84	E	Bed Boundary
7457.4951	BED	35.53	215.29	1	8.76	E	Bed Boundary
7457.7388	BED	39.94	202.15	1	8.66	E	Bed Boundary
7458.0259	BED	32.16	202.03	1	8.57	E	Bed Boundary
7458.1572	BED	32.94	206.97	1	8.54	E	Bed Boundary
7458.2695	BED	32.45	197.85	1	8.51	E	Bed Boundary
7460.1372	BED	44.67	229.04	1	8.6	E	Bed Boundary
7460.356	BED	40.15	222.63	1	8.54	E	Bed Boundary
7460.5244	BED	35.56	210.25	1	8.5	E	Bed Boundary
7462.4014	BED	54.2	209.47	1	8.59	E	Bed Boundary
7462.645	BED	51.48	212.41	1	8.59	E	Bed Boundary
7463.1074	BED	48.31	223.34	1	8.5	E	Bed Boundary
7463.4072	BED	46.62	218.49	2	8.5	G	Bed Boundary
7463.6943	BED	46.52	226.14	1	8.57	E	Bed Boundary
7466.7456	BED	41.34	216.6	1	8.77	E	Bed Boundary
7469.3188	FRAC	87.56	45.69	1	8.75	E	Borehole Breakout
7471.7329	BED	18.66	343.91	1	8.6	E	Bed Boundary
7471.9766	BED	13.37	273.43	3	8.57	F	Bed Boundary
7472.7822	BED	10.91	265.69	3	8.76	F	Bed Boundary
7473.1445	BED	17.2	247.75	3	8.84	F	Bed Boundary
7474.0024	BED	25.07	245.1	1	8.65	E	Bed Boundary
7474.3438	BED	22.46	223.19	1	8.61	E	Bed Boundary
7478.0405	BED	13.37	197.13	1	8.61	E	Bed Boundary
7478.8525	BED	36.32	216.4	1	8.69	E	Bed Boundary
7484.2207	BED	47.34	198.81	1	8.67	E	Bed Boundary
7484.4458	BED	42.63	195.17	1	8.69	E	Bed Boundary
7485.9009	FRAC	58.35	166.01	1	8.75	E	Fault
7486.8193	BED	29.55	230.41	1	8.66	E	Bed Boundary
7487.0815	BED	29.37	226.9	1	8.69	E	Bed Boundary
7487.5625	BED	32.28	227.94	1	8.64	E	Bed Boundary
7487.8623	BED	30.16	235.13	2	8.56	G	Bed Boundary
7490.0327	BED	34.31	232.66	3	8.6	F	Bed Boundary
7490.3701	BED	35.14	223.64	1	8.57	E	Bed Boundary
7490.8447	BED	27.94	230.77	1	8.67	E	Bed Boundary
7491.1572	BED	32.48	231.82	1	8.62	E	Bed Boundary
7491.5068	BED	29.27	235.13	1	8.58	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7491.9819	BED	28.92	234.05	3	8.58	F	Bed Boundary
7494.2085	BED	14.59	219.79	2	8.57	G	Bed Boundary
7495.0952	BED	27.13	218.82	2	8.54	G	Bed Boundary
7495.7324	BED	25.84	229.3	2	8.56	G	Bed Boundary
7496.2446	BED	28.24	238.15	1	8.6	E	Bed Boundary
7496.457	BED	29.2	242.53	1	8.6	E	Bed Boundary
7496.7852	BED	31.31	234.2	1	8.68	E	Bed Boundary
7496.9536	BED	28.42	232.68	1	8.68	E	Bed Boundary
7497.1411	BED	27.43	232.3	1	8.67	E	Bed Boundary
7497.4629	BED	26.34	234.66	3	8.63	F	Bed Boundary
7497.6094	BED	29.7	241.05	1	8.61	E	Bed Boundary
7497.7842	BED	33.6	240.46	1	8.6	E	Bed Boundary
7498.0093	BED	30.15	232.53	1	8.62	E	Bed Boundary
7498.3027	BED	28.79	230.81	1	8.64	E	Bed Boundary
7498.8555	BED	29.69	230.75	3	8.62	F	Bed Boundary
7499.0459	BED	31.96	233.2	1	8.63	E	Bed Boundary
7499.1836	BED	33.08	231.52	1	8.65	E	Bed Boundary
7499.4146	BED	29.08	229.24	1	8.72	E	Bed Boundary
7499.7271	BED	29.47	227.68	1	8.73	E	Bed Boundary
7499.8706	BED	28.31	230.18	1	8.81	E	Bed Boundary
7501.7441	BED	29.61	240.7	1	8.64	E	Bed Boundary
7502.7471	BED	36.13	211.04	1	8.73	E	Bed Boundary
7502.8345	BED	32.71	202.15	2	8.71	G	Bed Boundary
7503.0967	BED	29.08	238.38	1	8.65	E	Bed Boundary
7503.3027	BED	27.11	237.19	2	8.6	G	Bed Boundary
7503.9897	BED	26.95	240.97	1	8.8	E	Bed Boundary
7504.1836	BED	24.64	229.98	1	8.8	E	Bed Boundary
7504.2959	BED	24.55	235.49	1	8.79	E	Bed Boundary
7504.627	BED	21.57	224.29	1	8.72	E	Bed Boundary
7505.564	BED	24.24	233.69	1	8.57	E	Bed Boundary
7505.6763	BED	25.5	231.29	1	8.55	E	Bed Boundary
7505.9009	BED	31.88	225.62	1	8.52	E	Bed Boundary
7506.1323	BED	32.7	228.86	1	8.53	E	Bed Boundary
7506.207	BED	30.29	225.82	1	8.51	E	Bed Boundary
7506.2822	BED	31.22	228.98	1	8.49	E	Bed Boundary
7506.3633	BED	31.54	230.05	1	8.48	E	Bed Boundary
7506.4634	BED	28.76	226.45	1	8.49	E	Bed Boundary
7506.582	BED	25.38	227.55	1	8.5	E	Bed Boundary
7506.6631	BED	27.26	227.31	1	8.49	E	Bed Boundary
7506.8911	BED	22.55	228.23	1	8.47	E	Bed Boundary
7506.9785	BED	21.26	222.2	1	8.47	E	Bed Boundary
7507.0596	BED	24.65	231.03	1	8.47	E	Bed Boundary
7507.1597	BED	26.85	235.23	1	8.46	E	Bed Boundary
7507.3535	BED	26.25	233.04	1	8.44	E	Bed Boundary
7507.522	BED	27.36	227.29	1	8.43	E	Bed Boundary
7507.6279	BED	29.28	227.58	1	8.44	E	Bed Boundary
7507.7217	BED	29.51	225.74	1	8.46	E	Bed Boundary
7507.8281	BED	28.44	225.33	1	8.49	E	Bed Boundary
7507.9404	BED	27.74	228.84	1	8.49	E	Bed Boundary
7508.0405	BED	28.4	225.26	1	8.49	E	Bed Boundary
7508.1152	BED	27.79	229.01	1	8.49	E	Bed Boundary
7508.2466	BED	27.22	227.09	1	8.48	E	Bed Boundary
7508.3525	BED	27.19	221.15	1	8.47	E	Bed Boundary
7508.4463	BED	27.2	224.06	1	8.47	E	Bed Boundary
7508.5527	BED	28.67	223.13	1	8.48	E	Bed Boundary
7508.6899	BED	28.9	226.83	1	8.49	E	Bed Boundary
7508.7837	BED	29.49	225.85	1	8.5	E	Bed Boundary
7508.8711	BED	29.09	221.75	1	8.51	E	Bed Boundary
7508.9834	BED	29.18	224.93	1	8.52	E	Bed Boundary
7509.0522	BED	28.62	223.18	1	8.52	E	Bed Boundary
7509.1396	BED	28.13	227.25	1	8.53	E	Bed Boundary
7509.2085	BED	28.11	227.41	1	8.53	E	Bed Boundary
7509.2959	BED	26.29	227.39	1	8.53	E	Bed Boundary
7509.3584	BED	28.75	226.54	1	8.53	E	Bed Boundary
7509.4956	BED	27.47	228.15	1	8.54	E	Bed Boundary
7509.6582	BED	27.37	227.94	2	8.56	G	Bed Boundary
7509.7207	BED	29.86	224.57	1	8.56	E	Bed Boundary
7509.8267	BED	31.36	221.34	1	8.57	E	Bed Boundary
7509.9766	BED	30.5	223.94	1	8.58	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7510.083	BED	29.82	222.01	1	8.59	E	Bed Boundary
7510.3765	BED	27.86	215.53	2	8.54	G	Bed Boundary
7510.8701	BED	22.51	231.69	2	8.6	G	Bed Boundary
7513.8398	FRAC	64.93	170.96	1	8.54	E	Conductive Fracture
7513.9463	BED	27.2	227.2	1	8.54	E	Bed Boundary
7514.5332	BED	26.29	227.73	3	8.66	F	Bed Boundary
7514.8267	BED	20.48	223.77	2	8.61	G	Bed Boundary
7516.2319	BED	28.86	230.86	2	8.83	G	Bed Boundary
7516.688	BED	22.2	230.96	2	8.76	G	Bed Boundary
7516.7881	BED	21.47	237.84	2	8.75	G	Bed Boundary
7517.8247	BED	23.83	224.49	2	8.87	G	Bed Boundary
7518.2686	BED	27.89	225.42	2	8.93	G	Bed Boundary
7518.6152	BED	27.7	222.33	1	8.96	E	Bed Boundary
7518.9897	BED	24.61	229.18	2	8.87	G	Bed Boundary
7519.252	BED	24.74	221.43	1	8.89	E	Bed Boundary
7520.2954	BED	27.89	223.27	1	9.06	E	Bed Boundary
7520.7202	BED	26.67	227.95	2	9.11	G	Bed Boundary
7521.4883	BED	24.8	222.17	1	9.03	E	Bed Boundary
7522.0503	BED	29	212.93	2	8.9	G	Bed Boundary
7522.5503	BED	29.88	220.13	2	8.85	G	Bed Boundary
7522.7749	BED	28.93	229.58	2	8.72	G	Bed Boundary
7523.1309	BED	25.46	227.33	2	8.65	G	Bed Boundary
7523.4746	BED	26.53	230.13	2	8.61	G	Bed Boundary
7523.5684	BED	27.38	232.47	2	8.56	G	Bed Boundary
7523.8179	BED	31.82	235.9	1	8.59	E	Bed Boundary
7523.9492	BED	34.41	240.61	1	8.6	E	Bed Boundary
7524.1538	BED	29.57	213.55	1	8.58	E	Bed Boundary
7524.3369	BED	27.3	221.4	1	8.56	E	Bed Boundary
7524.4453	BED	29.16	219.39	2	8.55	G	Bed Boundary
7524.5459	BED	27.4	224.08	1	8.56	E	Bed Boundary
7524.6704	BED	29.76	222.1	1	8.57	E	Bed Boundary
7524.7954	BED	28.61	224.73	1	8.58	E	Bed Boundary
7524.9331	BED	28.83	231.4	1	8.59	E	Bed Boundary
7525.0122	BED	29.99	227.1	1	8.59	E	Bed Boundary
7525.187	BED	27.24	224.39	2	8.57	G	Bed Boundary
7525.3872	BED	29.25	221.87	1	8.54	E	Bed Boundary
7525.5454	BED	28.76	220.08	1	8.51	E	Bed Boundary
7525.6704	BED	30.12	224.5	1	8.5	E	Bed Boundary
7525.8955	BED	29.18	228.28	3	8.5	F	Bed Boundary
7526.0039	BED	31.87	224.49	3	8.5	F	Bed Boundary
7526.104	BED	28.61	227.25	1	8.5	E	Bed Boundary
7526.2207	BED	28.43	224.47	1	8.51	E	Bed Boundary
7526.3789	BED	29.46	224.67	3	8.54	F	Bed Boundary
7526.6123	BED	29.51	221.76	3	8.68	F	Bed Boundary
7526.812	BED	28.06	224.12	4	8.74	P	Bed Boundary
7527.019	BED	26.3	232.53	1	8.73	E	Bed Boundary
7527.2378	BED	27.11	232.28	1	8.73	E	Bed Boundary
7528.3589	BED	27.31	232.05	2	8.6	G	Bed Boundary
7528.5898	BED	24.97	242.86	2	8.58	G	Bed Boundary
7528.7026	BED	26.01	240.14	2	8.62	G	Bed Boundary
7528.7837	BED	26.82	236.8	2	8.65	G	Bed Boundary
7528.8774	BED	26.66	239.28	1	8.66	E	Bed Boundary
7528.9585	BED	29.34	236.04	1	8.65	E	Bed Boundary
7529.0459	BED	29.36	227.38	1	8.65	E	Bed Boundary
7529.187	BED	30.15	226.4	1	8.66	E	Bed Boundary
7529.2871	BED	30.29	227.33	2	8.68	G	Bed Boundary
7529.3789	BED	28.47	229.48	3	8.68	F	Bed Boundary
7529.502	BED	31.47	228.64	1	8.67	E	Bed Boundary
7529.6021	BED	30.15	227.09	1	8.66	E	Bed Boundary
7529.7583	BED	30.7	231.73	1	8.65	E	Bed Boundary
7529.9038	BED	28.45	228.61	4	8.65	P	Bed Boundary
7530.0869	BED	26.91	226.3	1	8.65	E	Bed Boundary
7530.2622	BED	30.33	226.28	1	8.66	E	Bed Boundary
7530.3828	BED	28.6	230.65	1	8.65	E	Bed Boundary
7530.4639	BED	28.03	228.66	1	8.65	E	Bed Boundary
7530.5327	BED	27.7	236.47	1	8.64	E	Bed Boundary
7530.6948	BED	26.82	236.42	1	8.64	E	Bed Boundary
7530.7949	BED	27.47	235.67	1	8.63	E	Bed Boundary
7530.8574	BED	26.17	231.73	1	8.65	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7530.9512	BED	27.11	228.85	1	8.67	E	Bed Boundary
7531.0571	BED	28.22	232.31	2	8.68	G	Bed Boundary
7531.1636	BED	28.85	228.73	1	8.68	E	Bed Boundary
7531.2207	BED	29.61	227.31	1	8.68	E	Bed Boundary
7531.3198	BED	28.11	229.28	1	8.68	E	Bed Boundary
7531.4258	BED	27.19	226.33	1	8.67	E	Bed Boundary
7531.4946	BED	29	226.32	1	8.66	E	Bed Boundary
7531.563	BED	27.46	224.36	1	8.66	E	Bed Boundary
7531.7129	BED	28.13	223.53	1	8.65	E	Bed Boundary
7531.8457	BED	30.69	230.54	1	8.65	E	Bed Boundary
7531.9453	BED	27.85	224.74	1	8.65	E	Bed Boundary
7532.0347	BED	25.61	229.92	1	8.65	E	Bed Boundary
7532.1162	BED	26.64	233.1	1	8.66	E	Bed Boundary
7532.2285	BED	28.48	230.26	1	8.66	E	Bed Boundary
7532.3096	BED	27.32	229.4	1	8.66	E	Bed Boundary
7532.3877	BED	27	225.77	1	8.67	E	Bed Boundary
7532.4375	BED	27.83	222.74	1	8.67	E	Bed Boundary
7532.522	BED	27.13	223.69	1	8.67	E	Bed Boundary
7532.5908	BED	26.83	225.52	1	8.67	E	Bed Boundary
7532.647	BED	26.26	226.43	1	8.66	E	Bed Boundary
7532.7158	BED	27.12	229	1	8.66	E	Bed Boundary
7532.7842	BED	25.93	228.24	1	8.66	E	Bed Boundary
7532.853	BED	27.1	228.79	1	8.67	E	Bed Boundary
7532.9282	BED	27.98	228.85	1	8.68	E	Bed Boundary
7533.0122	BED	28.86	223.69	1	8.7	E	Bed Boundary
7533.1621	BED	27.76	227.48	1	8.7	E	Bed Boundary
7533.2871	BED	28.9	224.27	1	8.7	E	Bed Boundary
7533.3652	BED	26.1	228.89	1	8.7	E	Bed Boundary
7533.4341	BED	26.62	227.79	1	8.7	E	Bed Boundary
7533.5337	BED	26.57	224.74	1	8.69	E	Bed Boundary
7533.6465	BED	27.72	225.43	1	8.69	E	Bed Boundary
7533.709	BED	28.58	222.56	1	8.69	E	Bed Boundary
7533.8335	BED	29.88	223.67	1	8.69	E	Bed Boundary
7533.9521	BED	27.47	227.2	1	8.69	E	Bed Boundary
7534.0288	BED	27.2	217.24	1	8.68	E	Bed Boundary
7534.1646	BED	27.15	228.88	1	8.66	E	Bed Boundary
7534.271	BED	28.41	227.15	1	8.65	E	Bed Boundary
7534.3833	BED	26.99	228.36	1	8.64	E	Bed Boundary
7534.4897	BED	28.56	227.57	1	8.64	E	Bed Boundary
7534.5894	BED	27.14	228.73	1	8.64	E	Bed Boundary
7534.752	BED	25.94	228.12	1	8.62	E	Bed Boundary
7534.8516	BED	27.73	227.63	1	8.63	E	Bed Boundary
7534.9268	BED	26.08	234.24	1	8.64	E	Bed Boundary
7535.0371	BED	27.92	225.19	1	8.65	E	Bed Boundary
7535.1265	BED	27.25	223.71	1	8.65	E	Bed Boundary
7535.312	BED	29.33	227.34	3	8.68	F	Bed Boundary
7535.4824	BED	26.57	224.96	1	8.73	E	Bed Boundary
7535.7324	BED	20.72	230	2	8.75	G	Bed Boundary
7535.9512	BED	19.7	228.38	2	8.79	G	Bed Boundary
7536.1011	BED	26.83	231.21	1	8.75	E	Bed Boundary
7536.2012	BED	27.97	234.52	1	8.72	E	Bed Boundary
7536.3135	BED	25.08	234.55	1	8.7	E	Bed Boundary
7536.3882	BED	26.13	237.38	1	8.7	E	Bed Boundary
7536.5757	BED	25.86	233.49	1	8.67	E	Bed Boundary
7536.7129	BED	25.09	234.1	2	8.64	G	Bed Boundary
7536.8691	BED	24.48	238.2	2	8.62	G	Bed Boundary
7537.085	BED	28.97	228.89	1	8.66	E	Bed Boundary
7537.4346	BED	26.6	232.82	2	8.64	G	Bed Boundary
7541.126	BED	17.56	266.24	1	8.72	E	Bed Boundary
7545.9072	BED	26.75	236.08	2	8.66	G	Bed Boundary
7546.5571	BED	24.79	220.34	3	8.64	F	Bed Boundary
7546.7129	BED	31.86	224.31	1	8.68	E	Bed Boundary
7546.9316	BED	30.52	223.19	2	8.72	G	Bed Boundary
7547.2754	BED	30.86	224.32	1	8.71	E	Bed Boundary
7547.5	BED	27.37	209.77	2	8.68	G	Bed Boundary
7548.0498	BED	28.28	228.97	1	8.57	E	Bed Boundary
7559.4209	BED	31.58	223.39	1	8.64	E	Bed Boundary
7570.5889	BED	31	210.1	1	8.67	E	Bed Boundary
7572.0752	BED	33.34	224.85	2	8.56	G	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7572.875	BED	29.78	203.46	2	8.79	G	Bed Boundary
7573.0967	BED	30.69	214.35	1	8.77	E	Bed Boundary
7579.8706	BED	29.45	209.64	3	8.81	F	Bed Boundary
7580.395	BED	35.12	214.06	3	8.88	F	Bed Boundary
7580.7451	BED	32.83	216.51	3	8.87	F	Bed Boundary
7580.9824	BED	28.84	212.58	1	8.83	E	Bed Boundary
7581.2759	BED	29.84	189.96	2	8.83	G	Bed Boundary
7583.687	BED	37.21	219.17	2	8.73	G	Bed Boundary
7584.1929	BED	36.9	222.84	2	8.75	G	Bed Boundary
7584.4082	BED	31.06	213.06	1	8.72	E	Bed Boundary
7584.5771	BED	33.19	216.48	1	8.7	E	Bed Boundary
7584.7329	BED	32.33	203.39	1	8.69	E	Bed Boundary
7584.9609	BED	27.91	216.34	2	8.69	G	Bed Boundary
7585.1641	BED	29.94	219.28	1	8.71	E	Bed Boundary
7586.1572	BED	28.89	210.72	1	8.84	E	Bed Boundary
7587.0942	BED	27.41	209.16	3	8.79	F	Bed Boundary
7587.6626	BED	31.09	204.42	2	8.68	G	Bed Boundary
7587.9497	BED	32.3	207.58	1	8.68	E	Bed Boundary
7588.4526	BED	22.81	207.49	1	8.67	E	Bed Boundary
7588.8525	BED	30.47	197.13	2	8.73	G	Bed Boundary
7589.252	BED	33.35	200.15	2	8.68	G	Bed Boundary
7589.6396	BED	31.15	198.83	1	8.72	E	Bed Boundary
7589.8643	BED	28.85	207.46	2	8.68	G	Bed Boundary
7589.9956	BED	25.95	207.33	2	8.66	G	Bed Boundary
7590.3203	BED	29.34	212.84	2	8.63	G	Bed Boundary
7590.4575	BED	27.18	214.41	2	8.63	G	Bed Boundary
7590.5952	BED	32.59	210.08	1	8.63	E	Bed Boundary
7591.2383	BED	33.44	212.04	1	8.59	E	Bed Boundary
7591.582	BED	33.26	205.34	1	8.58	E	Bed Boundary
7591.9194	BED	32.43	209.63	3	8.62	F	Bed Boundary
7592.063	BED	27.84	198.07	3	8.6	F	Bed Boundary
7592.4004	BED	30.01	199.25	3	8.59	F	Bed Boundary
7592.6519	BED	29.77	204.81	1	8.57	E	Bed Boundary
7593.2515	BED	29.89	205.83	1	8.68	E	Bed Boundary
7593.6011	BED	29.23	210.49	1	8.66	E	Bed Boundary
7594.3145	BED	28.46	210.69	1	8.63	E	Bed Boundary
7594.396	BED	31.39	211.39	1	8.63	E	Bed Boundary
7594.6445	BED	31.02	212.94	2	8.68	G	Bed Boundary
7594.813	BED	31.92	217.33	2	8.69	G	Bed Boundary
7594.9956	BED	31.42	218.16	2	8.67	G	Bed Boundary
7595.0952	BED	30.51	217.85	1	8.65	E	Bed Boundary
7595.2202	BED	31.47	222.53	2	8.63	G	Bed Boundary
7595.3267	BED	30.19	219.31	2	8.61	G	Bed Boundary
7595.5024	BED	31.03	216.71	1	8.6	E	Bed Boundary
7595.7139	BED	32.47	232.78	2	8.61	G	Bed Boundary
7596.3896	BED	27.88	211.43	1	8.6	E	Bed Boundary
7596.8506	BED	21.55	219.63	3	8.61	F	Bed Boundary
7597.1816	BED	25.19	205.5	2	8.61	G	Bed Boundary
7597.5264	BED	28.04	214.13	3	8.62	F	Bed Boundary
7597.7148	BED	30.59	211.33	1	8.63	E	Bed Boundary
7597.9648	BED	28.09	207.66	1	8.64	E	Bed Boundary
7598.1133	BED	28.1	207.63	2	8.63	G	Bed Boundary
7598.2632	BED	30.93	214.41	2	8.64	G	Bed Boundary
7598.6445	BED	21.46	224.59	3	8.64	F	Bed Boundary
7598.9316	BED	23.11	220.16	2	8.67	G	Bed Boundary
7599.0815	BED	24.11	210.31	3	8.66	F	Bed Boundary
7599.2764	BED	20.62	200.92	2	8.66	G	Bed Boundary
7599.4766	BED	23.08	201.11	2	8.64	G	Bed Boundary
7599.6577	BED	27.94	213.9	1	8.62	E	Bed Boundary
7600.0513	BED	27.18	217.2	1	8.7	E	Bed Boundary
7600.207	BED	27.36	212.88	3	8.7	F	Bed Boundary
7600.3945	BED	27.77	213.94	1	8.69	E	Bed Boundary
7601.1689	BED	30.74	197.9	2	8.71	G	Bed Boundary
7601.6812	BED	27.36	204.65	2	8.77	G	Bed Boundary
7602.0186	BED	26.77	199.17	2	8.78	G	Bed Boundary
7602.6699	BED	23.56	203.04	2	8.75	G	Bed Boundary
7603.0146	BED	31.85	207.18	1	8.79	E	Bed Boundary
7603.271	BED	26.75	205.78	1	8.81	E	Bed Boundary
7603.4521	BED	27.69	210.02	1	8.8	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7603.5957	BED	28.63	214.21	1	8.78	E	Bed Boundary
7604.1689	BED	28.04	214.81	3	8.75	F	Bed Boundary
7604.2764	BED	27.87	216.72	1	8.76	E	Bed Boundary
7604.4751	BED	25.57	214.07	3	8.77	F	Bed Boundary
7605.1309	BED	36.74	213.75	3	8.79	F	Bed Boundary
7605.4443	BED	24.04	202.37	3	8.83	F	Bed Boundary
7606.0552	BED	28.05	199.04	3	8.91	F	Bed Boundary
7607.0059	BED	24.77	214.99	2	8.8	G	Bed Boundary
7608.0615	BED	28.56	213.57	2	8.67	G	Bed Boundary
7608.2051	BED	25.64	216.18	2	8.68	G	Bed Boundary
7608.3584	BED	24.9	223.98	2	8.71	G	Bed Boundary
7608.5459	BED	24.69	214.46	2	8.71	G	Bed Boundary
7608.6592	BED	25.58	207.21	2	8.72	G	Bed Boundary
7608.8145	BED	27.3	211.11	2	8.72	G	Bed Boundary
7609.2202	BED	28.11	213.1	2	8.75	G	Bed Boundary
7609.4214	BED	31.65	214.83	2	8.75	G	Bed Boundary
7609.5527	BED	32.7	221.84	2	8.75	G	Bed Boundary
7609.7964	BED	31.26	211.81	2	8.73	G	Bed Boundary
7610.5708	BED	22.67	210.62	1	8.7	E	Bed Boundary
7610.8379	BED	22.9	215.39	2	8.65	G	Bed Boundary
7611.0205	BED	25.94	207.79	1	8.64	E	Bed Boundary
7612.7881	BED	25.55	225.28	4	8.69	P	Bed Boundary
7613.9063	BED	28.9	199.66	3	8.63	F	Bed Boundary
7614.209	BED	30.09	221.38	2	8.65	G	Bed Boundary
7614.8931	BED	26.45	218.12	2	8.69	G	Bed Boundary
7615.252	BED	18.81	193.56	2	8.66	G	Bed Boundary
7615.5269	BED	24.66	212.11	2	8.65	G	Bed Boundary
7615.7954	BED	25.97	214.84	1	8.67	E	Bed Boundary
7615.8892	BED	29.36	213.5	1	8.68	E	Bed Boundary
7615.9766	BED	29.35	215.57	1	8.66	E	Bed Boundary
7616.1514	BED	28.62	207.31	1	8.63	E	Bed Boundary
7616.2954	BED	29.05	206.27	1	8.62	E	Bed Boundary
7616.7075	BED	28.67	213.72	3	8.6	F	Bed Boundary
7616.9263	BED	28.67	207.56	3	8.62	F	Bed Boundary
7617.1445	BED	26.64	209.31	2	8.62	G	Bed Boundary
7617.2822	BED	31.85	214.82	1	8.62	E	Bed Boundary
7617.707	BED	38.44	219.4	2	8.64	G	Bed Boundary
7618.5503	BED	34.29	225.32	2	8.64	G	Bed Boundary
7618.6582	BED	33.91	217.93	2	8.65	G	Bed Boundary
7618.8457	BED	31.02	217.18	2	8.64	G	Bed Boundary
7619.0767	BED	30.98	223.46	2	8.62	G	Bed Boundary
7619.3267	BED	32.31	234.02	3	8.6	F	Bed Boundary
7620.1636	BED	29.09	212.47	1	8.58	E	Bed Boundary
7620.9897	BED	38.76	234.19	2	8.69	G	Bed Boundary
7622.0952	BED	30.41	219.75	2	8.6	G	Bed Boundary
7622.6558	BED	24.95	223.79	3	8.55	F	Bed Boundary
7623.0698	BED	30.48	222.09	2	8.56	G	Bed Boundary
7623.9629	BED	29.32	205.48	2	8.69	G	Bed Boundary
7624.7437	BED	32.42	232.17	2	8.68	G	Bed Boundary
7624.9136	BED	30.78	222.96	1	8.62	E	Bed Boundary
7625.332	BED	28.56	200.88	1	8.56	E	Bed Boundary
7625.9507	BED	29.65	220.53	2	8.61	G	Bed Boundary
7626.1626	BED	29.45	222.2	3	8.62	F	Bed Boundary
7630.707	BED	29.68	214.57	1	8.69	E	Bed Boundary
7631.0381	BED	25.3	236.95	2	8.73	G	Bed Boundary
7633.3804	BED	25.95	221.64	3	8.61	F	Bed Boundary
7633.5425	BED	25.95	226.07	3	8.61	F	Bed Boundary
7633.8579	BED	20.6	217.26	2	8.59	G	Bed Boundary
7634.0767	BED	26.93	223.55	2	8.61	G	Bed Boundary
7634.2827	BED	25.93	228.36	2	8.62	G	Bed Boundary
7634.4888	BED	27.64	222.71	2	8.61	G	Bed Boundary
7634.645	BED	22.91	229.93	2	8.6	G	Bed Boundary
7634.9824	BED	26.11	226.37	3	8.62	F	Bed Boundary
7635.1387	BED	21.08	230.04	2	8.6	G	Bed Boundary
7635.3447	BED	18.23	206.31	2	8.54	G	Bed Boundary
7635.4697	BED	21.63	220.73	2	8.5	G	Bed Boundary
7635.6255	BED	20.55	223.88	1	8.47	E	Bed Boundary
7635.813	BED	22.04	221.18	2	8.47	G	Bed Boundary
7636.0439	BED	27.43	223.8	1	8.49	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7636.4707	BED	29.39	217.05	3	8.52	F	Bed Boundary
7636.6582	BED	27	220.96	3	8.52	F	Bed Boundary
7637.9399	BED	25.85	218.76	3	8.52	F	Bed Boundary
7638.0898	BED	24.91	219.21	3	8.53	F	Bed Boundary
7638.2261	BED	24.75	212.38	2	8.55	G	Bed Boundary
7638.3896	BED	26.06	233.08	1	8.57	E	Bed Boundary
7638.5581	BED	24.71	228.22	3	8.57	F	Bed Boundary
7638.7271	BED	25.97	219.16	1	8.55	E	Bed Boundary
7638.9204	BED	26.5	224.64	1	8.54	E	Bed Boundary
7639.083	BED	22.09	216.96	1	8.55	E	Bed Boundary
7639.2954	BED	26.86	218.73	1	8.57	E	Bed Boundary
7639.4512	BED	23.32	210.16	1	8.57	E	Bed Boundary
7639.5889	BED	19.73	206.29	2	8.56	G	Bed Boundary
7639.6826	BED	22.34	210.46	3	8.54	F	Bed Boundary
7639.7637	BED	26.24	212.92	3	8.53	F	Bed Boundary
7640.9443	BED	34.13	223.87	2	8.52	G	Bed Boundary
7648.4272	BED	23.73	234.12	4	8.67	P	Bed Boundary
7678.4644	BED	34.83	236.67	1	9.03	E	Bed Boundary
7678.6206	BED	35.4	238.18	1	9.01	E	Bed Boundary
7679.1641	BED	36.02	213.45	1	8.94	E	Bed Boundary
7679.9136	BED	16.41	223.33	3	8.97	F	Bed Boundary
7680.1948	BED	20.81	228.15	3	8.97	F	Bed Boundary
7681.3691	BED	19.1	233.71	1	8.88	E	Bed Boundary
7681.519	BED	19.08	226.63	2	8.88	G	Bed Boundary
7681.6187	BED	18.14	233.51	2	8.87	G	Bed Boundary
7681.7935	BED	27.17	227.9	1	8.9	E	Bed Boundary
7681.9155	BED	30.75	237.37	1	8.94	E	Bed Boundary
7682.0215	BED	29.45	236.73	1	8.94	E	Bed Boundary
7682.4341	BED	25.28	241.96	1	8.89	E	Bed Boundary
7682.6899	BED	25.02	239.55	1	8.97	E	Bed Boundary
7685.3818	BED	21.03	228.51	1	8.98	E	Bed Boundary
7686.4224	BED	14.04	176.46	1	9.04	E	Bed Boundary
7687.5093	BED	12.47	270.29	1	8.85	E	Bed Boundary
7687.7148	BED	6.49	238.54	1	8.87	E	Bed Boundary
7687.853	BED	11.59	227.26	1	8.92	E	Bed Boundary
7687.9341	BED	13.48	218.36	1	8.95	E	Bed Boundary
7688.0776	BED	16.72	221.47	1	8.96	E	Bed Boundary
7688.2466	BED	19.87	214.29	1	8.98	E	Bed Boundary
7688.4277	BED	19.15	220.5	1	8.99	E	Bed Boundary
7688.5518	BED	19.83	223.35	1	8.97	E	Bed Boundary
7688.665	BED	15.93	215.88	1	8.97	E	Bed Boundary
7688.8267	BED	19.96	218.92	1	8.98	E	Bed Boundary
7688.9648	BED	18.9	208.67	1	9	E	Bed Boundary
7689.1577	BED	15.59	210.72	2	9.01	G	Bed Boundary
7689.3022	BED	8.01	236.98	1	9.01	E	Bed Boundary
7690.3882	BED	34.77	207.54	1	9.18	E	Bed Boundary
7690.5669	BED	31.58	218.34	1	9.18	E	Bed Boundary
7690.751	BED	32.47	205.96	1	9.15	E	Bed Boundary
7691.1191	BED	34.32	220.16	3	9.12	F	Bed Boundary
7691.2261	BED	36.36	217.44	1	9.1	E	Bed Boundary
7693.3335	BED	23.81	21.35	2	9.22	G	Bed Boundary
7693.7769	BED	12.29	328.43	2	9.19	G	Bed Boundary
7694.1826	BED	18.96	35.1	2	9.24	G	Bed Boundary
7694.4453	BED	25.98	59.15	2	9.22	G	Bed Boundary
7696.9688	BED	12.46	240.99	1	9.19	E	Bed Boundary
7697.2124	BED	16.38	213.23	2	9.17	G	Bed Boundary
7697.6431	BED	14.27	243.36	2	9.11	G	Bed Boundary
7697.793	BED	18.21	282.24	3	9.12	F	Bed Boundary
7699.209	BED	19.54	247.48	3	9.08	F	Bed Boundary
7699.79	BED	18.79	253.22	2	9.08	G	Bed Boundary
7699.9463	BED	17.39	252.94	2	9.08	G	Bed Boundary
7700.1265	BED	17.31	246.93	1	9.05	E	Bed Boundary
7702.0317	BED	18.01	233.82	1	9.09	E	Bed Boundary
7702.1753	BED	18.41	236.14	1	9.06	E	Bed Boundary
7702.3252	BED	16.92	239.37	1	9.02	E	Bed Boundary
7702.5596	BED	15.31	244.82	1	9	E	Bed Boundary
7702.7466	BED	15.57	251.24	1	8.98	E	Bed Boundary
7703.0151	BED	15.27	257	1	8.96	E	Bed Boundary
7703.209	BED	16.98	254.31	1	8.96	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7703.4336	BED	17.05	253.87	1	8.96	E	Bed Boundary
7703.7588	BED	13.59	257.63	1	8.98	E	Bed Boundary
7704.1396	BED	14.83	249.94	1	8.97	E	Bed Boundary
7704.2832	BED	16	250.01	1	8.95	E	Bed Boundary
7704.5146	BED	17.46	249.97	1	8.94	E	Bed Boundary
7704.6895	BED	17.25	244.68	1	8.94	E	Bed Boundary
7704.8086	BED	18.83	253.36	1	8.95	E	Bed Boundary
7704.8892	BED	17.61	252.88	1	8.95	E	Bed Boundary
7705.1143	BED	16.84	255.08	1	8.94	E	Bed Boundary
7705.314	BED	18.99	256.03	1	8.98	E	Bed Boundary
7705.4512	BED	16.95	251.38	1	9	E	Bed Boundary
7705.6455	BED	17.38	244.64	3	9.01	F	Bed Boundary
7705.9883	BED	15.99	250.43	1	8.96	E	Bed Boundary
7708.5273	BED	23.09	253.1	1	9.11	E	Bed Boundary
7709.0469	BED	29.75	242.22	2	8.99	G	Bed Boundary
7709.9829	BED	19.78	250.77	1	9.09	E	Bed Boundary
7710.0767	BED	17.31	245.48	1	9.1	E	Bed Boundary
7710.2139	BED	18.3	244.4	1	9.08	E	Bed Boundary
7710.6636	BED	15.57	239.25	1	9.07	E	Bed Boundary
7710.9199	BED	18.37	242.1	1	9.09	E	Bed Boundary
7711.0508	BED	19.5	241.57	1	9.11	E	Bed Boundary
7711.2017	BED	18.45	237.22	3	9.11	F	Bed Boundary
7711.4067	BED	20.08	241.53	1	9.1	E	Bed Boundary
7711.7285	BED	16.92	249.24	1	9.07	E	Bed Boundary
7712.0659	BED	16.62	246.88	1	9.12	E	Bed Boundary
7712.2407	BED	18.32	247.25	1	9.1	E	Bed Boundary
7712.3906	BED	23.94	241.57	1	9.08	E	Bed Boundary
7712.7529	BED	22.75	242.55	1	9.04	E	Bed Boundary
7712.8965	BED	23.71	235.27	1	9.05	E	Bed Boundary
7713.2529	BED	20.39	237.22	1	9.03	E	Bed Boundary
7714.1021	BED	19.3	246.78	1	9.17	E	Bed Boundary
7714.5527	BED	9	240.79	3	9.15	F	Bed Boundary
7715.0459	BED	12.53	221.46	3	9.17	F	Bed Boundary
7715.77	BED	21.33	234.19	1	9.22	E	Bed Boundary
7716.0947	BED	27.61	225.62	1	9.21	E	Bed Boundary
7716.2822	BED	27.53	227.48	1	9.22	E	Bed Boundary
7719.2842	BED	23.87	235.97	1	9.07	E	Bed Boundary
7720.2896	BED	26.18	230.66	2	9.05	G	Bed Boundary
7720.4888	BED	28.75	230.71	1	9.04	E	Bed Boundary
7720.6895	BED	26.56	229.24	2	9.02	G	Bed Boundary
7720.9141	BED	23.81	229.51	2	8.98	G	Bed Boundary
7721.1479	BED	22.54	236.32	1	8.93	E	Bed Boundary
7721.3013	BED	21.52	235.44	1	8.85	E	Bed Boundary
7721.4634	BED	25.01	234.35	1	8.8	E	Bed Boundary
7721.6699	BED	26.89	236.52	2	8.75	G	Bed Boundary
7721.769	BED	27.01	228.58	1	8.72	E	Bed Boundary
7721.8379	BED	26.14	227.27	1	8.7	E	Bed Boundary
7721.9565	BED	29.19	227.98	1	8.68	E	Bed Boundary
7722.1689	BED	32.18	244.27	1	8.66	E	Bed Boundary
7722.9468	BED	29.49	239.09	1	8.8	E	Bed Boundary
7723.0654	BED	27.06	235.17	1	8.83	E	Bed Boundary
7723.2407	BED	30.49	241.02	3	8.84	F	Bed Boundary
7723.416	BED	28.89	238.15	2	8.84	G	Bed Boundary
7723.584	BED	29.15	232.58	1	8.82	E	Bed Boundary
7723.7212	BED	28.46	239.32	1	8.78	E	Bed Boundary
7723.8345	BED	24.51	239.78	1	8.74	E	Bed Boundary
7723.9023	BED	26.52	238.04	1	8.72	E	Bed Boundary
7727.8755	BED	13.63	253.89	2	8.76	G	Bed Boundary
7728.1465	BED	19.12	239.33	1	8.66	E	Bed Boundary
7728.291	BED	13.29	240.41	1	8.64	E	Bed Boundary
7729.1709	BED	15.19	316.88	1	8.72	E	Bed Boundary
7729.3145	BED	16.29	294.32	1	8.69	E	Bed Boundary
7729.4019	BED	19.48	296.59	1	8.68	E	Bed Boundary
7729.5488	BED	25.96	290.43	1	8.66	E	Bed Boundary
7729.7266	BED	23.81	292.73	3	8.65	F	Bed Boundary
7729.9141	BED	24.06	292.47	3	8.66	F	Bed Boundary
7730.1641	BED	29.69	298.66	3	8.77	F	Bed Boundary
7730.5269	BED	15.37	295.57	1	8.79	E	Bed Boundary
7732.3721	BED	46.02	225.57	2	8.61	G	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7732.8467	BED	38.61	235.07	2	8.58	G	Bed Boundary
7733.1592	BED	40.43	221.35	2	8.7	G	Bed Boundary
7733.417	BED	25.9	213.81	2	8.71	G	Bed Boundary
7734.1084	BED	34.89	223.33	3	8.64	F	Bed Boundary
7734.3789	BED	26.39	206.92	1	8.69	E	Bed Boundary
7734.5601	BED	27.93	213.18	1	8.71	E	Bed Boundary
7734.7598	BED	29.72	218.01	1	8.71	E	Bed Boundary
7735.1411	BED	29.43	234.66	1	8.67	E	Bed Boundary
7735.3394	BED	31.02	229.25	1	8.66	E	Bed Boundary
7735.4282	BED	30.58	224.66	1	8.64	E	Bed Boundary
7735.6528	BED	30.4	228.02	1	8.63	E	Bed Boundary
7735.9155	BED	28.85	229.97	1	8.72	E	Bed Boundary
7736.2275	BED	28.55	241.5	2	8.75	G	Bed Boundary
7736.4028	BED	32.11	237.79	3	8.71	F	Bed Boundary
7736.54	BED	28.35	238.99	1	8.68	E	Bed Boundary
7736.6763	BED	29.21	242.27	1	8.64	E	Bed Boundary
7736.7959	BED	27.14	230.75	1	8.6	E	Bed Boundary
7736.9521	BED	28.89	233.24	1	8.56	E	Bed Boundary
7737.0337	BED	29.68	234.66	1	8.55	E	Bed Boundary
7737.3647	BED	33.59	242.4	1	8.52	E	Bed Boundary
7737.7017	BED	28.21	230.47	3	8.63	F	Bed Boundary
7738.0122	FRAC	89.12	205.03	1	8.7	E	Borehole Breakout
7738.564	BED	26.15	235.91	3	8.69	F	Bed Boundary
7738.6748	BED	23.62	231.07	1	8.73	E	Bed Boundary
7738.8228	BED	18.13	238.18	1	8.8	E	Bed Boundary
7738.9541	BED	17.38	244.34	1	8.83	E	Bed Boundary
7739.354	BED	21.32	244.74	3	8.73	F	Bed Boundary
7739.4912	BED	21.98	242.51	1	8.72	E	Bed Boundary
7739.6411	BED	22.17	238.39	2	8.7	G	Bed Boundary
7740.0347	BED	21.75	246.81	1	8.7	E	Bed Boundary
7740.2344	BED	21.43	253.31	3	8.68	F	Bed Boundary
7740.4658	BED	20.4	249.27	3	8.68	F	Bed Boundary
7740.9531	BED	19.69	237.86	1	8.71	E	Bed Boundary
7741.1279	BED	19.63	245.11	2	8.71	G	Bed Boundary
7741.2529	BED	21.59	244.87	3	8.72	F	Bed Boundary
7741.3652	BED	21.32	244.87	3	8.73	F	Bed Boundary
7741.5527	BED	24.24	250.4	1	8.76	E	Bed Boundary
7741.6401	BED	23.71	243.89	3	8.77	F	Bed Boundary
7741.9272	BED	33.48	228.86	1	8.76	E	Bed Boundary
7742.2832	BED	25.92	233.65	2	8.67	G	Bed Boundary
7742.4707	BED	23.45	237.06	1	8.64	E	Bed Boundary
7742.7422	BED	27.75	248.2	1	8.6	E	Bed Boundary
7742.9111	BED	31.11	241.5	1	8.59	E	Bed Boundary
7743.0298	BED	36.12	233.43	1	8.6	E	Bed Boundary
7743.3296	BED	24.96	246.6	2	8.61	G	Bed Boundary
7743.5669	BED	26.8	238.53	2	8.61	G	Bed Boundary
7743.7295	BED	27.28	241.45	1	8.62	E	Bed Boundary
7743.998	BED	26.42	228.45	1	8.66	E	Bed Boundary
7744.1416	BED	24.34	238.07	1	8.7	E	Bed Boundary
7744.5786	BED	24.08	231.94	3	8.78	F	Bed Boundary
7744.7476	BED	24.74	232.56	3	8.72	F	Bed Boundary
7744.9971	BED	42.93	248.21	1	8.65	E	Bed Boundary
7745.2095	BED	35.48	230.07	1	8.6	E	Bed Boundary
7745.3784	BED	33.87	224.91	1	8.57	E	Bed Boundary
7745.5908	BED	30.89	234.87	1	8.57	E	Bed Boundary
7745.7031	BED	30.45	240.11	1	8.57	E	Bed Boundary
7745.8154	BED	26.84	236.38	2	8.56	G	Bed Boundary
7745.9653	BED	27.84	239.79	1	8.56	E	Bed Boundary
7746.1714	BED	30.06	241.34	1	8.57	E	Bed Boundary
7746.3652	BED	30.03	231.47	1	8.58	E	Bed Boundary
7746.6772	BED	27.35	227.51	1	8.63	E	Bed Boundary
7746.8584	BED	25.16	226.86	1	8.67	E	Bed Boundary
7747.0396	BED	27.52	227.93	1	8.68	E	Bed Boundary
7747.1772	BED	28.15	232.83	1	8.71	E	Bed Boundary
7747.2739	BED	29.29	227.03	1	8.73	E	Bed Boundary
7747.4053	BED	25.1	229.2	1	8.73	E	Bed Boundary
7747.7612	BED	29.13	234.18	1	8.68	E	Bed Boundary
7747.9736	BED	28.32	225.21	1	8.64	E	Bed Boundary
7748.1235	BED	30.71	236.54	1	8.62	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7748.2422	BED	31.9	236.71	1	8.6	E	Bed Boundary
7748.4546	BED	28.51	229.08	1	8.58	E	Bed Boundary
7748.8042	BED	34.4	239.54	1	8.57	E	Bed Boundary
7749.2476	BED	30.5	238.18	1	8.62	E	Bed Boundary
7749.4038	BED	34.38	235.52	1	8.61	E	Bed Boundary
7749.6226	BED	32.04	223.68	1	8.61	E	Bed Boundary
7749.8286	BED	31.82	232.75	1	8.64	E	Bed Boundary
7749.9849	BED	28.62	239.28	1	8.64	E	Bed Boundary
7750.3032	BED	33.03	236.81	1	8.64	E	Bed Boundary
7750.8218	BED	29.66	232.8	2	8.62	G	Bed Boundary
7750.9404	BED	31.25	235.32	1	8.6	E	Bed Boundary
7751.0527	BED	29.57	234.45	1	8.58	E	Bed Boundary
7751.3403	BED	31.14	235.08	1	8.55	E	Bed Boundary
7752.2646	BED	32.52	228.21	2	8.62	G	Bed Boundary
7752.7642	BED	37.85	229.17	1	8.62	E	Bed Boundary
7752.9702	BED	34.27	229.41	3	8.62	F	Bed Boundary
7753.3638	BED	37.17	219.27	3	8.64	F	Bed Boundary
7753.8325	BED	26.07	207.35	2	8.65	G	Bed Boundary
7753.9883	BED	27.68	226.29	3	8.66	F	Bed Boundary
7754.1196	BED	26.82	227.26	3	8.67	F	Bed Boundary
7754.6631	BED	30.86	237.06	3	8.71	F	Bed Boundary
7755.522	BED	24.44	232.28	1	8.62	E	Bed Boundary
7760.1875	BED	22.23	238.98	2	8.6	G	Bed Boundary
7760.959	BED	13.02	268.45	1	8.63	E	Bed Boundary
7761.0405	BED	13.01	265.32	1	8.63	E	Bed Boundary
7761.1465	BED	17.9	269.31	1	8.64	E	Bed Boundary
7762.1958	BED	31.49	224.32	3	8.57	F	Bed Boundary
7762.4458	BED	30.1	218.71	1	8.58	E	Bed Boundary
7762.6113	BED	30.78	212.85	1	8.58	E	Bed Boundary
7763.6387	BED	31.95	216.81	3	8.65	F	Bed Boundary
7763.8447	BED	23.17	219.47	3	8.66	F	Bed Boundary
7764.2788	BED	19.06	186.87	3	8.74	F	Bed Boundary
7764.4351	BED	19.28	198.75	3	8.74	F	Bed Boundary
7764.6226	BED	17.12	215.56	3	8.75	F	Bed Boundary
7768.2764	BED	40.33	310.54	3	8.79	F	Bed Boundary
7770.4282	BED	40.31	220.33	1	8.61	E	Bed Boundary
7775.291	BED	37.64	226.27	1	8.55	E	Bed Boundary
7775.5283	BED	38.44	224.19	1	8.52	E	Bed Boundary
7775.834	BED	32.05	221.07	1	8.46	E	Bed Boundary
7776.3027	BED	21.77	209.11	2	8.5	G	Bed Boundary
7776.5024	BED	23.68	219.41	2	8.52	G	Bed Boundary
7777.1895	BED	34.4	231.25	3	8.65	F	Bed Boundary
7777.4331	BED	28.12	232.34	3	8.6	F	Bed Boundary
7777.6079	BED	29.88	227.23	2	8.57	G	Bed Boundary
7778.0264	BED	31.81	230.05	2	8.54	G	Bed Boundary
7778.3638	BED	35.17	219.66	1	8.49	E	Bed Boundary
7778.8418	BED	34.17	239.73	2	8.43	G	Bed Boundary
7779.1538	BED	30.72	228.15	3	8.48	F	Bed Boundary
7779.9097	BED	38.96	217.5	3	8.59	F	Bed Boundary
7780.1284	BED	34.3	220.34	1	8.57	E	Bed Boundary
7780.5654	BED	23.54	205.68	1	8.57	E	Bed Boundary
7780.772	BED	22.17	203.79	3	8.56	F	Bed Boundary
7780.959	BED	22.62	222.73	3	8.57	F	Bed Boundary
7781.1401	BED	27.48	229.66	2	8.58	G	Bed Boundary
7781.3589	BED	22.06	230.69	1	8.54	E	Bed Boundary
7781.5527	BED	24.52	220.32	1	8.5	E	Bed Boundary
7781.7837	BED	25.09	207.45	2	8.47	G	Bed Boundary
7781.9834	BED	30.06	209.5	2	8.48	G	Bed Boundary
7782.583	BED	28.03	224.41	2	8.48	G	Bed Boundary
7782.708	BED	27.5	221.85	1	8.48	E	Bed Boundary
7782.8892	BED	25.28	226.91	3	8.49	F	Bed Boundary
7783.6514	BED	20.63	224.24	1	8.66	E	Bed Boundary
7783.7886	BED	21.09	217.98	3	8.66	F	Bed Boundary
7784.4414	BED	28.61	216.46	1	8.54	E	Bed Boundary
7785.397	BED	27.97	207.23	2	8.63	G	Bed Boundary
7785.7344	BED	27.4	215.38	2	8.65	G	Bed Boundary
7786.0342	BED	27.7	230.65	1	8.7	E	Bed Boundary
7786.209	BED	24.88	231.28	1	8.67	E	Bed Boundary
7786.3838	BED	30.72	220.2	1	8.66	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7786.665	BED	33.17	224.11	4	8.67	P	Bed Boundary
7786.7544	BED	34	223.85	1	8.66	E	Bed Boundary
7786.8794	BED	33.53	224.45	1	8.62	E	Bed Boundary
7787.1851	BED	32.94	228.48	1	8.57	E	Bed Boundary
7787.3604	BED	30.18	233.37	1	8.54	E	Bed Boundary
7787.708	BED	30.47	239.47	3	8.53	F	Bed Boundary
7787.9702	BED	37.61	235.01	3	8.51	F	Bed Boundary
7788.2598	BED	36.49	242.92	1	8.52	E	Bed Boundary
7788.3906	BED	32.36	238.46	2	8.5	G	Bed Boundary
7788.5029	BED	30.08	236.61	2	8.49	G	Bed Boundary
7788.6719	BED	27.17	229.3	1	8.53	E	Bed Boundary
7792.1851	BED	29.95	243.2	3	8.77	F	Bed Boundary
7801.9771	BED	65.12	251.96	3	8.5	F	Bed Boundary
7804.4634	BED	44.01	220.63	3	8.44	F	Bed Boundary
7804.9106	BED	45.64	230.83	2	8.48	G	Bed Boundary
7805.1978	BED	45.71	221.81	2	8.55	G	Bed Boundary
7805.6538	BED	40.51	203.96	3	8.61	F	Bed Boundary
7805.9409	BED	32.35	191.34	3	8.6	F	Bed Boundary
7806.147	BED	24.48	173.27	3	8.6	F	Bed Boundary
7806.397	BED	35.61	174.45	4	8.65	P	Bed Boundary
7806.647	BED	36.36	188.83	4	8.68	P	Bed Boundary
7807.2026	BED	35.54	200.85	4	8.5	P	Bed Boundary
7807.5645	BED	44.96	210.3	4	8.47	P	Bed Boundary
7809.0264	BED	51.96	213.28	4	8.6	P	Bed Boundary
7809.6841	BED	40.91	231.33	2	8.63	G	Bed Boundary
7809.8467	BED	40.25	233.24	2	8.58	G	Bed Boundary
7810.084	BED	41.09	229.47	2	8.52	G	Bed Boundary
7813.3896	BED	27.95	254	2	8.58	G	Bed Boundary
7816.272	BED	19.27	294.38	2	8.39	G	Bed Boundary
7817.3716	BED	15.15	308.43	3	8.66	F	Bed Boundary
7818.6895	BED	19.81	322.44	4	8.44	P	Bed Boundary
7819.0264	BED	13.37	307.02	4	8.43	P	Bed Boundary
7821.0225	BED	30.33	147.88	1	8.46	E	Bed Boundary
7823.021	BED	60.89	267.74	2	8.48	G	Bed Boundary
7823.6953	BED	64.34	277.43	3	8.43	F	Bed Boundary
7823.8955	BED	62.01	275.52	3	8.39	F	Bed Boundary
7824.5796	BED	62.89	282.78	1	8.39	E	Bed Boundary
7824.7979	BED	60.38	288.08	3	8.39	F	Bed Boundary
7824.9761	BED	59.36	296.75	3	8.41	F	Bed Boundary
7828.6582	BED	29.57	43.13	3	8.56	F	Bed Boundary
7830.2979	BED	32.1	281.15	3	8.59	F	Bed Boundary
7834.9824	FRAC	35.84	147.14	1	8.75	E	Conductive Fracture
7837.1455	BED	38.23	244.42	3	8.64	F	Bed Boundary
7838.1758	BED	44.62	251.51	3	8.75	F	Bed Boundary
7838.4507	BED	42.84	253.41	3	8.77	F	Bed Boundary
7838.7725	BED	41.76	258.3	3	8.68	F	Bed Boundary
7838.9722	BED	37.81	262.23	2	8.63	G	Bed Boundary
7839.147	BED	47.81	254.04	2	8.61	G	Bed Boundary
7839.4346	BED	48.32	256.77	3	8.6	F	Bed Boundary
7839.6841	BED	53.61	244.97	3	8.61	F	Bed Boundary
7839.8843	BED	57.49	242.29	2	8.64	G	Bed Boundary
7840.5649	BED	54.84	233.28	2	8.69	G	Bed Boundary
7842.2847	BED	62.16	224.25	1	8.6	E	Bed Boundary
7843.2778	BED	58.51	229.74	1	8.66	E	Bed Boundary
7843.4336	BED	56.77	230.73	3	8.68	F	Bed Boundary
7843.6587	BED	56.03	233.17	1	8.69	E	Bed Boundary
7843.8335	BED	51.64	229.71	1	8.69	E	Bed Boundary
7844.0337	BED	50.12	227.83	1	8.7	E	Bed Boundary
7844.3394	BED	56.82	232.63	3	8.73	F	Bed Boundary
7844.5977	BED	56.61	229.13	1	8.69	E	Bed Boundary
7844.8784	BED	61.28	234.03	1	8.61	E	Bed Boundary
7845.1597	BED	58.24	231.06	1	8.57	E	Bed Boundary
7845.3657	BED	53.6	235.51	3	8.58	F	Bed Boundary
7845.5342	BED	48.25	230.61	3	8.6	F	Bed Boundary
7845.7217	BED	49.57	227.88	3	8.63	F	Bed Boundary
7846.0151	BED	44.14	230.08	3	8.66	F	Bed Boundary
7846.6162	BED	41.2	229.22	1	8.68	E	Bed Boundary
7848.7212	BED	50.54	278.13	1	8.65	E	Bed Boundary
7852.895	BED	43.19	207.83	1	8.79	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7853.0322	BED	46.33	212.16	1	8.77	E	Bed Boundary
7853.2383	BED	46.49	207.47	2	8.69	G	Bed Boundary
7853.5288	BED	51.87	209.79	1	8.61	E	Bed Boundary
7854.7217	BED	26.4	210.81	3	8.71	F	Bed Boundary
7854.8843	BED	39.44	220.54	3	8.73	F	Bed Boundary
7855.1904	BED	30.63	208.47	3	8.72	F	Bed Boundary
7855.6714	BED	37.38	226.15	4	8.74	P	Bed Boundary
7856.1709	BED	28.6	228.54	3	8.69	F	Bed Boundary
7856.7642	BED	24.88	273.14	2	8.65	G	Bed Boundary
7857.1079	BED	25.74	244.33	3	8.77	F	Bed Boundary
7857.2764	BED	26.6	243.42	3	8.96	F	Bed Boundary
7857.8447	BED	25.87	232.17	4	8.91	P	Bed Boundary
7858.1333	BED	26.53	275.56	2	8.82	G	Bed Boundary
7858.2896	BED	26.25	272.03	4	8.8	P	Bed Boundary
7858.4268	BED	25.95	270.3	2	8.82	G	Bed Boundary
7861.6436	BED	44.04	218.45	4	8.65	P	Bed Boundary
7862.3589	BED	28.11	198.97	1	8.48	E	Bed Boundary
7862.9834	BED	41.12	194.46	2	8.65	G	Bed Boundary
7863.3335	BED	29.21	211.35	2	8.68	G	Bed Boundary
7863.5205	BED	27.47	204.16	2	8.68	G	Bed Boundary
7863.8413	BED	24.12	210.02	1	8.62	E	Bed Boundary
7865.7397	BED	47.89	241.23	1	8.63	E	Bed Boundary
7866.7329	BED	41.78	204.19	2	8.56	G	Bed Boundary
7867.5718	BED	27.62	224	2	8.58	G	Bed Boundary
7867.853	BED	23.82	222.79	2	8.62	G	Bed Boundary
7868.0527	BED	24.47	228.81	2	8.63	G	Bed Boundary
7868.8462	BED	31.7	224.23	1	8.7	E	Bed Boundary
7869.3022	BED	30.61	229.12	4	8.6	P	Bed Boundary
7870.2266	BED	31.33	229.55	2	8.53	G	Bed Boundary
7870.5356	BED	26.69	224.68	1	8.52	E	Bed Boundary
7871.0542	BED	37.17	225.22	2	8.59	G	Bed Boundary
7871.4849	BED	27.54	206.12	4	8.68	P	Bed Boundary
7876.0913	BED	53.55	253.51	2	8.77	G	Bed Boundary
7877.3408	BED	48.48	204.58	2	8.75	G	Bed Boundary
7884.271	BED	23.04	258.58	3	9.03	F	Bed Boundary
7887.5718	BED	29.15	218.11	3	8.96	F	Bed Boundary
7890.4761	BED	28.86	229.44	2	9.06	G	Bed Boundary
7890.6138	BED	27.01	226.01	1	9	E	Bed Boundary
7890.7285	BED	29.39	224.86	1	8.96	E	Bed Boundary
7890.873	BED	31.56	234.9	3	8.94	F	Bed Boundary
7891.0103	BED	31.6	239.68	3	8.92	F	Bed Boundary
7891.1353	BED	30.64	240.33	3	8.91	F	Bed Boundary
7891.4287	BED	28.5	236.75	3	8.9	F	Bed Boundary
7891.6221	BED	23.7	228.9	1	8.9	E	Bed Boundary
7891.8911	BED	26.82	239.15	3	8.92	F	Bed Boundary
7892.7095	FRAC	76.97	286.98	1	8.93	E	Fault
7893.499	BED	30.96	215.83	1	8.92	E	Bed Boundary
7893.7026	BED	31.76	207.95	3	8.88	F	Bed Boundary
7894.0049	BED	32.25	208.33	1	8.83	E	Bed Boundary
7894.5645	BED	31.41	220.21	4	8.78	P	Bed Boundary
7894.9229	BED	34.96	211.81	3	8.79	F	Bed Boundary
7900.5723	BED	22.74	260.12	2	9.18	G	Bed Boundary
7901.0532	BED	35.35	245.47	2	9.18	G	Bed Boundary
7902.6025	FRAC	28.78	199.07	1	9.04	E	Resistive Fracture
7910.2603	BED	16.27	249.68	2	8.92	G	Bed Boundary
7912.5527	BED	33.11	231.81	1	8.9	E	Bed Boundary
7913.146	BED	31.95	229.22	1	8.98	E	Bed Boundary
7913.6704	BED	20.98	205.83	1	8.99	E	Bed Boundary
7914.3926	BED	28.26	248.61	1	9.05	E	Bed Boundary
7918.0898	BED	11.2	216.29	1	9.24	E	Bed Boundary
7918.7847	BED	17.51	357.29	3	9.12	F	Bed Boundary
7919.1782	BED	18.71	254.31	3	9.09	F	Bed Boundary
7920.0464	FRAC	20.92	333.86	1	9.02	E	Fault
7921.6768	BED	24.39	235.34	2	9.06	G	Bed Boundary
7921.8403	BED	17.63	231.76	2	9.12	G	Bed Boundary
7922.2598	BED	21.27	226.29	1	9.14	E	Bed Boundary
7922.979	BED	14.63	269.94	2	9.02	G	Bed Boundary
7923.2041	BED	13.53	297.14	2	9.01	G	Bed Boundary
7923.4224	BED	18.85	309.75	2	9.01	G	Bed Boundary

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7923.6895	BED	13.67	238.57	2	9.01	G	Bed Boundary
7923.9829	BED	19.06	223.94	2	9.06	G	Bed Boundary
7924.2515	BED	11.9	254.04	3	9.08	F	Bed Boundary
7924.395	BED	12.33	224.53	3	9.07	F	Bed Boundary
7924.6201	BED	26.06	232.64	2	9.09	G	Bed Boundary
7924.7451	BED	28.27	235.46	2	9.1	G	Bed Boundary
7925.7339	BED	21.4	231.45	1	8.92	E	Bed Boundary
7925.8462	BED	20.77	227.4	1	8.92	E	Bed Boundary
7926.0645	BED	17.94	228.25	3	8.92	F	Bed Boundary
7926.3521	BED	17.41	210.07	3	8.9	F	Bed Boundary
7927.7886	BED	22.76	224.16	3	8.99	F	Bed Boundary
7927.9097	BED	20.54	225.66	1	8.96	E	Bed Boundary
7928.0659	BED	19.33	225.65	1	8.91	E	Bed Boundary
7928.291	BED	16.08	193.31	1	8.88	E	Bed Boundary
7928.478	BED	20.63	190.72	1	8.88	E	Bed Boundary
7928.7842	BED	23.49	214.95	2	8.86	G	Bed Boundary
7929.084	BED	6.47	229.4	1	8.85	E	Bed Boundary
7929.4336	BED	17.96	223.73	3	8.88	F	Bed Boundary
7929.8022	BED	22.48	216.41	3	8.89	F	Bed Boundary
7930.0083	BED	21.13	235.71	2	8.9	G	Bed Boundary
7930.3145	BED	26.1	235.74	3	8.96	F	Bed Boundary
7930.5454	BED	28.25	238.2	3	8.96	F	Bed Boundary
7930.8452	BED	22.35	231.43	1	8.92	E	Bed Boundary
7930.958	FRAC	44.39	32.06	1	8.89	E	Resistive Fracture
7930.9707	BED	22.23	227.87	2	8.89	G	Bed Boundary
7931.2705	BED	19.97	221.64	3	8.86	F	Bed Boundary
7931.4131	BED	21.82	225.5	2	8.86	G	Bed Boundary
7931.6069	BED	22.13	227.46	2	8.85	G	Bed Boundary
7931.8472	BED	21.05	229.31	1	8.84	E	Bed Boundary
7932.0347	BED	20.56	231.51	2	8.82	G	Bed Boundary
7932.2222	BED	23.63	229.45	2	8.82	G	Bed Boundary
7932.3286	BED	20.94	223.62	2	8.81	G	Bed Boundary
7932.4253	FRAC	69.03	3.6	1	8.81	E	Resistive Fracture
7932.4346	BED	22.24	227.34	1	8.81	E	Bed Boundary
7932.5796	BED	21.76	231.41	1	8.83	E	Bed Boundary
7932.7544	BED	21.3	227.53	2	8.86	G	Bed Boundary
7932.9121	BED	19.24	230.11	4	8.88	P	Bed Boundary
7933.104	BED	23.69	228.32	1	8.9	E	Bed Boundary
7933.2705	BED	22.12	227.01	2	8.91	G	Bed Boundary
7933.4204	BED	19.43	229.23	1	8.91	E	Bed Boundary
7933.5371	BED	19.67	227.49	2	8.91	G	Bed Boundary
7933.6704	BED	20.96	226.34	2	8.91	G	Bed Boundary
7933.7959	BED	19.75	228.15	1	8.9	E	Bed Boundary
7933.9458	BED	19.3	223.9	1	8.9	E	Bed Boundary
7934.2271	BED	21.19	236.09	1	8.92	E	Bed Boundary
7934.3271	BED	21.47	238.08	1	8.92	E	Bed Boundary
7934.4521	BED	25.67	239.15	2	8.92	G	Bed Boundary
7934.5845	BED	19.44	239.91	1	8.93	E	Bed Boundary
7934.7642	BED	22.83	239.53	2	8.93	G	Bed Boundary
7934.978	BED	22.18	229.95	1	8.92	E	Bed Boundary
7935.1592	BED	22.35	235.87	1	8.92	E	Bed Boundary
7935.2651	BED	23.14	231.76	1	8.93	E	Bed Boundary
7935.4775	BED	22.64	233.77	1	8.94	E	Bed Boundary
7935.7026	BED	22.44	233.98	1	8.95	E	Bed Boundary
7935.8711	BED	25.05	235.71	1	8.97	E	Bed Boundary
7936.0024	BED	20.79	234.78	1	8.99	E	Bed Boundary
7936.1772	BED	23.93	235.82	1	9.01	E	Bed Boundary
7936.5508	BED	21.91	238.19	1	8.97	E	Bed Boundary
7936.7036	BED	22.81	232.31	3	8.97	F	Bed Boundary
7937.1265	BED	24.86	232.11	2	8.94	G	Bed Boundary
7937.3262	BED	23.92	228.35	2	8.91	G	Bed Boundary
7937.5356	BED	20.95	236.56	1	8.93	E	Bed Boundary
7937.6792	BED	23.81	233.82	2	8.94	G	Bed Boundary
7937.8203	BED	23.32	230.88	4	8.92	P	Bed Boundary
7937.937	BED	22.76	230.28	2	8.92	G	Bed Boundary
7938.1704	BED	20.4	224.23	4	8.93	P	Bed Boundary
7938.3623	BED	23.47	231.3	1	8.91	E	Bed Boundary
7938.5103	BED	24.25	228.63	1	8.94	E	Bed Boundary
7938.6602	BED	26.82	233.05	2	8.96	G	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
7938.8662	BED	23.15	230.42	1	8.97	E	Bed Boundary
7939.0474	BED	20.83	239.03	2	8.94	G	Bed Boundary
7939.3096	BED	25.42	241.29	2	8.97	G	Bed Boundary
7939.522	BED	23.74	235.82	2	8.94	G	Bed Boundary
7939.6782	BED	25.35	234.23	2	8.93	G	Bed Boundary
7939.812	BED	26.03	230.08	4	8.93	P	Bed Boundary
7939.9038	BED	26.39	228.75	4	8.92	P	Bed Boundary
7940.2339	BED	25.84	234.16	1	8.9	E	Bed Boundary
7940.4302	BED	24.65	228.69	1	8.9	E	Bed Boundary
7940.7212	BED	25.64	230.77	1	8.9	E	Bed Boundary
7940.8672	BED	31.1	235.49	1	8.89	E	Bed Boundary
7941.0674	BED	28.83	235.51	1	8.86	E	Bed Boundary
7941.3418	BED	29.84	233.11	1	8.93	E	Bed Boundary
7941.4795	BED	27.41	234.89	1	8.92	E	Bed Boundary
7941.5796	BED	30.5	238.47	1	8.92	E	Bed Boundary
7941.7295	BED	28.13	241.85	2	8.92	G	Bed Boundary
7941.9165	BED	27.97	238.47	1	8.91	E	Bed Boundary
7942.0166	BED	29.63	234.68	1	8.91	E	Bed Boundary
7942.1538	BED	28.35	229.02	1	8.91	E	Bed Boundary
7942.3228	BED	30.09	233.43	1	8.91	E	Bed Boundary
7942.6138	BED	33.56	236.53	1	8.89	E	Bed Boundary
7942.7163	BED	29.8	237.84	1	8.89	E	Bed Boundary
7942.916	BED	30.2	238.12	1	8.88	E	Bed Boundary
7943.1284	BED	32.47	227.97	1	8.89	E	Bed Boundary
7943.3882	BED	29.31	220.51	1	8.89	E	Bed Boundary
7943.5381	BED	25.71	219.23	2	8.89	G	Bed Boundary
7943.6479	FRAC	50.26	340.74	1	8.89	E	Resistive Fracture
7944.3281	BED	4.42	99.06	1	9.07	E	Bed Boundary
7944.4907	FRAC	20.03	151.48	1	9.11	E	Resistive Fracture
7945.6646	BED	7.47	238.39	1	9.36	E	Bed Boundary
7945.8267	FRAC	76.06	297.63	1	9.36	E	Resistive Fracture
7946.2358	FRAC	74.61	316.01	1	9.23	E	Resistive Fracture
7946.2783	BED	17.76	229.64	1	9.21	E	Bed Boundary
7946.6094	BED	18.87	235.65	2	9.19	G	Bed Boundary
7947.2104	FRAC	79.96	297.76	1	9.29	E	Resistive Fracture
7948.2095	FRAC	77.67	326.58	1	9.18	E	Resistive Fracture
7948.7954	BED	14.5	228.04	1	9.21	E	Bed Boundary
7949.0586	BED	14.3	234.69	1	9.21	E	Bed Boundary
7949.3521	BED	23.82	230.21	1	9.2	E	Bed Boundary
7949.5977	BED	17.63	222.92	1	9.2	E	Bed Boundary
7949.9346	BED	21.97	231.72	1	9.15	E	Bed Boundary
7950.2285	BED	24.75	235.52	1	9.16	E	Bed Boundary
7950.9849	FRAC	62.82	317.59	1	9.26	E	Fault
7954.6157	FRAC	66.88	352.83	1	10.2	E	Fault
7955.9849	FRAC	65.74	316.4	1	9.32	E	Conductive Fracture
7956.0786	FRAC	52.34	295.92	1	9.29	E	Conductive Fracture
7956.5718	FRAC	70.71	281.62	1	9.21	E	Conductive Fracture
7957.0215	FRAC	75.85	294.76	1	9.15	E	Conductive Fracture
7970.8413	FRAC	79.39	324.68	1	9.67	E	Induced Fracture
7980.5225	BED	29.09	264.47	2	9.39	G	Bed Boundary
7986.7104	BED	67.6	260.78	1	9.46	E	Bed Boundary
7988.0474	BED	59.47	259.3	1	9.26	E	Bed Boundary
7988.3076	FRAC	30.66	195.73	1	9.27	E	Resistive Fracture
7992.2295	BED	34.92	268.01	1	9.28	E	Bed Boundary
7994.6157	BED	27.36	307.18	1	9.28	E	Bed Boundary
7996.1333	BED	11.46	137.4	1	9.17	E	Bed Boundary
7996.5957	BED	21.6	167.54	1	9.08	E	Bed Boundary
7998.3506	BED	13.41	203.19	2	8.93	G	Bed Boundary
7998.6099	BED	13.43	157.35	2	8.95	G	Bed Boundary
8000.1777	BED	20.06	220.6	1	9.1	E	Bed Boundary
8002.7915	BED	36.2	232.33	1	9.19	E	Bed Boundary
8002.9854	BED	26.35	232.41	1	9.19	E	Bed Boundary
8003.479	BED	21.16	312.8	2	9.23	G	Bed Boundary
8005.8037	BED	55.77	357.46	1	9.02	E	Bed Boundary
8010.2324	FRAC	83.82	25.46	1	8.87	E	Borehole Breakout
8016.1938	BED	53.51	212.01	2	8.84	G	Bed Boundary
8016.3906	BED	49.31	213.32	2	8.78	G	Bed Boundary
8016.5781	BED	47.95	210.25	1	8.77	E	Bed Boundary
8017.4463	BED	46.03	218.91	2	8.82	G	Bed Boundary

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8018.4912	BED	43.89	197.02	2	9.08	G	Bed Boundary
8020.2529	BED	56.99	295.16	1	9.07	E	Bed Boundary
8024.7905	BED	34.76	256.27	2	9.36	G	Bed Boundary
8025.415	FRAC	78.93	275.32	1	9.72	E	Conductive Fracture
8029.3315	BED	34.13	227.22	3	9.74	F	Bed Boundary
8029.9092	BED	23.29	217.77	3	9.93	F	Bed Boundary
8030.4399	BED	28.95	223.3	3	9.81	F	Bed Boundary
8031.7769	BED	33.37	223.64	4	9.66	P	Bed Boundary
8033.1021	BED	29.51	232.14	4	9.48	P	Bed Boundary
8034.4951	BED	28.92	210.66	4	9.38	P	Bed Boundary
8035.6318	BED	28.36	209.64	3	9.83	F	Bed Boundary
8035.9849	BED	34.02	219.39	3	9.94	F	Bed Boundary
8036.8281	BED	36.16	246.45	3	9.67	F	Bed Boundary
8037.2402	BED	30.75	234.66	3	9.55	F	Bed Boundary
8037.5293	BED	35.67	224.14	1	9.49	E	Bed Boundary
8041.2456	BED	38.88	217.84	1	9.37	E	Bed Boundary
8041.7329	BED	36.08	224.28	1	9.39	E	Bed Boundary
8042.3887	BED	32.24	228.09	4	9.27	P	Bed Boundary
8042.77	BED	20.25	216.85	4	9.25	P	Bed Boundary
8045.7524	BED	38	231.96	1	9.45	E	Bed Boundary
8047.7451	BED	33.32	229.88	2	9.15	G	Bed Boundary
8048.0073	BED	33.27	233.76	3	9.06	F	Bed Boundary
8048.4009	BED	26.89	229.76	3	9.1	F	Bed Boundary
8049.3408	BED	29.46	223.54	2	9.06	G	Bed Boundary
8049.6436	BED	30.02	232.43	3	9.01	F	Bed Boundary
8049.853	BED	34.67	228.86	2	8.93	G	Bed Boundary
8050.084	BED	28.4	232.63	2	8.89	G	Bed Boundary
8050.2476	BED	31.01	235.6	1	8.91	E	Bed Boundary
8050.916	BED	33.57	230.71	2	8.98	G	Bed Boundary
8051.3223	BED	29.86	236.36	2	8.88	G	Bed Boundary
8051.5205	BED	31.37	240.03	2	8.81	G	Bed Boundary
8051.6719	BED	29.85	234.42	2	8.76	G	Bed Boundary
8051.7593	BED	27.65	231.71	1	8.76	E	Bed Boundary
8051.8965	BED	29.27	227.94	1	8.76	E	Bed Boundary
8052.0718	BED	29.13	229.08	1	8.7	E	Bed Boundary
8052.209	BED	27.1	226.32	1	8.67	E	Bed Boundary
8052.3149	BED	26.82	224.47	1	8.65	E	Bed Boundary
8052.4775	BED	28.12	229.84	2	8.64	G	Bed Boundary
8052.6211	BED	27.63	234.38	1	8.63	E	Bed Boundary
8053.0664	BED	29.28	240.14	1	8.69	E	Bed Boundary
8053.3335	BED	32.42	233	2	8.68	G	Bed Boundary
8053.5225	BED	30.52	239.13	1	8.69	E	Bed Boundary
8053.6143	BED	31.03	241.05	2	8.7	G	Bed Boundary
8053.6973	BED	30.51	243.79	1	8.69	E	Bed Boundary
8053.8193	BED	30.74	234.67	2	8.69	G	Bed Boundary
8053.9453	BED	29.33	232.2	2	8.69	G	Bed Boundary
8054.3159	BED	34.98	212.12	1	8.71	E	Bed Boundary
8054.7905	BED	35.02	209.92	1	8.78	E	Bed Boundary
8055.3462	BED	35.51	223.96	1	8.92	E	Bed Boundary
8055.8271	BED	28.23	241.59	1	8.9	E	Bed Boundary
8055.9399	BED	29.74	236.05	1	8.89	E	Bed Boundary
8056.0898	BED	29.2	240.32	1	8.87	E	Bed Boundary
8056.1646	BED	31.48	235.42	1	8.83	E	Bed Boundary
8056.2646	BED	27.71	233.09	1	8.78	E	Bed Boundary
8056.3521	BED	27.97	236.19	1	8.74	E	Bed Boundary
8056.5332	BED	32.66	248.14	2	8.7	G	Bed Boundary
8056.7705	BED	27.25	244.02	2	8.64	G	Bed Boundary
8056.8892	BED	29.25	231.65	1	8.63	E	Bed Boundary
8057.873	BED	35.16	227.49	2	8.59	G	Bed Boundary
8058.1104	BED	32.14	231.85	2	8.58	G	Bed Boundary
8058.7847	BED	35.14	236.68	2	8.77	G	Bed Boundary
8058.9912	BED	36.04	237.6	2	8.77	G	Bed Boundary
8059.4971	BED	33.07	228.65	3	9.1	F	Bed Boundary
8059.9653	BED	35.09	227.58	2	9.05	G	Bed Boundary
8060.6587	BED	30.81	251.74	2	8.98	G	Bed Boundary
8060.9961	BED	33.01	228.89	2	8.83	G	Bed Boundary
8061.2334	BED	35.32	228.28	2	8.83	G	Bed Boundary
8061.8516	BED	29.52	236.49	2	8.78	G	Bed Boundary
8062.2671	BED	30.12	237.13	2	8.89	G	Bed Boundary

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8062.4639	BED	28.57	237.91	3	8.88	F	Bed Boundary
8062.77	BED	31.23	232.05	2	8.96	G	Bed Boundary
8063.0728	BED	29.98	234.12	2	8.92	G	Bed Boundary
8063.6538	BED	32.7	245.35	2	9.03	G	Bed Boundary
8064.0225	BED	34.54	239.69	2	9.09	G	Bed Boundary
8064.6343	BED	31.8	232.25	2	8.92	G	Bed Boundary
8065.6914	BED	32.58	241.99	2	9.04	G	Bed Boundary
8066.5093	BED	34.1	219.79	1	9.15	E	Bed Boundary
8068.5879	BED	23.94	232.83	3	9.19	F	Bed Boundary
8068.9941	BED	25.46	227.94	3	9.19	F	Bed Boundary
8069.6436	BED	31.11	219.53	3	9.18	F	Bed Boundary
8069.8467	BED	32.72	233.42	2	9.18	G	Bed Boundary
8069.9902	BED	31.22	230.72	2	9.17	G	Bed Boundary
8070.0791	BED	29.66	223.81	1	9.15	E	Bed Boundary
8070.3853	BED	30.91	234.43	1	9.02	E	Bed Boundary
8070.6426	BED	32.35	230.99	1	8.97	E	Bed Boundary
8070.855	BED	33.65	233.89	1	9.08	E	Bed Boundary
8071.2534	BED	36.03	237.74	2	9.16	G	Bed Boundary
8071.5146	BED	33.95	238.65	3	9.21	F	Bed Boundary
8071.7969	BED	30.65	229.07	2	9.28	G	Bed Boundary
8073.1099	BED	29.86	236.59	1	9.05	E	Bed Boundary
8073.6021	BED	37.76	232.04	3	9.06	F	Bed Boundary
8074.4399	BED	33.03	234.54	2	9.16	G	Bed Boundary
8074.6587	BED	31.27	236.02	2	9.11	G	Bed Boundary
8075.082	BED	34.62	244.59	3	9.13	F	Bed Boundary
8075.4082	BED	21.58	238.77	1	9.13	E	Bed Boundary
8079.5273	BED	28.59	250.27	2	9.3	G	Bed Boundary
8079.6401	BED	31.13	251.27	1	9.36	E	Bed Boundary
8079.9023	BED	29.82	235.94	1	9.46	E	Bed Boundary
8081.2891	BED	32.16	220.42	3	9.36	F	Bed Boundary
8081.7261	BED	23.88	225.25	4	9.27	P	Bed Boundary
8082.9409	BED	26.44	236.49	4	9.05	P	Bed Boundary
8084.2837	BED	25.61	240.95	3	9.51	F	Bed Boundary
8087.4351	BED	48.21	220.59	1	8.93	E	Bed Boundary
8087.6973	BED	44.33	218.99	1	8.86	E	Bed Boundary
8094.9399	BED	28.41	224.4	2	8.64	G	Bed Boundary
8095.5581	BED	27.42	252.31	4	8.65	P	Bed Boundary
8103.9028	BED	23.46	223.05	3	8.8	F	Bed Boundary
8104.6587	BED	30.06	230.89	2	8.78	G	Bed Boundary
8104.8838	BED	28.87	234.9	3	8.76	F	Bed Boundary
8105.1538	BED	28.79	225.3	2	8.76	G	Bed Boundary
8105.4165	BED	29.64	230.55	1	8.76	E	Bed Boundary
8105.6851	BED	30.35	232.78	1	8.83	E	Bed Boundary
8105.7788	BED	30.75	234.68	1	8.87	E	Bed Boundary
8105.9224	BED	30.6	231.6	1	8.89	E	Bed Boundary
8106.1284	BED	31.24	227.81	1	8.93	E	Bed Boundary
8106.478	BED	37.49	220.64	3	9	F	Bed Boundary
8106.6655	BED	34.55	204.96	1	9.02	E	Bed Boundary
8107.6567	BED	31.61	179.88	4	9.35	P	Bed Boundary
8110.5786	BED	37.26	200.55	1	8.83	E	Bed Boundary
8110.9658	BED	34.12	208.31	2	8.81	G	Bed Boundary
8118.2085	BED	52.71	215.67	1	8.86	E	Bed Boundary
8118.8267	BED	28.67	220.04	1	8.57	E	Bed Boundary
8122.5337	BED	36.14	220.43	3	8.71	F	Bed Boundary
8122.8213	FRAC	62.91	298.8	1	8.78	E	Conductive Fracture
8123.9204	BED	35.21	213.72	1	9.1	E	Bed Boundary
8124.1514	BED	27.59	222.42	1	9.21	E	Bed Boundary
8126.8843	BED	35.53	225.13	1	9.65	E	Bed Boundary
8127.29	BED	39.85	233.27	2	9.51	G	Bed Boundary
8127.584	BED	36.61	211.39	1	9.48	E	Bed Boundary
8128.0771	BED	37.1	224.41	1	9.67	E	Bed Boundary
8131.7529	FRAC	45.47	316.06	1	9.42	E	Conductive Fracture
8133.3145	BED	30.33	229.57	2	9.45	G	Bed Boundary
8135.8848	BED	31.47	243.45	2	9.53	G	Bed Boundary
8136.0845	BED	30.54	254.66	3	9.51	F	Bed Boundary
8138.583	BED	23.92	225.43	2	9.72	G	Bed Boundary
8138.9331	BED	22.82	237.85	3	9.79	F	Bed Boundary
8139.8354	BED	32.8	236.88	2	9.82	G	Bed Boundary
8140.1104	BED	32.93	243.93	2	9.87	G	Bed Boundary

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8140.8784	BED	27.8	237.51	3	9.93	F	Bed Boundary
8143.6455	BED	33.66	227.12	3	9.69	F	Bed Boundary
8144.2485	BED	24.12	228.48	4	9.52	P	Bed Boundary
8144.5229	BED	18.6	232.07	4	9.43	P	Bed Boundary
8144.8887	BED	28.79	236.86	4	9.39	P	Bed Boundary
8145.0415	BED	29.67	234.13	4	9.35	P	Bed Boundary
8147.8647	BED	33.73	212.74	4	9.65	P	Bed Boundary
8152.8086	BED	29.22	223.07	4	9.59	P	Bed Boundary
8153.6206	BED	28.58	234.59	4	9.76	P	Bed Boundary
8155.1948	BED	27.86	229.69	4	9.61	P	Bed Boundary
8156.6841	BED	30.29	240.41	4	9.45	P	Bed Boundary
8157.1777	BED	32.49	249.13	4	9.61	P	Bed Boundary
8158.3457	BED	28	222.56	4	9.52	P	Bed Boundary
8158.9233	BED	28.45	233.42	4	9.71	P	Bed Boundary
8161.6436	BED	30.28	234.52	4	9.73	P	Bed Boundary
8161.8652	BED	34.75	236.2	3	9.65	F	Bed Boundary
8162.1777	BED	30.29	230.06	3	9.6	F	Bed Boundary
8164.1704	BED	26.49	232.42	2	9.48	G	Bed Boundary
8164.4355	BED	32.83	220.94	1	9.43	E	Bed Boundary
8165.0479	BED	29.92	223.24	1	9.62	E	Bed Boundary
8166.7466	BED	33.85	232.37	4	9.44	P	Bed Boundary
8167.2153	BED	29.04	229.18	2	9.49	G	Bed Boundary
8167.8022	BED	30.71	232.42	3	9.35	F	Bed Boundary
8169.4668	BED	24.27	235.17	3	9.34	F	Bed Boundary
8170.5132	BED	30.33	241.12	3	8.89	F	Bed Boundary
8170.8662	BED	29.49	236.2	2	8.87	G	Bed Boundary
8171.2344	BED	27.6	233.98	2	8.88	G	Bed Boundary
8171.6221	BED	28.17	235.77	2	8.88	G	Bed Boundary
8171.9092	BED	29.36	242.28	3	8.85	F	Bed Boundary
8172.209	BED	29.49	237.64	2	8.81	G	Bed Boundary
8173.1147	BED	31.95	235.08	2	8.97	G	Bed Boundary
8173.3022	BED	31.23	231.58	3	8.91	F	Bed Boundary
8173.9077	BED	26.82	235.6	3	8.94	F	Bed Boundary
8180.0352	BED	34.77	251.9	4	8.93	P	Bed Boundary
8181.7593	BED	27.89	241.44	4	9.07	P	Bed Boundary
8182.665	BED	33.13	246.49	4	9.07	P	Bed Boundary
8187.9521	FRAC	62.82	40.7	1	9.07	E	Borehole Breakout
8192.0459	BED	31.22	233.52	2	8.77	G	Bed Boundary
8192.3896	BED	23.94	235.04	3	8.7	F	Bed Boundary
8192.7891	BED	30.52	232.86	1	8.68	E	Bed Boundary
8193.2139	BED	30.44	249.41	2	8.7	G	Bed Boundary
8193.8359	BED	27.57	238.34	2	8.7	G	Bed Boundary
8196.584	BED	29.66	236.48	2	8.85	G	Bed Boundary
8197.0146	BED	31.8	236.81	3	8.71	F	Bed Boundary
8197.1836	BED	30.99	239.54	2	8.68	G	Bed Boundary
8197.5488	BED	31.6	236.78	1	8.64	E	Bed Boundary
8197.792	BED	30.96	236.18	2	8.62	G	Bed Boundary
8197.9736	BED	31.09	231.93	2	8.62	G	Bed Boundary
8198.127	BED	28.34	234.04	3	8.62	F	Bed Boundary
8198.3232	BED	27.88	236.92	4	8.62	P	Bed Boundary
8198.8262	BED	26.42	240.32	3	8.64	F	Bed Boundary
8199.2354	BED	24.48	239	2	8.66	G	Bed Boundary
8199.3789	BED	28.1	248.66	2	8.69	G	Bed Boundary
8200.2217	BED	30.76	246.82	2	8.58	G	Bed Boundary
8200.3379	BED	27.53	248.6	3	8.57	F	Bed Boundary
8200.4473	BED	25.63	249.54	2	8.56	G	Bed Boundary
8200.5908	BED	24.79	250.23	2	8.55	G	Bed Boundary
8200.9277	BED	30.1	249.83	1	8.52	E	Bed Boundary
8201.459	BED	26.87	228.44	1	8.46	E	Bed Boundary
8201.752	BED	27.69	238.41	2	8.5	G	Bed Boundary
8201.915	BED	29.38	234.31	1	8.54	E	Bed Boundary
8202.0957	BED	26.39	242.18	2	8.58	G	Bed Boundary
8202.2588	BED	25.76	235.39	1	8.53	E	Bed Boundary
8202.4082	BED	26.92	240.46	1	8.55	E	Bed Boundary
8202.6426	BED	28.75	241	2	8.68	G	Bed Boundary
8202.8672	BED	29.36	245.75	2	8.68	G	Bed Boundary
8203.6914	BED	30.08	233.71	3	8.69	F	Bed Boundary
8204.3291	BED	28.84	229.12	3	8.7	F	Bed Boundary
8204.4668	BED	30.81	238.83	3	8.73	F	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
8204.8408	BED	32.35	234	3	8.77	F	Bed Boundary
8205.041	BED	30.13	242.08	3	8.86	F	Bed Boundary
8205.3906	BED	34.02	231.82	2	8.95	G	Bed Boundary
8205.8408	BED	31.34	227.53	2	8.97	G	Bed Boundary
8206.1152	BED	28.76	239.36	3	9.05	F	Bed Boundary
8206.2402	BED	29.41	236.44	2	9.02	G	Bed Boundary
8206.5527	BED	27.1	231.16	2	8.96	G	Bed Boundary
8207.002	BED	28.68	240.58	2	8.96	G	Bed Boundary
8207.9824	BED	29.44	245.19	4	8.92	P	Bed Boundary
8208.8418	BED	28.01	250.29	4	8.91	P	Bed Boundary
8209.7412	BED	22.88	248.55	3	8.9	F	Bed Boundary
8210.5283	BED	29.46	238	3	8.88	F	Bed Boundary
8210.7588	BED	26.94	235.95	3	8.9	F	Bed Boundary
8210.9844	BED	25.21	234.52	2	8.93	G	Bed Boundary
8211.3027	BED	28.29	231.85	3	8.93	F	Bed Boundary
8211.5713	BED	27.79	234.79	1	8.93	E	Bed Boundary
8211.877	BED	25.45	237.74	3	8.94	F	Bed Boundary
8212.1836	BED	30.53	235.48	2	8.87	G	Bed Boundary
8213.2705	BED	24.99	238.24	3	8.96	F	Bed Boundary
8214.2168	BED	33.31	238.7	1	9.02	E	Bed Boundary
8214.6348	BED	30.24	237.29	1	9.04	E	Bed Boundary
8214.6729	FRAC	75.96	270.16	1	9.03	E	Conductive Fracture
8215.1279	BED	34.31	239.35	3	9.05	F	Bed Boundary
8215.5596	BED	29.56	235.39	1	8.95	E	Bed Boundary
8215.8965	BED	28.6	228.82	2	8.87	G	Bed Boundary
8216.6465	BED	24.53	233.55	4	8.98	P	Bed Boundary
8216.8896	BED	20.01	233.25	4	8.93	P	Bed Boundary
8217.2334	BED	23.78	244.8	4	9.05	P	Bed Boundary
8219.335	BED	27.06	237.45	1	9.67	E	Bed Boundary
8221.3154	FRAC	65.3	357.05	1	8.74	E	Resistive Fracture
8222.5986	BED	30.56	231.33	1	8.94	E	Bed Boundary
8222.9639	BED	29.75	239.79	4	8.94	P	Bed Boundary
8224.4443	BED	19.14	223.32	2	8.83	G	Bed Boundary
8224.6445	BED	22.83	228.03	2	8.82	G	Bed Boundary
8225.2783	BED	18.69	207.82	1	8.85	E	Bed Boundary
8225.9404	BED	30.28	248.9	1	8.93	E	Bed Boundary
8226.5586	BED	35.44	228.52	1	8.66	E	Bed Boundary
8226.8525	BED	31.45	221.25	1	8.56	E	Bed Boundary
8227.4648	BED	39.48	234.35	1	8.57	E	Bed Boundary
8227.6611	BED	34.02	228.31	2	8.56	G	Bed Boundary
8229.0537	BED	33.65	228.42	2	8.93	G	Bed Boundary
8232.0146	BED	25.49	233.82	3	9.25	F	Bed Boundary
8232.2275	BED	34.55	237.06	3	9.27	F	Bed Boundary
8232.958	BED	31.46	237.98	3	9.22	F	Bed Boundary
8233.1543	BED	27.98	235.01	3	9.1	F	Bed Boundary
8234.6846	BED	29.11	235.13	4	9.03	P	Bed Boundary
8235.5283	BED	33.07	243.38	3	8.92	F	Bed Boundary
8235.7344	BED	32.53	247.52	4	8.92	P	Bed Boundary
8236.5029	BED	27.58	233.73	4	9.08	P	Bed Boundary
8236.9893	BED	29.79	238.55	4	9.07	P	Bed Boundary
8237.1709	BED	30.1	237.04	3	8.99	F	Bed Boundary
8237.3457	BED	32.46	237.64	4	8.87	P	Bed Boundary
8237.6016	BED	26.61	237.27	4	8.81	P	Bed Boundary
8239.6973	BED	26.98	254.76	4	9.06	P	Bed Boundary
8240.5342	BED	31.08	251.7	4	8.97	P	Bed Boundary
8240.7158	BED	28.63	240.99	4	8.89	P	Bed Boundary
8241.3584	BED	18.39	250.14	4	9.03	P	Bed Boundary
8241.7207	BED	18.66	247.68	4	9.17	P	Bed Boundary
8241.9209	BED	18.38	250.89	4	9.15	P	Bed Boundary
8242.6328	BED	29.65	239.15	4	9.15	P	Bed Boundary
8243.0859	BED	33.34	227.9	3	9.19	F	Bed Boundary
8243.3604	BED	29.89	231.34	1	9.31	E	Bed Boundary
8243.8477	BED	35.85	255.03	4	9.43	P	Bed Boundary
8244.46	BED	32.73	243.81	2	9.39	G	Bed Boundary
8245.0098	BED	41.69	239.43	2	9.26	G	Bed Boundary
8249.6816	BED	39.78	239.91	4	8.89	P	Bed Boundary
8250.7783	BED	36.91	244.6	4	8.81	P	Bed Boundary
8254.5977	BED	28.64	228.34	4	8.6	P	Bed Boundary
8283.9541	BED	44	231.33	1	8.61	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
8284.291	BED	44.25	241.33	4	8.6	P	Bed Boundary
8284.541	BED	47.37	236.41	2	8.6	G	Bed Boundary
8285.6094	BED	41.42	242.21	2	8.64	G	Bed Boundary
8286.1211	BED	48.3	250.06	2	8.7	G	Bed Boundary
8286.4648	BED	42.46	249.21	1	8.73	E	Bed Boundary
8286.7402	BED	41.27	244.99	1	8.71	E	Bed Boundary
8287.3711	BED	30.96	263.55	1	8.64	E	Bed Boundary
8289.4043	BED	53.4	298.14	2	8.69	G	Bed Boundary
8296.5762	FRAC	37.65	331.75	1	8.65	E	Conductive Fracture
8302.1357	BED	31.35	278.58	4	8.89	P	Bed Boundary
8308.1592	BED	31.76	273.56	4	8.92	P	Bed Boundary
8314.2461	BED	33.23	285.26	4	8.55	P	Bed Boundary
8319.3232	FRAC	59.07	11.27	1	8.7	E	Induced Fracture
8323.1846	BED	71.1	255.61	1	9.11	E	Bed Boundary
8323.3721	BED	71.71	254.29	1	9.08	E	Bed Boundary
8324.8838	BED	20.99	244.97	4	9.02	P	Bed Boundary
8325.3711	BED	21.79	227.49	2	8.87	G	Bed Boundary
8325.5898	BED	19.61	223.78	2	8.79	G	Bed Boundary
8325.8516	BED	20.99	223.85	2	8.86	G	Bed Boundary
8326.1641	BED	18.87	230.92	2	8.87	G	Bed Boundary
8326.5889	BED	23.72	239.37	1	8.82	E	Bed Boundary
8326.6758	BED	21.72	242.54	2	8.8	G	Bed Boundary
8326.7695	BED	25.6	241.75	2	8.82	G	Bed Boundary
8327.0693	BED	22.73	238.61	2	8.98	G	Bed Boundary
8327.2568	BED	25.07	239.31	3	9.05	F	Bed Boundary
8327.335	FRAC	60.65	299.94	1	9.04	E	Induced Fracture
8327.9414	BED	24.96	243.25	1	9.07	E	Bed Boundary
8328.2471	BED	15.15	225.95	1	8.94	E	Bed Boundary
8328.541	BED	28.71	237.37	3	9.05	F	Bed Boundary
8328.9092	BED	27.47	229.66	2	9.02	G	Bed Boundary
8331.832	BED	68.15	224.66	1	8.8	E	Bed Boundary
8332.3975	BED	53.41	247.12	1	8.8	E	Bed Boundary
8332.5225	BED	43.25	243.69	1	8.79	E	Bed Boundary
8332.6348	BED	40.96	243.68	1	8.74	E	Bed Boundary
8332.7598	BED	37.42	239.02	1	8.7	E	Bed Boundary
8332.8975	BED	33.9	239.31	1	8.67	E	Bed Boundary
8333.1719	BED	34.74	240.79	1	8.59	E	Bed Boundary
8333.2725	BED	32.83	242.54	1	8.53	E	Bed Boundary
8333.3848	BED	31.69	237.73	1	8.5	E	Bed Boundary
8333.5098	BED	30.81	238.72	2	8.47	G	Bed Boundary
8333.6348	BED	30.64	238.66	2	8.47	G	Bed Boundary
8333.8281	BED	30.81	232.81	1	8.49	E	Bed Boundary
8333.959	BED	30.83	232.99	1	8.53	E	Bed Boundary
8334.1904	BED	28.11	240.12	2	8.57	G	Bed Boundary
8334.2969	BED	31.01	240.65	2	8.57	G	Bed Boundary
8334.4404	BED	29.51	238.83	1	8.6	E	Bed Boundary
8334.8027	BED	29.13	232.9	1	8.6	E	Bed Boundary
8335.1211	BED	31.72	235.36	3	8.67	F	Bed Boundary
8335.2832	BED	31.58	235.19	2	8.63	G	Bed Boundary
8335.4395	BED	28.49	229.73	1	8.61	E	Bed Boundary
8335.5176	BED	26.92	230.81	1	8.61	E	Bed Boundary
8335.7178	BED	27.33	237.16	1	8.57	E	Bed Boundary
8335.998	BED	30.15	240	1	8.5	E	Bed Boundary
8336.2422	BED	29.29	236.79	1	8.44	E	Bed Boundary
8336.5732	BED	30.38	237.16	2	8.49	G	Bed Boundary
8336.9482	BED	32.46	237.02	2	8.7	G	Bed Boundary
8337.1543	BED	26.38	233.04	1	8.75	E	Bed Boundary
8337.3477	BED	24.66	238.6	1	8.8	E	Bed Boundary
8337.5166	BED	28.1	239.21	1	8.76	E	Bed Boundary
8337.7041	BED	24.96	233.14	1	8.74	E	Bed Boundary
8337.8789	BED	25.58	234.87	2	8.81	G	Bed Boundary
8338.0781	BED	24.96	231.5	1	8.79	E	Bed Boundary
8338.2725	BED	27.84	240.72	1	8.69	E	Bed Boundary
8338.4346	BED	29.82	235.7	1	8.59	E	Bed Boundary
8338.7842	BED	30.32	236.78	1	8.46	E	Bed Boundary
8338.8594	BED	29.04	238.12	1	8.43	E	Bed Boundary
8339.0713	BED	28.89	241.16	1	8.46	E	Bed Boundary
8339.209	BED	30.49	243.09	1	8.51	E	Bed Boundary
8339.8457	FRAC	83	229.7	1	8.75	E	Fault

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
8340.377	FRAC	64.46	20.33	1	8.87	E	Borehole Breakout
8340.7451	BED	32.84	242.1	4	8.98	P	Bed Boundary
8340.9395	BED	28.51	238.26	3	8.91	F	Bed Boundary
8341.0859	BED	26.96	236.19	3	8.8	F	Bed Boundary
8341.2236	BED	28.89	234.5	3	8.7	F	Bed Boundary
8341.3174	BED	30.56	231.88	3	8.66	F	Bed Boundary
8341.498	BED	29.1	236.95	2	8.59	G	Bed Boundary
8341.6914	BED	28.6	230.8	2	8.55	G	Bed Boundary
8341.8047	BED	32.68	233.94	2	8.55	G	Bed Boundary
8342.085	BED	33.54	231.48	3	8.56	F	Bed Boundary
8342.1973	BED	33.28	227.39	2	8.57	G	Bed Boundary
8342.4287	BED	27.22	233.93	1	8.61	E	Bed Boundary
8342.6416	BED	28	240.48	3	8.65	F	Bed Boundary
8342.8789	BED	32.32	236.96	3	8.73	F	Bed Boundary
8343.085	BED	29.31	231.96	2	8.81	G	Bed Boundary
8343.2344	BED	29.16	236.36	3	8.84	F	Bed Boundary
8343.3662	BED	29.13	238.08	3	8.87	F	Bed Boundary
8343.4844	BED	31.11	238.36	2	8.89	G	Bed Boundary
8343.5908	BED	29.14	236.59	3	8.9	F	Bed Boundary
8343.79	BED	29.42	241.02	2	8.91	G	Bed Boundary
8343.8965	BED	31.03	245.44	3	8.87	F	Bed Boundary
8344.0088	BED	28.59	237.67	3	8.84	F	Bed Boundary
8344.2217	BED	27.28	236.2	2	8.84	G	Bed Boundary
8344.334	BED	27.75	239.25	2	8.81	G	Bed Boundary
8344.5029	BED	27.54	237.43	2	8.71	G	Bed Boundary
8344.7021	BED	29.14	238.74	3	8.66	F	Bed Boundary
8344.8838	BED	26.89	230.73	2	8.64	G	Bed Boundary
8345.1396	BED	30.23	238.99	2	8.69	G	Bed Boundary
8345.2705	BED	30.83	237.7	3	8.74	F	Bed Boundary
8345.5117	BED	36.67	242.63	1	8.9	E	Bed Boundary
8345.7051	BED	31.4	244.1	3	8.88	F	Bed Boundary
8345.9551	BED	32.57	232.2	3	8.89	F	Bed Boundary
8346.1172	BED	33.6	232.79	3	8.89	F	Bed Boundary
8346.8359	BED	19.29	226.99	3	8.67	F	Bed Boundary
8346.9482	BED	15.45	231.27	3	8.69	F	Bed Boundary
8347.1162	BED	16.99	231.6	3	8.72	F	Bed Boundary
8347.8164	BED	34.44	243.79	3	8.86	F	Bed Boundary
8349.3154	BED	25.99	279.37	2	9.09	G	Bed Boundary
8350.7646	BED	32.3	248.08	4	9.38	P	Bed Boundary
8351.0391	BED	29.31	252.47	3	9.34	F	Bed Boundary
8351.1328	BED	26.35	251.08	4	9.34	P	Bed Boundary
8351.2578	BED	22.64	250.07	3	9.36	F	Bed Boundary
8351.4268	BED	26.71	244.29	3	9.37	F	Bed Boundary
8351.5449	BED	29.7	249.35	2	9.39	G	Bed Boundary
8351.6514	BED	30.57	252.17	2	9.39	G	Bed Boundary
8351.8389	BED	28.43	251.47	2	9.39	G	Bed Boundary
8351.9951	BED	29.81	247.78	2	9.33	G	Bed Boundary
8352.126	BED	26.71	247.25	3	9.26	F	Bed Boundary
8352.7939	BED	32.37	236.14	3	9.09	F	Bed Boundary
8352.9629	BED	33.05	228.99	3	9.16	F	Bed Boundary
8353.2754	BED	30.62	230.33	2	9.14	G	Bed Boundary
8353.3691	BED	31.15	230.68	2	9.17	G	Bed Boundary
8353.5566	BED	29.91	226.34	3	9.21	F	Bed Boundary
8353.7246	BED	29.52	228.71	3	9.22	F	Bed Boundary
8353.8701	BED	32.42	232.62	3	9.22	F	Bed Boundary
8354.0762	BED	33.31	235.49	3	9.16	F	Bed Boundary
8354.1953	BED	33.28	235.29	3	9.1	F	Bed Boundary
8354.2822	BED	31.29	235.61	3	9.07	F	Bed Boundary
8354.4199	BED	31.26	228.91	2	9.03	G	Bed Boundary
8354.5703	BED	32.36	230.63	2	9.01	G	Bed Boundary
8354.6826	BED	32.17	231.94	1	9	E	Bed Boundary
8354.8262	BED	33.76	235.11	2	8.97	G	Bed Boundary
8354.9443	BED	36.14	239.15	2	8.95	G	Bed Boundary
8355.0635	BED	35.4	236.07	3	8.96	F	Bed Boundary
8355.207	BED	33.69	239.03	3	8.97	F	Bed Boundary
8355.4199	BED	32.75	233.38	3	8.98	F	Bed Boundary
8355.6006	BED	33.48	226.22	1	9	E	Bed Boundary
8355.7568	BED	33.55	224.94	1	9.01	E	Bed Boundary
8356.9063	BED	26.16	216.34	4	8.92	P	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
8357.3711	BED	29.64	248.2	2	8.96	G	Bed Boundary
8357.5869	BED	27.34	247.43	1	8.92	E	Bed Boundary
8357.7051	BED	30.01	240.69	1	8.96	E	Bed Boundary
8357.918	BED	29.17	243.89	1	9.02	E	Bed Boundary
8358.1113	BED	29.33	237.86	1	9.02	E	Bed Boundary
8358.5801	BED	26.54	237.86	1	8.91	E	Bed Boundary
8358.6924	BED	27	235.94	1	8.88	E	Bed Boundary
8358.8643	BED	24.23	244.11	1	8.87	E	Bed Boundary
8359.5664	FRAC	54.02	341.85	1	9.08	E	Resistive Fracture
8359.7012	BED	28.99	239.65	3	9.08	F	Bed Boundary
8360.0918	FRAC	67.63	337.21	1	9.02	E	Resistive Fracture
8360.2539	BED	37.94	239.43	4	9	P	Bed Boundary
8360.4131	BED	31.16	235.42	3	8.95	F	Bed Boundary
8360.4971	BED	31.04	231.01	4	8.93	P	Bed Boundary
8360.6348	FRAC	66.97	348.58	1	8.92	E	Resistive Fracture
8361.0664	BED	29.69	222.95	1	9.02	E	Bed Boundary
8361.4844	BED	29.99	244.26	3	9.13	F	Bed Boundary
8362.0215	BED	29.03	232.71	3	9.13	F	Bed Boundary
8362.1836	BED	28.89	229.44	1	9.04	E	Bed Boundary
8362.3711	FRAC	64.45	334.35	1	8.95	E	Resistive Fracture
8362.584	BED	29.16	232.35	1	9.02	E	Bed Boundary
8362.8965	BED	29.16	237	2	9.05	G	Bed Boundary
8363.1143	FRAC	78.12	327.81	1	9.02	E	Resistive Fracture
8366.0723	BED	15.52	218.81	1	9.03	E	Bed Boundary
8366.5723	BED	24.05	221.53	1	9.06	E	Bed Boundary
8366.7588	BED	17.76	230.92	2	9.07	G	Bed Boundary
8367.5967	BED	27.7	262.84	1	9.14	E	Bed Boundary
8369.7295	FRAC	76.16	355.51	1	8.95	E	Induced Fracture
8369.8477	BED	28.02	242.8	3	8.91	F	Bed Boundary
8370.916	BED	27.48	251.31	3	8.79	F	Bed Boundary
8371.085	BED	25.92	256.79	3	8.77	F	Bed Boundary
8371.5342	BED	25.23	251.6	3	8.86	F	Bed Boundary
8371.7031	BED	22.65	246.73	1	8.86	E	Bed Boundary
8371.8906	FRAC	60.97	185.62	1	8.87	E	Resistive Fracture
8373.4521	FRAC	70.7	326.98	1	9.01	E	Resistive Fracture
8374.623	BED	30.77	235.18	1	9.02	E	Bed Boundary
8374.7793	BED	29.88	232.25	1	9.01	E	Bed Boundary
8374.9199	BED	28.38	236.19	2	9	G	Bed Boundary
8376.3818	BED	43.43	282.72	4	8.83	P	Bed Boundary
8376.8574	BED	47.42	268.78	4	8.8	P	Bed Boundary
8377.167	BED	33.61	274.09	1	8.78	E	Bed Boundary
8377.291	BED	33.59	271.1	1	8.78	E	Bed Boundary
8378.3037	BED	28.4	247.94	1	8.73	E	Bed Boundary
8378.5527	BED	31.1	247.3	2	8.73	G	Bed Boundary
8378.7871	BED	29.41	261.24	1	8.75	E	Bed Boundary
8378.8789	BED	26.59	255.41	2	8.76	G	Bed Boundary
8379.1152	BED	31.4	249.09	2	8.78	G	Bed Boundary
8379.5537	BED	31.22	253.83	1	8.78	E	Bed Boundary
8379.6621	BED	32.85	254.04	1	8.79	E	Bed Boundary
8379.7959	BED	34.54	242.45	2	8.81	G	Bed Boundary
8379.9121	BED	40.34	244.81	4	8.85	P	Bed Boundary
8380.1875	BED	37.04	244.35	4	8.88	P	Bed Boundary
8380.4648	BED	43.81	247.57	3	8.91	F	Bed Boundary
8380.6768	BED	42.1	241.45	3	8.89	F	Bed Boundary
8380.8203	BED	39.6	234.12	2	8.85	G	Bed Boundary
8380.9375	BED	39.8	234.39	1	8.81	E	Bed Boundary
8381.1543	BED	42.45	238.32	1	8.78	E	Bed Boundary
8381.2959	BED	39.34	236.35	1	8.77	E	Bed Boundary
8381.4121	BED	39.8	231.42	1	8.74	E	Bed Boundary
8381.5361	BED	37.64	234.5	2	8.71	G	Bed Boundary
8381.8623	BED	30.21	237.94	1	8.68	E	Bed Boundary
8382.1035	BED	34.24	239.74	4	8.64	P	Bed Boundary
8382.2373	BED	34.66	243.84	1	8.64	E	Bed Boundary
8382.373	BED	31.02	244.72	1	8.65	E	Bed Boundary
8382.4541	BED	29.08	246.34	2	8.66	G	Bed Boundary
8382.5869	BED	27.64	247.48	1	8.68	E	Bed Boundary
8382.6953	BED	28.72	248.8	4	8.68	P	Bed Boundary
8382.8037	BED	30.94	245.03	3	8.67	F	Bed Boundary
8382.8975	BED	32.78	252.05	1	8.67	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
8383.0156	BED	29.57	247.81	1	8.69	E	Bed Boundary
8383.3154	BED	27.54	238.77	1	8.74	E	Bed Boundary
8383.4033	BED	27.4	243.86	1	8.74	E	Bed Boundary
8383.624	BED	27.66	243.75	1	8.72	E	Bed Boundary
8384.2578	BED	24.74	239.96	1	8.71	E	Bed Boundary
8384.3955	BED	27.7	243.68	2	8.69	G	Bed Boundary
8384.6279	BED	25.51	218.55	2	8.66	G	Bed Boundary
8384.7402	BED	25.38	214.03	1	8.65	E	Bed Boundary
8385.1523	BED	22.87	231.75	2	8.68	G	Bed Boundary
8385.457	BED	28.09	209.13	2	8.74	G	Bed Boundary
8385.626	BED	33.18	211.32	1	8.79	E	Bed Boundary
8385.9258	BED	34.48	231.56	1	8.82	E	Bed Boundary
8386.1123	BED	28.07	245.58	2	8.81	G	Bed Boundary
8386.2188	BED	27.92	244.15	1	8.82	E	Bed Boundary
8386.4189	BED	31.36	245.25	1	8.84	E	Bed Boundary
8386.5752	BED	30.05	249.99	1	8.84	E	Bed Boundary
8386.6309	BED	29.87	246.69	1	8.84	E	Bed Boundary
8386.8623	BED	27.34	234.81	1	8.85	E	Bed Boundary
8387.3428	BED	27.34	237.81	1	8.8	E	Bed Boundary
8387.4492	BED	30.66	239.2	2	8.79	G	Bed Boundary
8387.5371	BED	30.99	240.8	2	8.78	G	Bed Boundary
8387.7803	BED	33.16	208.77	1	8.76	E	Bed Boundary
8387.9736	BED	31.39	226.84	1	8.74	E	Bed Boundary
8388.2363	BED	29.85	243.53	2	8.71	G	Bed Boundary
8388.4492	BED	27.04	276.81	1	8.74	E	Bed Boundary
8388.7422	BED	31.74	246.4	2	8.74	G	Bed Boundary
8388.8926	BED	26.33	248.37	3	8.74	F	Bed Boundary
8388.9922	BED	31.55	246.39	2	8.74	G	Bed Boundary
8389.1514	BED	26.6	247.89	1	8.73	E	Bed Boundary
8389.4141	BED	25.23	241.73	1	8.71	E	Bed Boundary
8389.584	BED	23.47	223.47	3	8.71	F	Bed Boundary
8389.8975	BED	22.62	237.87	4	8.73	P	Bed Boundary
8390.1816	BED	23.64	231.91	1	8.75	E	Bed Boundary
8390.3691	BED	22.95	218.72	1	8.79	E	Bed Boundary
8390.875	BED	28.87	224.75	1	8.78	E	Bed Boundary
8391.1875	BED	27.07	244.54	3	8.85	F	Bed Boundary
8391.4004	BED	31.29	244.1	3	8.87	F	Bed Boundary
8393.917	FRAC	47.68	175.68	1	9.11	E	Fault
8394.8291	BED	20.94	289.68	2	9.36	G	Bed Boundary
8395.3506	BED	22.79	253.32	1	9.31	E	Bed Boundary
8395.6631	BED	23.06	248.65	2	9.39	G	Bed Boundary
8395.9688	BED	23.84	230.66	1	9.51	E	Bed Boundary
8396.4629	BED	31.4	217.7	1	9.4	E	Bed Boundary
8397.0498	BED	8.62	180.65	2	9.23	G	Bed Boundary
8397.4307	BED	15.65	180.29	1	9.04	E	Bed Boundary
8397.918	BED	23.95	238.42	3	8.94	F	Bed Boundary
8398.2422	BED	32.43	231.42	1	9.02	E	Bed Boundary
8398.4863	BED	19.93	243.19	2	9.02	G	Bed Boundary
8398.8232	BED	21.62	214.67	1	8.92	E	Bed Boundary
8399.2607	BED	41.83	202.18	1	8.95	E	Bed Boundary
8400.6318	BED	44.02	240.05	1	8.87	E	Bed Boundary
8400.7813	BED	38.65	239.72	1	8.83	E	Bed Boundary
8400.8564	BED	39.91	244.44	1	8.81	E	Bed Boundary
8401.4004	BED	55.31	256.43	3	8.74	F	Bed Boundary
8401.8008	BED	50.17	261.03	1	8.67	E	Bed Boundary
8402.3945	BED	26.07	256.62	4	8.67	P	Bed Boundary
8402.5752	BED	28.51	248.67	4	8.68	P	Bed Boundary
8403.4248	BED	27.97	242.63	3	8.7	F	Bed Boundary
8403.6064	BED	26.17	241.68	4	8.69	P	Bed Boundary
8404.3682	BED	59.71	262.97	1	8.66	E	Bed Boundary
8404.8809	BED	48.35	258.41	1	8.61	E	Bed Boundary
8405.2178	BED	25.04	240.34	1	8.66	E	Bed Boundary
8405.8701	BED	32.58	237.69	1	8.85	E	Bed Boundary
8406.0645	BED	31.1	239.03	1	8.86	E	Bed Boundary
8407.6885	BED	30.59	250.73	1	8.91	E	Bed Boundary
8408.0566	BED	31.59	253.32	1	8.9	E	Bed Boundary
8408.1631	BED	31.77	256.28	1	8.9	E	Bed Boundary
8408.3379	BED	33	243.66	1	8.89	E	Bed Boundary
8408.5254	BED	32.2	254.8	3	8.87	F	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
8408.6123	BED	29.45	255.62	1	8.88	E	Bed Boundary
8408.7744	BED	27.89	258.86	3	8.89	F	Bed Boundary
8409.7559	BED	32.56	292.84	1	9.12	E	Bed Boundary
8411.0049	BED	46.66	240.46	1	9.11	E	Bed Boundary
8411.5547	BED	33.42	260.96	4	9.23	P	Bed Boundary
8412.0293	BED	31.05	251.9	3	9.36	F	Bed Boundary
8412.9941	BED	42.19	226.67	1	9.55	E	Bed Boundary
8413.3623	BED	42.31	229.36	1	9.48	E	Bed Boundary
8415.8545	BED	20.01	241.75	3	9.32	F	Bed Boundary
8416.0986	BED	19.94	243.42	3	9.14	F	Bed Boundary
8416.4141	BED	21.88	250.48	1	8.89	E	Bed Boundary
8416.7383	BED	25.76	244.93	2	8.8	G	Bed Boundary
8417.0947	BED	26.74	246.14	2	8.78	G	Bed Boundary
8417.291	BED	28.6	242.18	4	8.79	P	Bed Boundary
8417.5381	BED	28.77	254.98	4	8.78	P	Bed Boundary
8417.8379	BED	28.08	248.51	3	8.75	F	Bed Boundary
8418.3936	BED	25.46	245.32	3	8.8	F	Bed Boundary
8418.5	BED	24.95	247.93	3	8.82	F	Bed Boundary
8418.6621	BED	26.08	246.72	3	8.85	F	Bed Boundary
8419.1367	BED	23.25	250.24	4	8.89	P	Bed Boundary
8419.4678	BED	24.14	245.48	4	8.95	P	Bed Boundary
8423.4629	BED	25.54	242.79	1	8.91	E	Bed Boundary
8424.2559	BED	30.35	249.95	4	8.86	P	Bed Boundary
8424.5615	BED	27.21	253.63	1	8.88	E	Bed Boundary
8425.6953	BED	27.19	232.5	4	8.88	P	Bed Boundary
8429.2188	BED	22.05	252.8	4	9.06	P	Bed Boundary
8431.5244	BED	8.29	246.76	1	9.06	E	Bed Boundary
8431.6865	BED	13.71	278.75	1	9.06	E	Bed Boundary
8432.9863	BED	28.22	246.55	4	9.34	P	Bed Boundary
8433.6914	BED	27.73	245.71	3	9.53	F	Bed Boundary
8433.9668	BED	25.16	240.41	3	9.37	F	Bed Boundary
8434.3945	BED	28.81	229.65	3	9.1	F	Bed Boundary
8434.8193	BED	25.82	248.85	2	9.01	G	Bed Boundary
8435.6934	BED	35.87	253.26	2	9.02	G	Bed Boundary
8438.0244	BED	27.72	261.63	4	9.76	P	Bed Boundary
8438.6992	BED	29.41	234.57	3	9.28	F	Bed Boundary
8439.4492	BED	20.16	239.82	4	9.39	P	Bed Boundary
8441.8438	BED	26.96	247	2	10.3	G	Bed Boundary
8442.6514	BED	30.45	249.63	1	9.2	E	Bed Boundary
8442.8311	BED	30.57	256.77	2	9.03	G	Bed Boundary
8442.9707	BED	30.81	252.13	2	8.94	G	Bed Boundary
8443.1387	BED	28.26	253.42	3	8.95	F	Bed Boundary
8443.4639	BED	28.16	249.89	2	8.81	G	Bed Boundary
8443.5947	BED	25.14	248.61	3	8.81	F	Bed Boundary
8443.7266	BED	29.8	247.6	3	8.8	F	Bed Boundary
8443.9131	BED	26.48	249.3	2	8.81	G	Bed Boundary
8444.1191	BED	26.89	240.58	3	8.82	F	Bed Boundary
8444.3447	BED	27.75	238.91	3	8.84	F	Bed Boundary
8444.5947	BED	28.3	243.52	2	8.89	G	Bed Boundary
8445.6934	BED	22.93	244.52	3	9.06	F	Bed Boundary
8445.875	BED	25.77	249.3	3	9.11	F	Bed Boundary
8446.0869	BED	24.19	241.81	3	9.21	F	Bed Boundary
8446.4561	BED	29.59	254.81	3	9.23	F	Bed Boundary
8446.5947	BED	29.25	250.38	4	9.24	P	Bed Boundary
8446.6943	BED	27.28	249.79	3	9.19	F	Bed Boundary
8446.8008	BED	27.78	256.29	3	9.13	F	Bed Boundary
8446.9004	BED	27.23	246.02	2	9.06	G	Bed Boundary
8447.3379	BED	30.09	241.97	2	8.97	G	Bed Boundary
8447.5313	BED	27.84	239.18	3	8.94	F	Bed Boundary
8447.7119	BED	24.91	249.19	2	8.91	G	Bed Boundary
8447.8936	BED	24.62	231.72	1	8.85	E	Bed Boundary
8448.0313	BED	22.85	252.45	2	8.82	G	Bed Boundary
8448.2373	BED	22.3	259.63	1	8.82	E	Bed Boundary
8448.374	BED	19	254.22	1	8.84	E	Bed Boundary
8448.6807	BED	28.69	258.05	2	8.78	G	Bed Boundary
8448.9111	BED	27.64	255.3	3	8.83	F	Bed Boundary
8449.3047	BED	28.48	248.24	3	8.96	F	Bed Boundary
8449.4365	BED	27.7	252.08	3	8.92	F	Bed Boundary
8449.6045	BED	31.18	260.66	1	8.87	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
8450.6201	FRAC	64.73	333.8	1	8.92	E	Resistive Fracture
8450.7881	BED	17.89	260.74	1	8.94	E	Bed Boundary
8451.001	BED	19.93	259.31	1	9	E	Bed Boundary
8452.9805	FRAC	44.62	151.32	1	9.24	E	Fault
8454.208	BED	25.61	248.76	1	9.01	E	Bed Boundary
8454.4395	BED	27.69	248.52	1	8.92	E	Bed Boundary
8455.9414	BED	27.32	249.84	3	8.71	F	Bed Boundary
8456.957	BED	27.62	255.6	3	8.79	F	Bed Boundary
8457.2061	BED	26.46	256.94	2	8.77	G	Bed Boundary
8457.5	BED	30.58	251.19	3	8.7	F	Bed Boundary
8457.7871	BED	34.31	252.06	3	8.7	F	Bed Boundary
8458.5557	BED	28.27	258.19	3	8.57	F	Bed Boundary
8458.7988	BED	31.07	256.97	3	8.59	F	Bed Boundary
8459.1738	BED	20.27	244.28	1	8.58	E	Bed Boundary
8459.9922	BED	19.11	258.2	4	8.76	P	Bed Boundary
8460.7266	BED	20.33	233.45	1	8.65	E	Bed Boundary
8461.0137	BED	23.28	243.1	1	8.76	E	Bed Boundary
8462.0938	BED	21.48	255.97	2	8.78	G	Bed Boundary
8466.6377	BED	25.22	239.52	1	8.68	E	Bed Boundary
8466.8506	BED	23.38	239.38	1	8.74	E	Bed Boundary
8467.0811	BED	21.72	239.23	1	8.82	E	Bed Boundary
8467.4033	BED	30.73	247.49	4	8.79	P	Bed Boundary
8467.7715	BED	24.39	245.64	3	8.6	F	Bed Boundary
8468.1494	BED	28.28	241.62	3	8.68	F	Bed Boundary
8469.5205	BED	26.02	255.95	1	8.64	E	Bed Boundary
8471.6377	BED	32.86	248.76	2	8.79	G	Bed Boundary
8472.0879	BED	20.73	232.87	2	8.87	G	Bed Boundary
8473.4619	BED	24.03	245.57	1	8.87	E	Bed Boundary
8475.3262	BED	25.72	260.59	3	9.01	F	Bed Boundary
8475.9443	BED	24.5	246.01	1	9.08	E	Bed Boundary
8476.0439	BED	26.27	246.15	1	9.1	E	Bed Boundary
8476.1631	BED	26.05	248.4	2	9.14	G	Bed Boundary
8479.6514	BED	16.52	224.46	1	9.2	E	Bed Boundary
8480.0508	BED	17.55	234.34	3	9.12	F	Bed Boundary
8481.7813	BED	18.94	245.23	1	8.93	E	Bed Boundary
8483.2617	BED	25.42	257.32	3	9.16	F	Bed Boundary
8485.0264	BED	35.38	270.34	2	8.99	G	Bed Boundary
8486.8809	BED	22.24	228.17	3	8.76	F	Bed Boundary
8487.7051	BED	21.04	247.19	2	8.66	G	Bed Boundary
8488.8174	FRAC	77.43	353.53	1	9.26	E	Induced Fracture
8491.5498	BED	15.04	243.47	1	8.86	E	Bed Boundary
8491.832	BED	27.97	244.74	1	8.82	E	Bed Boundary
8492.8252	BED	26.23	246.89	3	8.69	F	Bed Boundary
8493.1299	BED	24.78	239.7	3	8.83	F	Bed Boundary
8493.9688	BED	27.4	253.23	3	9.24	F	Bed Boundary
8494.3682	BED	25.37	249.79	3	9.24	F	Bed Boundary
8494.5615	BED	27.01	256.49	2	9.01	G	Bed Boundary
8496.6699	BED	22.9	230.21	3	8.8	F	Bed Boundary
8498.7559	BED	20	252.62	4	8.76	P	Bed Boundary
8498.9189	BED	18.78	250.53	4	8.76	P	Bed Boundary
8500.6309	BED	24.2	231.18	4	8.77	P	Bed Boundary
8500.9873	BED	27.12	244.73	3	8.7	F	Bed Boundary
8501.3682	BED	26.04	251.04	4	8.76	P	Bed Boundary
8502.7861	BED	21.47	242.73	3	8.84	F	Bed Boundary
8503.7949	BED	22.86	236.24	1	8.59	E	Bed Boundary
8504.0918	BED	24.77	242.31	4	8.64	P	Bed Boundary
8505.0693	BED	24.53	257.84	3	8.82	F	Bed Boundary
8505.5	BED	27.57	245.67	1	8.65	E	Bed Boundary
8505.8438	BED	26.03	243.53	3	8.7	F	Bed Boundary
8506.0498	BED	20.11	248.76	3	8.67	F	Bed Boundary
8506.2119	BED	25.14	242.12	4	8.68	P	Bed Boundary
8507.1992	BED	30.27	226.72	2	8.97	G	Bed Boundary
8509.3291	BED	36.16	270.38	2	8.71	G	Bed Boundary
8510.2373	BED	26.8	213.51	2	8.79	G	Bed Boundary
8510.4248	BED	31.08	220.93	2	8.78	G	Bed Boundary
8510.8125	BED	25.9	224.01	3	8.68	F	Bed Boundary
8511.6865	BED	29	249.87	3	8.79	F	Bed Boundary
8512.0615	BED	29.72	240.73	2	8.83	G	Bed Boundary
8512.2754	BED	23.95	247.35	2	8.85	G	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
8512.457	BED	27.5	243	2	8.87	G	Bed Boundary
8512.6064	BED	23.33	240.38	2	8.91	G	Bed Boundary
8512.8252	BED	25.33	237.8	1	8.99	E	Bed Boundary
8513.0068	BED	25.41	242.63	2	8.96	G	Bed Boundary
8513.1748	BED	28.24	245.72	2	8.9	G	Bed Boundary
8513.3564	BED	20.67	243.04	1	8.83	E	Bed Boundary
8513.5	BED	25.51	233.59	1	8.81	E	Bed Boundary
8514.8184	BED	22.2	238.29	1	8.67	E	Bed Boundary
8515.8418	BED	25.63	241.31	1	8.71	E	Bed Boundary
8515.9482	BED	23.5	240.89	1	8.71	E	Bed Boundary
8516.042	BED	23.78	238.98	1	8.73	E	Bed Boundary
8516.1924	BED	26.08	244.55	1	8.71	E	Bed Boundary
8516.4326	BED	25.32	248.56	1	8.61	E	Bed Boundary
8516.6074	BED	25.33	248.42	1	8.58	E	Bed Boundary
8516.751	BED	28.43	246.13	3	8.58	F	Bed Boundary
8516.9639	BED	23.95	239.99	3	8.55	F	Bed Boundary
8517.5381	BED	24.16	241.05	3	8.44	F	Bed Boundary
8517.8125	BED	28.45	245.52	1	8.48	E	Bed Boundary
8517.9502	BED	25.9	251.07	1	8.48	E	Bed Boundary
8518.2188	BED	25.05	242.13	1	8.44	E	Bed Boundary
8518.3809	BED	25.51	238.17	1	8.42	E	Bed Boundary
8518.7627	BED	26.76	246.76	1	8.49	E	Bed Boundary
8519.1055	BED	28.74	252.27	1	8.52	E	Bed Boundary
8519.2559	BED	27.37	251.88	2	8.57	G	Bed Boundary
8519.5615	BED	26.07	247.23	1	8.55	E	Bed Boundary
8519.8301	BED	28.51	252.57	1	8.57	E	Bed Boundary
8520.293	BED	20.39	259.75	2	8.65	G	Bed Boundary
8520.6045	BED	25.8	253.79	1	8.68	E	Bed Boundary
8520.7109	BED	28.77	257.99	2	8.69	G	Bed Boundary
8520.8232	BED	31.58	259.08	1	8.7	E	Bed Boundary
8520.917	BED	30.83	254.79	1	8.7	E	Bed Boundary
8520.9951	BED	26.91	250.76	1	8.71	E	Bed Boundary
8521.1143	BED	28.85	246.29	1	8.7	E	Bed Boundary
8521.2295	BED	29.88	245.92	1	8.69	E	Bed Boundary
8521.5889	BED	31.94	240.04	1	8.71	E	Bed Boundary
8521.8193	BED	32.8	248.09	2	8.59	G	Bed Boundary
8521.9883	FRAC	10.26	68.12	1	8.56	E	Partial Conductive Fracture
8522.0137	BED	29.27	244.21	2	8.55	G	Bed Boundary
8522.1387	BED	29.03	247.2	2	8.54	G	Bed Boundary
8522.3066	BED	30	256.47	3	8.54	F	Bed Boundary
8522.4883	BED	29.6	240.95	1	8.52	E	Bed Boundary
8522.6318	BED	29.01	243.88	1	8.5	E	Bed Boundary
8528.0361	BED	37.76	276.16	2	9.02	G	Bed Boundary
8530.1943	BED	32.06	251.65	4	8.87	P	Bed Boundary
8530.8955	BED	23.76	250.07	2	8.59	G	Bed Boundary
8531.0684	BED	27.49	249.5	3	8.56	F	Bed Boundary
8531.2246	BED	31.58	246.5	3	8.54	F	Bed Boundary
8531.3828	BED	29.83	237.77	2	8.53	G	Bed Boundary
8531.5762	BED	28.86	233	2	8.5	G	Bed Boundary
8535.3115	BED	20.59	222.56	2	8.62	G	Bed Boundary
8535.4238	BED	22.26	232.7	1	8.57	E	Bed Boundary
8535.7734	BED	21.83	247.34	1	8.49	E	Bed Boundary
8535.8926	BED	21.64	250.28	1	8.47	E	Bed Boundary
8535.998	BED	25.28	244.98	3	8.46	F	Bed Boundary
8536.1729	BED	30.76	250.64	2	8.49	G	Bed Boundary
8536.4229	BED	32.18	247.4	2	8.48	G	Bed Boundary
8536.5234	BED	32.02	248.99	3	8.47	F	Bed Boundary
8536.6484	BED	29.51	249.5	3	8.47	F	Bed Boundary
8539.3047	BED	31	232.24	3	8.7	F	Bed Boundary
8539.6172	BED	33.23	226.74	2	8.72	G	Bed Boundary
8540.2734	BED	31.25	246.15	1	8.65	E	Bed Boundary
8540.4121	BED	29.49	249.34	1	8.63	E	Bed Boundary
8540.7246	BED	25.41	244.95	1	8.6	E	Bed Boundary
8540.8496	BED	23.3	247.1	1	8.58	E	Bed Boundary
8541.1748	BED	28.57	244.86	1	8.55	E	Bed Boundary
8541.3369	BED	30.87	244.46	1	8.55	E	Bed Boundary
8541.918	BED	30.71	247.74	3	8.66	F	Bed Boundary
8542.7295	BED	30.16	240.2	2	8.7	G	Bed Boundary
8542.8926	BED	26.93	244.2	2	8.65	G	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
8543.2979	BED	30.37	253.48	4	8.55	P	Bed Boundary
8544.1035	BED	26.17	244.08	4	8.59	P	Bed Boundary
8544.8408	FRAC	87.97	110.07	1	8.71	E	Conductive Fracture
8544.8789	BED	24.99	233.17	4	8.69	P	Bed Boundary
8545.1973	BED	24.25	242.19	4	8.65	P	Bed Boundary
8545.3594	BED	25.87	240.85	4	8.65	P	Bed Boundary
8545.4785	BED	25.69	239.36	4	8.67	P	Bed Boundary
8545.6377	BED	23.49	226.6	2	8.68	G	Bed Boundary
8545.9375	BED	24.36	223.43	4	8.72	P	Bed Boundary
8546.3428	BED	24.1	226.06	3	8.65	F	Bed Boundary
8546.5117	BED	27.12	229.41	3	8.64	F	Bed Boundary
8546.7051	BED	23.25	233.1	3	8.62	F	Bed Boundary
8546.9619	BED	28.67	246	4	8.58	P	Bed Boundary
8547.5811	BED	30.16	226.76	2	8.56	G	Bed Boundary
8547.7188	BED	29.36	229.31	2	8.55	G	Bed Boundary
8547.8184	FRAC	59.31	306.2	1	8.53	E	Partial Conductive Fracture
8548.001	BED	26.55	224.32	1	8.54	E	Bed Boundary
8548.1816	BED	27.21	228.98	1	8.62	E	Bed Boundary
8548.5195	BED	30.78	236.98	1	8.64	E	Bed Boundary
8548.7627	BED	29.05	238.06	2	8.59	G	Bed Boundary
8548.9375	BED	30.53	233.85	3	8.59	F	Bed Boundary
8549.1006	BED	27.94	235.24	2	8.59	G	Bed Boundary
8549.9063	BED	33.23	239.29	2	8.8	G	Bed Boundary
8551.3984	BED	29.45	235.04	1	8.99	E	Bed Boundary
8551.6689	BED	29.6	244.76	1	8.83	E	Bed Boundary
8551.9121	BED	30.93	235.66	1	8.75	E	Bed Boundary
8552.0498	BED	29.49	238.32	1	8.72	E	Bed Boundary
8552.2793	BED	39.04	225.85	3	8.58	F	Bed Boundary
8553.3428	BED	32.73	232.5	1	8.45	E	Bed Boundary
8553.4863	BED	31.82	233.39	1	8.44	E	Bed Boundary
8553.6357	BED	30.61	240.06	2	8.44	G	Bed Boundary
8553.7676	BED	29.87	237.29	2	8.45	G	Bed Boundary
8553.8984	BED	31.5	240.44	2	8.46	G	Bed Boundary
8553.998	BED	32.6	240.43	1	8.47	E	Bed Boundary
8554.2012	BED	30.68	231.61	1	8.47	E	Bed Boundary
8554.4355	BED	23.43	235.66	3	8.49	F	Bed Boundary
8554.9824	BED	10.95	256.31	4	8.56	P	Bed Boundary
8556.4346	BED	30.56	236.49	3	8.64	F	Bed Boundary
8556.5752	BED	28.06	236.62	3	8.69	F	Bed Boundary
8557.125	BED	31.95	242.7	4	8.73	P	Bed Boundary
8557.3115	BED	31.95	238.14	2	8.67	G	Bed Boundary
8557.5508	BED	30.65	233.43	1	8.59	E	Bed Boundary
8557.7627	BED	28.32	232.89	2	8.53	G	Bed Boundary
8557.874	BED	31.52	238.85	2	8.51	G	Bed Boundary
8557.9688	BED	30.5	237.33	2	8.5	G	Bed Boundary
8558.1123	BED	31.33	235.88	3	8.5	F	Bed Boundary
8558.2881	BED	28.88	235.76	3	8.49	F	Bed Boundary
8558.5947	BED	30.01	235.49	3	8.46	F	Bed Boundary
8559.001	BED	30.65	235.79	1	8.45	E	Bed Boundary
8559.3633	BED	34.93	230.91	3	8.51	F	Bed Boundary
8559.6123	BED	41.91	227.73	1	8.52	E	Bed Boundary
8559.7793	BED	45.74	228.81	3	8.56	F	Bed Boundary
8560.0439	BED	32	235.39	3	8.69	F	Bed Boundary
8560.3564	BED	28.85	237.97	3	8.72	F	Bed Boundary
8560.5	BED	30.2	235.09	1	8.72	E	Bed Boundary
8560.5996	BED	25.61	244.06	1	8.74	E	Bed Boundary
8561.3555	BED	33.65	228.77	2	8.81	G	Bed Boundary
8563.1016	BED	29.1	249.84	2	8.54	G	Bed Boundary
8563.3887	BED	26.05	246.76	2	8.58	G	Bed Boundary
8563.5449	BED	29.99	245.11	2	8.63	G	Bed Boundary
8564.207	BED	30.47	246.64	1	8.71	E	Bed Boundary
8564.5752	BED	26.08	241.55	1	8.63	E	Bed Boundary
8564.7783	BED	31.27	249.31	2	8.61	G	Bed Boundary
8564.9189	BED	32.46	256.63	1	8.61	E	Bed Boundary
8565.6748	BED	76.2	254.3	1	8.67	E	Bed Boundary
8566.6992	BED	22.72	208.31	1	8.79	E	Bed Boundary
8567.0928	BED	23.89	196.64	1	8.89	E	Bed Boundary
8568.3545	BED	18.84	248.05	2	8.91	G	Bed Boundary
8568.9512	BED	24.01	244.12	1	8.95	E	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
8569.4072	BED	26.33	236.14	1	8.98	E	Bed Boundary
8571.0498	BED	61.68	254.81	2	8.92	G	Bed Boundary
8573.458	BED	27.59	241.1	2	9.18	G	Bed Boundary
8573.832	BED	21.67	233.31	1	9.09	E	Bed Boundary
8574.0449	BED	23.89	228.95	2	9.08	G	Bed Boundary
8574.8008	BED	19.4	217.88	3	9.12	F	Bed Boundary
8576.0742	BED	24.52	223.88	1	9.07	E	Bed Boundary
8576.5811	BED	27.2	226.37	1	8.89	E	Bed Boundary
8576.6992	BED	24.62	232.56	2	8.9	G	Bed Boundary
8576.8369	BED	25.35	230.84	1	8.9	E	Bed Boundary
8576.918	BED	23.08	226.29	1	8.89	E	Bed Boundary
8577.2617	BED	27.59	232.04	1	8.81	E	Bed Boundary
8577.4678	BED	23.96	232.55	1	8.8	E	Bed Boundary
8577.6426	BED	24.73	233.86	3	8.79	F	Bed Boundary
8577.8047	BED	28.76	233.4	2	8.79	G	Bed Boundary
8577.9863	BED	26.94	233.45	1	8.81	E	Bed Boundary
8578.292	BED	24.85	228.85	3	8.78	F	Bed Boundary
8578.542	BED	25.01	227.03	1	8.77	E	Bed Boundary
8578.6729	BED	28.13	231.68	2	8.78	G	Bed Boundary
8578.8135	BED	26.87	227.25	1	8.81	E	Bed Boundary
8579.3262	BED	26.6	213.92	1	8.97	E	Bed Boundary
8579.582	BED	27.31	223.13	1	9.13	E	Bed Boundary
8579.6943	BED	26.68	219.27	1	9.22	E	Bed Boundary
8580.1377	BED	28.17	215.72	1	9.21	E	Bed Boundary
8580.4873	BED	27.63	230.26	2	9.13	G	Bed Boundary
8580.8809	BED	26.41	225.7	1	9.14	E	Bed Boundary
8581.2744	BED	24.2	219.62	1	9.14	E	Bed Boundary
8581.3936	BED	25.22	218.51	1	9.15	E	Bed Boundary
8581.874	BED	26.22	218.37	2	9.11	G	Bed Boundary
8582.293	BED	27.64	226.59	1	8.95	E	Bed Boundary
8582.6113	BED	21.99	228.5	2	8.92	G	Bed Boundary
8582.9297	BED	26.41	231.74	2	8.81	G	Bed Boundary
8583.5322	BED	29.19	231.23	1	8.66	E	Bed Boundary
8583.6602	BED	26.64	232.58	1	8.6	E	Bed Boundary
8583.957	BED	31.45	230.24	2	8.6	G	Bed Boundary
8584.1914	BED	27.38	229.95	2	8.73	G	Bed Boundary
8584.9063	BED	24.63	237.92	1	9.34	E	Bed Boundary
8586.1055	BED	25.73	232.16	2	9.2	G	Bed Boundary
8586.4424	BED	28.72	228.64	1	9.06	E	Bed Boundary
8586.6553	BED	29.04	229.55	1	8.89	E	Bed Boundary
8587.1299	BED	43.19	236.76	2	8.64	G	Bed Boundary
8587.5234	BED	43.99	204.08	3	8.49	F	Bed Boundary
8587.9697	BED	30.64	217.58	1	8.46	E	Bed Boundary
8588.1445	BED	24.39	224.48	2	8.51	G	Bed Boundary
8588.3945	BED	27.82	225.59	1	8.67	E	Bed Boundary
8590.9111	BED	20.78	232.25	1	8.65	E	Bed Boundary
8591.2236	BED	21.01	219.92	1	8.56	E	Bed Boundary
8592.0645	BED	16.8	204.09	1	8.68	E	Bed Boundary
8596.8672	BED	10.26	136.63	1	8.69	E	Bed Boundary
8597.0859	BED	8.57	146.5	1	8.72	E	Bed Boundary
8597.3672	BED	9.1	181.3	3	8.68	F	Bed Boundary
8597.8477	BED	18.5	213.16	2	8.52	G	Bed Boundary
8598.4414	BED	20.03	222.93	2	8.57	G	Bed Boundary
8599.3936	BED	26.27	228.9	1	8.69	E	Bed Boundary
8599.5752	BED	25.25	230.78	1	8.69	E	Bed Boundary
8599.8184	BED	26.6	230.56	1	8.68	E	Bed Boundary
8601.7549	BED	28.9	266.49	2	8.59	G	Bed Boundary
8601.8672	BED	30.29	265.89	2	8.64	G	Bed Boundary
8601.9443	BED	29.26	268.5	2	8.65	G	Bed Boundary
8603.7725	BED	19.74	287.69	4	8.65	P	Bed Boundary
8605.5547	BED	10.71	334.26	4	8.55	P	Bed Boundary
8606.2129	BED	26.98	323.78	2	8.49	G	Bed Boundary
8610.0918	BED	24.27	252.07	4	8.62	P	Bed Boundary
8610.8613	BED	22.52	237	3	8.58	F	Bed Boundary
8611.0791	BED	21.74	241.87	1	8.56	E	Bed Boundary
8611.2373	BED	18.18	249.86	3	8.49	F	Bed Boundary
8611.3701	BED	20.39	243.02	1	8.52	E	Bed Boundary
8611.7666	BED	19.05	239.7	1	8.64	E	Bed Boundary
8611.96	BED	25.99	240.57	2	8.67	G	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
8612.1104	BED	28.47	238.52	4	8.74	P	Bed Boundary
8612.3457	BED	18.92	236.7	1	8.76	E	Bed Boundary
8612.4619	BED	22.09	231.06	1	8.73	E	Bed Boundary
8612.8789	BED	26.99	232.24	1	8.62	E	Bed Boundary
8613.0537	BED	24.67	241.54	3	8.59	F	Bed Boundary
8613.1455	BED	25.18	235.52	3	8.58	F	Bed Boundary
8613.5684	BED	27.46	237.75	3	8.48	F	Bed Boundary
8614.4873	BED	20.04	250.78	3	8.6	F	Bed Boundary
8614.7988	BED	22.06	237.74	3	8.62	F	Bed Boundary
8615.5303	BED	25.82	245.3	1	8.41	E	Bed Boundary
8615.873	BED	26.03	235.96	1	8.39	E	Bed Boundary
8618.1035	BED	28.16	246.69	3	8.78	F	Bed Boundary
8618.4277	BED	25.32	237.62	3	8.7	F	Bed Boundary
8618.708	BED	22.33	237.48	1	8.61	E	Bed Boundary
8619.4365	BED	30.9	243.64	3	8.56	F	Bed Boundary
8620.0693	BED	23.98	226.2	1	8.65	E	Bed Boundary
8620.1445	BED	25.55	223.05	2	8.66	G	Bed Boundary
8620.3262	BED	26.25	221.71	1	8.64	E	Bed Boundary
8620.7803	BED	31.84	251.44	4	8.66	P	Bed Boundary
8621.0068	BED	33.89	254.17	2	8.62	G	Bed Boundary
8621.4043	BED	30.39	254.72	3	8.6	F	Bed Boundary
8621.9248	BED	30.06	237.14	4	8.74	P	Bed Boundary
8622.7285	BED	26.17	224.11	1	8.73	E	Bed Boundary
8623.0459	BED	24.45	229.73	3	8.77	F	Bed Boundary
8623.2441	BED	27.49	237.16	3	8.76	F	Bed Boundary
8623.3877	BED	26.93	225.36	3	8.75	F	Bed Boundary
8623.6621	BED	24.86	227.96	3	8.75	F	Bed Boundary
8624.4004	BED	26.54	222.82	1	8.86	E	Bed Boundary
8624.5869	BED	23.89	225.4	1	8.88	E	Bed Boundary
8624.7871	BED	23.96	232.47	2	8.9	G	Bed Boundary
8625.0059	BED	24.34	229.14	2	8.94	G	Bed Boundary
8625.1182	BED	21.15	225.01	2	8.94	G	Bed Boundary
8625.3369	BED	22.39	221.12	2	8.92	G	Bed Boundary
8625.6377	BED	24.3	225.93	2	8.86	G	Bed Boundary
8625.7627	BED	23.31	227.27	3	8.84	F	Bed Boundary
8626.0361	BED	23.9	232.19	3	8.84	F	Bed Boundary
8626.1543	BED	24.58	235.67	3	8.84	F	Bed Boundary
8626.2539	BED	24.1	236.21	3	8.84	F	Bed Boundary
8626.3701	BED	22.58	228.93	3	8.83	F	Bed Boundary
8626.5371	BED	24.82	239.97	3	8.8	F	Bed Boundary
8626.7549	BED	23.16	239.61	1	8.75	E	Bed Boundary
8626.8857	BED	25.01	234.64	3	8.71	F	Bed Boundary
8630.8125	FRAC	15	8.35	1	8.78	E	Conductive Fracture
8631.6563	FRAC	20.91	28.3	1	8.74	E	Conductive Fracture
8632.4053	FRAC	70.95	319.2	1	8.74	E	Conductive Fracture
8633.2744	FRAC	72.5	302.15	1	8.79	E	Induced Fracture
8633.4326	FRAC	76.92	294.42	1	8.83	E	Induced Fracture
8633.6006	FRAC	68.13	304.74	1	8.85	E	Induced Fracture
8633.8887	FRAC	71.9	306.2	1	8.87	E	Induced Fracture
8634.8564	FRAC	76.3	323.71	1	8.95	E	Induced Fracture
8635.4434	FRAC	70.33	321.47	1	8.9	E	Induced Fracture
8636.2754	FRAC	70.48	327.72	1	9	E	Induced Fracture
8636.6865	FRAC	85.09	316.4	1	8.97	E	Induced Fracture
8636.9688	FRAC	73.17	332.25	1	8.95	E	Induced Fracture
8637.75	FRAC	76.82	324.33	1	8.88	E	Induced Fracture
8638.1436	BED	25.36	245.71	1	8.82	E	Bed Boundary
8638.2559	BED	26.02	248.41	1	8.77	E	Bed Boundary
8638.4678	BED	27.78	248.65	2	8.77	G	Bed Boundary
8638.7178	BED	31.25	238.79	3	8.73	F	Bed Boundary
8639.2236	FRAC	74.99	319.23	1	8.58	E	Induced Fracture
8639.8076	BED	35.2	271.46	3	8.35	F	Bed Boundary
8641.5381	FRAC	77.64	319.13	1	8.29	E	Induced Fracture
8642.8682	FRAC	81.86	318.95	1	8.46	E	Induced Fracture
8643.6738	FRAC	71.1	297.43	1	8.37	E	Induced Fracture
8644.249	FRAC	73.8	323.64	1	8.48	E	Induced Fracture
8646.6133	BED	29.11	231.52	2	8.76	G	Bed Boundary
8650.6016	BED	22.96	250.18	1	8.7	E	Bed Boundary
8655.3232	BED	25.14	242.52	2	8.9	G	Bed Boundary
8656.2842	BED	32.97	257.74	3	8.87	F	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
8657.5996	BED	30.37	238.42	4	8.66	P	Bed Boundary
8668.6826	BED	31.31	294.76	3	9.27	F	Bed Boundary
8681.3896	BED	43.03	221.76	2	8.84	G	Bed Boundary
8688.5117	FRAC	88.23	18	1	9.2	E	Borehole Breakout
8694.2129	BED	37.05	267.32	3	8.96	F	Bed Boundary
8696.6895	BED	34.16	259.75	3	8.89	F	Bed Boundary
8697.8076	BED	35.53	269.64	4	9.13	P	Bed Boundary
8706.0713	BED	35.66	269.7	3	8.96	F	Bed Boundary
8711.4717	FRAC	83.89	187.29	1	8.94	E	Borehole Breakout
8718.0645	FRAC	87.14	205.07	1	8.93	E	Borehole Breakout
8737.3643	BED	33.94	195.35	1	8.65	E	Bed Boundary
8743.166	BED	29.09	213.49	1	8.36	E	Bed Boundary
8751.9131	BED	31.17	265.44	3	8.11	F	Bed Boundary
8753.2471	BED	44.27	252.03	3	8.15	F	Bed Boundary
8755.4961	BED	23.91	214.57	4	8	P	Bed Boundary
8762.4883	BED	45.32	258.18	3	8.13	F	Bed Boundary
8773.1777	BED	37.07	250.26	4	8.04	P	Bed Boundary
8783.5146	FRAC	87.54	128.95	1	7.85	E	Induced Fracture
8785.9326	FRAC	76.04	316.83	1	8.05	E	Induced Fracture
8789.2578	BED	38.57	249.52	4	8.06	P	Bed Boundary
8796.9688	FRAC	88.07	134.53	1	8.19	E	Induced Fracture
8797.9561	FRAC	89.97	322.2	1	8.15	E	Induced Fracture
8802.4688	FRAC	86.7	153.91	1	8.77	E	Induced Fracture
8804.4551	FRAC	80.37	346.31	1	8.18	E	Induced Fracture
8809.5996	FRAC	86.88	156.22	1	8.03	E	Induced Fracture
8823.1006	FRAC	78.18	338.76	1	8.28	E	Induced Fracture
8825.3887	FRAC	71.09	344.03	1	8.44	E	Induced Fracture
8827.876	FRAC	82.36	319.44	1	8.11	E	Induced Fracture
8832.4131	BED	27.9	199.73	3	8.01	F	Bed Boundary
8832.8525	BED	29.33	205.52	3	8.13	F	Bed Boundary
8836.2764	FRAC	88.47	347.33	1	8.13	E	Induced Fracture
8840.7803	FRAC	83.98	353.08	1	8.13	E	Induced Fracture
8846.7129	BED	25.97	217.83	1	7.91	E	Bed Boundary
8847.3623	BED	31.63	228.78	3	7.97	F	Bed Boundary
8855.8887	BED	21.24	208.57	1	8.18	E	Bed Boundary
8856.6318	BED	29.93	218.31	1	8.21	E	Bed Boundary
8859.8076	FRAC	72.22	6.09	1	8.02	E	Induced Fracture
8863.8066	BED	15.35	230.18	3	8.14	F	Bed Boundary
8871.5576	BED	12.99	258.97	4	8.03	P	Bed Boundary
8876.6143	BED	26.96	208.57	4	8.19	P	Bed Boundary
8911.5195	BED	58.26	324.27	4	8.35	P	Bed Boundary
8912.4209	BED	46.05	324.94	1	8.39	E	Bed Boundary
8913.333	BED	43.93	272.44	3	7.81	F	Bed Boundary
8920.6436	BED	62.11	238.23	4	7.3	P	Bed Boundary
8923.0518	BED	45.88	241.52	3	8.04	F	Bed Boundary
8923.3135	BED	42.47	245.73	3	7.97	F	Bed Boundary
8927.9893	BED	27.57	225.65	3	8.66	F	Bed Boundary
8935.2627	BED	29.93	240.49	2	8.24	G	Bed Boundary
8936.0654	BED	28.58	215.01	2	8.16	G	Bed Boundary
8940.1631	BED	22.73	203.15	2	8.23	G	Bed Boundary
8940.5283	BED	28.56	202.08	2	8.23	G	Bed Boundary
8941.2773	BED	27.67	210.68	3	8.26	F	Bed Boundary
8941.8496	BED	23.92	219.94	4	8.26	P	Bed Boundary
8944.0576	BED	22.59	244.87	3	7.77	F	Bed Boundary
8944.7568	BED	31.3	245.34	3	7.32	F	Bed Boundary
8945.1748	BED	33.45	254.78	3	7.12	F	Bed Boundary
8950.9873	BED	28.33	256.25	4	7.47	P	Bed Boundary
8954.9727	BED	18.7	209.57	2	7.7	G	Bed Boundary
8955.2783	BED	22.94	214.75	2	7.8	G	Bed Boundary
8956.4834	BED	29.65	196.24	2	7.67	G	Bed Boundary
8963.7139	BED	28.18	228.72	1	8.14	E	Bed Boundary
8964.3135	BED	20.99	214.07	3	8	F	Bed Boundary
8967.4961	BED	26.87	224.33	1	7.94	E	Bed Boundary
8970.6748	BED	23.19	24.28	4	7.8	P	Bed Boundary
8976.1719	BED	28.4	192.54	1	7.88	E	Bed Boundary
8979.1133	BED	31.25	216.52	1	7.58	E	Bed Boundary
8982.9268	BED	34.5	219.82	3	7.57	F	Bed Boundary
8983.6016	BED	14.08	184.6	2	7.33	G	Bed Boundary
8986.2275	BED	27	223.13	1	7.73	E	Bed Boundary

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8991.5273	BED	31.7	237.46	3	8.04	F	Bed Boundary
8992.9766	BED	25.36	233.5	1	8.15	E	Bed Boundary
8996.79	BED	32.48	218.81	1	8.15	E	Bed Boundary
8996.9521	BED	38.13	224.96	1	8.13	E	Bed Boundary
8997.1338	BED	37.64	223.54	1	8.15	E	Bed Boundary
8999.0068	BED	34.43	223.23	1	8.35	E	Bed Boundary
8999.2881	BED	25.45	232.13	1	8.33	E	Bed Boundary
9000.4063	BED	35.39	225.1	2	8.38	G	Bed Boundary
9000.6807	BED	30.48	226.77	3	8.45	F	Bed Boundary
9000.9619	BED	34.89	229.28	3	8.58	F	Bed Boundary
9001.584	BED	30.92	233.15	2	8.55	G	Bed Boundary
9001.7148	BED	28.63	240.17	2	8.5	G	Bed Boundary
9001.7988	BED	29.75	238.46	3	8.46	F	Bed Boundary
9001.9023	BED	31.48	239.89	3	8.47	F	Bed Boundary
9002.0645	BED	29.9	239.88	4	8.47	P	Bed Boundary
9002.1836	BED	27.44	233.98	2	8.45	G	Bed Boundary
9002.6016	BED	30.38	239.54	3	8.37	F	Bed Boundary
9002.8018	BED	33.73	231.83	4	8.34	P	Bed Boundary
9003.0703	BED	28.42	239.72	4	8.35	P	Bed Boundary
9003.2705	BED	30.25	235.15	4	8.38	P	Bed Boundary
9003.7822	BED	32.21	235.54	3	8.38	F	Bed Boundary
9004.1445	BED	28.92	236.35	2	8.32	G	Bed Boundary
9013.2871	BED	29.98	209.48	1	7.85	E	Bed Boundary
9015.915	BED	24.07	239.37	1	8.08	E	Bed Boundary
9018.6885	BED	34.77	216.59	2	8.62	G	Bed Boundary
9022.1396	BED	29.05	234.65	1	8.5	E	Bed Boundary
9022.3018	BED	29.42	234.11	1	8.41	E	Bed Boundary
9036.2539	BED	26.81	215.74	1	7.7	E	Bed Boundary
9038.5947	BED	35.43	218.13	2	8.52	G	Bed Boundary
9039.2881	BED	36.24	219.41	2	8.43	G	Bed Boundary
9042.6621	BED	14.8	265.42	1	8.65	E	Bed Boundary
9043.6084	BED	18.48	236.22	1	8.53	E	Bed Boundary
9044.126	BED	31.39	233.98	3	8.54	F	Bed Boundary
9044.3447	BED	34.04	238.85	3	8.47	F	Bed Boundary
9050.5195	BED	19.08	235.66	4	8.56	P	Bed Boundary
9050.9443	BED	24.82	226.65	4	8.31	P	Bed Boundary
9051.1875	BED	25.85	228.53	3	8.34	F	Bed Boundary
9051.8564	BED	29.97	228.61	3	8.26	F	Bed Boundary
9052.2744	BED	38.08	226.69	3	8.31	F	Bed Boundary
9053.0713	BED	36.08	241.33	2	8.48	G	Bed Boundary
9053.2773	BED	38.36	242.22	2	8.34	G	Bed Boundary
9053.7646	BED	20.54	233.51	1	8.43	E	Bed Boundary
9054.3447	BED	17.7	211.27	2	8.34	G	Bed Boundary
9054.6514	BED	27.19	230.36	1	8.34	E	Bed Boundary
9063.7627	BED	20.97	195.99	1	8.62	E	Bed Boundary
9064.9697	BED	30.77	216.93	1	8.75	E	Bed Boundary
9066.2061	BED	24.6	290.6	2	8.89	G	Bed Boundary
9067.1309	BED	42.37	237.5	3	8.85	F	Bed Boundary
9067.6465	BED	28.05	225.95	1	8.92	E	Bed Boundary
9068.6582	BED	17.82	254.54	1	9.04	E	Bed Boundary
9069.8389	BED	18.74	249.3	2	8.8	G	Bed Boundary
9070.6885	BED	26.19	241.99	1	8.63	E	Bed Boundary
9071.0439	BED	25.39	233.74	1	8.6	E	Bed Boundary
9071.8096	BED	27.02	246.23	1	8.49	E	Bed Boundary
9072.2842	BED	22.44	262.24	1	8.5	E	Bed Boundary
9075.2256	BED	28.57	232.6	1	8.79	E	Bed Boundary
9077.1152	BED	30.56	236.59	3	8.6	F	Bed Boundary
9077.54	BED	27.09	235.15	2	8.64	G	Bed Boundary
9078.3457	FRAC	84.56	287.68	1	8.65	E	Fault
9081.1943	BED	30.39	206.94	4	8.48	P	Bed Boundary
9082.6758	BED	26.08	214.38	2	8.73	G	Bed Boundary
9082.9883	BED	28.01	212.52	1	8.67	E	Bed Boundary
9083.2324	BED	24.22	219.49	2	8.63	G	Bed Boundary
9084.6621	FRAC	71.76	323.8	1	8.63	E	Induced Fracture
9086.9688	BED	31.39	224.98	4	8.51	P	Bed Boundary
9089.4277	BED	21.84	194.38	2	8.56	G	Bed Boundary
9093.2119	BED	46.22	248.11	3	8.76	F	Bed Boundary
9096.9873	BED	32.7	208.65	1	8.48	E	Bed Boundary
9099.9902	BED	27.98	257.42	2	8.68	G	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
9104.4746	FRAC	86.86	73.18	1	8.94	E	Conductive Fracture
9105.3496	BED	14.08	230.64	2	8.69	G	Bed Boundary
9106.1211	BED	22.44	242.06	1	8.79	E	Bed Boundary
9106.5957	BED	32.56	242.38	2	8.77	G	Bed Boundary
9109.0254	BED	33.75	223.75	2	8.93	G	Bed Boundary
9110.627	BED	36.81	249.83	2	8.6	G	Bed Boundary
9114.3125	FRAC	76.73	116.98	1	9.07	E	Induced Fracture
9114.9121	BED	43.21	251.34	2	9.26	G	Bed Boundary
9115.6992	BED	29.87	233.32	2	8.9	G	Bed Boundary
9116.2803	BED	32.85	225.55	3	8.69	F	Bed Boundary
9116.5703	BED	22.96	228.48	1	8.65	E	Bed Boundary
9116.8018	BED	23.58	226.74	1	8.67	E	Bed Boundary
9116.9639	BED	24.9	233.31	1	8.74	E	Bed Boundary
9119.0195	BED	35.12	242.05	2	8.61	G	Bed Boundary
9119.7588	BED	30.36	241.89	3	8.93	F	Bed Boundary
9120.8428	BED	37.42	244.24	3	8.54	F	Bed Boundary
9123.2012	BED	39.57	250.47	3	8.73	F	Bed Boundary
9126.6895	BED	39.66	229.46	3	8.59	F	Bed Boundary
9132.7695	BED	20.45	201.86	1	8.46	E	Bed Boundary
9133.5293	BED	25.59	220.47	3	8.67	F	Bed Boundary
9133.6455	BED	23.4	224.46	1	8.71	E	Bed Boundary
9137.8584	BED	30.21	243.84	1	8.72	E	Bed Boundary
9138.1523	BED	29.13	244.07	1	8.63	E	Bed Boundary
9139.376	FRAC	76.56	115.19	1	8.71	E	Resistive Fracture
9139.501	BED	15.55	230.77	2	8.69	G	Bed Boundary
9140.0576	BED	17.86	236.57	2	8.57	G	Bed Boundary
9140.1006	FRAC	79.1	122.88	1	8.58	E	Resistive Fracture
9140.5967	BED	29.12	204.15	3	8.57	F	Bed Boundary
9140.626	FRAC	83.83	126.88	1	8.57	E	Resistive Fracture
9141.0498	FRAC	78.97	98.07	1	8.57	E	Resistive Fracture
9141.1143	BED	22.99	213.5	3	8.57	F	Bed Boundary
9141.4082	BED	21.65	217.58	3	8.7	F	Bed Boundary
9141.7705	BED	18.08	229.52	3	8.69	F	Bed Boundary
9141.9141	BED	20.87	227.58	3	8.78	F	Bed Boundary
9141.9502	FRAC	75.18	94.75	1	8.8	E	Resistive Fracture
9142.3369	FRAC	77.43	89.26	1	8.7	E	Resistive Fracture
9142.9131	BED	18.28	241.43	3	8.59	F	Bed Boundary
9143.0508	BED	13.95	241.16	3	8.6	F	Bed Boundary
9143.1611	FRAC	80.35	89.34	1	8.6	E	Resistive Fracture
9143.2754	BED	27.67	233.16	2	8.61	G	Bed Boundary
9143.4629	BED	25.89	236.89	2	8.6	G	Bed Boundary
9143.7676	BED	35.98	240.72	2	8.56	G	Bed Boundary
9143.8047	FRAC	81.35	97.29	1	8.57	E	Resistive Fracture
9146.3828	BED	32.19	238.47	2	8.33	G	Bed Boundary
9147.5703	BED	15.33	224.71	1	7.95	E	Bed Boundary
9149.2881	BED	41.33	226.04	3	8.23	F	Bed Boundary
9149.8438	BED	41.47	238.56	3	8.56	F	Bed Boundary
9151.002	BED	14.71	207.73	1	8.32	E	Bed Boundary
9151.1143	BED	15.6	210.19	3	8.32	F	Bed Boundary
9152.2197	BED	21.97	227.36	1	8.13	E	Bed Boundary
9152.3623	BED	14.37	239.86	2	8.06	G	Bed Boundary
9153.0703	BED	26.53	215.07	2	8.29	G	Bed Boundary
9153.2793	BED	19.27	235.07	2	8.31	G	Bed Boundary
9153.4541	BED	21.07	243.51	2	8.29	G	Bed Boundary
9153.5791	BED	23.49	233.41	2	8.29	G	Bed Boundary
9153.7451	BED	23.97	220.56	2	8.27	G	Bed Boundary
9153.9121	BED	25.53	222.83	1	8.2	E	Bed Boundary
9156.0986	BED	27.47	230.16	3	8.52	F	Bed Boundary
9156.5488	BED	30.5	239.06	3	8.48	F	Bed Boundary
9288.3389	BED	14.16	229.48	4	7.5	P	Bed Boundary
9288.7197	BED	19.15	208.61	4	7.49	P	Bed Boundary
9288.8818	BED	19.96	221.42	4	7.48	P	Bed Boundary
9289.0254	BED	15.85	229.45	4	7.48	P	Bed Boundary
9289.9688	BED	24.44	212.3	4	7.43	P	Bed Boundary
9290.2373	BED	24.6	225.03	4	7.45	P	Bed Boundary
9293.4609	BED	21.6	213.53	4	7.54	P	Bed Boundary
9295.3223	BED	31.18	274.15	4	7.53	P	Bed Boundary
9295.4971	BED	30.39	272.78	4	7.55	P	Bed Boundary
9298.3633	BED	28.55	247.96	4	7.81	P	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
9304.3662	BED	15.95	264.16	4	7.86	P	Bed Boundary
9309.5186	BED	20.03	193.53	4	7.88	P	Bed Boundary
9310.8145	BED	22.1	242.47	4	7.73	P	Bed Boundary
9310.9707	BED	13.01	251.58	4	7.72	P	Bed Boundary
9311.3701	BED	20.42	217.37	4	7.74	P	Bed Boundary
9315.9326	BED	32.64	216.66	4	7.88	P	Bed Boundary
9316.2266	BED	27.49	207.81	4	7.73	P	Bed Boundary
9316.4893	BED	29.1	199.86	4	7.81	P	Bed Boundary
9319.4063	BED	22.14	204.01	4	7.88	P	Bed Boundary
9319.793	BED	25.85	207.63	4	7.87	P	Bed Boundary
9345.8076	FRAC	70.28	335.38	1	8.2	E	Induced Fracture
9349.0283	FRAC	68.74	344.76	1	8.15	E	Induced Fracture
9351.6885	FRAC	87.46	337.81	1	8.18	E	Induced Fracture
9361.6621	BED	62.36	329.23	4	8.28	P	Bed Boundary
9362.083	BED	63.98	322.66	4	8.27	P	Bed Boundary
9362.4521	BED	59.32	325.05	4	8.25	P	Bed Boundary
9362.7393	BED	50.62	325.41	4	8.26	P	Bed Boundary
9363.002	BED	58.28	322.29	4	8.29	P	Bed Boundary
9363.3135	BED	54.97	309.72	4	8.31	P	Bed Boundary
9363.6074	BED	44.28	298.76	4	8.29	P	Bed Boundary
9363.7334	BED	43.18	296.05	4	8.27	P	Bed Boundary
9363.9014	BED	42.72	303.57	4	8.26	P	Bed Boundary
9364.0576	BED	44.48	320.26	4	8.26	P	Bed Boundary
9364.5947	BED	36.47	327.98	4	8.29	P	Bed Boundary
9364.7881	BED	35.17	338.27	4	8.31	P	Bed Boundary
9365.207	BED	50.96	335.1	4	8.31	P	Bed Boundary
9365.7813	BED	65.66	324.77	4	8.32	P	Bed Boundary
9371.8438	FRAC	71.28	137.77	1	8.38	E	Induced Fracture
9384.3018	BED	30.76	277.49	1	8.56	E	Bed Boundary
9385.96	BED	47.52	228.24	3	8.25	F	Bed Boundary
9386.7529	BED	11.01	265.84	2	8.27	G	Bed Boundary
9406.7783	BED	19.67	250.64	4	8.26	P	Bed Boundary
9407.1094	BED	12.12	260.06	3	8.27	F	Bed Boundary
9407.2969	BED	13.37	317.68	4	8.25	P	Bed Boundary
9407.4785	BED	19.69	310.26	3	8.24	F	Bed Boundary
9407.665	BED	15.84	292.22	4	8.22	P	Bed Boundary
9407.8965	BED	22.53	231.36	2	8.21	G	Bed Boundary
9408.1094	BED	23.12	209.63	2	8.22	G	Bed Boundary
9408.3271	BED	28.14	206.64	4	8.23	P	Bed Boundary
9408.459	BED	32.97	217.2	2	8.25	G	Bed Boundary
9422.6875	BED	35.17	272.26	4	8.38	P	Bed Boundary
9423.4775	BED	35.32	279.65	4	8.33	P	Bed Boundary
9425.6514	BED	34.4	262.45	4	8.25	P	Bed Boundary
9448.0586	BED	17.02	197.57	1	8.31	E	Bed Boundary
9449.6709	BED	44.14	204.74	4	8.37	P	Bed Boundary
9451.1504	BED	66.13	211.69	4	8.23	P	Bed Boundary
9459.252	BED	33.31	228.28	1	8.23	E	Bed Boundary
9461.0137	BED	14.09	208.52	4	8.3	P	Bed Boundary
9467.7402	BED	35.72	280.89	1	8.37	E	Bed Boundary
9468.3525	BED	33.5	280.25	1	8.35	E	Bed Boundary
9473.3584	BED	13.85	203.39	4	8.22	P	Bed Boundary
9473.9648	BED	24.76	112.21	4	8.25	P	Bed Boundary
9475.1074	BED	39.28	159.23	4	8.25	P	Bed Boundary
9475.7139	BED	13.82	193.95	4	8.15	P	Bed Boundary
9478.9834	BED	28.89	170.05	4	8.13	P	Bed Boundary
9488.0898	BED	10.91	105.82	3	8.18	F	Bed Boundary
9488.3711	BED	5.91	145.54	4	8.16	P	Bed Boundary
9490.4199	BED	13.62	176.09	4	8.3	P	Bed Boundary
9497.8662	BED	23.17	267.94	4	7.84	P	Bed Boundary
9499.665	BED	8.34	219.33	4	7.9	P	Bed Boundary
9499.9521	BED	16.1	208.24	4	7.85	P	Bed Boundary
9501.8389	BED	9.31	176.45	4	7.9	P	Bed Boundary
9502.4883	BED	12.77	147.98	4	7.96	P	Bed Boundary
9502.9355	BED	17.34	154.86	1	7.94	E	Bed Boundary
9503.5664	BED	19.76	160.46	1	7.84	E	Bed Boundary
9504.1406	BED	8.1	207.55	4	7.8	P	Bed Boundary
9504.7217	BED	7.8	224.35	4	7.79	P	Bed Boundary
9505.1152	BED	11.45	230.54	4	7.82	P	Bed Boundary
9506.4707	BED	46.69	185.6	4	7.73	P	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
9509.6406	BED	27.54	195.83	4	7.8	P	Bed Boundary
9510.1279	BED	33.26	212.39	4	7.9	P	Bed Boundary
9510.4707	BED	31.32	200.2	4	7.9	P	Bed Boundary
9510.79	BED	19.74	201.07	4	7.86	P	Bed Boundary
9511.0703	BED	31.38	177.68	4	7.83	P	Bed Boundary
9513.8506	BED	22.33	186.12	4	8.3	P	Bed Boundary
9515.0459	BED	19.57	172.65	4	8.07	P	Bed Boundary
9515.4521	BED	27.79	184.3	4	8.05	P	Bed Boundary
9523.0645	BED	34.05	245.42	4	8.09	P	Bed Boundary
9524.2041	BED	44.74	244.76	4	8.04	P	Bed Boundary
9538.2021	BED	26.36	254.74	4	8.14	P	Bed Boundary
9538.7207	BED	25.49	231.84	3	8.18	F	Bed Boundary
9539.0078	BED	29	198.76	3	8.24	F	Bed Boundary
9539.5508	BED	17.97	223.04	2	8.46	G	Bed Boundary
9539.7383	BED	20.03	221.92	3	8.49	F	Bed Boundary
9539.8135	BED	18.53	220.81	2	8.5	G	Bed Boundary
9540.1729	BED	21.67	203.85	4	8.54	P	Bed Boundary
9540.6123	BED	20.51	217.78	4	8.55	P	Bed Boundary
9541.0654	BED	20.54	235.22	1	8.65	E	Bed Boundary
9541.6094	BED	28.72	198.95	4	8.78	P	Bed Boundary
9541.9775	BED	11.86	236.18	4	8.79	P	Bed Boundary
9542.3838	BED	21.1	210.39	4	8.79	P	Bed Boundary
9542.5957	BED	21.2	210.38	4	8.79	P	Bed Boundary
9543.083	BED	7.81	268.25	4	8.73	P	Bed Boundary
9543.6953	BED	17.77	224.65	4	8.65	P	Bed Boundary
9545.2227	BED	14.27	181.5	1	8.49	E	Bed Boundary
9553.7705	BED	69.4	247.17	4	8.62	P	Bed Boundary
9556.29	BED	16.83	291.88	4	8.58	P	Bed Boundary
9558.9072	BED	11.68	305.3	4	8.82	P	Bed Boundary
9564.7412	BED	25.34	270.71	4	8.5	P	Bed Boundary
9565.8818	BED	29.91	245.31	4	8.67	P	Bed Boundary
9566.084	BED	29.69	245.17	2	8.7	G	Bed Boundary
9566.1719	BED	29.62	245.54	4	8.74	P	Bed Boundary
9566.7217	BED	16.99	229.68	2	8.6	G	Bed Boundary
9568.3301	BED	33.52	235.09	4	8.54	P	Bed Boundary
9568.4795	BED	32.49	229.09	1	8.57	E	Bed Boundary
9574.8945	FRAC	82.05	262.33	1	8.98	E	Partial Conductive Fracture
9578.2207	BED	30.28	233.72	1	8.52	E	Bed Boundary
9578.5889	BED	31.15	225.41	1	8.57	E	Bed Boundary
9578.9326	BED	23.63	228.01	3	8.63	F	Bed Boundary
9579.7637	BED	29.35	216.47	4	8.62	P	Bed Boundary
9580.2441	BED	36.34	235.23	4	8.64	P	Bed Boundary
9581.1504	BED	30.07	225.63	4	8.69	P	Bed Boundary
9581.3965	BED	39.31	237.95	4	8.76	P	Bed Boundary
9581.5713	BED	36.66	232.99	4	8.7	P	Bed Boundary
9582.9766	BED	31.27	238.46	2	8.56	G	Bed Boundary
9583.2578	BED	33.93	243.49	2	8.55	G	Bed Boundary
9583.6016	BED	32.4	236.08	3	8.64	F	Bed Boundary
9583.7266	BED	27.71	238.98	3	8.68	F	Bed Boundary
9583.8447	BED	26.71	244.62	3	8.68	F	Bed Boundary
9584.1016	BED	25.48	236.91	2	8.81	G	Bed Boundary
9584.46	BED	27.22	242.06	1	8.57	E	Bed Boundary
9585.2598	BED	29.88	217.3	2	8.42	G	Bed Boundary
9585.7969	BED	26.12	233.6	3	8.4	F	Bed Boundary
9586.0342	BED	31.86	227.09	2	8.46	G	Bed Boundary
9586.7529	BED	34.09	235.71	4	8.61	P	Bed Boundary
9587.0898	BED	32.91	239.48	4	8.63	P	Bed Boundary
9587.3457	BED	26.17	224.46	4	8.59	P	Bed Boundary
9587.6143	BED	25.62	230.81	4	8.49	P	Bed Boundary
9588.2334	BED	34.11	232.37	4	8.38	P	Bed Boundary
9588.8203	BED	36.63	210.29	2	8.37	G	Bed Boundary
9589.4043	BED	31.34	230.94	1	8.68	E	Bed Boundary
9589.6855	BED	30.55	251.85	2	8.65	G	Bed Boundary
9589.9102	BED	28.55	242.43	1	8.57	E	Bed Boundary
9590.6221	BED	31.38	223.45	2	8.5	G	Bed Boundary
9591.166	BED	32.14	262.24	4	8.49	P	Bed Boundary
9591.8525	BED	28.75	238.24	3	8.67	F	Bed Boundary
9592.1963	BED	25.77	237.38	3	8.73	F	Bed Boundary
9592.708	BED	34.68	244.07	3	8.72	F	Bed Boundary

Depth (ft)	Class	True Mag (°)	True Azimuth (°)	Quality	Caliper	Confidence	Dip Type
9593.6953	BED	28.24	250.17	3	8.64	F	Bed Boundary
9593.9512	BED	23.12	243.16	3	8.6	F	Bed Boundary
9594.1074	BED	29.78	239.78	3	8.6	F	Bed Boundary
9594.4258	BED	26.74	222.38	3	8.6	F	Bed Boundary
9594.8662	BED	22.53	235.89	3	8.7	F	Bed Boundary
9594.9697	BED	23.2	248.21	4	8.71	P	Bed Boundary
9595.0566	BED	24.74	247.97	3	8.69	F	Bed Boundary
9595.2227	BED	22.82	239.99	4	8.66	P	Bed Boundary
9595.6533	BED	23.92	210.8	2	8.58	G	Bed Boundary
9596.5527	BED	31.28	241.42	3	8.47	F	Bed Boundary
9598.4453	BED	38.88	251.84	4	8.33	P	Bed Boundary
9598.8389	BED	41.6	221.65	3	8.43	F	Bed Boundary
9605.3789	BED	27.25	236.1	4	8.07	P	Bed Boundary
9605.6406	BED	17.93	242.47	4	7.99	P	Bed Boundary
9605.9404	BED	16.25	257.86	4	7.97	P	Bed Boundary
9606.166	BED	16.45	250.01	4	7.9	P	Bed Boundary
9609.1543	BED	25.28	239.84	3	7.95	F	Bed Boundary
9611.7773	BED	23.84	261.92	4	7.95	P	Bed Boundary
9612.0459	BED	34.74	258.99	3	7.99	F	Bed Boundary
9619.3389	BED	32.09	262.35	4	8.31	P	Bed Boundary
9623.3457	BED	35.02	225.27	4	8.85	P	Bed Boundary
9626.334	BED	50.27	234.33	4	8.89	P	Bed Boundary
9627.5146	BED	45.49	306.69	4	8.82	P	Bed Boundary
9629.2578	BED	28.55	221.27	3	8.86	F	Bed Boundary
9629.9785	BED	27.07	225.83	4	8.73	P	Bed Boundary
9633.5332	BED	25.19	216.91	1	8.56	E	Bed Boundary
9635.6035	FRAC	58.1	296.76	1	8.91	E	Partial Conductive Fracture
9641.9209	BED	51.25	239.88	4	8.95	P	Bed Boundary
9644.3262	BED	43.1	223.31	4	8.92	P	Bed Boundary
9644.8662	BED	28.28	224.73	2	8.99	G	Bed Boundary
9645.2783	BED	30.39	228.6	3	9.03	F	Bed Boundary
9646.8154	BED	28.7	234.24	3	9.55	F	Bed Boundary
9648.2959	BED	27.02	231	4	9.89	P	Bed Boundary
9650.0635	BED	33.58	220.51	3	9.94	F	Bed Boundary
9651.2871	BED	31.62	224.89	3	9.96	F	Bed Boundary
9652.084	BED	33.18	226.39	4	10.05	P	Bed Boundary
9652.4639	BED	29.41	232.5	4	10.02	P	Bed Boundary
9652.7588	BED	26.6	219.83	2	9.96	G	Bed Boundary

Notes:
Company: VALLEY RESOURCES
Well: SHIDELER 1-28
Field: NORTH BELRIDGE
County: KERN
State: CA
Country: KERN
Depth provided in feet (ft) measured depth
True Mag - Dip magnitude in degrees (°)
True Azimuth - Dip Azimuth in degrees (°)
Dip Confidence:
E=Excellent(dip quality=1)
G=Good(dip quality=2)
F=Fair(dip quality=3)
P=Poor(dip quality=4 or 5)

Appendix 2C
Faults and Fractures Supporting Data

OBMI Dip Log – 888N-12

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
167	296.1	1.7	0.45	Bedding
171	294.5	2.3	0.53	Bedding
175	231.1	1.3	0.54	Bedding
177	265.8	1.8	0.62	Bedding
179	278.4	1.7	0.59	Bedding
181	204.8	2.6	0.62	Bedding
183	240.1	1.9	0.54	Bedding
185	243.5	1.7	0.48	Bedding
187	234.1	1.6	0.52	Bedding
189	18.6	5.5	0.43	Bedding
191	81.1	7.7	0.46	Bedding
193	36.4	19.7	0.41	Bedding
195	42.2	16.4	0.44	Bedding
197	41.6	17.4	0.34	Bedding
199	44.4	15.3	0.38	Bedding
201	335.6	6.2	0.36	Bedding
203	152.3	2.1	0.37	Bedding
205	154.7	7.2	0.35	Bedding
207	153.8	5.7	0.36	Bedding
209	140.7	7.2	0.34	Bedding
211	137.1	16.8	0.27	Bedding
213	127.4	25.4	0.35	Bedding
215	130.9	4.8	0.33	Bedding
217	111.3	10	0.31	Bedding
219	136.8	4.5	0.4	Bedding
221	243.9	8	0.38	Bedding
223	187.7	4.1	0.51	Bedding
225	202.6	3.5	0.61	Bedding
227	194.4	3.7	0.7	Bedding
229	189.4	3.1	0.78	Bedding
231	182.7	4	0.8	Bedding
233	189.5	2.8	0.77	Bedding
235	180.7	2.8	0.77	Bedding
237	145.4	2.6	0.71	Bedding
239	155.5	2.9	0.73	Bedding
241	153	3.7	0.62	Bedding
243	137.5	4.1	0.57	Bedding
245	161.9	4.4	0.43	Bedding
247	157.1	4.8	0.46	Bedding
249	139.4	5.4	0.41	Bedding
251	138.2	14.4	0.36	Bedding
253	76	5.3	0.31	Bedding
255	71.6	30.3	0.37	Bedding
257	54.7	32.8	0.36	Bedding
259	61.9	25.4	0.38	Bedding
261	44.3	25.3	0.33	Bedding
263	81.9	22.5	0.28	Bedding
265	85.2	26.3	0.28	Bedding
275	143.4	2	0.54	Bedding
279	118.1	2.3	0.6	Bedding
281	118.9	2.2	0.57	Bedding
283	126.3	1.9	0.63	Bedding
285	130.3	2.5	0.69	Bedding
287	140.6	1.8	0.71	Bedding
289	125.3	2.4	0.73	Bedding
291	118.9	1.5	0.69	Bedding
293	110.3	2.1	0.67	Bedding
295	117.5	2.2	0.63	Bedding
297	123.7	2.8	0.59	Bedding
301	101.5	4	0.5	Bedding
303	95	3.9	0.5	Bedding
305	98.3	4.4	0.46	Bedding
307	98.7	4.9	0.46	Bedding
309	79.1	5.5	0.37	Bedding
311	78.7	6.9	0.41	Bedding
313	69.7	7.5	0.47	Bedding
315	62.1	7	0.36	Bedding
317	64	7.4	0.33	Bedding
319	59.9	6.4	0.4	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
321	57.6	7.8	0.43	Bedding
323	57.1	6.3	0.49	Bedding
325	354.4	5.4	0.53	Bedding
327	352.8	5	0.45	Bedding
329	357.5	4.6	0.55	Bedding
331	41.4	1.5	0.6	Bedding
333	6.5	5.3	0.64	Bedding
335	238.8	1.5	0.62	Bedding
337	284.6	1.8	0.61	Bedding
339	152.5	1.9	0.61	Bedding
341	144.8	2.1	0.68	Bedding
343	144.7	2.4	0.58	Bedding
345	274.4	1.7	0.6	Bedding
347	202.9	3.2	0.58	Bedding
349	250.5	1.7	0.7	Bedding
353	216.6	2.2	0.7	Bedding
355	227.4	1.8	0.59	Bedding
357	225	2.7	0.69	Bedding
359	77.7	2.5	0.62	Bedding
361	97.8	4.7	0.75	Bedding
363	65.9	5.4	0.7	Bedding
365	89.8	5.1	0.71	Bedding
367	95.6	4.6	0.69	Bedding
369	89.1	3.6	0.75	Bedding
371	85.2	3.7	0.74	Bedding
373	72.2	3.6	0.73	Bedding
375	59.1	2.9	0.7	Bedding
377	63.3	4.2	0.7	Bedding
379	61.4	5.5	0.63	Bedding
381	92.4	3.2	0.47	Bedding
383	34.2	2.7	0.45	Bedding
385	112.5	6.6	0.43	Bedding
387	161.2	3.7	0.41	Bedding
389	155.9	5.8	0.4	Bedding
391	155	4.8	0.4	Bedding
393	152.3	6.1	0.33	Bedding
395	118	3.9	0.34	Bedding
397	119.9	4.8	0.39	Bedding
399	120.7	4.6	0.43	Bedding
401	152.6	4.6	0.32	Bedding
403	54.5	10.6	0.47	Bedding
405	31.7	6	0.37	Bedding
407	45.4	6.5	0.43	Bedding
409	37.4	5.6	0.38	Bedding
411	81.7	5.9	0.52	Bedding
413	55	8.1	0.48	Bedding
415	80.4	3.9	0.54	Bedding
417	122.6	2.6	0.53	Bedding
419	66.4	2.5	0.51	Bedding
421	150.5	2.1	0.5	Bedding
425	326.3	2.7	0.53	Bedding
429	347.3	5	0.5	Bedding
431	82.7	2.6	0.41	Bedding
433	54.6	2	0.48	Bedding
435	30.6	2	0.46	Bedding
437	3.6	2.2	0.57	Bedding
439	82.7	2.1	0.53	Bedding
441	10.9	2.6	0.6	Bedding
443	83.6	2	0.53	Bedding
447	42.4	1.9	0.71	Bedding
449	30.3	3	0.7	Bedding
451	28.1	2.9	0.71	Bedding
453	26.4	3.6	0.69	Bedding
455	47.3	3.7	0.67	Bedding
457	45.7	3.2	0.7	Bedding
459	59.4	3.3	0.62	Bedding
461	65.5	2.5	0.59	Bedding
463	50.1	3	0.54	Bedding
465	95.4	2.7	0.53	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
467	56.8	3.6	0.48	Bedding
469	58.6	3.3	0.51	Bedding
471	71.5	3	0.52	Bedding
473	155.2	2.5	0.5	Bedding
475	112.5	1.8	0.58	Bedding
477	61.4	6	0.54	Bedding
479	45.3	4	0.51	Bedding
481	84.5	2.4	0.45	Bedding
483	147.5	2	0.51	Bedding
485	153	3	0.44	Bedding
487	178.6	4	0.52	Bedding
489	120.6	3.3	0.49	Bedding
491	148.2	4.9	0.51	Bedding
493	140.7	5.4	0.57	Bedding
495	114.7	5.9	0.64	Bedding
497	127.9	5.4	0.66	Bedding
499	117	5	0.65	Bedding
501	109.5	4.6	0.68	Bedding
503	116.3	2.9	0.64	Bedding
505	108.7	2.5	0.65	Bedding
507	94.2	2.1	0.72	Bedding
509	85.4	2.6	0.73	Bedding
511	83.7	2.5	0.74	Bedding
513	83	2.5	0.75	Bedding
515	82.7	2.5	0.73	Bedding
517	84	3.3	0.55	Bedding
519	84.6	2.5	0.68	Bedding
521	72.4	3.3	0.59	Bedding
523	70	4.1	0.64	Bedding
525	66.2	3.9	0.53	Bedding
527	61.1	2.2	0.57	Bedding
529	131.6	3.8	0.45	Bedding
531	112.1	3.2	0.58	Bedding
533	114.3	3.3	0.6	Bedding
535	94.7	3.1	0.63	Bedding
537	119	3.1	0.66	Bedding
539	101.7	2.4	0.71	Bedding
541	119	3.7	0.65	Bedding
543	123.5	2.8	0.68	Bedding
545	114.1	2.6	0.66	Bedding
547	74.3	4	0.63	Bedding
549	80	4.1	0.59	Bedding
551	91	4.5	0.57	Bedding
553	40.8	2.7	0.48	Bedding
555	69	4	0.55	Bedding
557	107.8	3.7	0.57	Bedding
559	96.7	4.8	0.64	Bedding
561	120.7	2.8	0.57	Bedding
563	106.5	4	0.54	Bedding
565	92	2.9	0.5	Bedding
567	78.9	3.8	0.56	Bedding
569	132.1	5.1	0.56	Bedding
571	111.6	7.1	0.53	Bedding
573	107	9.5	0.51	Bedding
575	108.2	9.3	0.35	Bedding
577	106.6	9.2	0.52	Bedding
579	86.4	4.6	0.48	Bedding
581	102.3	4.7	0.71	Bedding
583	78.7	4.6	0.56	Bedding
585	85.5	4.1	0.66	Bedding
587	87.9	4.6	0.58	Bedding
589	58.2	3.3	0.73	Bedding
591	84.1	3	0.71	Bedding
593	83.2	2.7	0.72	Bedding
595	91.1	2.8	0.65	Bedding
597	80.4	2.4	0.53	Bedding
599	105	2.3	0.51	Bedding
601	119.9	3.5	0.36	Bedding
603	14.8	2.2	0.52	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
605	141.5	2.8	0.36	Bedding
607	341	4	0.51	Bedding
609	131.3	6.4	0.34	Bedding
611	31.8	1.3	0.52	Bedding
613	92	2.6	0.47	Bedding
615	352.7	1.7	0.63	Bedding
617	13.1	3.4	0.6	Bedding
619	356	3.1	0.64	Bedding
621	343.6	3.6	0.58	Bedding
623	358.6	4.7	0.55	Bedding
625	23.9	2.6	0.6	Bedding
627	356	4.6	0.55	Bedding
629	24.7	3.1	0.59	Bedding
631	33.4	2.7	0.59	Bedding
633	112.2	3.7	0.62	Bedding
635	118.7	4.9	0.64	Bedding
637	113.2	5.1	0.64	Bedding
639	126.9	4.6	0.65	Bedding
641	96.9	4.1	0.47	Bedding
643	116.9	4.1	0.49	Bedding
645	105.1	4.1	0.52	Bedding
647	115.9	4.3	0.55	Bedding
649	105.9	4.5	0.55	Bedding
651	108.6	4.3	0.56	Bedding
653	88.9	5.8	0.59	Bedding
655	92.3	7	0.61	Bedding
657	107.5	5.2	0.71	Bedding
659	109.8	4.7	0.76	Bedding
661	94.4	3.8	0.72	Bedding
663	94	3.2	0.72	Bedding
665	98	3	0.7	Bedding
667	88.6	2.8	0.72	Bedding
669	117	2.5	0.66	Bedding
671	102.9	3.1	0.68	Bedding
673	80.1	2.2	0.64	Bedding
675	94.7	2.8	0.67	Bedding
677	121.9	3	0.56	Bedding
679	95.8	5.1	0.66	Bedding
681	100	5.3	0.59	Bedding
683	94.8	7.3	0.65	Bedding
685	133.7	7.6	0.55	Bedding
687	144.1	9.2	0.6	Bedding
689	131.9	9.7	0.49	Bedding
691	146.5	4.5	0.62	Bedding
693	137.5	4.6	0.62	Bedding
695	139.9	4.3	0.58	Bedding
697	183.2	4.5	0.6	Bedding
699	151.5	4	0.58	Bedding
701	121	2.6	0.67	Bedding
705	2	1.4	0.7	Bedding
709	106.6	4.3	0.62	Bedding
713	0.2	1.5	0.62	Bedding
715	22.3	2.6	0.6	Bedding
717	39.2	2.9	0.61	Bedding
719	78.7	2.8	0.67	Bedding
721	95.7	5.2	0.6	Bedding
723	102.8	4.1	0.54	Bedding
725	76.7	5.9	0.62	Bedding
727	96.8	4	0.58	Bedding
729	84.8	5.4	0.65	Bedding
731	84	4.8	0.64	Bedding
733	71.3	5.4	0.71	Bedding
735	48.2	7.6	0.58	Bedding
737	53.5	7.5	0.67	Bedding
739	88.9	8.1	0.6	Bedding
741	62.4	6.3	0.62	Bedding
743	60.6	5.6	0.54	Bedding
745	76	8.3	0.53	Bedding
747	74.9	5.6	0.42	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
749	93.7	6.8	0.46	Bedding
751	75.4	9.9	0.41	Bedding
753	88.9	11.1	0.33	Bedding
755	82.2	11.1	0.45	Bedding
757	94.5	11.6	0.39	Bedding
759	105.6	9	0.5	Bedding
761	113.5	7.7	0.44	Bedding
763	108.1	8.1	0.55	Bedding
765	101	7.1	0.43	Bedding
767	98.5	6.6	0.57	Bedding
769	71.5	6.6	0.55	Bedding
771	37.8	6.1	0.6	Bedding
773	48.1	6.1	0.55	Bedding
775	72.6	4.2	0.49	Bedding
777	79.5	3.4	0.53	Bedding
779	87.7	2.9	0.59	Bedding
781	100.5	3.3	0.6	Bedding
783	90.7	3	0.56	Bedding
785	96.6	3.6	0.53	Bedding
787	92.1	3.5	0.49	Bedding
789	100.9	3.2	0.49	Bedding
791	96.1	3.2	0.5	Bedding
793	94	4.9	0.52	Bedding
795	101.4	4.8	0.44	Bedding
797	68.1	5.9	0.45	Bedding
799	77.9	5.2	0.39	Bedding
801	69.2	5.2	0.41	Bedding
803	67.4	10.8	0.31	Bedding
805	65.8	6.9	0.44	Bedding
807	83.4	9.8	0.37	Bedding
809	89.3	1.6	0.44	Bedding
811	76.5	6.1	0.46	Bedding
813	80.1	4	0.48	Bedding
815	78.8	3.4	0.55	Bedding
817	65.5	2.2	0.57	Bedding
819	77.2	2.1	0.63	Bedding
821	82.8	2.6	0.6	Bedding
823	91.1	2.4	0.65	Bedding
825	74.6	2.3	0.66	Bedding
827	90.4	2.2	0.7	Bedding
829	82.4	2.2	0.71	Bedding
831	86.4	3	0.51	Bedding
833	97.5	4.5	0.72	Bedding
835	98.8	3.5	0.56	Bedding
837	68.1	3.6	0.62	Bedding
839	94.1	3.9	0.5	Bedding
841	66.5	3.8	0.55	Bedding
843	357.8	5.7	0.49	Bedding
845	346.1	7.2	0.52	Bedding
847	343.7	7	0.6	Bedding
849	335	8	0.48	Bedding
851	328.3	7.3	0.52	Bedding
853	323.3	7.3	0.52	Bedding
855	320.2	7.8	0.56	Bedding
857	315.1	7.6	0.58	Bedding
859	309.5	7.7	0.59	Bedding
861	308.5	7.4	0.57	Bedding
863	301.5	7.7	0.53	Bedding
865	303.7	7.7	0.5	Bedding
867	303.6	6.5	0.47	Bedding
869	56.4	1.3	0.46	Bedding
871	282.3	3.5	0.46	Bedding
873	334.3	6.9	0.42	Bedding
875	222.5	8.2	0.28	Bedding
877	290.1	24.2	0.34	Bedding
879	226.6	8.7	0.41	Bedding
881	267.3	18	0.45	Bedding
883	265.9	17	0.33	Bedding
885	291.1	7.3	0.42	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
887	310	7.2	0.43	Bedding
889	310.7	14.9	0.45	Bedding
891	329	11.5	0.52	Bedding
893	321.6	13.5	0.54	Bedding
895	310.5	14.3	0.52	Bedding
897	306.2	15.8	0.52	Bedding
899	310.8	18.7	0.55	Bedding
901	309.9	18.8	0.54	Bedding
903	307.2	17.7	0.48	Bedding
905	313.1	19.2	0.49	Bedding
907	314	22.7	0.5	Bedding
909	311.7	24.5	0.5	Bedding
911	312.5	22.9	0.51	Bedding
913	309.1	23.6	0.46	Bedding
915	311.1	21.7	0.44	Bedding
917	304	23.1	0.41	Bedding
919	307.1	26.4	0.46	Bedding
921	312.3	28.8	0.48	Bedding
923	313.8	29.1	0.49	Bedding
925	313	27.1	0.43	Bedding
927	306.6	30.3	0.44	Bedding
929	305.5	29.8	0.41	Bedding
931	306.2	36.6	0.37	Bedding
933	314.3	32.1	0.4	Bedding
935	308.6	34.5	0.34	Bedding
937	29.7	16	0.38	Bedding
939	173	12	0.23	Bedding
941	340.4	12.5	0.26	Bedding
943	180.7	11.8	0.2	Bedding
945	53.5	8	0.27	Bedding
947	205.9	11.1	0.25	Bedding
949	200.1	12.3	0.29	Bedding
951	223.6	11.4	0.34	Bedding
953	168.9	14.6	0.31	Bedding
955	170.8	14.8	0.35	Bedding
957	141.7	11.3	0.4	Bedding
959	142.3	12.1	0.43	Bedding
961	135	10.6	0.52	Bedding
963	127.5	11.5	0.47	Bedding
965	133	9.4	0.42	Bedding
967	130.6	10	0.41	Bedding
969	133.3	9.8	0.4	Bedding
971	124	11.7	0.35	Bedding
973	122.5	7	0.32	Bedding
975	214.2	16.5	0.25	Bedding
977	126.3	15	0.31	Bedding
979	149.3	33.5	0.27	Bedding
981	121.1	27.7	0.37	Bedding
983	135	17.5	0.29	Bedding
985	128.7	22.3	0.45	Bedding
987	115.8	21.4	0.31	Bedding
989	132.7	15.2	0.52	Bedding
991	118.7	9.4	0.37	Bedding
993	98	8.7	0.47	Bedding
995	45.5	1.1	0.39	Bedding
997	34.2	4.4	0.52	Bedding
999	54.4	3.7	0.59	Bedding
1001	42.5	4	0.78	Bedding
1003	35.2	3.8	0.77	Bedding
1005	30.6	3.6	0.6	Bedding
1007	46.8	2.6	0.68	Bedding
1009	37.4	2.5	0.63	Bedding
1011	36.6	2.6	0.73	Bedding
1013	59.8	2.8	0.64	Bedding
1015	42.6	2.6	0.77	Bedding
1017	51.2	2.7	0.67	Bedding
1019	56	2.9	0.79	Bedding
1021	55.1	3.5	0.83	Bedding
1023	40.5	3.1	0.89	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
1025	64.2	3.6	0.9	Bedding
1027	65.8	2.7	0.89	Bedding
1029	75.9	4	0.88	Bedding
1031	83.2	4.5	0.85	Bedding
1033	83.2	6	0.77	Bedding
1035	89.6	5.9	0.76	Bedding
1037	66.4	4.1	0.67	Bedding
1039	83.9	6.2	0.63	Bedding
1041	70.1	6.4	0.49	Bedding
1043	74.3	5.9	0.53	Bedding
1045	63.8	7.1	0.43	Bedding
1047	69.9	6.1	0.46	Bedding
1049	65.1	5.5	0.48	Bedding
1051	59.8	6.4	0.55	Bedding
1053	59.9	5	0.53	Bedding
1055	57	4.5	0.58	Bedding
1057	73.4	8	0.53	Bedding
1059	68.6	6.1	0.51	Bedding
1061	92.7	5.3	0.61	Bedding
1063	76.2	7.2	0.53	Bedding
1065	41.4	7.9	0.64	Bedding
1067	72.9	11.4	0.55	Bedding
1069	100.6	7.5	0.5	Bedding
1071	98.5	10	0.52	Bedding
1073	108.4	5.6	0.49	Bedding
1075	123.3	12.4	0.53	Bedding
1077	148.7	4.6	0.37	Bedding
1079	112.5	9.4	0.43	Bedding
1081	104	8	0.23	Bedding
1083	112.5	9.9	0.33	Bedding
1085	47.3	8.9	0.28	Bedding
1087	47.2	7.6	0.25	Bedding
1089	33.4	10.3	0.35	Bedding
1091	35.1	9.4	0.35	Bedding
1093	23.6	9.3	0.39	Bedding
1095	29.6	9.2	0.44	Bedding
1097	53.3	8.1	0.47	Bedding
1099	47.4	7.6	0.54	Bedding
1101	62.8	7.1	0.56	Bedding
1103	54.9	7.1	0.59	Bedding
1105	70.3	7.1	0.58	Bedding
1107	68.2	7.7	0.62	Bedding
1109	69.7	6.9	0.62	Bedding
1111	66	7.5	0.57	Bedding
1113	73.3	7.2	0.56	Bedding
1115	65.4	6.6	0.59	Bedding
1117	81.4	8.7	0.58	Bedding
1119	87.3	7.5	0.64	Bedding
1121	79.2	9	0.57	Bedding
1123	78.9	9.1	0.61	Bedding
1125	74.3	10.7	0.55	Bedding
1127	82.1	10	0.53	Bedding
1129	87.1	10.1	0.52	Bedding
1131	94.2	8.8	0.49	Bedding
1133	74	11.5	0.43	Bedding
1135	69.9	10.6	0.41	Bedding
1137	58.7	10.4	0.38	Bedding
1139	94.4	7.6	0.35	Bedding
1141	83.7	7.7	0.35	Bedding
1143	81.5	7.7	0.43	Bedding
1145	84.7	8	0.44	Bedding
1147	84	8	0.5	Bedding
1149	99	9	0.5	Bedding
1151	102.4	8.5	0.49	Bedding
1153	107.2	7.6	0.41	Bedding
1155	117.1	8.3	0.46	Bedding
1157	83.3	7.3	0.42	Bedding
1159	82.1	6.8	0.45	Bedding
1161	112.5	7.2	0.35	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
1163	135.6	9	0.32	Bedding
1165	86.6	6.4	0.35	Bedding
1167	298.6	6.4	0.37	Bedding
1169	80.4	6.8	0.34	Bedding
1171	95.2	8.6	0.39	Bedding
1173	77.9	7.6	0.4	Bedding
1175	98.3	7.5	0.45	Bedding
1177	85.3	8.9	0.43	Bedding
1179	93.2	7.2	0.43	Bedding
1181	87.8	7.4	0.57	Bedding
1183	72.7	7.3	0.5	Bedding
1185	89.7	11.6	0.49	Bedding
1187	107	11.8	0.4	Bedding
1189	98.8	13.9	0.4	Bedding
1191	94.8	11.3	0.29	Bedding
1193	81.3	11.1	0.33	Bedding
1195	93.9	7.9	0.31	Bedding
1197	14.1	9.2	0.27	Bedding
1199	82.4	5	0.26	Bedding
1201	57.2	10.3	0.31	Bedding
1203	58.3	6.5	0.26	Bedding
1205	57	9.5	0.31	Bedding
1207	67.8	8.8	0.36	Bedding
1209	81.9	6.5	0.38	Bedding
1211	72.5	7.9	0.33	Bedding
1213	105.6	9.1	0.37	Bedding
1215	121.9	7.1	0.35	Bedding
1217	135.4	4.7	0.34	Bedding
1219	170	8.9	0.43	Bedding
1221	140.7	9.5	0.26	Bedding
1223	129.6	10.2	0.33	Bedding
1225	121.6	9.1	0.28	Bedding
1227	110.2	9	0.28	Bedding
1229	104.3	10.1	0.3	Bedding
1231	104.5	9	0.39	Bedding
1233	140.1	12.4	0.35	Bedding
1235	107.9	9.5	0.25	Bedding
1237	85.3	10.5	0.44	Bedding
1239	93.1	9.8	0.42	Bedding
1241	88.7	11.9	0.51	Bedding
1243	83.2	10.9	0.45	Bedding
1245	85.7	10.7	0.38	Bedding
1247	88.3	11.3	0.33	Bedding
1249	90	10.9	0.37	Bedding
1251	85.9	13.4	0.42	Bedding
1253	94	10.6	0.3	Bedding
1255	88.8	11.9	0.33	Bedding
1257	98.3	13.4	0.23	Bedding
1259	91.7	12.3	0.36	Bedding
1261	90.7	11.2	0.36	Bedding
1263	86.2	10.7	0.39	Bedding
1265	85.9	11.3	0.45	Bedding
1267	79.9	11.1	0.37	Bedding
1269	90.9	11.2	0.57	Bedding
1271	94.5	11.6	0.51	Bedding
1273	101.3	13	0.55	Bedding
1275	80.8	11.4	0.39	Bedding
1277	91.8	11.1	0.52	Bedding
1279	99.9	10.1	0.52	Bedding
1281	98.8	9.9	0.6	Bedding
1283	98.4	9.8	0.57	Bedding
1285	102.3	9.2	0.56	Bedding
1287	102.1	8.7	0.58	Bedding
1289	82.9	9.6	0.59	Bedding
1291	76.3	17.2	0.57	Bedding
1293	70.3	16.1	0.58	Bedding
1295	93.1	19.3	0.5	Bedding
1297	99.3	14.6	0.47	Bedding
1299	81.4	14.7	0.54	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
1301	93.9	16.6	0.54	Bedding
1303	84.9	12	0.51	Bedding
1305	90.2	13.4	0.48	Bedding
1307	73.1	15.9	0.61	Bedding
1309	83.5	15.7	0.54	Bedding
1311	59.2	13.8	0.67	Bedding
1313	89.7	16.6	0.63	Bedding
1315	77.8	19.1	0.64	Bedding
1317	86.7	22.5	0.47	Bedding
1319	71.1	17.9	0.5	Bedding
1321	70.4	17.8	0.44	Bedding
1323	90.3	15.7	0.49	Bedding
1325	82.3	15.7	0.41	Bedding
1327	79.3	15.6	0.39	Bedding
1329	79.4	11.6	0.35	Bedding
1331	47.3	8.5	0.28	Bedding
1333	30.2	11.4	0.34	Bedding
1335	41	8.2	0.3	Bedding
1337	64.6	8.7	0.31	Bedding
1339	79	11	0.31	Bedding
1341	71.1	7.4	0.27	Bedding
1343	50.4	8.1	0.32	Bedding
1345	65.2	10.3	0.28	Bedding
1347	50.3	10.2	0.34	Bedding
1349	61.4	8.5	0.27	Bedding
1351	59.2	11.6	0.31	Bedding
1353	81	21.1	0.36	Bedding
1355	16.6	12.7	0.4	Bedding
1357	99.2	15.5	0.47	Bedding
1359	44.3	17.9	0.46	Bedding
1361	86.1	12.4	0.52	Bedding
1363	21.8	14.1	0.47	Bedding
1365	50.8	6.8	0.64	Bedding
1367	47.1	14	0.55	Bedding
1369	42.3	12.8	0.6	Bedding
1371	42.7	15.5	0.43	Bedding
1373	43.6	13.6	0.45	Bedding
1375	44.3	14.5	0.37	Bedding
1377	54	14	0.37	Bedding
1379	57.8	16.3	0.28	Bedding
1381	67.5	15.3	0.3	Bedding
1383	58	15.3	0.28	Bedding
1385	42	19.6	0.26	Bedding
1387	67.6	13.4	0.3	Bedding
1389	57.9	24.7	0.24	Bedding
1391	65.9	12.5	0.25	Bedding
1395	351	19.2	0.21	Bedding
1399	16.3	11.7	0.27	Bedding
1403	97.7	12.2	0.39	Bedding
1405	74.9	7.3	0.33	Bedding
1407	133.6	6.9	0.53	Bedding
1409	57.3	12.1	0.45	Bedding
1411	75.1	11.3	0.54	Bedding
1413	66.3	15.3	0.57	Bedding
1415	61.6	12.2	0.45	Bedding
1417	69.7	13.5	0.55	Bedding
1419	69.3	15.3	0.46	Bedding
1421	58.5	19.1	0.43	Bedding
1423	54.9	22	0.3	Bedding
1425	59.2	22.9	0.31	Bedding
1427	56.5	23.2	0.25	Bedding
1429	47.4	32.1	0.23	Bedding
1431	44.5	32.1	0.23	Bedding
1445	150.9	4	0.23	Bedding
1447	102.3	4.3	0.21	Bedding
1449	101.8	4.7	0.24	Bedding
1451	74.9	11.7	0.25	Bedding
1453	71.5	7	0.21	Bedding
1457	125	13.4	0.23	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
1459	126.9	13.9	0.22	Bedding
1473	22.8	23.8	0.2	Bedding
1477	50.4	18.2	0.26	Bedding
1479	51.8	18.3	0.2	Bedding
1481	43.3	19.8	0.24	Bedding
1483	150.5	11.9	0.28	Bedding
1485	69.6	18	0.29	Bedding
1487	197.4	2.2	0.25	Bedding
1489	59.9	17.1	0.23	Bedding
1491	64.2	22.9	0.25	Bedding
1493	47.8	17.9	0.26	Bedding
1495	44.1	17.2	0.26	Bedding
1497	26.6	16.3	0.26	Bedding
1499	47.9	15	0.33	Bedding
1501	54.4	13.5	0.3	Bedding
1503	26.4	9	0.34	Bedding
1505	38.2	9.6	0.35	Bedding
1507	64.3	9.7	0.31	Bedding
1509	68.9	16.3	0.29	Bedding
1511	71	16.5	0.3	Bedding
1513	95.6	17.1	0.28	Bedding
1515	111.6	20	0.24	Bedding
1517	47	9.8	0.22	Bedding
1519	58.1	26.1	0.26	Bedding
1521	72.5	15.9	0.27	Bedding
1529	86.1	14.8	0.21	Bedding
1533	102.2	33.5	0.21	Bedding
1535	94.5	30.2	0.24	Bedding
1537	83.1	32.6	0.22	Bedding
1539	68.7	27.7	0.32	Bedding
1541	64.4	21.6	0.26	Bedding
1543	64.6	27.7	0.27	Bedding
1545	97.6	26.4	0.25	Bedding
1547	87.5	25.9	0.35	Bedding
1549	92.7	16.7	0.23	Bedding
1551	71.8	21.3	0.39	Bedding
1553	82.8	18.3	0.31	Bedding
1555	82.3	17.8	0.41	Bedding
1557	81.4	17	0.31	Bedding
1559	82.1	17.3	0.36	Bedding
1561	40.3	22.1	0.26	Bedding
1563	74.4	15.9	0.22	Bedding
1567	65.7	14.2	0.23	Bedding
1571	62.8	14.1	0.23	Bedding
1575	81.1	12	0.28	Bedding
1577	221.2	14.2	0.21	Bedding
1579	69.8	13.9	0.27	Bedding
1581	62.2	13.1	0.37	Bedding
1583	66.3	18.2	0.31	Bedding
1585	66.8	20.9	0.3	Bedding
1587	77.1	9.7	0.31	Bedding
1589	74.6	9.7	0.35	Bedding
1591	27.9	4.1	0.26	Bedding
1593	347.1	8.3	0.33	Bedding
1595	16.2	5.7	0.3	Bedding
1597	19.8	18.8	0.23	Bedding
1601	354.8	14.6	0.21	Bedding
1603	32.7	7.7	0.21	Bedding
1605	4.8	20.9	0.21	Bedding
1615	342.9	14.3	0.25	Bedding
1619	349.6	25.7	0.29	Bedding
1621	340.2	25.5	0.22	Bedding
1623	348.8	27.1	0.39	Bedding
1625	323.1	16.2	0.2	Bedding
1627	345.6	24.7	0.39	Bedding
1629	339.4	20.1	0.24	Bedding
1631	350.6	27.9	0.28	Bedding
1633	346.3	24.1	0.25	Bedding
1635	335.2	20.8	0.24	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
1637	325.2	20.9	0.21	Bedding
1641	26.7	45.1	0.21	Bedding
1645	314.3	20.9	0.21	Bedding
1655	200.1	16.5	0.21	Bedding
1659	86.1	19.1	0.22	Bedding
1661	86.6	19.1	0.23	Bedding
1667	60.4	17	0.23	Bedding
1669	59.2	17.8	0.21	Bedding
1671	65.4	18	0.22	Bedding
1673	85.2	15.2	0.23	Bedding
1675	84.1	15.1	0.24	Bedding
1677	84.5	16.7	0.25	Bedding
1679	81.2	17.4	0.28	Bedding
1681	79.6	23.5	0.26	Bedding
1683	109.5	10.2	0.25	Bedding
1685	112.3	10.8	0.23	Bedding
1687	40.1	13.9	0.22	Bedding
1693	77.6	25.5	0.2	Bedding
1695	79	24	0.24	Bedding
1697	82.9	24.7	0.21	Bedding
1699	87.3	24.6	0.23	Bedding
1701	85.5	24.1	0.23	Bedding
1703	84.1	24.1	0.25	Bedding
1711	90.8	26.5	0.25	Bedding
1713	88	25.6	0.22	Bedding
1715	90.6	25.4	0.22	Bedding
1721	96.9	28.6	0.28	Bedding
1725	71.4	21	0.24	Bedding
1729	99.2	27.1	0.21	Bedding
1733	105	30.8	0.25	Bedding
1739	240.8	32.8	0.22	Bedding
1743	239.2	32.7	0.21	Bedding
1745	91.2	29.3	0.22	Bedding
1747	210.1	31.9	0.22	Bedding
1749	81	26.5	0.2	Bedding
1751	167.9	27	0.27	Bedding
1753	95.8	28.6	0.26	Bedding
1755	99.4	26.8	0.32	Bedding
1757	93.4	27.9	0.25	Bedding
1759	101.5	25.1	0.33	Bedding
1761	112.1	29.6	0.27	Bedding
1763	46.7	23	0.3	Bedding
1765	20.1	15.4	0.28	Bedding
1767	85.7	23.2	0.26	Bedding
1769	278.4	9.1	0.28	Bedding
1771	39.3	19.8	0.28	Bedding
1773	39.1	20.4	0.31	Bedding
1775	41.9	16.5	0.23	Bedding
1777	47	20.9	0.29	Bedding
1779	43.5	21.3	0.22	Bedding
1781	42.3	19.2	0.28	Bedding
1783	80	18.1	0.26	Bedding
1785	59.9	15.9	0.3	Bedding
1787	52.2	14.3	0.22	Bedding
1789	77.1	19.1	0.21	Bedding
1801	166.9	35.3	0.2	Bedding
1805	77.9	13.4	0.24	Bedding
1807	69.4	12.1	0.23	Bedding
1809	62.1	13.9	0.3	Bedding
1811	60.3	18.1	0.29	Bedding
1813	76.3	15.5	0.43	Bedding
1815	69	19.7	0.32	Bedding
1817	84.9	19.9	0.34	Bedding
1819	75	22.6	0.36	Bedding
1821	70	21.9	0.27	Bedding
1823	82	23.8	0.29	Bedding
1825	71.5	26	0.23	Bedding
1827	97.8	27.2	0.24	Bedding
1833	343.9	28.1	0.25	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
1835	278.8	40	0.27	Bedding
1837	65.1	17.3	0.27	Bedding
1841	19.1	27.7	0.23	Bedding
1845	321.6	27.1	0.23	Bedding
1847	348.3	28.4	0.23	Bedding
1849	44.2	28	0.2	Bedding
1851	319.4	21.6	0.22	Bedding
1855	334.5	22.9	0.22	Bedding
1857	295.2	25.6	0.24	Bedding
1859	299.6	25.8	0.26	Bedding
1861	313.3	24.3	0.23	Bedding
1863	356.4	24.3	0.24	Bedding
1865	12.4	26.7	0.21	Bedding
1867	14.9	31.7	0.29	Bedding
1869	16.3	37.6	0.22	Bedding
1871	18.9	31.6	0.29	Bedding
1875	23.4	23.3	0.26	Bedding
1879	317.2	13.7	0.21	Bedding
1885	1.7	25	0.22	Bedding
1887	0.6	24.4	0.26	Bedding
1895	353.5	25.6	0.23	Bedding
1899	20.7	39.5	0.25	Bedding
1903	18.9	40.8	0.24	Bedding
1905	13.1	23.2	0.23	Bedding
1907	18.8	30.6	0.21	Bedding
1909	27.6	16.1	0.24	Bedding
1911	0.2	29.1	0.22	Bedding
1913	76.4	18.1	0.24	Bedding
1915	6.2	29.6	0.22	Bedding
1917	31.7	11.5	0.3	Bedding
1919	115.6	8.4	0.23	Bedding
1921	356.9	10.9	0.32	Bedding
1923	63.9	7.6	0.25	Bedding
1925	359.6	16.7	0.34	Bedding
1927	59.6	22.7	0.27	Bedding
1929	358.1	17.4	0.41	Bedding
1931	17	17	0.32	Bedding
1933	6.8	19.1	0.28	Bedding
1935	38.9	22.8	0.29	Bedding
1937	75.7	9	0.26	Bedding
1941	285.9	28.9	0.23	Bedding
1943	57.4	21.1	0.22	Bedding
1949	49.6	24	0.23	Bedding
1953	53.1	33.2	0.23	Bedding
1955	38.1	26.9	0.26	Bedding
1957	43.3	32.2	0.24	Bedding
1959	3.2	24.3	0.29	Bedding
1961	24.2	26.1	0.25	Bedding
1963	17.9	22	0.34	Bedding
1965	15.9	23.3	0.24	Bedding
1967	3.6	21.7	0.34	Bedding
1971	8.7	16.9	0.25	Bedding
1973	26.1	37.9	0.24	Bedding
1975	35.9	33.6	0.32	Bedding
1977	52.4	28.2	0.24	Bedding
1979	52.4	28.1	0.23	Bedding
1981	309.1	14.9	0.27	Bedding
1983	21.7	14.1	0.27	Bedding
1985	117	24.5	0.26	Bedding
1987	92.8	8.1	0.24	Bedding
1989	58.9	17.7	0.22	Bedding
1991	53.2	27.8	0.2	Bedding
1993	53.3	12.8	0.28	Bedding
1995	83.8	13.3	0.21	Bedding
1997	59.2	18.1	0.21	Bedding
2023	82.6	17.1	0.22	Bedding
2025	112.8	16.5	0.21	Bedding
2029	96.9	21.3	0.26	Bedding
2031	95	14.5	0.22	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
2033	229.3	3	0.27	Bedding
2035	77.7	19	0.28	Bedding
2037	114	22.6	0.32	Bedding
2039	65	15.2	0.22	Bedding
2041	104.6	19.7	0.34	Bedding
2043	83.6	19.6	0.21	Bedding
2045	73.8	17.9	0.25	Bedding
2047	89.2	18.9	0.22	Bedding
2049	107.8	16.9	0.27	Bedding
2051	98.8	17.9	0.21	Bedding
2065	215.1	25.4	0.21	Bedding
2067	230.2	12.4	0.21	Bedding
2069	97.5	5.3	0.25	Bedding
2071	81.6	21.1	0.26	Bedding
2073	79.8	5.3	0.26	Bedding
2075	246.7	16.7	0.22	Bedding
2077	140.7	3.6	0.34	Bedding
2079	129.7	3.6	0.22	Bedding
2081	70.8	22.5	0.24	Bedding
2083	71	16.5	0.23	Bedding
2085	69.9	20.3	0.28	Bedding
2087	80.1	20.3	0.24	Bedding
2089	68.6	20.8	0.33	Bedding
2091	86.7	19.9	0.24	Bedding
2093	77.9	18.6	0.24	Bedding
2095	107.7	17.5	0.25	Bedding
2097	140.9	10.6	0.23	Bedding
2099	88.7	23.8	0.27	Bedding
2101	96.1	21.6	0.2	Bedding
2103	90.3	25.3	0.29	Bedding
2107	98.7	30.3	0.21	Bedding
2111	130	23.6	0.23	Bedding
2113	93.5	27.4	0.21	Bedding
2115	101.6	32.7	0.24	Bedding
2123	344.8	48.5	0.22	Bedding
2125	46.7	33.8	0.26	Bedding
2127	39.6	23	0.26	Bedding
2129	15.9	31.6	0.23	Bedding
2131	287.7	21.5	0.25	Bedding
2133	304.5	10.8	0.25	Bedding
2135	297.4	22.1	0.26	Bedding
2137	270.4	14.3	0.27	Bedding
2139	294.5	12.7	0.24	Bedding
2141	270.8	17.9	0.26	Bedding
2143	264.7	17.4	0.26	Bedding
2145	288.4	13.2	0.2	Bedding
2147	89.6	19.4	0.34	Bedding
2149	90.2	19.6	0.31	Bedding
2151	92.8	21.5	0.25	Bedding
2153	87.3	19.1	0.28	Bedding
2155	87.2	18.4	0.27	Bedding
2157	87.8	18.3	0.26	Bedding
2159	84.9	17.7	0.3	Bedding
2161	121.5	9.6	0.24	Bedding
2163	97.8	15.4	0.37	Bedding
2165	117.8	15.9	0.29	Bedding
2167	96.8	17.7	0.48	Bedding
2169	99.1	22.5	0.41	Bedding
2171	90.6	18.3	0.46	Bedding
2173	92.9	26.7	0.36	Bedding
2175	87.1	24	0.36	Bedding
2177	90.3	30.2	0.41	Bedding
2179	88.7	24	0.32	Bedding
2181	93.2	31.7	0.34	Bedding
2183	88.7	23.1	0.26	Bedding
2185	74.9	17.5	0.28	Bedding
2187	63.4	17.8	0.25	Bedding
2189	80.9	18.5	0.25	Bedding
2191	81.7	14.5	0.31	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
2193	109.3	23.8	0.25	Bedding
2195	113.7	30.3	0.21	Bedding
2197	98.2	22.4	0.24	Bedding
2199	91.7	27	0.3	Bedding
2201	61.9	30.1	0.21	Bedding
2203	92.6	26.2	0.26	Bedding
2205	95	39.8	0.29	Bedding
2207	87.9	20.1	0.25	Bedding
2209	92.2	20.9	0.32	Bedding
2211	89.5	21.1	0.46	Bedding
2213	88.7	21.4	0.35	Bedding
2215	88.3	18.9	0.56	Bedding
2217	93	17.2	0.48	Bedding
2219	90.4	17.6	0.57	Bedding
2221	94.8	17.6	0.52	Bedding
2223	93.1	17	0.52	Bedding
2225	94.1	18.7	0.42	Bedding
2227	93.8	18.2	0.38	Bedding
2229	93.1	17.4	0.33	Bedding
2231	94.6	19.5	0.25	Bedding
2233	81.7	25.7	0.29	Bedding
2235	82.6	16.3	0.28	Bedding
2237	188.6	18.3	0.27	Bedding
2239	76	16.4	0.28	Bedding
2241	84.8	16.3	0.3	Bedding
2243	85.6	15.5	0.39	Bedding
2245	75.6	15.5	0.38	Bedding
2247	89.8	15.2	0.47	Bedding
2249	86.2	15.8	0.46	Bedding
2251	85.1	15.9	0.53	Bedding
2253	85.6	16.2	0.46	Bedding
2255	85.9	14.5	0.48	Bedding
2257	90.6	16.3	0.38	Bedding
2259	86.1	15	0.4	Bedding
2261	80.9	14.5	0.42	Bedding
2263	86.7	16.3	0.43	Bedding
2265	88.2	15	0.31	Bedding
2267	87	14.8	0.35	Bedding
2269	93.9	14.9	0.35	Bedding
2271	88.8	14.2	0.41	Bedding
2273	85.1	13.3	0.45	Bedding
2275	88.5	11.5	0.46	Bedding
2277	91.1	11.9	0.44	Bedding
2279	91.7	12.1	0.42	Bedding
2281	90.6	11.9	0.47	Bedding
2283	91.2	12.2	0.45	Bedding
2285	91.6	12.7	0.37	Bedding
2287	92	14.2	0.35	Bedding
2289	88.5	12.1	0.32	Bedding
2291	80	15.9	0.28	Bedding
2293	107.2	15.2	0.28	Bedding
2295	75.3	25.9	0.23	Bedding
2297	89.4	12.3	0.24	Bedding
2299	101	34.3	0.26	Bedding
2301	92.8	27.3	0.25	Bedding
2303	76.9	34.6	0.25	Bedding
2305	93.6	39.1	0.25	Bedding
2309	88.5	36.5	0.25	Bedding
2311	84.2	29.3	0.21	Bedding
2313	73.7	20.1	0.23	Bedding
2315	181.4	2.9	0.26	Bedding
2317	68.9	15.6	0.22	Bedding
2319	96.4	23.8	0.25	Bedding
2321	99.9	21.7	0.22	Bedding
2323	114.4	22.4	0.24	Bedding
2339	97.9	30.3	0.27	Bedding
2347	53.9	31.3	0.28	Bedding
2349	76.3	27.6	0.23	Bedding
2351	28	16	0.29	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
2353	81.7	14.4	0.2	Bedding
2355	101.2	30.9	0.23	Bedding
2373	31.5	10.9	0.21	Bedding
2375	9.4	34.9	0.23	Bedding
2377	74.6	23.9	0.25	Bedding
2379	43.3	20.8	0.28	Bedding
2381	70	18.4	0.25	Bedding
2383	83.6	15.8	0.32	Bedding
2385	73.8	17.5	0.23	Bedding
2387	83.6	11.4	0.31	Bedding
2389	32.9	14	0.22	Bedding
2391	30.6	14	0.32	Bedding
2393	72.7	13.7	0.23	Bedding
2395	347.5	18.1	0.29	Bedding
2397	1.8	19.6	0.24	Bedding
2399	11.5	18.9	0.27	Bedding
2401	36.9	14.9	0.21	Bedding
2403	77.9	15.7	0.24	Bedding
2405	32.2	15.2	0.22	Bedding
2407	84.6	13.2	0.22	Bedding
2411	81.7	16.1	0.24	Bedding
2413	67.2	15.9	0.23	Bedding
2415	57.7	21.5	0.27	Bedding
2417	66.8	19.9	0.26	Bedding
2419	87.7	21.7	0.22	Bedding
2421	89.5	21.1	0.22	Bedding
2423	74.6	17.4	0.33	Bedding
2425	69.6	15.4	0.32	Bedding
2427	80.6	16.5	0.31	Bedding
2429	90.7	16.5	0.3	Bedding
2431	89.6	16.4	0.25	Bedding
2433	87.9	14.9	0.28	Bedding
2435	82.6	16.2	0.3	Bedding
2437	90.4	16.8	0.29	Bedding
2441	83	15.8	0.21	Bedding
2447	86.2	17.9	0.21	Bedding
2451	97.3	15.7	0.24	Bedding
2455	219.5	14.6	0.26	Bedding
2457	212.6	43.7	0.21	Bedding
2459	67	10.3	0.24	Bedding
2461	176.1	8.5	0.29	Bedding
2463	4.8	10.5	0.29	Bedding
2465	349.5	9	0.29	Bedding
2467	5.4	11.9	0.27	Bedding
2469	17.4	6.4	0.27	Bedding
2471	80.2	15	0.24	Bedding
2473	107.4	23.9	0.24	Bedding
2479	167.3	22.4	0.26	Bedding
2481	96	21.5	0.21	Bedding
2483	161.5	22.2	0.24	Bedding
2485	8.8	15.8	0.25	Bedding
2489	72.3	10.1	0.21	Bedding
2505	295.9	22	0.21	Bedding
2531	90.8	16.4	0.23	Bedding
2535	89	16.5	0.22	Bedding
2537	87.6	17.5	0.22	Bedding
2539	86.6	16.4	0.27	Bedding
2541	88.6	17	0.24	Bedding
2543	86.1	16.6	0.25	Bedding
2545	81.8	17.2	0.3	Bedding
2547	89.9	16.4	0.36	Bedding
2549	78.2	16.7	0.36	Bedding
2551	81.4	17.5	0.4	Bedding
2553	85.6	18	0.43	Bedding
2555	80.2	18.5	0.51	Bedding
2557	83.3	17.9	0.57	Bedding
2559	83.6	17.9	0.59	Bedding
2561	88.9	17.9	0.51	Bedding
2563	85.8	18.2	0.55	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
2565	86.1	18.9	0.55	Bedding
2567	82.6	19.3	0.5	Bedding
2569	86	18.9	0.57	Bedding
2571	84.7	18.9	0.45	Bedding
2573	82.8	18.8	0.44	Bedding
2575	84.1	18.3	0.28	Bedding
2577	81.2	19	0.27	Bedding
2579	82.7	17.8	0.25	Bedding
2581	87.3	19.8	0.23	Bedding
2583	79	19.5	0.24	Bedding
2585	8.2	21.7	0.22	Bedding
2587	359.1	22.6	0.22	Bedding
2589	82.2	19.6	0.29	Bedding
2591	34	18.8	0.32	Bedding
2593	101.2	21.7	0.35	Bedding
2595	93.4	17.3	0.32	Bedding
2597	79.4	20.5	0.38	Bedding
2599	110.8	18.9	0.35	Bedding
2601	85.2	20.9	0.35	Bedding
2603	98.2	20.2	0.28	Bedding
2605	98.4	22.7	0.37	Bedding
2607	96.5	23	0.27	Bedding
2609	99.3	23.7	0.3	Bedding
2611	101.2	22.2	0.29	Bedding
2613	93.4	17	0.3	Bedding
2615	95.6	18.2	0.26	Bedding
2617	98.2	19.8	0.31	Bedding
2619	97.7	22.3	0.21	Bedding
2621	96.2	22.6	0.29	Bedding
2623	95.9	23.7	0.22	Bedding
2625	76.9	13.6	0.29	Bedding
2627	74.4	13.5	0.25	Bedding
2629	81.4	22.8	0.27	Bedding
2631	88.6	19.1	0.29	Bedding
2633	90.7	18.6	0.29	Bedding
2635	94.2	18.5	0.28	Bedding
2637	78	10.8	0.26	Bedding
2639	124.5	15.5	0.28	Bedding
2641	92.4	13.9	0.24	Bedding
2643	103.1	17.5	0.23	Bedding
2649	74.1	9.9	0.2	Bedding
2667	99.4	25.8	0.21	Bedding
2669	51.7	5.9	0.2	Bedding
2671	84.8	23.6	0.23	Bedding
2673	93.7	25.6	0.23	Bedding
2677	101.2	37.4	0.21	Bedding
2681	90.8	14	0.21	Bedding
2685	99	38.2	0.23	Bedding
2689	88	20.2	0.23	Bedding
2691	90.1	20	0.27	Bedding
2693	82.4	13.7	0.29	Bedding
2695	101.9	20.6	0.26	Bedding
2697	101	20.6	0.3	Bedding
2699	101.6	22.8	0.27	Bedding
2701	102.3	19.5	0.23	Bedding
2703	92.3	18.9	0.23	Bedding
2727	63.5	41.6	0.2	Bedding
2731	341.7	25.4	0.2	Bedding
2733	58.2	13.4	0.22	Bedding
2735	60.3	13.1	0.32	Bedding
2737	60.5	12.5	0.41	Bedding
2739	64	12.8	0.51	Bedding
2741	63.8	12.7	0.53	Bedding
2743	69.4	12.5	0.52	Bedding
2745	73.4	13	0.64	Bedding
2747	66.5	13	0.65	Bedding
2749	64.9	13.3	0.7	Bedding
2751	68.6	13.3	0.67	Bedding
2753	74.4	13.3	0.71	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
2755	78.5	13.1	0.65	Bedding
2757	78.3	13.6	0.65	Bedding
2759	73.7	13.8	0.66	Bedding
2761	72	16.7	0.58	Bedding
2763	71.4	17.2	0.56	Bedding
2765	77.7	17.8	0.53	Bedding
2767	75.9	18.7	0.58	Bedding
2769	78.1	18.4	0.59	Bedding
2771	77.9	18	0.62	Bedding
2773	75.6	17.4	0.6	Bedding
2775	74.8	16.7	0.6	Bedding
2777	75.2	15.9	0.66	Bedding
2779	79.1	16.2	0.64	Bedding
2781	77.7	17.3	0.68	Bedding
2783	70.3	17.6	0.69	Bedding
2785	72.6	17.4	0.7	Bedding
2787	73.3	17.3	0.64	Bedding
2789	75.9	17.7	0.61	Bedding
2791	68.7	18.5	0.53	Bedding
2793	60.4	16.8	0.54	Bedding
2795	77.7	16.7	0.6	Bedding
2797	79.6	16.9	0.67	Bedding
2799	78.3	16.7	0.67	Bedding
2801	79.3	16.8	0.72	Bedding
2803	77.7	16.7	0.75	Bedding
2805	84.2	16.7	0.78	Bedding
2807	84.5	16.5	0.76	Bedding
2809	86.7	16.6	0.71	Bedding
2811	85.4	15.9	0.71	Bedding
2813	85	15.6	0.68	Bedding
2815	81	15.5	0.68	Bedding
2817	78.1	15.6	0.6	Bedding
2819	76.7	15.4	0.6	Bedding
2821	77.9	15.2	0.46	Bedding
2823	76.6	15.2	0.49	Bedding
2825	76.9	14.2	0.39	Bedding
2827	76.2	14.8	0.44	Bedding
2829	86.1	13.2	0.36	Bedding
2831	66.5	12.6	0.39	Bedding
2833	73.9	13	0.39	Bedding
2835	69.7	12.7	0.4	Bedding
2837	74.1	14.2	0.37	Bedding
2839	68.5	12.2	0.32	Bedding
2841	70.9	13.1	0.3	Bedding
2843	71.2	13.7	0.22	Bedding
2845	12.6	7.2	0.24	Bedding
2847	53.8	15	0.23	Bedding
2849	63.5	13.9	0.26	Bedding
2851	76.3	18.4	0.25	Bedding
2853	76.9	16.6	0.32	Bedding
2855	74.8	17.2	0.32	Bedding
2857	74.8	16.4	0.39	Bedding
2859	69.1	15	0.41	Bedding
2861	67	13.4	0.41	Bedding
2863	76.3	13.5	0.41	Bedding
2865	75.8	12.9	0.44	Bedding
2867	79.2	14.5	0.38	Bedding
2869	81.2	13.6	0.34	Bedding
2871	92.9	12.6	0.32	Bedding
2873	85.1	14	0.25	Bedding
2875	94.3	13	0.34	Bedding
2877	94.8	13	0.32	Bedding
2879	97.5	13.1	0.37	Bedding
2881	98.1	13.4	0.34	Bedding
2883	95.1	13.1	0.46	Bedding
2885	91.9	13.6	0.36	Bedding
2887	92.4	13.3	0.36	Bedding
2889	89.2	14.1	0.37	Bedding
2891	86.9	14.9	0.41	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
2893	83.1	14.3	0.4	Bedding
2895	82	14.1	0.46	Bedding
2897	80.9	14.9	0.45	Bedding
2899	83.2	14.6	0.42	Bedding
2901	83.1	14.8	0.44	Bedding
2903	83.4	15.6	0.44	Bedding
2905	81.7	15	0.44	Bedding
2907	81.9	15.5	0.45	Bedding
2909	80.7	15.6	0.48	Bedding
2911	77.7	14.4	0.42	Bedding
2913	76.3	14	0.52	Bedding
2915	76.2	13.8	0.49	Bedding
2917	73.1	13.3	0.6	Bedding
2919	74	13.2	0.47	Bedding
2921	77.6	14.8	0.56	Bedding
2923	81	14.6	0.44	Bedding
2925	80.1	14.7	0.54	Bedding
2927	81.7	14.7	0.48	Bedding
2929	80	14	0.52	Bedding
2931	82.3	14.3	0.42	Bedding
2933	83.6	14	0.43	Bedding
2935	80.5	14.2	0.47	Bedding
2937	77.1	14	0.49	Bedding
2939	82.4	14.5	0.51	Bedding
2941	81.7	14.3	0.51	Bedding
2943	79.2	14.3	0.5	Bedding
2945	77.3	14.3	0.43	Bedding
2947	77.4	14.7	0.44	Bedding
2949	79.3	16.8	0.38	Bedding
2951	71.4	15	0.39	Bedding
2953	76.7	18	0.36	Bedding
2955	73.7	19	0.39	Bedding
2957	73.9	18.7	0.36	Bedding
2959	74.6	22.3	0.29	Bedding
2961	77.1	22.5	0.45	Bedding
2963	68	25.3	0.41	Bedding
2965	70.4	24.6	0.48	Bedding
2967	70.5	23.9	0.39	Bedding
2969	71.1	24.3	0.58	Bedding
2971	74	25.3	0.49	Bedding
2973	73.6	24.6	0.51	Bedding
2975	77.1	25.3	0.44	Bedding
2977	69.2	24.6	0.38	Bedding
2979	87.9	25.7	0.29	Bedding
2981	83.8	23.8	0.33	Bedding
2983	80.8	22.1	0.29	Bedding
2985	83.9	18.6	0.27	Bedding
2987	91.1	19.9	0.21	Bedding
2991	81.7	17.5	0.23	Bedding
2993	80.1	17.5	0.27	Bedding
2995	74.8	17.8	0.28	Bedding
2997	75.5	17.5	0.3	Bedding
2999	75.9	18.5	0.25	Bedding
3001	73.3	16.4	0.25	Bedding
3005	74.6	16.9	0.2	Bedding
3007	75.6	17.1	0.21	Bedding
3037	64.5	17.2	0.28	Bedding
3039	48	24.1	0.34	Bedding
3041	65.2	21.7	0.26	Bedding
3043	63.3	21.7	0.37	Bedding
3045	75	25.4	0.29	Bedding
3047	59	20.4	0.38	Bedding
3049	72.3	20.3	0.31	Bedding
3051	64.4	18.8	0.31	Bedding
3081	117.3	27.6	0.21	Bedding
3083	116	28.3	0.24	Bedding
3085	103.5	28.3	0.26	Bedding
3087	108	27.4	0.23	Bedding
3089	100.3	24.1	0.28	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
3091	92.9	16.4	0.28	Bedding
3093	93.6	15.4	0.4	Bedding
3095	103	14.8	0.31	Bedding
3097	97.8	15.3	0.36	Bedding
3099	92.1	14.8	0.26	Bedding
3101	88.8	14.4	0.32	Bedding
3103	92.1	12.8	0.27	Bedding
3105	92.3	15.1	0.27	Bedding
3107	89.5	11.6	0.23	Bedding
3109	86.3	14.8	0.23	Bedding
3111	84.1	15.6	0.29	Bedding
3113	85.5	14.4	0.29	Bedding
3115	86.8	15.8	0.32	Bedding
3117	86.4	16.8	0.35	Bedding
3119	83.2	17.1	0.34	Bedding
3121	81.5	17.1	0.34	Bedding
3123	81.2	16.5	0.32	Bedding
3125	81.7	16.9	0.36	Bedding
3127	73.5	14.9	0.38	Bedding
3129	73.3	13	0.44	Bedding
3131	73.5	14.3	0.49	Bedding
3133	74.5	13.2	0.46	Bedding
3135	75	13	0.45	Bedding
3137	79.7	14.1	0.44	Bedding
3139	77.3	13.7	0.39	Bedding
3141	80.9	13.3	0.35	Bedding
3143	81.6	13.6	0.32	Bedding
3145	84.5	14.8	0.29	Bedding
3147	82.7	15.4	0.2	Bedding
3149	83.5	15.2	0.25	Bedding
3151	82.4	16.3	0.3	Bedding
3153	81.5	17	0.28	Bedding
3155	80.7	18	0.28	Bedding
3157	84.3	17.9	0.33	Bedding
3159	84.4	17.5	0.32	Bedding
3161	85.6	18.9	0.36	Bedding
3163	85	16.9	0.39	Bedding
3165	81.5	18.6	0.35	Bedding
3167	79.1	18.5	0.39	Bedding
3169	76.7	19.1	0.41	Bedding
3171	77.8	19	0.43	Bedding
3173	82.9	18.8	0.43	Bedding
3175	82.9	18.8	0.47	Bedding
3177	80	19.4	0.4	Bedding
3179	79.8	19.2	0.44	Bedding
3181	78.8	18.6	0.39	Bedding
3183	74.8	20	0.38	Bedding
3185	69.6	19.8	0.29	Bedding
3187	3.8	5	0.39	Bedding
3189	330.9	1.1	0.31	Bedding
3191	161.4	0.6	0.44	Bedding
3193	92	16.4	0.39	Bedding
3195	90	16.6	0.54	Bedding
3197	91.2	16.3	0.44	Bedding
3199	94.7	17	0.55	Bedding
3201	88.2	16.5	0.46	Bedding
3203	88	16.3	0.4	Bedding
3205	87.8	16.3	0.3	Bedding
3207	88.4	16.5	0.27	Bedding
3209	86.8	13.6	0.26	Bedding
3213	81	14.1	0.24	Bedding
3217	134	19.7	0.22	Bedding
3221	80.2	30.2	0.22	Bedding
3225	73.8	24.5	0.25	Bedding
3229	58.2	20.9	0.21	Bedding
3231	61.8	16.3	0.22	Bedding
3233	71.8	13.6	0.21	Bedding
3239	65.5	11.5	0.21	Bedding
3251	58	17	0.22	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
3253	67.3	16.7	0.25	Bedding
3259	82.9	14.4	0.22	Bedding
3261	62.7	15.7	0.23	Bedding
3263	62.2	14.3	0.26	Bedding
3265	64.9	12.3	0.33	Bedding
3267	68.4	12.6	0.36	Bedding
3269	57.4	11.2	0.37	Bedding
3271	53.3	12.3	0.38	Bedding
3273	56.5	10.8	0.37	Bedding
3275	69.6	12.2	0.39	Bedding
3277	68.5	11.6	0.38	Bedding
3279	75.8	10.7	0.34	Bedding
3281	68.4	10.6	0.27	Bedding
3283	70.7	10.1	0.28	Bedding
3285	79.7	12	0.28	Bedding
3287	75.5	11.2	0.27	Bedding
3289	81.4	11.8	0.36	Bedding
3291	80.2	11.5	0.35	Bedding
3293	82.6	11.7	0.38	Bedding
3295	80.5	11.2	0.37	Bedding
3297	85.4	10.9	0.4	Bedding
3299	89.4	11	0.42	Bedding
3301	89.7	11.1	0.44	Bedding
3303	91.7	11.6	0.51	Bedding
3305	87.6	10.7	0.52	Bedding
3307	85.4	10.9	0.57	Bedding
3309	77.6	12.3	0.58	Bedding
3311	78.8	12	0.67	Bedding
3313	76.4	11.7	0.64	Bedding
3315	82.1	10.8	0.59	Bedding
3317	72.2	11.5	0.59	Bedding
3319	69.6	10.6	0.53	Bedding
3321	74	11.8	0.41	Bedding
3323	82.5	11.2	0.34	Bedding
3325	72.9	9.3	0.32	Bedding
3327	69.6	7.4	0.33	Bedding
3329	76.8	10.3	0.31	Bedding
3331	68.4	9.8	0.3	Bedding
3333	75.5	9.8	0.28	Bedding
3335	81.2	6.4	0.34	Bedding
3337	120.1	4.5	0.29	Bedding
3339	87.8	5.2	0.25	Bedding
3341	94	6.6	0.22	Bedding
3353	54.1	12.3	0.2	Bedding
3355	42.4	12.6	0.22	Bedding
3357	55	9.3	0.22	Bedding
3359	66.8	7.4	0.23	Bedding
3361	74.6	8.7	0.25	Bedding
3363	79.8	8	0.26	Bedding
3365	78.7	9.8	0.24	Bedding
3367	63.2	8.1	0.3	Bedding
3369	62.9	8.7	0.3	Bedding
3371	68.3	9.3	0.28	Bedding
3373	71.3	10.9	0.21	Bedding
3375	71.2	10.9	0.26	Bedding
3377	70.1	10.3	0.25	Bedding
3379	70.1	10.4	0.24	Bedding
3381	91.2	10.7	0.22	Bedding
3383	89.9	14	0.22	Bedding
3385	100	16.1	0.24	Bedding
3387	103.5	15.1	0.25	Bedding
3389	103.9	15.9	0.26	Bedding
3391	101.9	14.4	0.28	Bedding
3393	100.8	15.5	0.26	Bedding
3395	97.3	14.7	0.28	Bedding
3397	96.2	14.2	0.36	Bedding
3399	90.9	15.6	0.33	Bedding
3401	86.6	11.7	0.33	Bedding
3403	92.2	13.7	0.36	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
3405	85.3	11.6	0.44	Bedding
3407	89.6	13.1	0.45	Bedding
3409	85.7	12.5	0.46	Bedding
3411	85.4	12.6	0.49	Bedding
3413	87.3	13	0.37	Bedding
3415	88.3	13.2	0.37	Bedding
3417	76.8	13.9	0.36	Bedding
3419	74.1	13.5	0.34	Bedding
3421	59.3	11.3	0.24	Bedding
3423	58.8	11.6	0.29	Bedding
3425	56.4	11.4	0.29	Bedding
3427	50.1	10.6	0.28	Bedding
3429	63	8.5	0.26	Bedding
3431	60.7	9.2	0.26	Bedding
3433	340.5	1.1	0.23	Bedding
3435	326.1	1.6	0.24	Bedding
3437	290.5	5.7	0.22	Bedding
3447	318.2	23.6	0.21	Bedding
3449	334.8	22.8	0.25	Bedding
3451	335.5	20.2	0.26	Bedding
3453	332.5	23.6	0.27	Bedding
3455	336.1	19.8	0.31	Bedding
3457	335.7	18.9	0.3	Bedding
3459	331.8	20.9	0.3	Bedding
3461	322.2	29.3	0.33	Bedding
3463	331.4	31.6	0.3	Bedding
3465	343.1	17.4	0.3	Bedding
3467	335.4	17.1	0.35	Bedding
3469	321.5	16.2	0.35	Bedding
3471	333.5	14.2	0.38	Bedding
3473	324.6	17	0.37	Bedding
3475	340.3	13.2	0.38	Bedding
3477	0.7	17	0.33	Bedding
3479	350.4	19	0.3	Bedding
3481	13.7	23.7	0.27	Bedding
3483	11.2	24	0.24	Bedding
3485	11	25.4	0.24	Bedding
3487	10.1	24.5	0.25	Bedding
3489	35.1	25.1	0.2	Bedding
3491	339.6	5.8	0.25	Bedding
3493	15.3	6	0.3	Bedding
3495	286.9	3.3	0.3	Bedding
3497	11.4	7.9	0.28	Bedding
3499	9.6	4.1	0.34	Bedding
3501	327.9	3.7	0.32	Bedding
3503	339.8	5.4	0.29	Bedding
3505	59	3.5	0.28	Bedding
3525	344.7	24.3	0.23	Bedding
3527	49.6	6.7	0.25	Bedding
3533	286	21.2	0.24	Bedding
3535	313.2	10.7	0.24	Bedding
3537	305.2	9.9	0.21	Bedding
3563	10.6	4.8	0.21	Bedding
3579	26.2	5.3	0.26	Bedding
3581	23.7	4.9	0.33	Bedding
3583	43.4	5.3	0.32	Bedding
3585	28.8	4.8	0.33	Bedding
3587	22.8	5.3	0.54	Bedding
3589	25.8	5.5	0.59	Bedding
3591	12.5	5.8	0.58	Bedding
3593	27.8	5.1	0.62	Bedding
3595	12.8	4.8	0.34	Bedding
3597	56.3	5.1	0.39	Bedding
3599	59.9	5.1	0.32	Bedding
3601	54	5.4	0.35	Bedding
3603	64.8	24.9	0.2	Bedding
3605	143.1	28.2	0.21	Bedding
3613	341.6	24.4	0.24	Bedding
3617	22	42	0.28	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
3621	131.3	7.6	0.24	Bedding
3623	140.8	3.8	0.21	Bedding
3625	181.8	18.6	0.23	Bedding
3627	324.4	9.3	0.22	Bedding
3629	20.2	16	0.22	Bedding
3631	322.6	9.9	0.25	Bedding
3633	313.4	13.8	0.24	Bedding
3635	310	14	0.22	Bedding
3637	14.7	10.1	0.29	Bedding
3639	350.1	3.9	0.33	Bedding
3641	18.2	9.4	0.27	Bedding
3643	5.8	4.1	0.3	Bedding
3645	5.4	6.6	0.26	Bedding
3647	348.6	5	0.37	Bedding
3649	13.7	4.6	0.34	Bedding
3651	5.5	4.7	0.35	Bedding
3653	312.7	15.9	0.25	Bedding
3655	322.7	12	0.32	Bedding
3657	351	6.7	0.38	Bedding
3659	72.1	6.2	0.53	Bedding
3661	50.6	4.3	0.52	Bedding
3663	49.6	6.2	0.55	Bedding
3665	53.2	4.1	0.5	Bedding
3667	56.8	5.7	0.6	Bedding
3669	62.1	5.1	0.5	Bedding
3671	59.6	5.5	0.46	Bedding
3673	21.6	4.1	0.29	Bedding
3675	74.2	9.7	0.36	Bedding
3677	81.4	12.7	0.3	Bedding
3679	79.4	9.1	0.33	Bedding
3681	86.6	15.2	0.27	Bedding
3683	50.8	10.2	0.34	Bedding
3685	72.5	11.2	0.29	Bedding
3687	29.6	12.1	0.27	Bedding
3689	48.3	4.9	0.3	Bedding
3691	48.7	4.1	0.21	Bedding
3693	53.7	4.2	0.23	Bedding
3695	46.3	15.6	0.24	Bedding
3697	90.2	13.3	0.25	Bedding
3699	343.1	4.6	0.26	Bedding
3701	278.4	3.4	0.28	Bedding
3703	17.6	3.9	0.31	Bedding
3705	346.8	4.9	0.31	Bedding
3707	326.7	3.7	0.37	Bedding
3709	325	3.4	0.32	Bedding
3711	320	3.5	0.33	Bedding
3713	322.9	3.4	0.24	Bedding
3781	34.6	4	0.28	Bedding
3783	36.6	11.1	0.3	Bedding
3785	11.9	6.9	0.36	Bedding
3787	33.6	5.6	0.39	Bedding
3789	27.7	6.1	0.38	Bedding
3791	26.8	6	0.5	Bedding
3793	30.8	7.4	0.3	Bedding
3795	23.6	6.7	0.39	Bedding
3797	33.8	6.5	0.37	Bedding
3799	31.6	6.1	0.35	Bedding
3801	322.1	26.4	0.33	Bedding
3803	317.1	53.1	0.3	Bedding
3805	318.4	30.7	0.34	Bedding
3807	331.4	15.4	0.29	Bedding
3809	49.5	3.9	0.32	Bedding
3811	48.4	3.3	0.41	Bedding
3813	11.7	4.3	0.3	Bedding
3815	350.1	4.7	0.31	Bedding
3817	316.1	34.7	0.36	Bedding
3819	311.6	34.8	0.28	Bedding
3821	31.4	34.4	0.4	Bedding
3823	316.8	34.7	0.23	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
3825	21.1	30.9	0.33	Bedding
3827	355.8	39.3	0.22	Bedding
3829	60	31.1	0.24	Bedding
3833	55	4.7	0.28	Bedding
3835	60.5	4.6	0.33	Bedding
3837	62.6	5.2	0.31	Bedding
3839	52.6	5	0.28	Bedding
3841	60.4	5.3	0.26	Bedding
3845	63.1	5.5	0.25	Bedding
3847	343.8	7.9	0.28	Bedding
3849	70.5	5.6	0.21	Bedding
3851	348.5	6.4	0.21	Bedding
3873	13.1	6.7	0.24	Bedding
3875	340.9	10.1	0.26	Bedding
3885	69.2	5.9	0.24	Bedding
3887	69.4	5.1	0.29	Bedding
3889	66	5.2	0.37	Bedding
3891	72.5	5.1	0.37	Bedding
3893	73.1	5.4	0.33	Bedding
3895	65.9	4.9	0.25	Bedding
3897	65.7	5.5	0.23	Bedding
3898.443	58.2	5.7	0.5	Bedding
3899	330.2	10.2	0.23	Bedding
3901	74.3	5.7	0.24	Bedding
3904.504	358.7	6.3	0.5	Bedding
3909.207	51.5	3.3	0.5	Bedding
3910.552	93.5	8.5	0.5	Bedding
3921	172.8	15.7	0.23	Bedding
3923	114.9	12.1	0.29	Bedding
3925	109.7	8.7	0.25	Bedding
3927	62.5	4.1	0.31	Bedding
3929	24.3	4.7	0.29	Bedding
3931	20.7	4.7	0.25	Bedding
3935	33.1	4.6	0.25	Bedding
3937	24.3	5.7	0.24	Bedding
3943	12.8	5.6	0.23	Bedding
3945	38.9	5.4	0.28	Bedding
3947	23.2	6.1	0.27	Bedding
3949	45	6.2	0.3	Bedding
3951	32.8	5.7	0.34	Bedding
3953	26	6	0.39	Bedding
3955	39.6	5.4	0.35	Bedding
3957	37.8	5.9	0.41	Bedding
3959	34.2	5.8	0.41	Bedding
3961	34.4	6	0.51	Bedding
3963	29	5.5	0.61	Bedding
3965	20.6	5.2	0.69	Bedding
3967	31.3	5.6	0.52	Bedding
3969	28	6.1	0.68	Bedding
3971	31.5	4.4	0.67	Bedding
3973	30.7	4.7	0.72	Bedding
3975	30.2	5.4	0.54	Bedding
3977	36.9	4.2	0.52	Bedding
3979	26.2	7	0.34	Bedding
3981	22.6	7.3	0.33	Bedding
3983	41.7	6.7	0.29	Bedding
3985	41.1	6.8	0.32	Bedding
3989	221.8	8.3	0.24	Bedding
3991	47.8	6	0.24	Bedding
3993	47	5.1	0.31	Bedding
3995	36.1	5.8	0.33	Bedding
3997	27.5	5.5	0.41	Bedding
3999	30	5.2	0.51	Bedding
4001	31.7	4.4	0.42	Bedding
4003	37.7	5.2	0.49	Bedding
4005	31.2	5.2	0.55	Bedding
4007	34.8	5	0.53	Bedding
4009	26.6	4.3	0.49	Bedding
4011	39.9	4.6	0.51	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
4013	44.8	4	0.49	Bedding
4015	46.6	5	0.53	Bedding
4017	51.1	4.8	0.6	Bedding
4019	49.7	5.7	0.62	Bedding
4021	56.7	5.4	0.63	Bedding
4023	52.9	5.4	0.63	Bedding
4025	59.5	5.4	0.61	Bedding
4027	58.1	6	0.63	Bedding
4029	58.3	6.2	0.6	Bedding
4031	58.5	5.5	0.56	Bedding
4033	56.3	5.5	0.5	Bedding
4035	56.4	5.6	0.5	Bedding
4037	58.1	4.8	0.53	Bedding
4039	57.7	4.9	0.6	Bedding
4041	55.2	4.6	0.66	Bedding
4043	61.3	5.1	0.73	Bedding
4045	68.4	5.7	0.74	Bedding
4047	59.4	4.3	0.8	Bedding
4049	56.7	4.8	0.72	Bedding
4051	58	6.1	0.78	Bedding
4053	52.4	6	0.75	Bedding
4055	46.9	5.4	0.74	Bedding
4057	60	6	0.68	Bedding
4059	55	5.6	0.66	Bedding
4061	59.1	6.2	0.59	Bedding
4063	59.6	6.8	0.58	Bedding
4065	60.5	6.6	0.61	Bedding
4067	58.4	5.9	0.69	Bedding
4069	49.2	5.4	0.62	Bedding
4071	61.7	5.6	0.72	Bedding
4073	64.9	6.8	0.62	Bedding
4075	74.9	7.1	0.7	Bedding
4077	75.7	7.6	0.67	Bedding
4079	76.4	7.2	0.75	Bedding
4081	53.8	5.6	0.66	Bedding
4083	71	6.7	0.69	Bedding
4085	61.8	5.7	0.59	Bedding
4087	76.2	6.5	0.61	Bedding
4089	64.6	4.4	0.54	Bedding
4091	62.2	4.5	0.63	Bedding
4093	57.8	4.1	0.52	Bedding
4095	65	4.4	0.57	Bedding
4097	66.4	4.9	0.61	Bedding
4099	66.5	4.9	0.6	Bedding
4101	66.3	4.1	0.69	Bedding
4103	68.8	4.6	0.68	Bedding
4105	78.3	4.8	0.75	Bedding
4107	77.1	5.1	0.68	Bedding
4109	75	5.1	0.78	Bedding
4111	63.2	5.1	0.78	Bedding
4113	64.1	4.9	0.82	Bedding
4115	65.6	5.1	0.73	Bedding
4117	69	5.3	0.75	Bedding
4119	67.5	5.4	0.69	Bedding
4121	67.8	5.1	0.74	Bedding
4123	75.3	5.2	0.76	Bedding
4125	66.2	4.8	0.76	Bedding
4127	88.1	5.5	0.69	Bedding
4129	90.4	5.5	0.69	Bedding
4131	69.8	4	0.68	Bedding
4133	75.5	4	0.7	Bedding
4135	76.7	5	0.64	Bedding
4137	79.4	5.4	0.65	Bedding
4139	78.3	6.4	0.56	Bedding
4141	72.7	6.6	0.6	Bedding
4143	71.5	7.5	0.65	Bedding
4145	77.8	7.5	0.67	Bedding
4147	79.7	8.5	0.63	Bedding
4149	77.6	8	0.61	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
4151	79.7	7.8	0.63	Bedding
4153	89.3	7.1	0.63	Bedding
4155	94.9	7.2	0.7	Bedding
4157	84.3	6.8	0.69	Bedding
4159	76.3	6.4	0.7	Bedding
4161	73.4	5.9	0.72	Bedding
4163	95.7	6.2	0.74	Bedding
4165	93.1	6.6	0.76	Bedding
4167	96.5	7.1	0.77	Bedding
4169	86.8	7.5	0.74	Bedding
4171	84.9	7.8	0.7	Bedding
4173	85	7.6	0.76	Bedding
4175	85.4	7.5	0.76	Bedding
4177	74.9	6.7	0.71	Bedding
4179	64	5.9	0.74	Bedding
4181	62.2	6.5	0.68	Bedding
4183	61	6.1	0.79	Bedding
4185	59.3	6.5	0.72	Bedding
4187	56.2	5.7	0.79	Bedding
4189	55.4	5.9	0.69	Bedding
4191	63.2	6.1	0.76	Bedding
4193	74.6	6.2	0.75	Bedding
4195	76	6.5	0.76	Bedding
4197	74.8	6.2	0.77	Bedding
4199	66.1	5.2	0.7	Bedding
4201	63.5	5.4	0.69	Bedding
4203	71.8	6.6	0.61	Bedding
4205	65.6	6.9	0.56	Bedding
4207	66.9	6.1	0.6	Bedding
4209	69.2	6.4	0.54	Bedding
4211	74.9	6.7	0.53	Bedding
4213	83.7	7.4	0.45	Bedding
4215	84.4	7.9	0.5	Bedding
4217	47.5	5.6	0.52	Bedding
4219	76.9	6.6	0.62	Bedding
4221	78.5	6.6	0.63	Bedding
4223	76.2	7.2	0.6	Bedding
4225	78.2	7.2	0.61	Bedding
4227	76.7	7.4	0.67	Bedding
4229	73.9	7.3	0.69	Bedding
4231	76.4	7.7	0.71	Bedding
4233	82.6	7.6	0.65	Bedding
4235	88.6	9	0.6	Bedding
4237	82.2	8.7	0.58	Bedding
4239	82.5	8.6	0.61	Bedding
4241	83.7	8.5	0.59	Bedding
4243	81.1	8.5	0.55	Bedding
4245	81.6	8.3	0.52	Bedding
4247	88.7	8.7	0.43	Bedding
4249	86.3	8.1	0.56	Bedding
4251	91.7	7.8	0.57	Bedding
4253	89.3	8.2	0.7	Bedding
4255	86.6	7.7	0.62	Bedding
4257	75.9	8.1	0.62	Bedding
4259	71.4	8.2	0.55	Bedding
4261	75.1	8.1	0.48	Bedding
4263	77.4	8	0.47	Bedding
4265	78.4	8.7	0.53	Bedding
4267	80.9	8.9	0.47	Bedding
4269	75.5	7.7	0.53	Bedding
4271	76.5	7.8	0.5	Bedding
4273	72.1	7.7	0.62	Bedding
4275	73.6	7.4	0.54	Bedding
4277	76.5	8.1	0.62	Bedding
4279	78	8.1	0.61	Bedding
4281	72.4	7.7	0.63	Bedding
4283	73.5	7.6	0.69	Bedding
4285	72.9	7.7	0.59	Bedding
4287	80.6	9.2	0.66	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
4289	83.8	8.9	0.58	Bedding
4291	84.3	9.6	0.65	Bedding
4293	84.5	9.3	0.69	Bedding
4295	81.2	9.5	0.75	Bedding
4297	82.4	9.4	0.69	Bedding
4299	84.4	10	0.71	Bedding
4301	81.3	10	0.67	Bedding
4303	84.2	9.4	0.72	Bedding
4305	82.4	9.3	0.68	Bedding
4307	87.1	9	0.77	Bedding
4309	83	9.2	0.77	Bedding
4311	80	9.8	0.73	Bedding
4313	86.1	9.6	0.68	Bedding
4315	80.3	9.8	0.69	Bedding
4317	71.7	8	0.62	Bedding
4319	62.7	7.7	0.65	Bedding
4321	67.3	7.7	0.6	Bedding
4323	59.6	7.6	0.62	Bedding
4325	69.9	7.8	0.55	Bedding
4327	65.2	7.7	0.58	Bedding
4329	76	10	0.57	Bedding
4331	66.4	9.2	0.58	Bedding
4333	68.2	9.5	0.62	Bedding
4335	71.6	10.7	0.62	Bedding
4337	66	10.4	0.58	Bedding
4339	78.3	12.4	0.58	Bedding
4341	74	12.9	0.63	Bedding
4343	71.9	12.1	0.68	Bedding
4345	73.2	12.5	0.64	Bedding
4347	74.2	12	0.67	Bedding
4349	76.2	11.9	0.59	Bedding
4351	70.1	11.5	0.56	Bedding
4353	77.6	13	0.5	Bedding
4355	79.9	12.4	0.4	Bedding
4357	80.6	10.8	0.4	Bedding
4359	61.5	7.9	0.34	Bedding
4361	63.3	8.1	0.31	Bedding
4363	96.6	30	0.2	Bedding
4366.897	84.9	17.7	0.5	Bedding
4372.982	66	32.2	0.5	Bedding
4375.165	60.6	24.5	0.5	Bedding
4379	57.4	28.5	0.25	Bedding
4381	64.9	22.5	0.31	Bedding
4383	50.3	5.7	0.4	Bedding
4385	62	6.1	0.45	Bedding
4387	43.9	4.9	0.5	Bedding
4389	59	5.2	0.51	Bedding
4391	75.9	5.8	0.51	Bedding
4393	81.6	5.6	0.58	Bedding
4395	61.8	4.2	0.43	Bedding
4397.172	79.4	3	0.5	Bedding
4401	63.9	4.2	0.25	Bedding
4413.132	60.8	11.9	0.5	Bedding
4415	55.9	15	0.23	Bedding
4417	57.9	14.1	0.32	Bedding
4421	53.1	14.1	0.28	Bedding
4423	48.4	14.3	0.39	Bedding
4425	42.4	18.9	0.32	Bedding
4427	61.4	14.2	0.36	Bedding
4429	72	13.9	0.42	Bedding
4431	72.8	14.1	0.37	Bedding
4433	75.9	15.3	0.42	Bedding
4435	74.3	16.3	0.56	Bedding
4437	81	15.5	0.6	Bedding
4439	77.4	15.5	0.55	Bedding
4441	87.1	14.5	0.6	Bedding
4443	89.6	16.5	0.58	Bedding
4445	89.6	15.3	0.63	Bedding
4447	91.5	13.9	0.74	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
4449	92.8	16	0.66	Bedding
4451	92.4	13.9	0.66	Bedding
4453	92.2	15.7	0.49	Bedding
4455	93.8	14.4	0.55	Bedding
4457	106.4	14.5	0.49	Bedding
4459	106.4	17.8	0.52	Bedding
4461	104	9.9	0.51	Bedding
4463	104.8	13.1	0.55	Bedding
4465	104.8	8.5	0.58	Bedding
4465.104	172.1	43.2	0.5	Fracture
4467	105.8	8.5	0.62	Bedding
4469	95.5	8.8	0.69	Bedding
4471	94.4	10.8	0.63	Bedding
4473	89.9	13.2	0.6	Bedding
4475	94.5	12.2	0.56	Bedding
4477	83.2	11.9	0.63	Bedding
4479	86.7	13.8	0.6	Bedding
4481	85.6	14.3	0.52	Bedding
4483	86.9	13.8	0.46	Bedding
4485	87.9	15.2	0.41	Bedding
4487	95.7	11.7	0.42	Bedding
4489	90.9	12.1	0.31	Bedding
4491	94.5	9.1	0.43	Bedding
4493	100.5	13.6	0.26	Bedding
4495	104.4	11.6	0.29	Bedding
4499	62.3	6.3	0.4	Bedding
4501	55.2	5.8	0.3	Bedding
4503	73.9	6.3	0.42	Bedding
4505	72.4	6	0.38	Bedding
4507	67.4	5.6	0.43	Bedding
4509	70.4	5.3	0.46	Bedding
4511	70.8	5.4	0.55	Bedding
4513	62.9	6.4	0.51	Bedding
4517.867	337.2	1.7	0.5	Bedding
4525	111.8	8.8	0.3	Bedding
4529	108.3	13.4	0.28	Bedding
4537	91.8	14.9	0.22	Bedding
4539	86.9	12.9	0.25	Bedding
4541	86.7	11	0.32	Bedding
4543	96.3	14.5	0.36	Bedding
4545	101.7	15.2	0.36	Bedding
4547	104.6	16.3	0.41	Bedding
4549	107.2	14.6	0.41	Bedding
4551	86.6	6.3	0.44	Bedding
4553	127.2	13.9	0.27	Bedding
4555	148	5.2	0.27	Bedding
4557.889	85.2	14.5	0.5	Bedding
4563	69.3	12.5	0.28	Bedding
4567	57.3	19.2	0.22	Bedding
4569	68.7	15.1	0.32	Bedding
4571	61.4	15.2	0.4	Bedding
4573	51.5	14.8	0.42	Bedding
4575	45.5	15	0.42	Bedding
4577	42.2	15.2	0.38	Bedding
4579	52.2	16	0.37	Bedding
4581	42.6	11.4	0.31	Bedding
4583	51.8	6.9	0.35	Bedding
4585	38.2	10.3	0.44	Bedding
4587	41.7	9.1	0.38	Bedding
4589	27.1	25.8	0.35	Bedding
4591	61.4	6.6	0.39	Bedding
4593	42.3	8.5	0.31	Bedding
4595	42.2	8.8	0.29	Bedding
4597	25.7	10	0.28	Bedding
4599	52.2	10.4	0.34	Bedding
4601.784	35.5	12.2	0.5	Bedding
4603	59.4	10.4	0.27	Bedding
4604.512	310.8	42.5	0.5	Resistive fracture
4604.517	200.5	60.3	0.5	Fracture

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
4605	46.9	8.5	0.3	Bedding
4606.84	58.2	32.5	0.5	Fracture
4607	96.9	16.2	0.32	Bedding
4609	60.1	7.9	0.31	Bedding
4611	66	8.3	0.41	Bedding
4613	65.7	8.6	0.4	Bedding
4615	62.9	8.8	0.43	Bedding
4616.929	359.3	49.5	0.5	Fracture
4617	59.2	8.1	0.44	Bedding
4619	57.4	8	0.52	Bedding
4621	51.1	8.1	0.49	Bedding
4621.998	290.8	68.7	0.5	Fracture
4623	51.2	8.6	0.6	Bedding
4625	52.2	8.7	0.57	Bedding
4627	56.1	8.8	0.51	Bedding
4629	40.7	7.8	0.51	Bedding
4629.024	349.9	13.5	0.5	Carb/Cemtd Bedding
4629.395	30.2	13.3	0.5	Carb/Cemtd Bedding
4631	34.1	6.6	0.51	Bedding
4633	40.6	7.7	0.57	Bedding
4635	47.1	5.3	0.52	Bedding
4635.886	45.3	5.1	0.5	Bedding
4636.597	325.6	75.5	0.5	Fracture
4637	50.5	7.6	0.62	Bedding
4638.722	53.5	13.7	0.5	Fracture
4639	48.9	5.5	0.61	Bedding
4641	46	8.2	0.68	Bedding
4643	49.6	10.4	0.6	Bedding
4644.692	38.1	7.6	0.5	Carb/Cemtd Bedding
4645	59.2	9.4	0.59	Bedding
4645.588	52.5	7.8	0.5	Carb/Cemtd Bedding
4647	53.2	10.7	0.56	Bedding
4649	58	9.2	0.59	Bedding
4651	49.1	9.2	0.61	Bedding
4651.255	109.4	10.9	0.5	Fracture
4653	56.5	9.6	0.61	Bedding
4654.881	18.2	23.6	0.5	Fracture
4655	65.8	9.3	0.51	Bedding
4657	57.5	10.2	0.64	Bedding
4659	70	9.9	0.52	Bedding
4661	122.3	6.7	0.57	Bedding
4663	81.2	15.2	0.42	Bedding
4664.124	43.4	14.5	0.5	Carb/Cemtd Bedding
4665	124.2	6.6	0.56	Bedding
4665.342	114.2	17.5	0.5	Carb/Cemtd Bedding
4667	78	13.5	0.43	Bedding
4669	124	7.2	0.42	Bedding
4671	57.1	12.9	0.36	Bedding
4673	74.7	6.6	0.33	Bedding
4675	57.7	12.9	0.26	Bedding
4677	77.6	6.9	0.31	Bedding
4679	75	7.3	0.35	Bedding
4681	78.5	7.4	0.35	Bedding
4683	51.5	4.7	0.4	Bedding
4685	62.6	5.4	0.51	Bedding
4687	30.1	4.5	0.48	Bedding
4688.783	91.9	12.1	0.5	Carb/Cemtd Bedding
4689	35.8	4.6	0.52	Bedding
4689.259	331.2	8.1	0.5	Carb/Cemtd Bedding
4691	49.7	6.1	0.47	Bedding
4693	37.2	6.5	0.58	Bedding
4693.935	70.3	12.7	0.5	Carb/Cemtd Bedding
4694.481	50.1	19.5	0.5	Carb/Cemtd Bedding
4695	65.6	6.9	0.46	Bedding
4699	70.5	8.1	0.43	Bedding
4701	75.2	7.6	0.43	Bedding
4706.301	76.8	10.8	0.5	Bedding
4709	66.1	5.8	0.51	Bedding
4711	66.6	6.5	0.58	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
4713	66.2	5.9	0.58	Bedding
4715	66.2	5.9	0.57	Bedding
4716.714	64.2	6.9	0.5	Bedding
4718.547	198.6	71.1	0.5	Fracture
4719.926	66.9	7.2	0.5	Bedding
4723	118.3	5.3	0.34	Bedding
4725	122.7	7	0.31	Bedding
4726.323	118.1	14.6	0.5	Bedding
4727	117.6	8.9	0.27	Bedding
4729	124.3	11.6	0.32	Bedding
4731	116.9	11.9	0.32	Bedding
4733	124.3	6.9	0.29	Bedding
4735	120.2	8.1	0.23	Bedding
4735.762	118.4	64.1	0.5	Fracture
4736.766	120	17.7	0.5	Carb/Cemtd Bedding
4737	125.9	6	0.24	Bedding
4739	114.3	7.3	0.22	Bedding
4741	144.3	4.9	0.29	Bedding
4743	142.5	5.2	0.23	Bedding
4745	146.9	4.7	0.29	Bedding
4747	124.2	18.7	0.21	Bedding
4747.851	144.7	20	0.5	Bedding
4757	97.6	7.2	0.23	Bedding
4757.833	22.3	71.8	0.5	Fracture
4759	104.3	9.6	0.24	Bedding
4763	83.2	7.4	0.4	Bedding
4765	72.1	7.8	0.37	Bedding
4767	72.8	10.1	0.34	Bedding
4767.653	67	7.8	0.5	Carb/Cemtd Bedding
4767.986	17.2	6.4	0.5	Carb/Cemtd Bedding
4769	60.6	8.6	0.27	Bedding
4771.181	38.7	8.9	0.5	Bedding
4772.935	294.5	40.2	0.5	Fracture
4773	41.2	9.1	0.22	Bedding
4783.057	0.5	75.7	0.5	Resistive fracture
4784.943	356.1	26.3	0.5	Bedding
4789.408	22.6	17.1	0.5	Bedding
4793.161	174.1	34.1	0.5	Resistive fracture
4796.027	1	12.2	0.5	Bedding
4797	353	3.2	0.24	Bedding
4799	62.3	3.7	0.34	Bedding
4801	62.4	3.8	0.42	Bedding
4802.045	33	54.2	0.5	Fracture
4803	64.2	7.8	0.54	Bedding
4805	62.4	10	0.53	Bedding
4805.486	29.1	16.1	0.5	Carb/Cemtd Bedding
4806.454	173.2	7.3	0.5	Carb/Cemtd Bedding
4807	61.2	8.6	0.5	Bedding
4809	59.4	12.6	0.48	Bedding
4811	60.8	9.8	0.53	Bedding
4813	43.7	12.2	0.38	Bedding
4814.178	57.5	11.3	0.5	Bedding
4814.7	15.4	8.9	0.5	Bedding
4814.839	0.5	18	0.5	Fracture
4815.164	36.5	7.1	0.5	Bedding
4817	40.1	12.3	0.3	Bedding
4819	36.5	11.9	0.22	Bedding
4821	53.1	9.9	0.33	Bedding
4821.212	44.4	10.5	0.5	Bedding
4823	47.3	9.7	0.32	Bedding
4824.662	60.9	11.6	0.5	Bedding
4825	47.6	9.4	0.42	Bedding
4827	43.9	10.5	0.37	Bedding
4829	47.3	9.7	0.4	Bedding
4829.535	57.4	7.6	0.5	Bedding
4830.338	79.3	9.3	0.5	Bedding
4831	59.9	7.5	0.39	Bedding
4833	89.6	10.3	0.34	Bedding
4835	65.4	7.1	0.31	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
4837	93.8	9.6	0.33	Bedding
4839	106.1	11.3	0.26	Bedding
4839.694	102.4	3.2	0.5	Carb/Cemtd Bedding
4839.842	45.2	14.5	0.5	Carb/Cemtd Bedding
4841	108.9	11.4	0.22	Bedding
4844.015	48.1	6.8	0.5	Bedding
4845.201	68.8	8	0.5	Bedding
4848.929	236.2	64.2	0.5	Fracture
4851.488	222.7	66.7	0.5	Fracture
4853.554	159	65.8	0.5	Fracture
4854.928	123.4	6.1	0.5	Bedding
4855.96	80	2.9	0.5	Bedding
4856.945	105.7	9.7	0.5	Bedding
4859.146	119.8	4.4	0.5	Bedding
4862.103	152.1	64.3	0.5	Fracture
4863.937	217.3	4	0.5	Bedding
4864.233	36.8	0.8	0.5	Bedding
4864.508	323.9	2.8	0.5	Bedding
4864.569	273.7	58.9	0.5	Fracture
4866.039	151.1	4	0.5	Bedding
4866.303	202.3	16.7	0.5	Carb/Cemtd Bedding
4866.546	139.8	18.4	0.5	Carb/Cemtd Bedding
4870.108	86.1	6.2	0.5	Bedding
4873.946	26.4	57	0.5	Fracture
4876.094	322.2	47.7	0.5	Fracture
4878.387	171.4	22	0.5	Bedding
4880.775	169.5	37.3	0.5	Bedding
4881.781	135.6	22.9	0.5	Bedding
4883.342	100.7	12.5	0.5	Bedding
4884.038	164.7	19.8	0.5	Fracture
4888.053	124.3	9.2	0.5	Bedding
4888.592	324.7	36.3	0.5	Fracture
4891	112.2	14.2	0.25	Bedding
4892.153	137.7	4.2	0.5	Bedding
4893	116.3	14.2	0.21	Bedding
4896.134	107.9	4.8	0.5	Bedding
4899	141.9	2.2	0.27	Bedding
4899.782	93.7	7.1	0.5	Bedding
4905	49.1	3.5	0.29	Bedding
4907	67.2	4.1	0.3	Bedding
4909	33.2	5.4	0.4	Bedding
4909.248	66.7	10.2	0.5	Carb/Cemtd Bedding
4909.675	77.3	14.9	0.5	Carb/Cemtd Bedding
4910.53	77	4.9	0.36	Internal Bedding
4910.864	105.9	11.1	0.36	Internal Bedding
4911.066	117.5	17.8	0.36	Internal Bedding
4913	47.7	5.3	0.5	Bedding
4914.324	13.4	5.4	0.36	Internal Bedding
4914.449	7.7	8.1	0.36	Internal Bedding
4915	53.8	5	0.41	Bedding
4915.259	31.3	3.3	0.36	Internal Bedding
4915.915	80.7	8.9	0.36	Internal Bedding
4917	54.3	5	0.47	Bedding
4919	54.6	4	0.41	Bedding
4921	53.7	3.9	0.51	Bedding
4923	58.8	3.5	0.44	Bedding
4925	59.2	3.5	0.4	Bedding
4927	70.2	3.9	0.37	Bedding
4929	52.7	4.3	0.35	Bedding
4931	47.6	3.9	0.34	Bedding
4931.671	66	6.1	0.36	Internal Bedding
4932.288	26.4	15.4	0.36	Internal Bedding
4932.428	35.3	12.8	0.36	Internal Bedding
4932.762	47.1	6.9	0.36	Internal Bedding
4933	46.6	4	0.4	Bedding
4933.384	86.1	6	0.5	Carb/Cemtd Bedding
4935	56.3	4.6	0.46	Bedding
4936.693	15.9	63.6	0.36	Fracture
4937	61.6	4.7	0.4	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
4939	56.2	4.7	0.42	Bedding
4941	58.2	4.3	0.5	Bedding
4941.662	65.8	8.4	0.5	Carb/Cemtd Bedding
4946.324	56.4	5.8	0.36	Bedding
4948.76	91.8	4.1	0.5	Bedding
4949.139	40.8	6.5	0.5	Carb/Cemtd Bedding
4949.425	27.2	4.7	0.5	Carb/Cemtd Bedding
4951	93.1	2.1	0.29	Bedding
4954.079	149.5	73	0.5	Fracture
4956.962	58.5	4.3	0.5	Bedding
4962.058	86	6	0.5	Bedding
4964.282	201.4	75.8	0.36	Fracture
4967.581	68.6	11.3	0.36	Carb/Cemtd Bedding
4968.034	81.7	5.6	0.36	Carb/Cemtd Bedding
4968.514	86.1	6.1	0.5	Bedding
4973.751	86.3	6.1	0.5	Bedding
4975.178	86.3	6.1	0.36	Bedding
4975.65	98	5.3	0.36	Bedding
4976.712	122.8	4.6	0.36	Bedding
4976.906	157.5	4.9	0.36	Carb/Cemtd Bedding
4977.59	14.9	9.2	0.36	Carb/Cemtd Bedding
4977.846	20.6	9	0.36	Bedding
4978.118	31.4	6	0.36	Bedding
4979.112	89.6	5.2	0.5	Bedding
4984.573	79.1	6.8	0.5	Bedding
4985.193	86.1	6.2	0.5	Carb/Cemtd Bedding
4985.492	67.4	8.6	0.5	Carb/Cemtd Bedding
4985.991	86.1	6.2	0.5	Carb/Cemtd Bedding
4989.245	50.3	8.7	0.5	Bedding
4990.979	65.2	4.7	0.5	Bedding
4995.802	209.4	55.9	0.36	Fracture
4996.444	113.5	5.3	0.5	Bedding
4998.394	167.3	63.5	0.5	Fracture
5001.04	115.2	5	0.5	Bedding
5002.356	126.6	13.5	0.36	Cross Bedding
5002.715	119.5	13.3	0.36	Cross Bedding
5008.36	72.6	3.9	0.5	Bedding
5010.489	161.7	73.6	0.36	Fracture
5013.115	134.4	12.7	0.5	Bedding
5014.754	328.5	52.2	0.5	Resistive fracture
5017.168	145.8	10	0.5	Bedding
5018.281	3.2	41.2	0.5	Fracture
5019.353	339.1	54.2	0.5	Fracture
5022.778	106.9	10.2	0.5	Bedding
5023.314	89.3	21.7	0.5	Carb/Cemtd Bedding
5023.34	216.4	17.4	0.5	Carb/Cemtd Bedding
5023.497	135.3	12	0.5	Carb/Cemtd Bedding
5024.931	284.6	59.3	0.5	Resistive fracture
5025.054	1.7	63.5	0.5	Fracture
5029	147.8	16.6	0.2	Bedding
5029.219	356.3	43	0.5	Fracture
5029.721	8.7	25	0.5	Fracture
5031	152.4	14	0.31	Bedding
5037.481	352.7	49.6	0.5	Fracture
5041	217.4	2.8	0.3	Bedding
5042.38	11.8	38.3	0.5	Fracture
5043	232.9	1.9	0.34	Bedding
5045	217.9	1.9	0.21	Bedding
5047.571	100.8	12.5	0.5	Carb/Cemtd Bedding
5048.417	274.8	4.6	0.5	Carb/Cemtd Bedding
5051.906	111.5	4.4	0.5	Bedding
5053.448	156.6	71.1	0.5	Fracture
5053.461	150.6	48.2	0.5	Fracture
5054.383	3.5	57.4	0.5	Fracture
5056.423	216.3	23.4	0.5	Carb/Cemtd Bedding
5057.933	12.5	10.7	0.5	Carb/Cemtd Bedding
5060.513	22.9	33	0.5	Fracture
5064.018	28.1	61.4	0.5	Fracture
5064.667	205.7	5.7	0.5	Carb/Cemtd Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
5069	172	4.5	0.26	Bedding
5071	190.1	6.2	0.32	Bedding
5072.512	344.4	6.1	0.5	Bedding
5073	69.7	9.7	0.26	Bedding
5075	65.6	11.4	0.3	Bedding
5075.463	65	11.3	0.5	Carb/Cemtd Bedding
5076.009	66.8	10.5	0.5	Carb/Cemtd Bedding
5077	349.1	7.1	0.29	Bedding
5079	354.5	6.2	0.44	Bedding
5080.265	285.6	3.7	0.5	Bedding
5081	353.1	4.4	0.46	Bedding
5083	79.4	0.6	0.36	Bedding
5084.823	74.4	14.7	0.5	Carb/Cemtd Bedding
5085.79	149.5	5.1	0.5	Carb/Cemtd Bedding
5087	238.2	2.6	0.35	Bedding
5088.323	309.4	7.1	0.5	Bedding
5089	274	3.6	0.35	Bedding
5090.025	57.4	8.3	0.5	Carb/Cemtd Bedding
5090.287	311.1	16.7	0.5	Carb/Cemtd Bedding
5090.931	288.7	19.9	0.5	Carb/Cemtd Bedding
5091.594	271.1	20.8	0.5	Carb/Cemtd Bedding
5093	170.3	4.8	0.36	Bedding
5094.415	342.8	59.9	0.5	Fracture
5096.902	179.5	11.5	0.5	Carb/Cemtd Bedding
5098.561	272.7	21.7	0.5	Carb/Cemtd Bedding
5099.45	325.2	19.1	0.5	Carb/Cemtd Bedding
5102.138	143.8	71.6	0.5	Fracture
5104.334	125.3	13.6	0.5	Bedding
5105	191.9	3.4	0.21	Bedding
5109	169.6	2.5	0.24	Bedding
5110.248	14.8	59.7	0.5	Fracture
5111.823	135.2	16.9	0.5	Carb/Cemtd Bedding
5112.127	143.8	20.9	0.5	Carb/Cemtd Bedding
5112.469	150.5	20.5	0.5	Carb/Cemtd Bedding
5117	13.5	13.1	0.36	Bedding
5118.337	330.7	12.4	0.5	Carb/Cemtd Bedding
5119.264	11.6	12.1	0.5	Carb/Cemtd Bedding
5121.37	167.2	72.5	0.5	Fracture
5123	2.3	6.2	0.56	Bedding
5124.204	344.6	56.1	0.5	Fracture
5125.352	14.9	4	0.5	Carb/Cemtd Bedding
5125.999	58.7	3.1	0.5	Carb/Cemtd Bedding
5127	18.9	9	0.49	Bedding
5129	30	3.5	0.46	Bedding
5131	351.5	3.9	0.42	Bedding
5133	335.2	2.4	0.4	Bedding
5133.642	59.4	27.9	0.5	Carb/Cemtd Bedding
5133.942	171	12.1	0.5	Carb/Cemtd Bedding
5134.328	123.3	18.5	0.5	Carb/Cemtd Bedding
5135	27.9	15.8	0.29	Bedding
5136.24	155.2	77.3	0.5	Fracture
5137	25.7	11.6	0.32	Bedding
5141.269	22.4	19.5	0.5	Carb/Cemtd Bedding
5141.673	318.9	62.2	0.5	Fracture
5141.686	37.5	17.4	0.5	Carb/Cemtd Bedding
5143.117	137.9	64.2	0.5	Resistive fracture
5146.212	52.3	4.7	0.5	Bedding
5149.756	171.4	57.1	0.5	Fracture
5150.87	149.9	68.4	0.5	Fracture
5155.76	79.9	3.3	0.5	Carb/Cemtd Bedding
5158.399	160.9	55.8	0.5	Resistive fracture
5161	103.1	7.9	0.36	Bedding
5161.333	68.5	12.2	0.5	Carb/Cemtd Bedding
5162.56	106.8	3.3	0.5	Bedding
5162.885	0.7	3.9	0.5	Carb/Cemtd Bedding
5165	76.9	4.6	0.44	Bedding
5167	36.4	1.9	0.4	Bedding
5169	72.4	4.8	0.46	Bedding
5171	73.6	5.3	0.28	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
5171.327	35.4	6.8	0.5	Carb/Cemtd Bedding
5171.62	13.6	8.1	0.5	Carb/Cemtd Bedding
5173	75.5	5.2	0.34	Bedding
5175.449	3.3	5.4	0.5	Bedding
5177	69.3	4.5	0.38	Bedding
5177.459	298.4	7.7	0.5	Carb/Cemtd Bedding
5177.959	70.9	5	0.5	Carb/Cemtd Bedding
5179	314	2.2	0.38	Bedding
5181	60.4	6.5	0.34	Bedding
5182.736	159.7	63	0.5	Fracture
5183.058	147.1	2.1	0.5	Carb/Cemtd Bedding
5183.28	346.7	11.1	0.5	Carb/Cemtd Bedding
5187.168	52.8	8	0.5	Carb/Cemtd Bedding
5187.326	158.7	48.1	0.5	Fracture
5187.416	45.5	14.4	0.5	Carb/Cemtd Bedding
5189	69.3	5.9	0.32	Bedding
5189.799	166.3	32.6	0.5	Fracture
5191	46.7	3.6	0.39	Bedding
5192.336	6.1	8.4	0.5	Carb/Cemtd Bedding
5193.261	59.3	20.1	0.5	Carb/Cemtd Bedding
5195	88.6	9.9	0.34	Bedding
5196.04	26.9	10.7	0.5	Carb/Cemtd Bedding
5196.643	71.7	19.7	0.5	Carb/Cemtd Bedding
5197	88.7	10	0.33	Bedding
5197.466	188.9	68.4	0.5	Fracture
5199	82.7	10.4	0.37	Bedding
5201	75.4	9.7	0.41	Bedding
5203	67.3	9.4	0.51	Bedding
5205	63	8.4	0.46	Bedding
5207	58.3	7.3	0.47	Bedding
5209	60.4	7.9	0.43	Bedding
5211	53	8.5	0.52	Bedding
5213	55.7	8.9	0.55	Bedding
5215	57	9.5	0.43	Bedding
5217	99.9	7.6	0.43	Bedding
5219	56.4	11.7	0.38	Bedding
5221	54.4	11.8	0.43	Bedding
5223	49.1	12.4	0.47	Bedding
5225	52.4	11.7	0.51	Bedding
5227	48.6	11.2	0.51	Bedding
5229	50.8	11.6	0.52	Bedding
5231	47.7	10.2	0.58	Bedding
5233	43.4	7.4	0.65	Bedding
5235	44.4	8	0.62	Bedding
5237	52.2	6.6	0.62	Bedding
5239	49.6	8.7	0.61	Bedding
5241	50	7.3	0.55	Bedding
5243	48.6	7.1	0.49	Bedding
5245	51.3	6.8	0.45	Bedding
5247	224.3	2.6	0.36	Bedding
5251	281.9	0.9	0.37	Bedding
5253	280.7	1.7	0.36	Bedding
5255	271.1	2.1	0.23	Bedding
5267	90.1	4.7	0.37	Bedding
5269	89.5	5	0.32	Bedding
5271	72.4	6.7	0.36	Bedding
5273	14	2.9	0.43	Bedding
5275	281.6	4.1	0.44	Bedding
5277	168.2	8.9	0.51	Bedding
5279	217.7	8.5	0.53	Bedding
5281	215.7	7.9	0.52	Bedding
5283	193	7.9	0.43	Bedding
5285	185.3	8.2	0.55	Bedding
5287	212	4.5	0.46	Bedding
5289	166.9	9.4	0.5	Bedding
5291	155.9	8.6	0.48	Bedding
5293	51.3	0.6	0.48	Bedding
5295	91.4	1.2	0.39	Bedding
5297	359.5	3.9	0.42	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
5299	10	5.9	0.35	Bedding
5301	357.5	4.7	0.42	Bedding
5303	347.7	6.3	0.25	Bedding
5307	29.9	4.5	0.23	Bedding
5309.017	13	3.4	0.5	Bedding
5312.863	8.7	1.7	0.5	Bedding
5315	76	4.3	0.32	Bedding
5317	91	7.4	0.27	Bedding
5318.078	166.8	71.8	0.5	Fracture
5319	93.7	3.7	0.31	Bedding
5323	115.6	4.2	0.25	Bedding
5329	185.1	14.3	0.23	Bedding
5338.211	150.8	33.2	0.5	Bedding
5347.435	69.1	4.6	0.5	Bedding
5363	82.6	14.2	0.22	Bedding
5369	46.2	5.9	0.21	Bedding
5373	68.5	6	0.35	Bedding
5375	99.4	6	0.32	Bedding
5377	88.1	3.5	0.3	Bedding
5379	99.6	4.3	0.27	Bedding
5381	99.9	4.4	0.35	Bedding
5383	124.4	4.8	0.25	Bedding
5385	116.3	5.1	0.23	Bedding
5387.351	86.7	3	0.5	Bedding
5392.86	143.3	14	0.5	Bedding
5397	111.2	4.5	0.29	Bedding
5399	97.2	4.6	0.23	Bedding
5401	86.9	4.1	0.32	Bedding
5402.179	84.3	4.7	0.5	Bedding
5403	118.1	4.5	0.23	Bedding
5405	77.7	5.6	0.21	Bedding
5407	109.9	4.6	0.22	Bedding
5411.958	132.6	14.9	0.5	Bedding
5419.82	57.7	8.9	0.5	Bedding
5423	119.8	4.3	0.25	Bedding
5423.807	168.5	3.8	0.5	Bedding
5425	117.5	1.8	0.32	Bedding
5427	137	3.3	0.38	Bedding
5429	188.8	0.9	0.28	Bedding
5431	217.3	1.1	0.3	Bedding
5433	97.6	5.9	0.29	Bedding
5435	99.8	5.6	0.32	Bedding
5437	114.4	6.6	0.38	Bedding
5439	106.9	6.7	0.36	Bedding
5441	113.4	7.7	0.39	Bedding
5442.577	102.4	8.8	0.5	Bedding
5443	116.6	8.5	0.42	Bedding
5445	96.2	8.6	0.47	Bedding
5447	97.8	9.1	0.47	Bedding
5451.981	104.1	9.8	0.5	Bedding
5455	101.3	9.3	0.36	Bedding
5459	140	7.1	0.28	Bedding
5460.401	62.4	9	0.5	Bedding
5464.29	141.2	9	0.24	Bedding
5465.21	139.1	9.8	0.5	Bedding
5467	98.2	5.6	0.2	Bedding
5469	145.9	7.1	0.21	Bedding
5471	126.5	5.9	0.21	Bedding
5473	126.1	5.5	0.24	Bedding
5473.768	103.3	15.4	0.5	Bedding
5475	117.3	4.3	0.24	Bedding
5485.046	124.7	7.5	0.5	Bedding
5485.998	160.7	3.7	0.5	Bedding
5493	138.5	4	0.22	Bedding
5495	118.6	4.3	0.28	Bedding
5496.462	153.1	5.8	0.5	Bedding
5497	92.7	4.8	0.22	Bedding
5499	83.5	4	0.23	Bedding
5501.08	143.3	11.4	0.5	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
5505	74.3	6.8	0.22	Bedding
5507	109.9	8.1	0.29	Bedding
5516.116	136.1	5.9	0.5	Bedding
5517	37.9	24.4	0.22	Bedding
5519	75.5	36.9	0.2	Bedding
5523	301.3	10	0.23	Bedding
5523.18	266.2	2.1	0.5	Bedding
5525	128.4	5	0.23	Bedding
5527	144.2	2.1	0.23	Bedding
5529	127.9	5	0.25	Bedding
5529.487	122.2	9.1	0.5	Bedding
5531	144	7.7	0.25	Bedding
5533	109.5	9.5	0.31	Bedding
5535	108.9	9.1	0.22	Bedding
5537	105.7	7.2	0.32	Bedding
5539	94.2	8	0.26	Bedding
5541	108.1	7.7	0.33	Bedding
5543	108.5	5	0.33	Bedding
5545	105.8	5.1	0.34	Bedding
5547	106.6	4.6	0.26	Bedding
5549	109.2	6.3	0.26	Bedding
5551	112.6	9.2	0.21	Bedding
5553	118.1	8.9	0.25	Bedding
5555	132.1	4.9	0.21	Bedding
5557	105.6	6.5	0.27	Bedding
5559	94.1	4	0.31	Bedding
5561	79.4	6.6	0.29	Bedding
5563	54.1	9	0.29	Bedding
5565	187.2	13.3	0.3	Bedding
5567	142.2	4.5	0.29	Bedding
5569	114.9	14.3	0.35	Bedding
5571	120.3	15.2	0.28	Bedding
5573	124.3	16.3	0.35	Bedding
5575	131.1	18.1	0.25	Bedding
5577	136.1	16.8	0.26	Bedding
5579	128.6	16.4	0.29	Bedding
5581	126.5	16.7	0.34	Bedding
5583	119.2	15.1	0.23	Bedding
5585	111.5	15.6	0.27	Bedding
5587	115.1	15.5	0.27	Bedding
5589	120.3	15.7	0.35	Bedding
5591	121.2	17.7	0.31	Bedding
5593	118.9	22.5	0.35	Bedding
5595	130	5.8	0.36	Bedding
5597	135.5	3.4	0.42	Bedding
5599	163.3	8.9	0.47	Bedding
5601	153.9	8.5	0.54	Bedding
5603	108.9	7.7	0.49	Bedding
5605	104.8	7.4	0.45	Bedding
5607	97.6	3.9	0.51	Bedding
5609	107.5	6.1	0.52	Bedding
5611	105.2	6.4	0.51	Bedding
5613	114.3	7.2	0.44	Bedding
5615	112.3	5.8	0.33	Bedding
5617	109.2	5.2	0.31	Bedding
5619	113.8	5.2	0.33	Bedding
5621	142.3	5.6	0.45	Bedding
5623	126.4	7.2	0.3	Bedding
5625	125.9	6.5	0.43	Bedding
5627	141.7	8	0.45	Bedding
5629	125.4	7.8	0.44	Bedding
5631	131.4	9.1	0.36	Bedding
5633	113.5	8.5	0.37	Bedding
5635	109	8.5	0.32	Bedding
5637	109.2	7.5	0.32	Bedding
5639	108.3	7	0.32	Bedding
5641	112.9	5.9	0.32	Bedding
5643	108.4	6	0.28	Bedding
5645	110	3.3	0.25	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
5647.424	103.8	2	0.5	Bedding
5658.413	122.5	6.2	0.5	Bedding
5665	112.3	4.5	0.27	Bedding
5667	136.8	0.7	0.27	Bedding
5669	134.1	3.8	0.35	Bedding
5671	127	6	0.29	Bedding
5673	147.8	3.6	0.24	Bedding
5675	153.3	6.2	0.23	Bedding
5677	115	5.3	0.29	Bedding
5679	111.4	5.6	0.24	Bedding
5681	100.8	5.3	0.24	Bedding
5683	40.3	23.8	0.22	Bedding
5685	43.3	13.6	0.26	Bedding
5687	35.2	11.7	0.29	Bedding
5689	34.3	12	0.29	Bedding
5691	37.8	10.1	0.25	Bedding
5697	43.4	13.6	0.25	Bedding
5699	41.7	13.6	0.26	Bedding
5701	47.2	13.4	0.32	Bedding
5703	39.8	12.7	0.44	Bedding
5705	44.3	12.3	0.46	Bedding
5707	38.6	12.6	0.49	Bedding
5709	45.8	12.2	0.34	Bedding
5711	39.4	12.3	0.26	Bedding
5712.732	58.2	6.1	0.5	Bedding
5715	57.9	8.6	0.26	Bedding
5717	75.1	6.6	0.22	Bedding
5719	69.4	5.4	0.31	Bedding
5721	169.9	5.5	0.29	Bedding
5723	152.8	3.6	0.25	Bedding
5725	162.8	4	0.41	Bedding
5727	153.6	2.6	0.61	Bedding
5729	170.5	1.6	0.48	Bedding
5731	245.7	5.6	0.65	Bedding
5733	231.2	6.7	0.54	Bedding
5735	233.7	8	0.51	Bedding
5737	223	5.6	0.44	Bedding
5739	229.6	9.6	0.44	Bedding
5741	223.3	8.4	0.35	Bedding
5743	221.8	9.4	0.26	Bedding
5761	84.4	9.5	0.2	Bedding
5766.709	80.8	9.4	0.5	Bedding
5781	80.3	29.3	0.21	Bedding
5783	87.6	27.3	0.22	Bedding
5785.379	78.7	26.4	0.5	Bedding
5787	96.7	22.3	0.29	Bedding
5789	95	19.5	0.27	Bedding
5791	95	19.5	0.44	Bedding
5795.396	75.3	7.4	0.5	Bedding
5801	81.1	8.6	0.68	Bedding
5803	76.4	9	0.53	Bedding
5805	80.7	8.8	0.52	Bedding
5807	77.7	9	0.53	Bedding
5809	77.4	9.6	0.53	Bedding
5811	79	9.5	0.43	Bedding
5813	79.9	8.6	0.46	Bedding
5815	77	9.3	0.58	Bedding
5817	78.5	8.8	0.52	Bedding
5819	80	11	0.65	Bedding
5821	86.7	8.9	0.61	Bedding
5823	90.1	9.2	0.58	Bedding
5825	87.4	6.8	0.51	Bedding
5827	90.3	6.4	0.49	Bedding
5829	92.8	5.2	0.56	Bedding
5831	93.1	8.4	0.53	Bedding
5833	92.3	7.6	0.56	Bedding
5835	84.8	7.7	0.52	Bedding
5837	83.5	7.3	0.54	Bedding
5839	76.4	7.7	0.58	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
5841	81.1	8.5	0.58	Bedding
5843	76.7	8.3	0.62	Bedding
5845	78.4	8.7	0.68	Bedding
5847	80.2	8.4	0.61	Bedding
5849	79.6	8.8	0.64	Bedding
5851	81	8.6	0.58	Bedding
5852.18	87.5	8.1	0.5	Bedding
5853	83.2	8.1	0.68	Bedding
5855	86.8	7.7	0.63	Bedding
5857	87.6	8	0.52	Bedding
5859	92.3	7.7	0.37	Bedding
5861	116.3	5.9	0.33	Bedding
5863	138.9	5.3	0.25	Bedding
5865	133.8	8.2	0.23	Bedding
5867	117.3	11.2	0.26	Bedding
5871	119.8	14.9	0.22	Bedding
5873	184.9	7.7	0.27	Bedding
5875	82.9	5.8	0.3	Bedding
5877	62.5	10.7	0.27	Bedding
5878.418	74.3	7.7	0.5	Bedding
5881	62.1	10.9	0.22	Bedding
5887	46.8	8.5	0.27	Bedding
5889	66.9	6.7	0.28	Bedding
5891	50.3	9.3	0.33	Bedding
5893	77.8	6.2	0.38	Bedding
5895	69.1	6.5	0.38	Bedding
5897	102.6	8.5	0.45	Bedding
5899	78.8	7.8	0.4	Bedding
5901	93.1	8.6	0.5	Bedding
5903	114.7	13.2	0.41	Bedding
5905	99	8.9	0.43	Bedding
5907	103.8	8.9	0.4	Bedding
5909	97	8.7	0.46	Bedding
5911	103.6	9	0.48	Bedding
5913	97.6	8.2	0.52	Bedding
5915	104.9	9.4	0.48	Bedding
5917	113.5	10	0.49	Bedding
5919	109.5	10.6	0.51	Bedding
5921	117.8	12.5	0.53	Bedding
5923	112.3	11.1	0.51	Bedding
5925	118.1	13.1	0.39	Bedding
5927	117.4	12.1	0.38	Bedding
5929	121.3	10.3	0.31	Bedding
5931	128	10	0.41	Bedding
5933	124.1	10.1	0.3	Bedding
5935	120.3	10.6	0.32	Bedding
5937	107.9	8.8	0.32	Bedding
5939	112.6	10	0.38	Bedding
5941	108.1	8.8	0.4	Bedding
5943	90.3	6.8	0.34	Bedding
5945	96.3	7.4	0.42	Bedding
5947	93.6	10.5	0.34	Bedding
5949	87.1	7.7	0.37	Bedding
5951	68.1	6.4	0.36	Bedding
5953	107.2	8.9	0.37	Bedding
5955	107.6	9.1	0.35	Bedding
5957	97.5	8.7	0.37	Bedding
5959	115.9	19	0.33	Bedding
5970.198	99	11.5	0.5	Bedding
5973	93.6	7	0.3	Bedding
5975	76	6.7	0.31	Bedding
5977	73.2	9	0.47	Bedding
5979	68.7	9.6	0.48	Bedding
5981	62.7	7.3	0.57	Bedding
5983	65.2	5.8	0.49	Bedding
5985	35.9	6.6	0.52	Bedding
5987	49.2	7.5	0.48	Bedding
5989	34.5	7.5	0.43	Bedding
5991	56.8	6.9	0.45	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
5993	13.4	7.2	0.42	Bedding
5995	37.6	5.7	0.29	Bedding
5997	78.1	6.9	0.32	Bedding
5999	354.6	3.7	0.39	Bedding
6001	36.6	5.6	0.35	Bedding
6003	346.5	9.1	0.32	Bedding
6005	98.5	7.4	0.34	Bedding
6007	350.4	10.9	0.24	Bedding
6009	344.7	11.3	0.29	Bedding
6011	349.7	11	0.26	Bedding
6011.702	146	4.8	0.5	Bedding
6013	13.8	10.2	0.29	Bedding
6015	149.2	34.2	0.21	Bedding
6019	103.8	10.9	0.36	Bedding
6021	24.8	13.3	0.24	Bedding
6023	27.2	12.7	0.43	Bedding
6025	21.3	13.3	0.32	Bedding
6027	21	11.4	0.48	Bedding
6029	9.1	15.3	0.29	Bedding
6031	26.3	13.8	0.55	Bedding
6033	29.9	13.6	0.42	Bedding
6035	34.4	13.9	0.4	Bedding
6041	113.4	11.1	0.43	Bedding
6043	95.5	10.8	0.34	Bedding
6045	108.3	13	0.37	Bedding
6047	103	15.8	0.26	Bedding
6049	102.1	14.1	0.23	Bedding
6051	119.7	23.2	0.24	Bedding
6068.625	79.8	17.5	0.5	Bedding
6091.945	62.5	15.2	0.5	Bedding
6115	147.3	30.8	0.21	Bedding
6127	246.6	9.4	0.21	Bedding
6129	283.4	6.2	0.25	Bedding
6133	255.6	7.2	0.22	Bedding
6141.892	155.9	2.4	0.5	Bedding
6147	108.5	4.4	0.3	Bedding
6149	66.6	6	0.32	Bedding
6151	94.2	7.6	0.3	Bedding
6153	101.1	7.1	0.35	Bedding
6155	102.8	7.1	0.48	Bedding
6157	110.1	7.7	0.46	Bedding
6159	105.8	6	0.36	Bedding
6161	101.7	5.5	0.37	Bedding
6163	78.3	3.8	0.33	Bedding
6165	126.5	8.6	0.32	Bedding
6167	130	10.1	0.27	Bedding
6169	130.7	9.2	0.3	Bedding
6171	127.1	8.1	0.29	Bedding
6173	128.7	8	0.28	Bedding
6177	125.9	9.6	0.44	Bedding
6179	127.9	12.7	0.45	Bedding
6181	124.5	9.4	0.49	Bedding
6183	102.8	7.5	0.5	Bedding
6185	120.9	9.9	0.48	Bedding
6189	97.1	10.5	0.63	Bedding
6193	76.5	8.2	0.55	Bedding
6203	78.4	14	0.4	Bedding
6205	64.6	13.3	0.46	Bedding
6207	67.5	12.3	0.52	Bedding
6209	69.2	12.3	0.47	Bedding
6211	71.5	12.6	0.54	Bedding
6213	67	10.6	0.37	Bedding
6215	289.5	4.4	0.44	Bedding
6217	16.3	6.9	0.29	Bedding
6219	17.8	4.8	0.32	Bedding
6226.684	82.8	10.3	0.5	Bedding
6240.552	103.7	4.3	0.5	Bedding
6249	21.3	5.7	0.23	Bedding
6251	14.8	7	0.28	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
6255	135.3	17.7	0.27	Bedding
6259	139.7	21.3	0.27	Bedding
6263	86.2	5.7	0.23	Bedding
6273	60.4	28	0.24	Bedding
6277	69.6	15	0.3	Bedding
6279	19.9	5.8	0.28	Bedding
6281	81.5	12.1	0.34	Bedding
6283	48.1	12.3	0.33	Bedding
6285	82.4	8	0.6	Bedding
6287	81.1	6.9	0.54	Bedding
6289	85.6	7.7	0.6	Bedding
6291	92.5	7.4	0.43	Bedding
6293	28	7.2	0.48	Bedding
6294.13	96.8	7.2	0.5	Bedding
6295	92.5	6.9	0.4	Bedding
6297	98.7	8.4	0.39	Bedding
6299	357.1	11.9	0.39	Bedding
6299.403	82.4	8.1	0.5	Bedding
6301	354.1	10.1	0.32	Bedding
6303	345.8	10	0.29	Bedding
6305	41.1	12.7	0.23	Bedding
6307.698	76.7	5.8	0.5	Bedding
6323	162.8	2.2	0.23	Bedding
6325	84.5	7.5	0.26	Bedding
6327	90.2	8.6	0.33	Bedding
6329	89.3	8	0.34	Bedding
6331	122.9	5.5	0.3	Bedding
6333	97.9	8.7	0.3	Bedding
6335	93.1	7.4	0.29	Bedding
6337.543	125.8	6.3	0.5	Bedding
6345.773	76.2	5.5	0.5	Bedding
6353	131.6	37.1	0.2	Bedding
6357	101.1	7	0.24	Bedding
6360.12	103.9	5.7	0.5	Bedding
6361	96.8	6.8	0.25	Bedding
6367.231	84.9	8.9	0.5	Bedding
6373	91.4	7.3	0.36	Bedding
6375	75.2	5.7	0.29	Bedding
6377	132.2	6.6	0.37	Bedding
6379	126	6.6	0.29	Bedding
6381	137.3	7.6	0.42	Bedding
6383	77.4	5.9	0.4	Bedding
6385	85.3	5.8	0.4	Bedding
6387	90.4	6.6	0.38	Bedding
6389	175.1	2.7	0.32	Bedding
6391	83.5	7.7	0.4	Bedding
6393	188.8	7	0.31	Bedding
6395	88	22.8	0.29	Bedding
6407	29.9	43.3	0.24	Bedding
6411	43.3	43	0.2	Bedding
6415	54.3	45.1	0.21	Bedding
6425.53	103.1	4.8	0.5	Bedding
6439	172.5	4.7	0.22	Bedding
6441	117.7	17.6	0.24	Bedding
6443	267.6	10.1	0.25	Bedding
6445	319.6	11.9	0.24	Bedding
6447	121.9	26.1	0.28	Bedding
6449	118.6	26.7	0.32	Bedding
6451	89.2	21.1	0.35	Bedding
6453	65.3	16.3	0.22	Bedding
6465.724	293.7	5.4	0.5	Bedding
6494.444	84.3	5.3	0.22	Bedding
6497	12.8	4.8	0.21	Bedding
6511.681	40.5	7.5	0.5	Bedding
6515	87.6	4.3	0.22	Bedding
6517	64	4.2	0.27	Bedding
6525.366	197	1.7	0.5	Bedding
6541.105	105.8	7.4	0.5	Bedding
6550.359	354.8	1.7	0.5	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
6555.31	114.4	4.7	0.5	Bedding
6557	79.2	5	0.24	Bedding
6559	89.9	4.7	0.22	Bedding
6563	115.3	19.3	0.23	Bedding
6567	259.3	4	0.24	Bedding
6569	257.2	4.5	0.23	Bedding
6573.931	61.2	5	0.5	Bedding
6575.936	100.1	3.3	0.5	Bedding
6596.404	93.8	3	0.5	Bedding
6603	125	5.4	0.29	Bedding
6605	89.7	4.1	0.27	Bedding
6607	82.7	6.9	0.39	Bedding
6609	111.7	7.5	0.42	Bedding
6611	106.4	8.9	0.48	Bedding
6613	107.1	8.2	0.38	Bedding
6615	105.7	6.2	0.44	Bedding
6617	188.9	4.4	0.42	Bedding
6619	122.9	7.7	0.47	Bedding
6621	59.6	4.3	0.4	Bedding
6623	100.3	11.3	0.29	Bedding
6625	4.8	5.2	0.41	Bedding
6627	53.1	7	0.41	Bedding
6629	170.1	8.6	0.41	Bedding
6631	98.1	7.4	0.41	Bedding
6633	126.9	12.2	0.49	Bedding
6635	98.7	4.1	0.26	Bedding
6637	136.7	6.4	0.4	Bedding
6639	125.6	4.3	0.46	Bedding
6641	141	6.1	0.43	Bedding
6643	156	3.7	0.46	Bedding
6645	113	4.6	0.42	Bedding
6647	137.9	4.7	0.49	Bedding
6649	130.5	3.7	0.41	Bedding
6651	147.3	4.1	0.42	Bedding
6653	200.3	0.2	0.32	Bedding
6655	298.1	2.4	0.26	Bedding
6657.164	339.5	7.7	0.5	Bedding
6659.643	1.5	3.6	0.5	Bedding
6665	111.7	2.7	0.24	Bedding
6667	131.9	5.4	0.3	Bedding
6669	96.9	7.4	0.24	Bedding
6671	83.3	8.4	0.24	Bedding
6673	88.3	8.8	0.41	Bedding
6675	81.4	6.8	0.43	Bedding
6677	86.1	6.4	0.49	Bedding
6679	93.4	5.8	0.47	Bedding
6681	86.4	6.6	0.46	Bedding
6683	83.1	5.7	0.36	Bedding
6685	54.6	5.9	0.46	Bedding
6687	79.7	5.5	0.53	Bedding
6689	89.3	5.4	0.3	Bedding
6691	94.6	5.2	0.36	Bedding
6693	29.8	7.3	0.2	Bedding
6695	93.8	5.5	0.36	Bedding
6697	88.6	6.3	0.38	Bedding
6699	88.7	6	0.45	Bedding
6701	91.6	6	0.5	Bedding
6703	89.7	6	0.52	Bedding
6705	81.3	7	0.63	Bedding
6707	87.9	6.6	0.5	Bedding
6709	88.9	6.9	0.6	Bedding
6711	66.7	4.8	0.44	Bedding
6713	72	5.1	0.43	Bedding
6715	88.9	4.2	0.31	Bedding
6717	82.6	6.7	0.25	Bedding
6720.26	133.4	5.2	0.5	Bedding
6727	72.8	3.4	0.25	Bedding
6729	74.3	3.8	0.28	Bedding
6731	70.2	2.3	0.37	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
6733	104.6	4.1	0.34	Bedding
6735	90.7	3.4	0.42	Bedding
6737	76.5	3.5	0.34	Bedding
6739	95.5	3.8	0.56	Bedding
6741	108.5	3.7	0.47	Bedding
6743	111.4	5.4	0.56	Bedding
6747	117.5	9.4	0.51	Bedding
6749	180.9	2.7	0.45	Bedding
6751	121.4	2.7	0.52	Bedding
6753	82.5	4.5	0.44	Bedding
6755	93	6.6	0.35	Bedding
6757	99.5	16.5	0.24	Bedding
6775	42.9	9.9	0.25	Bedding
6777	105.4	5.2	0.32	Bedding
6779	339.2	6.9	0.24	Bedding
6781	122	4.9	0.24	Bedding
6783	127.7	18.3	0.21	Bedding
6785	124.7	3.9	0.25	Bedding
6795	185.2	4.4	0.26	Bedding
6797	177.6	3.5	0.35	Bedding
6797.828	111.1	4.7	0.5	Bedding
6799	101.9	11.8	0.36	Bedding
6801	84.2	5.5	0.34	Bedding
6803	104.3	13.6	0.42	Bedding
6805	86.7	6.7	0.38	Bedding
6807	106	13.4	0.28	Bedding
6809	37.6	4.6	0.33	Bedding
6811	63.3	5.8	0.3	Bedding
6813	68.8	5.7	0.35	Bedding
6815	104.8	6.5	0.28	Bedding
6817	94.9	5.4	0.21	Bedding
6823	144.7	4.8	0.22	Bedding
6827	117.9	4.2	0.23	Bedding
6829	127.2	3.7	0.21	Bedding
6831	125	3	0.34	Bedding
6833	148.7	2.6	0.37	Bedding
6835	68	2.7	0.43	Bedding
6837	82.9	2.4	0.39	Bedding
6839	114.9	3.3	0.33	Bedding
6841	110.1	4.6	0.42	Bedding
6843	115.6	4.3	0.46	Bedding
6845	106	4.1	0.47	Bedding
6847	109.5	4.2	0.39	Bedding
6849	104.3	3.7	0.32	Bedding
6851	84.8	5.9	0.34	Bedding
6853	74.5	5	0.24	Bedding
6855	132.8	2.5	0.35	Bedding
6857	27.7	4.1	0.28	Bedding
6859	8.6	2.3	0.3	Bedding
6861	321.1	3.8	0.21	Bedding
6863	335.1	9.5	0.32	Bedding
6865	326.3	8.5	0.3	Bedding
6867	296.2	8.5	0.31	Bedding
6869	126.2	2.5	0.38	Bedding
6871	163.5	6.1	0.28	Bedding
6873	144.6	11.3	0.25	Bedding
6875.227	125	14.4	0.5	Bedding
6879	147.1	4.3	0.2	Bedding
6881	139.7	6.8	0.22	Bedding
6883	130.7	7.6	0.27	Bedding
6886.067	91.1	5.3	0.5	Bedding
6887	150.5	5.8	0.24	Bedding
6889	64.9	5.4	0.25	Bedding
6891	145.7	3.2	0.34	Bedding
6893	127.7	2.5	0.26	Bedding
6895	55.9	1.1	0.23	Bedding
6897	211.1	1.4	0.21	Bedding
6899.739	138.8	2.4	0.5	Bedding
6965.157	339.5	7.6	0.5	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
6968.309	68.5	4.4	0.5	Bedding
6978.145	83.5	4.4	0.5	Bedding
6982.43	247.7	6.2	0.5	Bedding
6987	165.6	5.1	0.25	Bedding
6989.153	156.3	1.3	0.5	Bedding
6994.287	353.1	9.4	0.5	Bedding
6994.528	339.6	11.2	0.5	Bedding
6995.612	317.6	10.5	0.5	Bedding
6996.631	351.8	4.3	0.5	Bedding
6996.897	29.4	6.5	0.5	Bedding
6997.532	11.9	5.3	0.5	Bedding
6999.191	213	3.9	0.5	Bedding
7000.258	350	8.3	0.7	Bedding
7000.638	346.8	8.7	0.5	Bedding
7001.806	28.5	4.6	0.5	Bedding
7002.107	6.6	6	0.5	Bedding
7003.398	7.5	8	0.5	Bedding
7003.806	2.2	7.7	0.5	Bedding
7004.332	347.6	7.9	0.5	Bedding
7004.699	348	7.5	0.5	Bedding
7005.699	337.7	10.2	0.5	Bedding
7008.08	325.9	8	0.5	Bedding
7009.609	312.4	11.3	0.5	Bedding
7010.146	342.8	7.9	0.5	Bedding
7010.575	32.8	4.3	0.5	Bedding
7011.615	310.6	23.6	0.5	Bedding
7013	317.5	9.8	0.21	Bedding
7017	220.6	11.1	0.24	Bedding
7023.408	39.5	4.8	0.5	Bedding
7027	40.1	9.3	0.27	Bedding
7029	41.5	6.8	0.32	Bedding
7029.721	51.5	7.1	0.5	Bedding
7031	64.7	7.2	0.27	Bedding
7032.778	318.5	9	0.5	Bedding
7034.61	313.3	5.8	0.5	Bedding
7037	199.8	2	0.31	Bedding
7039	85	1.3	0.34	Bedding
7041	107.4	1.3	0.36	Bedding
7043	305.5	8	0.35	Bedding
7043.959	126.3	2.2	0.7	Bedding
7045	291.9	7.2	0.28	Bedding
7046.049	351.7	8	0.5	Bedding
7046.394	332	8.2	0.5	Bedding
7047	326.5	4	0.26	Bedding
7048.073	236.2	18	0.7	Bedding
7051.306	58.5	5.9	0.5	Bedding
7051.501	48.5	7.5	0.5	Bedding
7061.572	5.1	19.5	0.5	Bedding
7061.865	13.5	17.7	0.5	Bedding
7067.168	104.7	10	0.5	Bedding
7069	72.4	11.8	0.35	Bedding
7094.024	97	14.7	0.38	Bedding
7146.341	72.4	2.8	0.5	Bedding
7151	348.1	12.3	0.25	Bedding
7155	291.1	5.9	0.27	Bedding
7156.257	144.6	2.7	0.5	Bedding
7167.14	103.6	6.9	0.5	Bedding
7173	149.5	10.4	0.22	Bedding
7241	64.3	4.7	0.24	Bedding
7243	190.8	5.2	0.29	Bedding
7245	209.3	6.3	0.27	Bedding
7247	222.9	6.2	0.34	Bedding
7249	267	3.1	0.3	Bedding
7251	267	3.1	0.41	Bedding
7253	90.3	6.6	0.29	Bedding
7257.578	90.5	7.6	0.5	Bedding
7257.879	75.2	7.1	0.5	Bedding
7279	113.2	5.6	0.22	Bedding
7283	77.8	4	0.27	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
7283.666	120.9	6.7	0.5	Bedding
7285	79.3	5.2	0.27	Bedding
7287	75.6	4	0.34	Bedding
7289	66.7	2.9	0.25	Bedding
7291	69.1	4.1	0.31	Bedding
7297.009	134.4	7.6	0.5	Bedding
7299	35.2	11.2	0.21	Bedding
7303	39.4	11.6	0.23	Bedding
7333	148.4	7.1	0.3	Bedding
7341	246.6	2.6	0.26	Bedding
7345	211.7	6.8	0.27	Bedding
7355	32.3	9.1	0.2	Bedding
7359	120.7	14.4	0.22	Bedding
7361	76.9	17.9	0.2	Bedding
7363	13.8	5.6	0.22	Bedding
7367	133.5	6.6	0.31	Bedding
7369	140	10.8	0.39	Bedding
7385.92	103	6.8	0.5	Bedding
7391	53.7	17.4	0.29	Bedding
7413	106.3	9.3	0.33	Bedding
7415	83.8	8.6	0.29	Bedding
7417	69.7	10	0.44	Bedding
7421	70.9	11	0.44	Bedding
7426.878	112.4	11.4	0.5	Bedding
7431	106.7	10.5	0.22	Bedding
7435	76.4	11.9	0.23	Bedding
7438.177	89.7	12.5	0.5	Bedding
7439	116.8	13.7	0.21	Bedding
7453	71.2	4.9	0.28	Bedding
7455	176.9	6.6	0.27	Bedding
7457	114.6	6.6	0.41	Bedding
7459	126.6	17.7	0.24	Bedding
7461	134.9	8.4	0.4	Bedding
7463	135.6	24	0.25	Bedding
7465	129.8	8.9	0.41	Bedding
7467	85.4	4.2	0.23	Bedding
7477	90.9	7.3	0.27	Bedding
7481	95.7	6.1	0.36	Bedding
7482.39	97.8	7.2	0.5	Bedding
7483	97.1	6.2	0.32	Bedding
7485	87.9	6.2	0.44	Bedding
7487	90.2	6.2	0.45	Bedding
7489	92.5	6.2	0.51	Bedding
7490.329	100.5	1.7	0.5	Bedding
7491	96.7	6.2	0.49	Bedding
7493	103.5	6.3	0.44	Bedding
7494.357	106	5.3	0.5	Bedding
7495	114.8	6.8	0.43	Bedding
7496.343	107.7	6.8	0.5	Bedding
7497	121.5	8.2	0.28	Bedding
7499	123.8	9.9	0.24	Bedding
7507.602	346.5	5.5	0.5	Bedding
7508.446	341.4	5.4	0.5	Bedding
7509.387	95	5.3	0.5	Bedding
7509.848	94.7	5.5	0.5	Bedding
7510.262	85.8	6.3	0.5	Bedding
7522.022	80.2	1.4	0.5	Bedding
7539	140.8	7.2	0.33	Bedding
7543	256.9	4.9	0.42	Bedding
7545	316.5	6.4	0.29	Bedding
7547	109.1	6.3	0.24	Bedding
7549	328.2	4.1	0.25	Bedding
7553	38.3	4.3	0.3	Bedding
7555	25.8	6	0.27	Bedding
7556.506	299.1	4	0.5	Bedding
7557	81.6	1.7	0.31	Bedding
7559	60.1	17.5	0.32	Bedding
7560.125	92.3	6.9	0.5	Bedding
7561	159.4	6.7	0.41	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
7563	144.6	7.7	0.46	Bedding
7565	35.2	18.8	0.42	Bedding
7567	141.3	9.5	0.43	Bedding
7569	90.5	8.3	0.28	Bedding
7570.647	50.2	12.9	0.5	Bedding
7573	86.7	7.7	0.37	Bedding
7575	100.1	6.2	0.38	Bedding
7577	99.3	8	0.37	Bedding
7579	80	10.2	0.28	Bedding
7581	111.9	8.7	0.32	Bedding
7585	105.7	9.8	0.25	Bedding
7587	109.6	8.9	0.23	Bedding
7589	74.9	3.5	0.24	Bedding
7593	45.9	15.6	0.21	Bedding
7597	84.4	22.7	0.23	Bedding
7601.393	68.4	21.5	0.5	Bedding
7617	100.9	7.5	0.2	Bedding
7621	341.7	3.1	0.23	Bedding
7625	208.1	4.1	0.22	Bedding
7627.301	130	9.5	0.5	Bedding
7635.442	107.1	28.7	0.5	Bedding
7666.069	63.3	17.8	0.5	Bedding
7672.42	80.1	23.5	0.5	Bedding
7675	87.3	6.9	0.29	Bedding
7677	80.7	3.5	0.23	Bedding
7679	91.6	8.7	0.28	Bedding
7681	133.9	5.8	0.26	Bedding
7683	114.3	6.2	0.28	Bedding
7685	104.8	10.6	0.24	Bedding
7687	116.4	9.3	0.33	Bedding
7689	100.1	1.9	0.25	Bedding
7693.48	65.6	3.4	0.5	Bedding
7706.041	182.3	9.7	0.5	Bedding
7711	127.1	10.4	0.27	Bedding
7713	163.5	4.9	0.25	Bedding
7715	113.5	12.8	0.43	Bedding
7716.519	143.3	1.6	0.5	Bedding
7717	149.7	6.8	0.44	Bedding
7721.573	162.1	25.5	0.5	Bedding
7723	232.1	10.6	0.61	Bedding
7723.506	326.4	13.2	0.5	Bedding
7723.87	294.8	17.2	0.5	Bedding
7725	251.5	21.1	0.56	Bedding
7727	210.7	9.1	0.56	Bedding
7728.854	46.5	9.2	0.5	Bedding
7731.335	40.2	6.9	0.5	Bedding
7735	15.4	12.6	0.25	Bedding
7739	34.2	13.4	0.2	Bedding
7745	35.1	6	0.2	Bedding
7747	42.6	6.7	0.21	Bedding
7749	60	2.9	0.23	Bedding
7749.686	120.6	3.4	0.5	Bedding
7751	49.2	2.5	0.22	Bedding
7755	145.1	5.9	0.22	Bedding
7761	210.6	3.1	0.26	Bedding
7769	71.7	21.3	0.36	Bedding
7771	69.1	19.6	0.26	Bedding
7775	92	14.7	0.29	Bedding
7777	28.6	2.3	0.39	Bedding
7779	249.1	10.1	0.25	Bedding
7781	97.8	1.2	0.48	Bedding
7782.72	176.6	7.7	0.5	Bedding
7784.268	226.2	24.5	0.5	Bedding
7785	225.1	25.6	0.37	Bedding
7793	150.9	11.8	0.33	Bedding
7915	215.6	3.2	0.31	Bedding
7947.931	329.4	16.3	0.5	Bedding
7951.485	266.6	24.1	0.5	Bedding
7955.095	92.4	4.7	0.5	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
7955.768	92.8	4.3	0.5	Bedding
7981.126	31.3	29	0.5	Bedding
7995.392	50	0.9	0.5	Bedding
8001	27	5.9	0.24	Bedding
8011	100.1	16.6	0.25	Bedding
8013	66.7	15.1	0.36	Bedding
8015	56.1	18.4	0.24	Bedding
8017	62.1	13.6	0.21	Bedding
8019	39.4	19.5	0.22	Bedding
8021	68.6	10.7	0.22	Bedding
8111	190	19.8	0.25	Bedding
8113	128	6.4	0.27	Bedding
8115	255.6	12.6	0.32	Bedding
8117	280.6	8.2	0.29	Bedding
8121	215.2	17	0.28	Bedding
8123	202.4	16.7	0.28	Bedding
8125	213.9	16.2	0.39	Bedding
8127	209.8	15.7	0.27	Bedding
8131	46.8	15.3	0.41	Bedding
8133	288.2	14.9	0.43	Bedding
8135	164.3	11.1	0.51	Bedding
8137	235.1	11.6	0.4	Bedding
8139	170.1	14.9	0.5	Bedding
8141	234.3	8.8	0.32	Bedding
8149	41.6	20.2	0.3	Bedding
8151	36.3	23.2	0.27	Bedding
8153	60.2	28.2	0.37	Bedding
8155	71.5	32.8	0.26	Bedding
8157	58.5	28.4	0.33	Bedding
8159	51.9	17.4	0.22	Bedding
8163	35.4	23.3	0.24	Bedding
8165	77.4	23.2	0.26	Bedding
8167	97.6	21.3	0.34	Bedding
8169	67.7	17.5	0.36	Bedding
8169.628	117.6	15.3	0.39	Bedding
8183.435	82.1	11.8	0.39	Bedding
8191	135.7	13.4	0.24	Bedding
8193	136.1	12.9	0.46	Bedding
8195	151.5	10.2	0.26	Bedding
8198.778	68.5	6.7	0.39	Bedding
8203	287.7	20.7	0.22	Bedding
8205	285.6	21.3	0.3	Bedding
8207	299.2	22.6	0.35	Bedding
8209	238.2	26.9	0.28	Bedding
8213	248.3	26.2	0.34	Bedding
8215	232	22.8	0.38	Bedding
8217	264.5	24.5	0.35	Bedding
8221.589	255	8.7	0.37	Bedding
8224.209	267.4	36.1	0.37	Bedding
8227	222.1	25.3	0.22	Bedding
8236.729	229	26.1	0.5	Bedding
8241.018	285	3.9	0.5	Bedding
8242.411	304.5	24.1	0.5	Bedding
8242.949	301.4	24.9	0.5	Bedding
8246.149	289.5	11	0.5	Bedding
8247.986	279.8	7.1	0.5	Bedding
8249.097	286.7	4	0.5	Bedding
8254.642	60.1	7.7	0.5	Bedding
8261	150.8	9.9	0.37	Bedding
8263	188.3	8.8	0.22	Bedding
8265	151.6	9.9	0.34	Bedding
8267	119.2	12.8	0.3	Bedding
8269	118.8	13	0.42	Bedding
8271	114.2	12.2	0.39	Bedding
8273	124.6	13.3	0.59	Bedding
8275	114.3	12.2	0.59	Bedding
8277	119.1	12.8	0.69	Bedding
8279	108	11.9	0.63	Bedding
8281	121.5	12.1	0.75	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
8283	107.2	9.1	0.65	Bedding
8285	102.2	11.5	0.71	Bedding
8287	108.2	11.9	0.69	Bedding
8289	115.6	14.1	0.65	Bedding
8291	108.2	11.9	0.58	Bedding
8332.293	133.5	2.3	0.5	Bedding
8363	278.2	5.9	0.23	Bedding
8389	193	7.9	0.23	Bedding
8391	169.1	9.9	0.29	Bedding
8395	186	12	0.31	Bedding
8399	184.3	12.1	0.3	Bedding
8402.396	188.2	1.2	0.5	Bedding
8406.688	170.8	3.1	0.5	Bedding
8420.4	180.5	11.8	0.5	Bedding
8423	186.1	21.1	0.26	Bedding
8425	200.7	14.8	0.26	Bedding
8426.008	188.9	9.4	0.5	Bedding
8428.976	224.8	19.9	0.5	Bedding
8429.8	178.3	12.5	0.5	Bedding
8448.349	50.9	9.3	0.5	Bedding
8449	81.1	17.1	0.22	Bedding
8450.67	101.2	23.6	0.5	Bedding
8453	69	17.1	0.32	Bedding
8457	29.8	13.1	0.3	Bedding
8461	0.6	12.4	0.31	Bedding
8463	347.1	3	0.35	Bedding
8465	186.9	7.3	0.29	Bedding
8467	7.7	2	0.35	Bedding
8469	15.9	10.5	0.24	Bedding
8473.498	14.1	5.3	0.5	Bedding
8482.816	100.6	5.3	0.5	Bedding
8517.589	96.3	8.5	0.5	Bedding
8521.213	191.7	4.1	0.5	Bedding
8542.882	94	12.8	0.5	Bedding
8556.678	129.9	13.2	0.5	Bedding
8577	193.2	7.3	0.28	Bedding
8583	176.1	9	0.23	Bedding
8585	171	9.9	0.27	Bedding
8595	140.3	7.8	0.22	Bedding
8596.15	183.1	7.4	0.3	Bedding
8597	156.6	6.4	0.21	Bedding
8599	140.5	7.8	0.22	Bedding
8601	173.1	6.6	0.22	Bedding
8603	170.2	7.3	0.22	Bedding
8605	208.7	5	0.23	Bedding
8607	172.3	8.4	0.24	Bedding
8609	205.4	5.2	0.21	Bedding
8611	260.1	10.7	0.39	Bedding
8613	255.9	2.2	0.32	Bedding
8615	218.3	1.7	0.49	Bedding
8617	151.8	5	0.3	Bedding
8619	104.1	2.9	0.39	Bedding
8623	176.9	16.2	0.41	Bedding
8624.618	159	5.6	0.5	Bedding
8625	154.8	7.9	0.33	Bedding
8651.072	109.6	20	0.5	Bedding
8793	108.4	19.1	0.41	Bedding
8795	156.8	12.3	0.36	Bedding
8797	172.2	12.6	0.4	Bedding
8799	191.3	12	0.33	Bedding
8801	189.9	6.7	0.34	Bedding
8803	158.5	26.1	0.28	Bedding
8805	152.9	15.9	0.22	Bedding
9095	126.7	18.7	0.23	Bedding
9101	127.3	23.3	0.2	Bedding
9105	132.8	18.3	0.21	Bedding
9133.526	79.1	12	0.5	Bedding
9150.5	93.5	25.8	0.5	Bedding
9193	58.8	24	0.21	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
9195	57.7	22.7	0.23	Bedding
9220.409	108.7	13.1	0.5	Bedding
9222.488	214	33.4	0.5	Bedding
9241	127.4	12	0.43	Bedding
9243	92.7	2.9	0.7	Bedding
9247	130.1	18.6	0.62	Bedding
9263.894	98.1	8.2	0.5	Bedding
9272.088	105.7	18.6	0.5	Bedding
9293	113.8	10.8	0.22	Bedding
9294.633	90.1	11.3	0.5	Bedding
9323.3	99.7	13.1	0.5	Bedding
9331	114.5	3.4	0.21	Bedding
9335	124.2	6	0.21	Bedding
9337	126.4	7.1	0.2	Bedding
9339	77.2	10	0.26	Bedding
9341	124	9	0.33	Bedding
9343	61.7	10.7	0.35	Bedding
9345	69	16.5	0.5	Bedding
9347	79.2	8	0.43	Bedding
9349	53	7.8	0.52	Bedding
9355	133.6	2.6	0.34	Bedding
9357	111.6	6.3	0.38	Bedding
9359	125.4	6.3	0.3	Bedding
9361	117.1	7.5	0.23	Bedding
9367	114.8	9.3	0.23	Bedding
9371	87.7	14.6	0.23	Bedding
9373	99.2	11	0.21	Bedding
9375	95.6	10.9	0.21	Bedding
9377	129	12.7	0.23	Bedding
9377.687	118.7	9.2	0.5	Bedding
9379	125.9	12.8	0.23	Bedding
9383	96.6	15.3	0.23	Bedding
9383.566	116.1	13.1	0.5	Bedding
9385	79.5	17.4	0.21	Bedding
9387	87.2	16.9	0.24	Bedding
9391	81.8	14.1	0.31	Bedding
9395	84.4	22.7	0.32	Bedding
9397	56.5	25.8	0.25	Bedding
9399	80.8	17.2	0.31	Bedding
9401	49.2	22.3	0.28	Bedding
9403	127.2	10.9	0.33	Bedding
9405	88.6	18.3	0.25	Bedding
9407	118.7	10.9	0.27	Bedding
9409	102.8	22.8	0.28	Bedding
9411	110.5	19.4	0.25	Bedding
9413	102.5	20.9	0.31	Bedding
9415	100.6	13.9	0.24	Bedding
9417	101.8	11.8	0.27	Bedding
9419	104.1	27.8	0.22	Bedding
9421	135.9	21.2	0.23	Bedding
9423	107.9	25.5	0.24	Bedding
9425	127.4	25.3	0.38	Bedding
9427	75	19.6	0.22	Bedding
9428.338	117.2	24.5	0.5	Bedding
9429	96	25	0.33	Bedding
9431	86.5	22.6	0.22	Bedding
9433	81.8	25.7	0.33	Bedding
9448.436	148.8	14.3	0.5	Bedding
9457.965	73.6	14	0.5	Bedding
9468.52	111.7	18.6	0.5	Bedding
9479	143.6	7.2	0.21	Bedding
9481	80.3	1	0.23	Bedding
9484.142	120	16.1	0.5	Bedding
9491.084	195.6	5.2	0.5	Bedding
9497	241.6	21	0.28	Bedding
9554.51	125.8	62	0.7	Fracture
9554.98	124.1	67.6	0.7	Fracture
9561.061	106.1	71	0.7	Fracture
9563.328	135.7	65.9	0.7	Fracture

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
9589	305.6	28.3	0.35	Bedding
9591	278.4	26.2	0.21	Bedding
9592.216	87.7	70.6	0.7	Fracture
9593	263	31.8	0.33	Bedding
9593.154	289.2	53.3	0.7	Fracture
9595	288.7	26.7	0.23	Bedding
9597	261.5	32.9	0.28	Bedding
9599	296.2	26.7	0.21	Bedding
9599.887	124.7	73.8	0.7	Fracture
9600.822	124.6	45.2	0.5	Fracture
9602.724	180.8	12.9	0.5	Bedding
9609.61	243.8	29.5	0.5	Bedding
9613.514	307	15.9	0.7	Bedding
9623.071	207	6.5	0.7	Bedding
9623.742	239	19.6	0.7	Bedding
9624.149	230.8	17.1	0.7	Bedding
9630.831	224.4	17.1	0.7	Bedding
9632.497	231.7	28.5	0.7	Bedding
9633	272.4	22.3	0.29	Bedding
9647.611	105.8	53.8	0.7	Fracture
9651	264.4	24	0.24	Bedding
9653	236.4	18.7	0.33	Bedding
9671	235	16.4	0.27	Bedding
9673.897	246.2	19	0.5	Bedding
9674.373	238.1	19.5	0.5	Bedding
9675	223.7	18.6	0.3	Bedding
9678.385	219.2	19.1	0.7	Bedding
9694.841	102.6	25	0.7	Bedding
9805	241.2	11.3	0.22	Bedding
9807.984	88	32.4	0.7	Bedding
9862.601	274.4	11.7	0.7	Bedding
9863.875	311.8	13	0.7	Bedding
9864.171	311.6	13.8	0.7	Bedding
9868.04	163.8	7.7	0.7	Bedding
9871.818	293.7	11	0.7	Bedding
9875	295.2	24.6	0.29	Bedding
9878.713	263.8	9.4	0.7	Bedding
9879.653	236.2	26.6	0.7	Bedding
9880.564	277.2	10	0.7	Bedding
9880.885	256.4	3.8	0.7	Bedding
9887	286.8	8.4	0.3	Bedding
9889	285.7	4.6	0.48	Bedding
9893.337	252.6	6.7	0.5	Bedding
9895.379	261.2	14.1	0.5	Bedding
9897.749	281.9	23.1	0.7	Bedding
9898.5	255	29.9	0.7	Bedding
9899	258.6	21	0.34	Bedding
9900.907	127.7	70.9	0.7	Fracture
9901	256.9	24.9	0.23	Bedding
9901.397	276	55	0.7	Fracture
9903	252.3	19.4	0.22	Bedding
9917.443	311.6	9.4	0.7	Bedding
9927	222.5	12.7	0.25	Bedding
9929	36.8	4.2	0.29	Bedding
9933	85.1	9.9	0.48	Bedding
9934.924	283.3	10.5	0.5	Bedding
9935.648	359.2	3.9	0.31	Bedding
9937	77.5	7.9	0.46	Bedding
9939	158.5	9.6	0.34	Bedding
9940.525	281.9	39.5	0.7	Bedding
9940.902	295.6	32.5	0.7	Bedding
9942.35	307.2	22.8	0.7	Bedding
9942.671	301.1	25.1	0.7	Bedding
9946.81	262.9	17.3	0.7	Bedding
9952.181	244.2	15.1	0.7	Bedding
9952.777	284.9	3.9	0.7	Bedding
9963	264.8	30.5	0.23	Bedding
9965	295.3	27.8	0.23	Bedding
9967	279.8	28.8	0.25	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
9969	259	27.9	0.33	Bedding
9971	266.6	27.2	0.38	Bedding
9973	261.2	27.8	0.31	Bedding
9974.981	115.9	57.9	0.7	Fracture
9975	266.9	26.6	0.34	Bedding
9975.574	249.3	26.2	0.5	Bedding
9976.531	249.8	30.4	0.5	Bedding
9977	278.1	25	0.34	Bedding
9977.638	132.1	62.4	0.7	Fracture
9977.899	284.8	9.7	0.7	Bedding
9979	273	24.4	0.34	Bedding
9979.181	254.1	20.4	0.5	Bedding
9981	260.3	27.3	0.31	Bedding
9983	267	26.4	0.3	Bedding
9989	283.8	17.8	0.26	Bedding
9989.707	281.7	8.8	0.7	Bedding
9990.411	242.4	53.2	0.7	Fracture
9991.276	263.9	42.8	0.7	Fracture
9995	305.9	29.8	0.34	Bedding
9998.355	85.4	15.6	0.7	Bedding
10009	288.1	34.2	0.2	Bedding
10013	283.8	34.4	0.24	Bedding
10014.37	274.9	7.7	0.7	Bedding
10015.66	278.6	22.8	0.7	Bedding
10017	284.3	32.7	0.3	Bedding
10018.41	156.7	64.8	0.7	Fracture
10018.6	151.6	67.1	0.7	Fracture
10021	287.5	32.7	0.35	Bedding
10023	235.1	34.2	0.31	Bedding
10023.46	211.1	3.7	0.7	Bedding
10027	294.8	26	0.36	Bedding
10033	302.2	20.3	0.26	Bedding
10035	260	29.3	0.23	Bedding
10039	254.5	20.6	0.21	Bedding
10039.96	302.3	11.7	0.7	Bedding
10044.29	238.8	24.6	0.7	Bedding
10045	223.1	29.9	0.7	Bedding
10046.14	230	38.9	0.7	Bedding
10073	214	19.9	0.39	Bedding
10075	240.4	33.4	0.44	Bedding
10077	230.1	20.6	0.5	Bedding
10079	230.3	20.6	0.44	Bedding
10081	244.9	21.2	0.57	Bedding
10083	262.8	32.3	0.5	Bedding
10085	221.4	18.4	0.44	Bedding
10089	221.5	18.4	0.5	Bedding
10091	220.7	17.4	0.56	Bedding
10093	209.3	15.6	0.54	Bedding
10097	205.8	20.8	0.46	Bedding
10108.55	265.6	11.1	0.7	Bedding
10115.12	230.5	17.6	0.7	Bedding
10125	210.8	35.2	0.22	Bedding
10138.82	296.7	18.2	0.7	Bedding
10147	292.5	38.4	0.26	Bedding
10149	254.6	39.5	0.2	Bedding
10153	229	35.7	0.23	Bedding
10156.22	246	26.3	0.7	Bedding
10157	257.6	41.3	0.24	Bedding
10157.68	254.2	36.8	0.5	Bedding
10158.25	254.5	30	0.7	Bedding
10160.33	212.2	32.1	0.7	Bedding
10161.8	260.4	38	0.7	Bedding
10164.7	263.4	33.5	0.5	Bedding
10166.43	243.6	37.2	0.5	Bedding
10166.79	251.7	42	0.5	Bedding
10171.48	310.9	21.3	0.7	Bedding
10175.31	290.9	33.3	0.5	Bedding
10176.65	282.2	30.9	0.5	Bedding
10183.43	264.5	40.1	0.5	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
10183.86	274.6	38.6	0.7	Bedding
10184.91	238	42.2	0.5	Fracture
10186.05	262.7	39.4	0.5	Fracture
10186.72	259.1	28.1	0.5	Bedding
10188.47	265.3	9	0.7	Bedding
10188.7	291.8	8.7	0.7	Bedding
10189.2	315.4	11.6	0.7	Bedding
10189.74	232.2	15.4	0.5	Bedding
10191.1	246.4	38.6	0.5	Bedding
10191.95	265.8	36	0.5	Bedding
10192.28	274.2	34.7	0.5	Bedding
10193.92	250.6	40.6	0.5	Bedding
10194.6	249.7	46.6	0.5	Bedding
10196.48	246.7	27.3	0.7	Bedding
10197.99	206.2	18.6	0.5	Bedding
10199.03	215.6	30.7	0.5	Bedding
10199.55	204.6	25.1	0.7	Bedding
10203.89	319.1	23.1	0.5	Bedding
10205.73	261.7	39.7	0.5	Bedding
10206.64	263.8	28.1	0.5	Bedding
10207.85	264.7	44.6	0.5	Bedding
10208.2	266.7	32.3	0.5	Bedding
10208.5	266.5	32.9	0.7	Bedding
10208.96	270.7	33	0.5	Bedding
10209.34	240.1	21.6	0.5	Bedding
10209.72	267.7	23.2	0.5	Bedding
10210.62	266.3	55	0.5	Fracture
10212.38	258.3	40	0.5	Fracture
10213.7	239.5	59	0.5	Fracture
10214.06	236.2	59.1	0.5	Fracture
10215.31	242.8	56.3	0.5	Fracture
10215.85	233.8	52.9	0.5	Fracture
10217.32	210	62.1	0.5	Fracture
10221.21	260.6	28.4	0.7	Bedding
10221.64	273	35	0.5	Bedding
10221.99	275.6	32.6	0.5	Bedding
10222.58	270.9	51.2	0.5	Fracture
10222.94	279.9	52.3	0.5	Fracture
10223.03	263.9	31.4	0.5	Bedding
10223.43	293.8	43.7	0.7	Fracture
10224.69	258.9	30.6	0.5	Bedding
10224.78	269	57.3	0.5	Fracture
10225.39	255.7	61	0.5	Fracture
10225.71	248.2	11.4	0.5	Bedding
10228.72	295	56.7	0.5	Fracture
10229.12	250.1	36.6	0.5	Bedding
10229.51	253.7	36.8	0.5	Bedding
10231.9	288.6	27.7	0.7	Bedding
10233.07	275.9	21.9	0.5	Bedding
10233.83	245.1	22.6	0.7	Bedding
10234.31	252.3	14.7	0.5	Bedding
10235.93	249.6	19.4	0.7	Bedding
10236.93	256.9	45.9	0.5	Fracture
10238.45	266.4	25.3	0.5	Bedding
10238.83	269.6	26.5	0.5	Bedding
10239.52	272.4	32.9	0.5	Bedding
10240.11	245.6	41.5	0.5	Bedding
10241.11	269.7	24.1	0.5	Bedding
10241.46	269.1	22.3	0.5	Bedding
10242.97	274.9	32.2	0.5	Bedding
10243.24	266.1	47.3	0.7	Fracture
10244.21	247.3	43	0.7	Fracture
10245.03	261.2	34.3	0.5	Bedding
10245.26	269.7	31.3	0.5	Bedding
10247.38	254.7	46	0.7	Fracture
10247.65	256	47.8	0.7	Fracture
10249.55	158.4	53.3	0.5	Fracture
10250.38	168.4	55.9	0.5	Fracture
10251.53	194.9	48.3	0.5	Fracture

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
10251.84	256.8	17.3	0.5	Bedding
10252.15	283.5	22.1	0.5	Bedding
10255	247.8	46.6	0.34	Bedding
10256.21	274.2	57.8	0.5	Fracture
10257.15	281.7	56.4	0.7	Fracture
10257.68	274.2	55.1	0.5	Fracture
10257.86	298.7	33.4	0.5	Bedding
10258.19	295.7	21.5	0.5	Bedding
10258.53	311	20.6	0.7	Bedding
10258.94	287.7	27.5	0.5	Bedding
10259.24	285.8	26.1	0.5	Bedding
10259.47	283.8	23.3	0.5	Bedding
10260.14	251.9	51.5	0.5	Fracture
10260.53	248	52.7	0.5	Fracture
10261.68	304.2	24.3	0.5	Bedding
10264.5	306.2	30	0.5	Bedding
10265.32	316.5	45.7	0.7	Bedding
10271	238.8	39.5	0.2	Bedding
10272.54	264.4	21.2	0.7	Bedding
10273.71	264.6	25.3	0.5	Bedding
10274.43	246	22.3	0.5	Bedding
10274.95	263.3	19.4	0.5	Bedding
10279.8	253.3	63.1	0.7	Fracture
10286.08	215.8	44.7	0.7	Bedding
10287.64	240.5	28	0.5	Bedding
10288.39	239.7	36.2	0.7	Bedding
10289.07	244.4	56.2	0.5	Fracture
10289.78	283.5	36.1	0.7	Bedding
10290.2	279.5	28.5	0.5	Bedding
10290.72	239.2	22	0.5	Bedding
10290.96	245.7	17.9	0.5	Bedding
10291.74	273.6	20.4	0.5	Bedding
10291.95	264.9	22.3	0.5	Bedding
10292.82	225.4	26.6	0.5	Bedding
10293.67	328.9	46.4	0.7	Fracture
10294.12	285	50.7	0.7	Fracture
10294.54	248	41.9	0.7	Bedding
10294.99	330.4	35.4	0.7	Fracture
10295.15	331.5	31.4	0.7	Fracture
10295.96	242.3	43.6	0.5	Bedding
10296.4	237	38.6	0.5	Bedding
10296.61	226.9	35.8	0.7	Bedding
10297.17	229.8	42.8	0.5	Bedding
10299.01	266.2	39	0.5	Bedding
10300.4	252.5	34	0.7	Bedding
10300.87	245.5	42	0.7	Bedding
10303.62	278.1	51.3	0.5	Fracture
10303.87	279.1	49.2	0.5	Fracture
10305.08	236.9	36.6	0.5	Bedding
10305.35	238.6	25.5	0.7	Bedding
10306.5	237.4	22.4	0.7	Bedding
10308.95	243.2	56.7	0.7	Fracture
10310.06	245.6	42.4	0.5	Fracture
10310.95	229.6	54.9	0.5	Fracture
10328.79	230.3	53.1	0.5	Fracture
10337.36	146.1	55.5	0.5	Fracture
10346.68	92.6	49	0.5	Fracture
10348.75	100.7	56.1	0.7	Fracture
10349.85	109.3	53.5	0.5	Fracture
10350.82	136.9	54.3	0.5	Fracture
10351.42	128	46.9	0.7	Fracture
10368.71	249.5	31.3	0.7	Bedding
10368.97	246.1	35.8	0.7	Bedding
10369.6	242.8	19.4	0.5	Bedding
10371.45	252	53.4	0.5	Fracture
10372.24	279.7	29	0.7	Bedding
10373.48	84.1	55.6	0.7	Fracture
10374.67	254.4	25.5	0.7	Bedding
10375.73	274.5	41.7	0.7	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
10378.93	257.5	39.4	0.7	Bedding
10390.86	272	19.3	0.7	Bedding
10392.57	262.6	50.3	0.7	Fracture
10393.57	236.8	31.4	0.7	Bedding
10394.2	309.1	12.2	0.7	Bedding
10396.26	214	15.9	0.7	Bedding
10397.44	251.9	16	0.5	Bedding
10399.26	306.1	16.1	0.7	Bedding
10399.67	118.6	32.5	0.7	Fracture
10402.46	62.9	11.1	0.7	Bedding
10403.42	73.8	41.8	0.7	Fracture
10404.97	229.6	35.5	0.7	Bedding
10407.17	220.3	15.7	0.7	Bedding
10412.72	59.8	26.4	0.5	Bedding
10415.33	310.8	14.8	0.7	Bedding
10415.97	314.2	11.5	0.7	Bedding
10416.44	287.3	14.5	0.7	Bedding
10417.72	300.8	8.9	0.7	Bedding
10418.28	94.9	21.9	0.7	Fracture
10427.36	306.5	31.3	0.7	Bedding
10428.52	265.1	30.6	0.7	Bedding
10428.85	289	42	0.5	Bedding
10429.87	288.2	32.5	0.7	Bedding
10431.09	289.5	37.2	0.7	Bedding
10431.81	299.7	39.4	0.5	Bedding
10432.24	275.5	40.6	0.5	Bedding
10433.46	305.9	24.1	0.7	Bedding
10440.85	308.6	30.8	0.7	Bedding
10442.58	340.3	35.4	0.7	Bedding
10442.98	328.7	32.1	0.7	Bedding
10443.37	310.7	34.4	0.7	Bedding
10444.68	323	38.3	0.7	Bedding
10461.34	63.8	15	0.7	Bedding
10462.41	71.6	15.9	0.7	Bedding
10474.16	87.7	32.7	0.7	Bedding
10475.26	74.9	30.4	0.7	Bedding
10483	215.4	29	0.26	Bedding
10483.59	243.9	28	0.7	Bedding
10484.42	270	48.3	0.7	Fracture
10487	238.8	33.7	0.25	Bedding
10490.92	229.6	33.2	0.7	Bedding
10493	246.2	34.1	0.24	Bedding
10497	226	30	0.7	Bedding
10497.77	232.8	33	0.7	Bedding
10498.11	238.1	33.1	0.7	Bedding
10499	256.9	36.5	0.33	Bedding
10501	227.7	34.5	0.28	Bedding
10501.89	235.4	33.8	0.5	Bedding
10503	239.3	37.1	0.7	Bedding
10504.05	238.5	40	0.5	Bedding
10504.7	240.4	47.4	0.7	Bedding
10505.41	241.2	45.2	0.7	Bedding
10505.99	234.5	34	0.5	Bedding
10506.49	257.4	33.5	0.5	Bedding
10506.97	232.2	25.4	0.7	Bedding
10507.18	224.3	20.9	0.7	Bedding
10507.53	232.2	21.7	0.5	Bedding
10507.75	247	24.4	0.5	Bedding
10508.29	255.2	36.1	0.5	Bedding
10508.6	259.7	31.3	0.5	Bedding
10509.02	253.8	33.2	0.7	Bedding
10509.35	240.7	34.9	0.7	Bedding
10510.54	230.9	19.4	0.5	Bedding
10511.16	228.6	22.2	0.5	Bedding
10511.75	244.7	30.1	0.5	Bedding
10512.25	237.4	32	0.5	Bedding
10512.66	239	28.1	0.5	Bedding
10513.16	232.6	22.8	0.5	Bedding
10513.56	232.5	23.6	0.5	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
10513.87	251.7	23.8	0.7	Bedding
10514.59	239	16.1	0.5	Bedding
10514.75	248.4	20.5	0.7	Bedding
10514.97	237.2	23.7	0.7	Bedding
10515.92	241.4	19.8	0.5	Bedding
10516.64	236.1	25.5	0.7	Bedding
10517.8	246.9	20.7	0.5	Bedding
10519.66	248.6	30.3	0.7	Bedding
10520.88	242	34.4	0.7	Bedding
10527.89	225.2	41.9	0.5	Bedding
10529.65	239.5	42.2	0.5	Bedding
10530.54	243.7	45.8	0.5	Bedding
10531.24	251.2	43.5	0.5	Bedding
10531.97	250	45	0	Bedding
10533.76	266.2	22.4	0.5	Bedding
10539	258.3	29.9	0.25	Bedding
10539.89	241.1	31.4	0.7	Bedding
10540.27	234.3	26.4	0.7	Bedding
10541	252.5	30.5	0.27	Bedding
10541.19	238.6	36.7	0.7	Bedding
10543.3	213.2	37.9	0.7	Bedding
10544.08	222.5	34	0.7	Bedding
10545	236	36.9	0.29	Bedding
10545.7	252.2	38.4	0.25	Bedding
10546.19	239	28.5	0.7	Bedding
10546.98	248.8	32.1	0	Bedding
10547.98	279.6	31.9	0.7	Bedding
10549.88	237.2	40.3	0.5	Bedding
10554.12	230.6	26.6	0.5	Bedding
10556.49	256.5	19.8	0.7	Bedding
10559.59	206.5	19.3	0.5	Bedding
10561.44	281.6	17.6	0.5	Bedding
10562.75	291.2	24.1	0.5	Bedding
10569.54	252	37.7	0.5	Bedding
10572.26	215.9	26.6	0.5	Bedding
10575	224.5	25.8	0.27	Bedding
10582.62	232.9	32.5	0.5	Bedding
10582.86	235.8	28.9	0.5	Bedding
10584.3	89.8	47.3	0.7	Fracture
10584.95	104.5	48.5	0.5	Fracture
10585.48	90.3	45.2	0.5	Fracture
10586.96	70.4	44.2	0.5	Fracture
10587.61	64.9	52	0.7	Fracture
10593	211.9	14.6	0.3	Bedding
10594.21	221.2	21.4	0.5	Bedding
10595	237.5	15.1	0.35	Bedding
10597	236.7	16.3	0.3	Bedding
10601	227.8	17.3	0.25	Bedding
10605	223.5	17.8	0.25	Bedding
10607	226.5	17.6	0.31	Bedding
10624.47	149.6	78	0.7	Fracture
10627	252	39.8	0.22	Bedding
10630.06	258.8	37.4	0.5	Bedding
10631	251	40.1	0.26	Bedding
10632.23	246	39	0.5	Bedding
10632.82	245.5	37.5	0.5	Bedding
10634.61	293	20.2	0.5	Bedding
10635.03	244.1	22.2	0	Bedding
10636.62	291.6	12	0	Bedding
10638.37	194.8	21.9	0.5	Bedding
10638.79	208.8	22.2	0.5	Bedding
10639.25	260.7	29.1	0	Bedding
10639.6	257.3	29.3	0.5	Bedding
10640.36	202.1	16.7	0.5	Bedding
10643.74	247.9	30.5	0.5	Bedding
10644.81	247.5	47.1	0.5	Bedding
10645.99	146	73.1	0.5	Fracture
10647.35	246.7	44.5	0.5	Bedding
10648.55	244.4	42	0.5	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
10649.37	241.6	27.3	0.5	Bedding
10649.92	88.9	43.8	0.5	Fracture
10651	237.8	24	0.31	Bedding
10651.5	239	36.7	0.5	Bedding
10651.93	239.4	35.8	0.5	Bedding
10652.46	114.4	53.2	0.5	Fracture
10654.2	120.1	56.8	0.5	Fracture
10654.29	237.4	33.7	0.5	Bedding
10655.12	245.4	23.9	0.5	Bedding
10655.46	243.5	29.1	0.5	Bedding
10657.13	240.8	27.9	0.5	Bedding
10657.27	105.3	33	0.5	Fracture
10658.75	82.1	63.7	0	Fracture
10659	242.2	32.1	0.29	Bedding
10659.46	229.5	30.4	0.5	Bedding
10660.14	242.7	43.3	0.5	Bedding
10660.21	80.7	65.8	0.5	Fracture
10661	235	31.7	0.26	Bedding
10661.36	238.5	33.9	0.5	Bedding
10661.87	151.9	56.2	0.5	Fracture
10662.67	144.6	66.5	0.5	Fracture
10663	232.4	31.9	0.26	Bedding
10663.59	236.9	38.8	0.5	Bedding
10664.15	262.8	36	0.5	Bedding
10664.61	235.4	25	0.5	Bedding
10675.74	163.3	43.7	0.5	Fracture
10676.03	138.2	40.1	0.5	Fracture
10676.4	144.2	41.3	0.5	Fracture
10677.27	233.3	42	0.5	Bedding
10678.04	245.3	31.1	0.5	Bedding
10678.48	148.6	58.8	0.5	Fracture
10680.3	234.9	27.6	0.5	Bedding
10681.68	242.4	35.2	0.5	Bedding
10682.34	237.5	27.1	0.5	Bedding
10682.69	236.7	24.8	0.5	Bedding
10683.79	226.8	18.5	0.5	Bedding
10689.67	146.6	48.5	0.5	Fracture
10692.22	239.6	20.8	0.5	Bedding
10693.15	225.3	31.2	0.5	Bedding
10693.73	228.1	29.2	0.5	Bedding
10695.59	136.1	51.5	0	Fracture
10696.45	236.8	31.8	0.5	Bedding
10697.38	235.2	18.2	0	Bedding
10700.01	243.7	49.7	0.5	Fracture
10700.67	241.6	24.8	0.5	Bedding
10703	240.3	45.8	0.21	Bedding
10704.91	236.9	37.4	0.5	Bedding
10707.65	238.6	27.1	0.5	Bedding
10708.26	241.7	51.2	0.5	Bedding
10709.3	242.5	43.4	0.5	Bedding
10710.64	231.2	30.7	0.5	Bedding
10711.72	226.5	31.9	0.5	Bedding
10713.01	241.8	40.9	0.5	Bedding
10715	255.4	34	0.35	Bedding
10715.52	241.5	37.3	0.5	Bedding
10717	220.7	31	0.27	Bedding
10717.85	233.8	27.8	0.5	Bedding
10719	241.5	38.1	0.24	Bedding
10720.13	254.8	61.9	0.5	Fracture
10721	253.3	32.9	0.25	Bedding
10721.35	240.7	39.3	0.5	Bedding
10723.3	238.4	25.6	0.5	Bedding
10725	255.7	25.6	0.25	Bedding
10729	245.5	24.7	0.27	Bedding
10731	247.4	22.9	0.2	Bedding
10733	245.4	35.1	0.26	Bedding
10735	248	23.8	0.33	Bedding
10737	246.6	30	0.32	Bedding
10738.97	251.6	23.6	0.5	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
10740.53	242.7	32.7	0.5	Bedding
10741	248.6	24.4	0.35	Bedding
10742.85	116.7	68.5	0.5	Fracture
10743	247.4	27.7	0.38	Bedding
10744.57	229.3	24.4	0.5	Bedding
10745	234.7	26.1	0.33	Bedding
10745.66	235.7	35.9	0.5	Bedding
10749	249.8	35.2	0.36	Bedding
10767.64	230.9	19.7	0.5	Bedding
10770.15	140.1	63.9	0.5	Fracture
10772.72	211.4	20.2	0.5	Bedding
10811.17	126.5	52.4	0.5	Fracture
10820.79	131.8	40.7	0.5	Fracture
10825.23	139.5	57.7	0.5	Fracture
10827.7	122	58.6	0.5	Fracture
10834.89	143.4	65.3	0.5	Fracture
10845	262.2	18.5	0.22	Bedding
10845.26	145.6	52.5	0.5	Fracture
10845.71	158.6	61.3	0.5	Fracture
10851	199.7	14.7	0.27	Bedding
10853	224.5	15	0.26	Bedding
10889	256.6	19.9	0.23	Bedding
10893	291.2	38.4	0.31	Bedding
10896.13	255.4	34	0.7	Bedding
10897	292	38.6	0.23	Bedding
10899	280.5	38	0.21	Bedding
10903	267.2	36.9	0.27	Bedding
10907	208.9	22.3	0.2	Bedding
10908.06	257.4	27.8	0.5	Bedding
10909.4	223.5	18.8	0.5	Bedding
10909.84	248.2	27.6	0.5	Bedding
10911	229.3	25.5	0.21	Bedding
10912.68	260.6	19.9	0.5	Bedding
10914.71	253.6	42.1	0.5	Bedding
10915.22	246.7	53.6	0.7	Bedding
10916.59	230.2	17.7	0.5	Bedding
10916.93	218.5	22.8	0.5	Bedding
10917.36	236.4	22.3	0.5	Bedding
10918.66	239.8	63.7	0.5	Fracture
10919.63	168.7	68.1	0.5	Fracture
10920.29	234.5	28.4	0.5	Bedding
10923.24	134.9	46.5	0.5	Fracture
10924.09	213.5	27.8	0.5	Bedding
10924.85	98.9	57.8	0.7	Fracture
10926.76	226.9	18.5	0.5	Bedding
10927.08	228.4	18.5	0.5	Bedding
10928.49	253.3	30	0.5	Bedding
10932.41	149.7	71.2	0.5	Fracture
10933.79	168.2	62.7	0.5	Fracture
10936.46	115.7	57.3	0.5	Fracture
10936.94	119.4	57.1	0.5	Fracture
10937.37	244.2	31.2	0.5	Bedding
10938.06	247.1	26.8	0.5	Bedding
10938.76	157.9	46.3	0.5	Fracture
10939.96	151.8	70.3	0.5	Fracture
10940.01	243.8	28.6	0.5	Bedding
10941.51	251.5	24.3	0.5	Bedding
10941.89	140	65	0.5	Fracture
10942.91	313.5	12.9	0.5	Bedding
10944.12	244	22.9	0.5	Bedding
10944.36	241.7	25.5	0.5	Bedding
10944.67	241.8	33.1	0.5	Bedding
10945.57	128.6	75.3	0.7	Fracture
10946.39	251.1	36.9	0.5	Bedding
10947.47	229.4	18.6	0.5	Bedding
10947.86	138.5	47.5	0.5	Fracture
10950.22	238.6	29	0.5	Bedding
10950.8	243.4	29.9	0.5	Bedding
10951.29	245	27.4	0.5	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
10951.85	250.7	22.3	0.5	Bedding
10952.22	243.8	27.5	0.5	Bedding
10952.61	229.7	24.3	0.5	Bedding
10953.41	237.9	22.4	0.5	Bedding
10953.7	106.4	42.6	0.5	Fracture
10955.34	248.2	27.4	0.5	Bedding
10955.98	239.5	26.9	0.5	Bedding
10957.22	244	30.3	0.5	Bedding
10957.81	228.1	33.3	0.5	Bedding
10958.15	219.8	23	0.5	Bedding
10958.64	230	18	0.5	Bedding
10960.97	241.8	17.8	0.5	Bedding
10977.22	116.4	55.7	0.5	Fracture
10979.52	98.8	42	0.5	Fracture
10996.24	298.8	16	0.5	Bedding
10997.85	282.4	28.7	0.5	Bedding
11001	207.5	22.9	0.31	Bedding
11005	208.1	30.8	0.3	Bedding
11049.87	84.9	25.5	0.5	Bedding
11050.4	92.4	25.5	0.5	Bedding
11050.81	81.2	35.4	0.5	Bedding
11051.79	102.3	32.6	0.5	Bedding
11069	230.7	41.5	0.36	Bedding
11069.7	247.1	31.8	0.5	Bedding
11070.91	243.3	23.3	0.7	Bedding
11071.59	252.3	26	0.5	Bedding
11072	250	17.8	0.7	Bedding
11079.94	249.2	39.1	0.7	Bedding
11081.45	263.9	31.9	0.7	Bedding
11082.95	257.6	30.3	0.5	Bedding
11085.83	254.3	31	0.7	Bedding
11087	243.1	27.9	0.25	Bedding
11095.25	245.7	35.6	0.5	Bedding
11123	287.3	33.6	0.38	Bedding
11129.43	232.2	34.7	0.7	Bedding
11139	190	32.9	0.27	Bedding
11141	205.5	22.1	0.33	Bedding
11143	186.1	24.9	0.26	Bedding
11145	253.9	31.8	0.4	Bedding
11147	280.3	23.8	0.32	Bedding
11151	249.5	37.7	0.34	Bedding
11155	251.7	32.6	0.31	Bedding
11157	252.3	39.9	0.4	Bedding
11159	235.5	42.9	0.33	Bedding
11169	266.2	18.5	0.48	Bedding
11171	285.5	26.6	0.37	Bedding
11173	231.2	36.8	0.39	Bedding
11175	219.2	12.5	0.39	Bedding
11177	248	22.3	0.35	Bedding
11183	212.7	39	0.28	Bedding
11185	253.6	41.3	0.47	Bedding
11187	218.9	27.1	0.35	Bedding
11189	186.6	20.1	0.46	Bedding
11191	236.4	35.5	0.34	Bedding
11191.87	246.5	24.6	0.5	Bedding
11192.2	236.7	24.5	0.5	Bedding
11193	261.4	38.3	0.3	Bedding
11197	214.7	22.4	0.32	Bedding
11199	274.2	25.5	0.29	Bedding
11203	257.1	28.9	0.29	Bedding
11211	163.7	39.1	0.22	Bedding
11215	159.1	40.6	0.21	Bedding
11218.99	153.1	46.4	0.5	Bedding
11223	90.1	44.9	0.22	Bedding
11225	89.7	44.6	0.24	Bedding
11227	85.9	34.8	0.23	Bedding
11229	85.4	34.5	0.33	Bedding
11231	78.7	34.2	0.33	Bedding
11233	36.9	39.5	0.28	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
11235	60.6	28.3	0.38	Bedding
11239	103	20.8	0.31	Bedding
11243	104.7	21.4	0.27	Bedding
11245.35	111.7	35.7	0.5	Bedding
11253	187.4	33.9	0.22	Bedding
11257	212.3	30.5	0.23	Bedding
11259	211.6	31.8	0.26	Bedding
11261	213.2	36.4	0.27	Bedding
11263	214.1	26.1	0.22	Bedding
11265	207	35.8	0.42	Bedding
11267	217.6	28	0.36	Bedding
11269	178.8	42	0.48	Bedding
11271	212.2	18.6	0.43	Bedding
11273	183.4	41	0.59	Bedding
11273.67	157	27.4	0.5	Bedding
11275	165.6	21.6	0.51	Bedding
11277	157.3	30.7	0.65	Bedding
11279	213.6	18.5	0.51	Bedding
11280.12	155.3	38.1	0.63	Bedding
11298.28	156.4	15.9	0.5	Bedding
11302.63	132.7	17.9	0.5	Bedding
11313	228.9	33.8	0.22	Bedding
11317	219.9	45.7	0.23	Bedding
11319	225.2	45.4	0.24	Bedding
11321	234.1	28.2	0.39	Bedding
11323	234.8	28	0.28	Bedding
11327	231.8	40.7	0.42	Bedding
11331	243.2	29.4	0.39	Bedding
11337	158.9	11.5	0.43	Bedding
11383	260.6	30.3	0.35	Bedding
11387	255.8	41.3	0.35	Bedding
11473	217.7	24.1	0.4	Bedding
11475	219	25.1	0.25	Bedding
11477	218.2	28.3	0.39	Bedding
11479	194.2	26.6	0.26	Bedding
11481	214.1	31.1	0.36	Bedding
11483	195.2	29.5	0.25	Bedding
11519	233.7	37.7	0.2	Bedding
11521	330	19.6	0.23	Bedding
11523	317.5	16.9	0.24	Bedding
11547	272.6	18	0.21	Bedding
11671.85	327.9	27.6	0.5	Bedding
11684.24	289.6	23	0.5	Bedding
11685	311.6	40.5	0.23	Bedding
11800.26	200.1	23.1	0.5	Bedding
11801	213.5	32.1	0.21	Bedding
11826.62	127.9	16.4	0.5	Bedding
11839	202.2	20.1	0.34	Bedding
11842.71	222.2	13.3	0.5	Bedding
11847	196.5	14.1	0.34	Bedding
11849	232.5	20.4	0.2	Bedding
11851	198.4	22.7	0.22	Bedding
11889	242.4	55.2	0.23	Bedding
11897	194.4	40	0.23	Bedding
11951	82	27	0.21	Bedding
11959	281	25.2	0.28	Bedding
11963	261.4	30.1	0.24	Bedding
11967	284.2	52.3	0.24	Bedding
11971	296.2	48.2	0.24	Bedding
11985.13	236	29.7	0.5	Bedding
11998.83	153.1	41.6	0.5	Bedding
12000.08	160.2	59	0.5	Bedding
12002.31	150.4	37.5	0.5	Bedding
12033	244.8	32.4	0.22	Bedding
12035	243.8	32	0.25	Bedding
12039	245.2	31.8	0.22	Bedding
12046.49	280.5	20.5	0.5	Bedding
12100.41	101.4	27.3	0.5	Bedding
12101.4	124.8	32.8	0.5	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
12116.5	130.7	31.5	0.5	Bedding
12121	68.1	29.9	0.2	Bedding
12130.78	132	38.9	0.5	Bedding
12134.47	141.7	42.4	0.5	Bedding
12135.63	124.2	43.9	0.5	Bedding
12141	63.8	43.7	0.32	Bedding
12154.17	275.6	30.3	0.5	Bedding
12162.27	179.6	33	0.5	Bedding
12164.81	199.7	26.5	0.5	Bedding
12202.59	125	30.2	0.5	Bedding
12204.74	104.1	18.5	0.5	Bedding
12220.19	276.9	17.3	0.5	Bedding
12223	286.5	33.3	0.25	Bedding
12225	284.3	33.5	0.23	Bedding
12228.67	254.4	40	0.5	Bedding
12229	255	47.2	0.22	Bedding
12243	115.2	28.4	0.3	Bedding
12245	128	46.6	0.23	Bedding
12247	87.5	34.1	0.31	Bedding
12249	135.5	31.1	0.24	Bedding
12251	147.3	34.2	0.25	Bedding
12253.09	131.4	19.7	0.5	Bedding
12255	161.9	29.2	0.24	Bedding
12257.01	197.5	22.4	0.5	Bedding
12305	239.3	24.3	0.27	Bedding
12307	239.6	24.7	0.25	Bedding
12309	226.9	23.4	0.28	Bedding
12313	238.2	23.1	0.39	Bedding
12317	275.6	31	0.32	Bedding
12323	236.4	30.9	0.35	Bedding
12325	242.4	34	0.44	Bedding
12327	235.6	37.1	0.37	Bedding
12329	237.9	33.1	0.49	Bedding
12331	241.3	37.1	0.32	Bedding
12333	245.4	35.2	0.53	Bedding
12335	239.1	39.1	0.35	Bedding
12337	242.5	38.4	0.38	Bedding
12339	236.6	35.3	0.26	Bedding
12341	239.9	36.6	0.21	Bedding
12351	31.6	28.3	0.22	Bedding
12361	59.3	40.3	0.29	Bedding
12363	85.7	43	0.23	Bedding
12364.36	103.4	34.5	0.5	Bedding
12365	59.4	40.3	0.34	Bedding
12367	77.7	45.8	0.22	Bedding
12369	54.2	36.8	0.28	Bedding
12371	100.4	33.7	0.3	Bedding
12374.42	93.5	26.3	0.5	Bedding
12377.34	181.8	11.1	0.5	Bedding
12381	273.2	38.4	0.25	Bedding
12383	297.8	27.9	0.33	Bedding
12385	331.7	29.8	0.36	Bedding
12387	5.8	18.5	0.26	Bedding
12389	322.2	36.3	0.27	Bedding
12391	351.1	26.6	0.3	Bedding
12394.47	207.4	22.4	0.5	Bedding
12399	3.2	38.4	0.32	Bedding
12403	359.2	31	0.24	Bedding
12407	326.4	35.3	0.28	Bedding
12409.8	13	42.7	0.5	Bedding
12411	332.8	35.2	0.27	Bedding
12413	331	37.6	0.27	Bedding
12421	55.9	39.4	0.24	Bedding
12425	68.4	43.5	0.36	Bedding
12429	57.1	41.9	0.3	Bedding
12431	85.8	42	0.29	Bedding
12433	86.8	41.2	0.28	Bedding
12436.77	124.3	41.1	0.31	Bedding
12439	61.9	36.6	0.29	Bedding

Depth (ft)	Azimuth (°)	Dip (°)	Quality	Discontinuity Type
12441.56	143.1	35.2	0.5	Bedding
12444.48	198.9	35.1	0.5	Bedding
12445.54	208.2	35.9	0.5	Bedding
12447	200.7	26.6	0.25	Bedding
12451	152.3	26.3	0.24	Bedding
12470.2	184.9	33.6	0.5	Bedding
12472.64	131.4	48.2	0.5	Bedding
12476.25	91.1	29.2	0.5	Bedding
12479.47	176.5	43	0.5	Bedding
12482.24	204	42.6	0.51	Bedding
12484.18	200.1	41.3	0.51	Bedding
12495	237.5	41.2	0.48	Bedding
12509.39	67	52.7	0.5	Bedding
12515	83.5	38.3	0.22	Bedding
12527.6	74.6	43.1	0.5	Bedding

Notes:
Well: THEBE 888N-12
Field: NORTH BELRIDGE
County: KERN
State: CA
Depth provided in feet (ft) measured depth
° - degrees

Appendix 2C
Faults and Fractures Supporting Data

64 Zone Pressure Data

UWI Number	API Number	Common Well Name	Date	Shut-in Time	Measured Depth (ft)	TVDss (ft)	Pressure (PSI)	Pressure Type	$P_{OilCorrected}$ (PSI) (1)	$P_{GasCorrected}$ (PSI) (1)	$P_{WaterCorrected}$ (PSI) (1)
40293506900	402935069	1-28N	1/11/1949	NA	8,400	7,714	1,180	Static	1,184.494	1,181.0318	1,185.9150
40293506900	402935069	1-28N	1/22/1943	3 days	8,430	7,749	1,682	Static	1,697.729	1,685.6113	1,702.7025
40293506900	402935069	1-28N	10/12/1948	NA	8,425	7,739	1,219	Static	1,231.519	1,221.8743	1,235.4775
40293506900	402935069	1-28N	10/17/1943	NA	8,430	7,749	1,550	Static	1,565.729	1,553.6113	1,570.7025
40293506900	402935069	1-28N	10/27/1949	NA	8,400	7,714	1,120	Static	1,124.494	1,121.0318	1,125.9150
40293506900	402935069	1-28N	10/31/1939	NA	8,400	7,719	2,420	Static	2,426.099	2,421.4003	2,428.0275
40293506900	402935069	1-28N	10/6/1946	NA	8,400	7,719	1,585	Static	1,591.099	1,586.4003	1,593.0275
40293506900	402935069	1-28N	11/11/1947	NA	8,425	7,744	1,357	Static	1,371.124	1,360.2428	1,375.5900
40293506900	402935069	1-28N	11/4/1941	NA	8,430	7,749	1,295	Static	1,310.729	1,298.6113	1,315.7025
40293506900	402935069	1-28N	12/21/1950	NA	8,400	7,714	1,070	Static	1,074.494	1,071.0318	1,075.9150
40293506900	402935069	1-28N	12/22/1945	NA	8,400	7,719	1,534	Static	1,540.099	1,535.4003	1,542.0275
40293506900	402935069	1-28N	3/15/1950	NA	8,400	7,719	1,027	Static	1,033.099	1,028.4003	1,035.0275
40293506900	402935069	1-28N	3/22/1951	1 month	8,400	7,714	1,085	Static	1,089.494	1,086.0318	1,090.9150
40293506900	402935069	1-28N	3/29/1948	NA	8,425	7,744	1,259	Static	1,273.124	1,262.2428	1,277.5900
40293506900	402935069	1-28N	4/15/1949	NA	8,400	7,714	1,140	Static	1,144.494	1,141.0318	1,145.9150
40293506900	402935069	1-28N	4/19/1954	NA	8,400	7,714	820	Static	824.494	821.0318	825.9150
40293506900	402935069	1-28N	4/23/1944	NA	8,430	7,749	1,585	Static	1,600.729	1,588.6113	1,605.7025
40293506900	402935069	1-28N	4/7/1952	NA	8,400	7,714	1,225	Static	1,229.494	1,226.0318	1,230.9150
40293506900	402935069	1-28N	4/8/1941	NA	8,400	7,719	1,810	Static	1,816.099	1,811.4003	1,818.0275
40293506900	402935069	1-28N	4/8/1953	NA	8,400	7,714	1,574	Static	1,578.494	1,575.0318	1,579.9150
40293506900	402935069	1-28N	5/2/1939	NA	8,000	7,319	2,665	Static	2,542.699	2,636.9203	2,504.0275
40293506900	402935069	1-28N	5/21/1942	NA	8,430	7,749	1,711	Static	1,726.729	1,714.6113	1,731.7025
40293506900	402935069	1-28N	6/15/1945	NA	8,381	7,695	1,612	Static	1,610.395	1,611.6315	1,609.8875
40293506900	402935069	1-28N	6/27/1956	NA	8,400	7,714	1,521	Static	1,525.494	1,522.0318	1,526.9150
40293506900	402935069	1-28N	6/6/1940	NA	8,400	7,719	1,850	Static	1,856.099	1,851.4003	1,858.0275
40293506900	402935069	1-28N	7/2/1957	NA	8,400	7,714	1,539	Static	1,543.494	1,540.0318	1,544.9150
40293506900	402935069	1-28N	7/6/1948	NA	8,425	7,744	1,286	Static	1,300.124	1,289.2428	1,304.5900
40293506900	402935069	1-28N	9/25/1950	1 month	8,400	7,714	1,067	Static	1,071.494	1,068.0318	1,072.9150
40293506900	402935069	1-28N	9/30/1952	NA	8,400	7,714	1,306	Static	1,310.494	1,307.0318	1,311.9150
40293511800	402935118	1-2N	1/14/1946	NA	8,230	7,591	1,691	Static	1,656.011	1,682.9667	1,644.9475
40293511800	402935118	1-2N	1/3/1941	NA	8,252	7,607	2,035	Static	2,005.147	2,028.1459	1,995.7075
40293511800	402935118	1-2N	10/18/1943	NA	8,245	7,606	1,665	Static	1,634.826	1,658.0722	1,625.2850
40293511800	402935118	1-2N	10/3/1952	NA	8,250	7,611	1,476	Static	1,447.431	1,469.4407	1,438.3975
40293511800	402935118	1-2N	11/3/1941	NA	8,254	7,606	1,710	Static	1,679.826	1,703.0722	1,670.2850
40293511800	402935118	1-2N	12/13/1950	NA	8,300	7,677	1,437	Static	1,429.617	1,435.3049	1,427.2825
40293511800	402935118	1-2N	12/22/1950	NA	8,250	7,611	1,188	Static	1,159.431	1,181.4407	1,150.3975
40293511800	402935118	1-2N	3/18/1952	NA	8,250	7,611	1,392	Static	1,363.431	1,385.4407	1,354.3975
40293511800	402935118	1-2N	3/21/1951	1 month	8,250	7,611	1,211	Static	1,182.431	1,204.4407	1,173.3975
40293511800	402935118	1-2N	3/27/1941	NA	8,250	7,617	1,930	Static	1,903.357	1,923.8829	1,894.9325
40293511800	402935118	1-2N	4/17/1953	NA	8,250	7,611	1,555	Static	1,526.431	1,548.4407	1,517.3975
40293511800	402935118	1-2N	4/20/1954	NA	8,250	7,611	1,631	Static	1,602.431	1,624.4407	1,593.3975
40293511800	402935118	1-2N	4/27/1944	4 months	8,250	7,611	1,660	Static	1,631.431	1,653.4407	1,622.3975
40293511800	402935118	1-2N	6/1/1955	NA	8,250	7,611	1,577	Static	1,548.431	1,570.4407	1,539.3975
40293511800	402935118	1-2N	6/15/1945	NA	8,125	7,486	1,636	Static	1,567.306	1,620.2282	1,545.5850
40293511800	402935118	1-2N	6/18/1956	NA	8,250	7,611	1,703	Static	1,674.431	1,696.4407	1,665.3975
40293511800	402935118	1-2N	9/28/1950	7 months	8,250	7,611	1,182	Static	1,153.431	1,175.4407	1,144.3975
40293506300	402935063	13-27N	1/14/1943	2 months	8,400	7,735	1,710	Static	1,721.235	1,712.5795	1,724.7875
40293506300	402935063	13-27N	10/19/1943	NA	8,390	7,725	1,282	Static	1,290.025	1,283.8425	1,292.5625
40293506300	402935063	13-27N	10/27/1941	NA	8,400	7,735	1,706	Static	1,717.235	1,708.5795	1,720.7875
40293506300	402935063	13-27N	3/28/1941	NA	8,400	7,735	1,825	Static	1,836.235	1,827.5795	1,839.7875
40293506300	402935063	13-27N	4/1/1940	NA	8,400	7,735	2,125	Static	2,136.235	2,127.5795	2,139.7875
40293506300	402935063	13-27N	9/17/1984	NA	8,076	7,411	1,310	Static	1,217.231	1,288.7007	1,187.8975
40293507700	402935077	14-35N	1/13/1943	10 days	7,950	7,317	2,510	Static	2,387.057	2,481.7729	2,348.1825
40293507700	402935077	14-35N	1/16/1946	NA	8,150	7,517	1,668	Static	1,609.257	1,654.5129	1,590.6825
40293507700	402935077	14-35N	1/26/1954	NA	8,290	7,657	1,683	Static	1,669.197	1,679.8309	1,664.8325
40293507700	402935077	14-35N	10/13/1943	NA	8,400	7,767	1,700	Static	1,721.507	1,704.9379	1,728.3075
40293507700	402935077	14-35N	10/19/1939	NA	8,100	7,467	2,500	Static	2,425.207	2,482.8279	2,401.5575
40293507700	402935077	14-35N	3/12/1940	NA	8,100	7,467	2,310	Static	2,235.207	2,292.8279	2,211.5575
40293507700	402935077	14-35N	3/28/1941	21 hrs	8,100	7,467	1,905	Static	1,830.207	1,887.8279	1,806.5575
40293507700	402935077	14-35N	4/18/1939	NA	7,750	7,117	2,605	Static	2,417.857	2,562.0329	2,358.6825
40293507700	402935077	14-35N	4/23/1953	NA	8,294	7,661	1,664	Static	1,651.481	1,661.1257	1,647.5225
40293507700	402935077	14-35N	4/26/1944	NA	8,310	7,677	1,443	Static	1,435.617	1,441.3049	1,433.2825
40293507700	402935077	14-35N	6/22/1956	NA	8,290	7,657	1,748	Static	1,734.197	1,744.8309	1,729.8325
40293507700	402935077	14-35N	6/3/1955	NA	8,290	7,657	1,739	Static	1,725.197	1,735.8309	1,720.8325
40293507700	402935077	14-35N	7/5/1957	NA	8,290	7,657	1,812	Static	1,798.197	1,808.8309	1,793.8325
40292961900	402929619	15-28N	10/14/1940	NA	8,300	7,612	3,483	Static	3,454.752	3,476.5144	3,445.8200
40292961900	402929619	15-28N	4/4/1940	NA	8,550	7,862	2,080	Static	2,132.002	2,091.9394	2,148.4450
40292961900	402929619	15-28N	4/8/1941	NA	8,550	7,862	1,960	Static	2,012.002	1,971.9394	2,028.4450
40293507801	402935078	15-35N	1/9/1946	NA	8,090	7,466	1,633	Static	1,557.886	1,615.7542	1,534.1350
40293507801	402935078	15-35N	11/1/1946	NA	8,300	7,676	1,683	Static	1,675.296	1,681.2312	1,672.8600
40293507801	402935078	15-35N	11/14/1947	NA	8,300	7,676	1,462	Static	1,454.296	1,460.2312	1,451.8600
40293507801	402935078	15-35N	11/3/1941	NA	8,100	7,476	1,730	Static	1,658.096	1,713.4912	1,635.3600
40293507801	402935078	15-35N	3/17/1952	NA	8,050	7,426	1,411	Static	1,323.046	1,390.8062	1,295.2350
40293507801	402935078	15-35N	4/18/1944	6 days	8,100	7,476	1,593	Static	1,521.096	1,576.4912	1,498.3600
40293507801	402935078	15-35N	4/19/1954	NA	8,050	7,426	1,638	Static	1,550.046	1,617.8062	1,522.2350
40293507801	402935078	15-35N	4/20/1953	NA	8,050	7,426	1,567	Static	1,479.046	1,546.8062	1,451.2350
40293507801	402935078	15-35N	4/4/1941	NA	8,300	7,676	1,925	Static	1,917.296	1,923.2312	1,914.8600
40293507801	402935078	15-35N	4/8/1941	51.5 hrs	8,300	7,676	1,935	Static	1,927.296	1,933.2312	1,924.8600
40293507801	402935078	15-35N	6/10/1945	NA	8,120	7,496	1,598	Static	1,532.516	1,582.9652	1,511.8100
40293507801	402935078	15-35N	6/2/1955	49 hrs	8,050	7,426	1,670	Static	1,582.046	1,649.8062	1,554.2350
40293507801	402935078	15-35N	6/22/1956	48 hrs	8,050	7,426	1,701	Static	1,613.046	1,680.8062	1,585.2350
40293507801	402935078	15-35N	6/24/1957	NA	8,050	7,426	1,740	Static	1,652.046	1,719.8062	1,624.2350
40293507801	402935078	15-35N	9/22/1952	NA	8,050	7,426	1,490	Static	1,402.046	1,469.8062	1,374.2350
40293507100	402935071	16-28N	1/12/1961	NA	8,525	7,835	1,615	Static	1,658.335	1,624.9495	1,672.0375
40293507100	402935071	16-28N	11/21/1944	90 hrs	8,550	7,860	1,602	Static	1,653.360	1,613.7920	1,669.6000
40293507100	402935071	16-28N	11/3/1947	NA	8,550	7,860	1,320	Static	1,371.360	1,331.7920	1,387.6000

UWI Number	API Number	Common Well Name	Date	Shut-in Time	Measured Depth (ft)	TVDss (ft)	Pressure (PSI)	Pressure Type	$P_{OilCorrected}$ (PSI) [1]	$P_{GasCorrected}$ (PSI) [1]	$P_{WaterCorrected}$ (PSI) [1]
40293507100	402935071	16-28N	11/4/1941	NA	8,555	7,865	1,340	Static	1,392.965	1,352.1605	1,409.7125
40293507100	402935071	16-28N	11/6/1939	NA	8,550	7,860	2,475	Static	2,526.360	2,486.7920	2,542.6000
40293507100	402935071	16-28N	11/8/1946	NA	8,550	7,860	1,555	Static	1,606.360	1,566.7920	1,622.6000
40293507100	402935071	16-28N	12/29/1945	NA	8,570	7,880	1,540	Static	1,597.780	1,553.2660	1,616.0500
40293507100	402935071	16-28N	3/26/1951	4 days	8,450	7,760	965	Static	984.260	969.4220	990.3500
40293507100	402935071	16-28N	4/4/1940	NA	8,500	7,810	2,015	Static	2,050.310	2,023.1070	2,061.4750
40293507100	402935071	16-28N	4/9/1941	NA	8,500	7,810	1,855	Static	1,890.310	1,863.1070	1,901.4750
40293507100	402935071	16-28N	6/15/1955	NA	8,525	7,835	1,480	Static	1,523.335	1,489.9495	1,537.0375
40293507100	402935071	16-28N	6/26/1956	NA	8,525	7,835	1,465	Static	1,508.335	1,474.9495	1,522.0375
40293507100	402935071	16-28N	8/2/1972	NA	8,550	7,860	1,422	Static	1,473.360	1,433.7920	1,489.6000
40293507100	402935071	16-28N	9/11/1967	NA	8,525	7,835	1,613	Static	1,656.335	1,622.9495	1,670.0375
40293507100	402935071	16-28N	9/22/1950	months	8,450	7,760	1,090	Static	1,109.260	1,094.4220	1,115.3500
40293507200	402935072	17-28N	10/17/1943	NA	8,660	7,944	1,730	Static	1,808.324	1,747.9828	1,833.0900
40293507200	402935072	17-28N	11/17/1944	NA	8,650	7,934	1,794	Static	1,869.114	1,811.2458	1,892.8650
40293507200	402935072	17-28N	11/6/1939	NA	8,660	7,944	2,385	Static	2,463.324	2,402.9828	2,488.0900
40293507200	402935072	17-28N	12/21/1945	NA	8,650	7,934	1,770	Static	1,845.114	1,787.2458	1,868.8650
40293507200	402935072	17-28N	3/28/1941	2 days	8,660	7,944	1,985	Static	2,063.324	2,002.9828	2,088.0900
40293507200	402935072	17-28N	4/4/1940	NA	8,660	7,944	1,965	Static	2,043.324	1,982.9828	2,068.0900
40293507900	402935079	17-35N	10/23/1943	NA	8,200	7,581	1,405	Static	1,366.801	1,396.2297	1,354.7225
40293507900	402935079	17-35N	10/27/1941	111 days	8,200	7,581	1,745	Static	1,706.801	1,736.2297	1,694.7225
40293507900	402935079	17-35N	11/9/1939	47 hrs	8,200	7,581	2,235	Static	2,196.801	2,226.2297	2,184.7225
40293507900	402935079	17-35N	12/28/1945	25 months	8,230	7,611	1,626	Static	1,597.431	1,619.4407	1,588.3975
40293507900	402935079	17-35N	3/15/1940	24 hrs	8,200	7,581	2,130	Static	2,091.801	2,121.2297	2,079.7225
40293507900	402935079	17-35N	4/11/1939	17 hrs	8,200	7,581	2,450	Static	2,411.801	2,441.2297	2,399.7225
40293507900	402935079	17-35N	4/26/1944	5 months	8,230	7,611	1,558	Static	1,529.431	1,551.4407	1,520.3975
40293507900	402935079	17-35N	4/9/1941	22 hrs	8,200	7,581	1,765	Static	1,726.801	1,756.2297	1,714.7225
40293507900	402935079	17-35N	6/18/1945	19 months	8,120	7,501	1,535	Static	1,471.121	1,520.3337	1,450.9225
40293508001	402935080	18-35N	1/13/1961	NA	8,240	7,609	1,805	Static	1,775.789	1,798.2933	1,766.5525
40293508001	402935080	18-35N	1/8/1946	NA	8,240	7,609	1,679	Static	1,649.789	1,672.2933	1,640.5525
40293508000	402935080	18-35N	10/12/1939	NA	8,100	7,469	2,520	Static	2,445.849	2,502.9753	2,422.4025
40293508001	402935080	18-35N	10/30/1941	NA	8,250	7,619	1,640	Static	1,613.999	1,634.0303	1,605.7775
40293508001	402935080	18-35N	10/5/1951	NA	8,250	7,619	1,305	Static	1,278.999	1,299.0303	1,270.7775
40293508001	402935080	18-35N	11/5/1946	NA	8,250	7,619	1,692	Static	1,665.999	1,686.0303	1,657.7775
40293508001	402935080	18-35N	12/18/1950	NA	8,250	7,619	1,200	Static	1,173.999	1,194.0303	1,165.7775
40293508001	402935080	18-35N	3/18/1952	NA	8,250	7,619	1,406	Static	1,379.999	1,400.0303	1,371.7775
40293508001	402935080	18-35N	3/2/1950	NA	8,250	7,619	1,101	Static	1,074.999	1,095.0303	1,066.7775
40293508001	402935080	18-35N	3/21/1951	NA	8,250	7,619	1,227	Static	1,200.999	1,221.0303	1,192.7775
40293508001	402935080	18-35N	3/24/1952	NA	8,250	7,619	1,405	Static	1,378.999	1,399.0303	1,370.7775
40293508001	402935080	18-35N	4/14/1954	NA	8,250	7,619	1,630	Static	1,603.999	1,624.0303	1,595.7775
40293508001	402935080	18-35N	4/15/1953	NA	8,250	7,619	1,560	Static	1,533.999	1,554.0303	1,525.7775
40293508000	402935080	18-35N	4/17/1939	NA	8,100	7,469	2,575	Static	2,500.849	2,557.9753	2,477.4025
40293508001	402935080	18-35N	5/20/1955	NA	8,250	7,619	1,649	Static	1,622.999	1,643.0303	1,614.7775
40293508001	402935080	18-35N	6/20/1956	NA	8,250	7,619	1,721	Static	1,694.999	1,715.0303	1,686.7775
40293508001	402935080	18-35N	6/21/1957	NA	8,250	7,619	1,745	Static	1,718.999	1,739.0303	1,710.7775
40293508001	402935080	18-35N	9/11/1967	NA	8,198	7,567	1,742	Static	1,699.307	1,732.1979	1,685.8075
40293508001	402935080	18-35N	9/12/1950	NA	8,250	7,619	1,185	Static	1,158.999	1,179.0303	1,150.7775
40293508001	402935080	18-35N	9/19/1952	NA	8,250	7,619	1,486	Static	1,459.999	1,480.0303	1,451.7775
40293506400	402935064	19-27N	1/3/1947	NA	8,460	7,800	1,702	Static	1,734.100	1,709.3700	1,744.2500
40293506400	402935064	19-27N	10/30/1939	NA	8,470	7,810	2,600	Static	2,635.310	2,608.1070	2,646.4750
40293506400	402935064	19-27N	11/14/1947	NA	8,450	7,790	1,690	Static	1,718.890	1,696.6330	1,728.0250
40293506400	402935064	19-27N	11/6/1947	NA	8,450	7,790	889	Static	917.890	895.6330	927.0250
40293506400	402935064	19-27N	3/27/1940	NA	8,450	7,790	2,350	Static	2,378.890	2,356.6330	2,388.0250
40293506400	402935064	19-27N	4/26/1939	NA	8,400	7,740	2,720	Static	2,732.840	2,722.9480	2,736.9000
40293506400	402935064	19-27N	4/3/1941	1 day	8,450	7,790	1,880	Static	1,908.890	1,886.6330	1,918.0250
40293506400	402935064	19-27N	6/17/1945	NA	8,360	7,700	1,662	Static	1,662.000	1,662.0000	1,662.0000
40293507000	402935070	2-28N	1/7/1942	NA	8,540	7,854	1,137	Static	1,186.434	1,148.3498	1,202.0650
40293507000	402935070	2-28N	11/3/1939	NA	8,500	7,814	2,600	Static	2,636.594	2,608.4018	2,648.1650
40293507000	402935070	2-28N	3/21/1940	1 day	8,500	7,814	1,945	Static	1,981.594	1,953.4018	1,993.1650
40293507000	402935070	2-28N	4/8/1941	2 days	8,440	7,754	1,860	Static	1,877.334	1,863.9798	1,882.8150
40293507000	402935070	2-28N	5/2/1939	33 hrs	8,500	7,814	3,290	Static	3,326.594	3,298.4018	3,338.1650
40293507000	402935070	2-28N	6/12/1940	NA	8,500	7,814	2,410	Static	2,446.594	2,418.4018	2,458.1650
40293511300	402935113	23-1N	3/8/1984	NA	8,300	7,658	1,185	Static	1,171.348	1,181.7346	1,167.0850
40293511300	402935113	23-1N	5/30/1984	NA	8,300	7,658	1,156	Static	1,142.158	1,152.5446	1,137.8950
40293511300	402935113	23-1N	6/30/1983	NA	8,300	7,658	1,163	Static	1,149.518	1,159.9046	1,145.2550
40293511300	402935113	23-1N	8/3/1984	NA	8,300	7,658	1,185	Static	1,171.348	1,181.7346	1,167.0850
40292958800	402929588	24-21N	12/15/1950	NA	8,500	7,821	1,734	Static	1,772.841	1,742.9177	1,785.1225
40292958800	402929588	24-21N	3/20/1941	48 hrs	8,480	7,801	2,835	Static	2,867.421	2,842.4437	2,877.6725
40292958800	402929588	24-21N	3/24/1948	14 months	7,400	6,721	1,247	Static	932.741	1,174.8477	833.3725
40292958800	402929588	24-21N	4/28/1954	NA	8,499	7,820	1,786	Static	1,824.520	1,794.8440	1,836.7000
40292958800	402929588	24-21N	4/3/1953	NA	8,499	7,820	1,780	Static	1,818.520	1,788.8440	1,830.7000
40292958800	402929588	24-21N	4/4/1952	NA	8,500	7,821	1,759	Static	1,797.841	1,767.9177	1,810.1225
40292958800	402929588	24-21N	4/5/1951	1 month	8,500	7,821	1,745	Static	1,783.841	1,753.9177	1,796.1225
40292958800	402929588	24-21N	5/2/1941	72 hrs	8,530	7,851	2,919	Static	2,967.471	2,930.1287	2,982.7975
40292958800	402929588	24-21N	6/16/1955	NA	8,499	7,820	1,672	Static	1,710.520	1,680.8440	1,722.7000
40292958800	402929588	24-21N	8/8/1950	NA	8,500	7,821	1,710	Static	1,748.841	1,718.9177	1,761.1225
40292958800	402929588	24-21N	9/18/1952	NA	8,500	7,821	1,753	Static	1,791.841	1,761.9177	1,804.1225
40292958800	402929588	24-21N	9/21/1951	NA	8,500	7,821	1,736	Static	1,774.841	1,744.9177	1,787.1225
40292958800	402929588	24-21N	9/25/1941	357 hrs	8,480	7,801	2,820	Static	2,852.421	2,827.4437	2,862.6725
40293508100	402935081	24-35N	1/12/1943	NA	8,600	7,928	1,712	Static	1,785.188	1,728.8036	1,808.3300
40293508100	402935081	24-35N	1/15/1946	NA	8,600	7,928	1,709	Static	1,782.188	1,725.8036	1,805.3300
40293508100	402935081	24-35N	10/24/1943	NA	8,600	7,928	1,540	Static	1,613.188	1,556.8036	1,636.3300
40293508100	402935081	24-35N	10/24/1946	NA	8,650	7,978	1,805	Static	1,894.238	1,825.4886	1,922.4550
40293508100	402935081	24-35N	10/28/1947	NA	8,650	7,978	1,556	Static	1,645.238	1,576.4886	1,673.4550
40293508100	402935081	24-35N	11/18/1939	NA	8,600	7,928	2,475	Static	2,548.188	2,491.8036	2,571.3300
40293508100	402935081	24-35N	3/18/1940	NA	8,600	7,928	2,065	Static	2,138.188	2,081.8036	2,161.3300
40293508100	402935081	24-35N	3/27/1941	NA	8,600	7,928	2,005	Static	2,078.188	2,021.8036	2,101.3300

UWI Number	API Number	Common Well Name	Date	Shut-in Time	Measured Depth (ft)	TVDss (ft)	Pressure (PSI)	Pressure Type	$P_{OilCorrected}$ (PSI) (1)	$P_{GasCorrected}$ (PSI) (1)	$P_{WaterCorrected}$ (PSI) (1)
40293508100	402935081	24-35N	4/27/1944	6 months	8,600	7,928	1,725	Static	1,798.188	1,741.8036	1,821.3300
40293508100	402935081	24-35N	5/29/1942	NA	8,600	7,928	1,590	Static	1,663.188	1,606.8036	1,686.3300
40293508100	402935081	24-35N	6/12/1940	NA	8,600	7,928	2,155	Static	2,228.188	2,171.8036	2,251.3300
40293508100	402935081	24-35N	6/6/1945	NA	8,372	7,700	1,640	Static	1,640.000	1,640.0000	1,640.0000
40293505301	402935053	25-26N	10/5/1950	month	8,290	7,632	1,212	Static	1,190.172	1,206.9884	1,183.2700
40293505301	402935053	25-26N	12/22/1950	NA	8,290	7,632	1,229	Static	1,207.172	1,223.9884	1,200.2700
40293505301	402935053	25-26N	3/20/1951	month	8,290	7,632	1,233	Static	1,211.172	1,227.9884	1,204.2700
40293505301	402935053	25-26N	3/6/1950	NA	8,290	7,632	1,229	Static	1,207.172	1,223.9884	1,200.2700
40293505301	402935053	25-26N	4/2/1952	NA	8,290	7,632	1,375	Static	1,353.172	1,369.9884	1,346.2700
40293505300	402935053	25-26N	4/25/1939	NA	8,100	7,442	2,525	Static	2,442.182	2,505.9854	2,415.9950
40293505301	402935053	25-26N	4/27/1949	NA	8,290	7,632	1,395	Static	1,373.172	1,389.9884	1,366.2700
40293505301	402935053	25-26N	4/6/1953	NA	8,290	7,632	1,503	Static	1,481.172	1,497.9884	1,474.2700
40293505301	402935053	25-26N	6/26/1956	NA	8,290	7,632	1,670	Static	1,648.172	1,664.9884	1,641.2700
40293505301	402935053	25-26N	6/8/1955	NA	8,290	7,632	1,661	Static	1,639.172	1,655.9884	1,632.2700
40293505301	402935053	25-26N	9/19/1951	NA	8,290	7,632	1,261	Static	1,239.172	1,255.9884	1,232.2700
40293505301	402935053	25-26N	9/19/2022	NA	8,210	7,552	699	Static	651.492	688.0924	636.4700
40293505301	402935053	25-26N	9/20/2022	NA	8,000	7,342	622	Static	507.082	595.6154	470.7450
40293505301	402935053	25-26N	9/22/1952	NA	8,290	7,632	1,452	Static	1,430.172	1,446.9884	1,423.2700
40293504900	402935049	2A-22N	3/27/1951	4 days	8,350	7,678	1,082	Static	1,074.938	1,080.3786	1,072.7050
40293504900	402935049	2A-22N	3/28/1950	NA	8,350	7,678	1,042	Static	1,034.938	1,040.3786	1,032.7050
40293504900	402935049	2A-22N	4/29/1954	NA	8,350	7,678	1,398	Static	1,390.938	1,396.3786	1,388.7050
40293504900	402935049	2A-22N	4/5/1952	NA	8,350	7,678	1,233	Static	1,225.938	1,231.3786	1,223.7050
40293504900	402935049	2A-22N	6/2/1955	NA	8,350	7,678	1,496	Static	1,488.938	1,494.3786	1,486.7050
40293504900	402935049	2A-22N	7/31/1972	NA	8,350	7,678	1,379	Static	1,371.938	1,377.3786	1,369.7050
40293504900	402935049	2A-22N	9/11/1967	NA	8,350	7,678	1,630	Static	1,622.938	1,628.3786	1,620.7050
40293504900	402935049	2A-22N	9/17/1971	NA	8,350	7,678	1,456	Static	1,448.938	1,454.3786	1,446.7050
40293504900	402935049	2A-22N	9/18/1952	NA	8,350	7,678	1,309	Static	1,301.938	1,307.3786	1,299.7050
40293504900	402935049	2A-22N	9/20/2022	NA	8,280	7,608	767	Static	737.468	760.2196	728.1300
40293504900	402935049	2A-22N	9/21/2022	NA	8,000	7,328	640	Static	520.588	612.5836	482.8300
40293504900	402935049	2A-22N	9/26/1950	38 days	8,350	7,678	1,067	Static	1,059.938	1,065.3786	1,057.7050
40293504900	402935049	2A-22N	9/27/1957	NA	8,350	7,678	1,141	Static	1,133.938	1,139.3786	1,131.7050
40293504700	402935047	3-22N	1/3/1941	284 hrs	8,321	7,654	1,601	Static	1,586.234	1,597.6098	1,581.5650
40293504700	402935047	3-22N	12/12/1940	288 hrs	8,321	7,654	2,162	Static	2,147.234	2,158.6098	2,142.5650
40293504700	402935047	3-22N	2/11/1941	516 hrs	8,310	7,643	1,287	Static	1,268.703	1,282.7991	1,262.9175
40293504700	402935047	3-22N	2/20/1940	26 hrs	8,320	7,653	2,476	Static	2,460.913	2,472.5361	2,456.1425
40293504700	402935047	3-22N	4/9/1940	30 hrs	8,000	7,333	2,291	Static	2,173.193	2,263.9521	2,135.9425
40293504700	402935047	3-22N	5/6/1942	6 days	8,425	7,758	1,936	Static	1,954.618	1,940.2746	1,960.5050
40293504700	402935047	3-22N	9/12/1941	413 hrs	8,470	7,803	912	Static	945.063	919.5911	955.5175
40293504700	402935047	3-22N	9/6/1940	31 hrs	8,320	7,653	2,232	Static	2,216.913	2,228.5361	2,212.1425
40293504000	402935040	31-21N	1/14/1961	NA	8,300	7,609	1,252	Static	1,222.789	1,245.2933	1,213.5525
40293504000	402935040	31-21N	10/1/1945	6 days	8,454	7,763	2,308	Static	2,328.223	2,312.6431	2,334.6175
40293504000	402935040	31-21N	12/16/1982	NA	8,300	7,609	2,547	Static	2,517.289	2,539.7933	2,508.0525
40293504000	402935040	31-21N	7/15/1945	96 hrs	8,450	7,759	2,497	Static	2,515.939	2,501.3483	2,521.9275
40293504000	402935040	31-21N	9/10/1948	6 days	8,450	7,759	1,322	Static	1,340.939	1,326.3483	1,346.9275
40293506500	402935065	31-27N	1/14/1961	NA	8,400	7,746	1,761	Static	1,775.766	1,764.3902	1,780.4350
40293506500	402935065	31-27N	1/3/1946	NA	8,430	7,776	1,692	Static	1,716.396	1,697.6012	1,724.1100
40293506500	402935065	31-27N	10/25/1939	NA	8,440	7,786	2,490	Static	2,517.606	2,496.3382	2,526.3350
40293506500	402935065	31-27N	11/10/1947	NA	8,435	7,781	1,500	Static	1,526.001	1,505.9697	1,534.2225
40293506500	402935065	31-27N	3/27/1940	NA	8,440	7,786	2,315	Static	2,342.606	2,321.3382	2,351.3350
40293506500	402935065	31-27N	4/19/1944	NA	8,394	7,740	1,677	Static	1,689.840	1,679.9480	1,693.9000
40293506500	402935065	31-27N	4/25/1939	NA	8,400	7,746	2,780	Static	2,794.766	2,783.3902	2,799.4350
40293506500	402935065	31-27N	4/3/1941	NA	8,394	7,740	2,035	Static	2,047.840	2,037.9480	2,051.9000
40293506500	402935065	31-27N	6/14/1945	NA	8,354	7,700	1,665	Static	1,665.000	1,665.0000	1,665.0000
40293504600	402935046	32-21N	10/28/1978	NA	8,468	7,743	2,275	Static	2,288.803	2,278.1691	2,293.1675
40293504600	402935046	32-21N	6/5/1963	NA	8,368	7,643	1,647	Static	1,628.703	1,642.7991	1,622.9175
40293504600	402935046	32-21N	8/2/1972	3 hrs 15 min	8,458	7,733	2,053	Static	2,063.593	2,055.4321	2,066.9425
40293508400	402935084	32-35N	1/8/1946	NA	8,450	7,821	1,707	Static	1,745.841	1,715.9177	1,758.1225
40293508400	402935084	32-35N	10/22/1943	NA	8,400	7,771	1,670	Static	1,692.791	1,675.2327	1,699.9975
40293508400	402935084	32-35N	11/14/1939	NA	8,400	7,771	2,430	Static	2,452.791	2,435.2327	2,459.9975
40293508400	402935084	32-35N	11/7/1947	NA	8,475	7,846	1,467	Static	1,513.866	1,477.7602	1,528.6850
40293508400	402935084	32-35N	3/15/1940	since 3/14/1940	8,400	3,321	2,275	Static	869.341	1,952.2677	424.8725
40293508400	402935084	32-35N	3/27/1941	NA	8,400	7,771	2,000	Static	2,022.791	2,005.2327	2,029.9975
40293508400	402935084	32-35N	4/14/1939	NA	8,400	7,771	2,695	Static	2,717.791	2,700.2327	2,724.9975
40293508400	402935084	32-35N	4/18/1947	since 4/05/1944	8,400	7,771	1,640	Static	1,662.791	1,645.2327	1,669.9975
40293508400	402935084	32-35N	5/23/1943	NA	8,329	7,700	1,640	Static	1,640.000	1,640.0000	1,640.0000
40293508400	402935084	32-35N	6/15/1955	NA	8,316	7,687	1,732	Static	1,727.827	1,731.0419	1,726.5075
40293508400	402935084	32-35N	6/21/1956	NA	8,450	7,821	1,742	Static	1,780.841	1,750.9177	1,793.1225
40293508400	402935084	32-35N	9/18/1984	NA	8,465	7,836	1,502	Static	1,545.956	1,512.3232	1,559.7600
40293504100	402935041	33-21N	10/10/1945	6 days	8,498	7,802	2,485	Static	2,517.742	2,492.5174	2,528.0950
40293504100	402935041	33-21N	12/10/1940	96 hrs	8,452	7,756	3,558	Static	3,575.976	3,562.1272	3,581.6600
40293504100	402935041	33-21N	12/31/1941	720 hrs	8,436	7,740	3,323	Static	3,335.840	3,325.9480	3,339.9000
40293504100	402935041	33-21N	3/27/1948	49 hrs	8,490	7,794	1,452	Static	1,482.174	1,458.9278	1,491.7150
40293504100	402935041	33-21N	5/13/1941	49 hrs	8,525	7,829	3,436	Static	3,477.409	3,445.5073	3,490.5025
40293504100	402935041	33-21N	5/6/1942	22 days	8,436	7,740	3,280	Static	3,292.840	3,282.9480	3,296.9000
40293504100	402935041	33-21N	7/20/1945	72 hrs	8,498	7,802	2,559	Static	2,591.742	2,566.5174	2,602.0950
40293504100	402935041	33-21N	9/22/1941	96 hrs	8,000	7,304	3,185	Static	3,057.884	3,155.8148	3,017.6900
40293508500	402935085	33-35N	1/25/1946	NA	8,200	7,572	1,669	Static	1,627.912	1,659.5664	1,614.9200
40293508500	402935085	33-35N	10/1/1952	NA	8,300	7,672	1,511	Static	1,502.012	1,508.9364	1,499.1700
40293508500	402935085	33-35N	10/18/1949	NA	8,300	7,672	1,212	Static	1,203.012	1,209.9364	1,200.1700
40293508500	402935085	33-35N	10/24/1941	NA	8,215	7,587	1,744	Static	1,707.727	1,735.6719	1,696.2575
40293508500	402935085	33-35N	11/14/1939	NA	8,200	7,572	2,480	Static	2,438.912	2,470.5664	2,425.9200
40293508500	402935085	33-35N	12/19/1950	NA	8,300	7,672	1,236	Static	1,227.012	1,233.9364	1,224.1700
40293508500	402935085	33-35N	3/10/1951	month	8,300	7,672	1,260	Static	1,251.012	1,257.9364	1,248.1700
40293508500	402935085	33-35N	3/12/1950	NA	8,300	7,672	1,159	Static	1,150.012	1,156.9364	1,147.1700
40293508500	402935085	33-35N	3/15/1940	since 03/14/1940	8,200	7,572	2,280	Static	2,238.912	2,270.5664	2,225.9200

UWI Number	API Number	Common Well Name	Date	Shut-in Time	Measured Depth (ft)	TVDss (ft)	Pressure (PSI)	Pressure Type	$P_{OilCorrected}$ (PSI) (1)	$P_{GasCorrected}$ (PSI) (1)	$P_{WaterCorrected}$ (PSI) (1)
40293508500	402935085	33-35N	3/18/1980	NA	8,370	7,742	1,145	Static	1,158.482	1,148.0954	1,162.7450
40293508500	402935085	33-35N	3/19/1952	NA	8,300	7,672	1,449	Static	1,440.012	1,446.9364	1,437.1700
40293508500	402935085	33-35N	4/12/1939	NA	8,200	7,572	2,685	Static	2,643.912	2,675.5664	2,630.9200
40293508500	402935085	33-35N	4/15/1954	NA	8,300	7,672	1,659	Static	1,650.012	1,656.9364	1,647.1700
40293508500	402935085	33-35N	4/27/1949	NA	8,300	7,672	1,223	Static	1,214.012	1,220.9364	1,211.1700
40293508500	402935085	33-35N	4/8/1953	NA	8,300	7,672	1,586	Static	1,577.012	1,583.9364	1,574.1700
40293508500	402935085	33-35N	4/9/1941	NA	8,200	7,572	1,840	Static	1,798.912	1,830.5664	1,785.9200
40293508500	402935085	33-35N	5/28/1942	NA	8,200	7,572	1,345	Static	1,303.912	1,335.5664	1,290.9200
40293508500	402935085	33-35N	6/2/1955	NA	8,300	7,672	1,652	Static	1,643.012	1,649.9364	1,640.1700
40293508500	402935085	33-35N	6/21/1956	NA	8,300	7,672	1,737	Static	1,728.012	1,734.9364	1,725.1700
40293508500	402935085	33-35N	6/28/1957	NA	8,300	7,672	1,776	Static	1,767.012	1,773.9364	1,764.1700
40293508500	402935085	33-35N	8/5/1972	3 hrs 15 min	8,300	7,672	1,451	Static	1,442.012	1,448.9364	1,439.1700
40293508500	402935085	33-35N	8/6/1981	NA	8,315	7,687	1,186	Static	1,181.827	1,185.0419	1,180.5075
40293508500	402935085	33-35N	9/12/1950	month	8,300	7,672	1,225	Static	1,216.012	1,222.9364	1,213.1700
40293508500	402935085	33-35N	9/14/1971	NA	8,300	7,672	1,500	Static	1,491.012	1,497.9364	1,488.1700
40293508500	402935085	33-35N	9/21/1951	NA	8,300	7,672	1,326	Static	1,317.012	1,323.9364	1,314.1700
40293504201	402935042	34-21N	1/14/1961	NA	8,390	7,716	1,215	Static	1,220.136	1,216.1792	1,221.7600
40293504200	402935042	34-21N	3/27/1951	NA	8,275	7,601	1,468	Static	1,436.221	1,460.7037	1,426.1725
40293504201	402935042	34-21N	4/23/1954	NA	8,590	7,916	565	Static	634.336	580.9192	656.2600
40293504201	402935042	34-21N	4/26/1954	NA	8,565	7,891	1,477	Static	1,538.311	1,491.0767	1,557.6975
40293504201	402935042	34-21N	4/29/1954	NA	8,580	7,906	1,905	Static	1,971.126	1,920.1822	1,992.0350
40293504201	402935042	34-21N	8/1/1972	NA	8,390	7,716	2,661	Static	2,666.136	2,662.1792	2,667.7600
40293504200	402935042	34-21N	9/10/1948	NA	7,826	7,152	1,770	Static	1,594.092	1,729.6124	1,538.4700
40293504200	402935042	34-21N	9/20/1950	4 days	8,275	7,601	1,614	Static	1,582.221	1,606.7037	1,572.1725
40293504201	402935042	34-21N	9/20/1971	NA	8,390	7,716	2,625	Static	2,630.136	2,626.1792	2,631.7600
40293504200	402935042	34-21N	9/25/1951	NA	8,275	7,601	1,300	Static	1,268.221	1,292.7037	1,258.1725
40293505401	402935054	39-26N	8/3/1984	NA	5,120	4,466	1,362	Static	323.386	1,123.1542	-4.8650
40293505901	402935059	4-27N	1/15/1943	NA	8,214	7,551	1,578	Static	1,530.171	1,567.0187	1,515.0475
40293505901	402935059	4-27N	10/11/1943	NA	8,200	7,537	1,640	Static	1,587.677	1,627.9869	1,571.1325
40293505900	402935059	4-27N	10/27/1939	NA	8,500	7,837	2,520	Static	2,563.977	2,530.0969	2,577.8825
40293505901	402935059	4-27N	11/4/1941	NA	8,200	7,537	1,608	Static	1,555.677	1,595.9869	1,539.1325
40293505901	402935059	4-27N	11/5/1946	NA	8,175	7,512	1,520	Static	1,459.652	1,506.1444	1,440.5700
40293505901	402935059	4-27N	12/18/1950	NA	8,300	7,637	1,084	Static	1,063.777	1,079.3569	1,057.3825
40293505901	402935059	4-27N	12/19/1950	NA	8,300	7,637	1,088	Static	1,067.777	1,083.3569	1,061.3825
40293505901	402935059	4-27N	12/20/1950	NA	8,300	7,637	1,090	Static	1,069.777	1,085.3569	1,063.3825
40293505901	402935059	4-27N	12/21/1950	NA	8,300	7,637	1,263	Static	1,242.777	1,258.3569	1,236.3825
40293505901	402935059	4-27N	12/22/1945	NA	8,180	7,517	1,520	Static	1,461.257	1,506.5129	1,442.6825
40293505901	402935059	4-27N	12/22/1950	NA	8,300	7,637	1,092	Static	1,071.777	1,087.3569	1,065.3825
40293505900	402935059	4-27N	3/24/1939	NA	8,500	7,837	2,860	Static	2,903.977	2,870.0969	2,917.8825
40293505901	402935059	4-27N	3/28/1950	NA	8,300	7,637	1,088	Static	1,067.777	1,083.3569	1,061.3825
40293505901	402935059	4-27N	4/2/1940	NA	8,212	7,549	2,085	Static	2,036.529	2,073.8713	2,021.2025
40293505901	402935059	4-27N	4/2/1941	shut in on 03/31/1941	8,212	7,549	1,765	Static	1,716.529	1,753.8713	1,701.2025
40293505901	402935059	4-27N	4/2/1951	NA	8,300	7,637	1,106	Static	1,085.777	1,101.3569	1,079.3825
40293505901	402935059	4-27N	4/21/1944	NA	8,195	7,532	1,585	Static	1,531.072	1,572.6184	1,514.0200
40293505901	402935059	4-27N	4/23/1954	NA	8,300	7,637	1,490	Static	1,469.777	1,485.3569	1,463.3825
40293505901	402935059	4-27N	4/7/1953	NA	8,300	7,637	1,433	Static	1,412.777	1,428.3569	1,406.3825
40293505901	402935059	4-27N	6/13/1945	NA	8,185	7,522	1,547	Static	1,489.862	1,533.8814	1,471.7950
40293505901	402935059	4-27N	6/27/1957	NA	8,300	7,637	1,619	Static	1,598.777	1,614.3569	1,592.3825
40293505901	402935059	4-27N	6/9/1955	NA	8,300	7,637	1,575	Static	1,554.777	1,570.3569	1,548.3825
40293505901	402935059	4-27N	8/3/1972	3 hrs 15 min	8,229	7,566	1,415	Static	1,371.986	1,405.1242	1,358.3850
40293505901	402935059	4-27N	9/18/1951	NA	8,300	7,637	1,174	Static	1,153.777	1,169.3569	1,147.3825
40293505901	402935059	4-27N	9/29/1952	NA	8,300	7,637	1,354	Static	1,333.777	1,349.3569	1,327.3825
40293507600	402935076	4-35N	1/8/1946	10 days	7,094	7,725	1,734	Static	1,742.025	1,735.8425	1,744.5625
40293507600	402935076	4-35N	1/8/1947	NA	8,210	7,579	978	Static	939.159	969.0823	926.8775
40293507600	402935076	4-35N	10/18/1948	NA	8,200	7,569	1,310	Static	1,267.949	1,300.3453	1,254.6525
40293507600	402935076	4-35N	10/23/1947	NA	8,200	7,569	1,712	Static	1,669.949	1,702.3453	1,656.6525
40293507600	402935076	4-35N	10/4/1951	NA	7,925	7,294	1,289	Static	1,158.674	1,259.0778	1,117.4650
40293507600	402935076	4-35N	11/4/1947	NA	8,200	7,569	1,472	Static	1,429.949	1,462.3453	1,416.6525
40293507600	402935076	4-35N	11/9/1944	9 days	7,094	7,725	1,719	Static	1,727.025	1,720.8425	1,729.5625
40293507600	402935076	4-35N	3/17/1952	NA	7,925	7,294	1,410	Static	1,279.674	1,380.0778	1,238.4650
40293507600	402935076	4-35N	3/17/1981	NA	8,021	7,390	1,061	Static	961.490	1,038.1530	930.0250
40293507600	402935076	4-35N	4/10/1953	NA	7,925	7,294	1,552	Static	1,421.674	1,522.0778	1,380.4650
40293507600	402935076	4-35N	4/26/1949	NA	8,200	7,569	1,242	Static	1,199.949	1,232.3453	1,186.6525
40293507600	402935076	4-35N	4/26/1954	NA	7,925	7,294	1,621	Static	1,490.674	1,591.0778	1,449.4650
40293507600	402935076	4-35N	5/28/1942	22 days	8,210	7,579	1,688	Static	1,649.159	1,679.0823	1,636.8775
40293507600	402935076	4-35N	6/10/1955	49 hrs	7,925	7,294	1,688	Static	1,557.674	1,658.0778	1,516.4650
40293507600	402935076	4-35N	6/25/1956	48 hrs	7,925	7,294	1,700	Static	1,569.674	1,670.0778	1,528.4650
40293507600	402935076	4-35N	6/28/1957	NA	7,925	7,294	1,739	Static	1,608.674	1,709.0778	1,567.4650
40293507600	402935076	4-35N	9/23/1952	NA	7,925	7,294	1,486	Static	1,355.674	1,456.0778	1,314.4650
40293504500	402935045	44-21N	1/18/1951	4 days	8,430	7,741	2,210	Static	2,223.161	2,213.0217	2,227.3225
40293504500	402935045	44-21N	1/28/1953	NA	8,399	7,710	2,954	Static	2,957.210	2,954.7370	2,958.2250
40293504500	402935045	44-21N	8/1/1972	NA	8,394	7,705	2,862	Static	2,863.605	2,862.3685	2,864.1125
40293504500	402935045	44-21N	9/11/1948	7 days	8,500	7,811	2,087	Static	2,122.631	2,095.1807	2,133.8975
40293504500	402935045	44-21N	9/22/1948	7 days	8,500	7,811	2,087	Static	2,122.631	2,095.1807	2,133.8975
40293508600	402935086	45-35N	1/6/1948	NA	8,250	7,596	1,236	Static	1,202.616	1,228.3352	1,192.0600
40293508600	402935086	45-35N	1/8/1948	NA	8,250	7,596	1,364	Static	1,330.616	1,356.3352	1,320.0600
40293508600	402935086	45-35N	1/9/1946	NA	8,280	7,636	1,651	Static	1,630.456	1,646.2832	1,623.9600
40293508600	402935086	45-35N	10/18/1943	NA	8,280	7,626	1,635	Static	1,611.246	1,629.5462	1,603.7350
40293508600	402935086	45-35N	10/18/1949	NA	8,250	7,596	1,139	Static	1,105.616	1,131.3352	1,095.0600
40293508600	402935086	45-35N	10/27/1941	NA	8,280	7,626	1,715	Static	1,691.246	1,709.5462	1,683.7350
40293508600	402935086	45-35N	10/27/1947	NA	8,250	7,596	1,390	Static	1,356.616	1,382.3352	1,346.0600
40293508600	402935086	45-35N	10/28/1946	NA	8,280	7,626	1,640	Static	1,616.246	1,634.5462	1,608.7350
40293508600	402935086	45-35N	10/6/1948	NA	8,250	7,596	1,243	Static	1,209.616	1,235.3352	1,199.0600
40293508600	402935086	45-35N	3/26/1948	NA	8,250	7,596	1,334	Static	1,300.616	1,326.3352	1,290.0600
40293508600	402935086	45-35N	3/31/1952	NA	8,275	7,621	1,417	Static	1,391.641	1,411.1777	1,383.6225

UWI Number	API Number	Common Well Name	Date	Shut-in Time	Measured Depth (ft)	TVDss (ft)	Pressure (PSI)	Pressure Type	$P_{OilCorrected}$ (PSI) (1)	$P_{GasCorrected}$ (PSI) (1)	$P_{WaterCorrected}$ (PSI) (1)
40293508600	402935086	45-35N	4/16/1953	NA	8,275	7,621	1,571	Static	1,545.641	1,565.1777	1,537.6225
40293508600	402935086	45-35N	4/16/1954	NA	8,275	7,621	1,641	Static	1,615.641	1,635.1777	1,607.6225
40293508600	402935086	45-35N	4/2/1953	NA	5,300	4,646	2,356	Static	1,375.666	2,130.9202	1,065.6850
40293508600	402935086	45-35N	4/26/1944	36 months	8,280	7,626	1,625	Static	1,601.246	1,619.5462	1,593.7350
40293508600	402935086	45-35N	4/27/1949	NA	8,250	7,596	1,185	Static	1,151.616	1,177.3352	1,141.0600
40293508600	402935086	45-35N	4/5/1951	2 days	8,275	7,621	1,207	Static	1,181.641	1,201.1777	1,173.6225
40293508600	402935086	45-35N	4/7/1947	NA	8,250	7,596	1,629	Static	1,595.616	1,621.3352	1,585.0600
40293508600	402935086	45-35N	5/31/1955	47 hrs	8,275	7,621	1,616	Static	1,590.641	1,610.1777	1,582.6225
40293508600	402935086	45-35N	6/18/1956	48 hrs	8,275	7,621	1,715	Static	1,689.641	1,709.1777	1,681.6225
40293508600	402935086	45-35N	6/26/1947	NA	8,250	7,596	1,504	Static	1,470.616	1,496.3352	1,460.0600
40293508600	402935086	45-35N	6/30/1948	NA	8,250	7,596	1,298	Static	1,264.616	1,290.3352	1,254.0600
40293508600	402935086	45-35N	7/8/1957	NA	8,275	7,621	1,752	Static	1,726.641	1,746.1777	1,718.6225
40293508600	402935086	45-35N	8/27/1947	NA	8,250	7,596	1,435	Static	1,401.616	1,427.3352	1,391.0600
40293508600	402935086	45-35N	9/20/1950	NA	8,275	7,621	1,096	Static	1,070.641	1,090.1777	1,062.6225
40293508600	402935086	45-35N	9/26/1951	NA	8,275	7,621	1,299	Static	1,273.641	1,293.1777	1,265.6225
40293508600	402935086	45-35N	9/29/1952	NA	8,275	7,621	1,509	Static	1,483.641	1,503.1777	1,475.6225
40293508700	402935087	48A-35N	1/10/1946	NA	8,170	7,537	1,648	Static	1,595.677	1,635.9869	1,579.1325
40293508700	402935087	48A-35N	1/5/1949	NA	8,150	7,517	1,213	Static	1,154.257	1,199.5129	1,135.6825
40293508700	402935087	48A-35N	1/7/1947	NA	8,000	7,367	1,359	Static	1,252.107	1,334.4579	1,218.3075
40293508700	402935087	48A-35N	10/18/1949	NA	8,150	7,517	1,104	Static	1,045.257	1,090.5129	1,026.6825
40293508700	402935087	48A-35N	10/2/1952	NA	8,160	7,257	1,477	Static	1,334.797	1,444.3509	1,289.8325
40293508700	402935087	48A-35N	10/24/1941	NA	8,180	7,547	1,710	Static	1,660.887	1,698.7239	1,645.3575
40293508700	402935087	48A-35N	10/25/1946	NA	8,150	7,517	1,666	Static	1,607.257	1,652.5129	1,588.6825
40293508700	402935087	48A-35N	10/28/1947	NA	8,150	7,517	1,387	Static	1,328.257	1,373.5129	1,309.6825
40293508700	402935087	48A-35N	10/6/1948	NA	8,150	7,517	1,247	Static	1,188.257	1,233.5129	1,169.6825
40293508700	402935087	48A-35N	11/10/1944	8 months	8,150	7,517	1,626	Static	1,567.257	1,612.5129	1,548.6825
40293508700	402935087	48A-35N	12/12/1950	1 month	8,160	7,257	1,180	Static	1,037.797	1,147.3509	992.8325
40293508700	402935087	48A-35N	3/14/1952	NA	8,160	7,257	1,419	Static	1,276.797	1,386.3509	1,231.8325
40293508700	402935087	48A-35N	3/18/1948	NA	8,150	7,517	1,346	Static	1,287.257	1,332.5129	1,268.6825
40293508700	402935087	48A-35N	3/18/1981	NA	8,220	7,587	1,161	Static	1,124.727	1,152.6719	1,113.2575
40293508700	402935087	48A-35N	3/2/1950	NA	8,160	7,257	1,078	Static	935.797	1,045.3509	890.8325
40293508700	402935087	48A-35N	3/20/1951	1 month	8,160	7,257	1,198	Static	1,055.797	1,165.3509	1,010.8325
40293508700	402935087	48A-35N	3/27/1941	NA	8,180	7,547	1,925	Static	1,875.887	1,913.7239	1,860.3575
40293508700	402935087	48A-35N	4/15/1954	NA	8,160	7,527	1,616	Static	1,560.467	1,603.2499	1,542.9075
40293508700	402935087	48A-35N	4/25/1949	NA	8,150	7,517	1,170	Static	1,111.257	1,156.5129	1,092.6825
40293508700	402935087	48A-35N	4/4/1947	NA	8,150	7,517	1,610	Static	1,551.257	1,596.5129	1,532.6825
40293508700	402935087	48A-35N	4/9/1953	NA	8,160	7,257	1,552	Static	1,409.797	1,519.3509	1,364.8325
40293508700	402935087	48A-35N	6/20/1956	NA	8,160	7,527	1,704	Static	1,648.467	1,691.2499	1,630.9075
40293508700	402935087	48A-35N	6/25/1947	NA	8,150	7,517	1,500	Static	1,441.257	1,486.5129	1,422.6825
40293508700	402935087	48A-35N	6/30/1948	NA	8,150	7,517	1,298	Static	1,239.257	1,284.5129	1,220.6825
40293508700	402935087	48A-35N	6/9/1955	NA	8,160	7,527	1,688	Static	1,632.467	1,675.2499	1,614.9075
40293508700	402935087	48A-35N	7/5/1957	NA	8,160	7,527	1,751	Static	1,695.467	1,738.2499	1,677.9075
40293508700	402935087	48A-35N	8/26/1947	NA	8,150	7,517	1,435	Static	1,376.257	1,421.5129	1,357.6825
40293508700	402935087	48A-35N	8/4/1972	NA	8,160	7,527	1,448	Static	1,392.467	1,435.2499	1,374.9075
40293508700	402935087	48A-35N	8/6/1981	NA	8,175	7,542	1,126	Static	1,075.282	1,114.3554	1,059.2450
40293508700	402935087	48A-35N	9/26/1951	NA	8,160	7,257	1,293	Static	1,150.797	1,260.3509	1,105.8325
40293508700	402935087	48A-35N	9/28/1950	1 month	8,160	7,257	1,182	Static	1,039.797	1,149.3509	994.8325
40293508800	402935088	49-35N	1/10/1961	NA	8,050	7,417	1,777	Static	1,686.157	1,756.1429	1,657.4325
40293508800	402935088	49-35N	1/15/1946	NA	8,050	7,418	1,635	Static	1,544.478	1,614.2166	1,515.8550
40293508800	402935088	49-35N	1/3/1941	2 days	8,070	7,437	1,935	Static	1,850.577	1,915.6169	1,823.8825
40293508800	402935088	49-35N	1/6/1948	NA	8,000	7,368	1,360	Static	1,253.428	1,335.5316	1,219.7300
40293508800	402935088	49-35N	1/7/1949	NA	8,000	7,368	1,209	Static	1,102.428	1,184.5316	1,068.7300
40293508800	402935088	49-35N	10/10/1949	NA	8,000	7,368	1,346	Static	1,239.428	1,321.5316	1,205.7300
40293508800	402935088	49-35N	10/17/1949	NA	8,000	7,368	1,117	Static	1,010.428	1,092.5316	976.7300
40293508800	402935088	49-35N	10/23/1946	NA	8,056	7,424	1,667	Static	1,578.404	1,646.6588	1,550.3900
40293508800	402935088	49-35N	10/24/1941	NA	8,050	7,417	1,717	Static	1,626.157	1,696.1429	1,597.4325
40293508800	402935088	49-35N	10/29/1947	NA	8,000	7,368	1,392	Static	1,285.428	1,367.5316	1,251.7300
40293508800	402935088	49-35N	10/8/1948	NA	8,000	7,368	1,240	Static	1,133.428	1,215.5316	1,099.7300
40293508800	402935088	49-35N	12/11/1950	month	8,055	7,423	1,193	Static	1,104.083	1,172.5851	1,075.9675
40293508800	402935088	49-35N	2/23/1950	NA	8,056	7,424	1,077	Static	988.404	1,056.6588	960.3900
40293508800	402935088	49-35N	3/14/1952	NA	8,050	7,418	1,411	Static	1,320.478	1,390.2166	1,291.8550
40293508800	402935088	49-35N	3/15/1950	NA	8,050	7,418	1,209	Static	1,118.478	1,188.2166	1,089.8550
40293508800	402935088	49-35N	3/15/1951	NA	8,050	7,418	1,209	Static	1,118.478	1,188.2166	1,089.8550
40293508800	402935088	49-35N	3/18/1948	NA	8,000	7,368	1,340	Static	1,233.428	1,315.5316	1,199.7300
40293508800	402935088	49-35N	3/19/1981	NA	8,070	7,437	1,335	Static	1,250.577	1,315.6169	1,223.8825
40293508800	402935088	49-35N	4/10/1953	NA	8,050	7,418	1,571	Static	1,480.478	1,550.2166	1,451.8550
40293508800	402935088	49-35N	4/14/1954	NA	8,050	7,418	1,623	Static	1,532.478	1,602.2166	1,503.8550
40293508800	402935088	49-35N	4/21/1953	NA	8,050	7,418	1,575	Static	1,484.478	1,554.2166	1,455.8550
40293508800	402935088	49-35N	4/25/1949	NA	8,000	7,368	1,160	Static	1,053.428	1,135.5316	1,019.7300
40293508800	402935088	49-35N	4/7/1947	NA	8,000	7,368	1,624	Static	1,517.428	1,599.5316	1,483.7300
40293508800	402935088	49-35N	5/17/1955	NA	8,050	7,418	1,663	Static	1,572.478	1,642.2166	1,543.8550
40293508800	402935088	49-35N	5/18/1955	NA	8,050	7,418	1,662	Static	1,571.478	1,641.2166	1,542.8550
40293508800	402935088	49-35N	6/12/1956	NA	8,050	7,418	1,673	Static	1,582.478	1,652.2166	1,553.8550
40293508800	402935088	49-35N	6/18/1957	NA	8,050	7,417	1,731	Static	1,640.157	1,710.1429	1,611.4325
40293508800	402935088	49-35N	6/24/1947	NA	8,000	7,368	1,499	Static	1,392.428	1,474.5316	1,358.7300
40293508800	402935088	49-35N	7/28/1972	NA	8,051	7,418	1,428	Static	1,337.478	1,407.2166	1,308.8550
40293508800	402935088	49-35N	7/7/1948	NA	8,000	7,368	1,286	Static	1,179.428	1,261.5316	1,145.7300
40293508800	402935088	49-35N	8/25/1947	NA	8,000	7,368	1,435	Static	1,328.428	1,410.5316	1,294.7300
40293508800	402935088	49-35N	9/11/1967	NA	8,050	7,417	1,715	Static	1,624.157	1,694.1429	1,595.4325
40293508800	402935088	49-35N	9/16/1951	NA	8,050	7,418	1,297	Static	1,206.478	1,276.2166	1,177.8550
40293508800	402935088	49-35N	9/16/1952	NA	8,050	7,418	1,482	Static	1,391.478	1,461.2166	1,362.8550
40293508800	402935088	49-35N	9/16/1971	NA	8,050	7,417	1,485	Static	1,394.157	1,464.1429	1,365.4325
40293508800	402935088	49-35N	9/8/1950	months	8,050	7,418	1,174	Static	1,083.478	1,153.2166	1,054.8550
40293506000	402935060	5-27N	1/14/1949	NA	8,350	7,676	1,136	Static	1,128.296	1,134.2312	1,125.8600
40293506000	402935060	5-27N	1/7/1948	NA	8,400	7,726	1,300	Static	1,308.346	1,301.9162	1,310.9850
40293506000	402935060	5-27N	10/15/1948	NA	8,400	7,726	1,170	Static	1,178.346	1,171.9162	1,180.9850

UWI Number	API Number	Common Well Name	Date	Shut-in Time	Measured Depth (ft)	TVDss (ft)	Pressure (PSI)	Pressure Type	$P_{OilCorrected}$ (PSI) (1)	$P_{GasCorrected}$ (PSI) (1)	$P_{WaterCorrected}$ (PSI) (1)
40293506000	402935060	5-27N	10/27/1939	NA	8,400	7,726	2,385	Static	2,393.346	2,386.9162	2,395.9850
40293506000	402935060	5-27N	10/28/1949	NA	8,450	7,776	1,080	Static	1,104.396	1,085.6012	1,112.1100
40293506000	402935060	5-27N	11/15/1944	NA	8,374	7,700	1,574	Static	1,574.000	1,574.0000	1,574.0000
40293506000	402935060	5-27N	11/3/1947	NA	8,400	7,726	1,391	Static	1,399.346	1,392.9162	1,401.9850
40293506000	402935060	5-27N	11/4/1941	NA	8,445	7,771	1,610	Static	1,632.791	1,615.2327	1,639.9975
40293506000	402935060	5-27N	11/8/1946	NA	8,440	7,766	1,827	Static	1,848.186	1,831.8642	1,854.8850
40293506000	402935060	5-27N	12/26/1945	2 days	8,350	7,676	1,564	Static	1,556.296	1,562.2312	1,553.8600
40293506000	402935060	5-27N	12/28/1945	NA	8,350	7,676	1,540	Static	1,532.296	1,538.2312	1,529.8600
40293506000	402935060	5-27N	2/28/1950	NA	8,450	7,776	1,117	Static	1,141.396	1,122.6012	1,149.1100
40293506000	402935060	5-27N	3/23/1948	NA	8,400	7,726	1,295	Static	1,303.346	1,296.9162	1,305.9850
40293506000	402935060	5-27N	4/1/1952	NA	8,450	7,776	1,274	Static	1,298.396	1,279.6012	1,306.1100
40293506000	402935060	5-27N	4/15/1949	NA	8,450	7,776	1,144	Static	1,168.396	1,149.6012	1,176.1100
40293506000	402935060	5-27N	4/2/1951	4 days	8,450	7,776	1,110	Static	1,134.396	1,115.6012	1,142.1100
40293506000	402935060	5-27N	4/23/1954	NA	8,450	7,776	1,470	Static	1,494.396	1,475.6012	1,502.1100
40293506000	402935060	5-27N	4/3/1940	NA	8,400	7,726	1,945	Static	1,953.346	1,946.9162	1,955.9850
40293506000	402935060	5-27N	4/4/1941	NA	8,332	7,658	1,735	Static	1,721.518	1,731.9046	1,717.2550
40293506000	402935060	5-27N	4/7/1953	NA	8,450	7,776	1,416	Static	1,440.396	1,421.6012	1,448.1100
40293506000	402935060	5-27N	4/8/1947	NA	8,400	7,726	1,534	Static	1,542.346	1,535.9162	1,544.9850
40293506000	402935060	5-27N	6/27/1957	NA	8,450	7,776	1,604	Static	1,628.396	1,609.6012	1,636.1100
40293506000	402935060	5-27N	6/7/1955	NA	8,450	7,776	1,554	Static	1,578.396	1,559.6012	1,586.1100
40293506000	402935060	5-27N	7/1/1947	NA	8,400	7,726	1,446	Static	1,454.346	1,447.9162	1,456.9850
40293506000	402935060	5-27N	7/2/1948	NA	8,400	7,726	1,227	Static	1,235.346	1,228.9162	1,237.9850
40293506000	402935060	5-27N	8/27/1947	NA	8,400	7,726	1,408	Static	1,416.346	1,409.9162	1,418.9850
40293506000	402935060	5-27N	9/18/1950	6 days	8,450	7,776	1,089	Static	1,113.396	1,094.6012	1,121.1100
40293506000	402935060	5-27N	9/18/1951	NA	8,450	7,776	1,188	Static	1,212.396	1,193.6012	1,220.1100
40293506000	402935060	5-27N	9/29/1952	NA	8,450	7,776	1,365	Static	1,389.396	1,370.6012	1,397.1100
40293508900	402935089	51-35N	10/22/1941	NA	8,470	7,803	1,744	Static	1,777.063	1,751.5911	1,787.5175
40293508900	402935089	51-35N	12/14/1950	NA	8,442	7,775	1,282	Static	1,306.075	1,287.5275	1,313.6875
40293508900	402935089	51-35N	3/11/1952	NA	8,440	7,773	1,444	Static	1,467.433	1,449.3801	1,474.8425
40293508900	402935089	51-35N	3/17/1981	NA	8,493	7,826	1,196	Static	1,236.446	1,205.2862	1,249.2350
40293508900	402935089	51-35N	3/19/1951	1 month	8,440	7,773	1,317	Static	1,340.433	1,322.3801	1,347.8425
40293508900	402935089	51-35N	3/27/1941	NA	8,470	7,803	2,035	Static	2,068.063	2,042.5911	2,078.5175
40293508900	402935089	51-35N	4/15/1953	NA	8,440	7,773	1,602	Static	1,625.433	1,607.3801	1,632.8425
40293508900	402935089	51-35N	4/21/1954	NA	8,440	7,773	1,649	Static	1,672.433	1,654.3801	1,679.8425
40293508900	402935089	51-35N	5/23/1955	NA	8,440	7,773	1,686	Static	1,709.433	1,691.3801	1,716.8425
40293508900	402935089	51-35N	6/13/1956	NA	8,440	7,773	1,745	Static	1,768.433	1,750.3801	1,775.8425
40293508900	402935089	51-35N	7/28/1972	NA	8,440	7,773	1,611	Static	1,634.433	1,616.3801	1,641.8425
40293508900	402935089	51-35N	7/3/1957	NA	8,440	7,773	1,791	Static	1,814.433	1,796.3801	1,821.8425
40293508900	402935089	51-35N	9/17/1952	NA	8,440	7,773	1,525	Static	1,548.433	1,530.3801	1,555.8425
40293508900	402935089	51-35N	9/26/1951	NA	8,440	7,773	1,354	Static	1,377.433	1,359.3801	1,384.8425
40293508900	402935089	51-35N	9/4/1984	NA	8,449	7,782	1,289	Static	1,314.922	1,294.6434	1,323.2450
40293505601	402935056	53-26N	1/10/1961	NA	8,105	7,474	1,781	Static	1,708.454	1,764.3438	1,685.5150
40293505601	402935056	53-26N	1/20/1943	NA	8,030	7,399	1,605	Static	1,508.379	1,582.8163	1,477.8275
40293505601	402935056	53-26N	1/29/1946	NA	8,080	7,449	1,632	Static	1,551.429	1,613.5013	1,525.9525
40293505601	402935056	53-26N	10/22/1943	NA	8,030	7,399	1,645	Static	1,548.379	1,622.8163	1,517.8275
40293505601	402935056	53-26N	10/31/1947	NA	8,050	7,419	1,368	Static	1,277.799	1,347.2903	1,249.2775
40293505601	402935056	53-26N	11/1/1946	NA	8,070	7,439	1,610	Static	1,526.219	1,590.7643	1,499.7275
40293505601	402935056	53-26N	11/5/1941	NA	8,076	7,445	1,670	Static	1,588.145	1,651.2065	1,562.2625
40293505601	402935056	53-26N	12/30/1945	NA	8,070	7,439	1,633	Static	1,549.219	1,613.7643	1,522.7275
40293505601	402935056	53-26N	4/1/1940	NA	8,225	7,594	2,150	Static	2,115.974	2,142.1878	2,105.2150
40293505601	402935056	53-26N	4/16/1952	NA	8,250	7,619	1,563	Static	1,536.999	1,557.0303	1,528.7775
40293505601	402935056	53-26N	4/17/1944	NA	8,030	7,399	1,578	Static	1,481.379	1,555.8163	1,450.8275
40293505601	402935056	53-26N	4/2/1941	NA	8,100	7,469	1,900	Static	1,825.849	1,882.9753	1,802.4025
40293505601	402935056	53-26N	4/21/1954	NA	8,250	7,619	1,611	Static	1,584.999	1,605.0303	1,576.7775
40293505601	402935056	53-26N	4/3/1952	NA	8,250	7,619	1,411	Static	1,384.999	1,405.0303	1,376.7775
40293505601	402935056	53-26N	6/25/1956	NA	8,250	7,619	1,694	Static	1,667.999	1,688.0303	1,659.7775
40293505601	402935056	53-26N	6/6/1945	NA	8,020	7,389	1,613	Static	1,513.169	1,590.0793	1,481.6025
40293505601	402935056	53-26N	6/6/1955	NA	8,250	7,619	1,685	Static	1,658.999	1,679.0303	1,650.7775
40293505601	402935056	53-26N	8/16/1940	NA	8,104	7,473	2,270	Static	2,197.133	2,253.2701	2,174.0925
40293505601	402935056	53-26N	8/3/1972	NA	8,105	7,474	1,448	Static	1,375.454	1,431.3438	1,352.5150
40293505601	402935056	53-26N	9/20/1971	NA	8,105	7,474	1,487	Static	1,414.454	1,470.3438	1,391.5150
40293505601	402935056	53-26N	9/23/1952	NA	8,250	7,619	1,483	Static	1,456.999	1,477.0303	1,448.7775
40293505601	402935056	53-26N	9/27/1951	NA	8,250	7,619	1,281	Static	1,254.999	1,275.0303	1,246.7775
40293505700	402935057	55-26N	1/19/1984	2 days	8,000	7,342	994	Static	879.102	967.6354	842.7650
40293505700	402935057	55-26N	1/9/1948	NA	7,900	7,242	1,197	Static	1,049.982	1,163.2454	1,003.4950
40293505700	402935057	55-26N	10/10/1950	NA	8,000	7,342	1,659	Static	1,544.082	1,632.6154	1,507.7450
40293505700	402935057	55-26N	10/12/1950	NA	8,000	7,342	1,262	Static	1,147.082	1,235.6154	1,110.7450
40293505700	402935057	55-26N	10/16/1950	NA	8,000	7,342	1,588	Static	1,473.082	1,561.6154	1,436.7450
40293505700	402935057	55-26N	10/23/1980	NA	7,410	6,752	1,040	Static	735.692	970.1324	639.4700
40293505700	402935057	55-26N	10/25/1949	NA	8,000	7,342	1,140	Static	1,025.082	1,113.6154	988.7450
40293505700	402935057	55-26N	10/31/1947	NA	7,923	7,265	1,345	Static	1,205.365	1,312.9405	1,161.2125
40293505700	402935057	55-26N	10/5/1948	NA	7,920	7,262	1,270	Static	1,129.402	1,237.7194	1,084.9450
40293505700	402935057	55-26N	3/14/1950	NA	8,000	7,342	1,086	Static	971.082	1,059.6154	934.7450
40293505700	402935057	55-26N	3/26/1948	NA	7,900	7,242	1,348	Static	1,200.982	1,314.2454	1,154.4950
40293505700	402935057	55-26N	3/28/1951	2 days	8,000	7,342	1,182	Static	1,067.082	1,155.6154	1,030.7450
40293505700	402935057	55-26N	3/8/1984	NA	8,000	7,342	1,050	Static	935.282	1,023.8154	898.9450
40293505700	402935057	55-26N	4/18/1949	NA	7,900	7,242	1,223	Static	1,075.982	1,189.2454	1,029.4950
40293505700	402935057	55-26N	4/2/1952	NA	8,000	7,342	1,421	Static	1,306.082	1,394.6154	1,269.7450
40293505700	402935057	55-26N	4/22/1954	NA	8,000	7,342	1,628	Static	1,513.082	1,601.6154	1,476.7450
40293505700	402935057	55-26N	4/6/1953	NA	8,000	7,342	1,555	Static	1,440.082	1,528.6154	1,403.7450
40293505700	402935057	55-26N	5/30/1984	NA	8,000	7,342	991	Static	876.132	964.6654	839.7950
40293505700	402935057	55-26N	6/25/1956	NA	8,000	7,342	1,707	Static	1,592.082	1,680.6154	1,555.7450
40293505700	402935057	55-26N	6/29/1948	NA	7,900	7,242	1,313	Static	1,165.982	1,279.2454	1,119.4950
40293505700	402935057	55-26N	6/7/1955	NA	8,000	7,342	1,701	Static	1,586.082	1,674.6154	1,549.7450
40293505700	402935057	55-26N	8/3/1972	NA	8,000	7,342	1,443	Static	1,328.082	1,416.6154	1,291.7450
40293505700	402935057	55-26N	9/18/1950	2 days	8,000	7,342	1,115	Static	1,000.082	1,088.6154	963.7450

UWI Number	API Number	Common Well Name	Date	Shut-in Time	Measured Depth (ft)	TVDss (ft)	Pressure (PSI)	Pressure Type	$P_{OilCorrected}$ (PSI) (1)	$P_{GasCorrected}$ (PSI) (1)	$P_{WaterCorrected}$ (PSI) (1)
40293505700	402935057	55-26N	9/23/1952	NA	8,000	7,342	1,490	Static	1,375.082	1,463.6154	1,338.7450
40293510400	402935104	6-1N	1/15/1943	NA	8,330	7,713	1,783	Static	1,787.173	1,783.9581	1,788.4925
40293510400	402935104	6-1N	1/17/1942	NA	8,330	7,713	1,280	Static	1,284.173	1,280.9581	1,285.4925
40293510400	402935104	6-1N	10/17/1943	NA	8,330	7,713	1,715	Static	1,719.173	1,715.9581	1,720.4925
40293510400	402935104	6-1N	10/29/1946	NA	8,300	7,683	1,571	Static	1,565.543	1,569.7471	1,563.8175
40293510400	402935104	6-1N	10/31/1941	NA	8,330	7,713	1,812	Static	1,816.173	1,812.9581	1,817.4925
40293510400	402935104	6-1N	11/13/1939	NA	8,300	7,683	2,415	Static	2,409.543	2,413.7471	2,407.8175
40293510400	402935104	6-1N	11/4/1947	NA	7,982	7,365	1,442	Static	1,334.465	1,417.3105	1,300.4625
40293510400	402935104	6-1N	3/20/1940	1 day	8,300	7,683	2,170	Static	2,164.543	2,168.7471	2,162.8175
40293510400	402935104	6-1N	4/10/1941	1 day	8,263	7,646	1,790	Static	1,772.666	1,786.0202	1,767.1850
40293510400	402935104	6-1N	4/25/1944	NA	8,330	7,713	1,620	Static	1,624.173	1,620.9581	1,625.4925
40293510400	402935104	6-1N	4/27/1944	NA	8,330	7,713	1,735	Static	1,739.173	1,735.9581	1,740.4925
40293510400	402935104	6-1N	5/5/1939	17 hrs	8,000	7,383	2,510	Static	2,408.243	2,486.6371	2,376.0675
40293506100	402935061	6-27N	1/11/1961	NA	8,375	7,695	1,659	Static	1,657.395	1,658.6315	1,656.8875
40293506100	402935061	6-27N	1/12/1949	NA	8,350	7,670	1,193	Static	1,183.370	1,190.7890	1,180.3250
40293506100	402935061	6-27N	1/14/1943	NA	8,360	7,680	1,609	Static	1,602.580	1,607.5260	1,600.5500
40293506100	402935061	6-27N	1/7/1948	NA	8,350	7,670	1,286	Static	1,276.370	1,283.7890	1,273.3250
40293506100	402935061	6-27N	10/14/1943	NA	8,360	7,680	1,628	Static	1,621.580	1,626.5260	1,619.5500
40293506100	402935061	6-27N	10/24/1949	NA	8,350	7,670	1,086	Static	1,076.370	1,083.7890	1,073.3250
40293506100	402935061	6-27N	10/28/1941	NA	8,370	7,690	1,656	Static	1,652.790	1,655.2630	1,651.7750
40293506100	402935061	6-27N	10/30/1939	NA	8,350	7,670	2,160	Static	2,150.370	2,157.7890	2,147.3250
40293506100	402935061	6-27N	10/30/1946	NA	8,385	7,705	1,557	Static	1,558.605	1,557.3685	1,559.1125
40293506100	402935061	6-27N	10/5/1948	NA	8,350	7,670	1,214	Static	1,204.370	1,211.7890	1,201.3250
40293506100	402935061	6-27N	11/16/1944	3 months	8,380	7,700	1,607	Static	1,607.000	1,607.0000	1,607.0000
40293506100	402935061	6-27N	11/6/1941	NA	8,350	7,670	1,324	Static	1,314.370	1,321.7890	1,311.3250
40293506100	402935061	6-27N	12/14/1950	NA	8,375	7,695	1,098	Static	1,096.395	1,097.6315	1,095.8875
40293506100	402935061	6-27N	12/20/1945	NA	8,380	7,700	1,580	Static	1,580.000	1,580.0000	1,580.0000
40293506100	402935061	6-27N	2/28/1950	NA	8,350	7,670	1,055	Static	1,045.370	1,052.7890	1,042.3250
40293506100	402935061	6-27N	3/22/1948	NA	8,350	7,670	1,298	Static	1,288.370	1,295.7890	1,285.3250
40293506100	402935061	6-27N	3/26/1941	NA	8,350	7,670	1,855	Static	1,845.370	1,852.7890	1,842.3250
40293506100	402935061	6-27N	3/31/1952	NA	8,375	7,695	1,457	Static	1,455.395	1,456.6315	1,454.8875
40293506100	402935061	6-27N	4/2/1940	NA	8,350	7,670	2,005	Static	1,995.370	2,002.7890	1,992.3250
40293506100	402935061	6-27N	4/26/1954	NA	8,375	7,695	1,445	Static	1,443.395	1,444.6315	1,442.8875
40293506100	402935061	6-27N	4/5/1951	NA	8,375	7,695	1,110	Static	1,108.395	1,109.6315	1,107.8875
40293506100	402935061	6-27N	4/7/1953	NA	8,375	7,695	1,402	Static	1,400.395	1,401.6315	1,399.8875
40293506100	402935061	6-27N	4/8/1947	NA	8,350	7,670	1,561	Static	1,551.370	1,558.7890	1,548.3250
40293506100	402935061	6-27N	5/26/1942	NA	8,370	7,690	1,608	Static	1,604.790	1,607.2630	1,603.7750
40293506100	402935061	6-27N	5/3/1949	NA	8,350	7,670	1,150	Static	1,140.370	1,147.7890	1,137.3250
40293506100	402935061	6-27N	6/26/1956	NA	8,375	7,695	1,519	Static	1,517.395	1,518.6315	1,516.8875
40293506100	402935061	6-27N	6/27/1947	NA	8,350	7,670	1,500	Static	1,490.370	1,497.7890	1,487.3250
40293506100	402935061	6-27N	6/27/1957	NA	8,375	7,695	1,577	Static	1,575.395	1,576.6315	1,574.8875
40293506100	402935061	6-27N	6/29/1948	NA	8,350	7,670	1,233	Static	1,223.370	1,230.7890	1,220.3250
40293506100	402935061	6-27N	6/9/1955	NA	8,375	7,695	1,536	Static	1,534.395	1,535.6315	1,533.8875
40293506100	402935061	6-27N	8/15/1940	NA	8,350	7,670	1,985	Static	1,975.370	1,982.7890	1,972.3250
40293506100	402935061	6-27N	8/27/1947	NA	8,350	7,670	1,444	Static	1,434.370	1,441.7890	1,431.3250
40293506100	402935061	6-27N	8/3/1972	NA	8,375	7,695	1,458	Static	1,456.395	1,457.6315	1,455.8875
40293506100	402935061	6-27N	9/1/1967	NA	8,375	7,695	1,644	Static	1,642.395	1,643.6315	1,641.8875
40293506100	402935061	6-27N	9/13/1950	NA	8,375	7,695	1,097	Static	1,095.395	1,096.6315	1,094.8875
40293506100	402935061	6-27N	9/14/1950	NA	8,375	7,695	1,098	Static	1,096.395	1,097.6315	1,095.8875
40293506100	402935061	6-27N	9/18/1951	NA	8,375	7,695	1,176	Static	1,174.395	1,175.6315	1,173.8875
40293506100	402935061	6-27N	9/30/1952	NA	8,375	7,695	1,361	Static	1,359.395	1,360.6315	1,358.8875
40293505801	402935058	61-26N	1/22/1946	NA	8,100	7,470	1,633	Static	1,559.170	1,616.0490	1,535.8250
40293505801	402935058	61-26N	10/20/1943	NA	8,000	7,370	1,630	Static	1,524.070	1,605.6790	1,490.5750
40293505801	402935058	61-26N	11/21/1944	90 hrs	8,100	7,470	1,616	Static	1,542.170	1,599.0490	1,518.8250
40293505801	402935058	61-26N	3/12/1952	NA	8,100	7,470	1,402	Static	1,328.170	1,385.0490	1,304.8250
40293505801	402935058	61-26N	4/14/1953	NA	8,100	7,470	1,560	Static	1,486.170	1,543.0490	1,462.8250
40293505801	402935058	61-26N	4/21/1954	NA	8,100	7,470	1,623	Static	1,549.170	1,606.0490	1,525.8250
40293505801	402935058	61-26N	6/27/1956	48 hrs	4,539	3,909	1,591	Static	374.089	1,311.6033	-10.6975
40293505801	402935058	61-26N	6/28/1956	67 hrs	8,100	7,470	1,707	Static	1,633.170	1,690.0490	1,609.8250
40293505801	402935058	61-26N	6/8/1955	48 hrs	8,100	7,470	1,694	Static	1,620.170	1,677.0490	1,596.8250
40293505801	402935058	61-26N	9/27/1951	NA	8,100	7,470	1,284	Static	1,210.170	1,267.0490	1,186.8250
40293505801	402935058	61-26N	9/30/1952	NA	8,100	7,470	1,488	Static	1,414.170	1,471.0490	1,390.8250
40293506600	402935066	61-27N	1/11/1946	NA	8,500	7,797	1,909	Static	1,940.137	1,916.1489	1,949.9825
40293506600	402935066	61-27N	1/14/1943	NA	8,120	7,417	1,860	Static	1,769.157	1,839.1429	1,740.4325
40293506600	402935066	61-27N	10/18/1947	NA	8,600	7,897	1,932	Static	1,995.237	1,946.5189	2,015.2325
40293506600	402935066	61-27N	10/28/1941	NA	8,665	7,967	1,946	Static	2,031.707	1,965.6779	2,058.8075
40293506600	402935066	61-27N	11/1/1946	NA	8,600	7,897	1,924	Static	1,987.237	1,938.5189	2,007.2325
40293506600	402935066	61-27N	12/1/1978	NA	8,676	7,973	1,791	Static	1,878.633	1,811.1201	1,906.3425
40293506600	402935066	61-27N	12/20/1950	1 month	8,650	7,947	1,723	Static	1,802.287	1,741.2039	1,827.3575
40293506600	402935066	61-27N	2/22/1979	12 hrs 26 min	6,370	5,667	809	Static	156.407	659.1679	-49.9425
40293506600	402935066	61-27N	3/24/1952	NA	8,650	7,947	832	Static	911.287	850.2039	936.3575
40293506600	402935066	61-27N	3/28/1940	2 days	8,600	7,897	2,285	Static	2,348.237	2,299.5189	2,368.2325
40293506600	402935066	61-27N	3/6/1950	NA	8,670	7,967	1,755	Static	1,840.707	1,774.6779	1,867.8075
40293506600	402935066	61-27N	4/20/1944	21 months	8,000	7,297	1,912	Static	1,782.637	1,882.2989	1,741.7325
40293506600	402935066	61-27N	4/22/1953	NA	8,650	7,947	1,718	Static	1,797.287	1,736.2039	1,822.3575
40293506600	402935066	61-27N	4/26/1939	NA	8,600	7,897	2,390	Static	2,453.237	2,404.5189	2,473.2325
40293506600	402935066	61-27N	4/27/1954	NA	8,680	7,977	1,003	Static	1,091.917	1,023.4149	1,120.0325
40293506600	402935066	61-27N	5/26/1942	NA	8,660	7,957	2,090	Static	2,172.497	2,108.9409	2,198.5825
40293506600	402935066	61-27N	6/13/1945	NA	8,403	7,700	1,863	Static	1,863.000	1,863.0000	1,863.0000
40293506600	402935066	61-27N	9/22/1950	months	8,650	7,947	1,731	Static	1,810.287	1,749.2039	1,835.3575
40293509000	402935090	63-35N	1/10/1946	58 months	8,430	7,784	1,727	Static	1,753.964	1,733.1908	1,762.4900
40293509000	402935090	63-35N	1/13/1943	2 years	8,348	7,702	1,679	Static	1,679.642	1,679.1474	1,679.8450
40293509000	402935090	63-35N	1/3/1941	22 hrs	8,390	7,744	1,945	Static	1,959.124	1,948.2428	1,963.5900
40293509000	402935090	63-35N	10/23/1941	291 days	8,348	7,702	1,770	Static	1,770.642	1,770.1474	1,770.8450
40293509000	402935090	63-35N	11/13/1944	46 months	8,400	7,754	1,718	Static	1,735.334	1,721.9798	1,740.8150
40293509000	402935090	63-35N	11/28/1950	NA	8,425	7,779	1,212	Static	1,237.359	1,217.8223	1,245.3775

UWI Number	API Number	Common Well Name	Date	Shut-in Time	Measured Depth (ft)	TVDss (ft)	Pressure (PSI)	Pressure Type	$P_{OilCorrected}$ (PSI) [1]	$P_{GasCorrected}$ (PSI) [1]	$P_{WaterCorrected}$ (PSI) [1]
40293509000	402935090	63-35N	12/18/1950	NA	8,425	7,779	1,218	Static	1,243.359	1,223.8223	1,251.3775
40293509000	402935090	63-35N	3/10/1952	NA	8,425	7,779	1,417	Static	1,442.359	1,422.8223	1,450.3775
40293509000	402935090	63-35N	3/19/1951	NA	8,425	7,779	1,233	Static	1,258.359	1,238.8223	1,266.3775
40293509000	402935090	63-35N	3/24/1950	NA	8,425	7,779	1,156	Static	1,181.359	1,161.8223	1,189.3775
40293509000	402935090	63-35N	4/15/1943	NA	8,425	7,779	1,574	Static	1,599.359	1,579.8223	1,607.3775
40293509000	402935090	63-35N	4/20/1954	NA	8,425	7,779	1,628	Static	1,653.359	1,633.8223	1,661.3775
40293509000	402935090	63-35N	5/20/1955	NA	8,425	7,779	1,674	Static	1,699.359	1,679.8223	1,707.3775
40293509000	402935090	63-35N	5/28/1942	17.5 months	8,348	7,702	1,711	Static	1,711.642	1,711.1474	1,711.8450
40293509000	402935090	63-35N	6/13/1956	NA	8,425	7,779	1,713	Static	1,738.359	1,718.8223	1,746.3775
40293509000	402935090	63-35N	7/5/1957	NA	8,425	7,779	1,761	Static	1,786.359	1,766.8223	1,794.3775
40293509000	402935090	63-35N	9/17/1952	NA	8,425	7,779	1,516	Static	1,541.359	1,521.8223	1,549.3775
40293509000	402935090	63-35N	9/2/1951	NA	8,425	7,779	1,298	Static	1,323.359	1,303.8223	1,331.3775
40293509000	402935090	63-35N	9/22/1950	NA	8,425	7,779	1,212	Static	1,237.359	1,217.8223	1,245.3775
40293509100	402935091	64-35N	10/28/1941	NA	8,080	7,450	1,715	Static	1,634.750	1,696.5750	1,609.3750
40293509100	402935091	64-35N	10/29/1940	24 hrs	8,080	7,450	1,920	Static	1,839.750	1,901.5750	1,814.3750
40293509100	402935091	64-35N	10/3/1951	NA	8,100	7,470	1,289	Static	1,215.170	1,272.0490	1,191.8250
40293509100	402935091	64-35N	11/27/1950	Month	8,100	7,470	1,184	Static	1,110.170	1,167.0490	1,086.8250
40293509100	402935091	64-35N	12/12/1950	NA	8,100	7,470	1,173	Static	1,099.170	1,156.0490	1,075.8250
40293509100	402935091	64-35N	3/11/1952	NA	8,100	7,470	1,386	Static	1,312.170	1,369.0490	1,288.8250
40293509100	402935091	64-35N	3/19/1951	Month	8,100	7,470	1,183	Static	1,109.170	1,166.0490	1,085.8250
40293509100	402935091	64-35N	4/13/1954	NA	8,100	7,470	1,636	Static	1,562.170	1,619.0490	1,538.8250
40293509100	402935091	64-35N	4/22/1953	NA	8,100	7,470	1,562	Static	1,488.170	1,545.0490	1,464.8250
40293509100	402935091	64-35N	5/18/1955	NA	8,100	7,470	1,649	Static	1,575.170	1,632.0490	1,551.8250
40293509100	402935091	64-35N	6/14/1956	48 hrs	8,100	7,470	1,697	Static	1,623.170	1,680.0490	1,599.8250
40293509100	402935091	64-35N	6/18/1957	NA	8,100	7,470	1,734	Static	1,660.170	1,717.0490	1,636.8250
40293509100	402935091	64-35N	9/17/1952	NA	8,100	7,470	1,487	Static	1,413.170	1,470.0490	1,389.8250
40293510500	402935105	7-1N	1/11/1949	NA	8,200	7,579	1,200	Static	1,161.159	1,191.0823	1,148.8775
40293510500	402935105	7-1N	1/12/1943	NA	8,160	7,539	1,637	Static	1,585.319	1,625.1343	1,568.9775
40293510500	402935105	7-1N	1/15/1946	NA	8,200	7,579	1,648	Static	1,609.159	1,639.0823	1,596.8775
40293510500	402935105	7-1N	1/6/1948	NA	8,200	7,579	1,375	Static	1,336.159	1,366.0823	1,323.8775
40293510500	402935105	7-1N	10/19/1949	NA	8,200	7,579	1,129	Static	1,090.159	1,120.0823	1,077.8775
40293510500	402935105	7-1N	10/3/1951	NA	8,225	7,604	1,286	Static	1,255.184	1,278.9248	1,245.4400
40293510500	402935105	7-1N	10/3/1952	NA	8,225	7,604	1,786	Static	1,755.184	1,778.9248	1,745.4400
40293510500	402935105	7-1N	10/7/1948	NA	8,200	7,579	1,246	Static	1,207.159	1,237.0823	1,194.8775
40293510500	402935105	7-1N	11/7/1944	10 months	8,200	7,579	1,632	Static	1,593.159	1,623.0823	1,580.8775
40293510500	402935105	7-1N	12/13/1950	NA	8,225	7,604	1,192	Static	1,161.184	1,184.9248	1,151.4400
40293510500	402935105	7-1N	3/12/1952	NA	8,225	7,604	1,383	Static	1,352.184	1,375.9248	1,342.4400
40293510500	402935105	7-1N	3/16/1951	month	8,225	7,604	1,206	Static	1,175.184	1,198.9248	1,165.4400
40293510500	402935105	7-1N	3/17/1941	NA	8,235	7,614	2,015	Static	1,987.394	2,008.6618	1,978.6650
40293510500	402935105	7-1N	3/18/1948	NA	8,200	7,579	1,368	Static	1,329.159	1,359.0823	1,316.8775
40293510500	402935105	7-1N	3/23/1981	NA	8,252	7,631	1,173	Static	1,150.851	1,167.9147	1,143.8475
40293510500	402935105	7-1N	3/3/1950	NA	8,200	7,579	1,070	Static	1,031.159	1,061.0823	1,018.8775
40293510500	402935105	7-1N	4/10/1954	NA	8,225	7,604	1,616	Static	1,585.184	1,608.9248	1,575.4400
40293510500	402935105	7-1N	4/11/1949	NA	8,200	7,579	1,162	Static	1,123.159	1,153.0823	1,110.8775
40293510500	402935105	7-1N	4/17/1953	NA	8,225	7,604	1,550	Static	1,519.184	1,542.9248	1,509.4400
40293510500	402935105	7-1N	5/20/1955	NA	8,225	7,604	1,645	Static	1,614.184	1,637.9248	1,604.4400
40293510500	402935105	7-1N	6/18/1956	NA	8,225	7,604	1,697	Static	1,666.184	1,689.9248	1,656.4400
40293510500	402935105	7-1N	6/23/1947	NA	8,200	7,579	1,598	Static	1,559.159	1,589.0823	1,546.8775
40293510500	402935105	7-1N	7/1/1948	NA	8,200	7,579	1,303	Static	1,264.159	1,294.0823	1,251.8775
40293510500	402935105	7-1N	7/28/1972	NA	8,225	7,604	1,451	Static	1,420.184	1,443.9248	1,410.4400
40293510500	402935105	7-1N	8/13/1940	NA	8,235	7,614	2,015	Static	1,987.394	2,008.6618	1,978.6650
40293510500	402935105	7-1N	8/16/1940	NA	8,160	7,539	2,015	Static	1,963.319	2,003.1343	1,946.9775
40293510500	402935105	7-1N	8/6/1981	NA	8,247	7,626	1,199	Static	1,175.246	1,193.5462	1,167.7350
40293510500	402935105	7-1N	9/1/1941	NA	8,200	7,579	1,524	Static	1,485.159	1,515.0823	1,472.8775
40293510500	402935105	7-1N	9/11/1950	months	8,225	7,604	1,170	Static	1,139.184	1,162.9248	1,129.4400
40293510500	402935105	7-1N	9/17/1971	NA	8,225	7,604	1,503	Static	1,472.184	1,495.9248	1,462.4400
40293510500	402935105	7-1N	9/19/1984	NA	8,240	7,619	1,245	Static	1,218.899	1,238.9303	1,210.6775
40292960100	402929601	7-27N	10/29/1941	NA	8,460	7,780	1,881	Static	1,906.680	1,886.8960	1,914.8000
40292960100	402929601	7-27N	10/30/1939	NA	8,400	7,720	2,400	Static	2,406.420	2,401.4740	2,408.4500
40292960100	402929601	7-27N	4/20/1944	NA	8,400	7,720	1,752	Static	1,758.420	1,753.4740	1,760.4500
40292960100	402929601	7-27N	4/3/1940	NA	8,425	7,745	2,085	Static	2,099.445	2,088.3165	2,104.0125
40292960100	402929601	7-27N	4/3/1941	NA	8,425	7,745	1,995	Static	2,009.445	1,998.3165	2,014.0125
40292960100	402929601	7-27N	5/1/1939	NA	8,400	7,720	2,575	Static	2,581.420	2,576.4740	2,583.4500
40292960100	402929601	7-27N	8/15/1940	NA	8,425	7,745	2,115	Static	2,129.445	2,118.3165	2,134.0125
40293510601	402935106	8-1N	10/31/1940	24 hrs	8,154	7,527	1,880	Static	1,824.467	1,867.2499	1,806.9075
40293510601	402935106	8-1N	11/7/1944	7 months	8,150	7,523	1,618	Static	1,561.183	1,604.9551	1,543.2175
40293510601	402935106	8-1N	12/13/1950	NA	8,000	7,373	1,171	Static	1,066.033	1,146.9001	1,032.8425
40293510601	402935106	8-1N	3/16/1951	Mo	8,000	7,373	1,190	Static	1,085.033	1,165.9001	1,051.8425
40293510601	402935106	8-1N	9/11/1950	Mo	8,000	7,373	1,162	Static	1,057.033	1,137.9001	1,023.8425
40304263000	403042630	888N-12	3/19/2011	NA	9,444	8,698	3,809	MDT	4,129.825	3,882.9749	4,231.1401
40293510700	402935107	9-1N	1/11/1951	NA	8,350	7,716	1,712	Static	1,717.136	1,713.1792	1,718.7600
40293510700	402935107	9-1N	1/6/1956	NA	8,350	7,716	1,684	Static	1,689.136	1,685.1792	1,690.7600
40293510700	402935107	9-1N	10/20/1941	NA	8,385	7,751	1,745	Static	1,761.371	1,748.7587	1,766.5475
40293510700	402935107	9-1N	10/5/1950	45 days	8,350	7,716	1,204	Static	1,209.136	1,205.1792	1,210.7600
40293510700	402935107	9-1N	10/6/1952	NA	8,350	7,716	1,506	Static	1,511.136	1,507.1792	1,512.7600
40293510700	402935107	9-1N	11/7/1944	NA	8,334	7,700	1,685	Static	1,685.000	1,685.0000	1,685.0000
40293510700	402935107	9-1N	3/17/1952	NA	8,350	7,716	1,372	Static	1,377.136	1,373.1792	1,378.7600
40293510700	402935107	9-1N	3/18/1941	NA	8,385	7,751	1,925	Static	1,941.371	1,928.7587	1,946.5475
40293510700	402935107	9-1N	3/21/1951	month	8,350	7,716	1,222	Static	1,227.136	1,223.1792	1,228.7600
40293510700	402935107	9-1N	3/24/1981	NA	8,364	7,730	1,160	Static	1,169.630	1,162.2110	1,172.6750
40293510700	402935107	9-1N	4/12/1954	NA	8,350	7,716	1,607	Static	1,612.136	1,608.1792	1,613.7600
40293510700	402935107	9-1N	4/17/1953	NA	8,350	7,716	1,548	Static	1,553.136	1,549.1792	1,554.7600
40293510700	402935107	9-1N	5/27/1955	NA	8,350	7,716	1,604	Static	1,609.136	1,605.1792	1,610.7600
40293510700	402935107	9-1N	7/27/1972	NA	8,350	7,716	1,495	Static	1,500.136	1,496.1792	1,501.7600
40293510700	402935107	9-1N	8/5/1981	NA	8,363	7,729	1,107	Static	1,116.309	1,109.1373	1,119.2525
40293510700	402935107	9-1N	9/15/1971	NA	8,350	7,716	1,547	Static	1,552.136	1,548.1792	1,553.7600

UWI Number	API Number	Common Well Name	Date	Shut-in Time	Measured Depth (ft)	TVDss (ft)	Pressure (PSI)	Pressure Type	$P_{OilCorrected}$ (PSI) [1]	$P_{GasCorrected}$ (PSI) [1]	$P_{WaterCorrected}$ (PSI) [1]
40292960200	402929602	9-27N	10/29/1941	NA	8,380	7,680	1,662	Static	1,655.580	1,660.5260	1,653.5500
40293505000	402935050	JDM1-22N	10/21/1947	NA	8,200	7,527	1,312	Static	1,256.467	1,299.2499	1,238.9075
40293505000	402935050	JDM1-22N	2/25/1948	NA	8,200	7,527	1,238	Static	1,182.467	1,225.2499	1,164.9075
40293505000	402935050	JDM1-22N	6/27/1947	24 hrs	8,400	7,727	1,468	Static	1,476.667	1,469.9899	1,479.4075
40293505100	402935051	JDM2-22N	12/21/1950	NA	8,250	7,578	1,053	Static	1,013.838	1,044.0086	1,001.4550
40293505100	402935051	JDM2-22N	12/22/1941	1 year	8,250	7,578	1,615	Static	1,575.838	1,606.0086	1,563.4550
40293505100	402935051	JDM2-22N	3/28/1950	NA	8,250	7,578	1,013	Static	973.838	1,004.0086	961.4550
40293505100	402935051	JDM2-22N	3/30/1951	1 month	8,250	7,578	1,063	Static	1,023.838	1,054.0086	1,011.4550
40293505100	402935051	JDM2-22N	4/28/1954	NA	8,250	7,578	1,395	Static	1,355.838	1,386.0086	1,343.4550
40293505100	402935051	JDM2-22N	4/3/1953	NA	8,250	7,578	1,345	Static	1,305.838	1,336.0086	1,293.4550
40293505100	402935051	JDM2-22N	4/8/1952	NA	8,250	7,578	1,245	Static	1,205.838	1,236.0086	1,193.4550
40293505100	402935051	JDM2-22N	6/10/1955	NA	8,250	7,578	1,493	Static	1,453.838	1,484.0086	1,441.4550
40293505100	402935051	JDM2-22N	6/28/1956	NA	8,250	7,578	1,463	Static	1,423.838	1,454.0086	1,411.4550
40293505100	402935051	JDM2-22N	8/2/1972	NA	8,254	7,582	1,355	Static	1,317.122	1,346.3034	1,305.1450
40293505100	402935051	JDM2-22N	9/11/1967	NA	8,254	7,582	1,821	Static	1,783.122	1,812.3034	1,771.1450
40293505100	402935051	JDM2-22N	9/17/1951	NA	8,250	7,578	1,128	Static	1,088.838	1,119.0086	1,076.4550
40293505100	402935051	JDM2-22N	9/17/1971	NA	8,254	7,582	1,410	Static	1,372.122	1,401.3034	1,360.1450
40293505100	402935051	JDM2-22N	9/19/1952	NA	8,250	7,578	1,298	Static	1,258.838	1,289.0086	1,246.4550
40293505100	402935051	JDM2-22N	9/25/1950	10 months	8,250	7,578	1,037	Static	997.838	1,028.0086	985.4550
40293505200	402935052	JDM3-22N	2/20/1948	NA	8,250	7,591	1,290	Static	1,255.011	1,281.9667	1,243.9475
40293505200	402935052	JDM3-22N	3/29/1950	NA	8,275	7,616	1,065	Static	1,038.036	1,058.8092	1,029.5100
40293505200	402935052	JDM3-22N	4/2/1957	4 days	8,275	7,616	1,098	Static	1,071.036	1,091.8092	1,062.5100
40293505200	402935052	JDM3-22N	4/29/1954	NA	8,275	7,616	1,436	Static	1,409.036	1,429.8092	1,400.5100
40293505200	402935052	JDM3-22N	4/8/1952	NA	8,275	7,616	1,250	Static	1,223.036	1,243.8092	1,214.5100
40293505200	402935052	JDM3-22N	6/10/1955	NA	8,275	7,616	1,514	Static	1,487.036	1,507.8092	1,478.5100
40293505200	402935052	JDM3-22N	8/2/1972	3 hrs 15 min	8,275	7,616	1,384	Static	1,357.036	1,377.8092	1,348.5100
40293505200	402935052	JDM3-22N	9/19/1950	4 days	8,275	7,616	1,072	Static	1,045.036	1,065.8092	1,036.5100
40293505200	402935052	JDM3-22N	9/19/1951	NA	8,275	7,616	1,157	Static	1,130.036	1,150.8092	1,121.5100
40293505200	402935052	JDM3-22N	9/22/1952	NA	8,275	7,616	1,340	Static	1,313.036	1,333.8092	1,304.5100

Notes:
TVDss: True Vertical Depth Subsea level (ft)
P: pressure
ft: feet
NA: not available
hrs: hours
min: minute
PSI: pounds per square inch
MDT: Modular Dynamic Formation Tester
$P_{OilCorrected}$: Pressure measurements were normalized to the established field pressure datum at 7,700 ft TVDss and the oil gradient of 0.312 PSI/ft
$P_{GasCorrected}$: Pressure measurements were normalized to the established field pressure datum at 7,700 ft TVDss and the gas gradient of 0.0737 PSI/ft
$P_{WaterCorrected}$: Pressure measurements were normalized to the established field pressure datum at 7,700 ft TVDss and the water gradient of 0.4225 PSI/ft

1) Kaczorowski, N.J., Soule C.H., and Cummings, F.B., 1986, Belridge 64 Zone Development Engineering Review, Report #CP/F 86-012, Shell California Production Inc., Kernridge Production Division, Bakersfield, California. December.

Appendix 2C
Faults and Fractures Supporting Data

Agua Sandstone Pressure Data

UWI	API	Well Name	Date	Shut-in Time	Measured Depth (ft)	TVDss (ft)	Depth Type	Pressure (PSI)	Pressure Type	Formation
40292958900	402929589	102R-21N	8/30/1984	NA	8,003	7,317	Direct	444.6	Static	AGUA
40292962000	402929620	13R-28N	10/27/1945	NA	8,790	8,086	Direct	1,765.0	Static	AGUA
40292962000	402929620	13R-28N	10/28/1945	NA	8,790	8,086	Direct	2,600.0	Static	AGUA
40292962000	402929620	13R-28N	10/29/1945	NA	8,790	8,086	Direct	2,992.0	Static	AGUA
40292962000	402929620	13R-28N	11/7/1946	NA	8,700	7,996	Direct	3,739.0	Static	AGUA
40292962000	402929620	13R-28N	12/19/1945	NA	8,750	8,046	Direct	3,770.0	Static	AGUA
40292961900	402929619	15-28N	1/15/1948	NA	8,300	7,612	Direct	3,570.0	Static	AGUA
40292961900	402929619	15-28N	1/17/1942	NA	*7,995*	*7,307*	Direct	3,632.0	--	AGUA
40292961900	402929619	15-28N	1/2/1951	NA	*7,995*	*7,307*	Direct	1,388.0	--	AGUA
40292961900	402929619	15-28N	1/4/1949	NA	8,300	7,612	Direct	3,452.0	Static	AGUA
40292961900	402929619	15-28N	10/11/1950	NA	*7,995*	*7,307*	Direct	1,756.0	--	AGUA
40292961900	402929619	15-28N	10/13/1950	NA	*7,995*	*7,307*	Direct	2,076.0	--	AGUA
40292961900	402929619	15-28N	10/14/1948	NA	*7,995*	*7,307*	Direct	3,347.0	--	AGUA
40292961900	402929619	15-28N	10/19/1943	NA	8,275	7,587	Direct	3,550.0	Static	AGUA
40292961900	402929619	15-28N	10/9/1950	NA	*7,995*	*7,307*	Direct	1,418.0	--	AGUA
40292961900	402929619	15-28N	11/11/1947	NA	8,300	7,612	Direct	3,978.0	Static	AGUA
40292961900	402929619	15-28N	11/21/1950	NA	*7,995*	*7,307*	Direct	1,308.0	--	AGUA
40292961900	402929619	15-28N	11/8/1946	NA	8,300	7,612	Direct	1,387.0	Static	AGUA
40292961900	402929619	15-28N	12/19/1945	NA	8,300	7,612	Direct	1,397.0	Static	AGUA
40292961900	402929619	15-28N	12/27/1950	NA	*7,995*	*7,307*	Direct	1,043.0	--	AGUA
40292961900	402929619	15-28N	12/29/1950	NA	*7,995*	*7,307*	Direct	1,239.0	--	AGUA
40292961900	402929619	15-28N	3/23/1948	NA	8,300	7,612	Direct	3,550.0	Static	AGUA
40292961900	402929619	15-28N	3/27/1950	NA	8,303	7,615	Direct	3,168.0	Static	AGUA
40292961900	402929619	15-28N	4/21/1944	NA	8,305	7,617	Direct	3,615.0	Static	AGUA
40292961900	402929619	15-28N	4/29/1949	NA	8,300	7,612	Direct	3,350.0	Static	AGUA
40292961900	402929619	15-28N	5/30/1942	NA	8,301	7,613	Direct	3,670.0	Static	AGUA
40292961900	402929619	15-28N	6/14/1945	NA	8,305	7,617	Direct	3,658.0	Static	AGUA
40292961900	402929619	15-28N	6/18/1985	NA	*8,070*	*7,382*	Direct	247.0	--	AGUA
40292961900	402929619	15-28N	7/1/1947	NA	8,300	7,612	Direct	3,608.0	Static	AGUA
40292961900	402929619	15-28N	7/1/1948	NA	*7,995*	*7,307*	Direct	3,392.0	--	AGUA
40292961900	402929619	15-28N	9/2/1947	NA	8,300	7,612	Direct	3,605.0	Static	AGUA
40292961900	402929619	15-28N	9/26/1949	NA	8,300	7,612	Direct	3,293.0	Static	AGUA
40292964700	402929647	38-35N	1/14/1949	NA	7,980	7,299	Direct	3,445.0	Static	AGUA
40292964700	402929647	38-35N	10/15/1948	NA	7,980	7,299	Direct	3,467.0	Static	AGUA
40292964700	402929647	38-35N	10/4/1949	NA	7,980	7,299	Direct	3,635.0	Static	AGUA
40292964700	402929647	38-35N	10/6/1950	NA	7,980	7,299	Direct	3,406.0	Static	AGUA
40292964700	402929647	38-35N	11/13/1947	NA	*7,950*	*7,269*	Direct	3,445.0	--	AGUA
40292964700	402929647	38-35N	11/3/1947	NA	7,980	7,299	Direct	3,455.0	Static	AGUA
40292964700	402929647	38-35N	2/11/1952	NA	*7,950*	*7,269*	Direct	709.0	--	AGUA
40292964700	402929647	38-35N	2/12/1952	NA	*7,950*	*7,269*	Direct	1,843.0	--	AGUA
40292964700	402929647	38-35N	2/14/1952	NA	7,980	7,299	Direct	2,317.0	Static	AGUA
40292964700	402929647	38-35N	2/16/1952	4 Days	7,980	7,299	Direct	2,352.0	Static	AGUA
40292964700	402929647	38-35N	2/18/1952	6 Days	7,980	7,299	Direct	2,384.0	Static	AGUA
40292964700	402929647	38-35N	2/20/1952	NA	7,980	7,299	Direct	2,414.0	Static	AGUA
40292964700	402929647	38-35N	2/28/1950	NA	7,980	7,299	Direct	3,425.0	Static	AGUA
40292964700	402929647	38-35N	3/10/1952	27 Days	7,980	7,299	Direct	2,533.0	Static	AGUA
40292964700	402929647	38-35N	3/12/1952	NA	7,980	7,299	Direct	2,530.0	Static	AGUA
40292964700	402929647	38-35N	4/10/1947	NA	7,980	7,299	Direct	3,483.0	Static	AGUA
40292964700	402929647	38-35N	4/20/1949	NA	7,980	7,299	Direct	3,430.0	Static	AGUA
40292964700	402929647	38-35N	4/6/1951	NA	7,980	7,299	Direct	3,349.0	Static	AGUA
40292964700	402929647	38-35N	6/18/1951	NA	7,980	7,299	Direct	3,296.0	Static	AGUA
40292964700	402929647	38-35N	7/6/1948	NA	7,980	7,299	Direct	3,475.0	Static	AGUA
40292964700	402929647	38-35N	8/22/1951	NA	7,980	7,299	Direct	3,257.0	Static	AGUA
40293506600	402935066	61-27N	3/13/1979	13hrs 41 min	7,780	7,077	Direct	1,288.0	Static	AGUA
40293506600	402935066	61-27N	3/9/1979	11hrs 24 min	7,800	7,097	Direct	1,342.0	Static	AGUA

Notes:
TVDss: True Vertical Depth subsea level (ft)
ft: feet
NA: not available
Italicized text indicates measured depths were inferred from other database source information, and the accuracy of the TVDss depth (whether captured at the time the measurement was taken or transformed to a reference depth) is unknown
hrs: hours
min: minute
PSI: pounds per square inch
-- indicates type unknown

Appendix 2D
Injection and Confining Zone Supporting Data

Contents

Core Descriptions

XRD and SEM Report from Halliburton Chemical Laboratory

Scanning Electron Microscope Micrographs

888N-12 Elemental Capture Spectroscopy Log

888N-12 Petrology Report

Porosity, Permeability, Capillary Pressure Data

Mercury Injection Capillary Pressure Data

Appendix 2D
Injection and Confining Zone Supporting Data

Core Descriptions

CORE DESCRIPTION

4-1N

DATE 6/5/86 | C. Soule - SCPI
CORES EXAMINED BY | E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. #4-1

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
1	8437	8467	1.4	Sponge Core, end of core inspected: SANDSTONE, lt. gry to wh. gry; bedding unknown; v. hard; grain supported with calcareous cmt.; v. wk. petroleum odor; GRA: LM to UCRS, scat. VCRS; v. ang. to sbang, with scat. sbrnd; low spher; poor sort; extr. tight & dense, no vis. porosity; composition: clr. qtz; with com. to abdt. milky wh, softer fspar; com blk, gry, brn sbrnd to occ. well rnd grains; flouresence: pale yel. bkgrnd w/OCC bright yel. streaks & patches; no vis. oil; slow developing strmng yel. cut flour; pale straw vis cut.	8438.4		S	patchy brt. yel.	pale straw	1-	S
2	8472	8482	5.9	Sponge core, ends of core inspected: SANDSTONE, med. gry-brn, bedding not inspected; firm to sl. friable; grain supported, v. sl. calc. cmt, poss. kaolinitic; lt. brn oil stain, primarily in cmt, pinpoint stain on sand grains; fair petrol. odor on fresh surfaces, GRA: UF to LCRS, sl. coarser with incr. depth; ang-sbang w/scat. sbrnd; low to high spher; poor sort; composition: clear, vitr. & milky qtz; com wh. softer, grainy to chalky fspar; fair amt dk gry to blk rnd. grains; scant tr. glauc; vis porosity 10-15%; flourescence: even brt yel sample flour; instant streaming yel-wht to blue-wht cut flour; straw vis. cut; near opaque yel. resid cut flour; oily luster on lower sample.	8472		M	even brt. yel.	straw	1	S
					8477.9		A	even brt. yel.	straw	1	

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). I-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CPAH8617003

DATE 6/8/86

CORES EXAMINED BY C. Soule, E. Tikanen - Epoch, J. Affonso - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD ~~North Belridge~~

COMPANY SCPI

LEASE AND WELL NO. 4-1

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO, A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
3	8482	8508	4.5	Sandstone, med. gry brn, incr. gry on fresh surfaces; firm to sl. friable; appar. massive bedding, but core is badly broken up. Prob. contiguous from 8483.5 to 8485.7, but broken into 7 pieces. Natural fracture at 8484.9, angle 30° from vertical. Fair to good light oil odor, and good even lt. brn oil stain. Top 1" piece of rubble v. calc., balance of core sl. to non-calc. Poss shell or burrow at 8483.7. GRA: UF to UCRS, dom MED; ang-sbang; low to high spher, poor sort; Composition: qtz & common fspar; seat. sbrnd-rnd dk., prob mafic grs; tr. glauc.; low to mod. vis. porosity; Flourescence: even brt yel-wht sample flour; instant streaming yel-wht cut flour; strong yel-wht resid. cut flour; straw to dk straw vis. cut.	8482		M	Brt.yel wht.	Dark straw	1+	S
4	8508	8538	10'	Sandstone, med. gry brn, except 1½' sec lt. gry near bottom. Bedding appar. massive, core broken up badly. Appar contiguous pieces from 8508.8-10.6, 11.5-12.2, 13.8-14.9; rest rubbly chunks. Poss. fractures at 8508.4, 14.0-14.4, 8508.9 (partially healed), vug/frac at 8511.85; poss burrowing or soft sed. deformation at 8512.9. Two fractures on each side of core break at 8513.2, with cross-cutting fracture at 13.4. Core generally firm to sl. friable. Med. brn oil stain, fair petrol. odor. GRA: varies VF- MED to VF-CRSsort mod to poor; fair spher; sbrnd to sbang; Composition: dom milky & clear qtz & fspar; tr to freq. dk. heavy minerals; rare pinhead sporbo. Generally clean with v. sl. argil. matrix, , occ. chlorite staining. Flourescence: even to patchy brt to dull yellow sample flour; fast to inst. grn-yel blooming to diffuse cut flour, amber vis & dry cut, opaque yel resid cut flour.	8508.8		M	Brt to dull yel.	Dark amber	2+	S
					8510.7		M	Even brt.yel			
					8513.2			brt.yel	Lt. amber	2-	
					8515		S	Spotty brt.yel	Lt. amber	2-	
					8518		S	Brt.yel	Amber	2	

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). I-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CPAH8619201

DATE 6/8/86

CORES EXAMINED BY C. Soule - SCPI, E. Tikanen - Epoch, J. Affonso - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD N. Belridge

COMPANY SCPI

LEASE AND WELL NO. 4-1

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
5	8538	8566	9.2	Sandstone, med. gry brn to grey; appar. massive bedding; firm to sl. friable, gry rock v. hd; lt. brn. oil stain at top, decr. in lower half, with incr. hardness. Fair to wk. petrol. odor; dom sl. to non-calc, becoming extr. calc in grey rock from 8543.8 to 8545.8. Natural fractures at 8541.9, 8542.5, 8542.7, 8544.5, 8544.6, several fractures filled w/calcite in tight streak. Two breaks between pieces in the tight section are obvious fracture surfaces with slickensides, calcite and gypsum lining. Sampled segment at 8545.7 also contains Reidel shears in opposing directions. Core partially rubble, but several contiguous segments are present: 8538-8541.1, 8542-42.8, 8543.8-45.8. One rubble piece at 8546.1 prob. belongs at 8545.8. Cement dom sl. to non-calc in upper core, abruptly becoming extr. calc. at diagenetic boundary at 8544.8: Sandstone on either side of irregulare cementation front. GRA: VF to CRS often VF to MED, dom MED; fair to poor sort; ang. to sbang. dk. grs. sbrnd; composition: dom clr to milky qtz, fspar ranges from occ. to com; common dk mafics & lithic frags; tr. glauc. or chlorite; grain supported matrix with silicic cmt, cmt incr. with depth. Cmt becomes calc. at 8544.8; "fault" gouge on fracture surfaces 8545 contain calcite and gypsum; sands without calc cmt. show fair to good porosity and perm. Flourescence: sample flour. varies from patchy to v. intense yel., pale yel. in tight strk; instant to fast blooming grn-yel cut flour, pale grn crush flour only in tight streak. vis. cut amber to dk amber.	8539.1		S	Uneven lt. to mod. Brt.yel	Amber	2	S
					8541.5		S	Brt.yel			
					8542.9		S	Intense brt yel	Amber	2	
					8545		Abs	Pale yel		0	
					8547		M	Intense to pale yel	Dark amber	2+	
				Cores 3, 4, 5 all show common fracturing, prob. grain shearing. Some fractures are filled, but most may be permeable. Some vugular porosity within fractures was observed. Core recovery was too poor to do meaningful fracture density study.							
				PTS labelled last tray (8544.3-8547.1) upside down. Lab measurements are at correct depths, but core photo is wrong. Tight streak is at top (8544.3).							

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CPAH8619201

CORE DESCRIPTION

17-2

SCPI - 142-85- I

DATE 4/23/86

CORES EXAMINED BY C. Soule - SCPI
E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD ~~NORTH BELRIDGE~~

COMPANY SCPI

LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
1	8350	8372	19.8	Sdst; Lt. gry with lt. brn oil stain mottling. Massive, firm to hard; sl. friable where stained. Lt. gry spots 2-4 mm diam. v. hard. These spots have non-calc, prob. silicious cement. Brn. mottles 2-5 mm are softer, have about 10% vis porosity. Composition: quartzose, com. clear gry; chalky altered fspar. Scat. dk lithic/mafic grains, trace glauc. Weak acid reaction. GRA: generally coarsens upward. Fine sd to U.CRS, dom L. med. at base, dom. U. Med at top. Com. V.CSE at 8356.6 Larger grains often lithic frags. Ang. to Sbrnd, dom sbang; Low to mod. spher; mod sort, to poor towards base. Basal 0.4 ft. has flakey habit, hint of bedding. More fine sd. at base. 50-60% oil flour., slow streaming to blooming.	8350		M	Brt.Yel	Pale straw		S
					8353.3		M	Brt.Yel	straw		
					8359.2		M	Brt.Yel to blue white	Pale straw		
					8364.9		M	Yel	Pale straw		
					8369.3		M	even Yel.on broken surfaces	straw		
2	8378	8380	1.5	Rec. 6" of rubble in core 2. Rec. 1' rubble at top of core 3, attrib. to core 2 Sdst. Lt. gry; firm to hard but in part sl. friable; v. sl. calc; prob silicious cmt. Dom. grain supported; v. sl. calc; silicic chalky to grainy appar. cmt/matrix; matrix appar. porous, perm. Composition Clr & Gry Qtz; com. frosted to chalky altered fspar; scat blk grs; scant tr. soft glauc. 60-70%± Lt. to mod brt yel oil flour, v. lt. brn stain; slow streaming to blooming, transp. yel to blu-wh cut flour. Wk petrol odor, staining wk & residual. GRA L med to LCRS subang, low to mod spher, mod. sort.	8378.5		M	Yel	Pale straw		S

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). I-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CP[illegible] 512803

SCPI - 112-85- F

DATE 4/23/86 C. Soule - SCPI

CORES EXAMINED BY E. Tikanen - Epouch

Shell California Production Inc.

CORE RECORD

("HEAVY" OIL PROVINCES)

AREA OR FIELD ~~NORTH BELRIDGE~~

COMPANY SCPI

LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO, A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
3	8380	8410	30.5	Rec. 30.5' core plus 1 ft. rubble at top. This rubble assigned to core #2 Sdstn, Lt. gry, massive, friable to non-friable, mottled ±20% with white spots 2-4 mm diam. Spots are hard, with non-calc cmt. Do not flouresce. Common spots 2-5mm diam oil stained sd. flouresce blue-white. Composition quartzose; com. soft, weathered fspar; tr. brittle blk malfics, sl. tr. glauc. w/mica cleavage (poss. chlorite?) weak lt. oil odor. Weak acid reaction. GRA coarsens upwards; 8401.5 UF to UM, incr. to LM to LCRS, dom UM at 98.7. Remains in this range to top, with scat. VCRS at top. Ang-subang, low to mod. spher. Mod. well sorted at base decreasing to mod/poor at top.	8381.2		S	Yel	Pale straw		S
					8387.3		S	Spotty yel	Pale		
					8390.2		S	Yel to wh.			
					8393		M	Yel to wh.	Straw		
					8395.3		S	Yel to Bl-wh	Pale straw		
					8401.5		S	Brt yel	Straw		
				8380-8403.5 Dom massive, coarsening upwards sdst.							
				8403.5-8403.6 Sharp but contorted (soft sed. deformation) depositional contact; massive sand above, burrowed sand below.	8404.4		Abs	Diffuse	Clear		3
				8403.6-8410.3 Sdstn, lt. gry, heavily burrowed, non-friable, developing argil. streaks & patches. Silicic cmt. & matrix, v. sl. calcareous. Composition: quartzose; chalky fspar; incr. amts. mica; scat. glauc, incr. argil downward. GRA: FN-Med sand, ang-subang, low sphericity, mod to poor sort.	8407.2						
					8410.3						
				Cut & Flouresence Spotty oil flour. 40-70% mod to brt. yel; slow blooming to streaming cut flour, yel. to wht; weak petrol odor. Pale straw vis cut. Stain lt. to v. light.							
				Below 8403.5 Sample flour. decr. to nil. No vis. oil stn; v. weak diffuse yel. cut flour.; No vis. cut.							
				Cores 1-3 from Upper 64 Zone "Bloemer" or "U" Sand							

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). I-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CP 512803

SCPI - 112- 85- I

DATE 4/23/86

CORES EXAMINED BY C. Soule - SCPI
E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD

COMPANY NORTH BELRIDGE

LEASE AND WELL NO. SCPI 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO, A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
4	8485	8489	2	SDSTN Lt. brn-gry to lt. brn, mod petrol. odor. 8485-8485.4 gry with lt. brn oil stain; 0.2 ft. transition to 8485.6-8487 brn. oil stained sand. Hard to sl. friable; massive but disturbed, suggestive of burrowing. Dom. tight, non-calc cmt, but some calcite cmt above, decreasing downwards. Composition vitreous & frosted Qtz, abdt. altered fspar, up to 5% blk. lithic/mafic grains, scat. glauc. One 1½" dolostone clast at 8485.3; GRA: fine to granule. Granules tend to be lithic frags, which diminish in frequency below 8485.6. Lg. pebble (1½") at 8435.3; ang.-subrnd, mod. spher.; poor sort. Flour. Even brt yellow sample flour.; slow streaming lt. yel to blue-white cut flour., stronger blue-white below 8485.6. Vis. cut pale straw to straw. Overall apparently sli. softer, more porous than U sand.	8485	8487	M	Yel to Bl-wh A white	Pale straw Blue	Straw	3
5	8489	8494.5	0.1	SDSTN as above, some v. crs subrounded grains. Even lt. bn oil stain, cmt. dom non-calc. Appar porosity ±10%. Even, grainy brt. yel. sample flour.	8489		A	Blue-white	Straw		S

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CPA[illegible]612803

SCPI - 112-'85- I·

DATE 4/23/86 C. Soule - SCPI
CORES EXAMINED BY J. Day - Epoch

Shell California Production Inc.
CORE RECORD
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AREA OR FIELD NORTH BELRIDGE
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					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
6	8532	8559	22.8	Sdst., Lt. to med. gry; massive; nonfriable to occ. friable; lt. brn. oil stain; sl. to absent petrol. odor; composition: dom frosted or glassy Qtz, lesser fspar and dk mafic/lithic grains. Fspar dom over dk grains above 8538, lithic/mafics dom 8538-8542±, then fspar more dom to base. Overall qtz % incr downward from 8545 to 8554 (base), Tr. glauc. Mostly grain supported with sl. to minor silicic cmt. Non-calcareous above 8540± becoming sl. calcareous below. Fair appar. porosity, poor appar. perm. Absorbs water extremely slowly. GRA: LF to UM, dom. LM from 8532-8535, incr coarser downward w/occ. VCRS near 8545, Core has coarsest grain size where lithics are common. Overall sequence, core coarsens upward from 8554.5 to 8545, then fines upwards to top of core; v. ang. to occ. well rounded, low to mod. spher. Mod to poor sort; Flourescence: sample fl. uneven mod brt. yel. to even brt. yel to v. brt wh yel., gen. increase downward; cut flour. mod. fast to fast difuse to streaming pale yel to yel-wht; pale straw to dk. straw to lt. amber cut; resid cut flour. brt. chalky yel. to mod. brt yel. to v. brt yel-wht or blue-wht, incr. downward.	8532		S	even brt. yel-white	dk. straw	1+	S
					8535.6		S	uneven brt. yel.	pale straw	1-	○
					8538.8		S	uneven brt yel	straw	1	
					8543.1			brt yel	dk. straw	1+	
					8545.3		S	even v.brt. yel	pale straw	1-	
					8551.3		S	even brt yel	lt. amber	2	
					8554.5		S	v.brt wh-yel	dk straw	1+	
											○

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CP[illegible]612803

SCPI - 112-"85- I'

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

DATE 4/23/86 C. Soule - SCPI
CORES EXAMINED BY E. Tikanen - Epoch

AREA OR FIELD NORTH BELRIDGE
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO, A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
7	8559	8615	7.5	Sdst. med. gry, appar. massive, but core broken into many small pieces ½ to 3" length, one 12" piece. Mostly non-friable, chalkly non-calc. cmt, prob. silicic. Some small patches calc. cmt. at base--8566.7(?). Sl. lit. brn oil stain, fair petrol. odor; overall incr. in oil attributes w/depth. Composition: qtz with abdt. fspar, scat. lithic/mafics, tr. to scant tr. glauc.; grain supported, non-calc chalky cmt. Basal 0.5 ft. has 5-10% non-calc(?) white patchy cmt. Vis. porosity 15%± in most of core, v. tight at bottom. Sl. permeable-water percolates slowly. GRA: UF to LCRS, dom UM. Bottom 0.5' M-CRS w/some VCRS. Dom sbang w/com. ang & sbrnd, some well rounded VCRS grains; dom low to high spher, basal 0.5' v. low to occ. high spher. Some oblate lithic/mafic grains. Sort mod, to low at base. Overall, abrupt coarsening in basal 0.5 ft. May be from deeper than 8566.7 Flourescence: brt. yel to powdery yel. Sample flour, streaming yellow to instant blooming blue-wh cut flour; straw dk straw vis. cut; overall incr. oil attributes at base. Core had very poor recovery due to junk in hole and damaged bit.	8559 8566.7		S S	brt yel powdery yel	straw dk straw	1 1+	S

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					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
8	8617	8647	28.5	Sdstn., med. grey w/pervasive lt. brn oil stain; massive; firm to hard; grain supported, calc. cmt. in part; cmt. appar. v. finely granular to XLN, dom non-calc. w/patches kaol. constituent of cmt.; composition: clr., milky & gry qtz, accessory fspar & blk lithic/mafic grs. Pss. greater lithic/mafic above 8630±; lithics decrease substantially & fspar common below 8630± Scat. to nil glauc. Incr. kaol. w/depth, esp. near 8638, then diminish towards base (8645.5). GRA: LM-VCRS, com UCRS above 8626, fn-CRS com ML below; shale wisps in bedding @ 8626.9, 8643.3; dom.ang-com sbang; mod to low spher; pr to mod srt. Stain decreases from sl. to v. sl. in lower 10ft; vis. por. tight, 10% to 15%, tighter where calc. cmt; flouresence: spotty to even (±80%) mod to brt. yel. sample flour., often powdery, yel-wh @ 8641.8, with poss. wh. mineral flour. Inst. yel to wh. cut flour., streaming to blooming at top, less prominent with depth. Mod. strong to translucent yel. cut flour., diminish with depth; straw to pale straw vis. cut. 8617-8619 core has 5+ steeply dipping (±60°) fractures, healed with calcite fill.	8617 8619.7 8623.7 8631 8634.8 8638.8 8641.8 8645.5		S 80%Brt yel. part mineral S even brt yel S spotty to even brt.yel S powdery yel S as above S mod. brt. yel V.S. powdery yel-wh V.S. powdery mod. brt-yel V.S. prob. some mineral	straw 1 straw 1 pale to straw straw 1 1 decr. decr. decr.		S

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SCPI - 112-85- I

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9	8647	8677	30.5	Sdst. Lt. to mod. gry-brn, becoming lt. med gry below ±8668. Massive, w faint evidence of bedding in grain-size changes. Appar. dip 20-25°. Firm to hard; rubble from 8662.5 to 8664; Abdt. to sl. calc. cmt, often patchy. Common non-calc cmt. Some tr. kaolinite in cmt.; wk to tr. poss carbonaceous material @ 8652. Fair petrol. odor above 8668, weakening below. Composition: dom. frosted to glassy qtz; com to scat wh to gry fspar, scat to occ dom (over fspar) mafic/lithics. Tr to nil glauc. wk. tr. kaolinitic material in matrix. GRA: LF-UCRS, dom M, varying from UVF-CRS near 8660 to com UCRS grains most elsewhere. Texture change at 8677:LF-UCRS above, LF-UM w/rare UCRS below. The contact is diffuse, and dips about 20°. Less large mafics below. There are other grain-size changes, but they are gradational. Dom ang to subr., occ. rounded. Coarser grains com. subrounded. High to low spher., poor to mod. sort. Fracture, probably mechanically induced at 8651. Flourescence: sl. to com. v-brt mineral flour. from cmt, prob calcite; sample flour. (oil) powdery patchy (80%) to uniform brt. to mod. yel-wh to yel; crushed cut flour. range from v. fast streaming milky wh-yel at top through translucent to transparent wht. yel.; lt. amber to pale straw vis. cut; v. brt to mod brt chaly yel-wh to yel. resid. cut flour; all attributes diminish with depth.	8647.2 8650 8652.2 8656 8660 8662.5 8666.3 8669.2 8672 8677.5		S S S V.S. V.S V.S V.S V.S V.S. V.S.	powdery yel-wh brt yel 80% brt yel patchy powdery brt yel powdery wh-yel brt yel-wh incl. mineral mod yel-wht incl mineral mod.brt. yel-wh decr yel-wh patchy powdery yel-wh	lt. amber 2-straw 1 pale straw pale straw 1-straw 1	1-	S

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CPAH86128C

SCPI - 1124 85- I

DATE 5/8/86 C. H. Soule - SCPI
CORES EXAMINED BY E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

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10	8677	8707	30.2	Sdstn; Lt. med gry; faint bedding, almost massive, with several fining upwards sequences; hard; patchy lt. brn oil stain with weak petrol odor from broken surfaces. Cmt varies from non-calc w/poss. kaol to wht. calc. spots, to v.calc.; Poss. 5 sequences: 8677-8685.8: LM-LCRS at base, UF-UM dom. LM at top. Poss. burrow @ 8677.2, 8680.2, coarser bed at 8681.7; 8685.8-8691.3: Fines upwards, poss twice w/coarse bed @ 8688; 8691.3-8692.2: LM-UCRS at base, shaley at top; 8692.2-8697.7: LM-CRS at base, with shale rip-up clasts, shaley at top, v.calc. at base; 8697.7-8707: mostly massive. Sl. fining upwards from F-LCRS at base to UF-UM at top. Base of core prob. not base of sequence. Tight white spots appear, and incr. upwards from 8701. Composition: Qtz, com. fspar, scat lithic/mafic, tr. glauc, tr. wh. mica. At 8692.2, grs. matrix supported in calc. cmt; incr. in lithic/mafics & wh. mica. GRA: as above. Angular to sbrd, low to mod spher, poor to mod. sort. Appar. tight even where no heavy calc. cmt. plugging porosity. Lt. brn oil stn. appears to be in cmt. Flouresence: part from minerals. Oil flour. mod brt. yel, becoming quite spotty in some places. Cut flour. instant to slow transluc. to transp. yel-wht, few streamers. Mod. strong to transp. resid. cut flour., pale straw to no vis. cut. Oil attributes decrease downwards through thinner sequences, then incr. slightly in lowest sequence. Overall oil properties appar. v. wk and residual.	8680.8		V.S.Scat.mod brt.yel	Pale straw 1-		S
					8685.7		V.S.As above				
					8689		V.S.40-50% Yel		Pale straw 1-		○
					8692.2		V.S.20-30% Yel		Pale straw to none 1-		
					8699		V.S. 70% Yel		Straw, pale straw 1		
					8706.9		As above				○

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CPAH86128C

SCPI - 112- 85- I

DATE 5/8/86 C. H. Soule - SCPI
CORES EXAMINED BY T. Day - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

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11	8707	8737	28.9	SDST; med. gry; massive, except 4 thin fining upwards sequences topped by thin shales in basal 5 ft; hard; cmt. mostly silicic, tr. to sl.calc. cmt, becoming grain supported to calc cmtd near 8720. Weak petrol odor. Poor stain except lt. residual stain betwn 8718-8721, where core heavily broken into smaller pieces tight cmt. white spots incr. downward from 8727± to base of core. Prob. burrow at 8729.3; poss. permeable fracture at 8710.3; prob. permeable natural fracture at 8719.9-8720.4, broken from 8719.9-8720.2, unbroken 8720.2-8720.4; composition: frosted to glassy qtz; gry fspar; lesser lithics/mafics; tr. glauc; wk tr to tr wh. mica, incr. at base. GRA: LF to VCRS, dom M. fining upward from 8720 to 8707, 8735.9-8720; Qtz. mostly angular, sbang-sbrnd fspar; sbrnd mafics; poor to mod. sort; low to mod spher; Flourescence: common mineral flour., esp. where calc. cmt; patchy to spotty mod. brt yel-wht sample flour., less spotty where fractured near 8720; fast transluc. to transp. yel-wht cut flour. with freq. to few streamers; brt. yel resid. cut flour; straw to pale straw vis. cut.	8710.9		S	Patchy mod.brt. yel	Straw 1		
					8715.3		V.S.	incr. intensity (mineral?)			
					8719.7		V.S.	Mod.brt. yel-wht mineral 20% +			
					8725.4		V.S.	Patchy yel-wht			
					8730.2		V.S.	Patchy powdery yel-wht			
					8733.8		V.S.	Decr.	Pale straw 1		
					8735.9		V.S.	Incr. Prob. mineral	Pale straw 1		

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CPAH86128

SCPI - 112-85- I

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CORES EXAMINED BY E. Tikanen - Epoch

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12	8737	8767	30	SDSTN, lt. to med. gry, mostly massive with hints of 2 to 3 ft. beds in upper quarter. Hard to sl. friable where stained. Traces free oil on occ. fracture surface; cmt mostly non-calc, occ. appar kaolinitic; weak lt. brn oil stn with faint petrol. odor; burrows at 8737.9, soft sed. deformation of shale laminae at 8745, three possible fining upwards sequences 8745-8743.3; 8743.3-8440.4; 8740.4-8737.5±; not much obvious grain size change, but shale laminae at top of each sequence. Top sequence has no shale but has scat. tight spots (wht, 2 mm diam), and 0.1' tight band at 8739.2. Coarser grained above 8737.5; composition: qtz; fspar; scat. glauc. and lithic/mafic grains; occ mottled layered argillaceous material. GRA: finer tops of cycles are LF-LM, coarser lower portions F-CRS, dom LM; poor to mod. sort; ang-sbang; low to mod. spher; gen. grain supported. Only occ. calc. cmt; flourescence: even to scattered 60-75% powdery yel. sample flour, incr. to wht. yel at 8760; prob. part mineral flour.; slow streaming to instant transluc. yel. cut flour.; pale straw vis. cut; mod to fair yel. resid. cut, decr. with depth.	8739.6		S	60-70% powdery yel	Pale straw	1-	S
					8740.5		V.S.	even scat. yel prob.part mineral	Pale straw	1-	
					8746		V.S.	even med.yel	Pale straw	1-	
					8749.1		V.S.	Grainy even	Pale straw	1-	
					8755.4		V.S.	60-70% scat wht-yel	Pale straw	1-	
					8760.7		V.S.	incr. to 75% mod. wht.yel	Pale straw	1-	
					8766		V.S.	Poor			

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). I-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CPAH86128

SCPI - 112- 85- 1

DATE 5/14/86 C. H. Soule - SCPI
CORES EXAMINED BY E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
13	8767	8772	5.5	SDSTN, med. gry; bedding 3 fining upwards seq. 1-2 ft. thick with coarser sand at base, fining upwards to shale lenses: 8771.9 to 8770.6; 8770.6 to 8768; 8768 to 8767.2; cmt. non-calc to sl. calc; little vis. stain, confined to cmt; core freq. broken at 90° to core axis suggesting argil. boundaries, esp. towards base of core; composition: Qtz; fspar, incr. com. wh. mica w/ depth; scat. tr. glac, blk lithic/mafic grs; GRA: M-VCRS at base of cycles to LF-MU at top of cycles; poor to fair sort; ang. sbang; dom low spher; dom gr. supported; flourescence: pervasive to 50% yel-wht sample flour; slow streaming transluc. wht-yel cut flour., fair to scat resid cut flour., pale straw vis. cut. All oil attributes decr. downward.	8769.4 8771.5		S Pervasive wht-yel V.S.Decr. to 50%	Pale straw Pale straw	1- 1-	

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CPAH86128

SCPI - 112-85-1

DATE 5/14/86 C. H. Soule - SCPI
CORES EXAMINED BY T. Day - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD ~~North Belridge~~
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
14	8772	8801	28.8	SDST, lt. to med gry; massive with occ. bioturbation and shale streaks; incr. downward. Common planar breaks at rt. angles to axis. Very little to no stain, v. weak petrol odor. Cmt. non-calc to com. calc; grain supported, occ. matrix supported, in v. calc. matrix; core hard to v. hard; overall, core is massive with thin argil. streaks every 1-2 ft, streaks frequently disturbed, esp. by burrows. Compostion: qtz; com. easily crushed gry fspar; com. to scat. lithic/mafic, often coarse grained; scat. books of wh-mica, increasing downward; wk tr. glauc. Incr. argill. streaks with depth, as reflected in increased fractures 90° to core axis. GRA: LF to CRS. CRS content varies, and is often composed of lithic/mafic grs. Poor sort; ang. sbrnd; low to mod spher; low vis. porosity; Flourescence: mostly mod to br yel min. flour. masking weak sample flour; instant transpar. wh-yel cut flour w/few streamers decr. downward to v.v. weak dull yel-wh. cut flour; v. pale to clear vis cut. Brt to mod brt wh-yel resid. cut flour.	8774.5		No	V. brt yel.min	V.Pale straw	1-	S
					8780.1		No	Patchy mod yel-wh	Clear	0	
					8784.9			Sl.incr. yel-wh	Clear	0	
					8787.8			V. Brt Yel-min	Clear	0	
					8794.4		V.S.	Wk spotty yel-wh			
					8800.5		No	Brt. yel-wh mineral masking sample	Clear	0	

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CPAH86128

SCPI - 112- 85- I

DATE 5/14/86 C. H. Soule - SCPI
CORES EXAMINED BY E. Tikanen - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
15	8801	8831	30.3	SDSTN; lt. to med. gry; becoming bedded, approx. 1 ft. beds of massive sd topped by argillaceous layers. Core increasingly broken at rt. angles to axis along argill. partings. Burrowing increases downward, becoming pervasive, non-calc to sl. calc. cmt. No vis. stain, wk petrol odor from fresh surfaces. Composition: clear & milky qtz; fspar; tr to scat. glauc; gd tr white mica, markedly increased in argil. material, especially at base of core. Lithic/mafic component has almost vanished compared to higher cores. Argil. material increasing with depth; calcite vienlet at 8828.8; GRA: LF-UM, dom UF-LM: Mod to Mod. well sort, ang-sbang; low to mod spher; Flourescence: lt. yel grainy sample flour in patches; slightly; slow transl. to transp. streaming cut flour; sl. wk. powdery yel resid. cut flour. v. pale to no vis. cut. All petrol attributes decrease downward to 8822±, then incr. slightly.	8803.6		V.S. Patchy lt.yel.	15-30% Pale straw	1-	3
					8809.4		V. spotty Wht-yel	Lt. straw	1-	±
					8817.3		V.S. Spotty scat.lt. to mod. wht-yel	No	0	○
					8822.6		V.S. Incr. patchy wh-yel	Lt. straw	1-	
					8828.8		No Incr.to 60-70% on some surfaces	Pale straw	1-	
					8830.6		V.S. as above on fresh surf			○

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CPAH86128

SCPI - 112- 85- I

DATE 5/16/86 C. H. Soule - SCPI
CORES EXAMINED BY T. Day - Epoch

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. 17-2

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
16	8831	8861	24	SDST & Shale, sdstn med gry, sh. dk gry-brn. Heavily burrowed, with shale laminae increasing in frequency with depth. Core frequently broken along laminae, into pieces 0.4 to 0.05' in thickness. Basal 0.3' is shale. Mostly v. firm to hard, shale not fissile. Slow coring rate below 8855 and lack of recovery suggests that lost portion of core was mostly shale. Grain to matrix supported, wk. to strongly calcareous, incr. with depth, but patchy throughout core; Argill. streaks & prob. argil. content to cmt; v. sl. stain (30-40%) and weak odor at top, diminishingwith depth; tr. heavy blk oil on shale parting at 8852.3; Composition: clear to frosted qtz; fspar; spotty dk. lithic/mafics; wk tr to scat. glauc & wh mica; tr. poss phosphatic material at 8848.3; "shale" at 8855 (base) is very calcareous, almost an argillaceous limestone. GRA: quite variable, from UF-UCRS, dom M-LCRS, to LF-UM, to dom. shale, to argillaceous limestone with internal sd grains of VF to LM; sand ang-sbrnd, with dk mafic/lithic being sbrnd. Poor to mod sort; low to mod spher; Flourescence: sample flour. patchy v. brt to dull yel-wht to yel, with much bkgrnd mineral flour; cut flour fast, transluc. yel-wht with few wht streamers at top, rapidly degenerating to wk to v. wk transpar. to v. pale yel; v. pale straw to clear vis. cut; v. brt. yel-wht resid. cut flour at top, rapidly becoming dull yellow with incr. depth.	8833.5		V.S.	Patchy v.brt yel-wht			2
					8836.4		V.S.	Uneven v.brt yel-wht	V.Pale straw	1-	
					8839.9		TR	Decr. yel-wht	Clear	0	
					8845		No	Even v.dull yel			
					8848.3		No	V.wk.			
					8852.3		TR	Spotty dull yel			
					8855		No	Uniform dull yel			

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CPAH86128

CORE DESCRIPTION

43-27N

SCPI - 112- 85- I

DATE 6/13/85

CORES EXAMINED BY C. H. Soule

Shell California Production Inc.

CORE RECORD

("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge

COMPANY SCPI

LEASE AND WELL NO. Fee 43-27

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO, A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
1	5700	5730	27.5	Firm but friable sandstone, dk. to lt. grey, heavily bioturbated, occ. highly calcareous in lt. grey portions. Grain size dominantly upper fine, with some lower fine and lower medium sand. Small silt and clay constituent (5%?).							
2	5765	5795	26.5	Firm but friable sandstone, med. to lt. grey. 5791.6 to 5785.5: sl. to highly bioturbated, mostly lower fine to lower med. sand, dom. lower & upper fine. Sl. shale in turbations. 5785.5 to 5785: pronounced shell hash in sand matrix. 5785 to 5775: massive upper fine to lower med. sand, bioturbation decreases upwards. Occ. concretions and shell frags. May be heavily bioturbated, but without fine grained constituent to provide contrast between burrows. 5775 to 5765: sand, increasing bioturbation, increased fines. Some burrows filled with sandy mud or mud. Some laminae of mud and sand towards top, dip 25°.							
3	5951	2 5981.2	29.5	Firm but friable sandstone, med. to lt. grey. Well sorted, subrounded, upper fine and lower medium sand, bioturbated throughout with slight shale wisps in turbations. Clear conformable depositional surface at 5965.1', more burrowed below than above. Lt. grey calcified sandstone at 5966' with 3" of shell hash. Scattered pelecypod shell fragments and occasional burrows with calcareous cement throughout core. Remarkably constant grain size.							

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Test & Analysis
0402975126
North Belridge
27 T27S R20E
43-27

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CP[illegible]523203



SCPI -, 112- 85- I

DATE 6/13/85

CORES EXAMINED BY C. H. Soule

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD No. Belridge

COMPANY SCPI

LEASE AND WELL NO. Fee 43-27

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS					SHOW SYMBOL	LITH. SYMBOL
					SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO, A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.		
				Continued							
4	6039	6067	28	Firm but friable sandstone, med. to lt. grey. Bioturbated throughout. Transition about 6057' to 6054'. Below, mottled bioturbation with lots of burrows, but also many recognizable laminae. Above transition, laminae not present, and less color and textural contrast between adjacent burrows. Grain size transition at same range. Below, sand is upper very fine and lower fine grained, with silt constituent. Above transition, mean shifts to upper fine, with less silt or very fine sand.							

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SCPI - 112- 85- I

DATE 7/25/85

CORES EXAMINED BY C. H. Soule

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD No. Belridge
COMPANY SCPI
LEASE AND WELL NO. Fee 43-27

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
5	8353	8383	29.7	Sandstone, dk. grey, firmly consolidated, friable with difficulty. Massive with little evidence of bedding, thoroughly bioturbated. Some calcareous cement. Fractures between 8356 and 8357.5', with secondary calcareous filling. At 8357, burrow and associated lamination suggest possible bedding plane. Parallel fracture 1" higher dips 35° sharply demarcated color change at 8358' is dk. grey below, med. grey above. This corresponds to sl. greater calcareous matrix in lighter zone. Sorting poor, ranging from upper fine sand to silt. Mostly v. fine to fine sand, dom. lower fine. Subrounded to subangular. Core has salt and pepper texture of dk. and med. grey, with overall dark appearance.							3
6	8717	8736	17.5	Sandstone, med. to lt. grey, very firmly consolidated. Massive, bioturbated, with no evidence of bedding boundaries. Fracture at 8735', dipping 75°, thoroughly filled with secondary calcite. Color med. grey at base, gradually lightening above 8729', becoming lt. grey above 8724'. Becomes darker (med. grey) fairly rapidly between 8719.5' and 8718.5', then sl. lighter in top 3". This color change does not seem to correspond to calcareous content, and may be a function of grain size, darker being coarser. Subangular to subrounded, poorly sorted, with upper medium and occ. Lower coarse grains to very fine sand and silt. Framework grains dominantly fine with a possible tendency towards upper fine in darker zones. V. sl. calcareous cement, not directly corresponding to color changes. Occ. burrows and other light spots are sl. calc.							S

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CPAH85211

SCPI -.112- 85- I

DATE 1/25/85

CORES EXAMINED BY C. H. Soule

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD No. Belridge
COMPANY SCPI
LEASE AND WELL NO. Fee 43-27

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO. A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
7	8829	8833	3.5'	Sandstone, lt. brown to grey, very firmly consolidated. Massive with no evidence of bedding, sl. hint of possible burrows at 8829.5' to 8830'. Locally sl. calcareous. Whole core has sl. hydrocarbon odor, and forms sheen when wet. V. poorly sorted, v. cse to v. fine sand. Dom med. sand, but coarse component increases in top 18". Large grey calcareous pebble at 8829.5' is 1/2 x 3/4 x 2". Spots of pipe dope in top 6".							S
8	9115	9143	26.5'	Sandstone, lt. grey, hard. sl. calcareous throughout. Heavily bioturbuted from base to 9136.6'. Abrupt contact, with shift to massive sand with thin dark mineral layers giving lamination in basal 3", topped by featureless massive unbedded sand to top of core. Above 9121', occ. burrows increase upwards to moderate burrowing at top. Top not as heavily burrowed as base. Lower burrowed sequence v. poorly sorted, upper medium sand to silt, with occ. crs. grains, dom. fine sand. Locally v. calcareous. Upper sequence also v. poorly sorted, but slightly better than below. Med. sand to slt. Framework grains obviously lower to upper fine, with v. fine sand and silt in matrix. Occ upper medium and coarse sand grains towards base of upper sequence. Medium grain constituent diminishes upwards so only occ. lower medium present at top. V. sl. calcareous throughout, increasing to sl. calcareous from 9134' to 9136.6'.							S

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SCPI - 112- 85- I

DATE 8/20/85

CORES EXAMINED BY C. H. Soule

Shell California Production Inc.
CORE RECORD
("HEAVY" OIL PROVINCES)

AREA OR FIELD North Belridge
COMPANY SCPI
LEASE AND WELL NO. Fee 43-27

NO.	FROM	TO	RECOVERED	Rock type, color, stratification, hardness and cohesion, other features, e.g., fossils, cements, clay occurrences, carbonaceous material, dip, odor (oil / H_2S), GRA grain size (range and predom. size), silt and clay content, sorting, grain shape, est. of porosity, perm, and saturation.	OIL SATURATION OBSERVATIONS: SAMPLE DEPTH	VISIBLE OIL: LIQ. OIL STR. OR GLO, A.M.S.*	VISIBLE OIL: STAIN ONLY A.M.S.*	COLOR OF FLOUR.	COLOR OF CUT AND NUM.	SHOW SYMBOL	LITH. SYMBOL
9	9674	9698.5	23.5	9674 - 9696'1" Sandstone Lt. grey to lt. grey-brown, massive, hard, well cemented with calcareous cement. Abdt. fossil fragments (echinoderms) towards top. Lt. oil stain in less cemented zones, slight hydrocarbon odor. Grain size coarsens upwards. All samples have fine to v. fine contituent, but dom. grain size varies: mL to fU at 9695, ranging through more mU at 9691', with cse grains appearing at 9685' (1-3% dk litho grains, tending to have coarsest grain size in any interval). Cse framework grains w/v. cse lithic grains at 9681'. V. cse grains common at 9677', with occ. shell frags. Above 9677', shell frags abdt. in excess of 25%. Look like broken echinoderm shells. Lt. brn. oil stain from base to 9685'5", with occ. calcareous mottles. Above this depth, core v. calc. with no stain, lt. grey color. Occ. bioturbation below 9691'. Base of sand has load casts and a shale wisp due to soft sediment deformation. 9696'1" - 9697'6" Shale dk gy to blk, hard, 70% rubblized, dull luster with vitreous luster on some faces. Some conchoidal fracture. Upper contact w/sand is conformable, with soft sediment deformation features.							S C

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). I-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CALY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%). NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND. *A =ABUNDENT M = MODERATE S = SPARSE

CPA[illegible]523203

EPOCH
WELL LOGGING, INC.
1328 34TH STREET, SUITE C, BAKERSFIELD, CA 93301 TELEPHONE: (805) 324-0247

SUMMARY OF WELL ACTIVITY

SHELL CALIFORNIA PRODUCTION, INC.

PDET #43-27

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SHELL CALIFORNIA PRODUCTION, INC.

PDET #43-27

CORE DESCRIPTIONS

Core #4

6067' SILTSTONE - medium gray; very hard; well indurated; low apparent porosity; very clayey; common very fine-grained sand; poor shaly partings; common micas; trace phosphatic material; very slightly calcareous; no cut fluorescence.

6065' 3" SANDSTONE - medium gray; lower very fine to lower fine; angular to subrounded; moderate to well sorted; spherical to subdiscoidal; very tight; hard; well indurated; good calcareous cement; low apparent porosity; absorbs water with great difficulty; silty; exhibits poor shaly partings; predominantly quartz; increasing feldspar and lithic grains; trace heavy minerals; slightly micaceous; weak yellow mineral fluorescence; no cut fluorescence.

6062' 4" SANDSTONE - medium gray; lower very fine to upper fine; subangular to rounded; spherical; moderately sorted; very tight; good calcareous cement; low apparent porosity and permeability; grain contacts often difficult to distinguish; slightly silty; predominantly quartz; scattered lithics and heavy minerals; trace biotite; breaks along weakly defined subparallel planes; no cut fluorescence.

6059' 4" SANDSTONE - medium to dark gray; lower very fine-grained; subangular; spherical to subprismoidal; poorly sorted; very silty; trace clayey; commonly grades to siltstone; occasional lenses of lower medium white to light gray sandstone; common calcareous cement; very hard; well indurated; tight; low apparent porosity and permeability; trace phosphatic material; predominantly quartz; trace micas and lithic grains; no cut fluorescence.

6056' 4" SANDSTONE - light to medium gray; upper fine to lower medium grained; moderately sorted; spherical and subdiscoidal; hard; well indurated; low to moderate apparent porosity; absorbs water with difficulty; common calcareous cement; common silty pods; generally structureless; predominantly quartz; increasing feldspars; minor micas and heavy minerals; no cut fluorescence.

6053' 4" SANDSTONE - light to medium gray; lower fine to upper fine grained; subangular to rounded; spherical; moderately sorted; very tight; well indurated; common calcareous cement; low apparent porosity and permeability; slightly silty; structureless; predominantly quartz; trace feldspars, biotite, and heavy minerals; common very well rounded, spherical, black lithic grains; minor pale yellow mineral fluorescence; no cut fluorescence.

6050' 4" SANDSTONE - light gray; lower fine to lower medium; subangular to rounded; spherical to discoidal; well sorted; strong calcareous cement; hard; well indurated; only slightly friable; low to moderate apparent porosity and permeability; predominantly quartz; trace feldspar; common heavy minerals and well rounded lithic grains; very slight trace micas; structureless; no cut fluorescence.

6047' 4" SANDSTONE - light to medium gray; lower fine to lower medium; subrounded; well sorted; spherical to discoidal; moderate apparent porosity; absorbs water with only slight difficulty; hard; moderate to well indurated; slightly friable; very weak calcareous cement; predominantly siliceous cement; well compacted; predominantly quartz; common feldspars; abundant heavy minerals; increased biotite; frequent well rounded black lithic grains; no cut fluorescence.

6044' 4" SANDSTONE - light to medium gray; upper very fine to upper fine; angular to subrounded; poorly sorted; subprismoidal to subdiscoidal; low apparent porosity and permeability; very tight; common calcareous cement; well indurated; hard; only very slightly friable; very silty; occasional patches of slickensided claystone inclusions; dirty appearance; predominantly quartz, common muscovite, scattered heavy minerals; structureless to slightly shaly in appearance; no cut fluorescence.

6041' 4" SANDSTONE - light gray; upper fine to upper medium grained; angular to subrounded; spherical to subprismoidal; well sorted; very slightly silty; friable; well compacted; moderate to well indurated; slight trace calcareous cement; predominantly quartz; common feldspar; trace biotite and muscovite; common heavy minerals and lithic grains; moderate to good apparent porosity; readily absorbs water.

Core #5

8353' SANDSTONE - light gray; hard; very fine to medium; angular; moderately sorted; tight and very calcareous; quartz, speckled with black mafics and lithics and possibly carbonaceous material; bright yellow mineral fluorescence; diffuse green-yellow cut fluorescence; weak green-yellow residual cut fluorescence; no visible cut.

8356' SANDSTONE - light gray to brown-gray; firm to slightly friable; fine to medium; subangular; spherical; moderately well sorted; decreased to slightly calcareous; kaolinitic; improved porosity, permeability, grain supported quartzose; scattered light to dark green glauconitic grains; occasional mica flakes; scattered soft, black, probably carbon grains; mottled to even yellow oil fluorescence; streaming green-yellow cut fluorescence; strong green-yellow residual cut fluorescence; very pale straw visible cut; apparent semisaturated with light oil.

8359' SANDSTONE - light brown-gray; hard to slightly friable; very fine lower to medium upper; angular to subangular; spherical to prismoidal; poor to moderate sorting; increasingly kaolinitic and micaceous; very slightly calcareous; quartz and feldspars; increasingly glauconitic and carbonaceous; light oil throughout; moderately strong yellow oil fluorescence; fast streaming green-yellow cut fluorescence; excellent blooming cut when crushed; very pale straw visible cut; fair petroleum odor.

8362' SANDSTONE - as above; increasing glauconitic grains; scattered black, soft, rounded grains; apparently structureless; good yellow sample fluorescence and green-yellow cut fluorescence; strong green-yellow residual cut fluorescence; fair petroleum odor.

8365' SANDSTONE - light brown-gray; firm and brittle, crushed with some difficulty; very fine lower to medium upper; dominantly angular; moderate sphericity; poor to moderate sorting; very slightly calcareous; kaolinitic; subarkosic; clear quartz, cloudy feldspars; scattered muscovite, glauconite; common black rounded grains, possibly carbonaceous; spotty to even yellow sample fluorescence on fresh surfaces; good green-yellow cut fluorescence and residual cut fluorescence; very pale straw visible cut; light straw visible dry ring; fair light oil odor.

8368' SANDSTONE - as above with increased brown coloration; increasingly argillaceous and silty; slightly increased friability; clay streaks nonfluorescent; overall good sample and cut fluorescence.

8371' SANDSTONE - light brown-gray; light brown oil stains; firm to hard; brittle; occasionally slightly friable; reduced apparent porosity and permeability; very fine to medium; angular; moderately sorted; quartzose; kaolin; increased brown clay lenses and matrix material; noncalcareous; glauconitic and micaceous; strong yellow oil fluorescence; streaming green-yellow cut fluorescence.

8374' SANDSTONE - as above; increasingly brown and argillaceous; noncalcareous; crushed with difficulty; still good yellow sample fluorescence; good green-yellow crush cut fluorescence; very pale straw visible cut; oil fluorescence washed away by solvent; oil fluorescence diminishes over time.

8377' SANDSTONE - gray-brown; firm to hard; occasionally slightly friable; very fine lower to medium lower; generally fining downwards with increasing clay/silt component; angular; poor to moderate sorting; noncalcareous; quartzose; common frosted to chalky feldspars; persistent glauconite and micas; yellow sample fluorescence confined to streaks and patches of less argillaceous sandstone; continued good green-yellow cut fluorescence and strong green-yellow residual cut fluorescence; cuts somewhat slower developing; reduced petroleum odor.

8380' SANDSTONE - gray-brown; slightly decreased induration; very fine to medium; subangular; spherical; moderately sorted; argillaceous; noncalcareous; silty; quartzose; slightly decreased glauconite, black grains; decreased sample fluorescence; weak green-yellow cut fluorescence; weak to moderate green-yellow residual cut fluorescence; no visible cut.

8383' 4" SANDSTONE - as above; increasingly argillaceous/silty; decreased to rare spotty yellow sample fluorescence; weak to diffuse green-yellow cut fluorescence; no visible cut; poor oil indicators overall.

Core #6

8717' SHALE - very dark brown to black; hard and dense; massive; micromicaceous sparkle on fresh surface; very silty; noncalcareous; top grooved by bit; no sample fluorescence; weak, slightly sweet petroleum odor; streaming green-yellow cut fluorescence; fair to good green-yellow residual cut fluorescence; no to pale straw visible cut fluorescence; no visible stain.

8720' SANDSTONE - light gray to light brown-gray; moderately hard; slightly friable; very fine upper to medium lower; subangular to subrounded; spherical to discoidal; moderate sorting; noncalcareous; kaolinitic; grain supported; occasional random argillaceous streaks; fair apparent permeability; arkosic; clear quartz and gray feldspars; trace scattered muscovite, biotite; rare light to very dark green, soft glauconite; trace dark mafics; 25 - 30% moderately strong yellow sample fluorescence; no to trace very light brown oil stain; slow streaming to diffuse green-yellow cut fluorescence, greatly enhanced with crush; fair yellow to green-yellow residual cut fluorescence; no to pale straw visible cut; weak petroleum odor.

8723' SANDSTONE - as above; slight decrease in sample fluorescence to 20%; patchy, spotty yellow oil fluorescence; weak green-yellow cut fluorescence; fair green-yellow residual cut fluorescence; no visible cut; weak petroleum odor; possible spotty very light brown oil stain.

8726' SANDSTONE - light gray, increased brown with increase in oil fluorescence; moderately hard with slight friability; fine lower to medium lower; angular to subrounded; spherical to prismoidal; well sorted; noncalcareous; light brown, kaolinitic matrix; grain supported; fair apparent permeability, water percolates slowly into dry surface; arkosic; quartz and feldspars; scattered muscovite, glauconite, biotite; slight trace mafics; calcareous patches; mottled with 50 - 60% moderately bright yellow oil fluorescence; good blooming green-yellow crush cut fluorescence; strong green-yellow residual cut fluorescence; light straw visible cut; very light brown dry residual ring; weak petroleum odor; best oil attributes of all core samples.

8729' SANDSTONE - as above; decreased to moderate sorting; increasingly argillaceous, brown streaks; calcareous in spots; 30% yellow oil fluorescence; slow green-yellow cut fluorescence, enhanced with crush; no visible cut; weak light oil odor.

8732' SANDSTONE - light gray-brown; moderately hard but individual grains easily scraped free; chips broken free from core fairly easily; very fine upper to medium lower; angular to subrounded; spherical to blocky; moderate sorting; dominantly noncalcareous with occasional calcareous patches; light brown to white kaolinitic matrix; slightly decreased apparent permeability; arkosic; clear quartz; gray to white feldspars; trace biotite; muscovite; trace glauconite; slight trace mafics; decreased oil attributes to 10% pale yellow sample fluorescence; weak green-yellow cut and residual cut fluorescence; no visible cut; no apparent visible oil stain.

8735' SANDSTONE - as above but slightly coarser; very fine upper to medium upper; poor to moderate sorting; calcareous patches; increased sample fluorescence to 35%; slow streaming, transparent to translucent green-yellow cut fluorescence; fair green-yellow residual cut fluorescence; no to very pale straw visible cut; weak light oil odor; overall core very homogeneous.

Core #7

8829' SANDSTONE - light gray; very fine to coarse; angular to subangular; very poorly sorted; moderate to very low sphericity; moderately well indurated; large fractures visible in core barrel; dominantly quartz with abundant gray feldspars and dark lithics, scattered mica; weakly calcareous in places; silica cement; moderate to strong petroleum odor; bright yellow to white-yellow sample fluorescence; greenish light straw visible cut; fast to instant, opaque, bluish green to blue-white cut fluorescence; very bright yellow residual cut fluorescence.

8832' 5" SANDSTONE - gray, white; very fine to coarse; angular to subrounded; very poor sorting; subspherical to prismoidal; well indurated; clear, white, amber quartz; feldspars, black lithics, occasional mica; silica cement; moderately calcareous in places; moderate petroleum odor; bright yellow to bright white-yellow sample fluorescence; greenish light straw visible cut; very strong, fast, streaming to instant opaque bluish green white to blue-white cut fluorescence; bright yellow-white residual cut fluorescence.

CORE #8

9115' SANDSTONE - fine to medium grained; moderately well sorted; spotty bright white-yellow mineral fluorescence with very diffuse cut fluorescence; moderate yellow-white residual cut fluorescence.

9117.67' SANDSTONE - fine to medium; fair apparent porosity; soaks in H20 less than 1/2 minute; even bright white-yellow sample fluorescence; fast diffuse white-yellow to greenish yellow cut fluorescence; no streamers; increased intensity with crush; no visible cut.

9120.67' SANDSTONE - as above; same cuts.

9123.67' SANDSTONE - as above; even bright white-yellow sample fluorescence.

9126.67' SANDSTONE - light gray; fine to medium; poor porosity; even bright white-yellow to greenish yellow sample fluorescence; cuts as above.

9129.67' SANDSTONE - as above; poor apparent porosity; patchy to even cuts.

9132.67' SANDSTONE - as above; patchy areas with no fluorescence; slightly brownish stain in these areas; fast very diffuse cut with increased intensity and occasional wispy streamers.

9135.67' SANDSTONE - fine to medium; poor apparent porosity; even bright greenish white yellow cut fluorescence.

9135.67' SANDSTONE - pale brownish gray; fine to medium; tight; no sample fluorescence; very faint greenish cut fluorescence; much less intense than above.

9141.67' SANDSTONE - dark brown-gray; argillaceous; tight; well indurated; trace very spotty very faint greenish sample fluorescence, probably contamination; fast greenish yellow cut fluorescence; transparent; very pale straw visible cut.

Core #9

9674' CALCARENITE - (Sandstone) - yellowish to pinkish gray-white; fine to coarse grains with scattered lith clasts; calcite from shell fragments makes up bulk of chip from core; grains are subangular to apparently subrounded; poorly sorted; well indurated with calcite cement; some in crystalline form indicating fractures; predominantly clear to frosted quartz with scattered oval, subrounded, black lith fragments; trace fine grained moderately well sorted sandstone clast with bright sea-green grains; patchy bright yellow oil and orange calcite mineral fluorescence; fast streaming bright yellow-white to green-white cut fluorescence; bright yellow residual cut fluorescence; pale straw visible cut; spotty stain; weak odor.

9676' SANDSTONE - light yellowish gray, common pink stain from mud thinner; medium to very coarse; subangular to subrounded; poor to occasionally fair sphericity; poorly sorted; well indurated; abundant calcite cement from shell fragments; rare visible outline of microgastropod; very poor apparent porosity; common clear to slightly milky quartz with common dark gray-black subrounded to rounded lith fragments; decreasing calcite from above; patchy sample fluorescence as above; increased intensity of cut fluorescence; straw visible cut; spotty stain; weak odor.

9678.5' SANDSTONE - light gray, salt and pepper; fine to medium with occasional coarse; subangular to subrounded; poor to occasionally fair sphericity; moderately sorted; well indurated with trace friable pockets; calcite cement with hint of bivalve fragments; poor apparent porosity; common clear quartz with scattered soft milky feldspar; scattered gray-black lith fragments; subvitreous with cherty appearance but much softer than chert; patchy calcite fracture fill; decreased oil fluorescence; spotty bright yellow; abundant orange calcite mineral fluorescence; weak yellow cut fluorescence; weak orange-yellow residual cut fluorescence; no visible cut.

9681.7' SANDSTONE - yellowish gray; fine to medium; subangular to subrounded; poor sphericity; moderately well sorted; friable to moderately indurated; grain packed; slightly calcareous; poor apparent porosity but slightly improved over last sample; quartz with spotty feldspar; decreased black lith fragments; trace blue-green grains; trace visible oil on surface of chip after acid has dried; even bright yellow oil fluorescence and light brown oil stain; instant, strong yellow-white to green-white cut fluorescence, turning blue-white over time; opaque bright yellow residual cut fluorescence; straw visible cut; light brown dry ring; light to medium brown oil bleeding from core after 1 - 2 hours; strong light oil odor from core.

9685.4' SANDSTONE - light gray; medium to coarse; subangular; poor to moderate sphericity; moderately sorted; well indurated; grain packed; spotty calcite cement; poor apparent porosity; clear to milky and gray quartz and feldspar; minor black lith fragments; no visible bedding lineation from core chip; oil shows as above.

9688' SANDSTONE - as above becoming slightly finer grained; oil shows as above.

9690.8' SANDSTONE - light gray; fine to medium, predominantly medium; subangular; poor to moderate sphericity; moderately well sorted; moderately well to well indurated; grain packed; spotty calcareous cement; poor apparent porosity but trace minor outgassing when immersed in water; predominantly quartz; minor spotty dark gray grains; oil shows as above.

9693' SANDSTONE - as above.

9698.5' MUDSTONE - (possibly shale); very dark, dusky yellowish brown; hard; tough; dull luster; silty texture; no bedding lineation or fissility in core chip; very slow initial effervescence in HCl; becomes moderately strong and leaves a discolored (bleached) area where applied; no sample fluorescence or visible stain; weakly streaming yellow cut fluorescence; weak yellow residual cut fluorescence; no visible cut; weak petroleum odor.

SHELL CALIFORNIA PRODUCTION, INC.

PDET #43-27

FORMATION SUMMARY

The interval from 57' to 1,020' consists predominantly of silty claystone, sandstone and siltstone. Lost circulation was encountered in the poorly sorted sands of the Tulare Formation at 176' and was not regained until a cement plug was set at 343'. No hydrocarbon shows were encountered and in the upper 80% of the interval only traces of methane gas were observed. The siltstones in the lower portion of this interval appear lithologically gradational to the underlying diatomite section. Cuttings gas readings indicate a distinct break at 1020'.

1020' - 1715'

The diatomite section from 1020' to 1715' is not as well developed as similar sections in South Belridge. Cuttings exhibit a high amount of detrital material and grade from silty diatomaceous clays through silty diatoms to siltstone with intermittent calcareous, and locally glauconitic, sands. Although cuttings gas readings indicate increased porosities through this section and ditch gas (methane only) ranged from 20 to 70 units, no oil indicators were observed.

As in the overlying unit, the lower portion of the diatomite section appears lithologically gradational to the underlying, increasingly detrital, section. Thirteen and three eighths inch casing is set at 1715', a convenient point to break up the section.

1715' - 2800'

Although diatoms and lithologies of diatomaceous origin are present from the Belridge Diatomite down through the older, Antelope Shale, the interval from 1715' to 2800' represents a period of increased detrital influx. The interval consists predominantly of gray-green clay and olive colored shaly mudstones with scattered thin interbeds of marl/limestone. The mudstone is commonly diatomaceous and infrequently grades to clayey diatomite.

Minor traces of reddish-brown oil stain occur in silty/sandy cuttings from 1800' to 1865' and also in diatomaceous mudstones from 1945' to 2040', giving fast, weak, milky-yellow cut fluorescence with traces of weakly iridescent oil sheen. Cuttings gas readings were nil. Ditch gas consisted of methane only. Averaging 10 units to 2270', ditch gas readings increased to an average of 50 units with peaks over 90 units, gradually reducing to an average of 25 units. Overall, the interval shows no real hydrocarbon potential.

2800' - 3300'

Increased induration and slightly improved bedding lineation in ditch samples from 2800' mark the top of the Reef Ridge. The poorly fissile dull olive to brown gray shales that predominate this interval become less diatomaceous in appearance, grading toward more compact brittle mudstones with increasingly more common porcelaneous characteristics. Calcareous microfossils and thin laminations occur in the lower portion of the Reef Ridge. A subtle color change from predominantly olive and brownish grays to increasingly brown and the phosphatic nature of the shales marks the gradational boundary between the Reef Ridge and the underlying Antelope Shale.

Methane and minor amounts of ethane were recorded from the ditch gas throughout the Reef Ridge. In two separate intervals within this section, propane and butane were also observed when ditch gas exceeded 50 units. No oil fluorescence or cuts were observed in the cuttings.

3300' - 4820'

The Antelope Shale in this well can be broken into five members as follows: upper shale (3300' to 3765'); upper siliceous (3765' to 3960'); middle shale (3960' to 4045'); lower siliceous (4045' to 4340'); lower shale (4340' to 4820').

The upper shale is gray-brown becoming medium to dark brown near the top of the upper siliceous member. The cuttings are silty textured, calcareous and weakly to moderately phosphatic. No oil indicators were observed.

The upper siliceous member consists of pale gray-brown to brown porcelanite and porcelaneous shales interbedded with brown silty mudstones (shaly). The porcelaneous cuttings are brittle with a waxy to resinous luster when wet and commonly exhibit translucent edges. The middle shale member is dark chocolate brown with a grainy, earthy appearance. No oil indicators were present.

The lower siliceous member of the Antelope is better developed and more expansive than the upper siliceous zone. The porcelanite and porcelaneous shales which dominate this member are occasionally cherty and exhibit better developed fracturing, a feature not well developed in the upper zone.

Although fractured porcelanites generally exhibit good reservoir qualities, no oil indicators were present in the siliceous members of the Antelope Shale.

The lower member of the Antelope consists of dark brown, poorly fissile, organic rich shales and mudstones. Tan to occasionally dark brown interbeds of limestone and infrequently dolostone, are common. The shale/mudstone cuttings exhibit a grainy texture and are non to slightly calcareous. Unlike the upper portion of the Antelope the lower shale contains very weak oil shows. Traces of black oil stain were observed in limestone/dolostone cuttings. The shale cuttings exhibited no stain or sample fluorescence but occasionally gave very slow, very diffuse, pale greenish cut fluorescence and almost persistent very pale greenish residual cut fluorescence. No oil sheen or petroleum odor was present.

Ethane and propane occurred as minor amounts of the ditch gas at the top of the upper siliceous zone and persisted through the Antelope and underlying McDonald shale. Minor amounts of butane were also detected below 4625'.

The shales of the lower Antelope become very limey to dolomitic as they grade into the underlying McDonald shale. The first loggable amounts of waxy smectite probably represent the best lithologic marker for the Antelope-McDonald boundary.

4820' - 5660'

The shales and mudstones of the McDonald from approximately 4820' to 5660' commonly contain thin interbeds of limestone and occasionally dolostone.

The shales, grading downward from the overlying Antelope shale are very dark brown, moderately to well indurated, silty and noncalcareous to occasionally very slightly dolomitic. Fissility, when discernible is very poor with most cuttings grading to mudstone. The shale/mudstone cuttings become lighter in color and exhibit a more silty, detrital appearance with depth. The most distinctive feature of the McDonald is the numerous interbeds of pale yellow-brown to cream colored limestone whose cuttings exhibit a resinous to sparkling luster with a microsucrosic texture. The limestone cuttings are occasionally dolomitic, especially in the upper section of the McDonald.

Thin interbeds of very fine white to yellow-brown sandstone occur in the McDOnald below 5350'. These sands appear as minor traces in the ditch samples and as a small percentage in samples taken from the desilter.

Very weak traces of oil occur almost persistently in the shales, and occasionally in the limestone and sandstone. The shales exhibit very pale yellow sample fluorescence and give very weak transparent greenish tinted cut fluorescence with repeated attempts.

On occasions the limestones also give extremely weak greenish cut fluorescence and in rare instances exhibit traces of oil stain in microvugs. The sandstone, although not stained, gave occasional pale greenish cut fluorescence with repeated attempts.

The ditch gas consisted of methane with small amounts of ethane through butane. 5660' - 6170' The Miocene Temblor Formation is bounded by the McDonald shale above and the Media silts below. It consists of five distinct sand bodies separated by shaly intervals, except for the fourth and fifth sands, which are separated by an argillaceous layer not easily recognized by drilled cuttings or drill rate. Furthermore, the third sand is apparently truncated by a small normal fault. These five sands occur from 5660' to 6005'. Two lower sands, one of which is locally known as the button bed, are included in this discussion of the Temblor, although they are not normally assigned to this formation.

These light gray sandstones are generally hard, as evidenced by core samples, and consist of very fine to medium grained quartz sand with very common feldspar and lithic grains. Sandstones range from permeable and kaolinitic to tight and calcareous. Gray to brown, silty shales divide the sands. These are firm to hard, non to slightly calcareous, locally micromicaceous or pyritic, and occasionally fossiliferous.

The Temblor sands are probably depleted of oil in this fault block. Ditch gas remained below 30 units (mud weight 9.3) with only traces of petroleum vapors. Lost circulation was a problem in the lower fourth/upper fifth sands. Only traces of oil fluorescence could be found in sandstone cuttings, with heavy, sticky oil coating rare shale cuttings. Cores #2 and #3 had a small amount of oil with yellow fluorescence streaked through more permeable, noncalcareous sandstone layers.

6170' - 6715'

The interval from 6170' to 6715' separating the Temblor and upper carneros sandstones consists of siltstone, very poorly fissile silty shale with intermittent limestone and occasional sandstone interbeds. The siltstones and shales appear as gray to gray-brown, moderately well indurated cuttings with a grainy to gritty texture. Some cuttings exhibit poorly developed fissility and infrequent faint laminations.

The intermittently occurring light yellow-brown limestone cuttings are more numerous in the upper portion of this silty interval, especially from 6200' to 6250'. The cuttings are hard with a resinous to sparkling luster and occasionally grade to calcarenite.

The sandstone is white to brownish gray where silty. Grain size ranges from very fine to medium, being predominantly very fine to fine and grading from friable to moderately well indurated.

Drill rates indicate only one small distinct sand body from 6300' - 6311'. Thin laminations and lenses of fine sandstone grading to siltstone occur in the lower portion of this interval. Sporbo is locally common in fine sandstones at 6450'.

Weak traces of oil occur intermittently in the sandstones and limestones which exhibit very slow, diffuse (infrequently streaming) very pale yellow to greenish cut fluorescence. Traces of dry flaky oil stain occur in very fine sandstone from 6650' to 6690'.

Ditch gas remained below 30 units averaging approximately 10 units. Minor amounts of ethane and propane were recorded throughout the entire section. Butane was first observed from 6547' and persisted through this section into the underlying Carneros sandstone.

6715' - 6853'

The sands of the Upper Carneros are light gray to white, fine to medium grained and distinctively kaolinitic. The increased grain size of the Carneros is reflected in the increased drill rate from 6715' to 6853'. Sporbo and pyrite nuggets are locally abundant. Only extremely weak traces of oil were present in cuttings. Spotty faint to bright white-yellow mineral fluorescence was observed in most samples. Occasional very pale greenish yellow cut fluorescence was obtained with repeated attempts.

Ditch gas ranged from 5 to 25 units and consisted predominantly of methane with minor amounts of ethane and propane. Minor amounts of butane were observed in the upper portion of the Upper Carneros but quickly dropped out.

6853' - 7210'

The interval from 6853' to 7210' separating the Upper and Lower Carneros Sandstone consists of medium to very dark brown moderately to well indurated poorly fissile silty shale (Upper Santos Shale?) Minor sandstone interbeds occur sporadically.

Weak traces of oil persisted throughout most of the interval, generally in the form of very weak yellow residual cut fluorescence. Infrequent traces of medium brown oil stain gave fast, diffuse pale to milky yellow cut fluorescence with pale straw visible cuts and very faint yellow residual cut fluorescence.

Butane was again observed as a component of the ditch gas at the top of this shale interval after having dropped out in the upper portion of the Upper Carneros Sandstone. Ditch gas averaged 20 units, peaking to 90 units at 6984' where pentane gas was recorded in the ditch gas for the first time in this well.

Tight hole problems in the lower portion of this shale continued into the Lower Carneros. The mud weight was raised from 9.2 lbs./gal. to 9.5 lbs./gal. while still drilling through the shale.

7210' - 7735'

The Lower Carneros sandstone is white to light gray, fine to coarse grained, and poorly to moderately sorted. Grains become generally more angular deeper into the formation. Cuttings are moderately to well indurated with spotty calcareous cement. As in the Upper Carneros the sandstones of the Lower Carneros are distinctly kaolinitic with common to abundant white feldspar grains. Minor constituents include lith fragments (predominantly shale), mica, pyrite and bright blue-green grains, possibly glauconite. Apparent porosity was generally poor.

Sloughing shales and intervals of poor returns coupled with tight hole persisted through most of the drilling of the Lower Carneros. A mud weight of 10 lbs./gas. and the last resort addition of the asphaltic chemical X-Pel-G did not solve the problem. Twelve and a quarter inch hole was drilled to a depth of 7576' where the additional problem of lost circulation made it necessary to run 9 5/8" casing which was set at 7057' instead of T.D. because of hole problems. A mud weight of 12.6 lbs./gal. was necessary to stop shale problems and continue drilling 8 1/2" hole.

Weak traces of oil were observed, almost consistently, in the upper 160' of the Lower Carneros. Cuttings with spotty, moderately bright white-yellow mineral/sample fluorescence gave very slow diffuse to occasionally wispy streaming pale yellow cut fluorescence with no visible cuts and faint yellow residual cuts. No oil staining or petroleum odor were observed.

At 7676' - 7680' the sandstone was observed to have bright yellow fluorescent pops with a weak petroleum odor and bright yellow mineral/sample fluorescence. Pentane was recorded in the ditch gas from this interval.

Overall, the ditch gas contained methane through propane with intermittent butane.

7735' - 8040'

The interval from 7735' to 8040' consists predominantly of medium to dark brown moderately to well indurated silty shale with intermittent sandstone beds. No oil attributes were observed although butane was recorded from the ditch gas throughout the interval. Abundant sporbo and increased sand at the very bottom of the interval mark the contact with the underlying Agua sandstone.

8040' - 8175'

Abundant sporbo and glauconite, gray clay, and an increase in sand near the base of the Lower Carneros herald the appearance of the Agua Sand at 8040'. This sand is approximately 108' thick and rests upon shale at 8148'. Apparently depleted and permeable, lost circulation was a persistent problem throughout. Abundant lost circulation material in the mud system made lithologic evaluation difficult.

This light gray sandstone is predominantly fine to medium grained quartz with an occasional coarse component, arkosic and commonly kaolinitic with traces of mica, pyrite, and glauconite. Occasional hard, calcareous streaks caused drilling bones. This sand becomes increasingly silty and argillaceous with depth. Samples of cuttings had a good percentage of dark brown, firm to hard, silty and slightly calcareous shale which was probably slough in large part.

The upper Agua contains some gas - 100 units with a fair amount of petroleum vapors was recorded at 8070' (mud weight 11.3) - but no oil was found in either cuttings or drilling mud. Traces of greenish sample fluorescence became evident below 8090'. Cuts were very weak and no other oil attributes were present.

The Agua here is somewhat thinner than it is on correlation logs and rests on dark brown, hard shale with evidence of polished slickensided surfaces. There is also an increase in ditch gas that one might expect in a fault zone. The formation directly below this shale is probably the Belridge 64 zone. This suggests that a normal fault has placed the 64 zone beneath the Agua sand, faulting out the Bloemer sand and much of the Salt Creek shale.

8175' - 8390'

The "first" Belridge 64 zone (it is repeated at 8810') exists from approximately 8175' to 8390'. The mudlog does not adequately represent this sandstone because of extremely abundant lost circulation material, partial returns, abundant shale slough, and a very slow drill rate, all suggesting a section which is predominantly shale.

Very fine to medium, angular to subangular, light gray quartz sandstone comprises this formation. It ranges from calcareous, very hard and tight to moderately kaolinitic, less indurated, more permeable and porous sandstones. These differences are reflected by drill rate. Accessory minerals include mafics and lithics, feldspar, and occasionally common glauconite. The hard, dark brown shales are largely slough.

Circulation was lost near the top of the "first" 64 zone, and full returns were not regained until approximately 8250'. From 8170' to 8245' only a very slight trace of light oil was seen in the few sandstone cuttings available. Ditch gas remained below 40 units (mud weight 11.3) and cuttings gas did not exceed 12 units. At 8145' oil became visible on shale, pentane became fairly consistent in the ditch gas, and cuttings gas increased slightly. This shale is commonly polished and slickensided, with common calcite fracture coatings. The sandstone cuttings began to increase in amounts and yellow sample fluorescence with weak green-yellow cuts. We also regained full returns. More permeable, less indurated sands below 8293' contain a fair amount of light oil with bright yellow-white fluorescence. Oil decreases at the base of the 64 zone as the sandstone becomes more argillaceous.

This 64 zone is approximately 150' thinner than the repeat at 8815'. The sudden occurrence of pentanes and visible oil, gouged shales, return of full circulation, and a steady increase in flowline temperature indicate a possible normal fault near 8250'.

8390' - 8694'

The interval underlying the Belridge 64 zone from approximately 8390' to 8694' consist predominantly of dark brown moderately to well indurated, calcareous, silty, poorly fissile shales and mudstone with intermittent light gray fine to coarse grained poorly sorted sandstone. The sandy interval from 8428' to 8445' may be the Gibson sand. Glauconite and sporbo are locally abundant from 8650' to 8660'. Persistent weak traces of oil were observed from the shales and mudstones. The sandstones occasionally exhibited spotty dull yellow-orange sample fluorescence and gave slow streaming weak yellowish green cut fluorescence.

Ditch gas ranged from 10 to 90 units and consisted of methane through butane with pentane occurring only at high gas peaks.

Lost circulation was encountered at 8662' with 11.3 lbs./gal. mud weight. The contact with the underlying Bloemer sandstone at 8694' appears sharp.

8694' - 8765'

The Bloemer sandstone is a distinctive body marked by abundant shell fragments and calcite in the top portion of the sandstone. The sandstone is light gray, to light gray-brown, fine to coarse grained, poorly to moderately sorted and slightly friable to well indurated. Core samples exhibited patchy yellow sample fluorescence and occasional strong greenish yellow cut fluorescence with pale straw visible cuts.

Cuts were much weaker from ditch samples. A trace of pinpoint iridescent pops were observed in unwashed samples above the core.

Ditch gas ranged from 40 to 100 units and consisted of methane through pentane. Lost circulation was encountered at 8471' and lost circulation material added to the mud system made sample determination difficult.

8815' - 9165'

A small, apparently shaly section separates the Bloemer sandstone from the underlying, apparently repeated Belridge 64 zone.

The sandstone of the 64 zone is white to light gray, very fine to coarse grained, angular to subangular, poorly sorted, friable to well indurated, and consists of quartz with common to locally abundant feldspar and spotty lithics. Apparent porosity ranged from fair to good in the upper 100' and then decreased, becoming increasingly tight with depth. Thin beds and streaks of brown argillaceous sandstone and sandy shale occur with increased frequency below 9100' where traces of siltstone clasts were observed.

Sample fluorescence exhibited by ditch cuttings was generally an even moderately bright white-yellow to occasionally greenish yellow, white intensity greatly diminished as the cuttings dried, indicating light oil. Cut fluorescence was not as impressive as sample fluorescence and unlike the latter, decreased with depth. The better cuts observed were instantly diffuse pale yellow with slow wispy streamers, becoming greenish yellow. Crushing the cuttings being examined increased the intensity of the cut fluorescence. Crush cuts diminished below 9050' and were not generally fruitful below 9100'. Residual cuts indicate light oil with moderately bright white-yellow to greenish fluorescence. A moderately strong petroleum odor and abundant bright yellow fluorescent oil pops were observed in the upper 50' feet of the 64 zone. Live oil was observed in a small core taken at 8829'.

Ditch gas ranged from 14 to 120 units and consisted of methane through pentane. Although cuts diminished with depth, pentane gas became more consistent in the lower half of the 64 zone. Overall, the interval from 8820' to 9070' appears to be the best bet for a production test.

9225' - 9277'

The poorly developed sandy interval from 9225' to 9277' may represent the, possibly repeated, Gibson sand which lies stratigraphically below the Belridge 64 zone. This sand yielded spotty yellow sample fluorescence with very weak cuts.

9277' - 9470'

The interval from 9277' to 9470' consists of medium to dark brown and gray-brown, well indurated, noncalcareous, poorly fissile shale that grades to mudstone. Traces of sandstone occurred from 9335' to 9405'. Weak greenish yellow cuts were obtained from both the shale and sandstone.

Eight and one half inch hole was drilled to 9450'. Seven inch liner was set to combat lost circulation and running shale apparently caused by geo-pressures (the big fault?) The liner was set at 9403' and it was necessary to raise the mud weight to 16.5 lbs./gal. to solve the shale problem and resume drilling a 6 1/8" hole.

9470' - 9649'

Below 9470' a dramatic change occurs in the shales and mudstones. The medium to dark brown cuttings become soft to firm, crumbly and very calcareous. The cuttings do not appear as pressured as those in the interval above.

Extremely weak traces of oil are exhibited by extremely slow diffuse pale yellow to greenish cut fluorescence from the shales and trace sandstones that occur in this interval.

Ditch gas, suppressed by 16. to 16.5 mud weight ranged from 4 to 22 units, averaging 5 units. Methane, ethane and propane comprised the major percentage of the ditch gas. Butane was observed only intermittently.

The contact with the underlying Oceanic sandstone (?) is fairly abrupt, marked by a two-fold increase in drill rate.

9649' - 9695'

The Oceanic sandstone (?) is light gray to brownish gray (oil stained), fine to medium grained, angular to subrounded, moderately well indurated and locally (9674' - 9678') very calcareous with numerous shell fragments. Although apparent porosity was poor cuttings and core samples exhibited light brown oil staining and even bright yellow sample fluorescence. Cuts obtained were instant bright greenish yellow with straw visible cuts. Good petroleum odor was observed from 9674'.

Oil was observed slowly bleeding from the core, but only after an hour of setting at normal atmospheric pressure. The color of the sample and cut fluorescence indicates a heavier oil for the Oceanic than in the 64 zone but still relatively light (approximately 18 to 20 degrees API).

9695' - 9807'

The interval from 9695' to 9807' consists of medium to dark gray-brown and brown, moderately indurated, intermittently calcareous shale with minor but common amounts of dark green glauconite. Phosphatic material also occurs as a minor visible component. The samples gave off an acrid tarry odor with fair greenish yellow cut fluorescence. No visible staining was observed.

The ditch gas averaged 12 units and consisted of methane through butane with occasional traces of pentane. Production from this interval is very doubtful but it is interesting to see increasing oil attributes in deep shales.

Drilling ceased when the drill string became differentially stuck at a measured depth of 9807.

SHELL CALIFORNIA PRODUCTION, INC.

PDET #43-27

SUPPLEMENTARY DATA LOG

2640' CLAY - dark green-gray; soft; slightly thick, pasty consistency; moderate to increasingly poor solubility; very smooth, creamy texture; slightly silty; sticky; no oil or cut fluorescence.

2670' SHALE - medium gray to slightly brown-gray; firm to slightly hard; occasionally punky; moderate induration; small to medium, subangular to subrounded, tabular cuttings; slightly sparkling to waxy luster; very fine abrasive to smooth texture; becoming slightly diatomaceous in places; slightly improved fissility; predominantly silty; minor trace impure silty limestone; no oil or cut fluorescence.

2700' CLAY - medium to dark green-gray to slightly brown-gray; soft; thick, pasty consistency; moderate to poor solubility; very smooth texture; creamy; slightly silty; creamy; greasy; nonnodular; no oil or cut fluorescence.

2730' SHALE - medium green-gray to predominantly brown-gray; firm; moderate induration; common slightly punky cuttings; small to medium, subangular to subrounded, tabular cuttings; increasingly sparkling to slightly resinous luster; very gritty texture; increasingly diatomaceous; slight increase in apparent porosity; noncalcareous; increased silty limestone; no oil or cut fluorescence.

2780' SHALE - olive green to greenish brown; moderate induration (firm); crumbly; tabular with slightly rounded edges; dull slightly waxy luster; smooth to infrequently gritty texture; poor fissility; commonly flakes when broken; noncalcareous; no cut or sample fluorescence.

2790' SHALE - olive green, occasionally gray-brown; soft to firm, predominantly crumbly; infrequently slightly brittle; tabular, slightly rounded; dull to slightly waxy luster; grainy, slightly abrasive texture; infrequently slightly translucent along very thin edges; very poor fissility; commonly flakes; extremely slight very slow pinpoint effervescence from HCl; no sample or cut fluorescence.

2810' SHALE - olive gray, green-gray-brown; moderately indurated, increased firmness; crumbly to increasingly brittle, occasionally breaking with snap; tabular with slight increase in sharpness; still predominantly slightly rounded edges; dull to slightly waxy luster; silty, abrasive texture; improved bedding lineation with some flaky cleavage; poor fissility; slightly calcareous from pinpoint areas; more brownish cuttings slightly porcelaneous; no sample or cut fluorescence.

2835' SHALE - as above; some mottling and streaks of white; soft calcilutite, shale becoming increasingly gray-brown; scattered porcelaneous mudstone with extremely faint microlaminations; limestone is white, greenish gray; soft to firm; tabular to irregularly shaped cuttings; gritty grainy texture, almost sandy in lighter cuttings; dirty impure gradings to calcilutite; no cut fluorescence.

2850' SHALE - medium olive green, gray, green-brown; moderate to occasionally well indurated; crumbly to tough, occasionally slightly brittle; compact tabular cuttings; dull, very slight waxy luster; smooth to very finely abrasive texture with a slightly grainy appearance; dents and gouges fairly easily; scattered stair stepped cleavage; poor fissility; no apparent laminations; slightly to moderately calcareous from pinpoint areas; no effervescence in water.

2865' SHALE - olive green, drab green; moderate induration; crumbly; blocky to predominantly tabular with slightly rounded edges; dull to slightly waxy luster; very finely abrasive texture; increased fissility but still poor; slightly calcareous from pinpoint areas; minor scattered microfossils; silty in places; occasionally marbled with pale gray calcilutite; no sample or cut fluorescence.

2900' SHALE - medium gray to slightly brown-gray; slightly soft to firm; moderate to poor induration; small to medium, subangular to rounded, tabular to slightly platy cuttings; sparkling to waxy luster; very gritty texture; punky appearance; very diatomaceous; good, uneven flaky fissility; increase in apparent porosity; no oil or cut fluorescence.

2970 SHALE - greenish brown, gray-brown; moderate induration; tough to brittle; tabular, increasingly angular; dull to slightly resinous; predominantly waxy; faint red laminations in porcelaneous shale, silty in places; slightly calcareous; no sample or cut fluorescence.

3000' SHALE - olive brown-gray; moderate induration, occasionally well; tough to slightly brittle; tabular; dull waxy luster; smooth to very fine abrasive texture; poor fissility; scattered faint laminations; slightly calcareous; scattered white microfossils grading to porcelaneous mudstone; no cut fluorescence.

3030' SHALE - medium gray-brown; moderate to well indurated; tough; blocky to tabular, angular; dull waxy, occasionally resinous luster; grainy to smooth, increasing porcelaneous shale with translucent edges; scattered white microfossils in more detrital cuttings; scattered laminations; slightly calcareous; no cut fluorescence.

3060' SHALE - olive green, gray-brown; moderate induration; predominantly crumbly, occasionally tough; tabular; dull to slightly waxy luster; very finely abrasive to occasionally grainy texture; apparent slight increase in detrital material; slightly improved fissility with common flaky cleavage; scattered white microfossils; very slightly calcareous in places; no sample or cut fluorescence.

3090' SHALE - medium gray-brown; moderately indurated; crumbly to tough; tabular with generally sharp edges; dull to occasionally slightly resinous luster; finely abrasive to gritty texture; commonly silty to grainy appearance; good to fair flaky cleavage; poor fissility; slightly to moderately calcareous from pinpoint areas; occasionally translucent on thin edges.

3120' CLAY - dark gray-green; very soft; thin to slightly thick pasty consistency; excellent solubility; very gritty texture; nonnodular; very silty; no oil or cut fluorescence.

3150' SHALE - light to medium gray-brown; fine to increasingly hard; moderate to well indurated; small to medium, subangular to rounded, tabular to slightly blocky cuttings; slightly resinous to sparkling luster; very rough grainy texture; noncalcareous; very silty; low apparent porosity; minor trace light tan calcareous laminations; weak trace foram ghosts; slight trace phosphatic material; poor to moderately uneven fissility; no oil or cut fluorescence.

3180' CLAY - medium to dark olive green; soft; thin, slightly pasty consistency; good solubility; very gritty texture due to abundant shale fracture; very silty; slightly greasy; poor to moderate cohesion; nonnodular; no oil or cut fluorescence.

3210' SHALE - medium gray to gray-brown; firm; moderately indurated; occasionally soft, slightly punky, diatomaceous cuttings; small to medium, subrounded, tabular cuttings; increasing sparkling luster; very fine abrasive to gritty texture; increasingly micaceous; becoming increasingly calcareous; indistinct trace microfossil debris; infrequent tan calcareous laminations; poor to moderate uneven fragment; no oil or cut fluorescence.

3240' CLAY - medium to very dark olive green to gray-green; soft, slightly thin pasty consistency; very good solubility; very gritty texture; slightly creamy in places; occasionally sticky; nonnodular; silty; no oil or cut fluorescence.

3270' SHALE - medium brown to gray-brown; firm to slightly hard; moderate to well indurated; medium, subangular to subrounded, tabular cuttings; dull to sparkling luster; gritty to very grainy texture; micaceous; very silty; punky occasionally; minor trace thin, tan to cream calcareous laminations; no cut fluorescence.

3300' CLAY - dark olive brown; slightly stiff to predominantly soft; slightly thick pasty consistency; slight decrease in solubility; gritty to slightly smooth texture; slightly creamy; greasy; increasingly sticky; moderate to good cohesion; silty; no cut fluorescence.

3330' SHALE - medium to slightly dark brown and gray-brown; firm to slightly hard; moderate to moderately well indurated; slight increase in overall hardness; very small to medium, subangular to subrounded, tabular to slightly platy cuttings; sparkling to slightly residual luster; slightly smooth to grainy texture; micaceous; calcareous; slight trace porcelanite fragments; no cut fluorescence.

3360' SHALE - medium to increasingly dark brown to gray-brown; firm to slightly hard; moderately well indurated; very small to medium, subangular to subrounded tabular to platy cuttings; sparkling luster; grainy texture; micaceous; slightly porcelanite; predominantly very silty; minor trace soft, punky appearing fragments; no cut fluorescence.

3390' CLAY - dark green-brown to olive green; slightly soft to increasingly stiff; thick, pasty consistency; moderate to good solubility; gritty to abrasive texture; very silty; slightly sticky; greasy; nonnodular; slightly micromicaceous; trace dirty white silty limestone; no cut fluorescence.

3410' SHALE - medium gray-brown; fine to slightly hard; moderate to moderately well indurated; small to medium, subangular to subrounded, tabular to slightly platy cuttings; increasing sparkling luster; very fine abrasive texture; very micromicaceous; persistently calcareous; trace foram remnants; medium to occasionally good fissility; trace limestone; no cut fluorescence.

3430' CLAY - dark green-brown to olive green; slightly soft; thin to slightly thick consistency; good solubility; gritty texture; micaceous; nonnodular; trace limestone; silty; no cut fluorescence.

3480' SHALE - gray-brown; moderately indurated; crumbly, tabular cuttings with flaky cleavage; dull to sparkling luster; silty abrasive texture; poor fissility; slightly moderately calcareous; occasionally slightly translucent on thin edges of limestone; no sample or cut fluorescence.

3510' SHALE - gray-brown; moderately indurated; tough, slightly brittle; dull with slight sparkle to occasionally resinous luster; predominantly rough abrasive texture; gritty appearance; slightly calcareous with scattered microvugs; porcelaneous in part with commonly translucent edges and nondetrital appearance slightly improved fissility; minor limestone; no cut or sample fluorescence.

3540' SHALE - as above; slightly darker; sharp edges gritty abrasive; occasional pods of microfossil; no sample or cut fluorescence.

3570' SHALE - medium gray-brown, becoming browner; moderate induration; crumbly to tough, occasionally slightly brittle; tabular sharp edges; flat to infrequent resinous luster with sucrosic sparkle when dry; gritty abrasive texture; flaky cleavage; common microfossils; in white patches and layers; moderately calcareous; more brittle cuttings; occasionally exhibit translucent edges; occasionally very faint laminations.

3600' SHALE - as above improved fissility but still poor common microfossils; slight increase in porcelaneous claystone; trace very faint orange mineral fluorescence; no sample or cut fluorescence.

3630' SHALE - brown, gray-brown; moderately indurated; slightly moderately brittle; tabular, sharp edges; dull luster; very finely abrasive texture, occasionally gritty fair fissility; scattered microfossil; moderately slightly calcareous; no visible laminations.

3660' SHALE - gray-brown; moderately indurated; slightly brittle; tabular, occasionally platy; dull, slightly resinous luster; abrasive flaky appearance with common uneven cleavage; moderately calcareous; streaks and microfossil; limestone is tan; firm to hard dirty faint laminations; gritty; slightly resinous; no cut.

3690' SHALE - medium gray-brown, brown; moderately indurated; slightly brittle becoming more so; tabular and sharp dull, slightly resinous; very finely abrasive commonly faint microlaminations; slightly transparent on edges; poor fissility uneven cleavage; moderately calcareous; trace mineral Cl; no cut fluorescence.

3750' SHALE - dark to very dark brown and gray-brown; firm to very hard; well indurated; occasionally slightly punky appearing cuttings; small to occasionally large, subangular to subrounded, tabular to slightly blocky cuttings; slightly brittle; strong sparkling luster; rough grainy texture; slightly micaceous; becoming increasingly porcelaneous; occasional translucent edges; slightly splintery to hackly fracture; minor phosphatic inclusions; slightly silty limestone fragments; no cut fluorescence.

3780' PORCELANEOUS SHALE - dark tan to medium brown; very hard; well indurated; small to medium, subangular to angular, tabular to slightly blocky cuttings; slightly resinous to waxy luster; smooth to grainy texture; slight increase in thin microlaminations; slight to pinpoint irregular-like pores formed from dissolution of foram rock.

3810' PORCELANITE - light tan, bone white and cream-brown; very hard; very brittle; very small to medium sharp, angular to subangular, shard-like cuttings; pearly to resinous luster; smooth to slightly grainy texture; common subconchoidal to splintery fracture; no cut fluorescence.

3840' SHALE - tan to brown; very hard; well indurated; small to medium, angular, tabular to blocky cuttings; waxy to sparkling luster; grainy texture; minor pinpoint vugs due to foram dissolution; weak trace laminations; commonly grades to porcelanite; no cut fluorescence.

3870' PORCELANITE - tan, cream, and bone white; very hard; very brittle; small to medium, sharp, angular, slightly blocky shard; slightly pearly luster; smooth to slightly grainy texture; abundant white, slightly calcareous laminations; minor phosphatic staining; no cut fluorescence.

3890' SHALE - medium brown and gray-brown; hard to very hard; well indurated; slightly brittle; small to predominantly medium, subangular, slightly blocky cuttings; slightly sparkling to resinous luster; gritty to grainy texture; predominantly very porcelaneous; trace white calcareous laminations and inclusions; poor, uneven fissility; low apparent porosity; minor trace hairline microfractures; no cut fluorescence.

3910' SHALE - dark brown; well indurated; brittle, crunchy, sharp blocky cuttings; resinous luster; commonly translucent on edges; generally rough uneven texture but not grainy or gritty-hackly fracture; commonly faint grayish microlamination; give an overall translucent appearance to many cuttings; calcareous in places with occasional brown streaks; darker cuttings are more detrital; no sample or cut fluorescence.

3930' PORCELANEOUS SHALE - as above; light to medium gray-brown cuttings; hard; brittle, blocky angular cuttings; resinous luster when wet, matte when dry; smooth cryptocrystalline texture; translucent quartz; microlaminated; slightly calcareous; no sample fluorescence or cut.

LIMESTONE - tan, cream, light gray-brown; hard; block; subresinous; very slightly sucrosic; appears very much like porcelanite but tough and effervescing rapidly and continuously; moderately bright yellow mineral fluorescence; no oil stain; no cut.

3945' PORCELANITE - light gray-brown, tan; firm to hard; can be gouged; brittle, sharp tabular cuttings; resinous luster when wet, slightly resinous to matte when dry; smooth microcrystalline texture although fractures to hackly cuttings; commonly translucent quartz; microlaminated; slightly calcareous in places; grades to porcelaneous shale with slight grainy texture; no sample or cut fluorescence.

3960' SHALE - very dark brown, chocolate brown; hard; tough to moderately brittle; dull earthy to subresinous luster; grainy texture; more brittle siliceous cuttings are hackly and grade to porcelaneous shale; detrital cuttings contain scattered white microfossil.

3975' LIMESTONE - tan, cream; hard; sharp tabular microsucrosic; with slightly resinous luster; greenish-yellow mineral fluorescence; no cut fluorescence; sample has become more clayey, less sharp to the touch, more earthy; porosity increase as seen in cuttings gas.

3975' SHALE - very dark brown, chocolate brown; firm-hard; tough to moderately brittle; tabular, angular, dull to subresinous luster; abrasive grainy texture; distinct increase in detrital content; scattered flaky cleavage; still slightly siliceous; no sample fluorescence or cut.

4005' SHALE - dark chocolate brown; firm to hard; tough to moderately brittle; blocky, tabular; dull to satin luster; becoming more earthy; grainy texture; increase clay content; poor fissility; occasionally flaky cleavage; very slightly calcareous; occasionally cuttings with very faint microlaminations; no sample or cut fluorescence.

4020' SHALE - dark chocolate brown, reddish-brown; firm to hard; crumbly to slightly brittle; tabular; predominantly sharp increase slightly rounded edges; dull luster becoming more earthy; grainy to gritty texture; poor fissility; some flaky cleavage; occasionally faint microlaminations; no visible bugs; very slightly calcareous from pinpoint areas; persistent porcelaneous shale; slough or intermittent interbeds; no sample or cut fluorescence.

4035' SHALE - very dark brown; moderately indurated; slightly brittle; tabular; earthy; grainy; fair fissility; flaky cleavage; occasional claystone; no sample or cut fluorescence.

4050' SHALE - dark brown; firm to hard; tough brittle; tabular; earthy; gritty; grainy; poor fissility; stair stepped to flaky cleavage; grades to claystone; non to slightly calcareous; persistent porcelanite shale; medium brown resinous brittle; no sample or cut fluorescence.

4080' SHALE - medium gray-brown to brown; moderately indurated; hard; brittle; sharp tabular cuttings; resinous luster; smooth to slightly grainy texture; commonly translucent edges; microlaminated; commonly white microfossil ghosts; porcelaneous traces dark brown sucrosic dolostone/limestone; no sample or cut fluorescence.

4110' PORCELANITE SHALE - medium gray-brown, light reddish-brown; firm to hard; brittle; blocky, tabular, angular; resinous; slightly grainy; translucent edges; microlaminated; common styololitic fractures; some dolostone fracture filling.

4130' PORCELANITE - tan, pale gray-brown, light brown; hard; brittle; tabular, sharp, angular; resinous to matte; translucent edges; smooth texture although hackly fracture; common microlaminations; no sample or cut fluorescence.

4155' PORCELANITE - light gray-brown, tan, caramel brown; hard; brittle; tabular, sharp, cherty; resinous luster; smooth texture; hackly fracture with occasionally thin film white dolomite limestone; slightly mottled to microlaminated; occasionally stretching structures visible in laminations; no sample or cut fluorescence.

4170' SHALE - medium brown to gray-brown; very hard; well indurated; small to medium, subangular, blocky to tabular cuttings; strong sparkling luster; gritty to abrasive texture; calcareous; common thin, white laminations; commonly grades to porcelaneous shale; no oil or cut fluorescence.

4200' SHALE - medium to dark brown and gray-brown; very hard; well indurated; brittle; medium, angular to subangular, tabular to blocky cuttings; weak sparkling luster; grainy to abrasive texture; siliceous; commonly grades to porcelaneous shale; infrequently laminated; occasionally sharp contact with porcelanite; common limestone streaks; no oil or cut fluorescence.

4230' PORCELANITE - tan, cream, and medium brown; very hard; very brittle; sharp, angular, slightly blocky to tabular shards; slightly sparkling to resinous luster; smooth to occasional sucrosic texture; commonly laminated; minor distorted foram ghosts; occasionally tan healed hairline microfracture; abundant limestone; splintery to subconchoidal fracture; trace yellow mineral fluorescence attributed to limestone; no oil or cut fluorescence.

4260' LIMESTONE - tan, light brown-yellow, cream and bone white; very hard; small to occasionally large, angular to subangular, blocky cuttings; slightly pearly to strong sparkling luster; very sucrosic texture; cryptocrystalline; occasional cherty lamination; minor microfractures; impure and silty in places; bright to moderately bright yellow mineral fluorescence; no oil or cut fluorescence.

4290' PORCELANEOUS SHALE - tan to medium brown; hard to very hard; becoming slightly crunchy; well indurated; slightly brittle; commonly grades to porcelanite; infrequent grades to slightly argillaceous chert; minor trace disseminated pyrite; poor fissility; porcelanite exhibits light gray and white-tan band; microfractures occasionally contain secondary siliceous mineralization; siliceous overgrowths; occasionally observed on exposed fracture surface; no oil or cut fluorescence.

4320' SHALE - medium to very dark brown and chestnut brown; firm to hard; moderate to well indurated; very crunchy; marked decrease in porcelanite; slight improvement in fissility; very grainy texture; minor lamination; very weakly calcareous in places; generally slightly porcelaneous; slightly micaceous; occasional cuttings have a phyllitic luster; general splintery fracture; minor trace tan healed microfractures; no oil or cut fluorescence.

4350' SHALE - medium to very dark brown; firm to slightly hard; moderate to well indurated; crunchy; slightly brittle; small to medium subangular, tabular to slightly blocky cuttings; slightly sparkling luster; very rough grainy texture; slightly silty; decrease porcelaneous; weakly calcareous in places; predominantly silty; minor light tan and dark brown lamination; minor streaks bone white microcrystalline limestone; no oil or cut fluorescence.

4370' CLAY - medium to dark brown and slightly greenish-brown; soft; thick, pasty consistency; moderate to good solubility; very silty; slightly sticky; very gritty texture; no oil or cut fluorescence.

4395' SHALE - medium dark chestnut brown; firm to hard; tough to brittle; tabular to occasionally blocky; earthy to slightly satin luster; grainy to silty appearance; poor fissility scattered cuttings exhibit microlaminations; commonly mottled appearance; lighter cuttings commonly grade to mudstone; slightly calcareous in places; scattered drab green siltstone with smectite matrix; no sample or cut fluorescence.

4410' SHALE - as above; medium dark brown grading to light brown claystone; blocky tabular; abrasive; dull earthy luster; gritty silty luster; non to very slightly calcareous with occasional visible microfossil; poor fissility; occasionally faint microlaminations; noncalcareous; trace scattered dark brown tarry oil stain; fast streaming light yellow cut fluorescence; faint yellow residual straw visible.

4410' LIMESTONE - cream, tan; very hard; blocky, angular; slightly resinous to sucrosic luster; smooth to sucrosic texture; microcrystalline; dolomitic in part; no visible oil straw.

4425' SHALE - dark gray-brown to medium reddish-brown; moderately indurated; crumbly to brittle; tabular to blocky earthy to subresinous luster; grainy slightly abrasive texture; commonly tan to white microlaminations more distinct when dry; chestnut brown cuttings porcelaneous in part; predominantly high detrital occasionally grades to and interbedded with moderately expansive claystone; scattered dull greenish-gray clay/siltstone; no sample fluorescence.

4440' SHALE - medium chestnut brown; firm to hard; crumbly to very tough; tabular to blocky; dull earthy to satin luster; grainy texture; fair to good bedding lineation; poor fissility; small stair stepped cleavage; very slightly calcareous in places; rare visible microfossil; minor microlaminations.

4470' SHALE - dark gray-brown, chestnut brown; firm to slightly hard; tough to crumbly tabular occasionally slightly rounded; dull earthy luster; grainy texture; occasionally poor fissility in firmer cuttings; increase apparent clay component; more soluble; predominantly noncalcareous; no sample or cut fluorescence; very weak yellow residual cut fluorescence.

4500' SHALE - medium to dark brown, bray-brown; firm to slightly hard; crumbly to brittle; tabular increasingly rounded; dull earthy to slightly satin luster; grainy slightly gritty; poor fissility, more brittle cuttings flaky; non to very slightly calcareous; occasional tan calcareous laminations; silty in places; no sample or cut fluorescence.

4530' SHALE - dark gray-brown, chestnut brown; soft to slightly hard; tabular; rich earthy luster with slight sparkle when dry; clayey; grainy texture; poor fissility; infrequent microlaminations; grades to claystone; diatomaceous appearance but density is higher; no sample or cut fluorescence; trace green-yellow residual cut fluorescence.

4540' SHALE - as above; trace blocky, silty cuttings with white phosphatic blotches or stains possible vug filling.

4540' CLAYSTONE - medium brown; soft to firm; crumbly; blocky to rounded cuttings; dull earthy luster; moderately expansive; now malleable; noncalcareous; silty; no cut fluorescence.

4550' SHALE/MUDSTONE - medium to very dark brown; soft; slightly hard; crumbly; tabular to blocky with rounded edge; earthy; grainy occasionally silty appearance; trace cleavage; no laminations; non calcareous.

4560' SHALE - black-brown; firm to hard; crumbly; tough; punky; clayey; massive; no laminations; some fissility.

4570' SHALE/MUDSTONE - as above; slightly firmer; dark brown microsucrosic lamination; tabular; blocky; subresinous oil stain.

4640' CLAY - dark, rich brown; soft to becoming slightly stiff; very thick pasty consistency; moderate to good solubility; gritty texture; slightly sticky; very silty; nonnodular; pale yellow on background sample fluorescence; slow, diffuse yellow-green cut fluorescence following repeated cuts; pale yellow residual cut fluorescence.

4650' SHALE - rich dark brown to gray-brown; firm to slightly hard; moderate to well indurated; slightly brittle; predominantly very crunchy; has slight diatomaceous surface appearance; strong sparkling luster; abrasive to gritty texture; poor apparent porosity; moderate, uneven fissility; very micromicaceous; silty; common limey dolostone fragments; oil as above.

4660' DOLOSTONE - caramel brown; very hard; brittle; sharp, angular, blocky cuttings; strong sparkling luster; highly sucrosic texture; slightly hackly fracture; minor white to cream calcareous inclusions which may be foram remnants; very limey; dense; oil as above.

4670' SHALE - dark chocolate brown to caramel brown; firm to hard; increasingly occasion of softer, punky, crunchy cuttings with diatomaceous surface appearance; small to medium, subangular to subrounded, tabular cuttings; strong sparkling to slightly resinous luster; very gritty to grainy texture; very micaceous; very silty; moderately uneven fissility; softer cuttings exhibit slight increase apparent porosity; oil as above.

4680' CLAY - dark brown to slightly greenish-brown; soft; thick, pasty consistency; moderate to good solubility; slightly punky, weak diatomaceous feel; sticky; nonnodular; very silty; oil as above.

4690' SHALE - medium chestnut brown; slightly firm to increasingly hard; generally well indurated; persistent chunky fragments; small to medium, subangular to rounded, tabular cuttings; sparkling to resinous luster; very grainy to finely abrasive texture; very micaceous; slightly porcelaneous in places; weak trace very fine laminations; slightly pitted surface apparently; oil as above.

4700' DOLOSTONE - tan to medium brown; very hard; brittle; medium, subangular, slightly blocky cuttings; slightly pearly to predominantly sparkling luster; slightly smooth to sucrosic texture; limey; weakly hackly fracture; minor white, strongly calcareous inclusions; minor trace hairline microfractions; oil as above.

4710' SHALE - medium brown to increasingly dark brown to black-brown; becoming increasingly hard and brittle; well indurated; medium to occasionally large, subangular to subrounded, tabular cuttings; sparkling luster; abrasive to gritty texture; micaceous; very weakly dolostone to predominantly silty; moderate, uneven fissility; poor apparent porosity; very pale yellow to orange background sample fluorescence; slow, diffuse green to yellow-green cut fluorescence following repeated cuts.

4720' LIMESTONE - tan, cream and bone white; very hard; sharp, angular to subangular, brittle cuttings; slightly waxy to pearly luster; sparkling to sucrosic luster; dolomitic, slightly hackly fracture; minor hairline microfractures; microcrystalline; predominantly pure to occasionally silty; very weak yellow mineral fluorescence; oil fluorescence as above.

4730' SHALE - very dark brown to black-brown; slightly firm to predominantly hard to very hard; well indurated; very small to medium, subangular to subrounded, tabular to slightly tabular cuttings; sparkling to resinous luster; very fine abrasive texture; micaceous; poor to moderate apparent porosity; siliceous to slightly calcareous; common limestone fragments; oil as above.

4740' LIMESTONE - tan, cream and predominantly bone white; very hard; dense; microcrystalline; trace microfractures and very thin laminations; slightly hackly fracture; occasional pyritized foram remnants; weak yellow mineral fluorescence; oil as above.

4750' CLAY - dark brown to greenish-brown; very thin, slightly pasty to liquid consistency; good solubility; very gritty texture; minor soft, malleable nodules; very silty; slightly punky at times; shale exhibits oil indicators similar to previous sample; no oil sheen or live oil pops.

4760' SHALE - dark brown to black-brown to dark tan; slightly firm to predominantly hard; well indurated; sparkling luster; gritty to abrasive texture; micaceous; trace pyritized forams; weak trace laminations; becoming increasingly limey; oil as above.

4770' CLAY - dark brown; very soft; very thin liquid consistency; very good solubility; gritty texture; poor cohesion; very silty; nonnodular; shale exhibits oil indicator as above.

4780' SHALE - medium to dark brown and dark tan; hard; slightly crunchy; brittle; small to medium, subangular to subrounded, tabular to slightly blocky cuttings; sparkling luster; very gritty texture; becoming increasingly limey to slightly dolomitic; weak trace pyritized forams; poor fissility; harder cuttings exhibit very fine laminations; oil as above.

4790 LIMESTONE - white, tan, and bone white; very hard; slightly brittle; small to medium, sharp, angular cuttings; slightly pearly to resinous luster; slightly smooth to sucrosic texture; microcrystalline; slightly dolomitic; occasionally silty streaks; minor pyritized foram inclusion; increasing pale yellow mineral fluorescence; oil as above.

4800' SHALE - becoming predominantly dark tan to light chestnut brown; very limey; readily reacts to HCl; minor pyritized forams; very gritty; crunchy; increasing occurrence of very fine laminations; oil as above.

4810' SHALE - dark tan to chestnut brown; hard; well indurated; slightly crunchy; poor apparent porosity; common laminations; abundant very fine limestone fragments; strong spotty bright yellow-green mineral fluorescence.

4820' SHALE - medium to dark brown, very dark gray-brown; hard; tough to brittle; hackly sharp-edged tabular cuttings; dark gray cuttings are distinctly detrital with earthy luster and grainy texture; medium brown cuttings are limey to dolomitic with rough mottled appearance; many cuttings are phosphatic with scattered visible remains; scattered faint yellow-brown mineral fluorescence; rare trace extremely slow pale greenish-yellow cut fluorescence; no visible cut; pale green residual cut commonly green and brown smectite.

4830' SMECTITE - bright yellow-green, olive green, dark burnt orange; firm; waxy luster and texture; flakes like old wax when broken; translucent where thin; moderately to extremely bright yellow; occasionally orange mineral fluorescence; very poor porosity; no cut.

4830' SHALE - light to very dark chestnut brown; very dark gray-brown; hard; tough to brittle; sharp, hackly, tabular to blocky cuttings; darker cuttings are predominantly more detrital/silty whereas lighter cuttings are dolomitic; common faint microlaminations.

4840' LIMESTONE - pale yellow-brown, tan, occasionally dark brown; hard; blocky to tabular; resinous to sparkling luster; more pure cuttings are microsucrosic and crystalline; commonly grades to limey shale; dolomitic in part; pale yellow mineral fluorescence; very weak diffuse greenish-yellow cut fluorescence from bulk; no visible cut; no oil stain; some pipe dope after wiper run.

4860' SHALE - medium to dark brown, chestnut brown and dark gray-brown; firm to hard; blocky to tabular, hackly; dark cuttings are softer with earthy luster and grainy texture; light brown and chestnut cuttings are hackly and slightly dolomitic; trace white microfossils in darker cuttings along with minor fissility; scattered fine yellow mineral fluorescence; no initial cut fluorescence; extremely slow diffuse; very pale greenish-yellow cut fluorescence dark shale; no cut from limestone.

4870' SHALE - increased dark brown; firm to hard; crumbly to tough; blocky to tabular; increase earthy luster and grainy texture; very dark cuttings commonly grade to mudstone; minor poor fissility; some subparallel cleavage; no sample fluorescence; extremely slow and weak very pale diffuse greenish-yellow cut fluorescence; no visible cut; very pale green-yellow residual.

4880' SHALE - very dark brown; firm to very hard; blocky to tabular with predominantly sharp edges; becoming more earthy in appearance; dull to slightly satin luster; grainy to silty texture; occasional microlaminations in shard brittle shales; trace white microfossil inclusion in more earthy cuttings; calcareous in places; still common dolomitic shale scattered smectite; no sample fluorescence; very weak cut as above.

4890' LIMESTONE - pale yellow-brown, pale green-gray; hard; block to tabular; resinous to sparkling; microsucrosic; occasional mottling; no laminations or banding; less dolomitic than above; fine and yellow mineral fluorescence; no cut fluorescence; no residual.

4900' SHALE - light brown, chestnut brown; firm to hard; tough to brittle; sharp tabular cuttings; dull earthy to dull satin luster; rough abrasive texture; light cuttings are limey to dolomitic; minor bands and streaks; extremely weak residual.

4910' DOLOSTONE/DOLOSHALE - overall shale becoming more detrital and earthy; light to dark brown; firm to hard; earthy to flat luster; grainy to abrasive; increase clay content; trace pale gray siltstone and some green pyritic siltstone.

4920' SHALE - medium brown; firm to hard; crumbly, tough; tabular with increasing round earthy grainy and very finely abrasive; increase clay grading to mudstone; no apparent laminations.

4930' SHALE - very dark chestnut brown; hard; tough to slightly brittle; block, angular; dull satin luster to earthy nonfissile trace planar cleavage; siliceous to very slightly dolomitic; nonlaminated; very weak greenish cut fluorescence.

4940' SHALE - as above; very dark brown; more earthy and grainy; slightly phosphatic.

4940' LIMESTONE - light brown, tan; hard; blocky; slightly resinous; increasingly mottled and impure grading to limey shale; very finely abrasive to microsucrosic; minor shaly cleavage to stair stepped fracture; pale yellow mineral fluorescence; no cut.

4950' SHALE - very dark brown; firm to slightly hard; crumbly to tough; blocky to tabular with common rounded edges; dull earthy luster; grainy silty appearance; light cuttings grade to medium brown mudstone; non to very poorly fissile; noncalcareous; no laminations; no sample fluorescence or cut.

4960' CLAY - dark brown; thin liquid consistency; very good solubility; very gritty texture; very silty; minor trace gray nodules; slightly calcareous in places; no oil or cut fluorescence.

4970' LIMESTONE - dark tan, gray-tan, and bone white; very hard; medium, angular to subangular, slightly blocky cuttings; slightly pearly luster; slightly sucrosic to abrasive texture; microcrystalline; slightly silty in places; hackly fracture; pale yellow mineral fluorescence; no oil or cut fluorescence.

4980' SHALE - dark brown to gray-brown; hard to very hard; well indurated; medium to increasingly large, subangular to subrounded, tabular to slightly blocky cuttings; sparkling luster; gritty to abrasive texture; very silty; slightly calcareous; micaceous; trace smectite, trace pyrite; very pale yellow; yellow background sample fluorescence; very slow, diffuse, pale green cut fluorescence following repeated cut attempts.

4990' LIMESTONE - tan; gray-tan, bone white; very hard; microcrystalline; sharp, angular to subangular cuttings; pearly luster; sucrosic texture; minor silty laminations; weak trace vuggy porosity; predominantly very dense; trace hairline microfractures; oil as above.

5000' SHALE - dark gray-brown to dark brown; slightly firm to predominantly hard; well indurated; predominantly siliceous; poor fissility; low apparent porosity; weak trace pyrite fragments; minor calcareous inclusions; oil as above.

5010' LIMESTONE - cream, light yellow-brown; hard to very hard; brittle; sharp, angular shards; slightly pearly to waxy luster; slightly smooth to predominantly sucrosic texture; trace microfractions; microcrystalline; pale, spotty fluorescence mineral fluorescence; oil as above.

5020' SHALE - medium to dark gray-brown to brown; firm to hard; marked decrease in hardness; moderate to well indurated; very small to medium, subangular to subrounded, tabular cuttings; resinous to sparkling luster; very grainy texture; slightly crunchy; nodular, uneven fissile; low apparent porosity; minor calcareous inclusions; possibly foram debris; persistent trace pyrite; oil as above.

5030' CLAY - dark brown; slightly stiff to soft; thick pasty consistency; moderate to good solubility; very gritty texture; slightly punky and greasy; very silty; minor small malleable nodules; slightly sticky; no oil sheen or pops; shale exhibits very weak pale yellow-gold fluorescence and slow diffuse green to green-yellow cut fluorescence following repeated cut attempts.

5040' SHALE - dark brown; very hard; well indurated; small to medium, subangular to subrounded cuttings; sparkling luster; gritty texture; trace lamination; very siliceous; minor calcareous inclusions; trace pyrite; oil as above.

5060' CLAY - very dark brown to gray-brown; soft to slightly stiff; increasingly thick, pasty consistency; moderate to good solubility; very gritty texture; slightly sticky; very silty; occasionally slightly punky; minor increase very small, soft, slightly malleable nodules; shale cuttings exhibit pale yellow background sample fluorescence.

5070' LIMESTONE - white bone to white and cream; very hard; very small to medium, sharp, angular shards; slightly pearly to resinous luster; predominantly sucrosic texture; slightly silty interlamination; minor trace vugs; generally very dense; weak trace pale yellow background sample fluorescence; very slow diffuse, pale green to yellow-green cut fluorescence following repeated cut attempts.

5080' SHALE - dark to very dark brown and chestnut brown; slightly firm to hard; moderate to well indurated; small to medium, subangular to subrounded, tabular cuttings; sparkling luster; gritty to abrasive texture; slightly calcareous in places; occasionally crunchy; weak trace pale tan laminations; abundant limestone shards; oil as above.

5090' CLAY - dark brown to gray-brown; soft to slightly stiff; slightly thick, pasty consistency; moderate to good solubility; slightly sticky; silty; gritty texture; weak trace nodules; persistent limestone fragments; shale exhibits oil as above.

5100' SHALE - dark to very dark brown and black-brown; hard to very hard; well indurated; small to medium, subangular to subrounded, tabular cuttings; sparkling to resinous luster; fine abrasive texture; micromicaceous; more siliceous; slightly hackly fracture; weak trace calcareous inclusions; very pale powdery yellow background fluorescence; slow, diffuse pale green to green-yellow cut fluorescence following repeated cut attempts.

5110' CLAY - very dark brown to gray-brown; increasingly stiff; thick, pasty consistency; moderate solubility; very silty; slightly sticky; gritty texture; slightly nodular; increased cohesion; shale exhibits oil as above.

5120' SHALE - medium gray-brown; firm to slightly hard; very silty; medium to well indurated; noncalcareous; medium to large, platy, tabular fragments with poor lamination; fissile in part; prominent white to beige foram ghosts, some recrystallized; very homogeneous; very weak yellow-green background sample fluorescence; very poor to weak, slow spotty yellow cut fluorescence; no streamers; lacking petroleum odor or staining.

5130' SHALE - medium gray to gray-brown; firm to very hard; slightly platy, flat tabular cuttings; gritty in part; sucrosic texture; slightly calcareous; reduced occurrence of foram ghosts; recrystallized to some extent; weakly laminated; no sample fluorescence; very weak extremely spotty pale yellow background fluorescence; no petroleum odor.

5140' SHALE - dark gray-brown; slightly firm to hard; overall moderately well indurated; cuttings are dominantly medium sized blocky tabs, some exhibit irregular subparallel bedding, with occasional calcareous rich layers; slightly gritty to smooth texture; dull earthy luster; micaceous; trace pyrite in dolostone; pale yellow background sample fluorescence.

5150' DOLOSTONE - tan, buff; hard; well indurated; sharp hackly fracture; commonly has light to dark microlaminations; grainy to microcrystalline texture; resinous to subvitreous luster; scattered mica and dark heavy inclusion; strong trace pyrite nodules on surface; trace yellow mineral fluorescence from clay; persistent pale yellow sample fluorescence; slightly brighter cut fluorescence.

5160' SHALE - very rich, dark brown to chocolate brown; firm to hard; moderate to well indurated; very small to medium, subangular to rounded, slightly platy to tabular cuttings; slightly waxy to sparkling luster; occasionally dull; very gritty to grainy texture; softer fragments exhibit a slightly punky appearance; indistinct foram ghosts; moderate, uneven fissility; low apparent porosity; slightly calcareous in places; generally homogeneous; very pale yellow background sample fluorescence; slow, diffuse, pale green to green-yellow cut fluorescence following repeated cut attempts; very weak indistinct yellow residual cut fluorescence; no live oil pops or oil sheen.

5170' LIMESTONE - gray-tan, cream bone white; very hard; sharp, subangular, brittle, tabular and blocky cuttings; slightly waxy to sparkling luster; grainy to slightly sucrosic texture; commonly light gray silty; microcrystalline; lense; weak trace microfractures; occasionally silty laminations; slightly dolomitic; oil as above.

5180' SHALE - medium gray-brown to dark brown; firm to increasingly hard; moderate to well indurated; small to medium, slightly larger, subangular to subrounded, tabular cuttings; sparkling luster; very gritty to grainy texture; very silty; occasionally light tan slightly dolomitic fragments; very micaceous; poor fissility; infrequent calcareous inclusions; dense; poor apparent porosity; persistent limestone fragments; very pale yellow sample fluorescence; weak to indistinct pale green cut fluorescence following repeated cut attempts.

5190' CLAY - very dark brown; predominantly very soft; thin to decreasingly thick, slightly pasty to liquid consistency; very good solubility; very gritty texture; sticky in places; extremely silty; infrequently small, soft, malleable nodules; shale exhibits poor quality of oil indicators as above.

5200' LIMESTONE - dirty white, tan, and bone white; commonly gray streaks; very hard; brittle; sharp, angular to subangular cuttings; slightly pearly to resinous luster; fine abrasive to occasionally grainy texture; minor hackly fracture; predominantly microcrystalline; occasionally silty streaks; trace laminations; slightly dolomitic; lacking distinct mineral fluorescence; moderate HCl reaction; oil as above.

5210' SHALE - medium brown, dark chestnut brown and less frequently very dark brown; slightly firm to hard; moderately to well indurated; very small to medium subangular to subrounded cuttings; slightly sparkling to dull luster; gritty to abrasive texture; micaceous; weak trace foram ghosts; poor fissility; common limestone fragments; minor hackly fracture; very pale yellow background sample fluorescence; very weak, indistinct diffuse yellow to yellow-green cut fluorescence following repeated cut attempts; very weak pale yellow residual cut fluorescence.

5220' LIMESTONE - medium gray to bone white; very hard; sharp, angular, brittle, blocky cuttings; slightly sparkling; sucrosic to very rough abrasive texture; slightly silty in places; predominantly microcrystalline; common hackly fracture; occasionally soft marl fragments; indistinct pale yellow background sample fluorescence; slight improvement in pale green cut fluorescence.

5230' SHALE - medium gray-brown and chestnut brown; firm to hard; moderate to well indurated; very small to medium, subangular, slightly platy to tabular cuttings; sparkling luster; occasionally dull; abrasive to gritty texture; softer cuttings have slightly diatomaceous appearance; trace cuttings with abundant foram debris; poor to moderate fissility; very micaceous; persistent limestone streaks; very pale yellow sample fluorescence; slow, diffuse pale green to green-yellow cut fluorescence following repeated cut attempts.

5240' SHALE - medium to slightly chestnut brown; firm to slightly hard; moderately indurated; commonly slightly soft to firm; slightly punky cuttings; occasionally grades to firm mudstone; sparkling luster; abrasive texture; micaceous; minor trace pyrite; poor fissility; very pale yellow background sample fluorescence; intensity of sample fluorescence slightly more pronounced; very weak diffuse pale green-yellow cut fluorescence.

5250' SHALE - dark brown; dominantly soft; very firm in places; poor to moderate induration; shows platy fissility when broken; more firm cuttings have light to dark microlayers; smooth to gritty texture; dull earthy luster sparkling with tiny mica inclusions; noncalcareous; limestone is dolomitic with trace pyrite nodules; strong trace yellow clay mineral fluorescence; very weak pale yellow background sample and cut fluorescence.

5260' CLAY - dark brown; thick, moderately pasty, weakly stiff consistency; slightly sticky, abrasive texture due to high, sharp, firm shale content; easily soluble; noncalcareous; trace small, slightly firm, malleable nodules with poor solubility; trace insoluble white marly clay; trace glauconitic claystone; well indurated shale contains scattered medium size impure calcite inclusions; weak pale yellow background sample and cut fluorescence.

5270' SHALE - dark to medium gray, trace gray-green; hard to slightly soft; induration ranges from moderately well to poor; exhibits irregular incipient to well defined platy fissility; slightly grainy to smooth texture; resinous to dull earthy luster; trace calcite inclusions weathered to calcareous rich clay; micaceous; slight increase in very small dolomitic limestone from last sample; trace forams; weak yellow organic sample fluorescence.

5280' DOLOSTONE/LIMESTONE - light to medium brown; very hard; well indurated; sharp uneven fracturing, weakly laminated in places; rough, nonuniform texture; resinous luster; occasionally lighter, more pure layers; trace mica and small dark inclusions; trace free weakly calcareous kaolinite nodules; persistent weak yellow background sample cut fluorescence.

5290' SHALE - rich dark brown to medium brown; overall firm, darker cuttings less firm; moderate induration; dominantly rough, incipient bedding with frequent sharp fragments showing regular planar fissility; smooth to gritty texture; dull earthy luster is prominent; less frequently resinous; scattered mica inclusions; trace calcite; kaolinite still limited to trace amounts; decrease pale yellow sample fluorescence.

5300' CLAY - dark brown; less thick pasty consistency; weakly gummy, more abrasive texture resulting from slight increase in hard limestone content; moderately good solubility; very slightly calcareous; limestone grades from very argillaceous to dolomitic with occasional pyrite inclusions; oil shows limited to pale yellow sample fluorescence from original rich shale.

5310' SHALE - dark to medium brown; very firm to soft; overall fair induration, occasionally poor; dominantly blocky tabular cuttings with sharp edges; irregular layering; frequent phosphatic material; occasionally weathered calcareous inclusions; trace kaolinite; decrease spotty pale yellow sample fluorescence.

5320' LIMESTONE - white, buff, light to medium brown; few cuttings are much more pure; hard to firm; well indurated; slightly more fractured appearance than previous samples; more impure fragments have irregular microlaminations of more pure limestone; rough texture with pyrite and mica inclusions; overall resinous; sparkling in places.

5330' CLAY - dark olive brown; less thick, slightly runny consistency; weakly sticky, abrasive texture; very few soft, easily malleable, poorly soluble nodules; very slightly calcareous; expands poorly when hydrated; phosphatic material abundant on well indurated shale; pale yellow sample fluorescence.

5340' LIMESTONE - cream to bone white; very hard; very small to medium, sharp, angular; slightly pearly to waxy luster; occasionally sparkling; sucrosic to slightly grainy texture; microfissile; pure; infrequent cuttings exhibit silty laminations; occasionally shiny pyritized foram remnants; shale fraction is very gritty and coarse silty in appearance; weak trace blocky pyrite fragments; very weak pale yellow background sample fluorescence; very slow diffuse pale green to green-yellow cut fluorescence following repeated cut attempts.

5350' SHALE - medium to very dark brown and gray-brown; hard to slightly firm; moderate to well indurated; very small to medium, subangular to subrounded; slightly platy to tabular cuttings; dull to slightly sparkling luster; fine abrasive to gritty texture; micaceous; slightly hackly fracture; minor trace foram inclusions; trace free pyrite; oil as above.

5360' CLAY - very dark brown to gray-brown; soft to slightly stiff; very thick pasty consistency; moderate to good solubility; gritty texture; very silty; minor trace nodules; shale exhibits very pale yellow sample fluorescence.

5370' SANDSTONE - white to light gray; extremely fine to gritty; angularity and sphericity not determinable; moderate to well sorted; moderately apparent porosity; very silty; slightly micaceous; trace calcareous cement; friable; predominantly quartz; common limestone fragments; infrequent limestone contain trace dark brown slightly sticky oil; slickensides observed as minor isolated shale fragments; scattered pale yellow sample fluorescence; weak diffuse pale green-yellow cut fluorescence generally observed following separated cut attempts.

5380' SHALE - very rich dark brown; slightly firm to hard; moderate to well indurated; small to medium, subangular to subrounded, tabular cuttings; slightly dull to sparkling luster; abrasive texture; occasionally punky fragments; commonly exhibits coarse silty surface appearance; minor foram inclusions; persistent trace pyrite; limestone continues to have isolated cuttings with minor dark brown oil stains; dull yellow sample fluorescence; weak, diffuse, pale green to green-yellow cut fluorescence following repeated cut attempts.

5390' SHALE - very dark brown; firm to hard; moderate to well indurated; slightly punky in places; trace slickensides; minor pyritized microfossils; very fine grain sandstone does not exceed 5% in amount; persistent sharp angular limestone fragments; lacking distinct visible oil staining; pale yellow sample fluorescence; weak yellow-green cut fluorescence following repeated cuts.

5400' SANDSTONE - light gray to white; extremely fine to very fine to gritty; moderately sorted; silty; soft, friable cuttings; predominantly quartz; sugary appearance; minor biotite; trace pyrite; common small or foram tests; lacking discernible oil stains; very pale yellow sample fluorescence; weak, diffuse pale green to green-yellow cut fluorescence following repeated cuts.

5410' LIMESTONE - bone white to cream; very hard; very small, sharp, angular, brittle subrounded; slightly pearly luster; slightly smooth to sucrosic texture; weak trace laminations; minor vugs; slight splintery fracture; persistent trace slight arenaceous appearing foram tests; very pale yellow sample fluorescence; slow, diffuse weak green-yellow cut fluorescence.

5420' SHALE - very dark brown; firm to hard; persistent slightly soft; punky to crunchy cuttings; moderate to strong sparkling luster; very grainy texture; trace slickensides; persistent pyrite; common broken foram tests; very micaceous; occasionally having a phyllitic-like luster; minor hairline fracture on harder fragments; abundant thin limestone shards; persistent trace extremely fine to gritty, soft, friable slightly silty light gray sandstone cuttings; very pale yellow sample fluorescence.

5430' LIMESTONE - light brown, light gray-brown; very hard to firm; fair induration; sharp, hackly fracture; weakly laminated; microcrystalline to grainy texture; resinous to sparkling luster; occasionally phosphatic material; trace carbonaceous material; transparent pale yellow cut fluorescence.

5440' SAND - clear, white, tan; extremely fine to coarse; very angular to subangular; very poorly sorted; low to moderate sphericity; quartz is major constituent with abundant very fine grained moderately friable sandstone with noncalcareous argillaceous matrix; trace very weak yellow background sample fluorescence; very slow yellow pale cut fluorescence; confined to shale; no pops; no odor.

5450' SANDSTONE - buff to yellow-brown; soft to slightly firm; extremely fine; very angular to subrounded; well sorted; fair sphericity; dominantly quartz with kaolinitic matrix; fair induration; trace calcareous; lacking cut fluorescence or sample fluorescence; fluorescence is confined to shales.

5455' LIMESTONE - few cuttings are slightly more pure hard; occasional microlaminations; irregular, sharp fracturing; sucrosic to microcrystalline texture, sparkly to resinous luster; reacts violently to acid; trace pyrite in fractures; abundant forams in several fragments; pale yellow mineral fluorescence from limestone masks possible sample fluorescence.

5460' SHALE - dark to medium brown; small to large cuttings; very firm to soft; predominantly moderate to well indurated; cuttings generally exhibit incipient bedding with occasionally having stair-stepped, planar layering; slightly gritty to grainy texture; dull earthy to sparkly luster where more arenaceous; calcareous where white limey blebs are present; micaceous; very pale yellow cut fluorescence.

5470' CLAY - rich dark brown; moderately thick, slightly stiff consistency; greasy, sticky, abrasive texture due mostly to hard, sharp limestone and shale cuttings; fair solubility; slightly calcareous; medium size rounded, firm, gritty; poorly soluble nodules grading to claystone; trace pyrite in washed sample; frequent forams from desilter; spotty mineral fluorescence; no discernible sample or cut fluorescence.

5475' SAND - clear, white, tan; very fine to coarse grained; very angular to subangular; extremely poorly sorted, very low sphericity in coarser grains moderate overall; dominantly quartz, more fine is from well sorted friable sandstone with fair apparent porosity; occasional forams, both as inclusions and free; weak mineral fluorescence; no oil indicators.

5480' SHALE - rich dark brown to moderately brown; hard to very soft; well indurated overall with occasional easily broken cuttings; dominantly blocky tabs with occasional good visible internal fissility; gritty to arenaceous texture; dull earthy to sparkling luster where abundantly scattered mica inclusions are present; very frequent preserved foram inclusions; no discernible oil shows.

5485' LIMESTONE - tan, medium brown; hard to very hard; well indurated; sharp irregular fracturing; less frequent lighter microlaminations; very argillaceous in places; sucrosic to occasionally microcrystalline texture; resinous to sparkling luster in more grainy fragments; very frequently cuttings contain abundant scattered foram inclusions; occasionally free kaolinite and as inclusions in shale; strong trace pale yellow mineral fluorescence; no sample or cut fluorescence.

5490' SHALE - very dark brown; slightly firm to predominantly hard; moderate to well indurated; very small to medium subangular to subrounded, predominantly tabular cuttings; slightly sparkling to dull luster; fine abrasive texture; occasionally punky cuttings; minor calcareous laminations and inclusions; slightly silty; micaceous; weak trace loose foram tests; minor trace pyrite; persistent trace limestone; no cut fluorescence.

5500' CLAY - dark brown; slightly stiff to predominantly soft; slightly thick pasty consistency; moderate to good solubility; silty; slightly sticky; gritty; slightly punky; minor trace soft to firm, chunky claystone cuttings; no cut fluorescence.

5510' SAND - clear to light brown; upper to lower fine grain; subangular to rounded; moderate to moderately well sorted; spherical to subprismoidal; predominantly loose quartz; minor trace biotites; ditch sample shows infrequent friable weakly cemented quartz sandstone cuttings; very weak spotty yellow background sample fluorescence; very slow, weak, diffuse pale green-yellow cut fluorescence following repeated cut attempts.

5520' CLAY - very dark brown to gray-brown; soft to slightly stiff; very thick, pasty consistency; moderate to good solubility; very gritty texture; very silty; slightly sticky; moderate to good cohesion; occasional greasy feel; common medium to large size sloughing shale; shale exhibits all as above.

5530' SHALE - very dark brown to dark chestnut brown; slightly firm to hard; slightly crunchy; very small to medium, subangular to subrounded, irregular tabular cuttings; predominantly sparkling luster; fine abrasive to gritty texture; occasional foram rich cuttings; decrease frequency of loose foram tests; predominantly uneven fissility; weak trace phosphatic inclusions; trace pyritized microfossils and loose pyrite fragments; marked increase in abundance of fine to upper very fine grain quality solubility; persistent trace poor oil indicators as above.

5540' SAND - clear and white; upper very fine to upper fine grained; subangular to moderately well indurated; subprismoidal to subdiscoidal; moderately sorted; predominantly loose quality; common biotite flakes; overall sample becoming increasingly clayey; trace forams; very weak yellow sample fluorescence.

5550' SHALE - very dark brown to dark chestnut brown; slightly firm to predominantly hard; slightly crunchy; very small to medium, subangular to subrounded, tabular cuttings; moderate, uneven fissility; resinous to sparkling luster; gritty texture; abundant forams; trace cuttings exhibit foram; very pale yellow sample fluorescence.

5560' SHALE - dark to medium brown; very firm to soft; dominantly moderately well indurated, occasionally very poor; abundant cuttings showing incipient bedding; few with good fissility smooth to arenaceous texture; dull earthy luster sparkling frequently with pinpoint mica inclusions; abundant forams; trace fish scales; no sample or cut fluorescence.

5570' CLAY - dark brown to gray; thick, stiff, slightly pasty consistency; gummy, sticky, gritty texture; moderately good cohesion; fair solubility; small; soft; rounded claystone nodules with very poor solubility; noncalcareous; shale contains infrequent kaolinite inclusions and abundant preserved and relict forams; trace phosphates; sample lacks oil indicators.

5580' SHALE - medium to dark brown-gray; light to medium gray when dry; firm overall, very soft in places; fair induration; slight increase fissility; irregular subplanar bedding; decreasingly arenaceous; prominent texture is slightly gritty with dull earthy luster; scattered mica and foram inclusions; no discernible sample or cut fluorescence.

5590' SAND - clear, white, amber; very fine to medium grained; very angular to subangular; moderate sorting; low sphericity in medium size grains; indiscernible in smaller; dominantly unconsolidated quartz; no visible sandstone fragments; occasional pyrite in trace limestone fragments.

5600' SHALE - medium brown-gray to brown; firm to slightly soft; trace calcareous; medium to fine platy cuttings; dull earthy texture; trace sucrosic appearance; prominent microfossils; weakly to strongly laminated; fair fissility; fair induration; trace very weak yellow mineral fluorescence; lacking cut fluorescence; no oil fluorescence; no pops.

5605' SANDSTONE - light gray to gray-brown; very fine to fine; subrounded to subangular; fair sorting; fair sphericity; dominantly quartz with trace clay matrix; dominantly noncalcareous; structureless; trace silt; lacking oil fluorescence; trace bright yellow mineral fluorescence.

5610' CLAY - medium gray-brown; soft, runny consistency; smooth, slightly greasy texture; noncalcareous; nodules are small, rounded; soft slimey, very poorly soluble to insoluble; sand is primarily very fine grained, angular, very well sorted unconsolidated quartz grains; weak trace kaolinite; spotty bright yellow-green mineral fluorescence from clay; no identifiable oil indicators.

5620' SANDSTONE - tan; very fine to fine grained; angular; well sorted; extremely easily friable; dominantly quartz, with glauconite and only trace limestone; clay matrix; desilter sample 95% sand; no sample or cut fluorescence.

5625' SHALE - medium to dark brown-gray; soft to firm; fair induration is prominent with occasional well indurated fragments; persistent blocky tabular cuttings with incipient to stair-step fissility; slightly gritty texture; dull earthy luster; less frequent mica flakes.

5630' SHALE - medium to dark gray; medium to fine, slightly molded cuttings; fair to well indurated; slightly calcareous on some internal fractures; weakly laminated; poorly fissile; possibly slightly porcelaneous; abundant clay fraction of sample may represent fine broken and disseminated shale fragments; no oil fluorescence; no mineral fluorescence.

5635' CLAY - medium gray to slightly brownish-gray; soft; slightly sticky; massive, lacking nodules, very pasty, thick consistency; slightly gritty consistency due to contained sand grains; poorly soluble; no oil fluorescence.

5660' CLAY - light to medium gray and brown-gray; very soft; thick pasty consistency; poor to moderate solubility; very smooth texture; slightly silty; very greasy; creamy; generally has a wall cake-like appearance; slightly kaolinitic; clay percentage appears to be anomalously high; very fine grain sand output from desander appears to be increasing; no oil or cut fluorescence.

5665' SAND - overall sand sample is light gray; individual grain are predominantly clear; upper very fine to lower fine grain; angular to subrounded; subparamoidal to spherical; moderate to well sorted; silty; predominantly loose, clear quartz; trace feldspar; minor biotite; abundant black lithic grain; lacking discernible accessory minerals; actual sand percentage from ditch sample is only 20% of total sample; output from desander is 100% sand and appears to be increasing in volume; evidence from drill rate and desander indicates actual percentage of sand should be markedly higher than that represented from the ditch sample.

5675' SAND - light to medium gray and clear; upper fine to upper very fine grained; occasionally lower medium grain; subangular to increasingly rounded; spherical to subprismoidal; moderately to increasingly well sorted; predominantly, loose clear quartz; lacking significant accessory minerals; commonly dark brown to black-brown lithic grain; slightly silty; kaolinitic clay matrix; clay percentage continues to be anomalously high; no oil or cut fluorescence.

5680' SAND - light gray and clear; lower to upper fine grain; subangular to subrounded; spherical to subdiscoidal; well sorted; predominantly loose clear quartz; trace feldspars; abundant lithic grain; minor trace biotite; continued abundance of greasy, kaolinitic clay matrix; no oil or cut fluorescence.

5690' CLAY - light to medium gray; very soft; thick pasty consistency; poor to moderately solubility; smooth texture; silty; kaolinitic; greasy; wall cake-like appearance; abundant very fine grain sand from desander; no cut fluorescence.

5710' SAND - light brown-gray overall; very fine to fine to occasionally medium; angular to subangular; moderate sphericity; loose; kaolinitic; vitreous quartz; white feldspars; abundant dark lithic mafic quartzitic; scattered calcite; no oil stain or fluorescence; no pops, sheen, odor.

5770' SHALE - medium to dark brown; firm to hard and bright; flaky to blocky, rare cuttings; clayey to silty and sparkling; occasional slightly resinous; occasional forams; massive to flaky fissility; occasional good planar parting; associated tan, hard dolostone cuttings; occasional dolomitic crystalline aggregates; dull orange carbonate mineral fluorescence; possibly very weak diffuse bulk cut fluorescence; no cut from individual grains.

5810' SHALE - very dark brown; firm to hard; moderate to well indurated; small to medium, subangular to subrounded, tabular cuttings; sparkling to slightly resinous luster; abrasive to grainy texture; silty; moderate, uneven fissility; low apparent porosity; common white calcareous inclusions; common loose quartz grains; no oil or cut fluorescence.

7820' CLAY - medium gray; soft; slightly low density; moderately malleable; cohesive; nonnodular; gritty; fair solubility; moderately calcareous; abundant fine grain quartz, feldspars, lithic grains; scattered sporbo; slightly expansive in #20; no oil.

5830' SANDSTONE - light gray; friable; very fine to medium; angular to subangular; moderate sphericity; moderately sorted; grades to dominantly matrix; kaolinitic; slightly calcareous; abundant vitreous quartz; white feldspars; abundantly dark lithics; commonly microsporbo; no stain or cut fluorescence; no odor, iridescence from blender; trace orange, pyritic tuff; common dolomitic limestone cuttings; trace odor at shakers; occasional iridescent pop.

5840' LIMESTONE - light gray to tan; hard, angular cuttings; resinous; argillaceous; commonly dolomitic; occasionally clear, crystalline calcite; occasional mineral fluorescence; no oil or cut fluorescence; trace weak green-yellow bulk cut fluorescence; weak gray to yellow residual cut fluorescence.

5850' SHALE - becoming commonly yellow-gray, translucent, tuffaceous; slightly soft; waxy; noncalcareous; abundant inclusions; weak yellow mineral fluorescence; no oil.

5860' CLAY - medium gray; slightly thick, soft; smooth to nonnodular; poor to fair cohesion, malleable; slightly expansive; soluble; noncalcareous; silty and sandy; scattered microsporbo; occasional bulk cut fluorescence, probably pipe dope.

5870' SHALE - dark brown; firm to hard and brittle; massive to flaky, elongated cuttings; occasionally slightly hackly; rare siliceous cutting; common light gray, tuffaceous cuttings; occasionally silty; noncalcareous; scattered fish parts; very fine disseminated pyrite; rare discernible foram; overall poor to fair fissility; no oil or cut fluorescence.

5880' SANDSTONE - white, light gray, rarely light brown; fine lower to medium lower; angular; dominantly subdiscoidal; moderately soft; abundant kaolinitic matrix; increasingly calcareous; fair apparent porosity to friable cuttings; commonly tight; abundant feldspars; green, black, red lithics; quartz; no oil.

5890' SHALE - medium to dark brown, occasional red tint; increase large blocky, massive cuttings; hard; noncalcareous; commonly gray, silty and sandy grading to siltstone; commonly sparkling, slightly siliceous appearance; no oil.

5900' CLAY - medium gray; soft, slightly thick consistency; weakly sticky, gritty texture due to sandstone and shale content; moderate to poor cohesion; easily soluble; very slightly calcareous; no discernible nodules; trace feldspar igneous rock fragments with amphibole inclusions; no sample fluorescence; very weak pale yellow cut fluorescence.

5910' SAND - clear, white, gray-black; very fine lower to very coarse lower; very angular to subrounded; extremely poor sorting dominantly subprismoidal; quartz is major consistency, abundantly white, tan, gray lithic fragments including sandstone and tuff; frequently gray to white feldspar; moderately to easily friable; one shale cutting with oil staining has no sample fluorescence; very fast bright white-yellow cut fluorescence; dark straw visible cut.

5920' SHALE - dark gray-brown; firm to slightly soft; moderately well indurated; blocky, tabular cuttings; irregular fissility, occasional stair-step layering; slightly gritty to grainy texture; dull earthy luster; sparkling with scattered mica flakes; occasional calcareous inclusions; scattered sporbo; trace live pops; faint oil odor; no discernible sample fluorescence; very slow weak diffuse yellow-green cut fluorescence.

5990' SILTSTONE - medium gray to brown-gray; firm to hard; moderate to well indurated; medium, subangular, tabular cuttings; strong sparkling luster; fine abrasive to gritty texture; very micaceous; poor shaly partings; common sharp contacts with calcareous sandstone; weak trace kaolinitic fragments; trace spotty yellow sample fluorescence; weak trace pale green sample fluorescence following repeated cuts.

6000' CLAY - medium gray; very soft; thin slightly pasty consistency; moderate solubility; smooth to slightly abrasive texture; silty; creamy; slightly sticky; greasy; slightly kaolinitic; minor trace spotty sample fluorescence.

6010' SANDSTONE - white and light gray; upper fine to upper medium grain; angular to subrounded; moderately sorted; tight; friable; trace calcareous cement; predominantly quartz; common lithics; moderate apparent porosity; abundant biotite flakes probably representative of LCM contamination; pale spotty yellow sample fluorescence; weak pale green cut fluorescence following repeated cut attempts.

6020' SHALE - medium gray to gray-brown; hard; moderate to well indurated; small to predominantly medium; subangular to subrounded, tabular cuttings; sparkling luster; abrasive to gritty texture; low apparent porosity; very silty and finely sandy; slightly calcareous; very micaceous; poor to moderate uneven fissility; no oil or cut fluorescence.

6030' SANDSTONE - white and light gray; lower fine to upper medium grain; angular to subangular grain; poor to moderate sorting; spherical to subdiscoidal; commonly loose grain; frequently tight, slightly calcareous, slightly friable cuttings; moderate apparent porosity; predominantly quartz; trace heavy minerals and lithic grain; indistinct pale spotty yellow sample fluorescence.

6080' SAND - clear, white and light gray; lower fine to upper medium; moderately sorted; spherical to subdiscoidal; predominantly loose; commonly tight; calcareous; low porosity; silty sandstone cuttings; predominantly quartz; trace heavy minerals and lithic grain; occasionally grades to very sandy siltstone; no cut fluorescence.

6090' SHALE - medium gray to gray-brown; hard; well indurated; small to predominantly medium, subangular to subrounded, very tabular cuttings; strong sparkling luster; fine abrasive to sucrosic texture; common calcareous streaks; very micromicaceous; poor fissility; commonly sandy streaks; very silty; low apparent porosity; no cut fluorescence.

6200' LIMESTONE - yellow-brown; hard; small; angular cuttings; sparkling to resinous; crystalline; occasional vugs; sandy; commonly grades to sandstone; sample overall increasingly limey; dull orange mineral fluorescence; no oil; scattered tuff.

6210' SANDSTONE - light gray; hard to friable; very fine to medium; angular; spherical to subdiscoidal; moderately well sorted; commonly very hard and calcareous, occasionally grading to sandy limestone; abundant kaolinite; dominantly tight; dominantly vitreous quartz; abundant feldspar; lithics; occasional shell fragments; no oil.

6220' CLAY - medium gray; becoming very soft and low density; slippery texture; increase amounts; soluble; expansive; calcareous; very silty, sandy; no oil; poor sample.

6240' SANDSTONE - light gray, light yellow-brown and white; lower very fine to upper fine grain; subprismoidal to subdiscoidal; poor to moderately sorted; very well indurated; hard; tight; commonly strong calcareous cement; occasionally siliceous; more friable fraction represented by loose quartz grain; light yellow-brown cuttings generally very silty; appears to exhibit tendency to cleave along subparallel planes; predominantly quartz; trace feldspars; common heavy minerals; frequent distinct biotite inclusions; matrix is slightly kaolinitic; trace siltstone cuttings contain foram debris; very pale yellow to yellow-gold sample fluorescence; weak, diffuse green cut fluorescence observed following crushing of sample; initial cut prior to crushing of sample resulted in no fluorescence.

6250' CLAY - medium gray to slightly brown-gray; very soft; thin to slightly thick pasty consistency; moderately soluble; very gritty to abrasive texture; silty; commonly very fine grain sand; slightly kaolinitic; sticky; slightly creamy; very weak trace small soft nodular clay masses; no live oil pops or iridescent oil sheen; sample and cut fluorescence from sandstone cuttings similar to those of previous sample.

6260' SANDSTONE - light yellow-brown to gray; lower fine to upper medium; poor to moderately sorted; spheritic to discoidal; very tight; well indurated; very calcareous; silty; slightly kaolinitic; predominantly quartz; trace biotite; weak pale green cut fluorescence following crushing of sample.

6270' SILTSTONE - medium gray to brown-gray; very moderately well indurated; slightly brittle; medium, subangular to subrounded, tabular cuttings; sparkling luster; very gritty texture; common very fine sandy streaks; trace calcareous laminations; common forams; very weak trace pale yellow sample fluorescence.

6280' SHALE - medium brown to slightly chestnut brown; very hard; well indurated; slightly brittle; small to medium, subangular to subrounded, tabular to slightly platy cuttings; slightly waxy to strong sparkling luster; very abrasive to grainy texture; common forams; calcareous; silty; minor hackly fracture; no oil or cut fluorescence.

6290' LIMESTONE - light yellow brown ;to cream; very hard; small to medium, angular to subrounded, tabular to slightly blocky cuttings; slightly sparkling to pearly luster; slightly sucrosic to grainy texture; slightly sandy; silty; moderate HCL reaction; trace foram inclusions; pale yellow mineral fluorescence; no cut fluorescence.

6300' SAND - white, light gray and light yellow-brown; lower fine to upper medium, subangular to rounded; moderate to well sorted; spherical to subdiscoidal; loose; calcareous overgrowths; probably represents well compacted, relatively tight, friable sandstone; predominantly quartz; trace biotite; commonly well rounded lithic grain; weak trace pale yellow sample fluorescence; slow diffuse pale green cut fluorescence following repeated cuts.

6310' SHALE - medium to chestnut brown; hard; well indurated; small to medium, tabular cuttings; sparkling luster; gritty to grainy texture; abundantly very fine grained sand; silty; trace silty to sandy limestone; common forams; weak trace pale yellow sample fluorescence.

6320' SILTSTONE - medium gray; gray-brown and brown; hard to very hard; well indurated; grade to very sandy siltstone to silty very fine grained sandstone; grainy texture; poor fissility; micaceous; trace forams; minor trace limestone; no cut fluorescence.

6330' SANDSTONE - light brown and gray; lower very fine to lower fine; poorly sorted; spherical; very calcareous; very tight; low apparent porosity; exhibits tendency to cleave along preferred subparallel planes; very silty; micaceous; abundant quartz; trace heavy minerals and lithic grain; trace pale yellow mineral fluorescence; no cut fluorescence.

6340' SANDSTONE - gray, gray and brown; mottled; very fine to occasionally medium; predominantly fine; appears subangular in cuttings; poor sorting; grades to sandy shale with spotty pockets of clean sand; well indurated; tight; slightly calcareous quartz with local abundant lithic fragments; very faint pale yellow mineral sample fluorescence; rare extremely slow extremely diffuse pale yellow cut fluorescence; no visible cut.

6350' SANDSTONE - white, gray, black; medium to granule; conglomerate; subangular to rounded; poor to fair sphericity; poorly sorted; moderate to moderately well indurated; calcareous cement with common calcite crystallines; fair apparent porosity; quartz and lithic fragments.

6360' SAND - clear, white, light gray and light brown; lower fine to upper medium; subangular to rounded; spherical to discoidal; moderately sorted; loose; infrequently tight; calcareous cuttings; sandstone cuttings commonly grade to siltstone; predominantly quartz; trace lithic grain and heavy mineral; weak trace pale yellow sample fluorescence; slow, weak, diffuse pale green cut fluorescence following repeated cut attempts.

6370' SILTSTONE - medium brown and gray-brown; hard; well indurated; small to medium, subangular to subrounded, tabular cuttings; sparkling luster; gritty to abrasive texture; slightly micaceous; abundant very fine grained quartz; trace calcareous inclusions; slightly shaly partings; micaceous; very weak pale yellow sample fluorescence.

6380' CLAY - medium to dark brown-gray; soft to increasingly stiff; thick pasty consistency; moderate to good solubility; very gritty to abrasive texture; silty to very fine to sandy; slightly sticky; weak trace soft, malleable nodules; no live oil pops or oil sheen; shale and sandstone exhibit indistinct pale yellow sample fluorescence.

6390' SHALE - medium to dark brown and chestnut brown; slightly firm to hard; overall decrease in hardness; moderate to well induration; small to medium, subangular, tabular cuttings; slightly sparkling to resinous luster; slightly gritty to grainy texture; silty; slightly micaceous; occasionally calcareous inclusions; weak trace foram debris; occasional crunchy to slightly punky; moderate, uneven fissility; trace sandy streaks; decrease abundance of loose, very fine to medium grained sand; weak trace pale yellow sample fluorescence; pale green cut fluorescence with difficulty.

6400' LIMESTONE - cream, tan and brown; hard; small to medium, angular to subangular, blocky cuttings; slightly sparkling to resinous luster; slightly grainy texture; impure; nonlaminated; trace foram increase; silty; no cut fluorescence.

6410' CLAY - dark brown-gray, increasingly stiff to soft; very thick, pasty consistency; moderate to good solubility; gritty texture; very silty; sticky; moderate to good cohesion; decrease sand content; slight increase in soft malleable nodules; no cut fluorescence.

6420' SHALE - medium to dark brown; firm to hard; moderate to well indurated; occasionally slightly crunchy to infrequently punky; very small to medium, subangular to subrounded, tabular cuttings; slightly waxy to sparkling luster; abrasive to grainy texture; poor to moderate uneven fissility; micaceous; calcareous; trace indistinct foram debris; minor inclusions of calcareous clasts; occasionally very fine to sandy; predominantly very silty; no cut fluorescence.

6430' SILTSTONE - medium brown to gray-brown; firm to hard; blocky occasionally tabular with fair shaly partings; dull luster; rough gritty texture; occasionally sandy; moderately calcareous with visible tan colored calcareous inclusions; occasionally very faint yellow mineral fluorescence; no sample or cut fluorescence.

6440' SHALE - dark brown, dark gray-brown; moderately indurated; crumbly to very tough; dull luster becoming increasingly earthy; rough gritty texture; very silty grading to siltstone; scattered sporbo in more earthy cuttings; moderately calcareous; no sample or cut fluorescence.

6450' SANDSTONE - dark brown; grades from silt sized to occasionally medium grained; larger clasts are predominantly sporbo; average grain size is fine; poorly sorted blocky cuttings; moderate to moderately well indurated; calcareous; very weak cut from better sorted cuttings.

6460' SANDSTONE - medium brownish-gray; fine; subangular; moderately well sorted; well indurated grain packed; tight; slightly to moderately calcareous; quartz feldspar and commonly dark lithics; occasional cuttings contain abundant fine to medium sporbo; commonly grading to dark brown siltstone; no sample fluorescence; slow extremely weak extremely faint wispy streaming yellowish cut fluorescence; no visible cut; none to extremely faint orange-yellow residual cut fluorescence.

6470' SILTSTONE - dark gray-brown; firm to slightly soft; moderately well indurated; cuttings range from rounded subspherical to blocky tabs, occasionally shows subparallel stair-step fissility; slightly gritty texture; dull earthy luster sparkling with frequent pinpoint mica inclusion; occasional white limey blebs indicating possible relict forams; trace kaolinite strong trace dolomitic limestone; no sample fluorescence; extremely weak slow pale yellow cut fluorescence.

6480' SAND - white, light gray; fine to medium grained; very angular to subrounded, moderately sorted; prismoidal to subspherical; good apparent porosity, easily absorbs water; dominantly quartz and feldspar with frequent lithics; weak calcareous cement; trace dark orange sample fluorescence; very weak yellow-green cut fluorescence.

6490' LIMESTONE - light to medium brown; hard, brittle; sharp cuttings with irregular fracturing; microcrystalline to slightly grainy texture, resinous to sparkling luster; very argillaceous in places; occasionally calcareous seams in siltstone; infrequently poorly indurated claystone with punky texture; no sample fluorescence; very weak slow pale green cut fluorescence.

6500' SILTSTONE - medium to dark gray; firm, slightly brittle; crunchy; structureless to occasionally irregular fissile; slightly more gritty texture; dull earthy to infrequently faintly waxy luster; calcareous in places; trace limey blebs; common mica; no sample fluorescence; very weak pale green cut fluorescence.

6510' CLAY - medium gray; moderately thick, pasty, slightly stiff consistency; weakly gummy, abrasive texture due to well indurated siltstone cuttings; moderate to poor solubility; very slightly calcareous, infrequent medium size rounded, soft nodules with very poor solubility grading to claystone; no oil odor; no sample fluorescence; weak pale whittish-green cut fluorescence.

6520' SILTSTONE - medium gray; firm, slightly brittle; structureless, rounded cuttings to blocky tabs with incipient fissility; slightly gritty texture grading to occasional sandy, dull earthy luster; frequently mica, limey blebs are common; trace pyrite; trace sporbo; no oil smell; weak green cut fluorescence.

6530' SANDSTONE - white, gray; brittle, crunchy, upper very fine to lower medium grained; very angular to subrounded; moderately well sorted; subprismoidal to subspherical; fair apparent porosity; readily absorbs H20; quartz and feldspars are prominent with less abundant dark lithics; trace fossil possibly sharktooth.

6540' CLAY - pale gray; less thick, slightly runny consistency; pasty, abrasive texture; moderate cohesion; fair solubility; slightly calcareous; minor medium size very soft gritty nodules with poor solubility.

6550' SILTSTONE - medium gray; firm, slightly brittle; subrounded to blocky tabular cuttings generally structureless with occasionally good internal fissility grading to shale; gritty to slightly grainy texture; dull luster; calcareous in places; trace calcareous seams; no sample or cut fluorescence.

6560' SANDSTONE - white to light gray; very fine to fine grained; angular to subangular; moderate sorting; prismoidal to spherical; good apparent porosity, absorbs water immediately; dominantly quartz with abundant gray to white feldspar; common dark brown to black lithics, occasionally mica; trace sporbo; infrequently has kaolinitic matrix; no significant oil shows.

6570' SHALE - medium to light gray-brown; hard to very soft in places; brittle; overall moderately indurated; abundant incipient fissility, some show good internal layering upon breaking; silty texture; dull luster; trace phosphatic material, spotty bright white-green mineral fluorescence; no oil indicators.

6580' CLAY - medium gray; thick, moderately pasty, stiff consistency; soft, slightly abrasive texture; moderate solubility; no discernible nodules; very slightly calcareous; no sample or cut fluorescence.

6590' SHALE - dark gray-brown; firm to hard; moderate to well indurated; small to occasionally large, subangular to subrounded, tabular cuttings; sparkling luster; very finely abrasive to grainy texture; poor fissility; low apparent porosity; very silty; trace very fine grain sand; commonly calcareous; trace blocky microcrystalline limestone; generally lacks significant structure; no cut fluorescence.

6600' SILTSTONE - medium gray to gray-brown; firm to hard; moderate to well indurated; small to medium, subangular to subrounded, tabular cuttings; sparkling luster; gritty texture; structureless; very micaceous; occasionally grades to very fine grain silty sandstone; slightly calcareous; grades to silty shale; calcareous; indistinct white calcareous inclusions; no cut fluorescence.

6610' CLAY - dark gray to light brownish-gray; increasingly stiff; very thick, pasty consistency; moderate to good solubility; gritty texture; sticky; silty; moderate cohesion; nonnodular; no cut fluorescence; slightly calcareous.

6620' LIMESTONE - trace amounts; gray, cream, and bone white; very hard; coarse; slightly pearly to waxy luster; smooth to slightly sucrosic texture; microcrystalline; minor vugs; generally lacks significant structure; minor pale yellow mineral fluorescence; no oil or cut fluorescence.

6630' SANDSTONE - white, light gray and occasionally light brown; lower fine to lower medium grain; subangular to rounded; moderately sorted; slightly calcareous; commonly tight; low to moderate apparent porosity; predominantly quartz; trace heavy mineral and lithics; common loose quartz; trace biotite; slightly silty; trace kaolinitic matrix material; no cut fluorescence.

6650' SANDSTONE - pale brownish gray; salt and pepper; very fine to fine; subangular to subrounded; moderately well sorted; friable to moderately indurated; grain packed; slightly calcareous; dirty appearance; quartz and feldspar with common dark green-gray and black clasts, probably lithic fragments; minor pinkish shell fragments; occasional coarser cuttings with scattered glauconite; no sample fluorescence; infrequently very slow, very pale yellow cut fluorescence; no visible faint yellow residual cut fluorescence.

6660' SANDSTONE - medium gray to very dark gray to black; predominantly very fine to fine with occasional coarse and silt size grains; subangular with common subrounded to rounded clasts in darker cuttings; moderately sorted; predominantly moderate to moderately well indurated; occasionally friable; grain packed; poor apparent porosity; slightly calcareous; feldspar with clear quartz and common brown and dark gray lithics; darker, silty cuttings commonly contain sporbo; no sample fluorescence; very slow, very pale yellow cut fluorescence becoming slightly more intense with time; no visible moderately greenish-yellow residual cut fluorescence.

6660' LIMESTONE - gray-brown; hard, blocky; slightly resinous to microsucrosic along fractures; common mottled appearance; no bands or laminations; occasional crystalline fracture fill; minor vuggy porosity; rare trace oil stain; faint yellow mineral fluorescence; faint extremely weak yellow flash of cut fluorescence from stain cutting; no visible; very weak residual; trace medium brown oil stain on fractures in fine silty gray sandstone; instant opaque milky yellow cut fluorescence; amber visible cut dull orange-yellow residual cut fluorescence; medium brown residual ring.

6670' LIMESTONE - medium gray; hard; tabular to blocky; angular; dull to slightly sucrosic luster; microsucrosic texture; common white crystalline fracture fill; some waxy luster with white and gray bonding.

6670' SILTSTONE - medium gray, gray-brown; moderately well indurated; tabular to slightly blocky; gritty texture becoming sandy and grading to silty sandstone and silty shale; very slightly calcareous; no sample fluorescence; no visible cut fluorescence.

6680' SHALE - medium to dark brown; hard; tough to crumbly; dull luster; gritty abrasive texture; very silty; poor subparallel fissility; moderately calcareous; phosphatic with organic appearance; occasional visible forams; no visible microbanding; no sample fluorescence; extremely slow diffuse; very pale yellow cut fluorescence; no visible cut; extremely pale yellow residual.

6700' SILTSTONE - green-gray to brown; moderately indurated; crumbly to tough; blocky; dull luster; gritty abrasive texture; commonly grades to silty shale; slight to moderately calcareous in places; no sample fluorescence; rare trace extremely weak diffuse cut.

6710' SHALE - medium dark brown; moderately indurated; tough to slightly brittle; tabular; dull earthy luster; gritty abrasive texture; very silty grading to siltstone; moderately calcareous; scattered phosphatic material; no laminations; extremely weak trace cut fluorescence; no visible cut; extremely pale yellow residual cut fluorescence.

6710' LIMESTONE - tan; hard; blocky and angular; dull slightly resinous; cryptocrystalline; silty in places; no bonding; no cut.

6720' SANDSTONE - brown-gray; very fine to fine; subangular to subrounded; moderately well sorted; friable to moderately induration; grain packed; slightly calcareous; quartz and feldspar with scattered lithic fragments and occasional very fine shell fragments; no sample fluorescence; extremely weak cut; residual; no visible.

6730' SANDSTONE - light gray-white; fine to medium; subangular to subrounded; poor sphericity; moderate to moderately well sorted; friable to moderate induration; grain packed with trace kaolinitic cement; quartz with abundant feldspar; scattered lithic fragments; grades to siltstone; occasional sporbo in dark cuttings.

6740' SHALE - medium to dark brown; soft to hard, crunchy; blocky tabular cuttings are prominent; occasional good fissility; some gradational siltstone shale; overall silty appearance; dull to slightly resinous luster; abundant rounded limey blebs occasionally preserved forams; overall sample moderately calcareous; pale green-yellow cut fluorescence; no sample fluorescence.

6750' LIMESTONE - tan, gray; very hard; brittle; crunchy; sharp irregular fracturing; trace very thin laminations; microcrystalline to sucrosic texture; resinous to sparkling luster; trace forams; infrequent sandstone fragments with abundant pyrite nodules on surface; very weak pale yellow residual fluorescence.

6760' SANDSTONE - white, light gray; fine to upper medium grained; angular to occasionally subrounded; moderate sorting; subprismoidal to subspherical; moderately well indurated; abundant calcareous cement; quartz with feldspars; occasional dark lithics; abundant pyrite on smaller cuttings; trace sporbo; siltstone appears arenaceous in places; no sample or cut fluorescence.

6770' SILTSTONE - medium gray, gray-brown; very firm; structureless to slightly fissile; slightly gritty to arenaceous texture; dull earthy luster; occasional cuttings have kaolinite attached; pale orange sample fluorescence; slow streaming green cut fluorescence.

6780' CLAY - light pale gray; thin runny consistency; very abrasive texture due to high angular firm solids content in sample; good solubility, effervesces in acid; no discernible nodules.

6790' LIMESTONE - tan, light gray; very hard and brittle, crunchy; angular to subangular cuttings; no visible laminations; smooth to slightly grainy texture; resinous luster; argillaceous; trace relict forams; trace tarry material on sandstone, spotty orange sample; extremely slow diffuse yellow-green cut fluorescence.

6800' SANDSTONE - white, light gray; fine to medium grained, angular to subrounded; moderately well sorted; subprismoidal to moderately spherical; easily friable; poorly consolidated; quartz with subequal amounts of feldspar, less lithics, occasionally glauconitic; abundant kaolinitic matrix; moderately calcareous; frequently pyrite; readily absorbs water; good apparent porosity; spotty mineral fluorescence; very slow green-yellow cut fluorescence.

6810' CLAY - light gray; slightly more thick, pasty weakly stiff consistency; soft abrasive texture; less soluble; increasing cohesion; slightly calcareous; trace soft gritty nodules; abundant slough; spotty bright yellow-green sample fluorescence; slightly stronger, faster green cut fluorescence.

6820' SILTSTONE - medium to dark gray-brown; slightly soft to very firm; many cuttings very brittle; gradational from shale with irregular fissility; slightly gritty texture; dull earthy luster; few cuttings have orangish-brown attached to fractured edges; very weak green cut fluorescence.

6830' SANDSTONE - white to light gray; fine to medium grained; very sharp, angular to rounded; moderate sorting; subspherical to prismoidal; kaolinitic matrix contains abundant quartz and feldspars; occasional dark brown, gray lithics infrequently glauconite; readily absorbs water; slightly calcareous; very pyritic; mineral fluorescence masks possible sample fluorescence; extremely weak pale yellow-green cut following repeated attempts; pale yellow residual fluorescence.

6840' SHALE - dark brown; hard, brittle; crunchy; incipient to semi-uniform layering; very silty; slightly gritty to arenaceous texture; dull earthy luster sparkling with pinpoint mica flakes; occasional white to buff colored calcareous inclusions abundant orange to white yellow mineral fluorescence; pale green cut fluorescence following repeat cuts.

6850' SILTSTONE - medium to dark gray-brown; soft to very firm; structureless subrounded subdiscoidal fragments to rough blocky tabs; sample is gradational between siltstone and slightly shale; tiny mica inclusions; mineral fluorescence masks possible sample fluorescence; pale yellowish-green cut fluorescence only after repeated attempts.

6860' SANDSTONE - white; fine to medium, grading to very fine and silty; subangular; poor sphericity; moderately well sorted; moderately indurated; slightly friable; grain packed with patchy kaolinite slightly moderately calcareous; poor to occasionally fair apparent porosity; abundant feldspar with quartz; scattered black and pale blue grains; spotty pyrite; black grains are probably carbonaceous material; no sample fluorescence; no cut fluorescence; no crush cut; faint cut when cut twice.

6860' SILTSTONE - medium dark brown; moderately indurated; crumbles when broken; blocky to occasionally tabular with rounded edges; dull luster; finely abrasive texture; moderately calcareous with occasional visible calcareous inclusions; no visible laminations; no sample fluorescence.

6870' SANDSTONE - white, light gray; very fine to medium with slight increase medium; subangular; decreased sorting; moderately sorted; moderately indurated; grained packed; calcareous; tight; feldspar with commonly quartz; slightly decreased lithic fragments; kaolinitic; common subparallel carbonaceous microlaminations and stringers; minor blue-green grains; trace very faint yellow mineral fluorescence; slow, very diffuse transparent very pale yellow cut fluorescence; no visible cut.

6870' SHALE/SILTSTONE - medium dark brown, gray-brown; moderate to moderately well indurated; crumbly to slightly brittle; predominantly blocky with slightly rounded edges; silty with minor shaly partings; calcareous with scattered visible calcareous inclusions; no laminations; no sample fluorescence; very slow pale yellow cut fluorescence.

6880' SHALE - medium dark brown; moderate to occasionally well indurated; crumbly to brittle; platy to tabular; dull earthy to dull satin luster; finely abrasive texture; very silty; fair to good bedding or cleavage lineation; calcareous with common visible inclusions, possibly microfossils; no oil stain or sample fluorescence; slow extremely faint wispy streaming very pale yellow cut fluorescence; dissipates rapidly; no visible cut; extremely faint residual.

6885' SILTSTONE - predominantly brown; oil stain cuttings is grayish and less organic in appearance than predominant sample; moderate induration; dull luster; very slightly calcareous; no lamination or bonding; patchy medium brown oil stain; sticky; instant milky yellow cut; very diffuse; clear; very pale straw visible cut.

6890' SHALE/MUDSTONE - medium brown; moderate to moderately well indurated; tough; blocky; dull luster; finely abrasive texture; silty but becoming less so; increase greenish-brown cuttings with higher clay content; very poor fissility; moderately calcareous; faint trace cut fluorescence.

6895' SANDSTONE - medium brown-gray; very fine to medium; angular to subangular; moderately sorted; moderate induration; calcareous; poor porosity; abundant feldspar; common carbonaceous material; dirty appearance; scattered pyrite; flash cut fluorescence; no visible cut; very faint residual.

6900' SHALE - medium gray-brown, greenish-brown; moderate induration; blocky to tabular with slightly rounded edges; dull earthy luster; finely abrasive texture; silty but less so than above; increase clay component; poor fissility; no laminations; calcareous with scattered microfossils; trace smectite or fluorescent claystone as streaks and thin interbeds; no sample fluorescence.

6910' SHALE - medium brown; moderate induration; crumbly; slightly tough; tabular; dull earthy luster; very finely abrasive to rough gritty texture; silty occasionally grades to sandy mudstone; poor but improved fissility; calcareous; common white inclusions, probably microfossils but too distorted to see; no sample fluorescence; occasionally extremely faint wispy greenish cut fluorescence; diffuse very rapidly; no visible cut.

6920' SHALE - medium gray-brown; firm to hard; crumbly; slightly brittle; tabular becoming slightly sharper; dull luster; abrasive, gritty texture; silty, sandy in places; calcareous with scattered white and tan microinclusions; poor fissility; commonly green-gray waxy claystone; no sample fluorescence; extreme slight trace very faint greenish cut fluorescence; no visible cut; no oil stain; no petroleum odor.

6925' SANDSTONE - white; fine to medium; angular to subangular; moderately well sorted; moderate induration; moderately calcareous grain packed; kaolinitic; abundant feldspar, quartz and scattered lithic; occasional brown carbonaceous material; scattered pyrite.

6930' SHALE - medium dark gray-brown; moderately well indurated; slightly brittle; blocky; earthy; very finely abrasive; calcareous; very poor fissility grades to silty mudstone.

6940' SANDSTONE - white, gray; upper fine to medium; angular to subrounded; moderately sorted; friable, occasionally very tight; crunchy; white calcareous cement; quartz and feldspars dominantly disseminated lithics; infrequent glauconite; easily absorbs water; no oil stain.

6950' SHALE - light to medium gray-brown; moderately indurated; crunchy to brittle; platy cuttings are prominent; overall good internal microlayering; smooth to slightly arenaceous texture gradational between siltstone and shale; dull earthy to sparkling luster where mica inclusions are more abundant; no sample fluorescence; weak pale yellow-green cut fluorescence following repeated cut attempts.

6960' SILTSTONE - light to medium gray; very soft to slightly firm, crumbly; subrounded to rounded medium size cuttings with trace incipient fissility grading to silty shale; gritty punky texture; dull earthy luster; occasionally mica; trace pale green cut fluorescence from darker shale cuttings.

6970' SANDSTONE - white, gray; fine to medium; angular to subangular; moderately well sorted; moderate to low sphericity; easily friable abundant kaolinitic matrix with quartz and feldspars as primary constituents, occasionally dark brown, gray lithics; trace glauconite; bright yellow-white mineral fluorescence; extremely weak pale green cut fluorescence with many repeat cuts.

6980' SHALE - dark gray-brown; moderately indurated; brittle to crumbly; platy tabular cuttings; generally good internal microbedding; occasional cuttings are fractured; common limey blebs; slightly gritty to smooth texture; dull earthy luster.

6990' CLAY - light gray; very thick, stiff consistency; sticky, gritty texture; poor solubility; slightly calcareous; increase soft, slimey nodules with very poor solubility; no sample fluorescence; pale green cut fluorescence at first cut.

7000' SILTSTONE - light to medium gray-brown; soft to very firm; brittle, small subrounded cuttings; punky to slightly arenaceous texture; dull earthy luster; more firm cuttings waxy when gouged; bright white-yellow mineral fluorescence; trace oil in fractures.

7010' SHALE - rich dark brown; crunchy; brittle; moderately well indurated; incipient to subplanar microlayering; slightly more gritty texture; dull earthy luster; frequent subrounded white limey blebs; mica inclusions; very slow weak pale green cut fluorescence; no oil odor; trace oil in shale.

7015' SHALE - dark brown; moderately well indurated; crumbly to very tough; sharp, tabular to blocky with slightly rounded edges; rich earthy luster when developing sparkle when dry; abrasive silty texture; poor subparallel cleavage; slightly calcareous; fairly homogeneous; no distinct laminations or bonding; no sample fluorescence; very slow extremely weak wispy streaming to diffuse; very pale greenish cut fluorescence that dissipates rapidly; no visible cut; no stain; no odor.

7020' SHALE - dark brown, grayish-brown; hard; slightly brittle; tabular to occasionally platy; dull luster with common sparkle when dry; silty; abrasive texture; non to moderately calcareous in places; no cut fluorescence.

7025' SANDSTONE - white; fine to medium; subangular; poor sphericity; moderate to moderately well sorted; friable to moderate induration; slightly calcareous; grain packed, abundant feldspar; quartz with scattered gray occasional blue-green grains; local patchy pyrite; common kaolinitic in places; patchy bright yellow mineral fluorescence; occasionally very weak slow pale yellow wispy streaming cut fluorescence from pinpoint areas; rapidly becomes very diffuse; no visible cut.

7040' SHALE - medium to rich dark brown; fair induration; slightly crumbly; slight gritty texture; dull earthy luster; fair to poor fissility; slightly calcareous; trace relict foram blebs; trace silty material with infrequent fine sand grains; trace sample fluorescence from sandstone chips with calcareous mineral fluorescence also; slight trace weak pale yellow streamer from isolated sandstone chip; very poor weak yellow residual cut fluorescence; very weak yellow, very poor background cut fluorescence from shale fragments.

7050' SHALE - medium to rich brown; tough, hard; well indurated; gritty in part; abundant irregular calcite blebs; very weakly calcareous; lacking sharp angular edges to cuttings; trace rounded fragments; slightly sucrosic texture; dominantly gritty, earthy; trace light gray clay interbeds with bright yellow mineral fluorescence; no oil or cut fluorescence.

7070' SANDSTONE - light gray, white; fine to medium grained; light gray is loose, poorly consolidated; very easily friable; white to more well indurated; moderately well sorted; angular to subangular; subprismoidal to subspherical; abundant matrix material dominantly quartz with subequal amounts of feldspars; occasional dark lithics and glauconite; trace mica; no oil indicators.

7080' SHALE - medium to rich dark brown; firm; brittle; breaks into sharp fragments with platy appearance; silty texture; frequently very rough cuttings; dull earthy luster; occasional mica; trace carbonaceous material; trace relict forams; no oil shows.

7085' SILTSTONE - light gray-brown; slightly firm; crumbly; tough in places; subrounded to rounded cuttings with no visible structure; slightly gritty to arenaceous texture; dull earthy luster; trace tar healed fracture; very weak green cut fluorescence; pale yellow-white residual fluorescence; no oil odor.

7090' CLAY - pale gray; thick, pasty consistency, gummy, very abrasive texture due to abundant sharp hard shale cuttings; good solubility; moderate cohesion; trace soft malleable nodules with very poor solubility; transparent yellow-green cut fluorescence with repeated cuts.

7100' SHALE - medium to dark brown; tough, crunchy; brittle; blocky tabular cuttings are abundant occasionally less structured grading to siltstone; slightly gritty to arenaceous texture; dull earthy luster; scattered mica; occasional limey blebs; weak yellow-green cut fluorescence following repeat cuts.

7110' SILTSTONE - very dark olive brown; very dark brown; moderately indurated; crumbly to tough; predominantly blocky with slightly rounded edges; earthy; very gritty, abrasive texture; grades to minor amounts dark brown silty very fine sandstone; shaly cleavage in places; trace black oval inclusions; non to slightly calcareous; pale yellow cut fluorescence cut twice.

7115' SILTSTONE - very dark brown with occasional greenish-gray; possible interbeds; firm to hard; blocky with rounded edges to tabular and sharp; dull luster, very slight sparkle when dry; gritty abrasive texture; infrequently grading to very fine sandstone; non to very slightly calcareous in places; no apparent laminations; very dark cuttings slightly phosphatic; slightly shaly in part; no sample or cut fluorescence; very faint residual cut fluorescence.

7120' SHALE - dark gray-brown; firm to slightly hard; tabular; dull luster with slight sparkle when dry; very finely abrasive texture; poor stair-stepped cleavage; non to very slightly calcareous; no sample fluorescence; trace very weak diffuse cut fluorescence; no visible cut; very faint yellow residual.

7125' MUDSTONE - trace amounts; pale to medium greenish gray; firm; waxy luster, smooth argillaceous appearance; silty; noncalcareous; patch dark brown sticky oil stain on possible fracture plane; fast wispy streaming pale yellow transparent cut fluorescence; straw to amber visible cut.

7130' SILTSTONE/SHALE - very dark brown, gray-brown; firm to hard; crumbles when broken; tabular; earthy; increasing siltiness with distinct increase in abrasiveness; non to slightly calcareous; no laminations; very poor to infrequently fair subparallel cleavage; extremely slow diffuse cut fluorescence; weak pale green-yellow residual.

7130' SANDSTONE - white, predominantly light gray; very fine to medium with trace loose to medium to coarse quartz; angular to subangular; moderately sorted; well indurated; calcareous cement; grain packed; poor apparent porosity; quartz with common feldspar; trace light brown grains; very trace mica; occurs as thin laminations in shale; generally clay or/and silty near contact with shale; minor yellow mineral fluorescence; extremely faint diffuse cut; pale yellow residual.

7135' SHALE - predominantly dark gray brown, brown; firm to hard; tough to slightly brittle; tabular with generally sharp edges; dull luster with slight sparkle; very abrasive texture; very silty; occasional subparallel fissility; non to slightly calcareous; no sample or cut fluorescence.

7140' SILTSTONE - gray-brown; firm to hard; blocky; slightly rounded; dull luster; gritty; calcareous; occasionally mottled with white calcareous material, possibly fracture fill; trace cut.

7140' LIMESTONE - gray, occasionally tan; hard; thin tabular cuttings; dull slightly resinous luster; microsucrosic texture where fractured or broken; gray cuttings grading to calcarnite; trace oil stain on tan cutting.

7145' LIMESTONE - medium gray-brown; well indurated; brittle; tabular to sharp cuttings; slightly resinous; appears porcelaneous; initial slow reaction with HCl, then becomes very rapid.

7150' SANDSTONE - pinkish red; very fine grading to silt; moderately well sorted; moderately indurated; calcareous; dirty appearance; poor apparent porosity; trace blue-green oval grains; grades to calcarnite; no sample or cut fluorescence.

7160' SANDSTONE - white, medium green; fine to medium; angular to subangular; moderately sorted; friable white kaolinitic sandstone to well indurated tight gray sandstone; calcareous quartz and feldspar with patchy pyrite; no cut fluorescence.

7165' SANDSTONE - gray; very fine to fine, occasionally medium; subangular; poor sphericity; moderately sorted; friable to moderately well indurated; calcareous grain packed; tight to fair apparent porosity; commonly kaolinitic; common loose medium size quartz.

7170' SHALE/SILTSTONE - dark brown; firm to hard; blocky; dull with slight sparkle; gritty texture and appearance; silty grading to very fine sandstone in places; slightly calcareous; moderate fissility in places; no laminations.

7175' SHALE - medium to dark brown; crunchy; moderately well indurated; increased fissility breaks in platy fragments; gritty to slightly arenaceous texture; dull earthy luster; occasionally mica; very pale yellow-white residual fluorescence after first cut; pale yellow-green cut fluorescence following repeated cut attempts.

7180' CLAY - light gray; moderately thick pasty consistency; slightly stiff; sticky abrasive texture; poor cohesion; expands slightly when rehydrated; trace medium size soft gritty nodules; weak pale yellow cut fluorescence.

7190' SANDSTONE - white; fine to medium grained; angular to subangular; moderately well sorted; moderate to low sphericity; few cuttings readily absorbs water; dominant grain packed; occasional abundant kaolinitic matrix; dominantly quartz with feldspar mostly alkali; occasional dark lithics; trace glauconite; abundant pyrite; sample contains extensive LCM; hole still very tight; no oil odor, sheen; no sample fluorescence; no cut fluorescence; weak pale yellow residual fluorescence.

7200' CLAY - medium gray-brown; thick, stiff consistency; gummy, abrasive texture; spongy due to LCM; good solubility; few round, soft, pliable nodules with very poor solubility; weakly calcareous; increase glauconite in sandstone; few with abundant pyrite; shale is very silty; pale yellow-green cut fluorescence with repeated cuts; persistent pale yellow residual cut fluorescence.

7210' SHALE - dark brown; firm to hard; crunchy; tough; blocky to platy cuttings; occasional stair-step fissility; gritty to arenaceous texture; dull earthy luster; trace limey blebs; trace pyritic; weak yellow residual fluorescence.

7215' SAND - white, gray; fine to coarse; very angular and subrounded; poorly sorted; moderate to low sphericity; dominantly quartz and feldspars; dark lithics; occasionally glauconite; LCM in sample; cut fluorescence from pipe dope.

7220' SILTSTONE - medium gray; light gray when dry; firm; rounded cuttings; structureless to exhibiting incipient fissility; slightly gritty texture; dull earthy luster sparkling with occasional mica; slight increase in pyritic sandstone; no sample fluorescence; cuts from very pale yellow residual cut fluorescence.

7225' SANDSTONE - white to light gray; very fine to medium; trace coarse, predominantly fine; subangular; poor to moderate sphericity; friable to moderately well indurated; grain packed; calcareous cement; poor apparent porosity; abundant feldspar to small slightly kaolinitic; quartz and spotty dark gray lithic fragments; bright spotty yellow-white mineral fluorescence; occasionally slow diffuse pale yellow cut fluorescence; no visible cut; no oil stain; no fluorescence pops; pale yellow residual.

7230' SANDSTONE - light gray; fine to coarse; angular to subangular; poor to moderate sphericity; moderately sorted; moderate to moderately well indurated; calcareous cement; tight grain packed; abundant feldspar minor kaolinite; common spotty dark gray grades to possible lithic fragments; fluorescence and cut as above.

7235' SHALE - dark brown; firm to hard; blocky; earthy; abrasive silty texture; slightly calcareous; no laminations; very faint trace cut fluorescence.

7240' SANDSTONE - white to light gray; fine to medium, occasionally coarse; subangular to subrounded; poor to moderate sphericity; moderately sorted; moderately well indurated; common loose sand in sample; grain packed calcareous cement; poor apparent porosity; quartz with abundant feldspar; common medium to coarse subrounded lithic fragments; trace blue-green grains; kaolinitic in places; no visible oil stain; no odor; spotty bright yellow mineral fluorescence; occasional slow wispy streaming pale yellow cut fluorescence; no visible cut; faint residual.

7245' SANDSTONE - white, light gray; fine to coarse; angular to subrounded; moderate sphericity; poor sorting; moderately indurated; grain packed calcareous cement with scattered kaolinite; poor apparent porosity; occasionally fair where coarse grained; quartz with abundant feldspar; spotty dark gray lithics; trace mica; no stain or odor; no blebs; very slow weak very diffuse pale yellow cut fluorescence; no visible cut; very pale yellow residual.

7250' SANDSTONE - white, occasionally light gray; fine to coarse, predominantly fine to medium; angular to subrounded; predominantly subangular; poor sphericity; moderately sorted; moderate induration; increase loose sand; calcareous and kaolinitic cement; grain packed; overall poor apparent porosity; quartz abundant feldspar; minor blue-green grains; decreased lithics; spotty yellow white mineral fluorescence; extremely weak diffuse pale yellow cut fluorescence.

7255' SANDSTONE - white; fine to coarse; subangular to subrounded; poor sphericity; moderately sorted; moderately indurated; abundant loose sand; calcareous; poor to fair apparent porosity; quartz with abundant feldspar; trace rose quartz with minor pale blue-green grains; trace brown mica stain; spotty mineral fluorescence; extremely diffuse cut fluorescence; no visible cut; no fluorescence pops.

7260' SANDSTONE - white; fine to coarse; angular to subangular; poor sphericity; poor to moderately sorted; moderately indurated; grain packed; calcareous cement, occasionally kaolinitic; poor apparent porosity; abundant feldspar, quartz; scattered biotite and lithic fragments; trace orange stain quartz.

7265' SANDSTONE - white; fine to coarse; subangular to rounded; poor to moderate sphericity; poorly sorted; moderately indurated; common loose coarse grains; grain packed; calcareous and kaolinitic cement; quartz with feldspar; scattered subangular lithics; occasional rounded blue-green grains.

7270' SHALE - medium dark brown; firm to hard; tough to slightly brittle; tabular; earthy sparkle; silty abrasive texture; no laminations; no cut fluorescence; very faint residual cut fluorescence.

7275' SANDSTONE - white, light gray with slightly greenish tint; fine to coarse; angular to subrounded; poor sphericity; poor to moderately sorted; moderate to moderately well indurated; grain packed; calcareous cement; poor to occasional fair apparent porosity; abundant feldspar with increased quartz; spotty gray lithic fragments; common pale green-white to blue-green grains; scattered mica flakes; trace mineral fluorescence; no immediate cut fluorescence.

7580' SANDSTONE - common sand; slight increase round sea green grains; trace orange grains; no oil stain; no odor; no fluorescence pops; no sheen; very weak trace diffuse pale yellow cut fluorescence.

7285' SANDSTONE - white with pale bluish tint; fine to coarse; angular to subrounded; poor sphericity; poorly sorted; moderately indurated; good to poor; tight; calcareous; common pale blue-green grains giving blue tint; abundant feldspar common quartz; trace interbedded shale.

7290' SANDSTONE - trace brown, brown-gray; fine; subangular to subrounded; moderately well sorted; friable; moderately indurated; grain packed; slightly calcareous; abundant quartz, minor feldspar; minor sporbo; no sample fluorescence or cut.

7295' SANDSTONE - white; fine to coarse, predominantly medium; subangular to subrounded; poor to moderate sphericity; moderately sorted; moderately indurated; common loose sand; calcareous; common quartz with feldspar; spotty blue-green grains as above; trace pyrite; very weak residual cut.

7295' SHALE - dark brown; firm to hard; crumbly to tough; earthy with common sparkle when dry; silty with gritty textures; non to slightly calcareous; very weak trace diffuse pale yellow cut fluorescence.

7300' SANDSTONE - white; fine to coarse; subangular to subrounded; poor to moderate sphericity; poor to moderately sorted; moderately indurated; grain packed; calcareous cement; abundant feldspar with common quartz; trace bluish grains; spotty copper colored mica; spotty yellow mineral fluorescence; very slow diffuse pale yellow cut fluorescence; no visible cut.

7310' SANDSTONE - white; fine to coarse; angular to subrounded; poor sphericity; poorly sorted; moderate induration; grain packed; calcareous cement; poor to rare moderate apparent porosity; abundant feldspar; quartz with very minor lithic fragments; trace pyrite.

7320' SANDSTONE - white to very light gray; hard; tabular, blocky cuttings; upper fine to upper coarse; angular to rounded; dominantly spherical; calcareous and kaolinitic; tight; grain supported; abundantly quartz; trace pyrite; common brown to black lithic/mafic grains; occasional shale; trace red-pink grains; orange mineral fluorescence; trace very weak yellow-orange residual cut fluorescence only.

7330' SANDSTONE - becoming occasionally carbonaceous; black, pyritic, carbonaceous layering; trace brown oil blebs and sheen in blender; very slow streaming, transparent yellow streaming from carbon cutting; no visible cut; weak yellow-orange residual cut fluorescence.

7340' SHALE - dominantly dark brown; abundantly large, sloughing cutting; firm to hard; small, flaky to large blocky, dominantly structureless cuttings; gritty and silty with possibly very fine disseminated pyrite; no oil or cut fluorescence; trace brown, hard, very argillaceous limestone.

7350' SANDSTONE - white to light gray, develops green tint after acid reaction; hard to occasionally slightly friable; medium lower to coarse upper; dominantly medium upper to coarse lower; angular to subrounded; poor to moderate sphericity; moderately sorted; dominantly calcareous and tight; common kaolinite; abundant white feldspars; clear, vitreous quartz; common dark lithics; occasional pyrite; trace carbon; rare shale clast; yellow to orange mineral fluorescence; no oil or cut fluorescence.

7360' SHALE - increase amounts; dark brown; hard, blocky cuttings; moderately brittle; silty; noncalcareous; pyritic; fish parts; dominantly massive to poorly fissile; rare brown-orange cutting; rare green tuffaceous cutting; trace brown, dolomitic limestone; no oil.

7370' SHALE - dark brown; becoming flaky and increasingly fissile; occasionally slickensides; rare, small siliceous orange-red cutting; trace gray-green, tuffaceous, waxy cutting; occasional brown to off white, dolomitic limestone; sand probably in large part slough.

7380' SHALE - medium dark brown, greenish-brown; firm to slightly brittle; dull earthy luster; silty with abrasive texture; non to very slightly calcareous; no laminations or banding; no sample fluorescence; trace extremely faint yellow residual.

7385' SANDSTONE - gray-green; fine; moderately sorted; friable; clayey matrix; quartz with scattered feldspar and dark grains; fair apparent porosity; no sample or cut.

7395' SHALE - greenish-brown, brown; firm; small, blocky cuttings; very poor fissility predominantly grades to silty mudstone; earthy; gritty; no laminations; noncalcareous; rarely grades to very fine sandstone; no sample fluorescence; trace cut; abundant dope.

7400' SILTSTONE - greenish-brown, gray-green; firm; hard; blocky; dull luster; commonly sparkling when dry; abrasive texture grades to very fine sandstone; non to slightly calcareous; trace carbonaceous material; no sample fluorescence; no cut fluorescence.

7405' SHALE - gray-brown; firm; tabular; dull luster with common sparkle when dry; occasionally appearing sucrosic; non to slightly calcareous; no banding; no sample or cut fluorescence.

7405' SAND - predominantly white sandstone; increasingly coarse; subangular to subrounded grains; common gray opaque quartz grains.

7410' SILTSTONE - greenish-brown to dark brown; firm; crumbly to slightly brittle; tabular to blocky; dull luster with common sparkle; noncalcareous; very poor fissility; some cuttings appear slightly porcelaneous; no sample or cut fluorescence.

7420' SANDSTONE - white, occasionally light gray; fine to coarse; angular to subrounded; predominantly subangular; poor sphericity; moderately sorted; moderately indurated; calcareous; grain packed; poor apparent porosity; quartz with abundant feldspar; common dark gray lithics; trace spotty blue-green grains; faint yellow mineral fluorescence; no visible cut fluorescence.

7430' SANDSTONE - white; fine to coarse; angular to subrounded; predominantly subangular; poor to moderate sphericity; poor to moderately sorted; moderate to moderately well indurated; grain packed; calcareous cement; tight; slightly kaolinitic in places; quartz with abundant feldspar; trace greenish and occasional pale blue grains; trace dark lithic fragments; spotty yellow mineral fluorescence; no cut.

7440' SHALE - gray-brown; firm; tabular to blocky; dull luster; gritty abrasive texture; non to slightly calcareous; grades to silty mudstone.

7450' LIMESTONE - strong trace; very light to medium brown; hard; very angular, blocky cuttings; sparkling to resinous; microcrystalline; argillaceous; dolomitic to slow acid reaction; very silty; massive; no recognizable microfossils; no oil.

7460' SAND - white, clear, black, light green; very fine to medium; angular to subrounded; subspherical; moderately sorted; dominant feldspars and kaolinite; abundant quartz; frequent dark mafics/lithics; possibly in part carbonaceous material; trace pyrite; abundant calcite; no oil or bulk cut fluorescence.

7470' SANDSTONE - white; hard and brittle; very fine to very coarse, increasingly coarse downward; angular to subangular with common rounded to well rounded; poor sorting; calcareous cement; arkosic; abundant white, partially altered feldspars; common clear, light green, orange-red to pink quartz; common grainy quartzite with occasional pyrite overgrowths; scattered biotite; common dark lithics/mafic grains; occasional pyrite aggregates; tight; no oil.

7475' SHALE - medium to dark gray-brown; firm; crumbly; tabular; flat to dull satin luster; very finely abrasive texture; silty in places; non to slightly calcareous; some spotty white oval markings on dry cuttings, possibly bug ghosts; very poor indistinct fissility, better termed mudstone; no sample fluorescence; extremely diffuse faint greenish cut fluorescence; no visible cut; fain green residual cut fluorescence.

7480' SANDSTONE - white, light gray; fine to coarse; subangular to subrounded; poor to moderate sphericity; poor sorting; moderate to well induration; grain packed; calcareous cement; abundant feldspar; scattered quartz; trace dark gray lithics; trace mineral fluorescence; no cut fluorescence.

7485' SHALE - medium to dark gray-brown; moderate induration; crumbly to occasionally very slightly brittle; tabular; dull earthy luster; slightly higher apparent clay content; very finely abrasive texture; non to slightly calcareous; very poor but slightly improved fissility, still predominantly grades to mudstone; occasionally silty grading to very fine sandstone with slight sparkle when dry; no sample fluorescence; extremely slow, extremely faint greenish cut fluorescence; no visible cut.

7490' SAND/SANDSTONE - light gray; fine to very coarse; subangular to subrounded; moderate sphericity; poor sorting; friable to moderately well indurated; common loose coarse grains; grain packed; calcareous cement; poor apparent porosity; quartz with abundant feldspar; spotty dark gray lithics; trace faint spotty yellow mineral fluorescence; no cut fluorescence.

7495' SHALE - medium to dark brown, reddish brown; firm to hard; tabular to blocky with slightly rounded edges; dull earthy luster; slightly sparkly when dry; very finely abrasive; increased apparent clay content; very slightly calcareous in places; no laminations; very poor fissility, grading to mudstone; very diffuse greenish cut fluorescence.

7500' SHALE - gray-brown, brown; firm; blocky to tabular; earthy; smooth to very finely abrasive; silty in part; very poor fissility; grading to mudstone; no sample fluorescence; continued extremely weak greenish cut fluorescence with faint greenish residual cut fluorescence.

7510' SHALE - dark brown, gray-brown; firm to slightly hard; dark cuttings are generally blocky, gray-brown, tabular; crumbly; earthy luster; very finely abrasive; silty, occasionally grading to silty mudstone; some gray-brown fine sandstone with clayey matrix; slightly calcareous; occasional cuttings floculating slightly in HCl; no sample fluorescence; extremely faint greenish cut fluorescence; no visible cut.

7515' SILTSTONE - brown to light brown with occasional green cast; slightly firm; rounded, tabular cuttings; dull to slightly sparkling luster; abrasive texture; commonly sandy; occasional small sandstone pods within siltstone; very calcareous; rarely grades to silty limestone; occasional coarse micas; generally structureless; rare fissility; rarely grades to silty shale; no oil indicators.

7520' SANDSTONE - white with slight green cast; moderately friable; moderately well indurated; fine to commonly very coarse grained, predominantly upper medium; subrounded to subangular; very poorly sorted; predominantly low sphericity; structureless; calcareous cement, quartz, feldspars, light green transparent grains, dark green opaque grains; occasional micas, occasional lithics; occasionally argillaceous; rarely silty; good apparent porosity; no oil indicators.

7525' SHALE - medium brown to dark brown; slightly firm to commonly firm; subrounded to rounded, tabular cuttings; dull to slightly sparkling luster; slightly abrasive texture; common moderate fissility; occasional slickensides; occasional siltstone, sandstone, calcareous inclusions; commonly very calcareous; occasionally finely micaceous; commonly very silty; commonly may be called a shaly siltstone; no oil indicators except very slight weak very pale green-yellow cut fluorescence; very pale yellow residual cut fluorescence.

7540' SHALE - dark gray-brown to brown; hard to very hard; well indurated; very slightly brittle; common large sloughing shale fragments; predominantly medium, subangular to subrounded, slightly blocky to irregular, tabular cuttings; dull to slightly sparkling luster; slightly abrasive/gritty texture; micaceous; very silty; poor fissility; slightly calcareous; trace foraminiferal debris; minor coarse silty streaks and laminations; occasional waxy, clayey, highly slickensided surfaces; no cut fluorescence.

7545' SHALE - persistent trace slickensided surfaces; generally structureless; gritty; silty; increasingly calcareous; persistent foram debris; micaceous; minor black carbonaceous material; no cut fluorescence.

7555' SANDSTONE - white; fine to very coarse; subangular, subrounded; poor sphericity; poor sorting; moderate induration; common loose coarse to very coarse grains; calcareous cement; kaolinitic in part with common to abundant feldspars; scattered dark gray grains with minor mafics; trace mineral fluorescence; rare very weak diffuse pale yellow cut fluorescence.

7555' MUDSTONE - dark brown, very dark gray-brown; firm; blocky; rich earthy luster; slight sparkle when dry; very finely abrasive texture with silty appearance; rare very poor fissility; non to moderately calcareous; occasional visible inclusions, possibly bugs; no sample fluorescence; very weak cut fluorescence, possibly x-pel G contamination.

7560' SANDSTONE - white, light gray; fine to coarse; angular to subangular; poor sphericity; poor to moderate sorting; moderate to moderately well indurated; tight; calcareous cement; more ratty appearance than above with trace mudstone in matrix in occasional cuttings; quartz with common to abundant feldspar; common dark gray grains; possible smokey quartz; trace green and bright pink grains; rare mineral fluorescence; no cut fluorescence.

7570' SANDSTONE - white; fine to coarse, predominantly medium; subangular to subrounded; moderate sphericity; moderate sorting; friable to moderate induration, common loose grains; calcareous cement; poor apparent porosity; abundant feldspars with common gray and white quartz; common but decreased dark gray fragments; kaolinitic in places.

7577' SANDSTONE - light gray, salt and pepper; fine to medium; subangular; poor to moderate sphericity; moderately well sorted; moderately well indurated; tight; calcareous; less feldspar than above.

7580' SANDSTONE - light gray; hard and brittle, occasionally very hard; very fine to coarse; angular to subrounded; dominantly low sphericity; poor sorting; tight; commonly calcareous to kaolinitic; quartz and abundant feldspars; common micas; common gray and green, coarse, rounded quartzitic grains; occasionally pyritic and carbonaceous; scattered dark lithic/mafic grains; rare dark brown, sticky oil stains with dull orange fluorescence; faint milky yellow cut fluorescence and straw visible cut.

7590' SANDSTONE - white and light to medium gray; lower medium to upper very fine grained; subangular to subrounded; poor to moderate sorting; spherical to subdiscoidal; very tight, good calcareous cement; well indurated; low apparent porosity; occasionally parts along subparallel planes; predominantly quartz, common feldspars; abundant biotite; common kaolinitic matrix; trace silty blebs; minor lithic inclusions; slight bright yellow mineral fluorescence; lacking distinct oil fluorescence; weak yellow cut fluorescence probably due to x-pel G.

7600' SHALE - medium to dark brown and gray-brown; hard to very hard; moderate to well indurated; small to predominantly medium, subangular to angular, tabular to slightly blocky cuttings; sparkling to shiny luster; abrasive texture; very micaceous; abundant biotite; weak trace microfossil inclusions; poor fissility; very silty; minor very cherty fragments; slightly calcareous; no oil or cut fluorescence.

7610' CLAY - medium gray to white-gray; soft to slightly stiff; thick, pasty consistency; moderate to good solubility; gritty texture; silty; slightly kaolinitic; sticky; slightly punky; occasionally soft to slightly firm clay nodules; no cut fluorescence.

7620' SANDSTONE - white, light gray and clear; lower fine to lower coarse grained; subangular to medium; spherical to subdiscoidal; poorly sorted; increased abundance of loose quartz grains; persistent tight, well indurated, calcareous sandstone fragments; abundant biotite; occasionally chloritized; trace feldspars; minor kaolinitic matrix; persistent spotty yellow mineral fluorescence; minor yellow residual cut fluorescence (possibly due to x-pel G); lacking good oil indicators.

7630' SHALE - medium to dark brown, occasionally gray-brown; slightly soft to hard; blocky, massive to flaky, weakly fissile; earthy; increasingly soft; silty; slightly punky cuttings grading to claystone; occasionally very hard, calcareous, sparkling, grading to argillaceous limestone; dominantly slightly to moderately calcareous; visible sharp contact with sandstone; abundant x-pel G in blender; weak yellow cuts from contamination; no oil fluorescence; yellow mineral fluorescence from calcareous sandstone; high cuttings gas probably from recirculated carbide.

7640' CLAY - medium to dark gray-brown; increasing amounts thick, moderately stiff; malleable; moderately cohesive to crumbly; dominantly soluble with common poorly soluble, silty claystone cuttings; poorly expansive; moderately calcareous; very silty; no oil.

SHALE - becoming increasingly fissile with occasional small forams, occasional calcite fracture fill, increasing as possible clasts in sandstone.

7650' SANDSTONE - light gray; very hard; fine to medium; angular; poor to moderate sorting; dense and very tight; slightly calcareous; dominantly grain supported with siliceous cement; quartz and feldspars; rarely kaolinitic; abundant lithics; scattered micas; occasionally pyritic; decreased carbon; occasional sharp contact with dark brown shale; shale occasionally as apparent clasts; common moderately bright yellow mineral fluorescence; no stain or cut fluorescence.

7660' SHALE - becoming increasingly medium to dark brown with red tint; slightly soft, rounded, slightly punky cuttings; commonly massive and grading to claystone; increasingly calcareous; silty; scattered small forams; no oil or cut fluorescence; persistent x-pel G contamination.

7670' SANDSTONE - white, clear and light to medium gray; lower very fine to lower medium grained; angular to subrounded grains; poorly sorted; subprismoidal to subdiscoidal; tight; well indurated; strong calcareous cement; commonly brittle; minor kaolinitic clay matrix; low apparent porosity; predominantly quartz with common feldspars; abundant biotite, occasionally chloritized; individual cuttings exhibit shale/sandstone contacts; minor disseminated pyrite; pinpoint spotty pale yellow mineral fluorescence; no cut fluorescence.

7680' SANDSTONE - as above but increasingly kaolinitic and friable; scattered coarse grains; sample predominantly loose grains; 31 units ditch with C-1 through 5, 350 units cuttings gas; common to abundant pinpoint to 2 mm bright yellow to orange-yellow fluorescent pops; weak odor; sample and cut fluorescence largely obscured by bright yellow mineral fluorescence and x-pel G contamination; no visible stain; pops visible as light brown oil.

7690' SHALE - medium red-brown to dark brown, occasionally gray; slightly soft to hard; massive to weakly fissile; dominantly very calcareous; silty; very fine, probably pyritic sparkle; occasionally carbonaceous; occasional scattered, small, calcareous forams; occasionally as apparent clasts in sandstone; no oil or cut fluorescence.

7700' CLAY - light gray; very soft; slightly thick to thin pasty consistency; moderate to very good solubility; slightly creamy; silty; greasy; fluffy; minor soft nodules; no cut fluorescence.

7710' SANDSTONE - white, occasionally clear, and light white-gray; low fine to upper medium grained; subangular to subrounded; spherical to prismoidal; poorly sorted; very tight; well indurated; slightly friable; poor apparent porosity; predominantly quartz, trace feldspars, abundant biotite; minor chlorite stain; strong calcareous cement; minor lithic grains; strong milky yellow cut fluorescence from x-pel G contamination; lacking discernible oil or cut fluorescence.

7720' SHALE - medium to dark brown and chestnut brown; hard; moderate to well indurated; small to medium, subangular to subrounded, slightly tabular to blocky cuttings; dull to slightly sparkling luster; gritty to abrasive texture; silty; calcareous; poor fissility; indistinct microfossil remnants; isolated cuttings exhibit sharp contact with sandstone; no cut fluorescence.

7730' SANDSTONE - white to light white-gray; lower fine to occasionally lower coarse grained; subangular to subrounded grains; spherical to subdiscoidal; poor to moderate sorting; tight; well indurated; slight increase in friability; poor apparent porosity; predominantly quartz; trace feldspar, biotite; minor chlorite staining; calcareous; spotty yellow mineral fluorescence; no cut fluorescence.

7740' SHALE - dark brown to medium to dark chestnut brown; firm to hard; predominantly moderate to well indurated; occasional punky cuttings; small to medium, subrounded, tabular cuttings; slightly dull to sparkling luster; abrasive to gritty texture; silty; poor fissility; calcareous; generally structureless; no cut fluorescence.

7750' LIMESTONE - dark brown; hard and dense; sparkling and subsucrosic; microcrystalline; nonvugular; very argillaceous and silty; slow initial acid reaction, probably dolomitic; no apparent microfossils; associated with dark brown shale; very dull orange mineral fluorescence; no oil.

7760' SHALE - two types: 1) dark brown; hard; angular; slightly hackly cuttings; commonly tabular to flaky; sparkling and silty; noncalcareous; fish debris; fissile; 2) medium brown; slightly soft, rounded, punky cuttings; grades to claystone; massive to slightly flaky; very calcareous; silty; no oil any lith type.

7770' SANDSTONE - light gray; firm to hard; occasionally slightly friable; lower fine to upper medium; angular to subangular; dominantly spherical; poor sorting; calcareous and commonly kaolinitic; arkosic; vitreous quartz; white, commonly altered feldspars; common lithics, chlorite, biotite; dominantly very tight; yellow mineral fluorescence; no oil stain; cut fluorescence from x-pel G.

7775' STRONG TRACE TUFF - gray and light green; slightly soft; waxy; flaky; pyritic; translucent; bright yellow mineral fluorescence; no oil any rock type.

7780' SANDSTONE - becoming commonly medium gray and pyritic; hard and tight; fine to medium; angular; poor sorting; calcareous; arkosic; dull yellow mineral fluorescence; no oil.

7790' SHALE - dark brown; hard, variety, occasionally pyritic, slickensides; rare dark brown, sticky oil stain on slickensided surfaces; milky yellow cut fluorescence.

7790' CLAY - medium brown; soft and cohesive; very soluble; extremely calcareous; silty; slightly sandy; derived from soft brown shales; no pops or iridescence; no petroleum odor.

7800' TUFF - gray; very pale green-yellow; slightly soft, flaky cuttings; waxy and sparkling; translucent; disseminated pyrite; common red, flaky inclusions; bright yellow mineral fluorescence; no oil any lith type.

7810' CLAY - medium to dark gray-brown; soft to slightly stiff; thick, pasty consistency; moderate to good solubility; silty; slightly gritty texture; moderate cohesion; slightly sticky; trace firm, slightly malleable; structureless claystone cuttings; no cut fluorescence.

7820' SANDSTONE - white and light to medium gray; lower fine to upper medium grained; subangular to subrounded; poor to moderate sorting; spherical to subprismoidal; tight; well indurated; low apparent porosity; calcareous; predominantly quartz; trace feldspars, biotite; minor trace glauconitic fragments; some sandstone may represent slough from uphole; minor yellow cut from x-pel G contamination; no discernible oil or cut fluorescence.

7830' SHALE - medium to dark chestnut brown; firm to hard; occasional soft, punky, diatomaceous-like cuttings; predominantly moderately indurated; small to medium, subangular to rounded, tabular cuttings; slightly dull to predominantly sparkling luster; gritty to abrasive texture; poor fissility; very silty; micaceous; trace microfossil remnants; calcareous; minor slickensided surfaces; no cut fluorescence.

7840' SILTSTONE - white and light gray; lower fine to lower medium grained; prismoidal to spherical; subangular to subrounded; poorly sorted; tight; well indurated; low apparent porosity; calcareous; kaolinitic matrix material common; abundant quartz; common feldspars; trace biotite and hornblende; minor glauconitic fragments; no oil or cut fluorescence.

7850' CLAY - medium to dark gray-brown; slightly stiff; thick, pasty consistency; gritty texture; moderate solubility; good cohesion; very silty; very sticky; low to moderate apparent plasticity; trace soft, malleable, structureless claystone cuttings; no cut fluorescence.

7860' SHALE - medium to dark brown; slightly soft to hard; silty to slightly punky texture; sparkling to earthy; slightly to very calcareous; sample overall very calcareous; scattered calcareous inclusions, possibly microfossils; poor to fair fissility; trace slickensides; trace tuffaceous cuttings; no oil.

7870' SANDSTONE - white to light gray; dominantly hard; occasionally slightly friable; very fine to coarse; angular to subangular with occasionally subrounded; moderate sphericity to occasionally subprismoidal; poor sorting; grain supported; slightly calcareous; feldspars, quartz, lithic grains; occasional chlorite; occasional glauconite; trace pyrite; poor apparent porosity and permeability; yellow-orange mineral fluorescence; no oil stain or cut fluorescence; abundant x-pel G.

7880' SANDSTONE - increasingly kaolinitic and friable.

SHALE - medium to dark brown; soft to hard; massive to weakly fissile; occasionally hackly; no apparent fracturing; commonly very calcareous; hard variety slightly calcareous; silty; occasional scattered calcareous forams; no apparent slickensides; no oil or cut fluorescence.

7890' SHALE - medium to dark gray-brown and chestnut brown; slightly firm to hard; moderate to well indurated; small to medium, subangular to subrounded, tabular to slightly blocky cuttings; strong sparkling luster; abrasive to slightly gritty texture; very micaceous; silty; calcareous; abundant x-pel G contamination; no oil or cut fluorescence.

7900' SANDSTONE - white and light gray; lower fine to upper fine grained; subangular to subrounded; subprismoidal to subdiscoidal; tight; well indurated; calcareous; low apparent porosity; kaolinitic matrix; predominantly quartz; abundant feldspar; minor biotite; trace amphibole and pyroxene; minor spotty yellow mineral fluorescence; no oil or cut fluorescence.

7910' CLAY - medium gray to brown-gray; soft; thin to slightly thick, pasty consistency; good solubility; gritty texture; very silty; slightly micaceous; slightly sticky; becoming creamy; minor soft to slightly firm malleable nodules; no cut fluorescence.

7920' SHALE - dark brown; dominantly firm to hard; occasionally slightly soft; platy to flaky cuttings; commonly massive and blocky; overall poor fissility; silty and sparkling; slightly to dominantly very calcareous; very fine disseminated pyrite; scattered red, phosphatic fish parts; no to rare apparent microfossils; trace slickensides; no oil.

7930' SHALE - occasionally gray; slightly soft; tuffaceous; gradational contact with dark brown shale; silty; pyritic; flaky; bright yellow mineral fluorescence; no oil.

7940' CLAY - medium gray-brown to brown; slightly stiff to soft; thick, pasty consistency; slight decrease in solubility; very gritty to slightly abrasive texture; very silty; slightly micaceous; very sticky; good cohesion; common soft, malleable nodules; no cut fluorescence.

7950' SHALE - medium to dark chestnut brown, gray-brown; slightly firm to hard; moderate to well indurated; small to medium, subrounded to subangular cuttings; sparkling luster; finely abrasive texture; slightly calcareous; silty; micaceous; poor fissility; weak trace slickensided surfaces; minor very fine-grained sand pods; trace white calcareous inclusions; no cut fluorescence.

7960' SANDSTONE - white and light gray; upper very fine to lower medium grained; angular to subangular; poorly sorted; prismoidal to subdiscoidal; tight; well indurated; slightly friable; low apparent porosity; calcareous; moderately kaolinitic matrix; predominantly quartz and feldspar; trace hornblende and biotite; minor lithic inclusions; structureless; spotty bright yellow mineral fluorescence; persistent x-pel G contamination; no cut fluorescence.

7970' SHALE - dark gray-brown to brown; firm to hard; moderate to well indurated; occasionally punky to slightly crunchy; small to slightly large; subangular to rounded cuttings; dull to sparkling luster; very finely abrasive texture; very silty; punky cuttings are very clayey; poor fissility; lacking distinct structures; very micaceous; weakly calcareous; minor slickensided surfaces; occasional cuttings exhibit sharp contact with fine to medium-grained, well indurated sandstone; no cut fluorescence.

7980' CLAY - medium gray-brown to slightly dark brown; soft to stiff; thin pasty consistency; moderate to good solubility; gritty texture; very sticky; silty; micaceous; no cut fluorescence.

8000' CLAY - gray-brown to brown; firm and thick; gummy to crumbly; common large rounded aggregates over shakers; soluble with scattered less soluble nodular lumps; moderately calcareous; extremely silty; mild expansion when rehydrated; abundant sporbo; no oil.

8010' SANDSTONE - light gray to white; slightly friable to very firm and brittle; fine lower to coarse lower; angular to subrounded; poor to moderate sorting; tight; kaolinitic; very slightly calcareous; arkosic; feldspars and quartz; trace lithics; pyrite; spotty yellow mineral fluorescence; no cut fluorescence.

8020' SHALE - commonly medium brown to gray-brown; soft, slightly punky, rounded cuttings; earthy; slightly calcareous; slightly silty; occasional glauconite, overall decreased amounts; sporbo; occasional abundant forams; no oil.

8034' Lost circulation in sands from 8006' to 8025'.

8040' Repeated lost circulation, samples 98% LCM.

8060' SHALE - medium to dark gray-brown; slightly mottled appearance; firm and brittle; silty; slightly calcareous; delayed, mild acid reaction; glauconite inclusion; occasional calcareous forams; occasionally pyritic; occasional fish part; no oil.

8070' SANDSTONE - light gray to white; hard to slightly friable; very fine to very coarse; angular; poor sorting; calcareous to kaolinitic; arkosic; clear quartz; common dark gray, blue-gray grains; occasional mica, pyrite; yellow-orange mineral fluorescence from calcareous cuttings; no cut fluorescence; sample 98% LCM; partial returns.

8080' SAND - desilter sample; clear, white; very fine to coarse; angular to subangular; dominantly spherical to subprismatic; clear and cloudy quartz; abundant calcite; trace pyrite aggregates; abundant LCM; no oil.

8105' SANDSTONE - light gray, brownish gray; very fine to medium; commonly silty; subangular; poor to moderate sorting; friable to moderate induration; predominantly grain packed; slightly calcareous; commonly kaolinitic; trace bright green glauconite.

8110' SANDSTONE - medium gray, brownish gray; very fine to medium, predominantly fine; commonly silty; moderately sorted; slightly friable to moderately well indurated; grain packed with common kaolinitic interstitial clay, kaolinite; scattered black mafics; trace green grains, possibly glauconite; clay in matrix; moderately expansive.

8120' SHALE - dark brown; firm to hard; tabular; earthy; calcareous in places; poor to fair fissility; occasional white microinclusions interbedded with silty sandstone; trace slow wispy streaming greenish cut fluorescence.

8130' SHALE - dark brown; hard; blocky; angular; earthy luster; slightly calcareous; very finely abrasive texture; cuttings may be slough.

8140' SANDSTONE - light to medium gray; very fine to medium with trace coarse; very poorly sorted; friable to well indurated; calcareous; grain packed; common gray clay; possibly kaolinite; trace pyrite; becoming increasingly silty; no sample or cut fluorescence.

8150' SILTSTONE - medium gray; soft, clayey cuttings; dull earthy luster; soluble with agitation; moderately expansive where very clayey; noncalcareous; no cut fluorescence.

8160' SHALE - very dark brown; firm to hard; tabular with sharp edges; dull luster, occasionally polished as if sheered; silty in places; trace smectite lenses; calcareous in places with visible microinclusions; trace sporbo; no sample fluorescence; moderately fast wispy bright green-yellow cut fluorescence; no visible cut.

8170' SHALE - dark brown; firm to hard; blocky; dull earthy luster with moderate sparkle when dry; gritty, silty texture; minor sheering with polished surfaces; slightly calcareous; no sample fluorescence; weak wispy streaming greenish yellow cut fluorescence, probably x-pel G contamination; no visible cut.

8180' SANDSTONE - light gray, pale brownish gray; very fine to coarse; subangular; poor sorting; friable to moderately well indurated; grain packed; slightly calcareous; quartz and feldspar with scattered black mafics; common kaolinitic cuttings with trace bright green mica; common gray tuffaceous claystone.

8190' SANDSTONE - pale brownish gray; very fine to fine; subangular; moderately well sorted; friable; calcareous; grain packed; quartz and feldspar with scattered mafics; occasional disseminated pyrite; kaolinitic in places.

8200' SHALE - brown, brown-gray; firm to hard; blocky and massive to tabular, elongated, fissile; gritty and silty; slightly calcareous; occasional fish scale on bedding plane; occasionally finely sandy and grading to siltstone; no oil.

8210' SANDSTONE - light to medium gray, occasionally white; very fine to medium; subangular; poor to moderate sorting; friable to moderate induration; grain packed; slightly calcareous; poor apparent porosity; quartz and feldspar; trace white microfossil inclusions in shale; trace polished surfaces; minor spotty mafics; occasional white kaolinitic cuttings with trace bright green mica; occasional spotty yellow mineral fluorescence; no cut fluorescence.

8215' SANDSTONE - pale brownish gray; fine to medium; angular to subrounded; poor to moderate sphericity; moderately well sorted; friable to moderate induration; grain packed; slightly calcareous; poor to moderate apparent porosity; abundant quartz; spotty kaolinite; spotty mafics; trace very pale green grains; bright yellow mineral fluorescence; very slow weak diffuse to wispy streaming light yellow cut fluorescence; no visible cut; very weak light yellow residual cut fluorescence.

8225' SHALE - dark brown, very dark gray-brown; hard; slightly brittle to very tough; dull satiny luster with common sparkle when dry; silty with very finely abrasive texture; minor polished surfaces; no visible slickensides; moderately calcareous with common microinclusions; no sample fluorescence; slow, weak, wispy streaming greenish yellow cut fluorescence from pinpoint locations; becomes extremely diffuse.

8230' SHALE - very dark brown; hard; blocky with sharp edges; tough to slightly brittle; earthy with common polished surfaces, no distinct slickensides; silty with very finely abrasive texture; calcareous; no sample fluorescence; very weak cut as above.

8235' SANDSTONE - gray-white; very fine to medium; moderately sorted; moderate to moderately well indurated; calcareous; tight; quartz and feldspar with scattered mica; interbedded with shale; patchy yellow mineral fluorescence; infrequent weak cut fluorescence.

8240' SILTSTONE - silver gray; firm; tabular to shaly in appearance with no distinct fissility; submetallic luster; trace disseminated pyrite; no sample or cut fluorescence.

SANDSTONE - pale brown gray; medium; subangular to subrounded; well sorted; moderately well indurated; slightly calcareous; grain packed; fair apparent porosity; abundant quartz; spotty black mafics; moderately bright yellow mineral fluorescence; very diffuse pale greenish cut fluorescence; no visible cut; very pale yellow residual cut fluorescence.

8247' SHALE - medium to dark brown; hard; blocky to tabular, commonly hackly cuttings; resinous/shiny to sparkling; non to occasionally moderately calcareous; silty; pyritic; occasionally carbonaceous; occasional banding; dark brown visible oil staining on slickensides and occasional granular surfaces; no to very dull orange oil fluorescence; instant milky yellow cut fluorescence; straw visible cut; occasional green-yellow cut from brown-gray sandstone.

8255' SHALE - abundant slickensides and polished surfaces; sharp contact with sandstone; sandstone probably as lenses, pods; trace tuffaceous cuttings; trace visible stain on slickensides; streaming milky yellow cut fluorescence; trace glauconite, sporbo.

8260' SANDSTONE - white to medium gray; firm to hard; very fine to coarse; angular; poor sorting; calcareous; commonly kaolinitic; tight; quartz and feldspars; scattered glauconite; trace sporbo; occasional shale clasts; as streaks in shale; mineral fluorescence masks any oil fluorescence; no visible stain; weak yellow cut fluorescence from occasional cuttings; no visible cut.

8270' SHALE - dark brown; firm to hard; blocky to flaky cuttings; dominantly poor fissility; occasional good planar partings; very silty and gritty; sparkling; occasional slickensides and shiny, gouged surfaces; non to moderately calcareous; micromica; occasional very fine disseminated pyrite; trace phosphatic fish parts; rare apparent forams; no stain or oil fluorescence; trace weak yellow cut fluorescence.

SANDSTONE - occasional brown tint, possibly oil; occasional green-yellow sample fluorescence, in part mineral; slow green-yellow cut fluorescence; fair green-yellow residual cut fluorescence; no visible cut; no pops, odor.

8280' TUFF - strong trace; medium gray; slightly firm; flaky to blocky; waxy and translucent on thin edges; occasionally silty and abrasive grading to tuffaceous siltstone; altered and bentonitic; bright yellow mineral fluorescence; no oil; fair green-yellow cuts from shale and occasional sandstone.

8310' SANDSTONE - light gray with common very light brown, oily tint; firm to friable; fine to medium; angular to subangular; moderate sphericity; moderate sorting; slightly calcareous; kaolinitic; fair to good apparent porosity in friable cuttings; quartz; scattered green glauconitic grains; trace micas; scattered black, mafic/lithic grains; even bright yellow sample fluorescence; fast streaming to blooming, bright yellow to green-yellow to blue-white crush cut fluorescence; strong green-yellow residual cut fluorescence; pale straw visible cut; weak odor from blender; no pops; very abundant LCM.

8330' SHALE - dark brown; hard; flaky to blocky, commonly elongated cuttings; sparkling; occasionally shiny and gouged; silty; noncalcareous to possible dolomitic; gritty; micromica; disseminated pyrite; fish parts; decreased occurrence slickensides; occasional sticky brown oil stain on slickensides and rare calcite coated fracture; instant milky yellow cut fluorescence; dark straw visible cut.

8340' SANDSTONE - light gray; commonly apparently saturated with very light brown oil; firm to friable; fine to medium; subangular; moderate sorting; slightly calcareous; kaolinitic; clear quartz and feldspars; occasional bright to dark green glauconite grains; trace gray quartzite, black mafic/lithic grains; rare rose quartz; trace mica; occasional shale streak or clast; bright yellow to yellow-green sample fluorescence; good green-yellow crush cut fluorescence; pale straw visible cut.

8350' SHALE - dark brown; hard; hackly; sparkling; very silty; non to moderately calcareous; micromica; probably very fine disseminated pyrite; poor fissility; very rare heavy oil stain; dominantly no sample or cut fluorescence; fair to good crush cuts from sandstone.

8400' SILTSTONE - trace amounts; gray; hard; pyritic and carbonaceous; moderately calcareous; trace brown oil staining; weak green-yellow cut fluorescence.

LIMESTONE - good trace; light gray-brown; hard and very brittle; small, angular cuttings; translucent on thin edges; micritic; trace red, black grains; no oil or cut fluorescence.

8410' LIMESTONE - light brown; hard; dense; micritic; very fine, angular sand exposed by acid; no oil.

SHALE - dark brown; hard; silty and sparkling; non to moderately calcareous; disseminated pyrite; rare sporbo; trace slickensides; no oil.

SANDSTONE - becoming commonly medium gray; hard; calcareous; pyritic; yellow mineral fluorescence; no to very weak green-yellow cut fluorescence.

8430' SANDSTONE - white, gray; fine to medium; angular to subangular; moderately sorted; very low to moderate sphericity; dominantly loosely consolidated; very easily friable; occasionally well indurated; quartz with dark lithics; minor feldspars; common kaolinitic matrix; well indurated cuttings contain calcareous cement; yellow-orange sample fluorescence; very slow transparent green cut fluorescence; light yellow-white residual cut fluorescence; no petroleum odor.

8440' SHALE - medium to very dark brown; hard to firm; moderately well indurated overall; incipient to well defined fissility; blocky to tabular; silty to slightly arenaceous texture; dull earthy to sparkly luster when more mica is present as inclusions; hard cuttings are waxy when gouged; slightly to moderately calcareous; mineral fluorescence masks possible sample fluorescence; very slightly transparent green cut fluorescence; pale yellow-green residual cut fluorescence.

8450' CLAY - light gray-green; thick, very stiff consistency; gummy, gritty texture; poor solubility; slightly calcareous; medium to large, malleable, slimy nodules with very poor solubility; sample fluorescence is indiscernible; no cut fluorescence; light yellow-green residual cut fluorescence.

8460' SAND - clear, white, gray; very fine to coarse; angular to subrounded; very poorly sorted; moderate to low sphericity; unconsolidated; dominantly quartz with feldspars and lessor amounts of lithic fragments; trace limestone; bright yellow, yellow-green mineral fluorescence masks sample fluorescence; no cut fluorescence; very pale yellow residual fluorescence.

8470' LIMESTONE - dark brown; hard, brittle; crunchy; irregular, sharp, hackly fracture; no visible laminations; sucrosic to very rarely microcrystalline texture; sparkling luster; very argillaceous; trace carbonaceous material.

8480' SHALE - dark brown; slightly soft to hard; dominantly well indurated; angular to subangular, blocky cuttings; incipient to moderate fissility; slightly to moderately calcareous; trace mica; dull luster; occasionally waxy when gouged; slightly to moderately calcareous; no oil odor or sheen; no sample fluorescence; very slow yellow-green cut fluorescence; no residual cut fluorescence.

8490' CLAY - light gray; thick, stiff, pasty consistency; sticky, abrasive texture; poor solubility; slightly calcareous; small to medium, firm, malleable nodules with very poor solubility to insoluble grading to claystone; trace sandstone with abundant pyrite nodules; mineral fluorescence masks any sample fluorescence; slightly faster yellow-green cut fluorescence from sandstone; pale yellow residual cut fluorescence.

8500' LIMESTONE - white, brown, gray; moderately soft to hard; blocky to tabular cuttings; commonly massive; commonly drusy and silty; 5% mafic inclusions; micromica; no oil or cut fluorescence.

8510' SHALE - dark brown; slightly soft to hard; blocky to tabular cuttings; poor fissility; commonly massive; commonly gritty and silty to slightly arenaceous; occasionally earthy, soft, rounded, massive, grading to claystone; dominantly very calcareous, occasionally noncalcareous; micromica; occasional very fine disseminated pyrite; rare trace slickensides; trace possible calcite veinlet; associated light brown limestone; no oil or cut fluorescence.

8520' SHALE - dark brown; soft to firm; tabular to rounded cuttings; commonly massive; commonly gritty and silty; slightly less calcareous than above; rare slickensides and polish; trace yellow moderate sample fluorescence; weak yellow-green cut fluorescence; weak yellow residual cut.

8530' CLAY - medium brown-gray; soft; smooth and nonnodular; slightly malleable and cohesive; very soluble with occasional less soluble lumps; nonexpansive; extremely calcareous and silty; abundant very fine sand; no petroleum odor, iridescence, fluorescent pops; no odor or oil from blender.

8536' SANDSTONE - light gray; hard; fine to medium grained; angular; poorly sorted; irregular texture; calcareous and occasionally noncalcareous; grain supported; rare mafics; arkosic; clear quartz, milky white feldspars, opaque mafics; yellow cut sample fluorescence; no odor; pale yellow sample fluorescence.

8545' SHALE - mottled brown to gray; hard; jagged pieces; calcareous; cement; extremely silty; nonfissile; micromica; rare sporbo; rare pyrite; rare sandstone; weak pale yellow sample fluorescence; moderately strong green-yellow cut fluorescence.

8550' LIMESTONE - black to gray; hard; microcrystalline; calcareous cement; argillaceous; rare pyrite; no oil.

SANDSTONE - gray; hard; fine to coarse grains; angular to subrounded; poorly sorted; calcareous cement; no oil.

8560' SANDSTONE - white, gray; fine to coarse; angular to subrounded; poorly sorted; moderate to very low sphericity; dominantly easily friable, occasionally well indurated; quartz, feldspars, scattered dark lithics; infrequent glauconite; few cuttings are extensively pyritized; trace kaolinite; trace yellow-orange sample fluorescence; slow light yellow-green cut fluorescence; light yellow translucent residual cut fluorescence.

8570' SHALE - dark brown; firm to hard; angular to subangular, blocky to tabular; incipient to fair fissility; slightly calcareous; silty to arenaceous texture; sparkling luster with scattered mica inclusions; trace carbonaceous material; weak yellow-orange sample fluorescence; slow streaming milky yellow-green cut fluorescence; light yellow residual cut fluorescence.

8580' CLAY - light gray; thick, very stiff consistency; gummy abrasive texture due to hard, angular cuttings; poorly soluble; abundant small, rounded, soft, slimy, malleable nodules with very poor solubility; slightly calcareous; weak slow green cut fluorescence from organic shale; light yellow residual cut fluorescence; no oil odor.

8590' SAND - clear, white, gray; fine to coarse; angular to rounded; poor sorting; moderate to low sphericity; dominantly unconsolidated quartz; minor feldspars, occasional glauconite; trace limestone; abundant mineral fluorescence from claystone; very slow green cut fluorescence; light yellow residual fluorescence.

8600' SHALE - dark brown; hard; well indurated; trace interlayered with sandstone; silty to slightly arenaceous texture; dull luster; occasional mica; slightly to noncalcareous; subangular to angular, blocky cuttings; no sample fluorescence; very slow streaming yellow-green cut fluorescence; pale yellow residual cut fluorescence.

8610' SILTSTONE - light green-gray; soft to slightly firm; structureless, rounded cuttings; moderate to noncalcareous; slightly gritty texture; dull earthy luster; occasional mafics; trace orange-brown sample fluorescence; slow milky green-yellow cut fluorescence; very pale yellow residual cut fluorescence.

8620' CLAY - medium gray; stiff; very thick consistency; soft gummy texture; good cohesion; slightly calcareous; small rounded, soft slimey nodules with very poor solubility to insoluble; weak orange-brown sample fluorescence; green-yellow cut fluorescence.

8630' SHALE - gray to black; hard to firm; coarse to very fine; tabular; subangular to subrounded; earthy; noncalcareous and calcareous cement; nonfissile; massive shale; rare pyrite; sharp contact between shale and sandstone; very weak light yellow cut sample fluorescence.

8645' SANDSTONE - light gray; hard; very coarse to fine; tabular; angular; calcareous cement; low porosity; arkosic; quartz and feldspar and mafic within rock finer grain; no odor; weak pale yellow cut sample fluorescence; pale yellow mineral fluorescence.

8650' SHALE - brown to black; firm to hard; large to small, tabular; earthy; angular; commonly massive; calcareous and noncalcareous cement; nonfissile; calcite veining; no odor.

8660' SHALE - brown or black; soft to hard; large to very small; earthy, calcareous cement; commonly massive; slickensides; no oil; abundant glauconite.

8680' SANDSTONE - white to brown; hard; fine to medium; prismoidal to subdiscoidal; medium well sorted; hackly; glassy; calcareous cement; massive; rare forams; arkosic; quartz; feldspars; mafics; no odor; sample fluorescence is weak pale yellow; no odor.

8690' SHALE - medium brown to dark brown, gray; soft to hard; large cut; irregular; hackly; silty texture; dull; calcareous; contact with sandstone; low porosity; commonly massive; commonly nonfissile; no sample fluorescence.

8700' SANDSTONE - medium brown to dark brown; dominantly hard; fine grained; subdiscoidal; smaller cuttings; moderately well sorted; glassy; calcareous cement; massive; arkosic; quartz, feldspar, mafic; no sample fluorescence; occasional abundant mica.

8740' CLAY - light gray; moderately thick consistency; soft, lumpy texture; poor solubility; very weakly calcareous; abundant medium to large firm, pliable greasy insoluble to very poorly soluble nodules grading to claystone; no discernible oil shows due to abundant LCM from partial lost circulation.

8750' SANDSTONE - light gray; fine to coarse; angular to rounded; poorly sorted; moderate to very low sphericity; crunchy; moderately well indurated; quartz with abundant gray feldspars and dark lithics; occasional glauconite; trace shell fragments; calcareous cement; most cuttings are grain supported; abundant LCM; patchy bright white mineral fluorescence from claystone masks sample fluorescence; very slow streaming yellow cut fluorescence from sandstone; weak yellow-green residual cut fluorescence.

8760' SHALE - dark brown; firm to hard; brittle; angular to subangular, tabular cuttings; infrequently blocky; no visible internal microlayering; silty to grainy texture; scattered mica inclusions yielding a sparkling luster; slightly to moderately calcareous; few fragments contain trace amounts of carbonaceous inclusions; sample still contains extensive LCM contamination; mineral fluorescence masks possible sample fluorescence; no cut fluorescence; pale yellow-white residual cut fluorescence.

8770' SAND - white, clear; very fine to coarse grained; angular to subangular; poorly sorted; moderate to very low sphericity; dominantly unconsolidated quartz, occasional feldspars and dark lithics; different apparent source area than sandstone fragments; abundant mica from LCM; sample still predominantly LCM; desilter contains markedly less free sand; no discernible sample fluorescence; no bulk cut fluorescence; pale yellow residual cut fluorescence; sandstone fragments give occasional very slow streaming yellow cut fluorescence.

8780' SILTSTONE - light gray-green; soft to slightly firm; rounded subdiscoidal; dominantly structureless; occasional cuttings break in uneven layers; slightly gritty to rarely punky texture grading to silty claystone; dull luster; weakly calcareous; scattered mafics; weak yellow-orange sample fluorescence from sandstone; slow streaming yellow cut fluorescence; milky yellow-green residual cut fluorescence; shale gives slow green-yellow cut fluorescence with pale yellow residual cut fluorescence.

8790' SHALE - dark brown; firm to hard; overall well indurated; angular to subrounded, blocky to tabular with one cutting exhibiting microlayering with fine-grained sandstone; calcareous; silty texture; infrequently arenaceous; dull luster frequently sparkling with pinpoint mica inclusions; still extensive LCM contamination; up to 90% of sample; no petroleum odor, pops, or sheen.

8810' SHALE - medium to very dark brown; soft to hard; hackly to slightly punky; granular to gritty and sparkling; dominantly moderately calcareous; occasionally non or extremely calcareous; very silty; occasional calcite as veinlet or fracture coating; common sporbo; trace slicks and polished surfaces; poor fissility overall; no sample fluorescence; weak gray cut fluorescence; petroleum odor from blender.

8850' SAND - clear, white, green, gray; fine to very coarse; very angular to rounded; poorly sorted; very low to moderate sphericity; unconsolidated; quartz with feldspars and abundant glauconite; difference apparent source area than sandstone fragments; trace free calcite; increase of sandstone with abundant kaolinitic matrix; occasional cuts with parallel mica inclusions; very weak orange-yellow sample fluorescence; no visible cut; very slow streaming light yellow cut fluorescence; light yellow residual cut fluorescence.

8860' SHALE - dark brown; firm to hard; angular cuttings; blocky to thin tabs; slightly calcareous; gritty to rarely arenaceous; dull luster; frequent mica inclusions; still abundant free glauconite in sample; shale has no sample fluorescence; slow transparent green-yellow cut fluorescence; bright yellow-green cut fluorescence; sandstone gives persistent slow weakly streaming light yellow-white cut fluorescence with light yellow residual cut fluorescence.

8870' SANDSTONE - white, light gray; very fine to coarse; angular to rounded, poorly sorted; moderate to low sphericity; more loosely consolidated; quartz with occasional feldspars and lithics; frequent mica inclusions; bright yellow-white sample fluorescence; fast milky yellow cut fluorescence; light yellow residual fluorescence.

8880' SAND - white, clear, green; very fine to very coarse; angular to rounded; very poor sorting; subspherical to prismoidal; dominantly unconsolidated quartz with scattered glauconite and dark lithics; abundant mica from mud additive; no pops or odor; bright yellow-white sample fluorescence; spotty mineral fluorescence; bright milky yellow cut fluorescence; pale yellow-white residual fluorescence.

8900' CLAYSTONE - trace amounts; light gray; soft, easily malleable; sticky; grades from clay; small to large; slightly calcareous; smooth to punky texture; dull earthy luster; expands slightly when hydrated; same bright yellow-white sample fluorescence from sandstone; fast to instant yellow-white cut fluorescence; pale yellow-green residual cut fluorescence.

8910' SANDSTONE - white to light gray to light brown; well indurated; blocky to spherical; subangular to subrounded; well sorted; vitreous luster; calcareous; kaolinite matrix; grain supported; commonly massive; apparent permeability; mostly clear to milky quartz; slightly glauconitic; slight mafics; milky yellow cut fluorescence.

8925' SANDSTONE - white, light gray; very fine to coarse; angular to subangular; poor sphericity; poor sorting; friable to moderately indurated; calcareous cement; grain packed; poor to occasionally fair apparent porosity; predominantly quartz with common feldspar; kaolinitic in places; minor spotty pinpoint mafics; bright white yellow mineral/sample fluorescence; slow diffuse pale yellow-white cut fluorescence; no visible cut.

8935' SANDSTONE - as above; increasingly kaolinitic cuttings; trace gray lithics; no pale brown staining; even bright yellow-white mineral/sample fluorescence; slow wispy streaming yellow-white cut fluorescence; slight increase in yellow with crushing; extremely faint straw visible cut.

8945' SANDSTONE - white to gray with few brown oil stains; poorly indurated; medium to fine; subangular to subrounded; poor sphericity; poor sorting; grain supported; good apparent permeability; calcareous; kaolinitic matrix; mostly quartz; slight mafics; sample fluorescence is moderately scattered.

8950' SANDSTONE - light gray-white; fine to very coarse; angular to subrounded; poor sphericity; poor to locally well sorted; friable to moderate induration; grain packed; calcareous; poor to fair apparent porosity; abundant quartz with common feldspar; patchy kaolinite; trace pale green grains; locally common brown siltstone-shale lith clasts; overall increase in darker grains; some with salt and pepper appearance; patchy to even bright yellow sample fluorescence; slow diffuse pale yellow cut fluorescence; slight intensity increase with crushing.

8970' SANDSTONE - light gray with slightly increased gray grains, giving a slightly salt and pepper appearance; fine to coarse; predominantly medium; subangular to subrounded; poor sphericity; poor to locally well sorted; friable to moderately indurated; grain packed; calcareous; generally poor to moderate apparent porosity; commonly coarse with increase in feldspar; locally kaolinitic; trace medium green grains; even bright yellow mineral/sample fluorescence; slow wispy streaming pale yellow cut fluorescence; very faint straw visible cut with bulk sample; moderately bright yellow-white to greenish yellow residual cut fluorescence; no stain or odor.

8980' SANDSTONE - white; very fine to coarse; very angular to rounded; very poorly sorted; subspherical to prismoidal; dominantly easily friable; occasionally moderately well indurated; quartz and feldspars, occasional lithics; increased abundance of kaolinitic matrix; strong reaction to HCl; trace glauconite; no live pops or fluorescent pops; slightly gassy odor; bright white-green-yellow sample fluorescence; milky yellow cut fluorescence is very slow; light yellow-green residual cut fluorescence.

8990' SANDSTONE - white, light gray; fine to medium; angular to subangular; moderate sorting; moderate sphericity; trace prismoidal; fair to poor induration; grain supported; moderate to good apparent porosity; dominantly quartz with lessor feldspars, trace dark lithics.

9000' SHALE - dark brown; firm to hard; blocky to few tabular fragments; silty to occasionally arenaceous texture; earthy luster; weakly calcareous in places; trace limey blebs.

9010' CLAY - light gray; slightly thick consistency; soft; gritty texture with abundant small sandstone fragments; good solubility; very weakly calcareous; medium to very large greasy to chalky nodules with very poor solubility.

9020' SANDSTONE - white; fine to medium grained; angular to rounded; moderately well sorted; moderate sphericity; loosely consolidated; grain packed; trace kaolinitic matrix/cement; slightly to moderately calcareous; quartz with trace feldspars; glauconite in few cuttings; bright white-yellow sample and cut fluorescence; bright white-green to yellow-green residual cut fluorescence.

9040' SHALE - dark brown; hard to firm; fair induration; gritty texture; dull to slightly sparkling luster when trace mica is present; disappearing off white limey blebs; one cutting with carbonaceous inclusions; weakly to noncalcareous; persistent white-yellow sample fluorescence; milky yellow-green cut fluorescence; bright yellow-green residual cut fluorescence.

9050' SILTSTONE - trace amounts; light gray-brown; soft to occasionally firm; small to medium subrounded and structureless to subangular tabs; slightly gritty texture; dull earthy luster; trace mica; frequent dark heavy inclusions; very slightly calcareous.

9060' SANDSTONE - grayish white; fine to medium; angular to subrounded; moderate sorting; low to moderate sphericity; easily friable to moderately well indurated; quartz; feldspars; very minor dark to light lithics; weakly calcareous; grain supported with trace cement; moderately bright white-yellow sample fluorescence; very weak greenish white cut fluorescence; pale greenish yellow residual cut.

9090' SANDSTONE - gray-white; fine to medium; subangular to subrounded; poor to moderate sphericity; moderately well sorted; friable to moderate induration; grain packed; slightly calcareous; moderate apparent porosity; quartz and feldspar; minor spotty lithic fragments and occasional greenish grains; overall clean appearance; locally pinpoint kaolinite; even bright white-yellow sample fluorescence; fast extremely diffuse to transparent pale yellow cut fluorescence; no visible cut; no fluorescent pops or petroleum odor.

9105' SANDSTONE - gray-white; fine to medium with increased medium; subangular to subrounded; poor to moderate sphericity; moderately well sorted; slightly friable to moderate induration; locally increased calcite cement; predominantly spotty cement; grain packed with poor to fair apparent porosity; predominantly quartz with spotty feldspar; spotty fine grained mafics with slightly increased sea green grains, possibly glauconite; no visible oil stain; even moderately bright white-yellow sample fluorescence; slow extremely diffuse pale yellow cut fluorescence; no distinct increase in intensity when crushed; no visible cut; pale green-yellow residual cut.

9115' SANDSTONE - pale gray-white; fine to medium, predominantly fine; subangular to occasionally rounded; poor to moderate sphericity; moderately well sorted; friable to moderately indurated; grain packed; slightly calcareous; fair apparent porosity; abundant quartz with spotty interstitial kaolinite; spotty gray, brown and sea-green grains; patchy moderately bright white-yellow sample fluorescence.

9120' SANDSTONE - white to light gray; fine to medium; angular to subrounded; moderate sorting; moderate sphericity; grain supported; kaolinitic cement; moderate induration; quartz, occasional feldspars and lithics; trace glauconite; spotty green-white sample fluorescence; very slow milky green-yellow cut fluorescence; light yellow residual cut fluorescence.

9130' SHALE - becoming harder; dominantly dark brown; silty texture; dull luster; waxy when gouged; slightly to noncalcareous; abundant slough; sand still decreasing; trace bright white-green to yellow-white sample fluorescence; yellow-green cut fluorescence with frequent streamers from sandstone.

9145' SANDSTONE - brown, gray-brown; fine to medium with argillaceous matrix; grades from sandy siltstone with argillaceous matrix to argillaceous sandstone with interstitial silt and clay; moderately well indurated; tight; very slightly calcareous where increasingly argillaceous; no bedding lineation; minor glauconite spheroids in some cuttings.

9155' SANDSTONE - white to light gray; fine to medium; subangular to subrounded; poor to moderate sphericity; moderately well sorted; moderate to moderately well indurated; grain supported; spotty calcareous cement; poor apparent porosity; predominantly quartz; locally spotty kaolinite; common kaolinitic bit gouge in sample; moderately bright white-yellow to green-yellow sample fluorescence; very slow very weak diffuse pale yellow cut fluorescence; no visible cut; moderate greenish yellow residual cut fluorescence; no stain or odor.

9165' CLAY - medium gray; moderately thin pasty consistency; easily soluble; moderate cohesion; poor to moderate plasticity; nonnodular; no oil sheen or odor; no pops.

9180' SANDSTONE - brown; moderate induration; medium to silt sized grains; angular to subangular; poorly sorted; arenaceous; quartz; feldspar; lithic fragments; calcareous; poor apparent permeability; moderate intensity; weak pale yellow cut fluorescence.

9190' SILTSTONE - brown, gray-brown; firm to hard; tough to slightly brittle; earthy luster with shaly appearance; abrasive texture; locally arenaceous; grades to mudstone and very fine silty sandstone; very slightly calcareous; no sample fluorescence; extremely faint extremely weak trace greenish cut fluorescence.

9200' SILTSTONE - brown to light gray; soft to hard; finely abrasive texture; earthy luster; calcareous mineralization; occasionally argillaceous; quartz; feldspars; calcareous inclusions; trace very weak intensity yellow cut fluorescence; very weak very pale yellow residual cut fluorescence.

9210' SHALE - dark brown to gray-brown; hard; well indurated; small to occasionally large, angular to subangular, tabular to slightly blocky cuttings; slightly sparkling luster; gritty to very grainy texture; generally siliceous; common white, calcareous inclusions; very silty; slightly micaceous; poor fissility; common fine-grained streaks; weak trace limestone fragments; minor trace spotty yellow sample fluorescence; weak, slow, diffuse green-yellow cut fluorescence.

9220' SAND AND SANDSTONE - white and medium gray; lower fine to upper medium grained; spherical to subprismoidal; poor to moderate sorting; tight; moderate to well indurated; occasionally slightly friable; common loose, clear quartz grains; predominantly quartz; abundant lithic grains; trace heavy minerals; weak calcareous cement; low apparent porosity; weak trace spotty yellow sample fluorescence; slow, diffuse transparent green-yellow cut fluorescence; lacking significant petroleum odor; no live oil pops or oil sheen.

9230' SILTSTONE - medium to very dark brown to gray-brown; firm to predominantly hard; well indurated; small to medium, angular to subrounded, tabular to slightly blocky cuttings; moderate to strong sparkling luster; gritty to grainy texture; silty; micaceous; commonly grades to very silty shale; occasional very fine-grained sandstone streaks and pods; minor trace pale yellow to yellow-green sample fluorescence.

9240' SHALE - medium to dark gray-brown; hard; occasionally soft, punky mudstone; small to medium, subangular, tabular to slightly blocky cuttings; sparkling luster; gritty to grainy texture; very silty; common very fine-grained sand streaks; poor fissility; common calcareous inclusions; micaceous; poor trace green-yellow sample fluorescence; weak diffuse green-yellow cut fluorescence.

9250' SAND - white, clear and light gray; fine to occasionally lower coarse; subangular to rounded; spherical to discoidal; poor sorting; loose; commonly tight; predominantly quartz; trace lithics and heavy minerals; sandstone cuttings have weak calcareous cement; very weak yellow sample fluorescence; slow diffuse green-yellow cut fluorescence; very pale powdery yellow residual cut fluorescence.

9260' SILTSTONE - medium to dark gray-brown and brown; firm to hard; moderate to well indurated; small to medium, subangular to subrounded, tabular cuttings; sparkling luster; grainy texture; poor fissility; very micaceous; common calcareous inclusions; commonly grades to very silty shale; indistinct green-yellow sample fluorescence; very weak diffuse green-yellow cut fluorescence.

9270' SAND - clear, white, light gray; lower fine to upper medium grained; subangular to increasingly rounded; spherical to subdiscoidal; poorly sorted; predominantly loose; occasionally hard, tight, well indurated, slightly calcareous sandstone cuttings; predominantly quartz; common lithics; slight trace micas; trace heavy minerals; weak trace pale green-yellow cut fluorescence; slow, indistinct, diffuse, translucent green-yellow cut fluorescence.

9280' SHALE - dark brown to medium gray-brown; slightly firm to predominantly hard; moderate to well indurated; small to medium, subangular to subrounded, tabular cuttings; sparkling luster; gritty to grainy texture; micaceous; common calcareous inclusions; poor fissility; occasional soft, punky mudstone; very weak trace green-yellow sample fluorescence; very slow diffuse, transparent to translucent green-yellow cut fluorescence; no live oil pops.

9290' SILTSTONE - brown to gray-brown; hard; angular to subrounded; dull luster with occasional mica sparkles; homogeneous; grain supported; poorly sorted; quartz, dark lithic fragments; no sample fluorescence; no cut fluorescence; very weak very pale yellow residual cut fluorescence.

9300' MUDSTONE - olive brown; soft to slightly firm; tabular to blocky with rounded edges; flat earthy luster; slightly waxy when scored; silty grading to siltstone; hydrates and expands rapidly in 10% HCl with a floculated appearance and minor effervescence; slightly expansive in pure water; trace glauconite; no sample or cut fluorescence.

9310' SILTSTONE - brown; well indurated; homogeneous texture; earthy luster; poor apparent permeability; commonly slightly calcareous; quartz, feldspar, lithic fragments; no pops; very slow, very weak green-yellow cut fluorescence.

9320' SILTSTONE _ brown to light brown; moderately well indurated; homogeneous texture; dull luster; poor apparent porosity; noncalcareous; quartz, mica, lithic fragments; very slow, very weak green-yellow cut fluorescence; very weak green-yellow residual fluorescence.

9325' MUDSTONE - dark red-brown; hard; slightly brittle; thin sharp platy to hackly cuttings; subresinous; slightly translucent luster; smooth to microsucrosic texture; micritic; grading to argillaceous limestone; extremely slow very weak pale yellow cut fluorescence; very weak very pale yellow residual fluorescence.

9340' SAND - white, clear, light gray; lower medium to lower coarse grained; subrounded; well indurated; spherical to discoidal; poor to moderate sorting; loose; predominantly clear quartz, trace lithics and heavy minerals; weak trace mica inclusions; trace well indurated sandstone; very weak green-yellow sample fluorescence; indistinct slow diffuse green-yellow cut fluorescence.

9350' SHALE - medium to dark brown and gray-brown; firm to hard; moderate to well indurated; small to medium, subangular to subrounded, tabular cuttings; sparkling luster; gritty to grainy texture; slightly micaceous; very silty; poor to moderate fissility; common calcareous inclusions; grades to mudstone; very weak green-yellow sample fluorescence.

9360' SANDSTONE - brown; fine to medium grained; angular to subangular; moderate sorting; moderate to low sphericity; fair to poor induration; slightly calcareous; silica cement; dominantly quartz with lessor amounts of feldspars; trace glauconite and mica; trace micaceous claystone; very weak trace yellow-green sample fluorescence; extremely slow translucent yellow-green cut fluorescence; pale yellow-green residual cut fluorescence; no odor, pops or sheen.

9370' SILTSTONE - light to medium gray-brown; soft to slightly firm; small to medium subrounded cuttings; structureless; slightly gritty to punky texture where grading from claystone; slightly to noncalcareous; occasional mica and mafics; trace interlayered with shale; weak trace yellow-green sample fluorescence; very slow green-yellow cut fluorescence; very pale yellow residual cut fluorescence.

9380' SHALE - medium to dark brown; firm to hard; irregularly shaped cuttings; dominantly blocky with few tabular fragments; moderate to poor fissility; gritty to slightly arenaceous texture; dull to sparkling luster; slightly to noncalcareous; occasional mica; trace kaolinite attached; trace cuttings with slickenside appearance; trace bright white-green sample fluorescence from sandstone.

9390' MUDSTONE - medium brown; chalky; slightly firm to soft; rounded, structureless; smooth to punky texture; occasionally interlayered with shale; trace kaolinitic inclusions; slightly to noncalcareous; rare mica; no pops or odor; trace bright white-green sample fluorescence from sandstone; very slow milky yellow-green cut fluorescence; light yellow-green residual fluorescence.

9400' SAND _ clear, white, gray; fine to coarse; very angular to rounded; poor sorting; moderate to low sphericity; unconsolidated; dominantly quartz with lessor amounts of feldspar; appears immature in most places; trace free calcite and attached to shale; shale is getting more cuttings with slickensides; weak trace white-yellow sample fluorescence; very slow milky yellow cut fluorescence from trace sandstone; pale yellow residual cut fluorescence.

9410' CLAY - gray-brown; slightly thick, pasty consistency; spongy due to abundant LCM contamination; slightly sticky; moderate cohesion; good solubility; small to medium, moderately firm nodules with very poor solubility; spotty yellow-white sample fluorescence; milky yellow cut fluorescence from sandstone when crushed; light yellow residual fluorescence.

9420' MUDSTONE - brown; well indurated; smooth texture; dull luster; poor apparent porosity; occasionally slightly calcareous; slickensides; quartz; immature pops; trace very weak green-yellow cut fluorescence; very weak green-yellow residual fluorescence; pale straw visible cut.

9430' SHALE - dark brown, medium caramel brown; moderate to well indurated; crumbly to tough; blocky to tabular; earthy luster; silty lighter colored cuttings have apparent higher clay content; very slightly calcareous; occasional white calcareous veins and fracture fill; no sample fluorescence; extremely slow tinge of cut fluorescence.

9440' SHALE - brown; well indurated; homogeneous texture; dull luster; stair-step fracture; subparallel fissility; noncalcareous; poor permeability; slickensides; no cut fluorescence; extremely weak greenish residual fluorescence.

9450' SHALE - brown; hard to firm; homogeneous texture; earthy luster; noncalcareous; poor permeability; subparallel fissility; no cut fluorescence; very weak greenish residual fluorescence.

9458' CLAY - changing colors from gray-brown to gray-green; abundant glauconite, pyrite in scattered cuttings; continued abundant sloughing shale; trace light brown siliceous cuttings.

9465' SHALE - becoming commonly medium to dark brown; softer and commonly calcareous; pyritic sparkle; silty; occasional abundant glauconite; poor fissility; associated light tan, micritic to microcrystalline limestone; small, hard, blocky cuttings; dolomitic; only very weak, greenish crush cut from shale.

9475' DOLOSTONE - medium to dark brown, occasionally mottled with light brown; hard and brittle; small to large, blocky, angular cuttings; resinous to sparkling; micritic to microsucrosic; dense and nonvugular; blocky microfractures; calcitic; commonly very argillaceous; common white calcite veinlets and fracture coating; massive; even dull orange mineral fluorescence with spotty bright yellow calcite mineral fluorescence; no visible stain or cut fluorescence.

9485' MUDSTONE - medium gray-brown, dark green-brown; moderate induration; crumbly; blocky with rounded edges; high apparent clay content with earthy luster; commonly scores easily leaving waxy indentation; very calcareous; common white calcareous veins; no bedding lineation; no sample fluorescence; extremely faint diffuse pale green cut.

9495' MUDSTONE - medium to dark gray-brown; soft to firm; crumbly; tabular to blocky with common rounded edges; dull luster; slightly silty; very calcareous; floculates slightly in acid; fair shaly partings in occasional cuttings; spotty very faint yellowish sample fluorescence; very slow very diffuse pale yellow cut fluorescence; no visible cut; translucent pale yellow residual cut fluorescence.

9500' LIMESTONE - medium to dark brown; hard to very hard; commonly brittle with blocky fracture; sparkling and microcrystalline; dolomitic; very argillaceous; dense and nonvuggular; massive; occasional white calcite veinlets; even dull orange mineral fluorescence; no cut fluorescence; weak green-yellow cut fluorescence only from softer, calcareous mudstone; weak residual cut from limestone.

9510' SHALE - medium to dark brown; soft to slightly firm; slightly malleable; easily scored; earthy and slightly punky; massive, grading to claystone; slightly silty; very calcareous; occasional white inclusions and mottling; occasional calcite coating slicked surfaces; trace forams, pyrite in noncalcareous hard cuttings; no sample fluorescence; weak greenish crush cut fluorescence; fair green-yellow residual cut fluorescence.

9520' CLAY - medium brown; dominantly firm, thick; malleable to crumbly; soluble with scattered poorly soluble aggregates; nonnodular; nonexpansive; extremely calcareous; silty; abundant soft claystone cuttings; no petroleum odor or iridescence; no pops or free oil.

9535' MUDSTONE - medium to dark brown, occasionally gray-brown; dominantly slightly soft, rounded cuttings; massive; malleable; grades to claystone; commonly very calcareous; silty; occasional trace pyrite; no sample fluorescence; diffuse green-yellow crush cut fluorescence; fair yellow residual cut fluorescence.

9540' SHALE - dark brown; slightly soft to firm; flaky to blocky cuttings; breaks along rough bedding surfaces; silty; noncalcareous; reduced to trace calcareous cuttings in sample; occasionally pyritic; associated light brown dolomitic limestone; trace gray, tuffaceous and very pyritic siltstone; no oil fluorescence; weak green-yellow crush cut fluorescence; fair green-yellow residual cut fluorescence; no pops or odor.

9550' MUDSTONE - medium to dark brown; soft to firm cuttings; commonly with rounded edges; dull earthy luster; smooth to slightly silty texture; moderate to very calcareous; no distinct bedding lineation or fissility; occasional oval microfossil molds; no sample fluorescence; occasional slow wispy streaming to diffuse pale yellow cut fluorescence; no visible cut.

9555' SANDSTONE - medium gray; very fine to fine; angular to subangular; poor sphericity; moderately well sorted; moderate induration; very slightly calcareous; tight; quartz with scattered greenish gray elongated grains; no sample fluorescence or cut.

9560' SANDSTONE - light gray; very fine to fine with occasional trace medium clasts; increased loose grains in desilter; angular to subangular; poor sphericity; moderately well sorted; moderate induration becomes friable when cuttings are broken; grain packed; slightly calcareous; predominantly clear quartz and feldspar with spotty blue-green grains; no sample or cut fluorescence.

9565' SHALE - medium to dark brown; occasionally black; firm to hard; flaky to blocky; poor to no fissility; gritty and sparkling; very silty; noncalcareous; trace micromica; rare trace glauconite and sporbo; scattered forams; no oil fluorescence; diffuse yellow-green crush cut fluorescence; fair orange-yellow residual cut fluorescence.

9575' SHALE - medium to dark brown, grayish brown; firm to hard; tabular with moderately sharp edges; tough; dull luster with slight sparkle when dry; very fine silty texture; non to slightly calcareous; poor fissility; fair bedding lineation; no sample fluorescence; very slow faint diffuse pale yellow cut fluorescence; no visible cut.

9580' MUDSTONE - medium brown, grayish brown; firm, crumbly; blocky to occasionally tabular with common rounded edges; dull earthy luster with occasional microsparkles when dry; high apparent clay content; moderately calcareous in places; much less calcareous than above mudstone, clay floculates slightly in acid; no sample fluorescence; very slow very diffuse pale yellow cut fluorescence; no visible cut; weak pale yellow residual cut fluorescence.

9590' SHALY MUDSTONE - medium brown; firm to slightly hard; crumbly to tough; general overall high apparent clay content; dull earthy luster, occasional microsparkle on darker cuttings; rough uneven texture; occasional flaky fissility; calcareous with occasional microfossil molds and white streaks; no sample fluorescence; very slow diffuse pale yellow cut fluorescence; no visible cut; pale yellow residual cut fluorescence.

9600' VOLCANICS - gray; tuffaceous cuttings; firm; waxy; very slightly calcareous; commonly silty and occasionally very sandy; occasionally extremely pyritic; occasional oriented, brown, flaky mineral; bright yellow mineral fluorescence; no oil.

9610' MUDSTONE - medium brown; dominantly soft, subrounded cuttings; massive to occasional planar parting; earthy; grades to claystone; moderately silty; very calcareous; occasional white calcareous streaks; occasional calcite veinlet; no oil fluorescence; weak green-yellow crush cut fluorescence; no petroleum odor, iridescence, pops or visible oil.

9620' SHALE - medium to dark brown; slightly soft to firm; tabular to flaky; earthy to occasionally silty with probable pyritic sparkle; dominantly slightly silty; very calcareous; increasing amounts foram tests; massive to weakly bedded; commonly gradational to soft, massive, very calcareous mudstone; no oil fluorescence; weak greenish crush cut fluorescence; moderately strong green-yellow residual cut fluorescence; no visible cut.

9630' SHALE - medium brown; firm to slightly hard; crumbly; no tough or brittle cuttings; predominantly tabular with common rounded edges; dull earthy appearance with high apparent clay content; moderate to very calcareous; common microfossil molds, some oval shaped and noncalcareous; poor uneven fissility, grading to mudstone; no sample fluorescence; fast cut from mud contaminate, pits vigorously agitated bringing up sludge from bottom of pits.

9640' SANDSTONE - trace amounts; light gray-white; very fine to fine; subangular; moderately sorted; moderate induration; grain packed; calcareous cement; poor apparent porosity; quartz, feldspar, spotty dark green-gray clasts; faint yellow mineral fluorescence; no oil stains or cut fluorescence.

9655' SANDSTONE - brownish gray; fine to medium with occasionally coarse, angular to subangular grains; poor sphericity; poorly sorted; friable to moderate induration; grain packed; spotty to scattered calcareous cement; very poor to fair apparent porosity; predominantly clear to frosted quartz; scattered feldspar and spotty grayish inclusions; trace white kaolinitic cuttings with bright blue-green grains; spotty very faint yellow mineral fluorescence; infrequently very diffuse very weak yellowish cut fluorescence; no visible cut.

9665' SAND AND SANDSTONE - white; fine to medium with occasional coarse; angular to subrounded, predominantly subangular; poor sphericity; moderately sorted; predominantly loose sand with occasional moderately indurated grain packed sandstone cuttings with poor to fair apparent porosity; very calcareous with abundant white kaolinitic cuttings; predominantly clear quartz with minor grayish lithic fragments; no visible oil stains; scattered moderate to occasionally bright white-yellow mineral/sample fluorescence; very slow very diffuse pale yellow cut fluorescence becoming slightly more intense with time; no distinct improvement with crushing; no visible cut; moderately bright translucent pale to light yellow residual cut fluorescence.

9700' SHALE - (mudstone) - dusky yellowish brown; hard; tough; tabular; dull luster; silty; finely abrasive texture; slightly to moderately calcareous; no bedding lineation; trace fecal pellet; moderately calcareous; trace streaky faint yellow sample fluorescence; very slow diffusely streaming very pale greenish yellow cut fluorescence; no visible cut.

9705' MUDSTONE - medium to dark brown; firm to hard; very small blocky cuttings with slightly rounded to sharp edges; earthy; common clay in sample; most probably derived from grinding of mudstone by Strato-pak type bit; non to very slightly calcareous; no apparent banding or fissility.

9715' SHALE - medium to dark brown; soft with good flaky fissility; bedding commonly pronounced; occasional weak laminations; earthy; very clayey; noncalcareous; occasional glauconite grains; occasional phosphatic fish remains on bedding surfaces; occasional black, probably carbonaceous material; no sample fluorescence; weak greenish cut fluorescence; common bit gouge.

9720' CLAY - medium gray-brown; soft, slightly thin; smooth; poor cohesion and malleability; very soluble; nonexpansive; slightly calcareous; very silty; probably produced by strata-pak bit action; no iridescence, pops; strong pungent petroleum odor.

9730' SHALE - medium to dark brown; soft to firm; earthy and very clayey; fissile with pronounced bedding; becoming very calcareous; slightly silty; no sample fluorescence; fair greenish yellow crush cuts; no oil in desilter sand.

9740' CLAY - medium brown; soft, slightly thick; slightly crumbly to dominantly smooth; nonnodular; derived from shale; soluble; nonexpansive when rehydrated; slightly to moderately calcareous, becoming less calcareous; very silty; rare quartz sand; no pops or iridescence, no oil fluorescence; acrid petroleum odor.

9745' SAND - desilter sample; clear, white, trace green; fine to medium; angular to subangular; spherical to occasionally prismoidal; well sorted desilter sample; quartz with scattered feldspars; trace calcite; no sample or cut fluorescence.

9750' SHALE - (mudstone); dusky yellowish brown, dark grayish brown; firm; crumbly; rich earthy luster; slightly silty; predominantly noncalcareous; occasional trace spotty oval shaped glauconite grains, possibly replaced forams; trace of lenses or pockets of fine sandstone; common striations and lineation caused by the bit which also imparts false fissility; trace faint yellow sample fluorescence from sandy areas; overall no sample fluorescence; very weak diffuse pale yellow transparent cut fluorescence; no visible cut.

9755' SHALE - dark brown; firm, crumbly; predominantly tabular; earthy luster; silty; high apparent clay content; noncalcareous; rare microglauconite; common lineation and possible false fissility; imparted by bit; no sample fluorescence; very slow extremely diffuse tinge of yellowish cut fluorescence; no visible cut.

9765' SHALE - dark grayish brown; firm; crumbly to very slightly brittle; tabular; dull luster with faint microsparkle when dry; silty; non to very slightly calcareous; very slightly expansive in HCl; cuttings have fine flaky appearance and apparent good fissility, both probably from Strata-pak bit; no sample fluorescence; slow to moderately fast streaming light yellow cut fluorescence; very pale straw visible cut from bulk; pale greenish yellow to bright orangish yellow residual cut fluorescence with pale brown ring; slight petroleum odor from blender.

9770' SHALE - dark grayish brown; firm; crumbly, becoming much firmer when dry; tabular; earthy; slightly silty; very slightly calcareous; spotty trace of microscopic dark green-black oval shaped glauconite; continued lineation from bit; no sample fluorescence; slow to moderately fast weak diffuse pale yellow to fast diffuse moderately bright greenish yellow cut fluorescence; very pale straw visible cut from bulk; moderately bright yellow residual cut fluorescence with pale brown residual ring; possible trace contaminates; faint tarry odor from blender.

9780' SHALE - dark grayish brown, dark brown; firm to slightly hard when dry; tabular, crumbly to slightly tough; dull luster; silty texture with very fine grainy appearance; moderately calcareous in places; locally abundant glauconite; no sample fluorescence; moderately fast wispy streaming transparent greenish cut fluorescence; pale straw visible cut from bulk; moderately bright translucent yellow residual cut fluorescence; no obvious trace X-Pel-G; weak tarry odor from blender with acrid odor.

9790' TUFF - trace amount; medium orange-brown; firm; waxy; easily scored; commonly slightly grainy; noncalcareous; disseminated pyrite; weak, parallel microbanding; very bright yellow mineral fluorescence; no oil or cut fluorescence; fair cuts from shale.

9800' SHALE - dark brown; slightly soft to moderately firm; dominantly easily broken cuttings; cuttings predominantly curved, elongated, heavily gouged and grooved; earthy and very clayey; noncalcareous; occasional small, very calcareous cuttings; slightly silty; occasional phosphatic debris; no oil fluorescence; slow blooming green-yellow crush cut fluorescence; moderate to strong yellow residual cut fluorescence; straw dry cut ring; cuts best from dry cuttings.

9807' CLAY - medium gray-brown; soft and thin; smooth; poor cohesion; very soluble; nonexpansive when rehydrated; derived from shale; noncalcareous; extremely silty to very finely sandy; no oil fluorescence or visible oil in mud; no iridescence or fluorescent pops; strong, acrid petroleum odor from blender.

Appendix 2D
Injection and Confining Zone Supporting Data

XRD and SEM Report from Halliburton Chemical Laboratory

FORM 1012 R-6

LITTLE'S 112485 6M 9/80

CHEMICAL RESEARCH AND DEVELOPMENT DEPARTMENT

HALLIBURTON SERVICES
DUNCAN, OKLAHOMA

LABORATORY REPORT

No. T11-A178-85

To Mr. Mike Eberhard

Halliburton Services

Bakersfield, CA

Date October 14, 1985

This report is the property of Halliburton Services and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operation by any person or concern and employees thereof receiving such report from Halliburton Services.

We give below results of our examination of formation core samples.

Submitted by Shell Exploration and Production Company

Marked Well: 43-27
Location: North Belridge; Kern County, CA
Formation: Oceanic
Depth: 8,354-9,681 feet
Samples Received: August 23 and September 27, 1985
Los Angeles Division Reference No: CBB-A98-0394-0822-85

Purpose

The purpose of this report is to analyze the submitted samples. The tests include x-ray diffraction, acid solubility, immersion and scanning electron microscope examination.

Discussion

The results of the requested tests are included in the Data Section of this report.

8000031995
Test & Analysis
0402975126
North Belridge
27 T27S R20E
43-27

8000031995

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Data

Core Description

Sample No. 1 at 9,681 feet SANDSTONE - Light grey color, fine clay and quartz debris present as matrix, secondary quartz overgrowth may also be present as cement. Poor visible porosity.

Sample No. 2 at 9,126 feet SANDSTONE - Light grey color, fine grained, secondary quartz overgrowth present. Fair to poor visible porosity.

Sample No. 3 at 8,830 feet SANDSTONE - Grey color, fine grained, secondary quartz overgrowth present. Poor visible porosity.

Sample No. 4 at 8,727 feet SANDSTONE - Grey to light grey color, fine grained, clay appears to be present in the matrix. Poor visible porosity.

Sample No. 5 at 8,354 feet SANDSTONE - Similar to Sample No. 3 but finer grained.

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Data Cont'd

Qualitative X-ray Diffraction and Acid Solubility Analyses

Purpose: To identify the types and relative quantities of minerals in the formation sample.

Procedure: A pulverized one gram sample is placed in an x-ray beam and rotated through an arc. The x-ray beam is diffracted by the sample and the diffraction patterns are recorded.

Results: The diffraction patterns are used to identify the types of minerals present and their relative quantities. The relative quantities for the submitted samples are as follows:

Formation	Oceanic	Lower 64 "W" Sand	Upper "W" Sand	Upper 64 "U" Sand	Aqua
Sample No.	1	2	3	4	5
Depth (feet)	9,681	9,126	8,830	8,727	8,354
HCl Solubility*	1.5%	0.8%	1.5%	1.3%	2.0%
Quartz	65-80%	35-45%	40-50%	50-65%	50-65%
Feldspar	10-15%	45-55%	40-50%	35-45%	25-35%
Calcite	0.5-2%	-	-	-	-
Dolomite	-	-	-	-	-
Kaolinite	5-10%	2-5%	2-5%	-	2-5%
Illite	0.5-2%	0.5-2%	0.5-2%	0.5-2%	2-5%
Smectite	-	-	-	-	-
Mixed Layer	0.5-2%	2-5%	2-5%	0.5-2%	0.5-2%
Chlorite	-	-	-	-	-

*One gram of sample is added to 0.5N HCl. After reaction, the excess acid is titrated with 0.2N NaOH. The results are calculated and reported as calcium carbonate. (Note: a pure dolomite will be reported as 108%).

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Data Cont'd

Immersion Test

Purpose: To observe the effect of various base fluids on core chips from selected representative cores.

Procedure: Freshly broken chips from cores are immersed in test fluids; one chip per fluid in a 30 ml beaker. The samples are then placed in a vacuum for one hour. After that time an observation is made to evaluate the effect of the fluid on the core chip.

Results: Released fines from a core chip may indicate formation sensitivity to the test fluid.

Effects of immersion under vacuum at 180°F (test temp.) for one hour in the following fluids:

Sample No.	Depth (feet)	Fresh Water	2% KCl Water	2% KCl Water*	7½% MCA Acid	6.0% HF Acid	Kerosene
1	9,681	N	N	N	V	V	N
2	9,126	V	N	V	V	V	N
3	8,830	V	V	N	V	V	N
4	8,727	V	N	N	V	V	V
5	8,354	V	V	N	V	V	N

N - No fines released.
V - Very small amount of fines.
S - Small amount of fines.
M - Moderate amount of fines.
L - Large amount of fines.
P - Partially disintegrated.
CD - Completely disintegrated.
GR - Gelatinous residue formed.
PD - Partially dissolved.
C - Completely dissolved.

*0.5 gallon CLA-STA II compound per 1,000 gallons.

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Data Cont'd

Scanning Electron Microscope (SEM) Examination

Purpose: To provide a greatly magnified view of a core sample. Minerals present in the sample can be identified and their location observed.

Procedure: A core chip with a freshly broken surface is required for this examination. The sample is coated with a gold palladium alloy and placed in the vacuum chamber of the SEM. The core chip is viewed at a high magnification and a photomicrograph is taken. An associated energy dispersive x-ray (EDX) is used to help identify the mineral content of the sample.

Results: The framework grains can be identified and their size approximated. The location of the clay minerals within the sample can be observed. The SEM can produce, in effect, a pseudo three-dimensional view of formation pore spaces. The area of the sample viewed is very small and may not clearly characterize the entire formation.

Sample No: 1
Depth: 9,681 feet

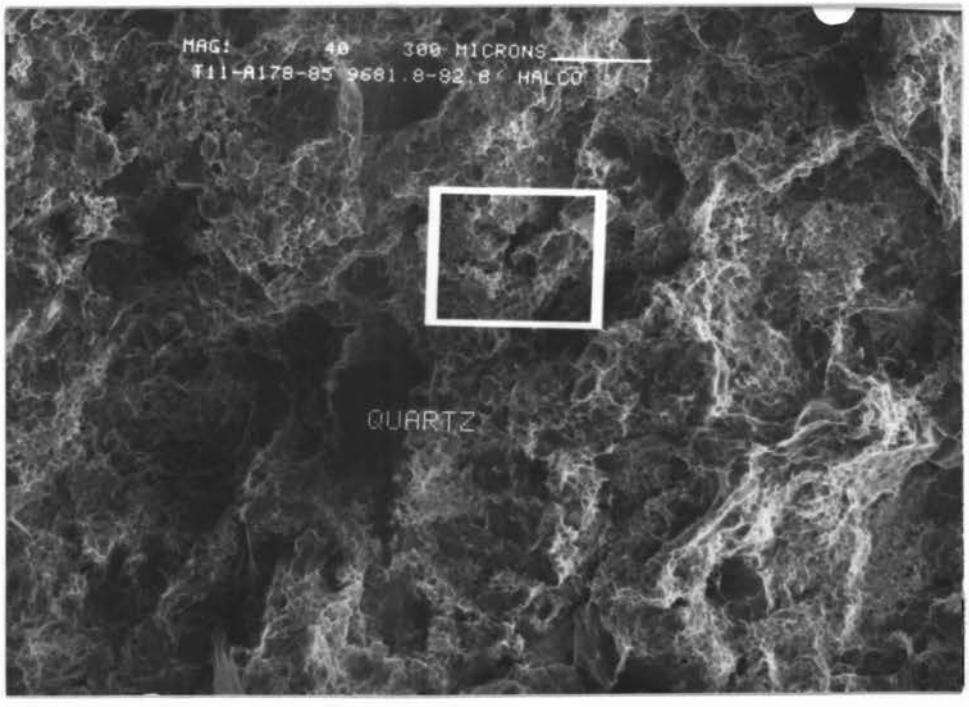

Figure No. 1; Negative No. 21805-9070; Magnification 40X

Framework grains are difficult to distinguish in this low magnification view.

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Data Cont'd

Scanning Electron Microscope Examination Cont'd

Sample No: 1
Depth: 9,681 feet

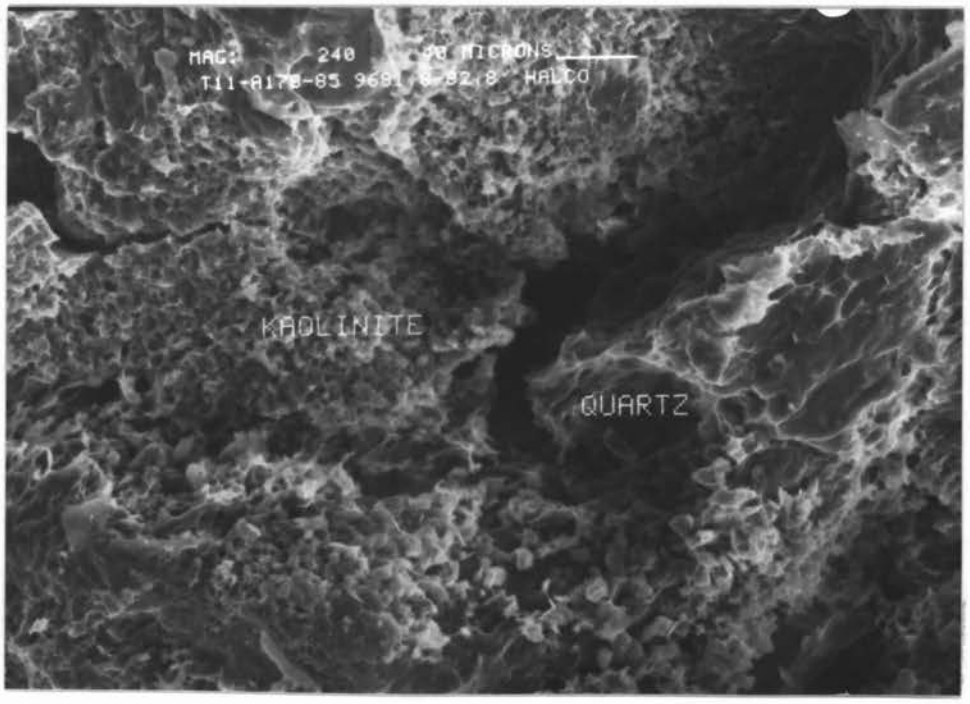

Figure No. 2; Negative No. 21805-9069; Magnification 240X

This view shows kaolinite covering the framework grain surface and the fair to poor visible porosity.

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Data Cont'd

Scanning Electron Microscope Examination Cont'd

Sample No: 2
Depth: 9,126 feet

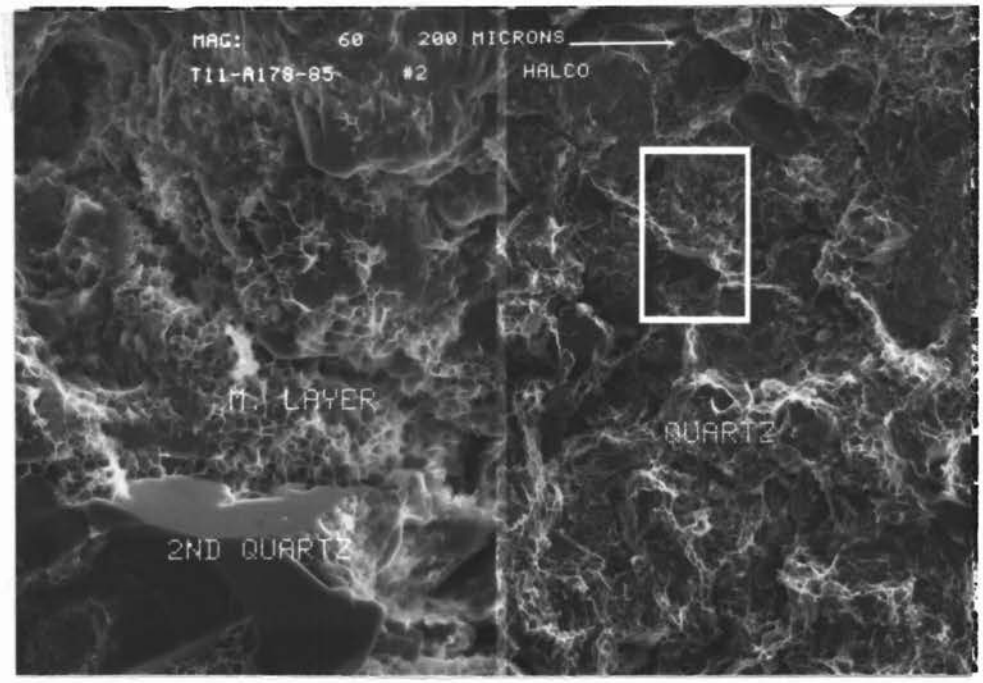

Figure No. 3; Negative No. 21805-9143; Magnification 60X and 300X

This sample is similar to Sample No. 1 in having poorly distinguished framework grains. High magnification view shows secondary quartz overgrowth and a highly smectitic mixed layer clay covering the sample.

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Data Cont'd

Scanning Electron Microscope Examination Cont'd

Sample No: 3
Depth: 8,830 feet

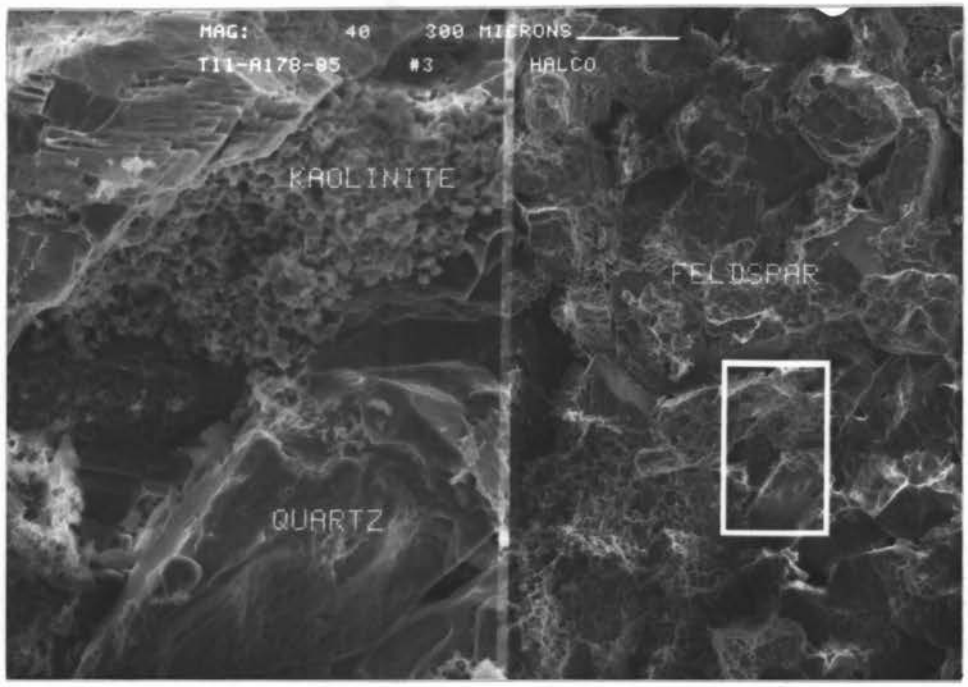

Figure No. 4; Negative No. 21805-9142; Magnification 40X and 200X

This view shows the fine to medium sand size grains of quartz and feldspar with pockets of kaolinite and small amounts of secondary quartz overgrowth.

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Data Cont'd

Scanning Electron Microscope Examination Cont'd

Sample No: 4
Depth: 8,727 feet

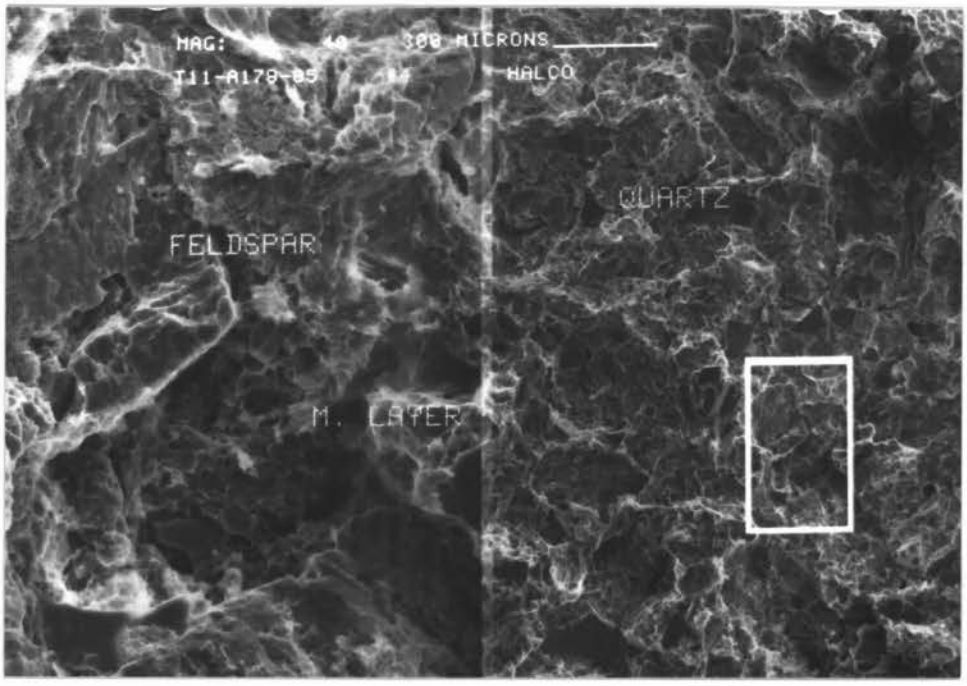

Figure No. 5; Negative No. 21805-9141; Magnification 40X and 200X

This sample has poorly distinguished framework grains and trace of illite and a highly smectitic mixed layer clay.

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Data Cont'd

Scanning Electron Microscope Examination Cont'd

Sample No: 5
Depth: 8,354 feet

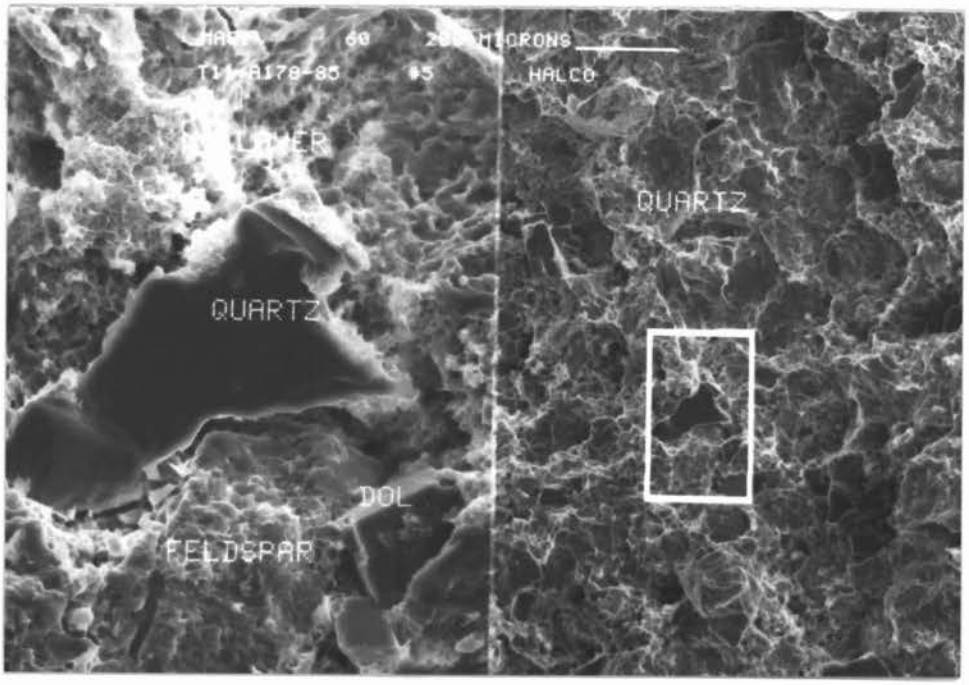

Figure No. 6; Negative No. 21805-9140; Magnification 60X and 300X

This sample is composed of fine to very fine sand size grains of quartz and feldspar. Mixed layer clay is noted in the high magnification view.

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Core Sample Disposition

The core samples will be held in storage for 60 days following mailing of the report. At the end of this time, we will select representative core pieces for storage in the Core Library and discard the remainder unless we are requested to ship the cores to another location.

The selected core pieces will be in the Core Library for two years and will be considered the property of the customer. These core pieces will not be released without the permission of the customer, the originating Halliburton Engineer, or a Stimulation Engineering and Design Section Supervisor. After two years, the selected core pieces will be kept for another eight years, during this time the pieces may be used for a variety of projects.

Data Book Reference

The data presented in this report are recorded in Stimulation Engineering and Design Book No. 5789, pages 37 and 68; Analytical Book No. 5826, page 31; Analytical Book No. 5804, page 45; Analytical Book No. 5823, page 73; Analytical Book No. 5813, page 33; Analytical Book No. 5785, page 73; and Analytical Book No. 5822, page 53.

cc: Mr. J. B. McCalla, Jr.
Mr. J. R. Fehrenbach
Mr. J. E. Diller
Dr. S. W. Almond
Mr. R. M. Melton
Mr. R. M. Lasater
Mr. A. B. Waters
Dr. L. E. Harris

Respectfully submitted,

HALLIBURTON SERVICES

By Mark A. Parker

Mark A. Parker

Laboratory Analyst
Parker-Arrington-Blanton
Lovett-Black

rdf

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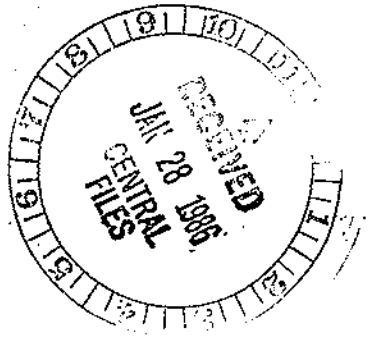
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Appendix 2D
Faults and Fractures Supporting Data

Scanning Electron Microscope Micrographs

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Aera Central Files

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Test & Analysis

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North Belridge 27 T27S R20E

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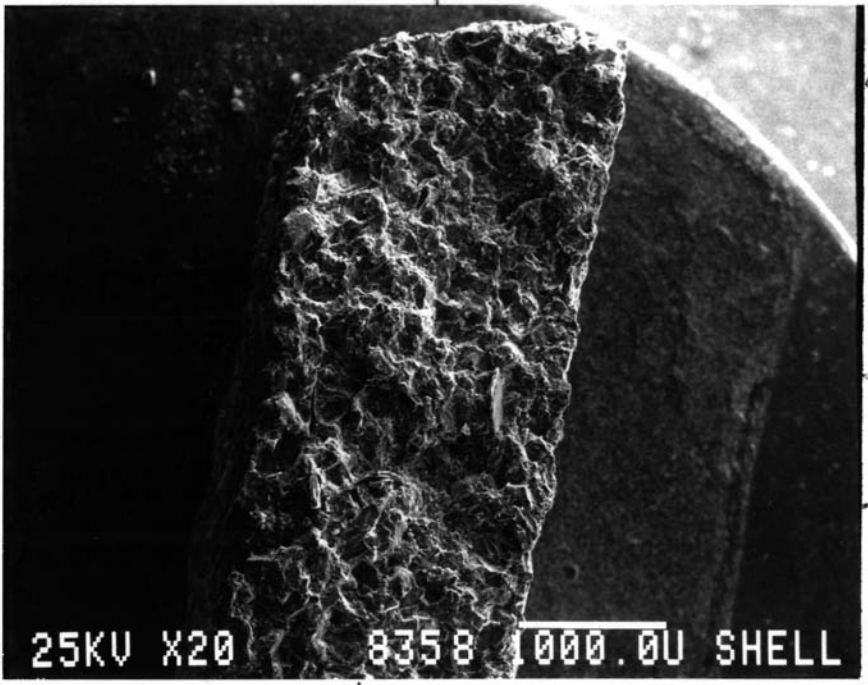

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83581

-1

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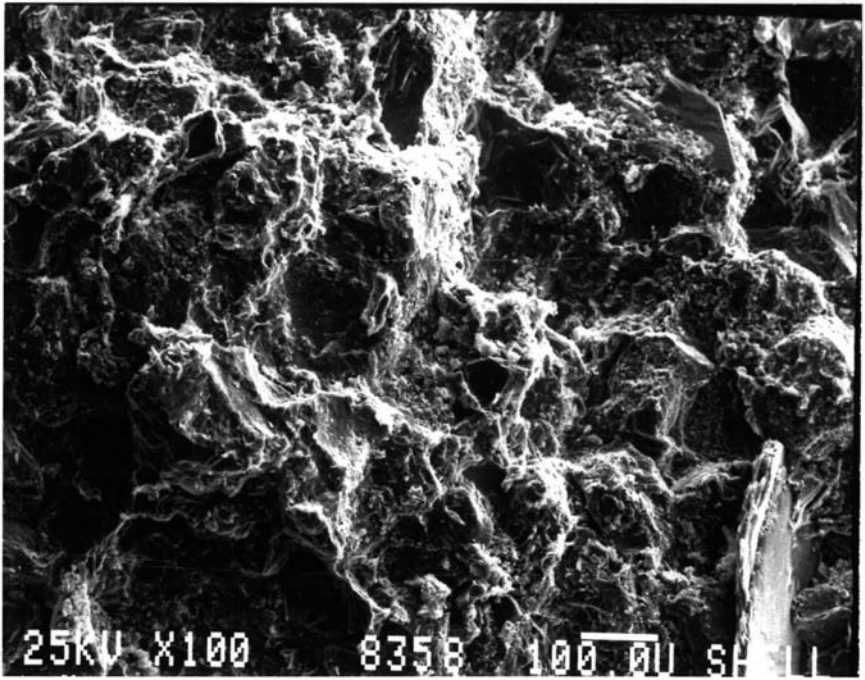
1/2

20X



83581

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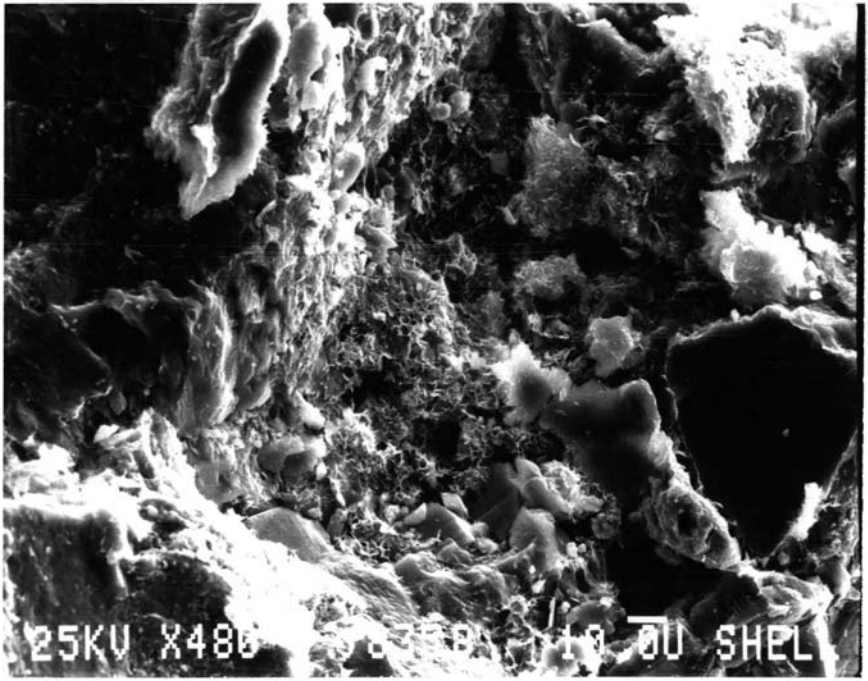
100X



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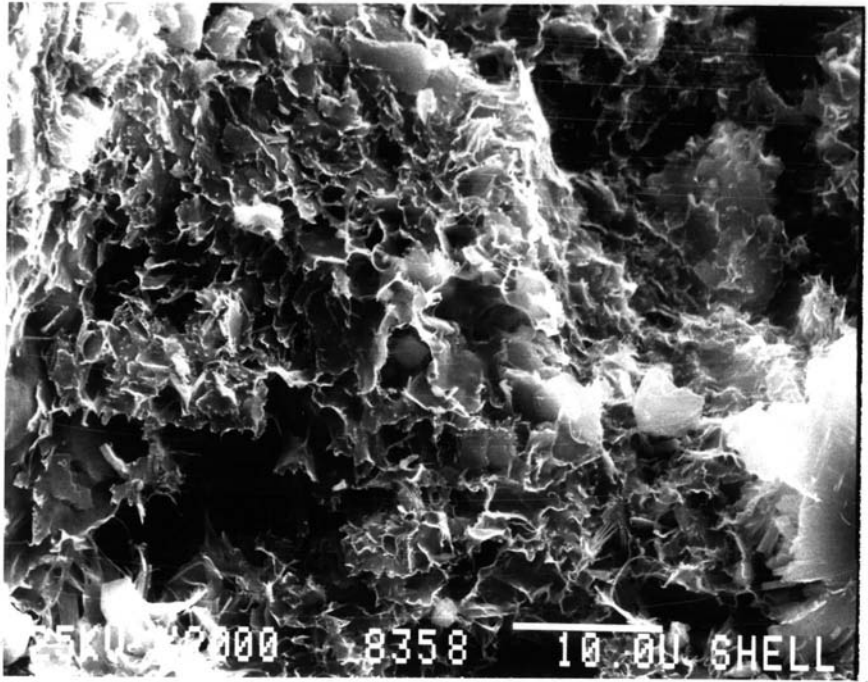
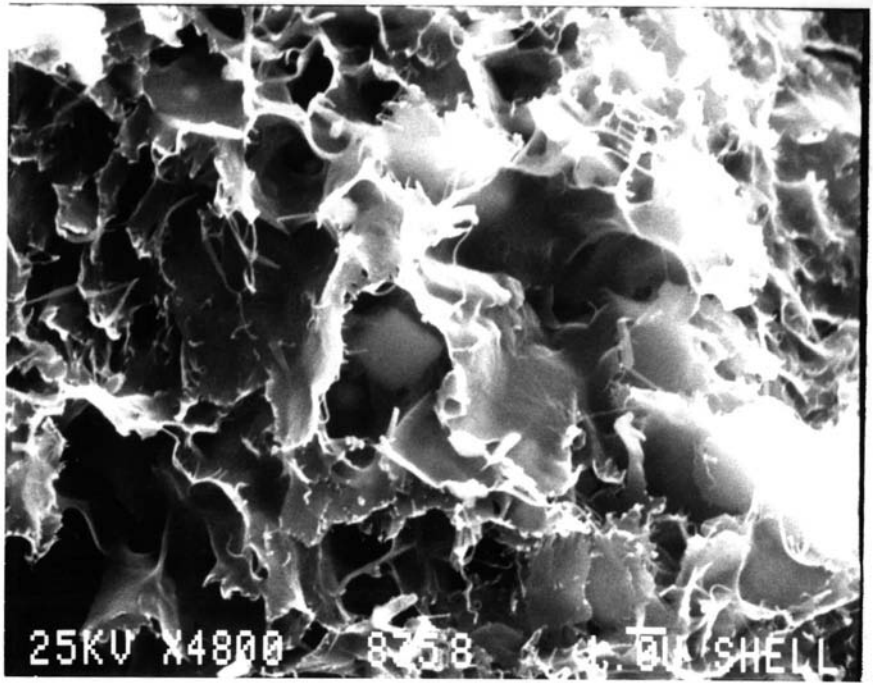
500Y



8358'

1

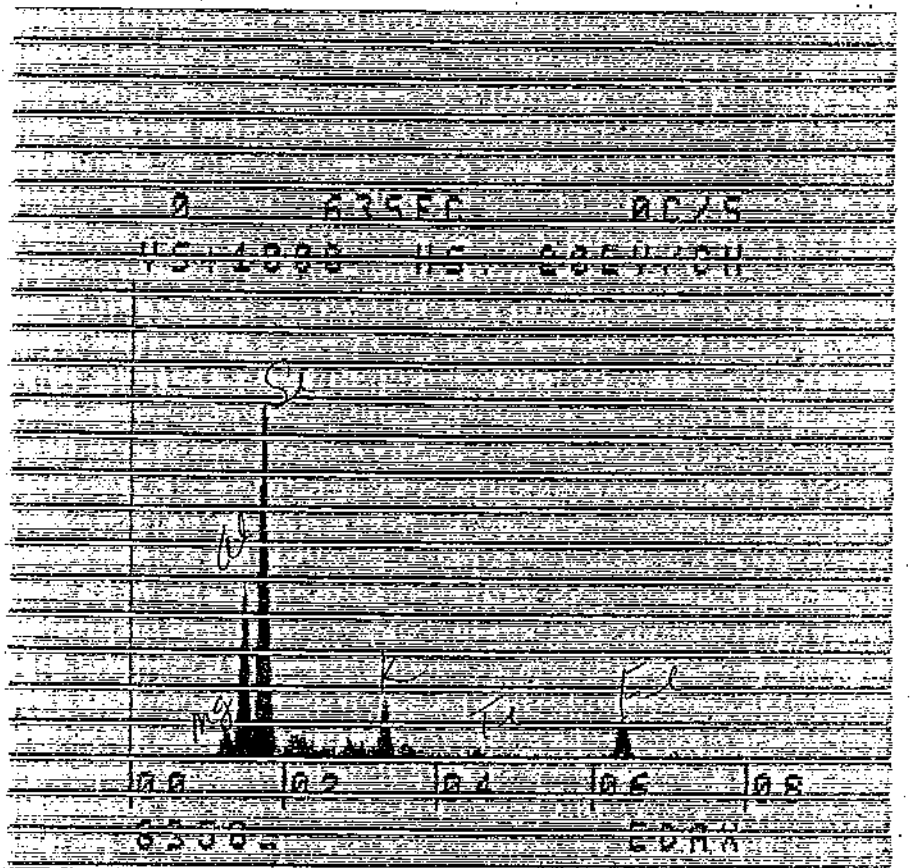
2000X



83581

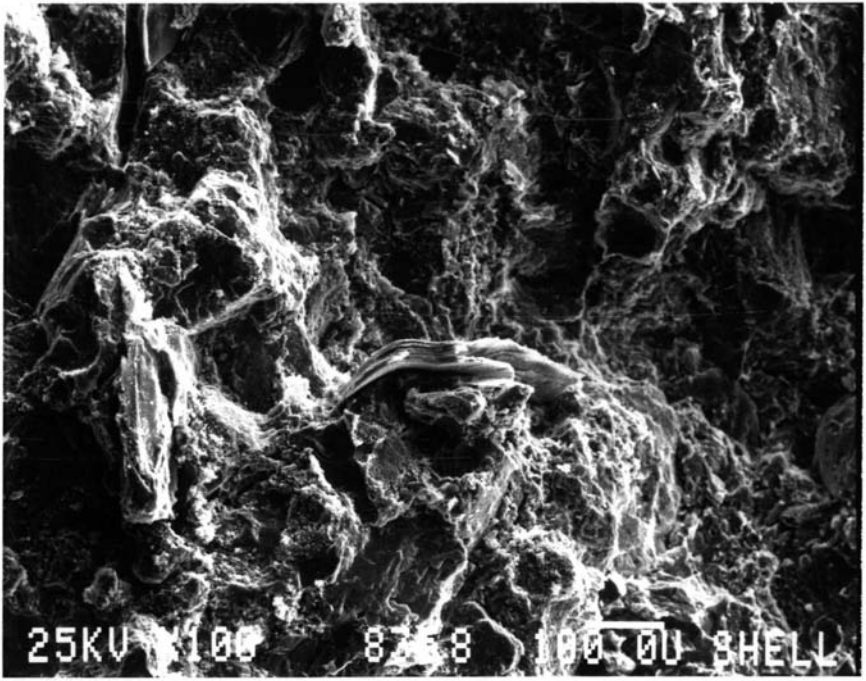
1

5000 Y



83581

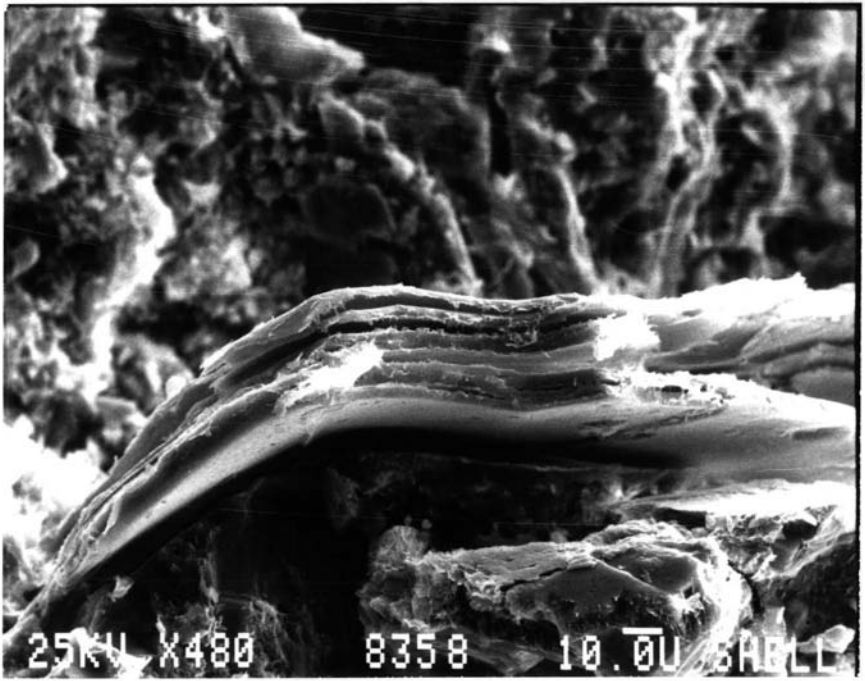
Area 1



835-81

2

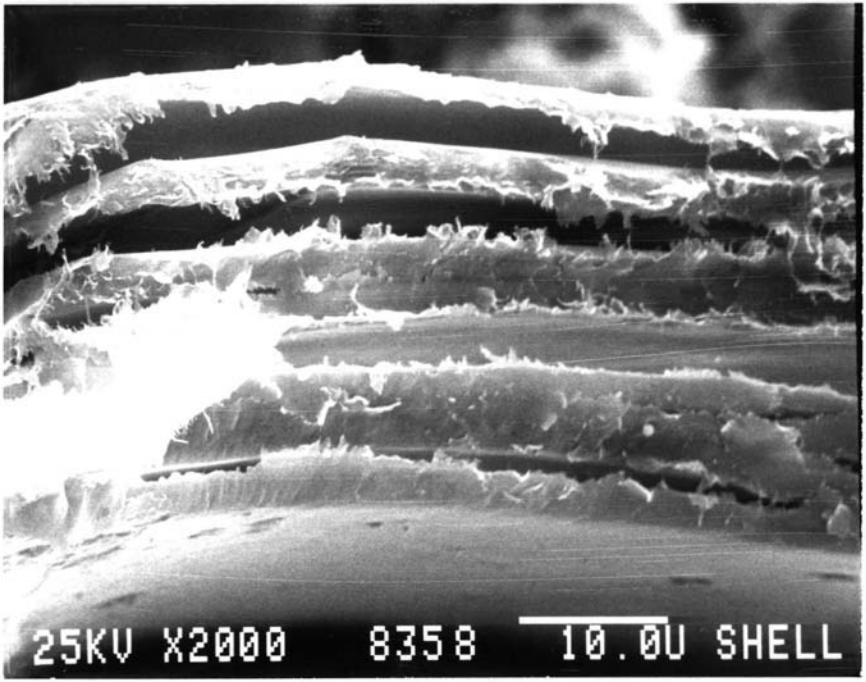
100X



83581

2

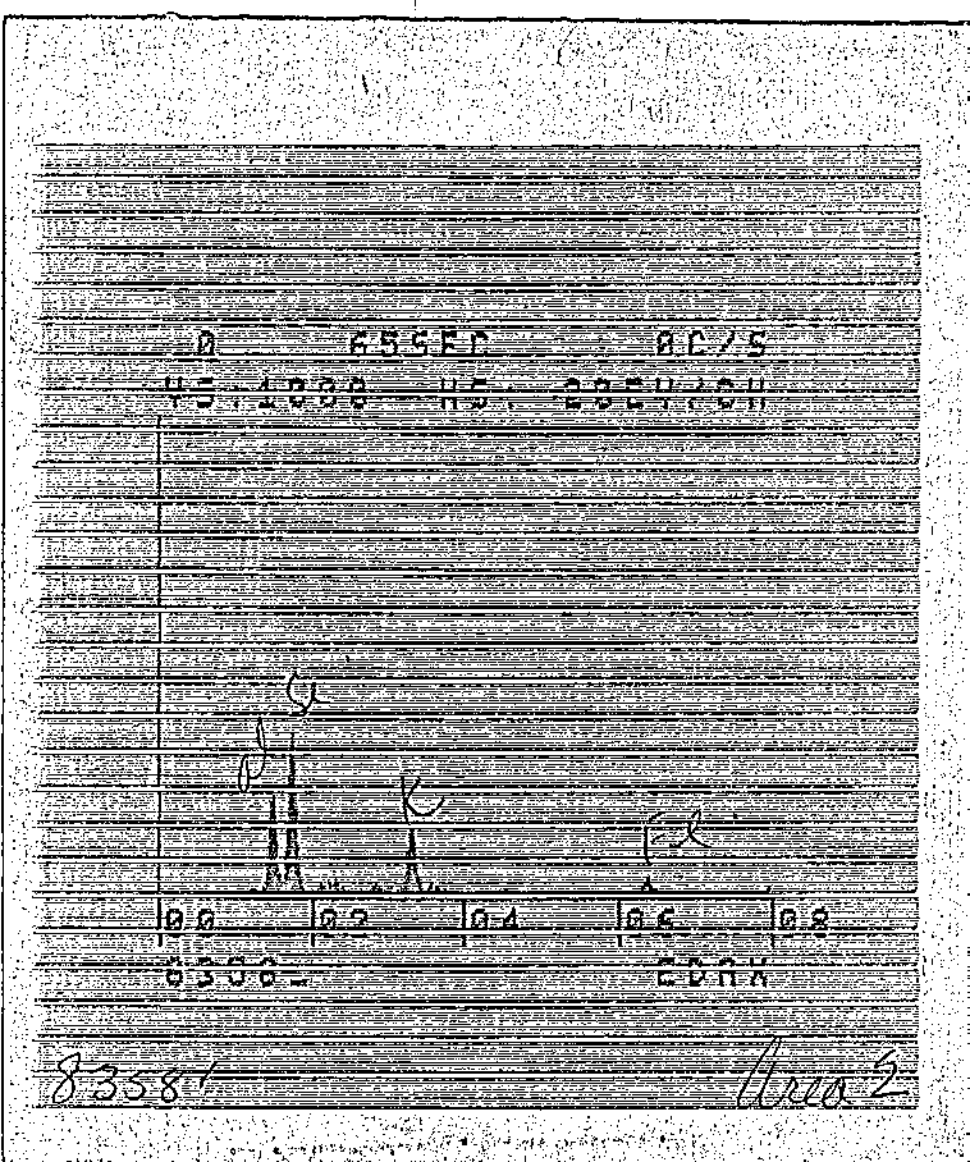
500X



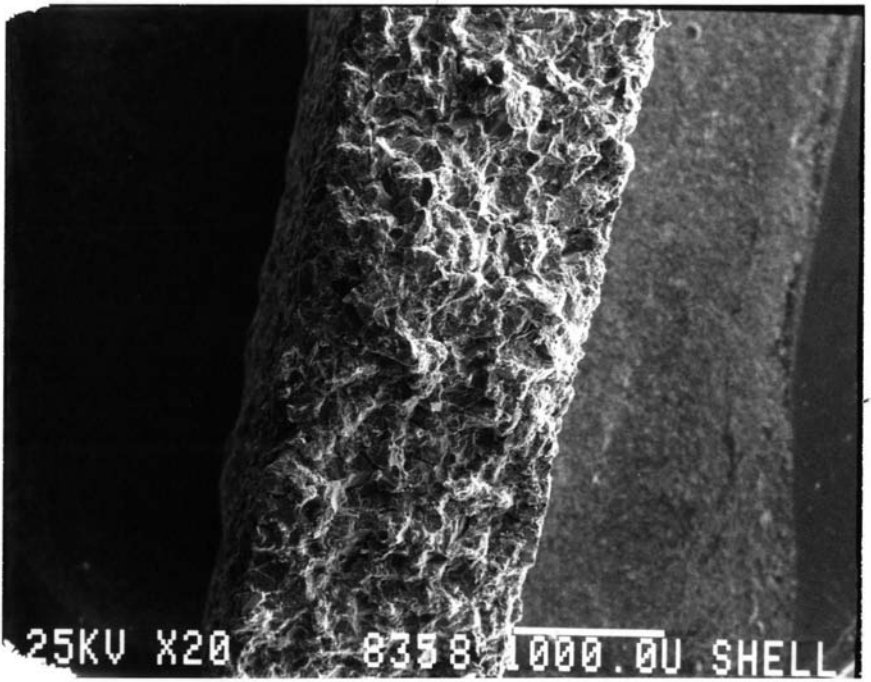
83581

2

2000 X


8358
Area 2

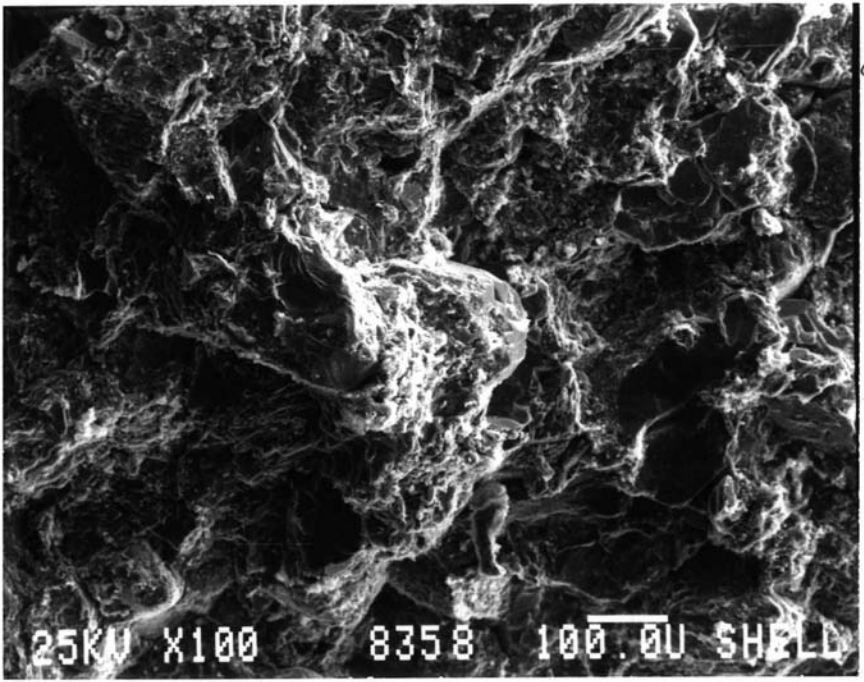
13



8358'

3

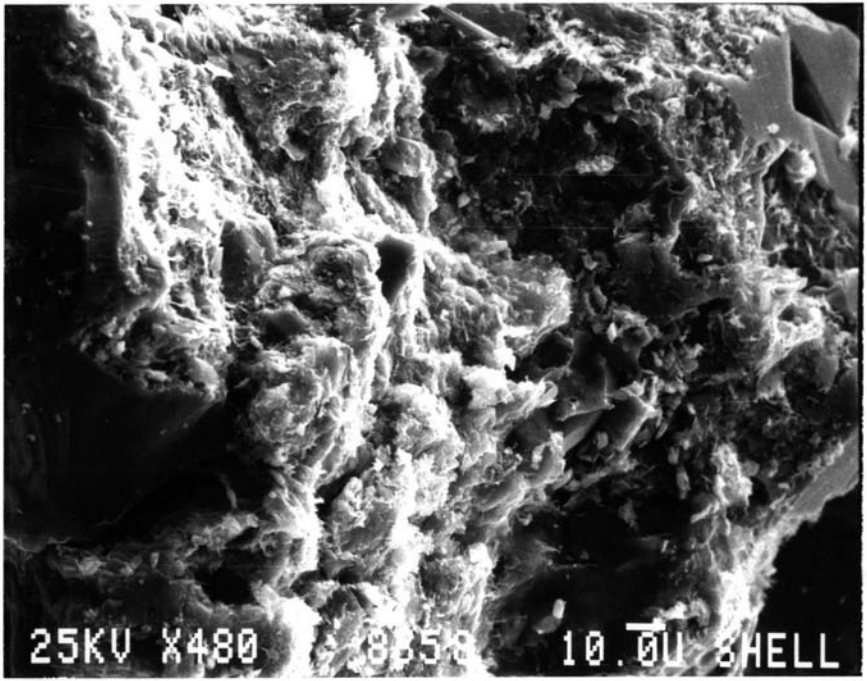
20 Y



83581

3

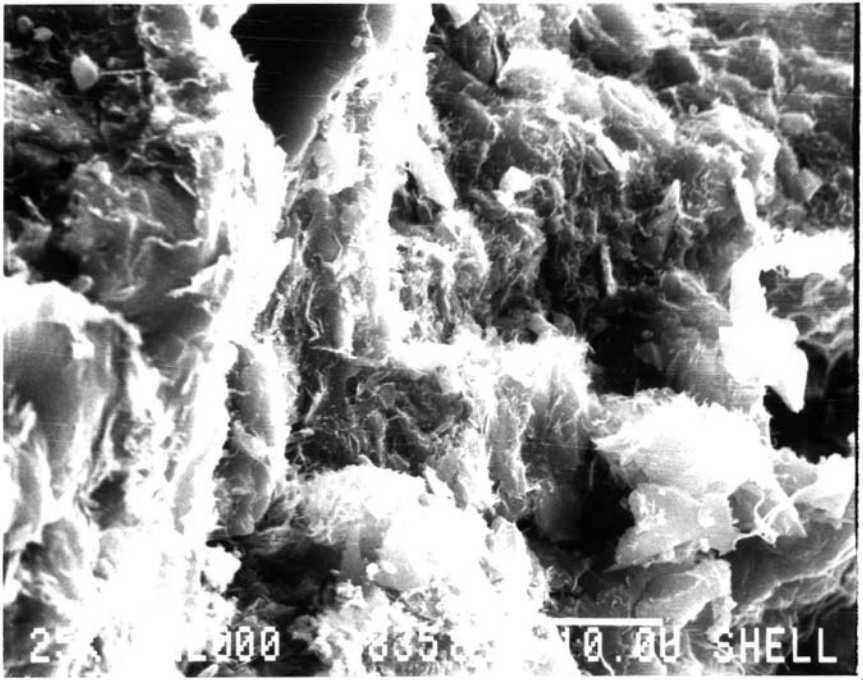
100 Y



8358'

3

500Y

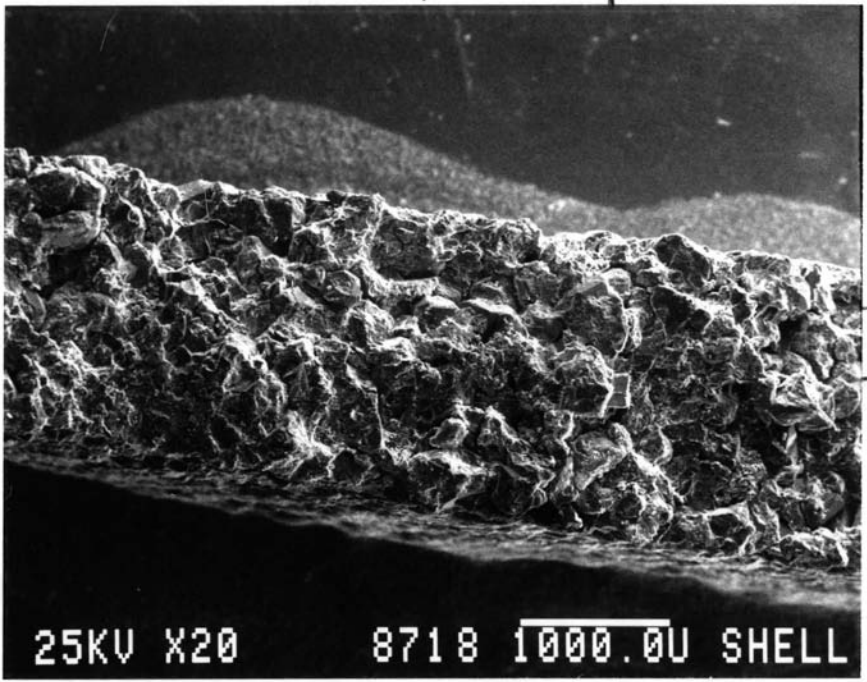

8358'
3
2000 X

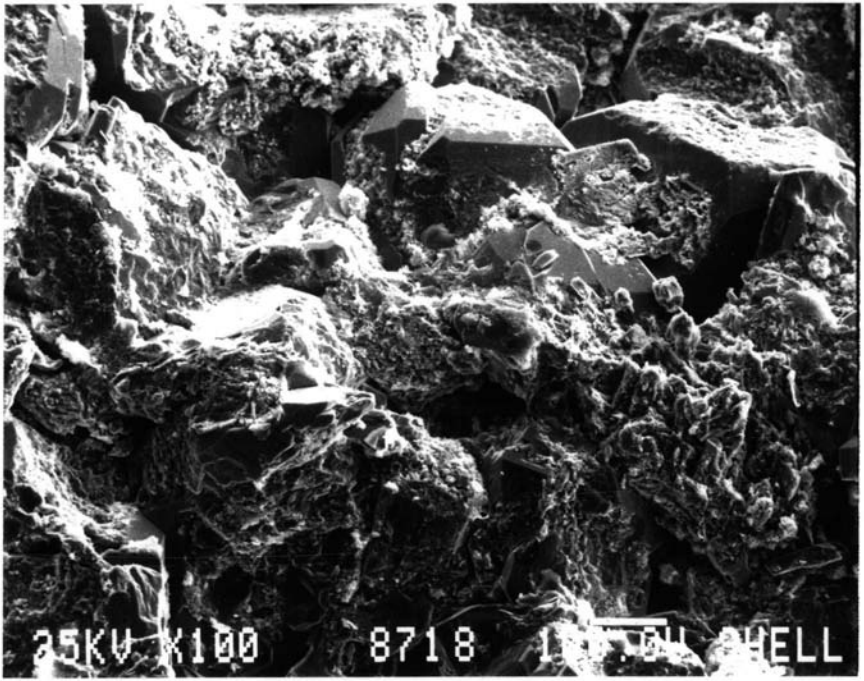
N. Belridge 43-27
8358'

Area 1 @ 5000X - Illite?

Area 2 @ 2000X - Biotite?

Area 3 @ " - Illite?

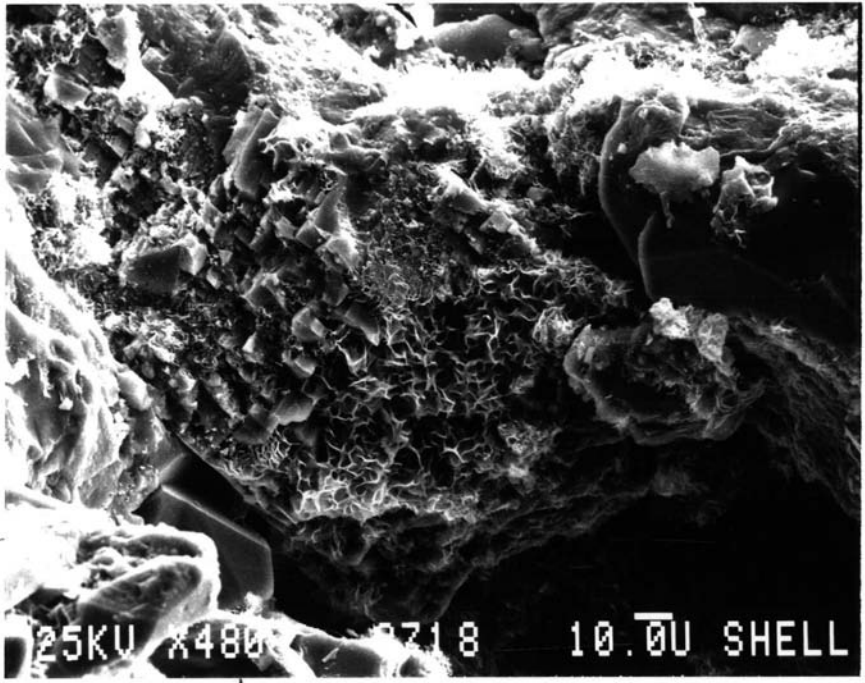

1
3
8718
3
1
25KV X20 8718 1000.0U SHELL
20X

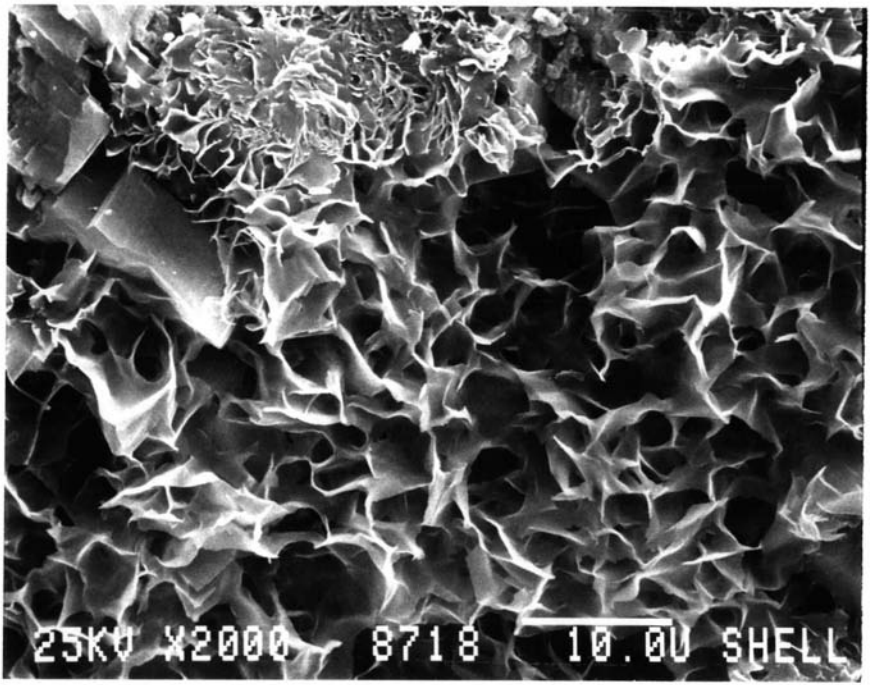


8718'

1

100X

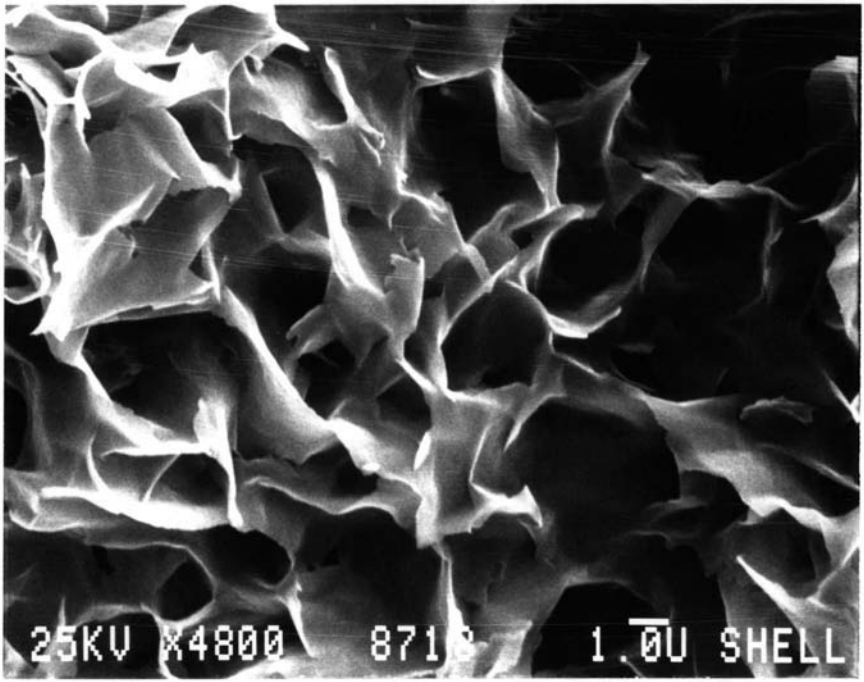

25KV X480
8718
10.0U SHELL



8718'

1

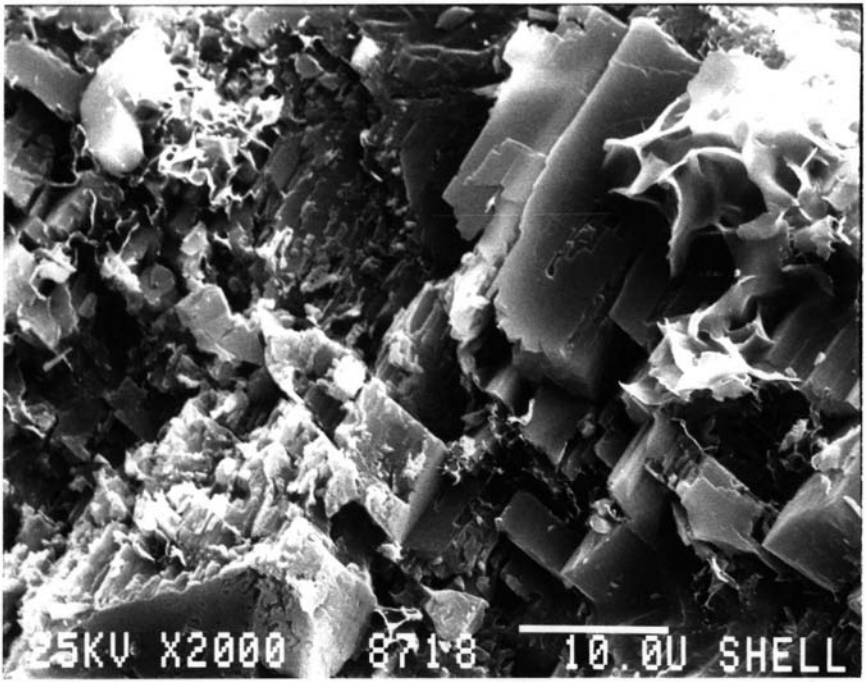
2000X



8718'

1

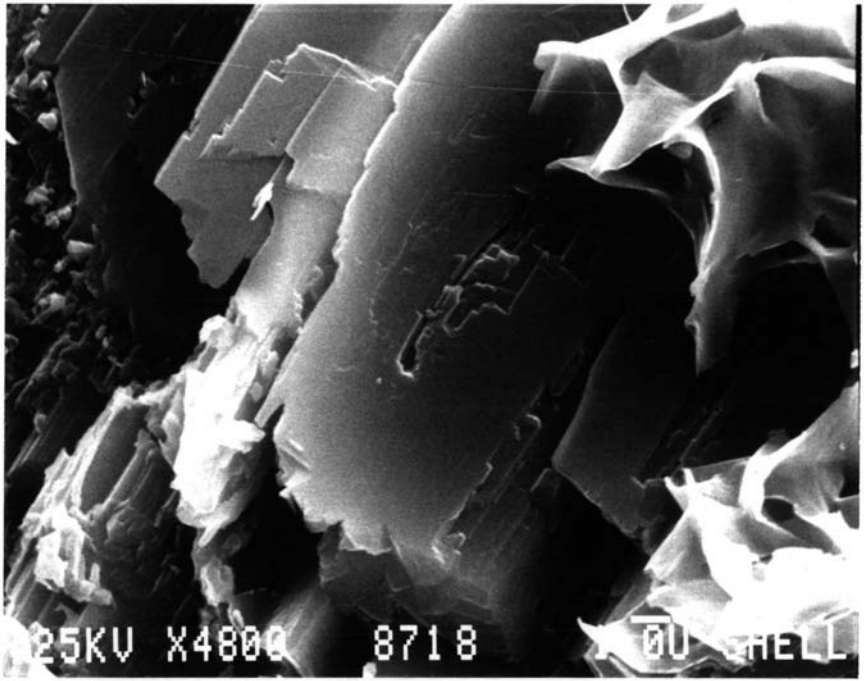
5800X



8718'

2

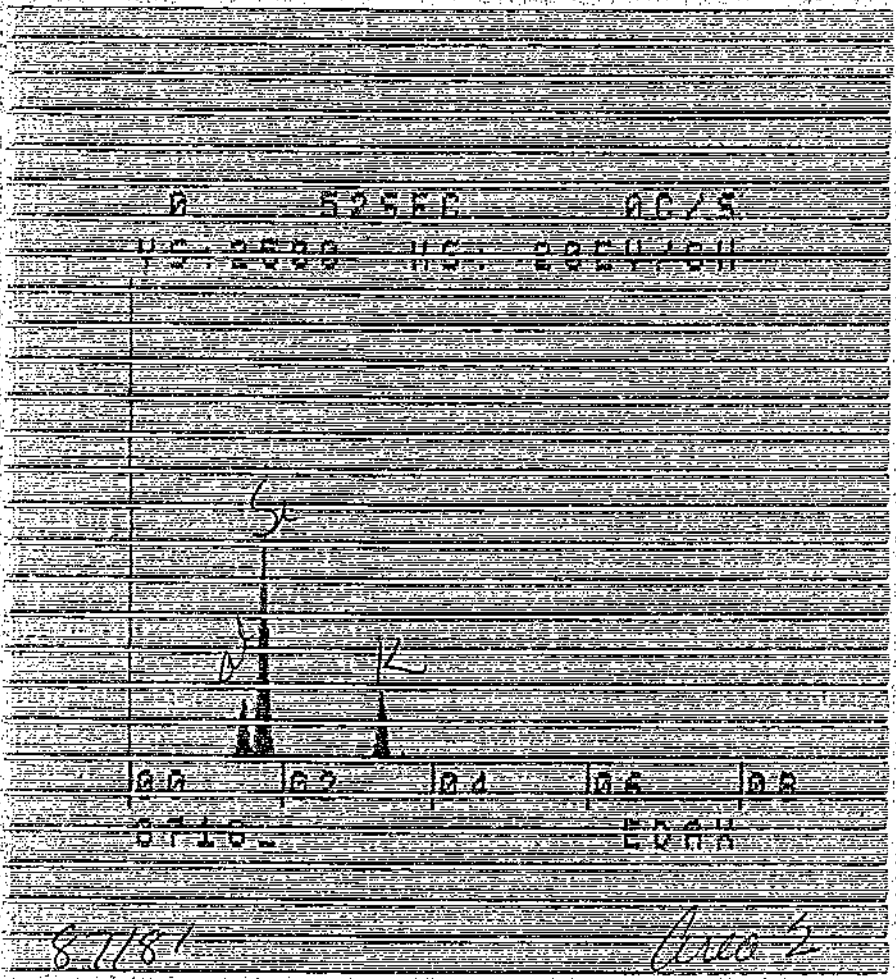
2000 X

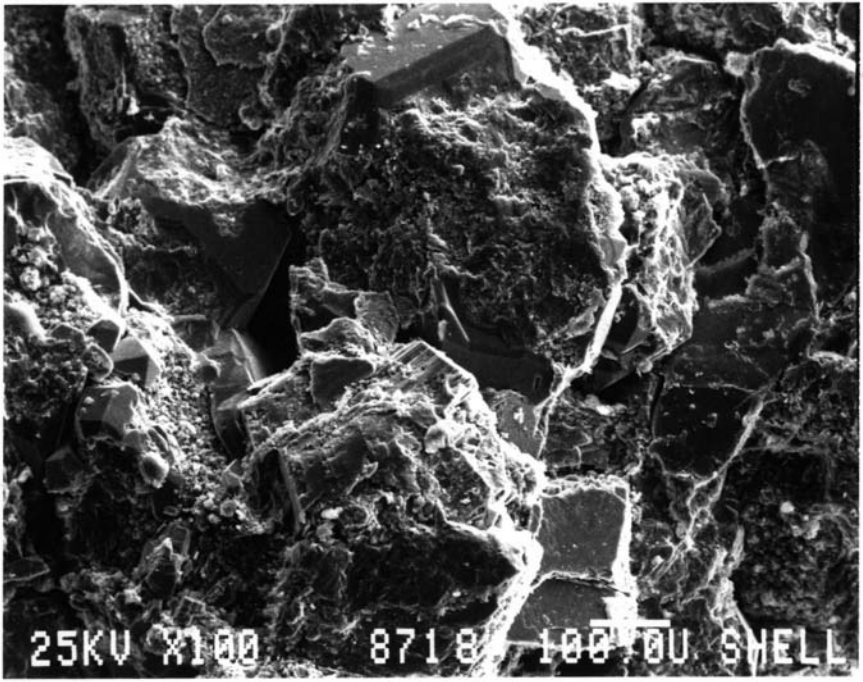


8718'

2

5000X

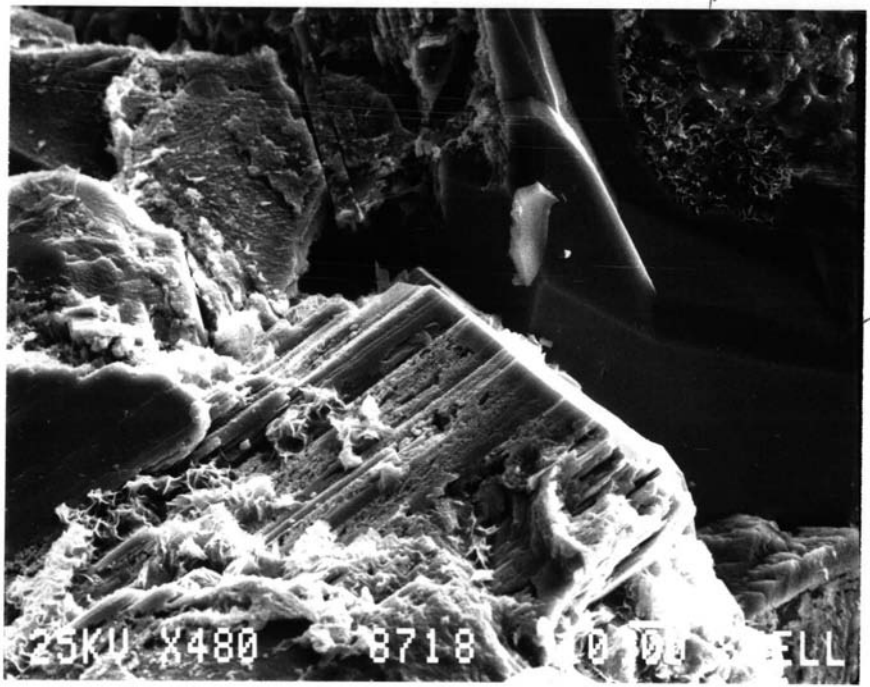




8718'

3

100 V

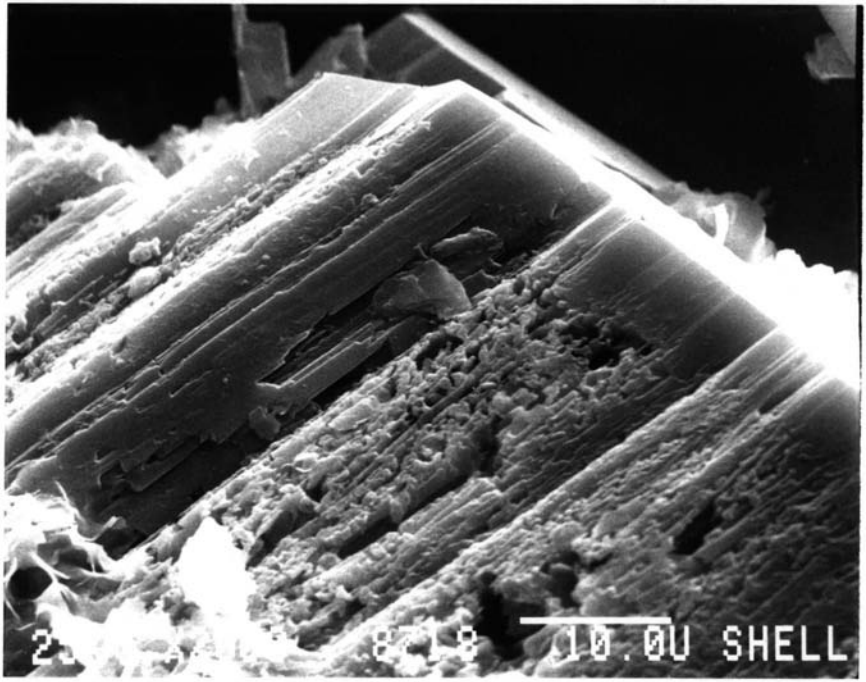


8718'

qtz

3

500X

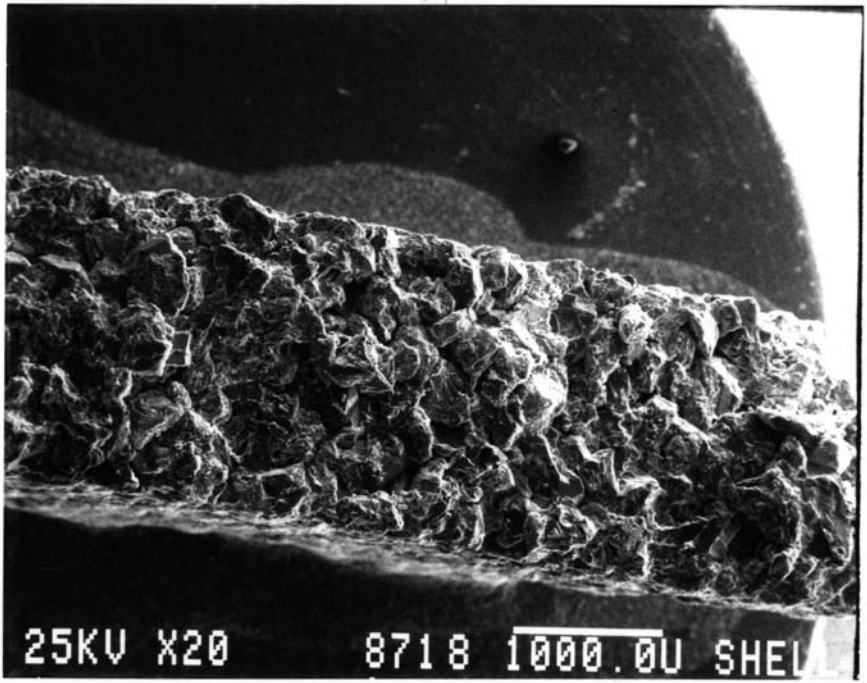


8718 1

3

EDS similar to Area 2 2000X

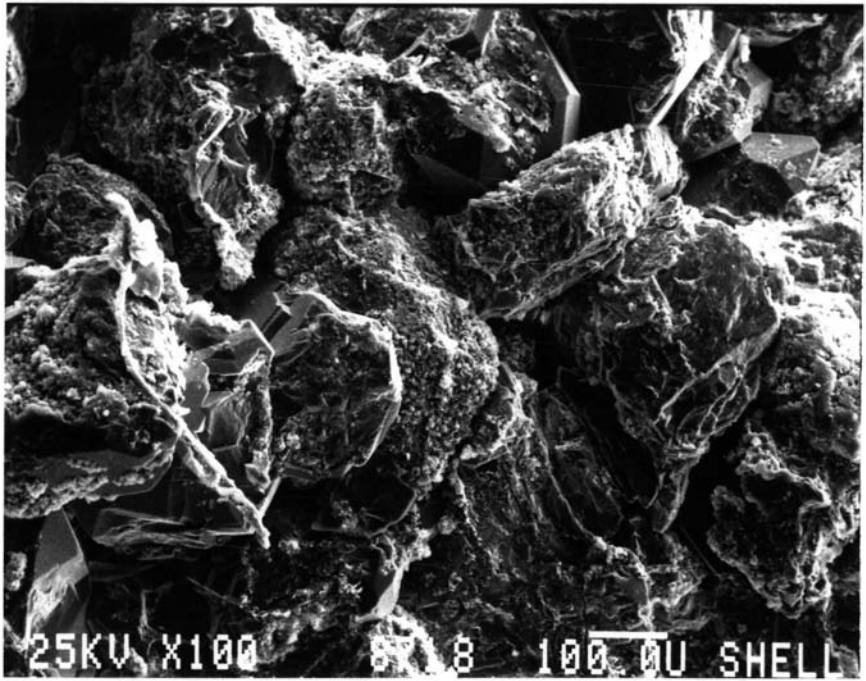
14



8718'

-4

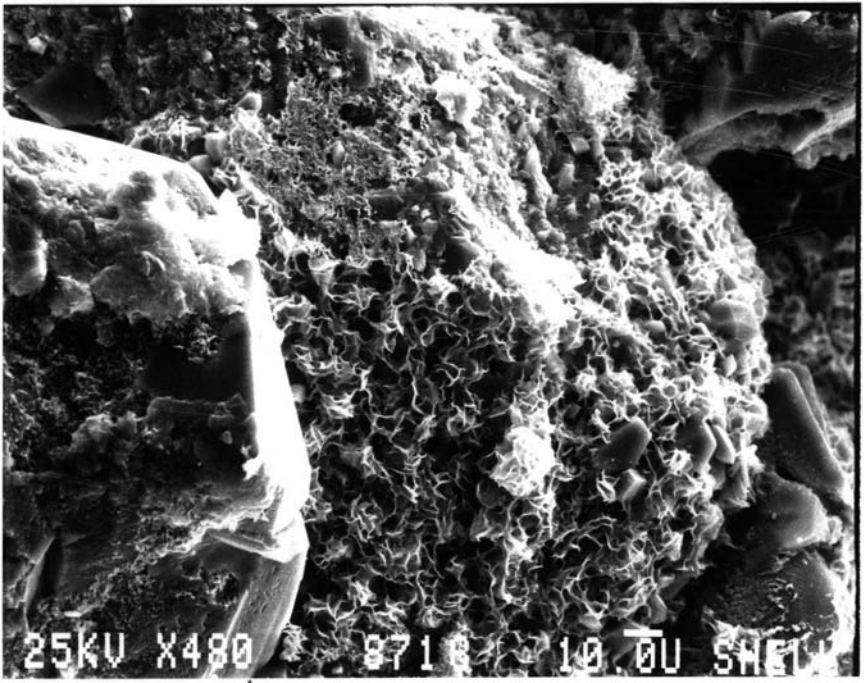
20X



87181

4

100V

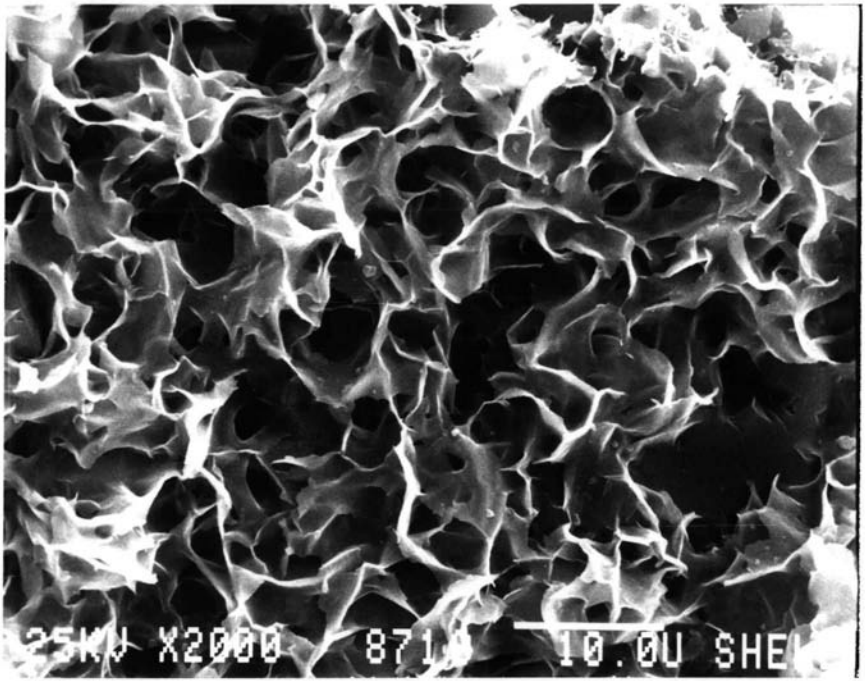


8718'

4

500 X

qtz



8718'

4

2000 X

EDS similar to Area 1

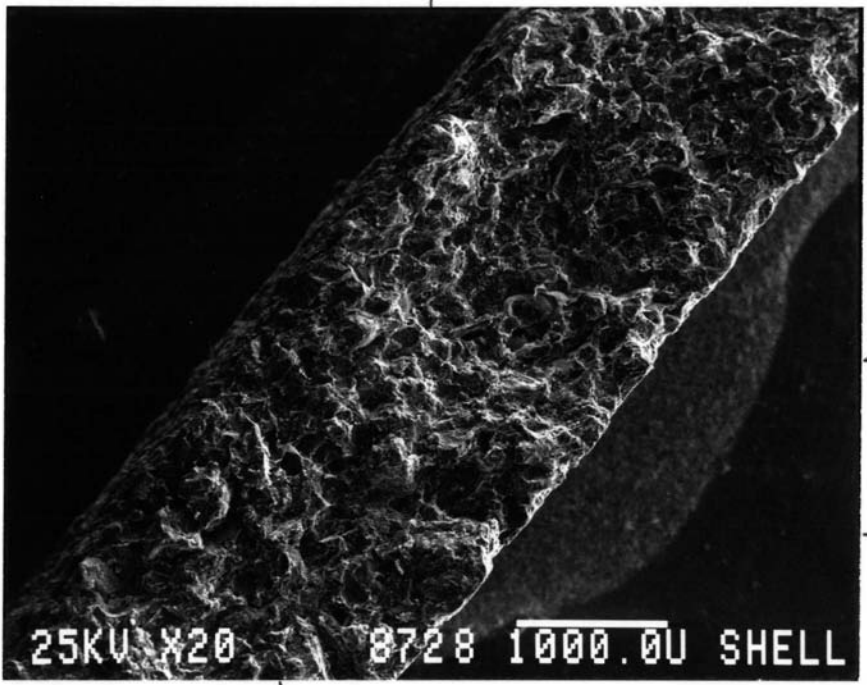
N. Belridge 43-27
8718'

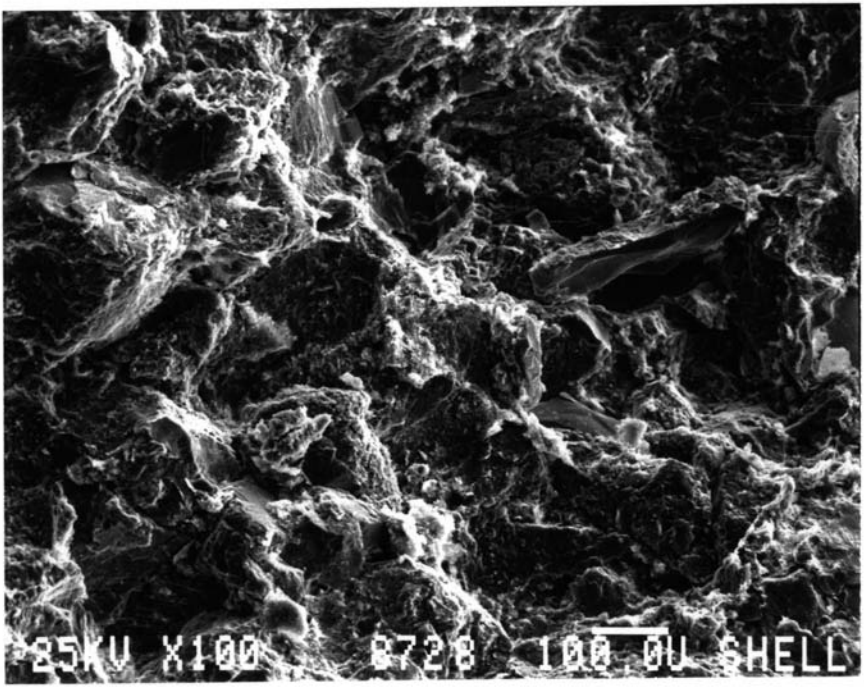
Area 1 @ -5000x- Illite/Smectite

Area 2 @ " - K Feldspar

Area 3 @ 2000x- " "

Area 4 @ " - Illite/Smectite

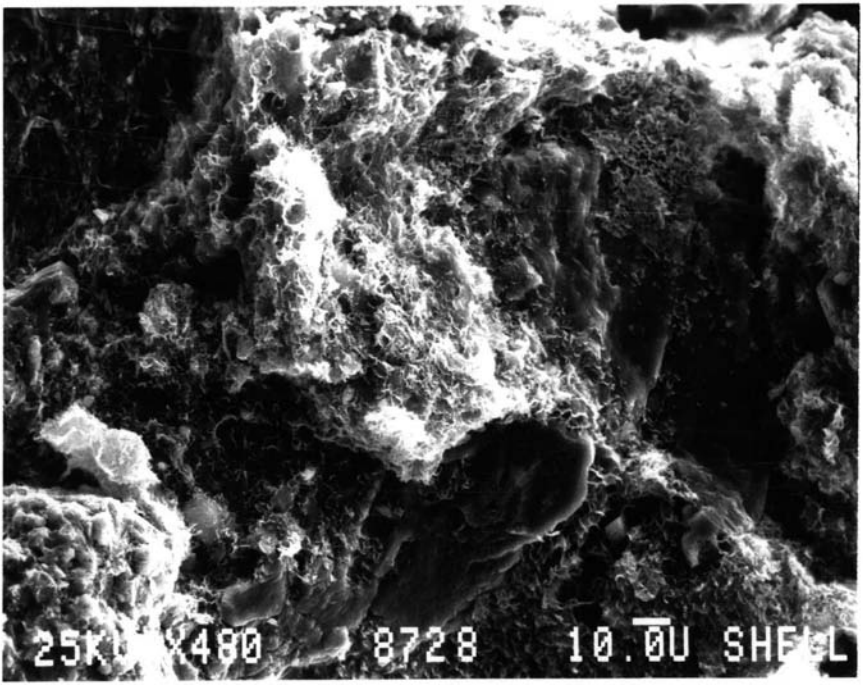

25KV X20 8728 1000.0U SHELL

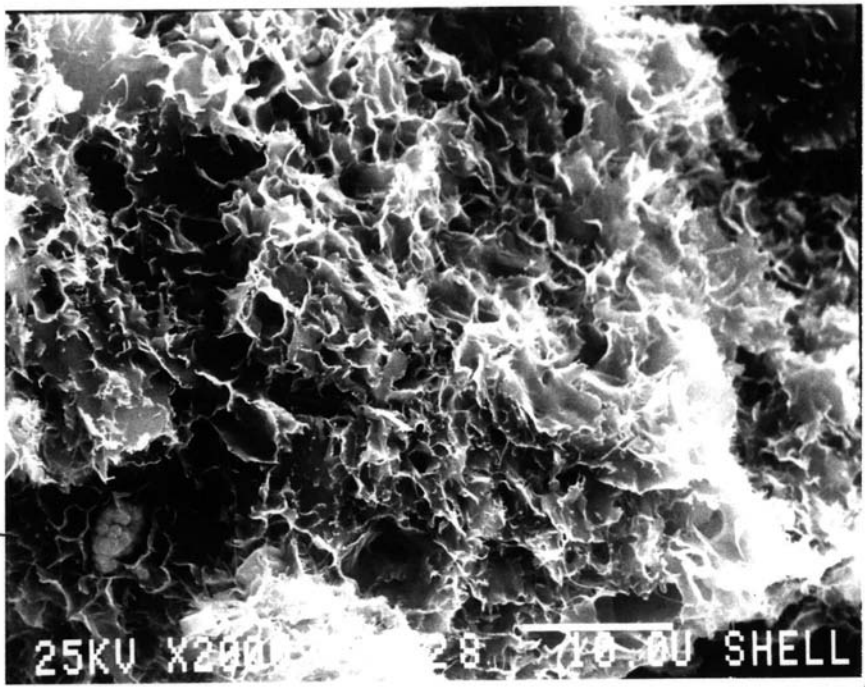


8728'

1

100X


8728'
1
25K X480 8728 10.0U SHELL
580Y

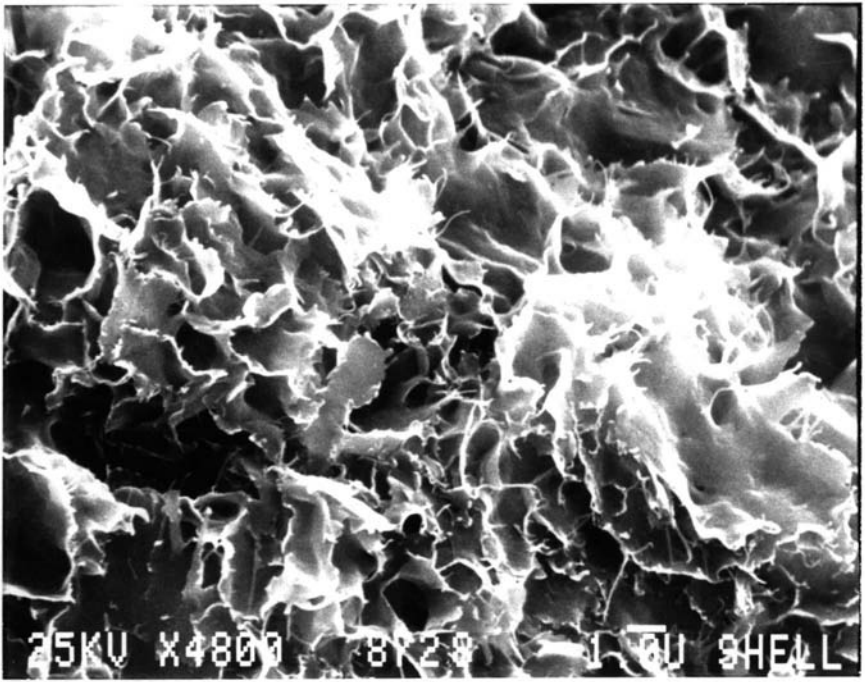


87281

1

2000X

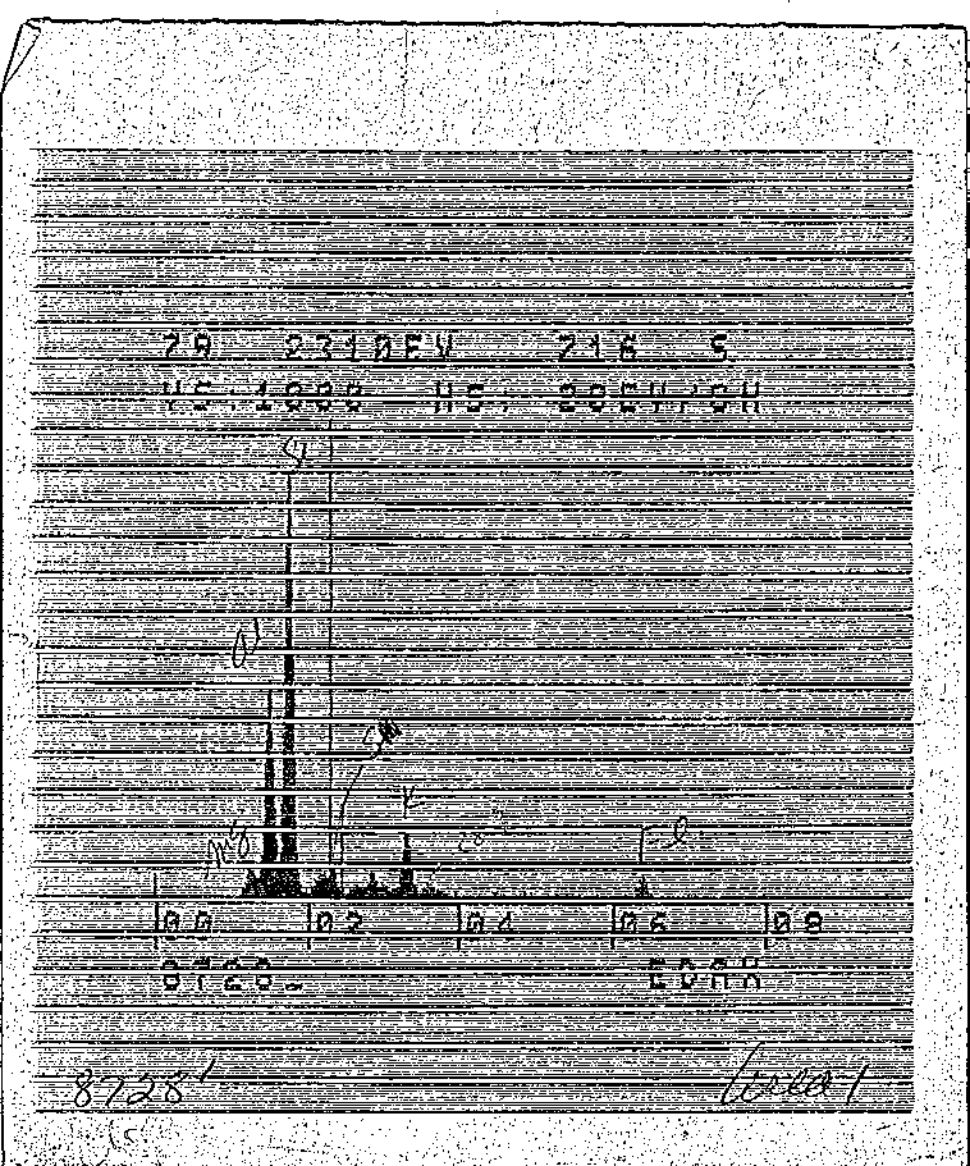
pyrite

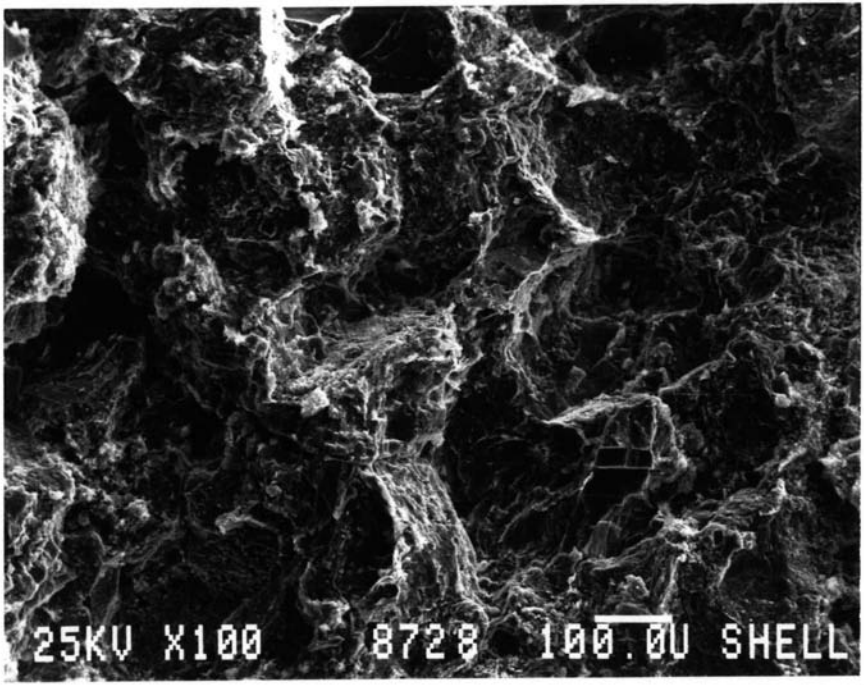


8728'

1

5000X

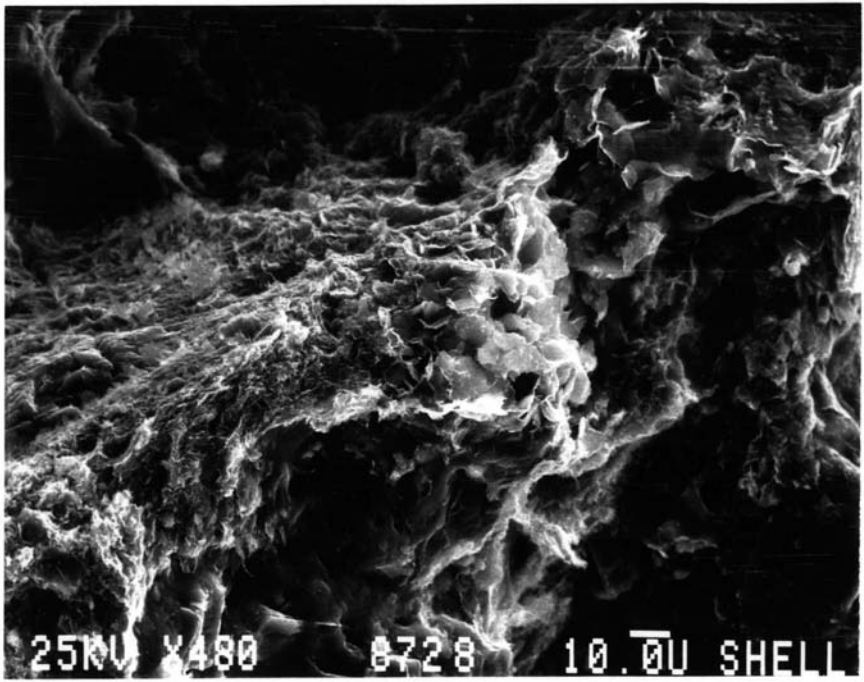




87281

2

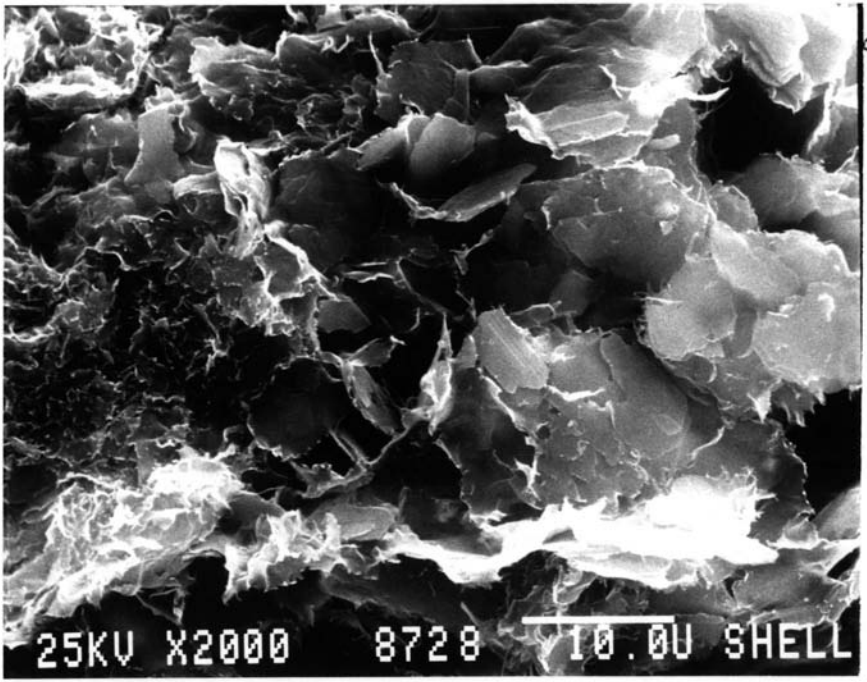
100X



8728'

2

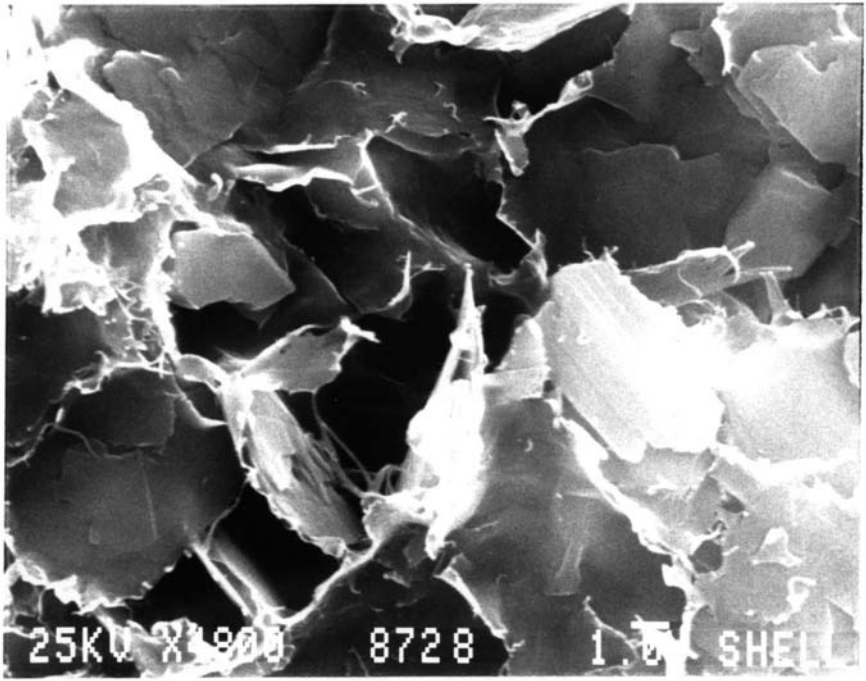
500X



8728'

2

2000X



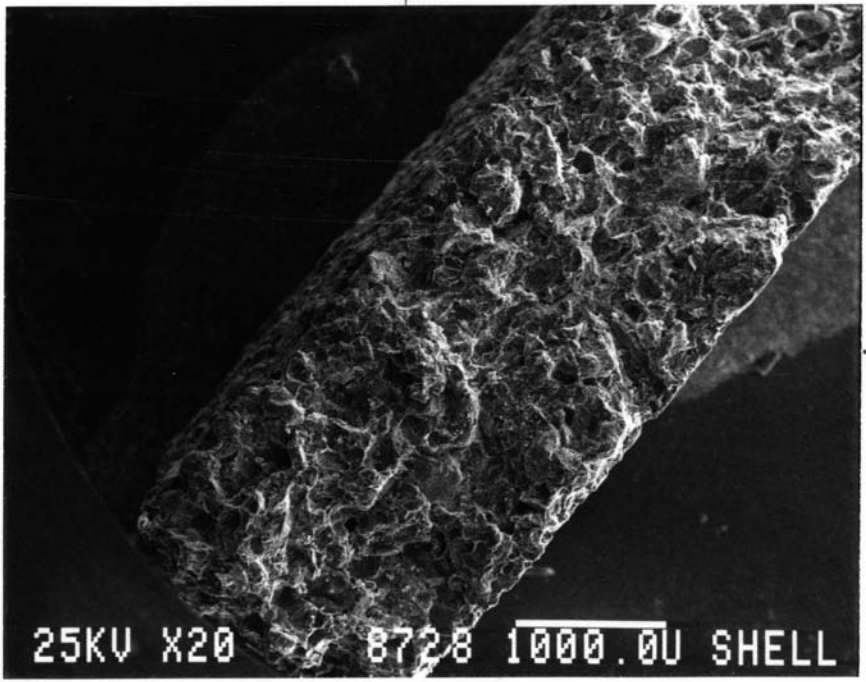
8728 1

2

5000 x

EDS similar to Area 1

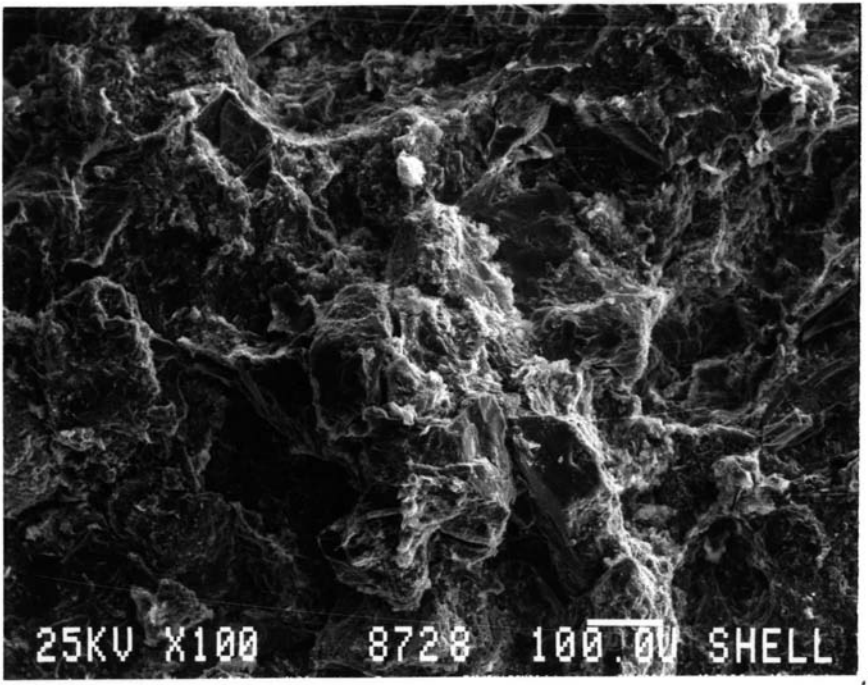
13



8728'

- 3

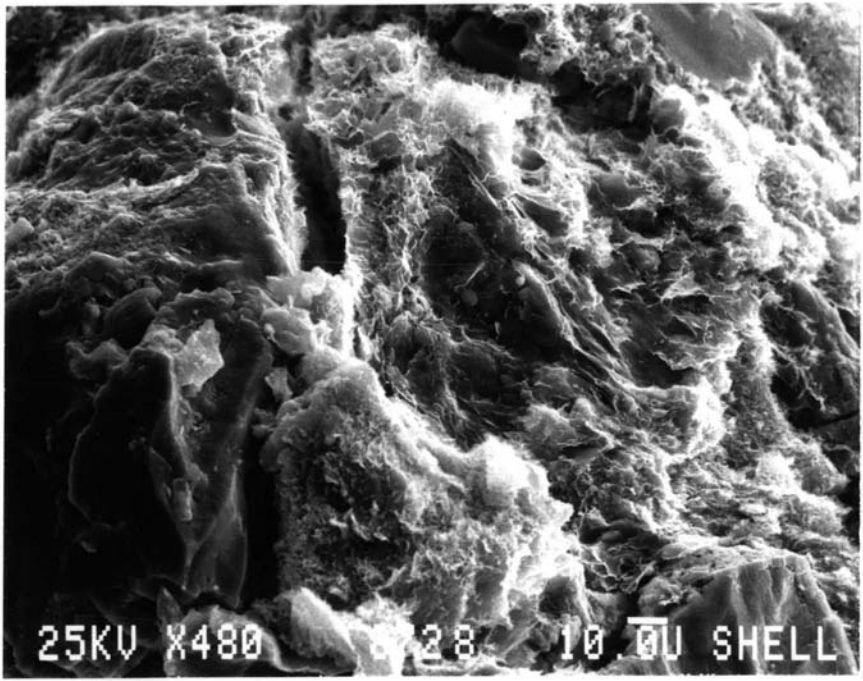
20 X



8728'

3

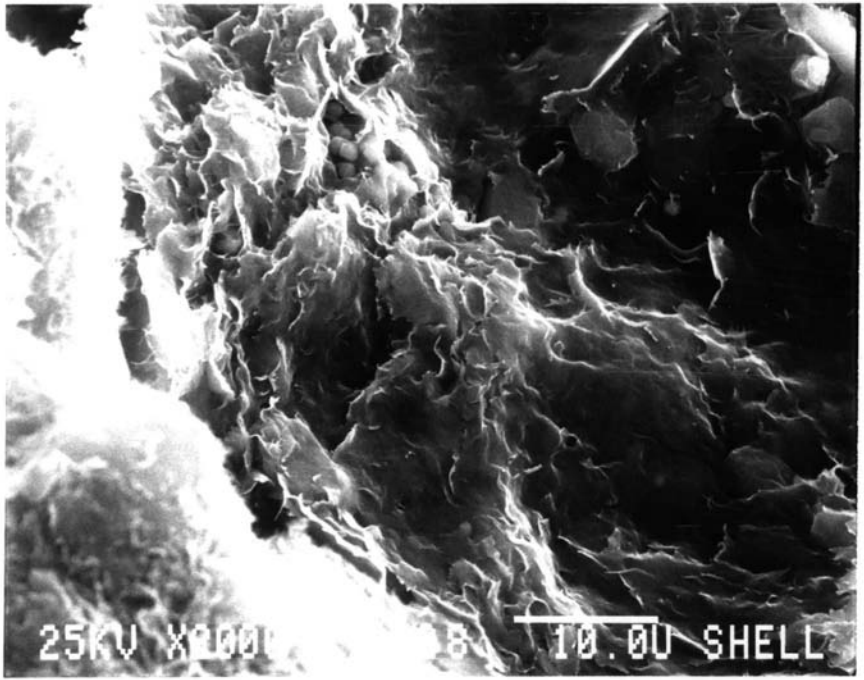
100 X



87281

3

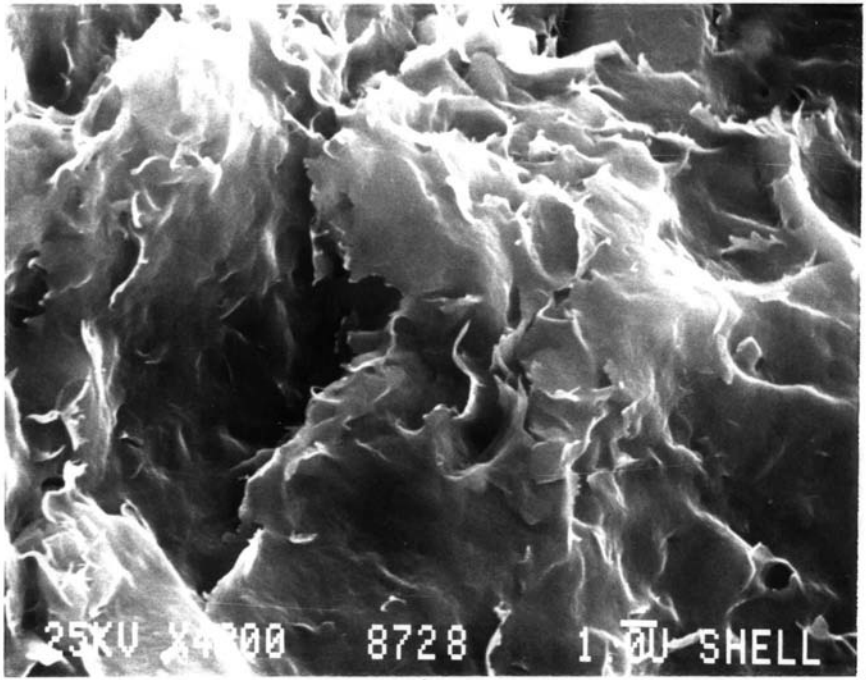
500Y



87281

3

2000 X



8728'

3

5000 ×

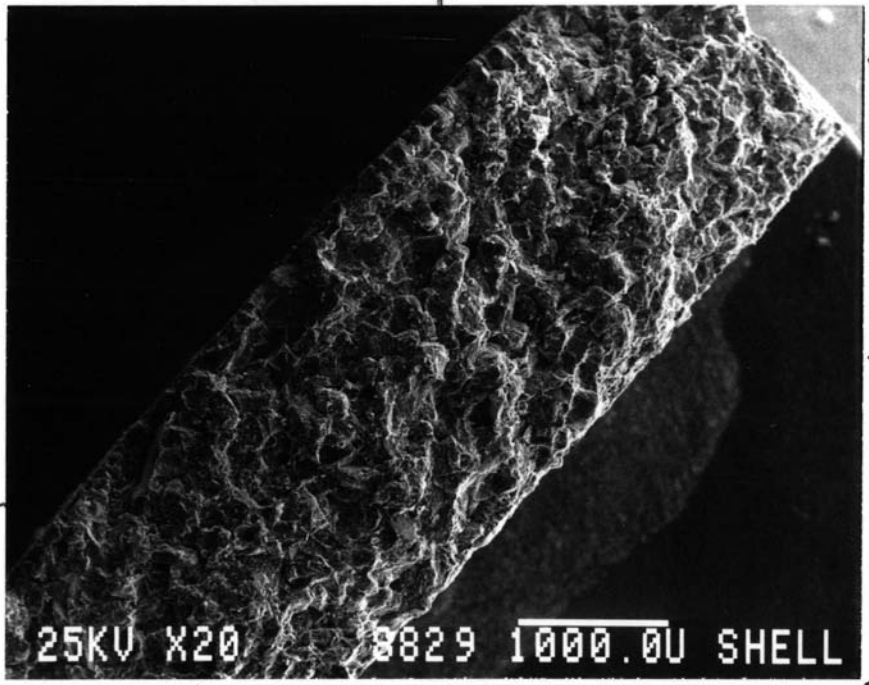
EDS similar to Area 1

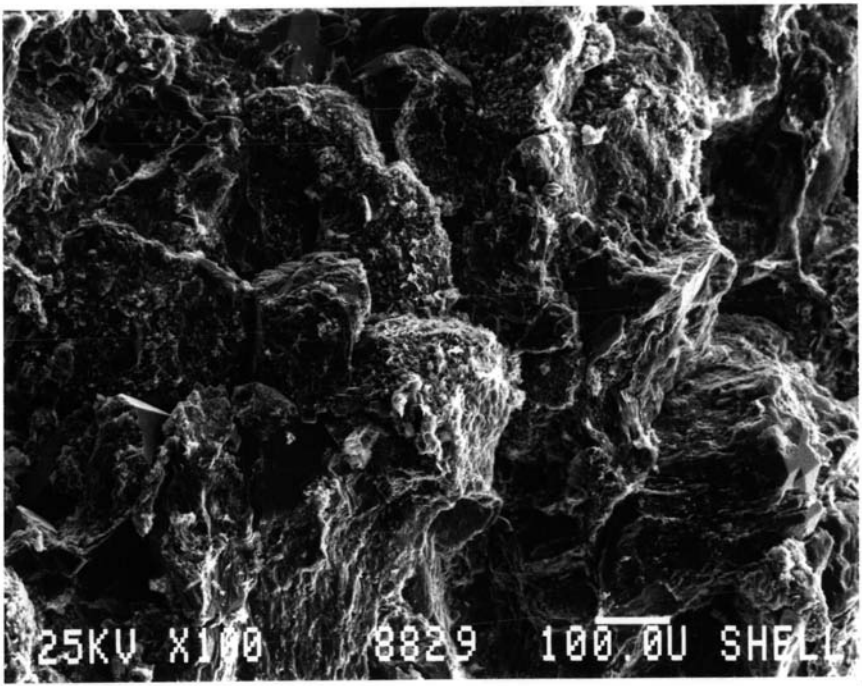
N. Belridge 43-27
87281

Area 1 @ 5000X - Illite/Smectite/Pyrite

Area 2 @ " - Illite/Smectite

Area 3 @ " - " "

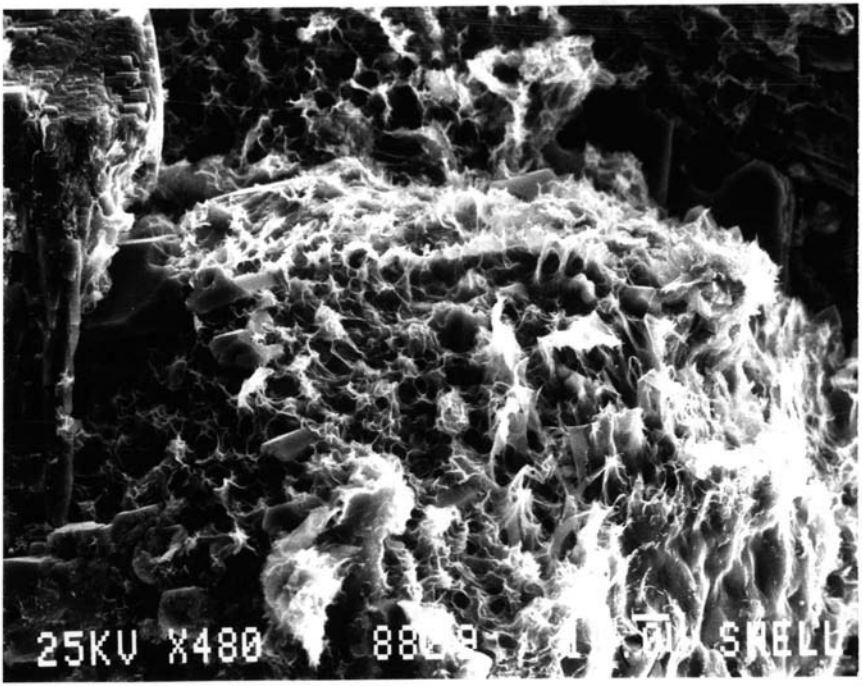

25KV X20
8829 1000.0U SHELL



883991

1

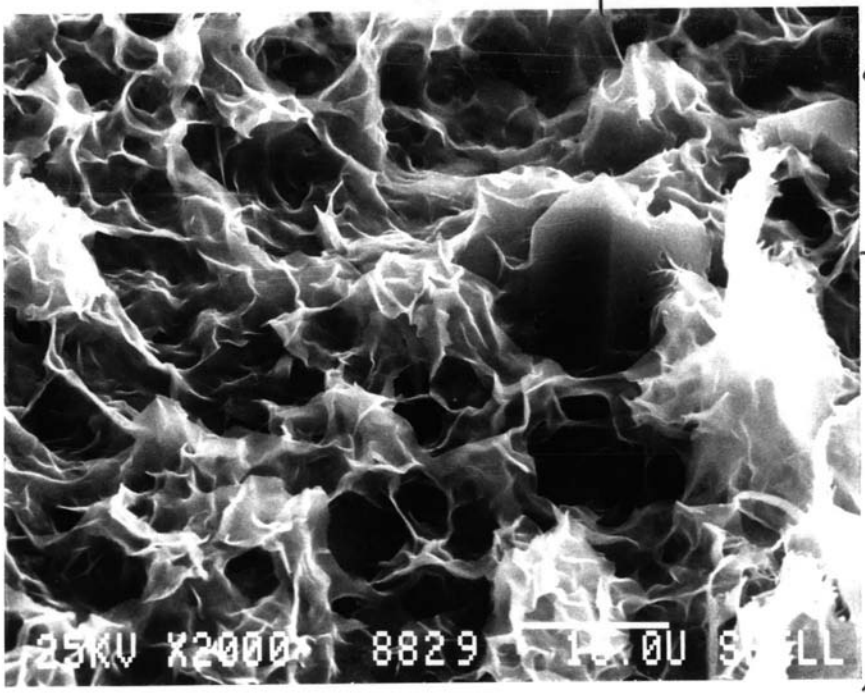
100 X



8829.9'

1

soot

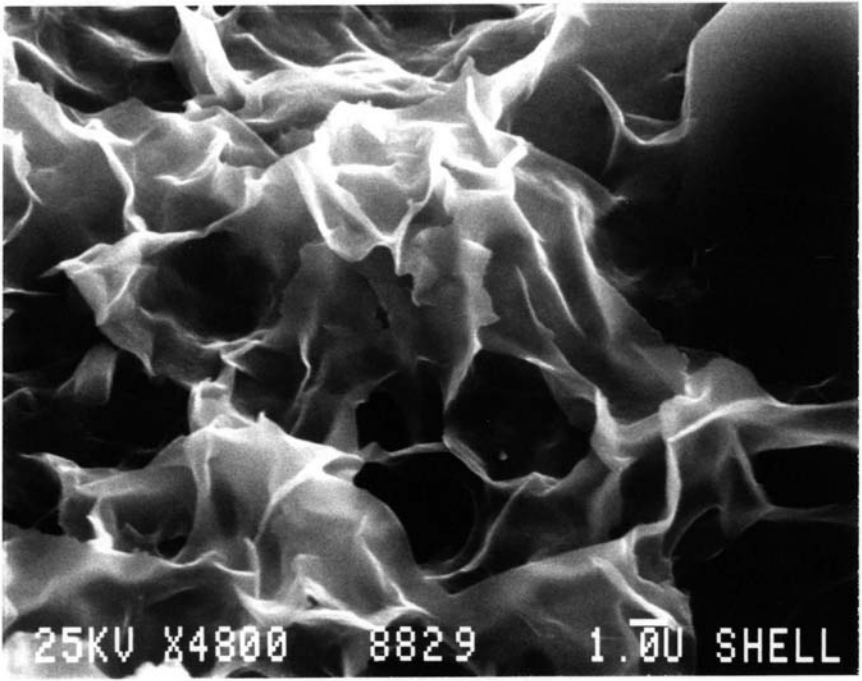


8829.91

-qtz

1

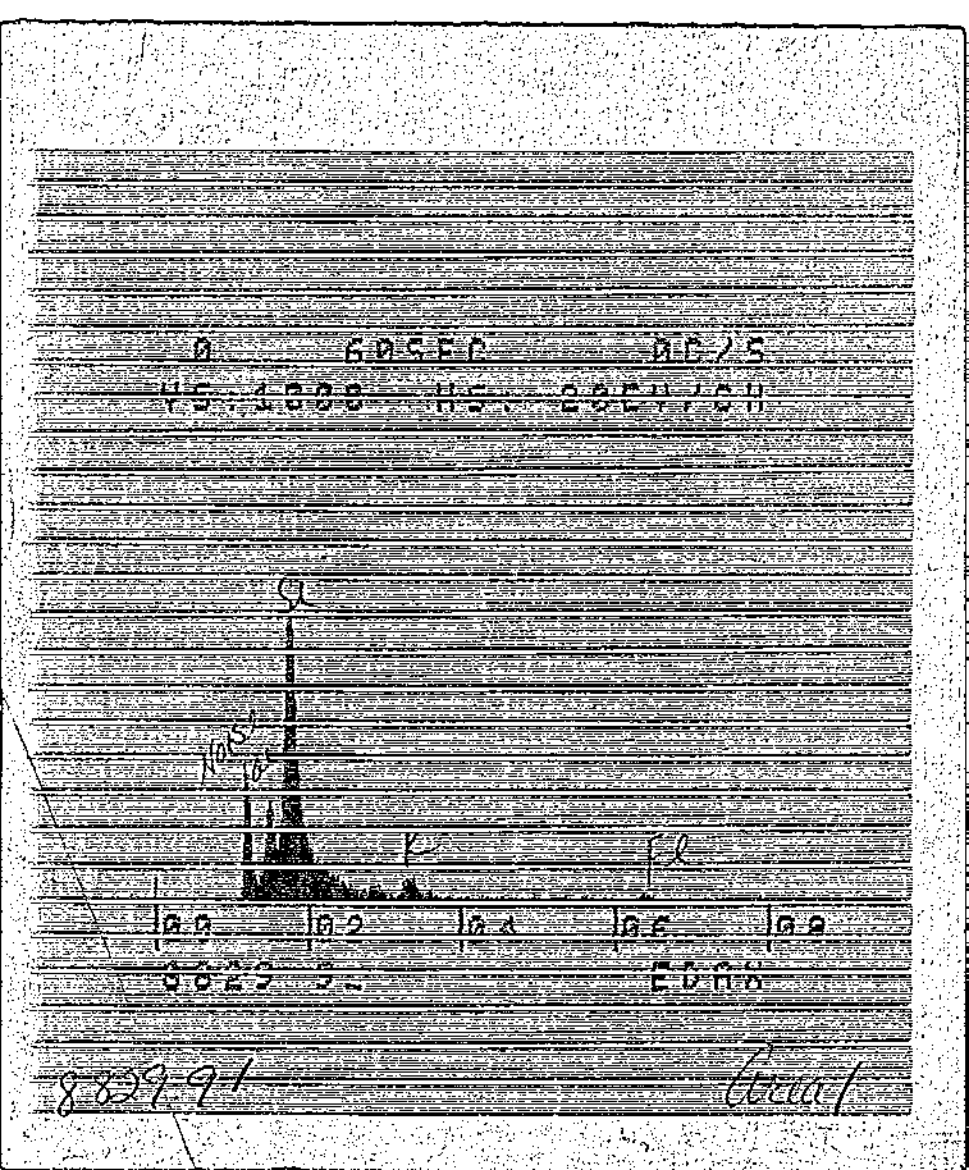
2000 X

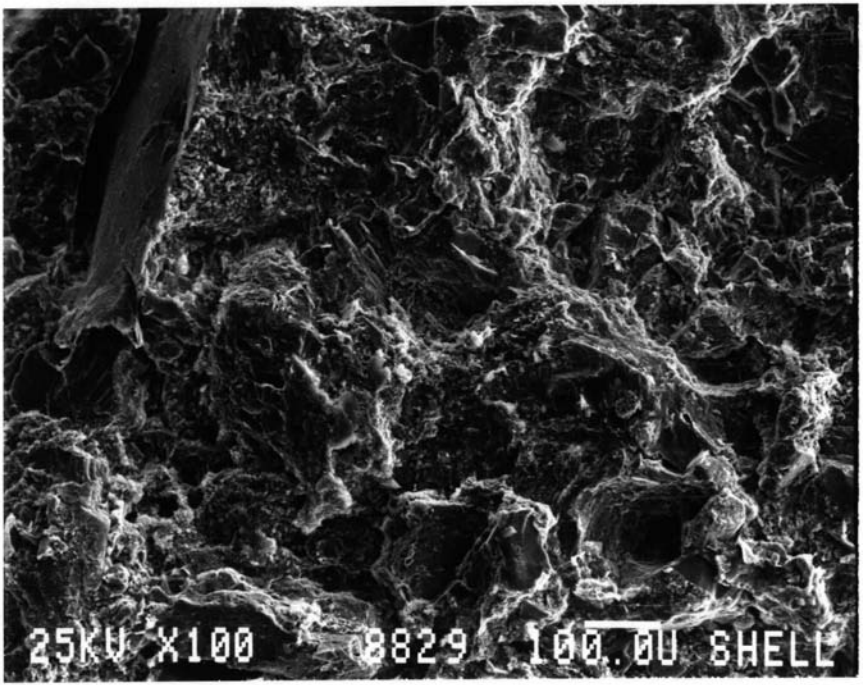


882991

1

5000V

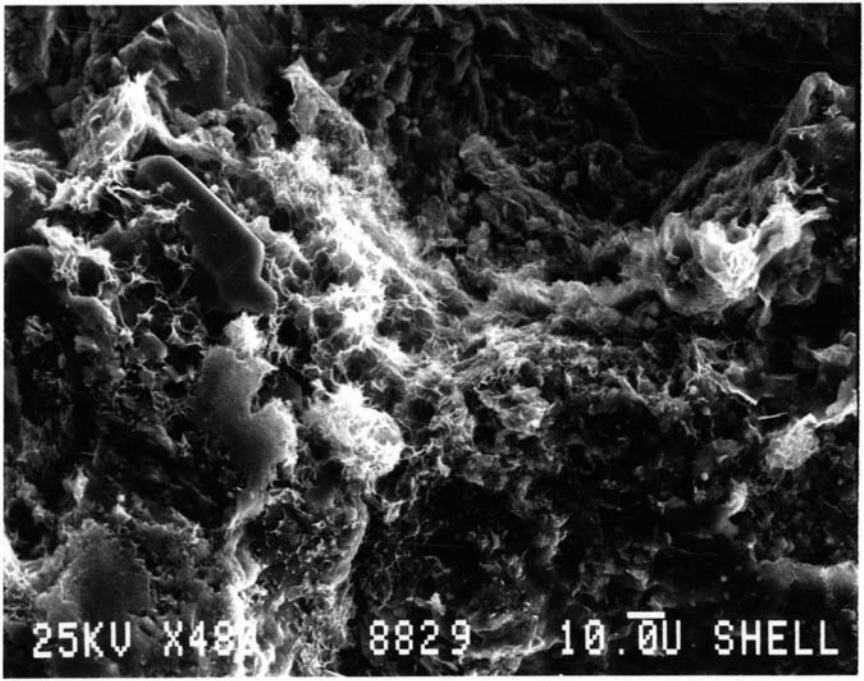




8829.91

2

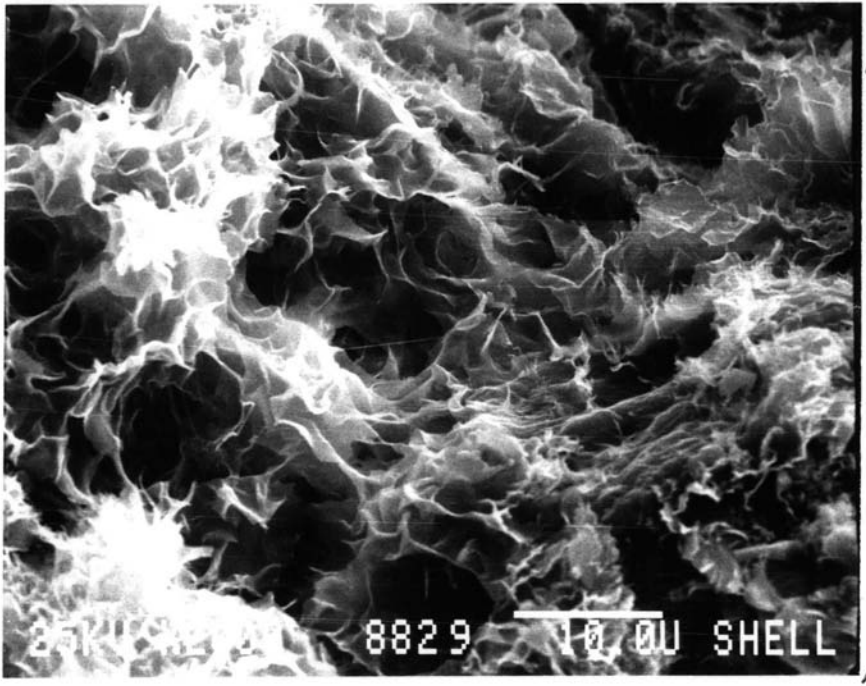
100 X



8829.91

2

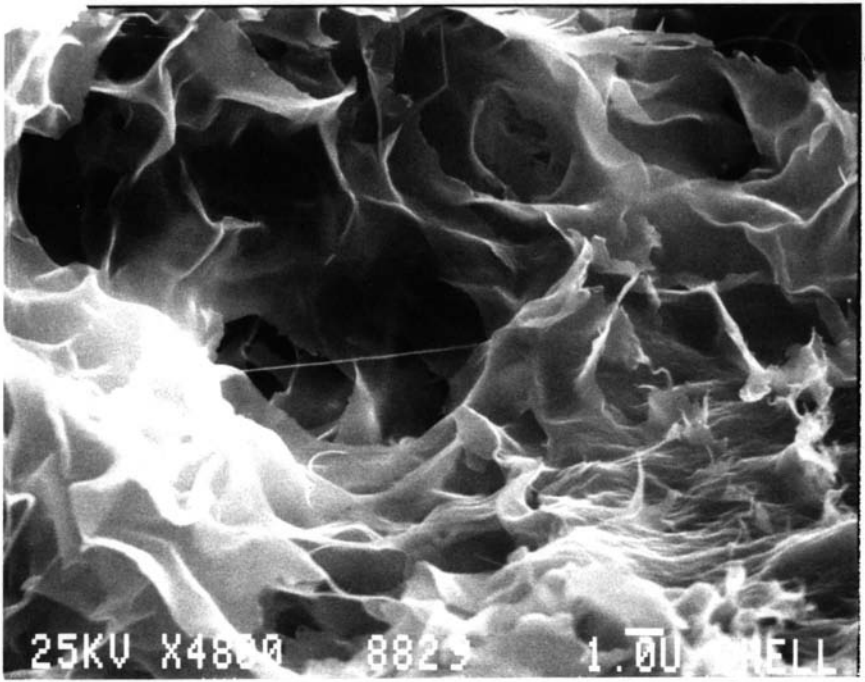
500 X



8859.91

2

3000 X



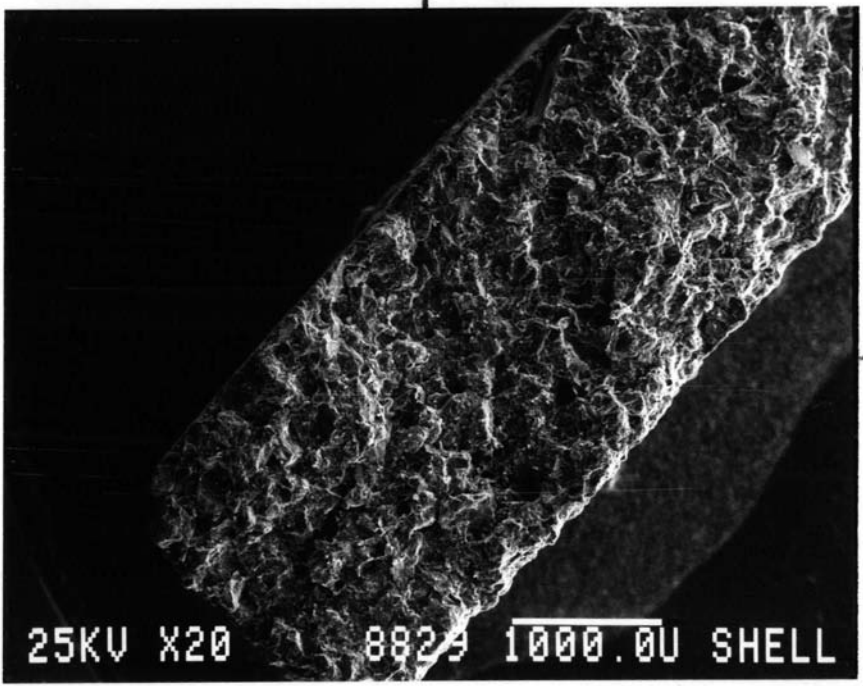
882991

2

5000 x

EDS similar to Area 1

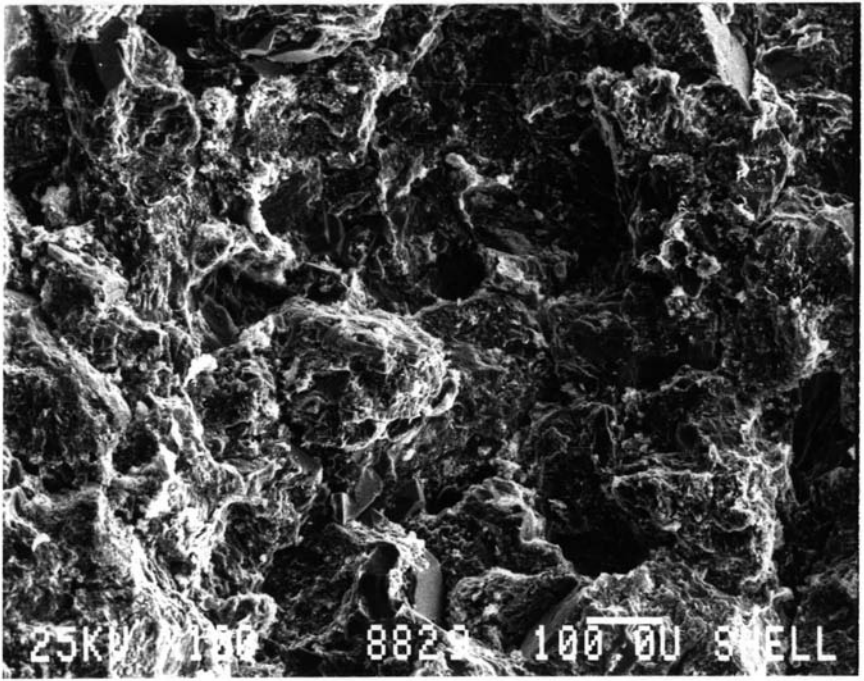
3



8829.91

3

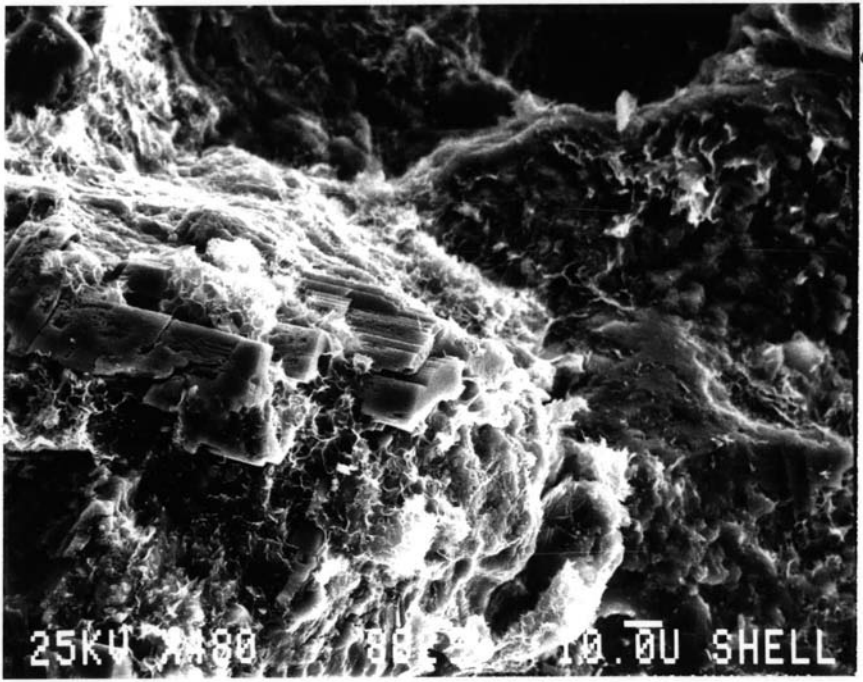
20 X



8829.91

3

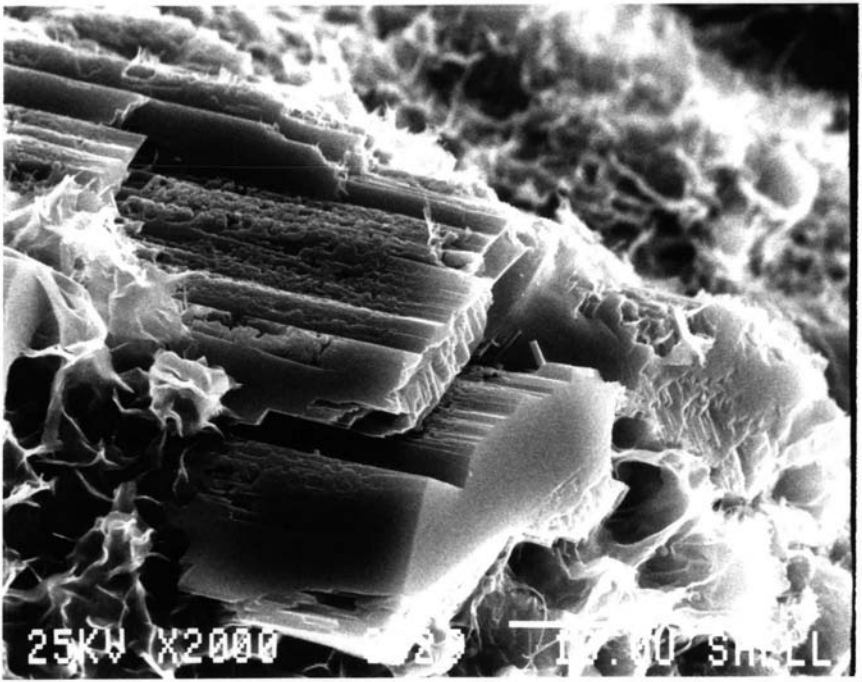
100X



8829.'91

3

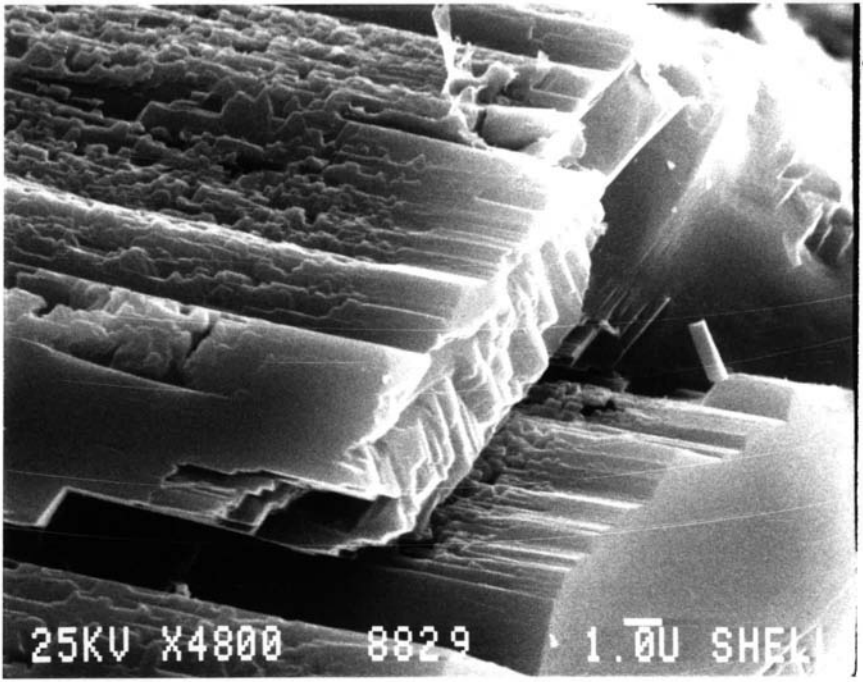
500 X



8819.91

3

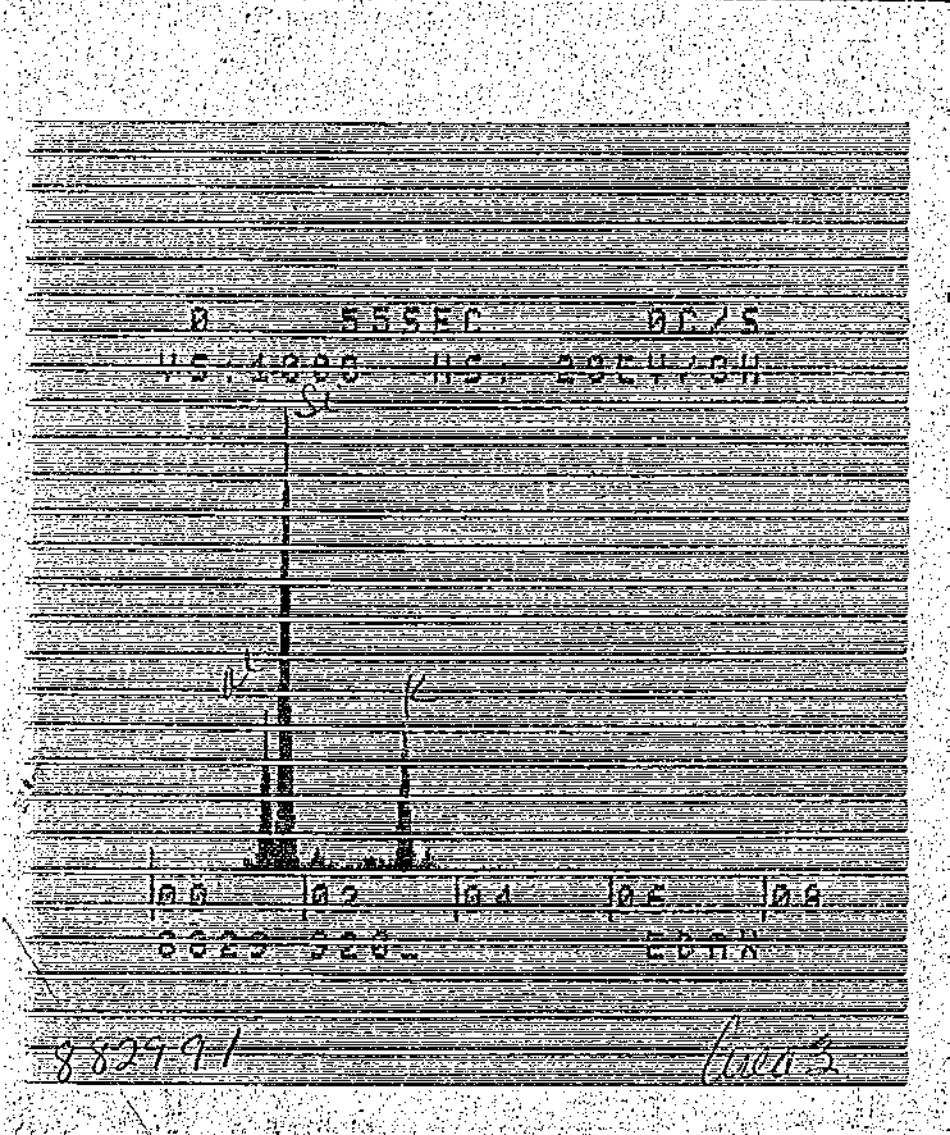
1000 X



8829.91

3

5000X

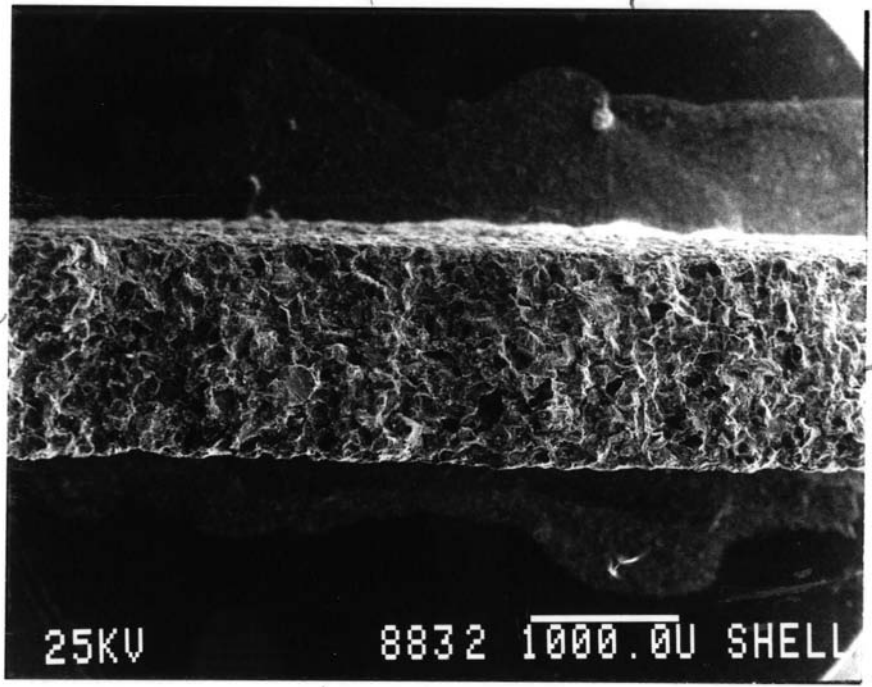


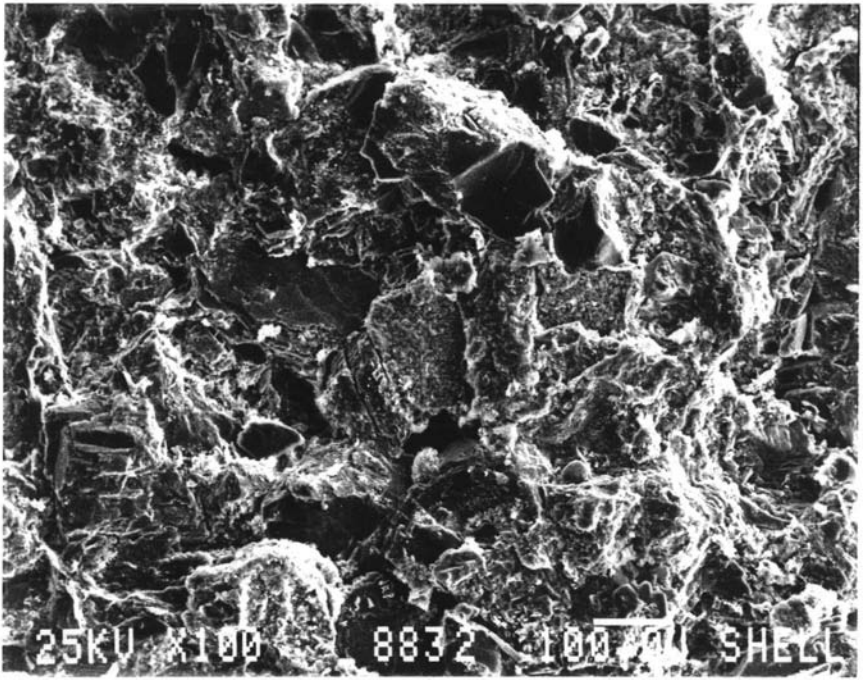
N. Belridge 43-27
8829.9'

Area 1 @ 5000x - Illite/Smectite

Area 2 @ " - " "

Area 3 @ " - K Feldspar

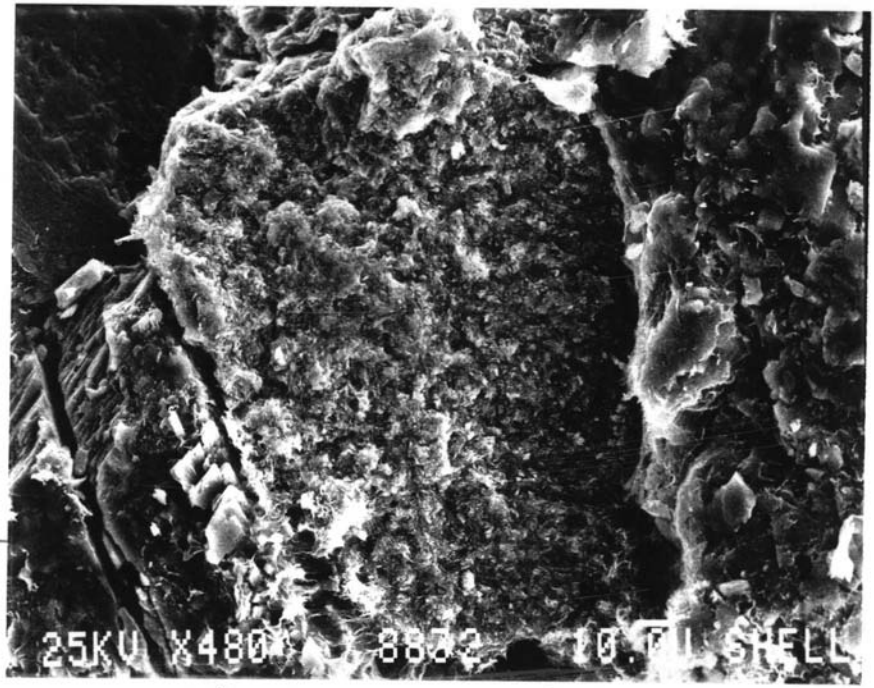

25KV
8832 1000.0U SHELL



8832

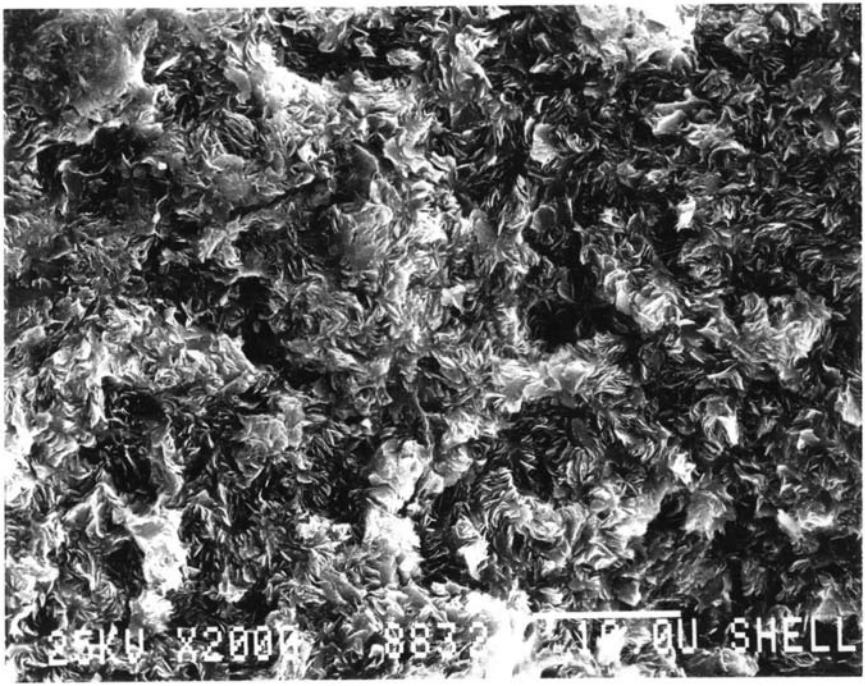
1

100X



8832'

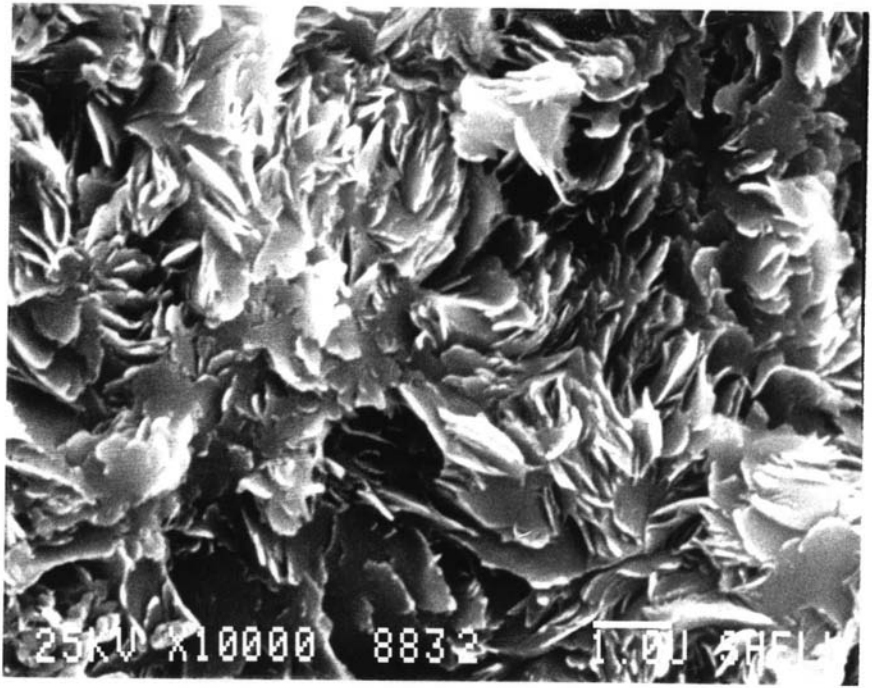
500X



8832'

1

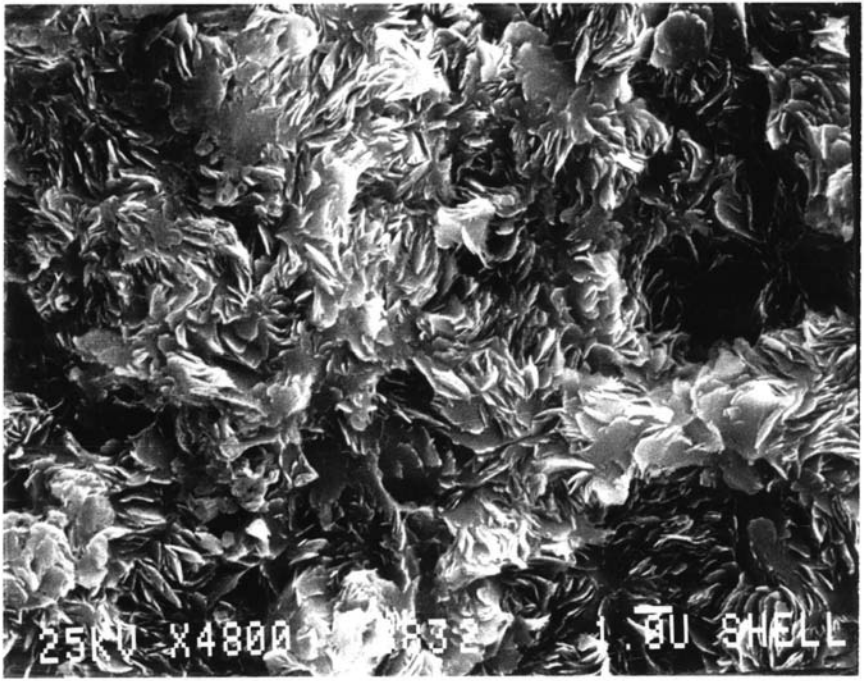
20000X



8832

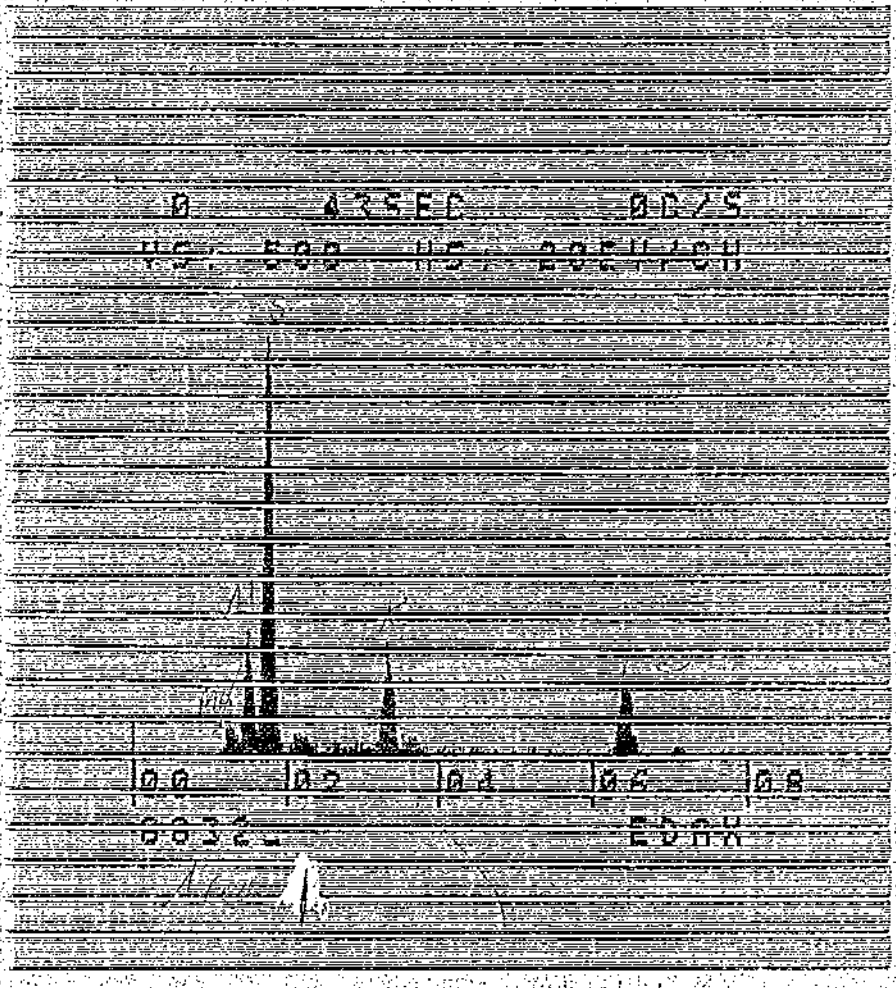
1

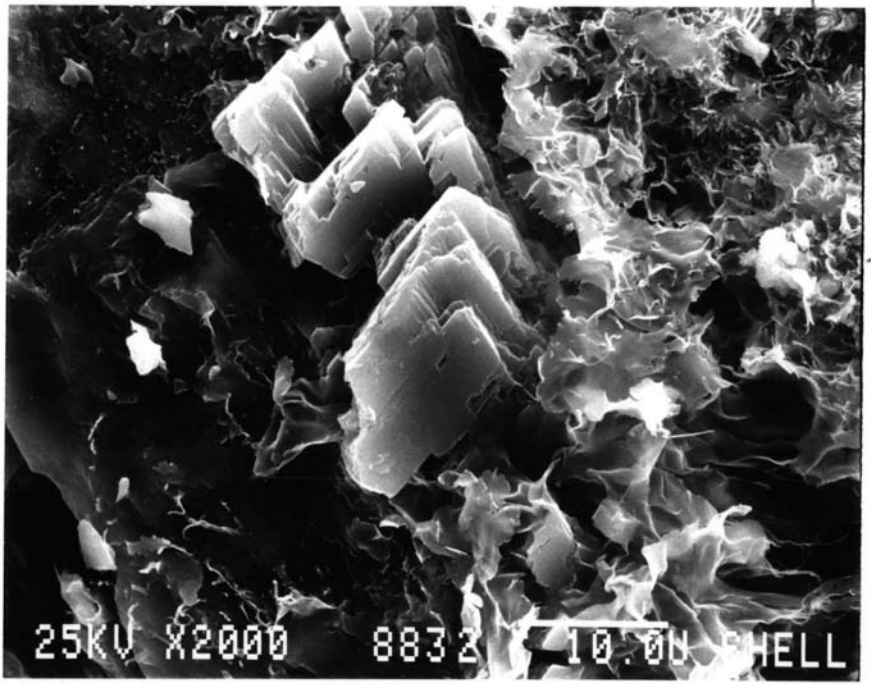
10,000X



8832'

5000X





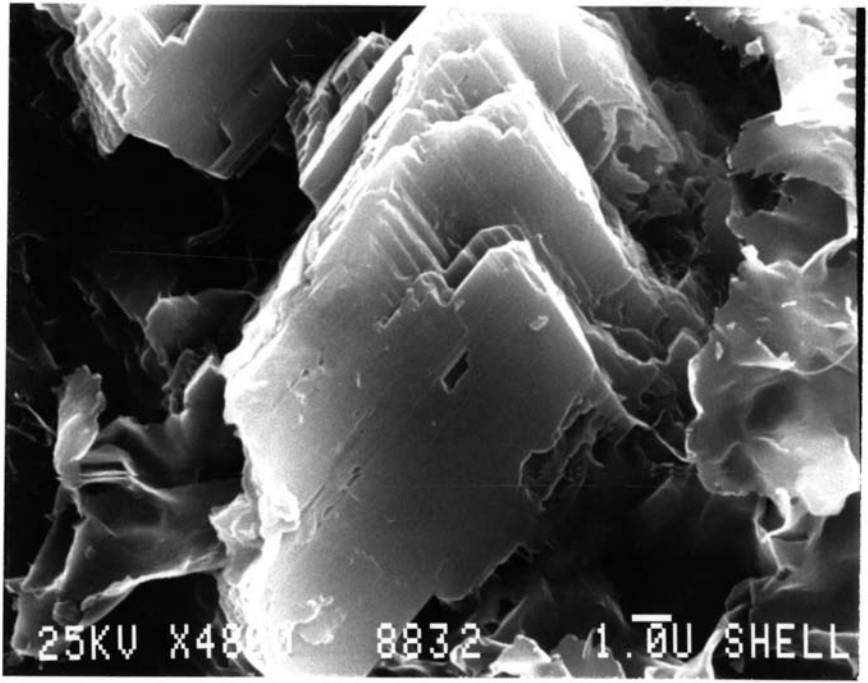
P

88321

-pyrite

2

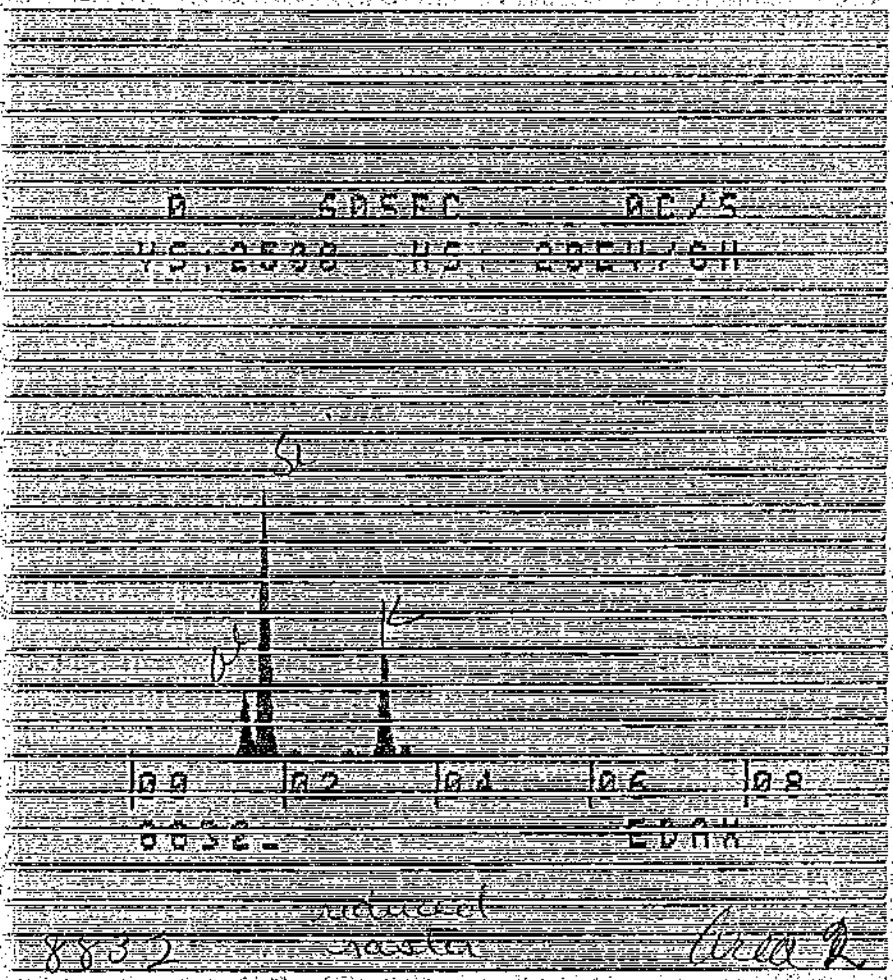
2000 x

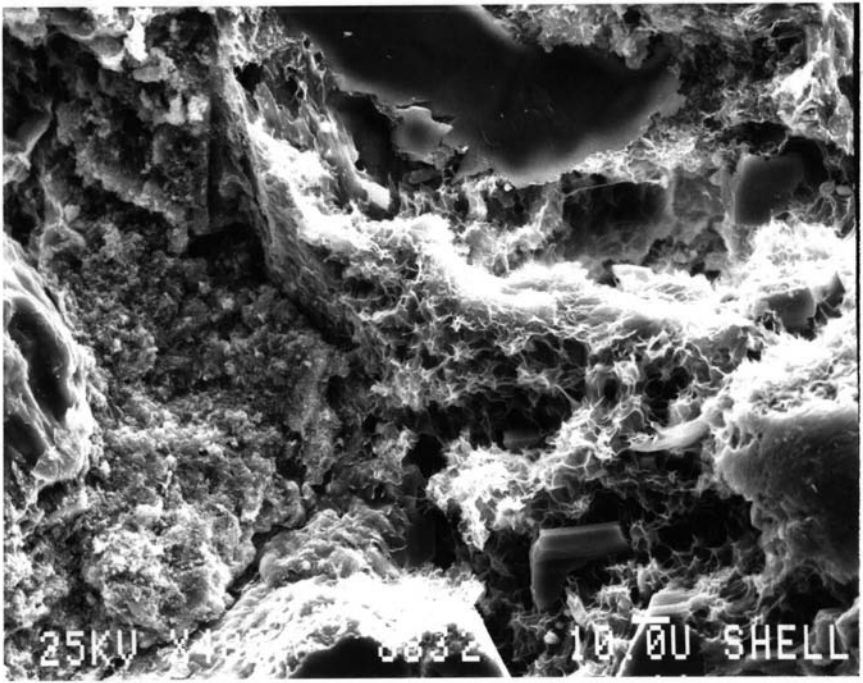


8832'

2

5000 X

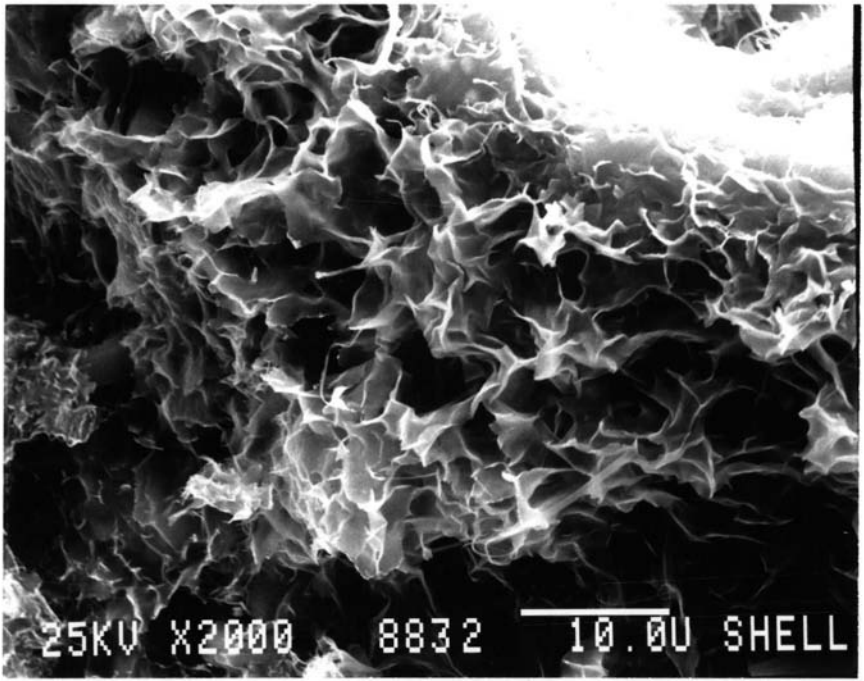




9832

3

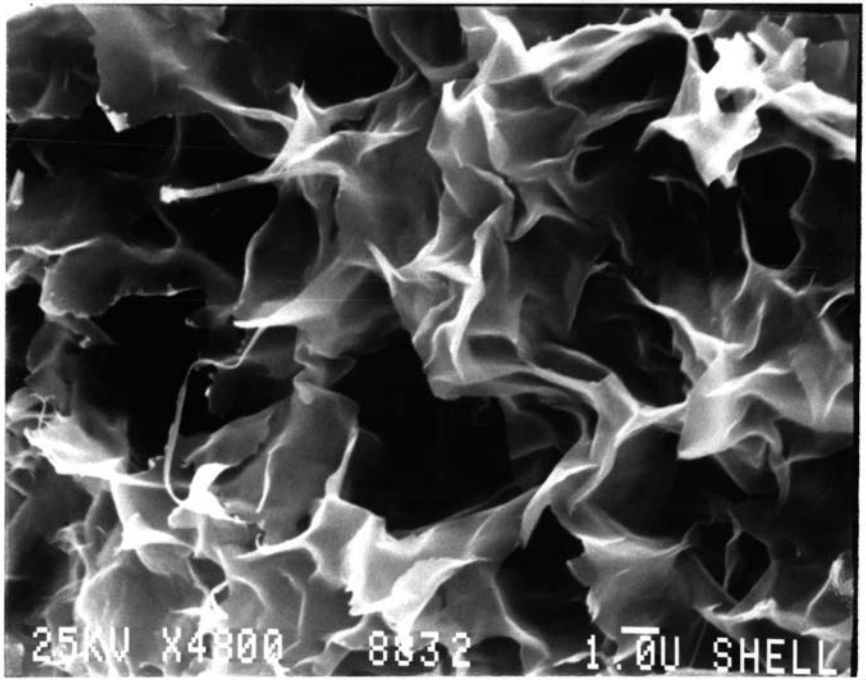
500 X



8832

3

2000 X



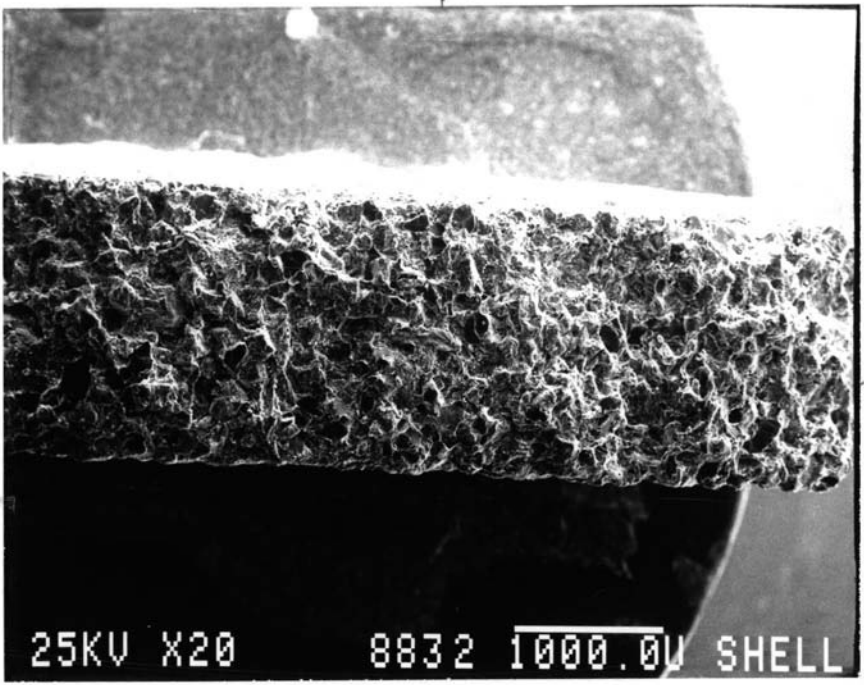
8832

3

5000Y

88321

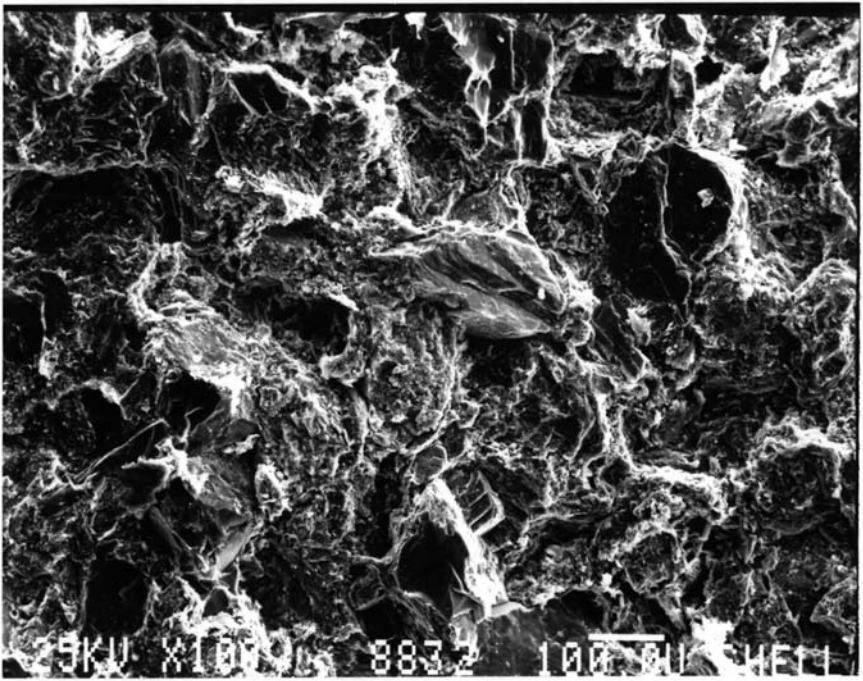
14



8832 1

4

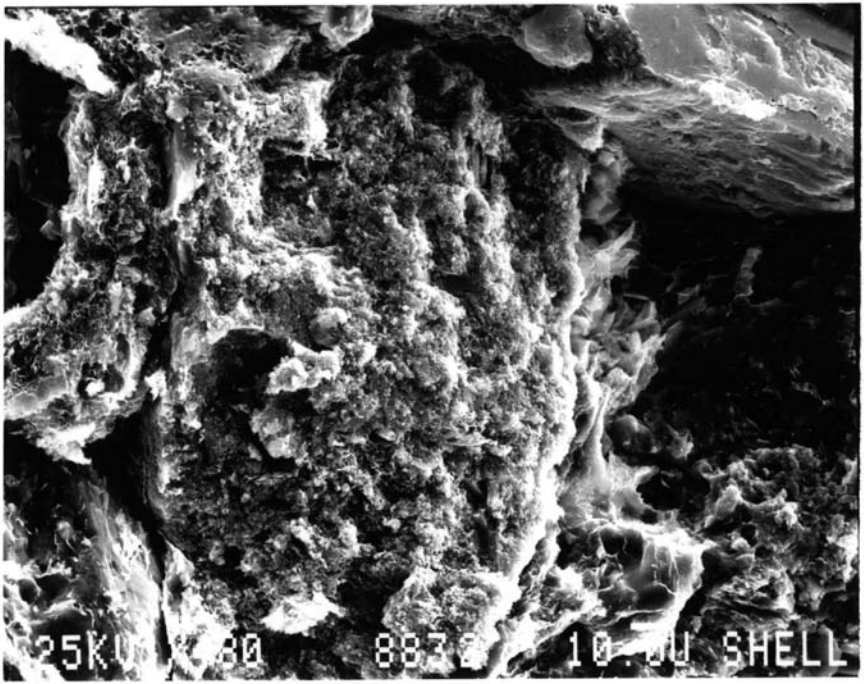
20 x



8832'

4

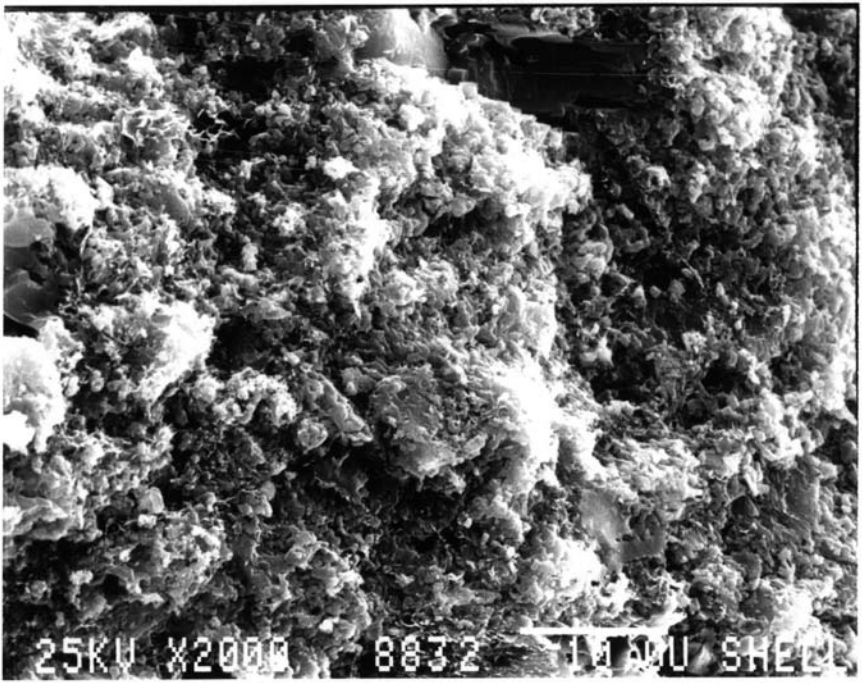
100X



8832

4

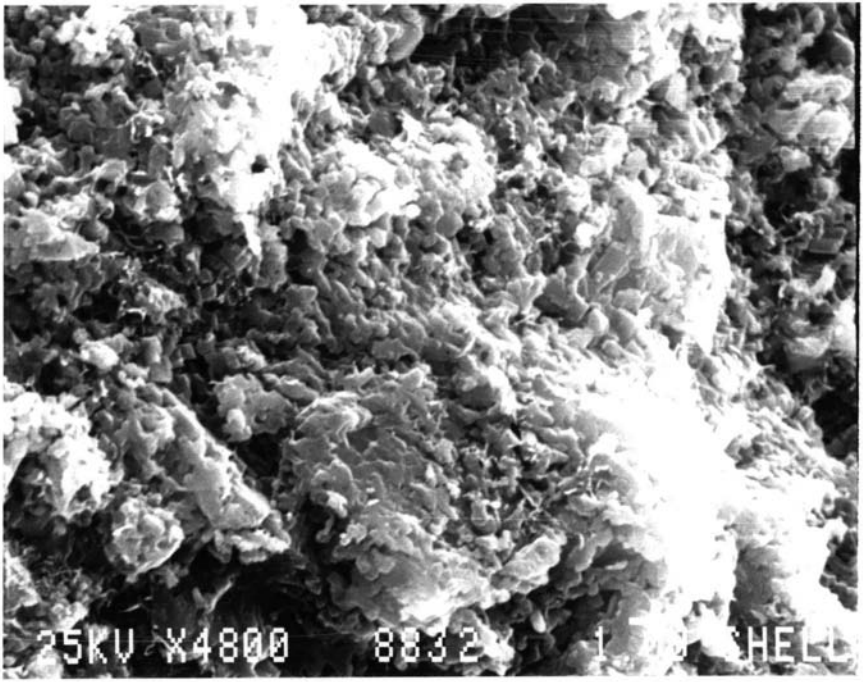
500 X



8832

4

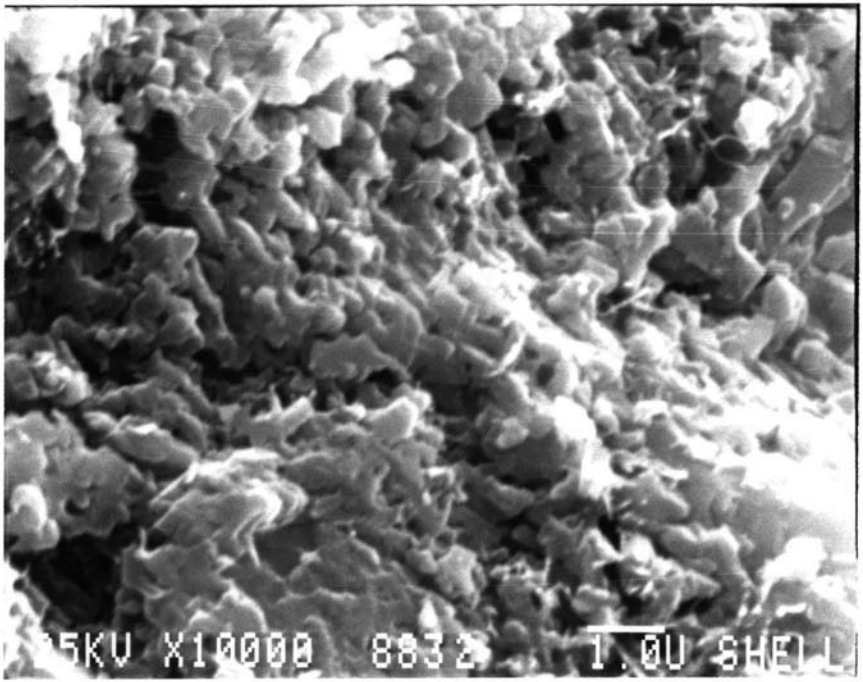
2000 X



8832

4

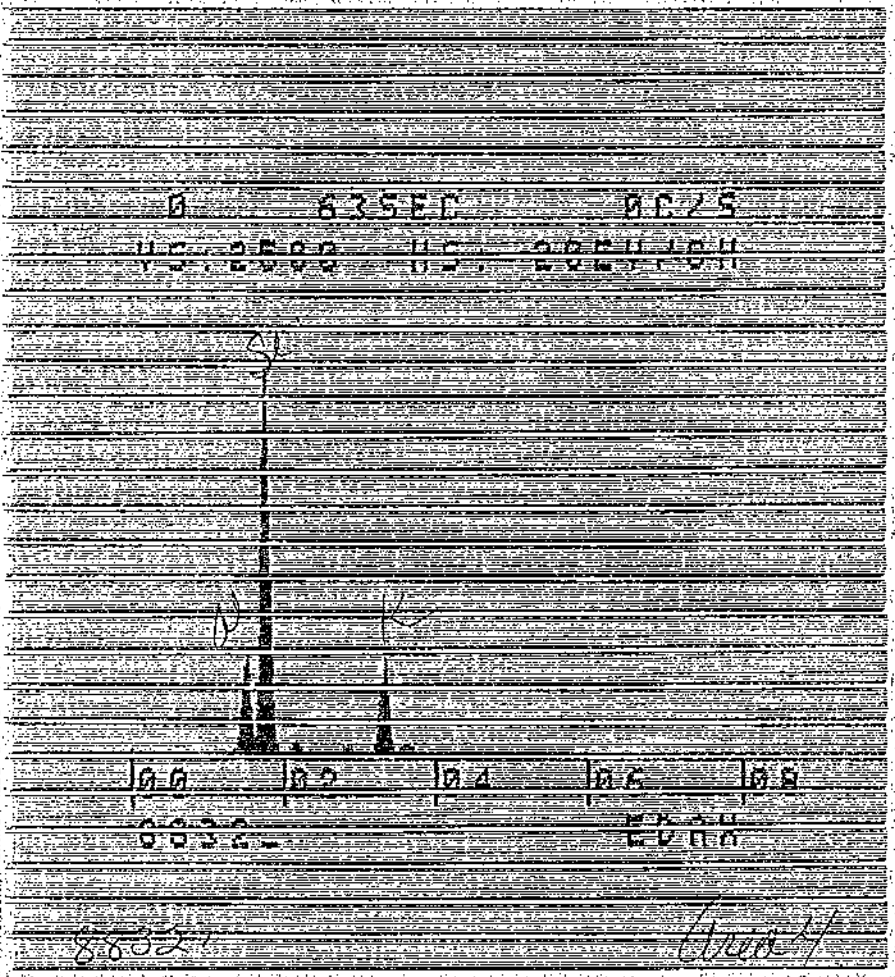
5000 X



8832

4

10000 Y



N. Belridge 43-29.

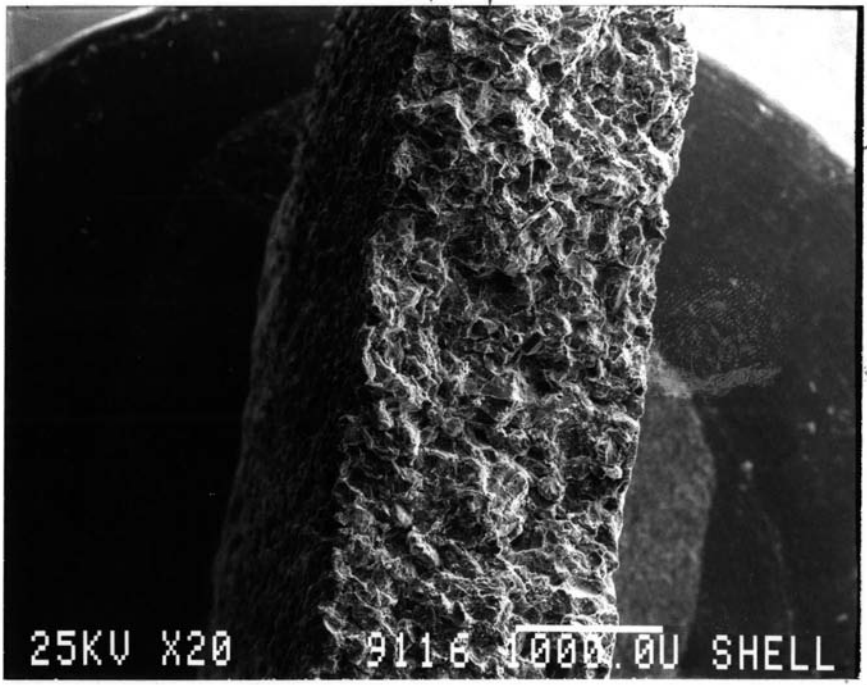
[redacted] 89321

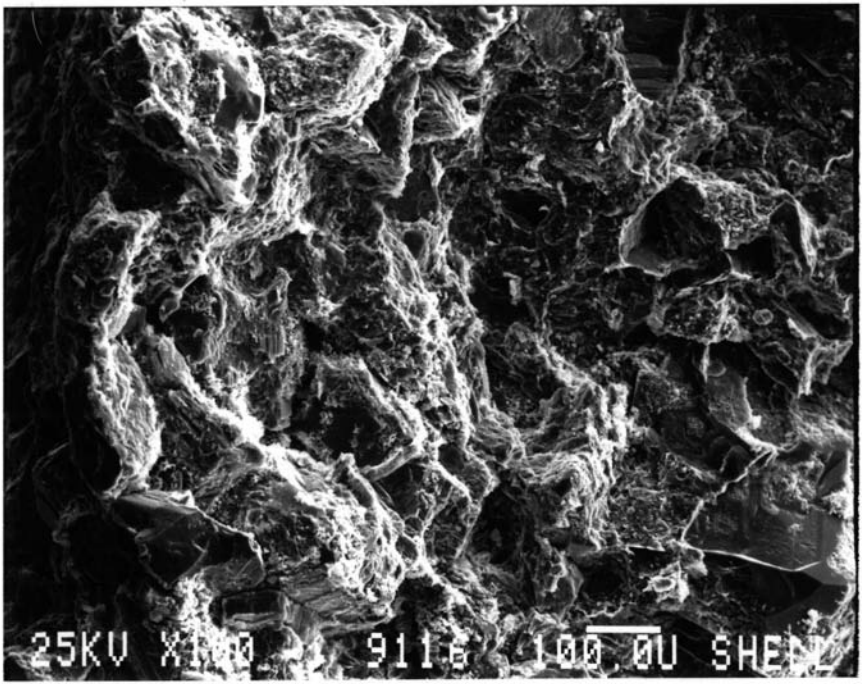
Area 1 @ 10000X - Illite / Chlorite?

Area 2 @ 5000X - K Feldspar

Area 3 @ " - Illite / Chlorite?

Area 4 @ 10000X - Illite Clay coating?

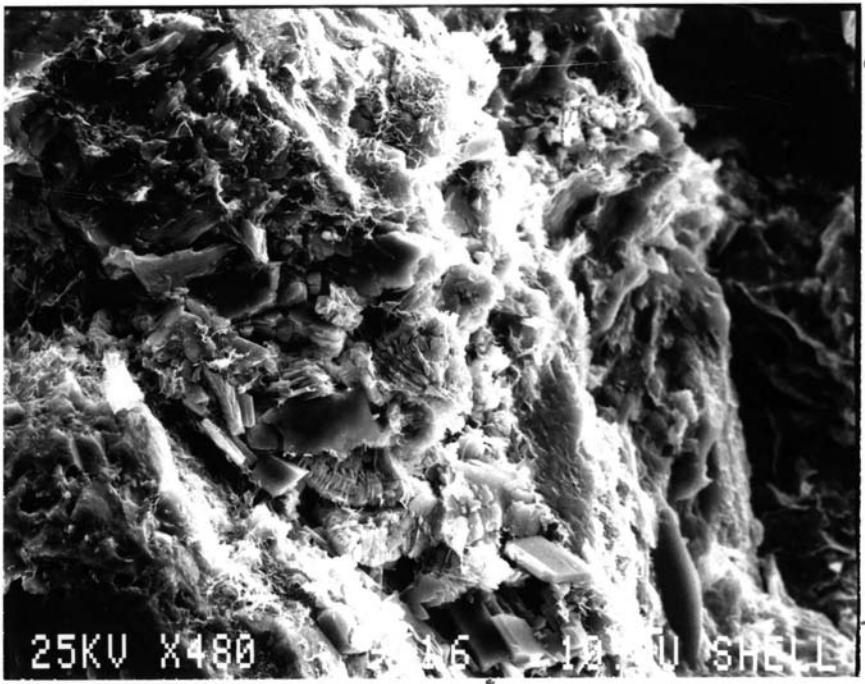

25KV X20
9116 1000.0U SHELL



9116'

1

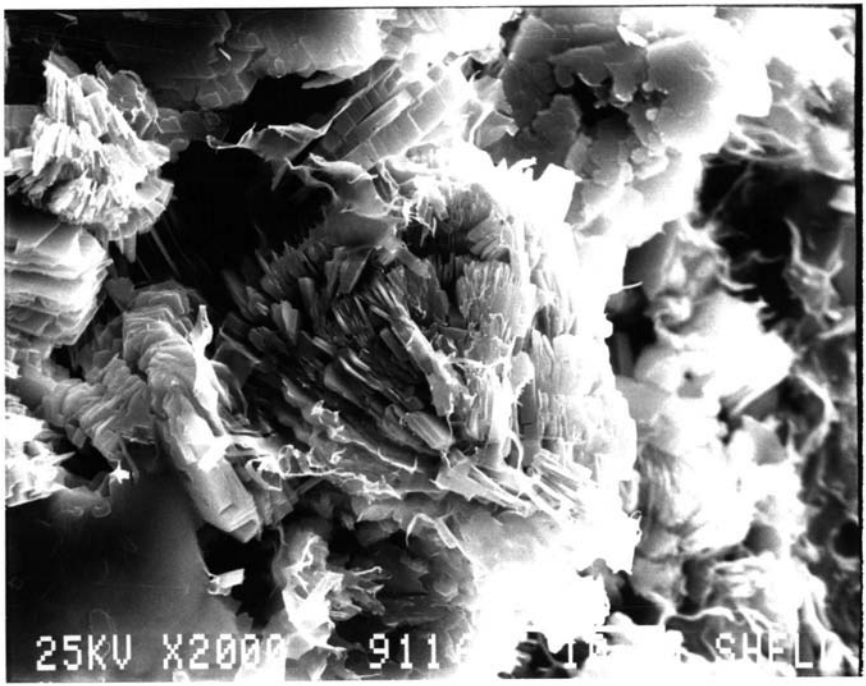
100X



9116'

500 X

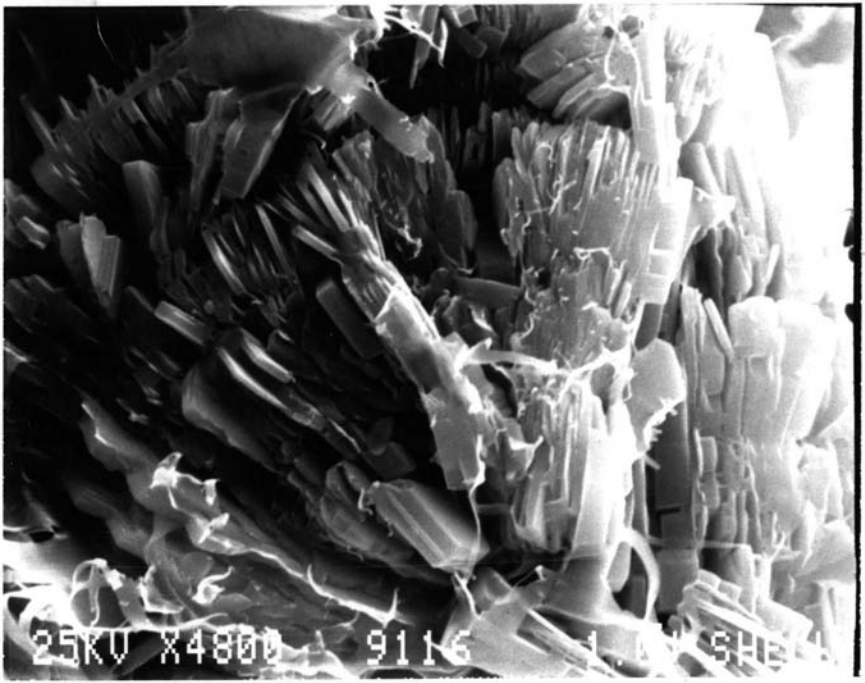
K Feldspar



9116'

1

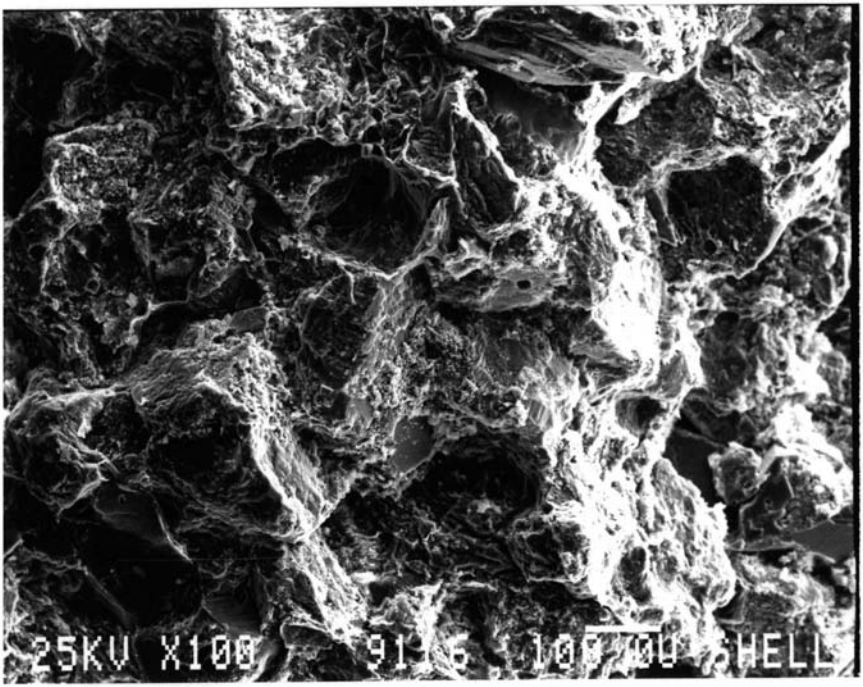
2000 Y



9116'

1

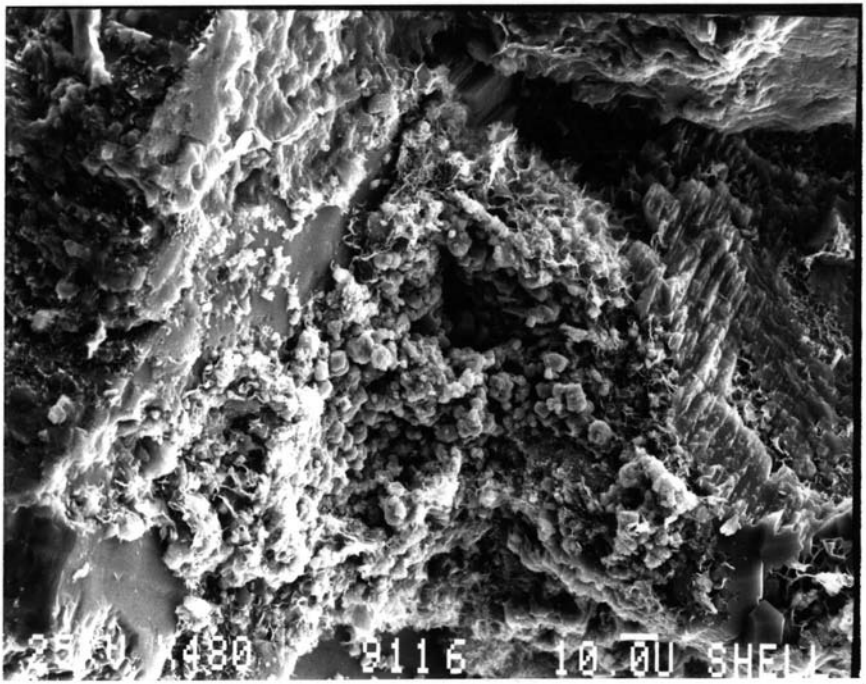
5000 X



9116'

2

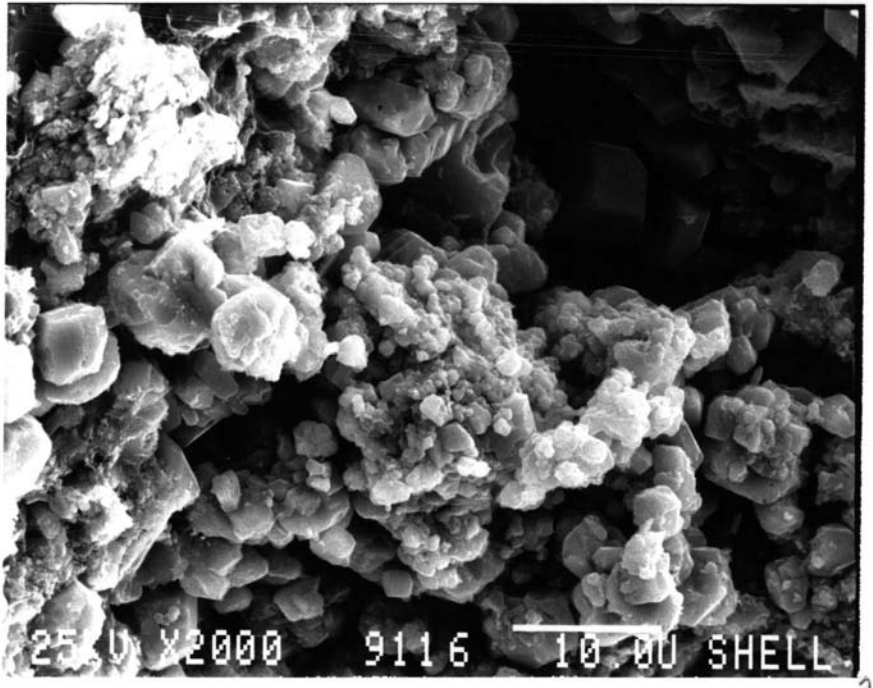
100Y



9116 1

2

500 X

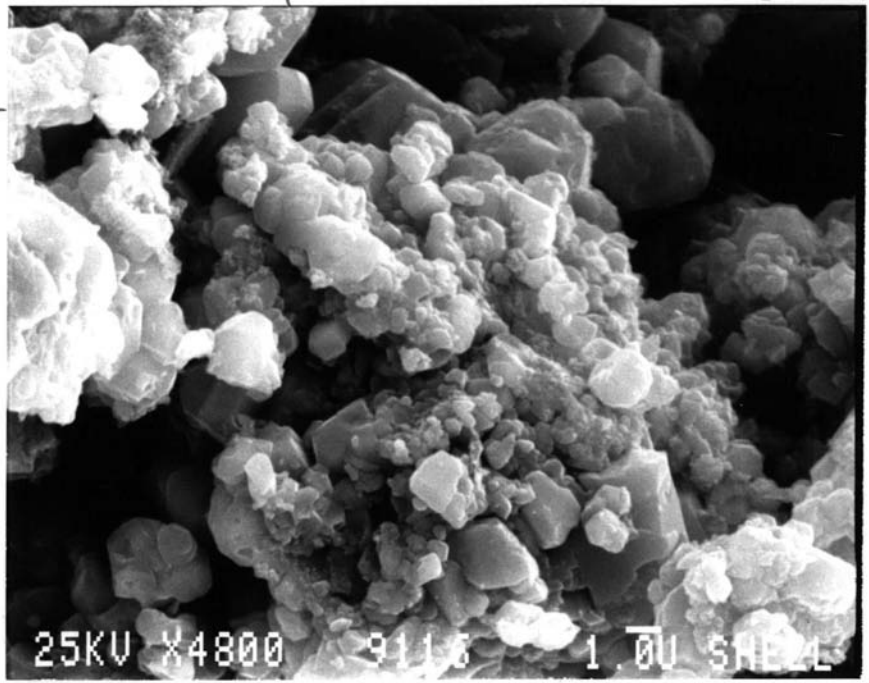


9116 1

2

2000X

Ilmenite
1 $FeTiO_3$

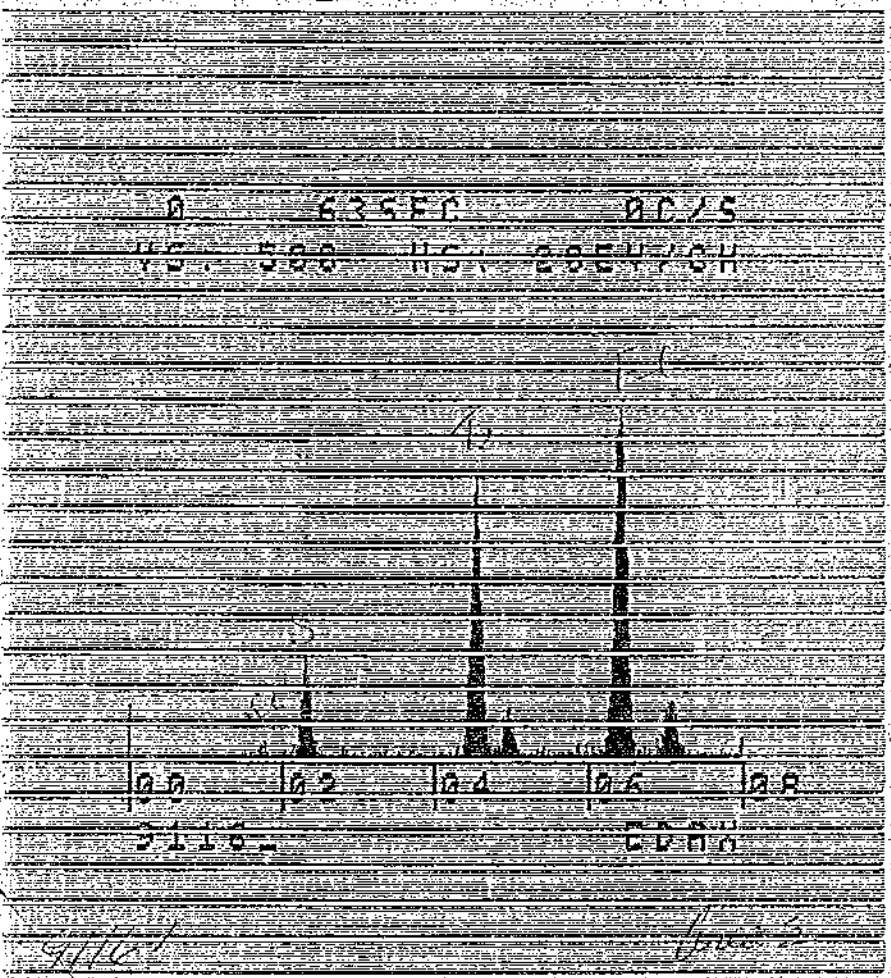


2a

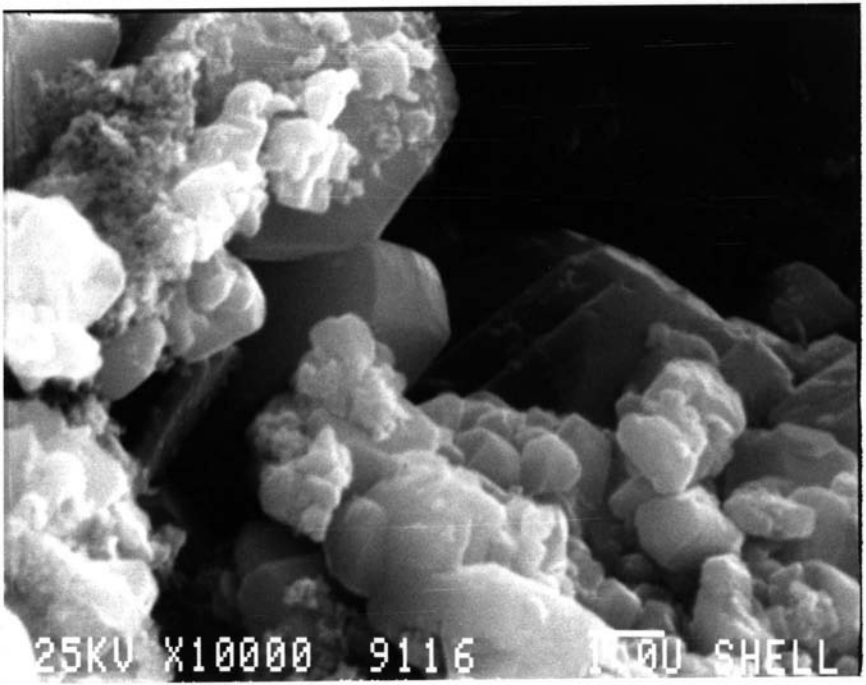
9116'

2

5000X



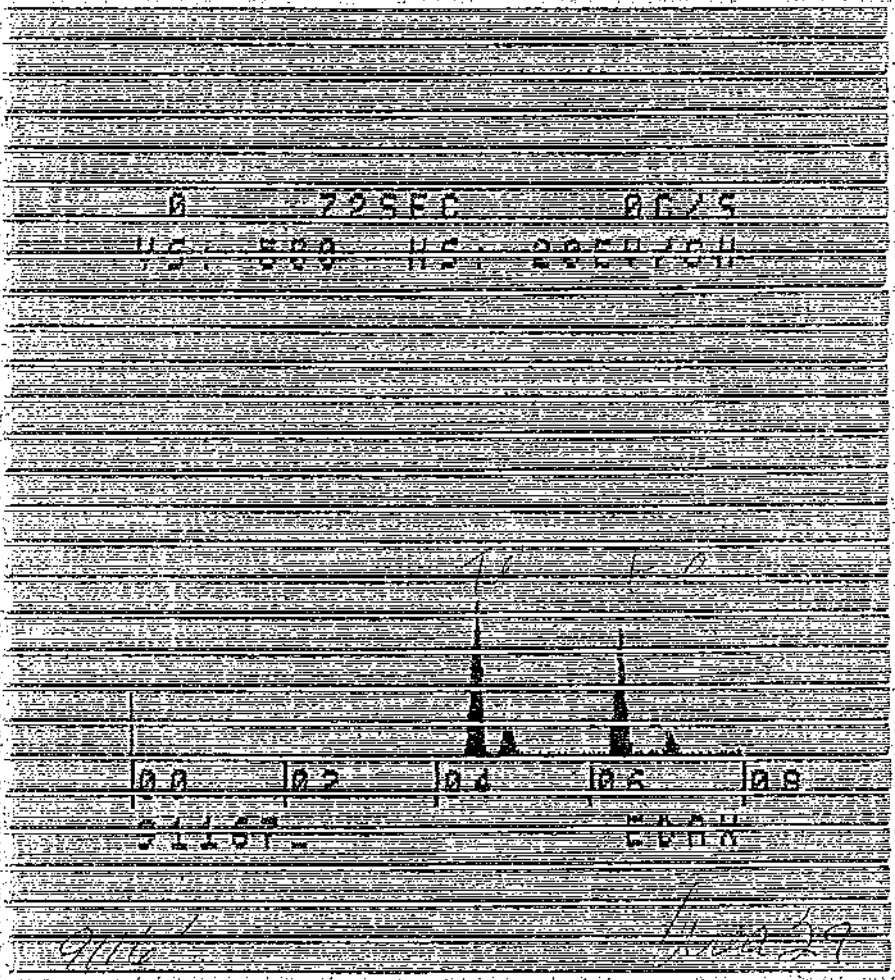
Ilmenite



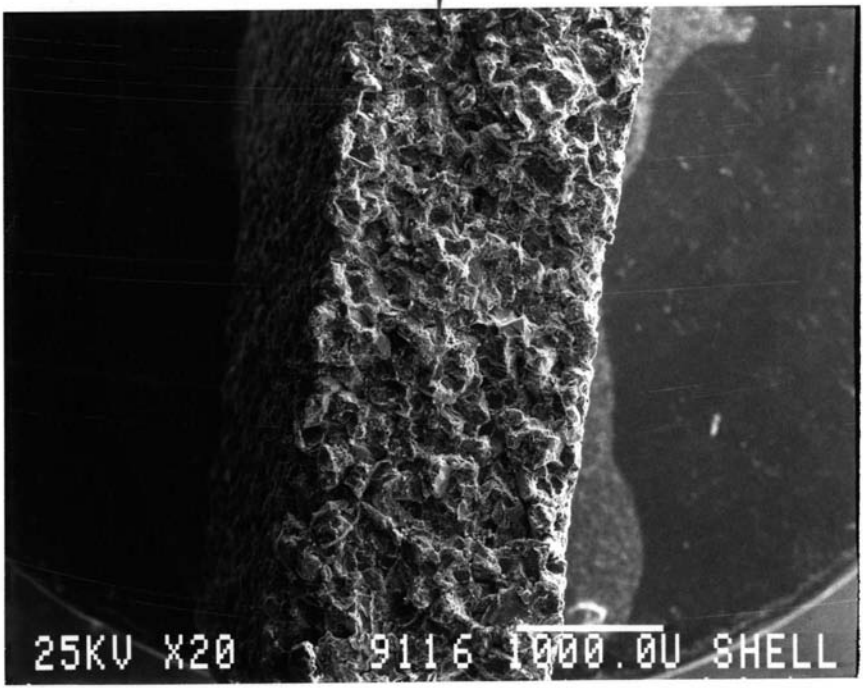
9116'

2a

10000


0
72SEC
0C/S
00
02
04
06
08

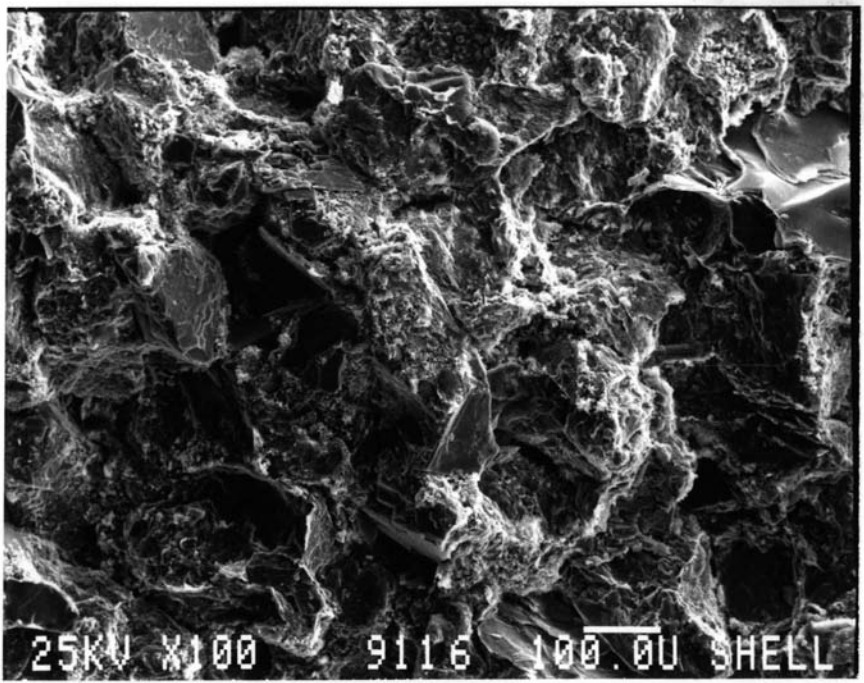
13.



9116'

-3

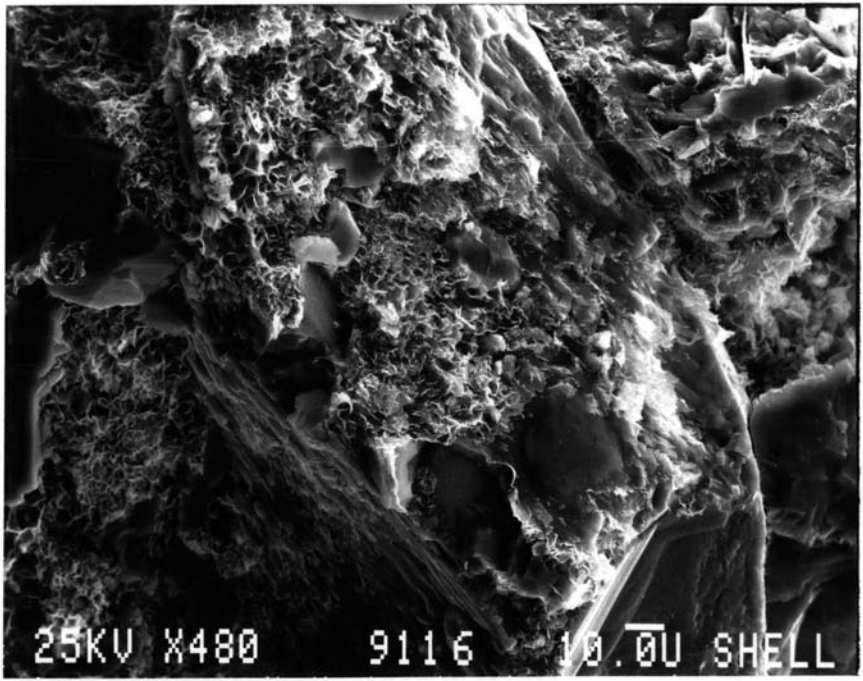
20 Y



9116'

3

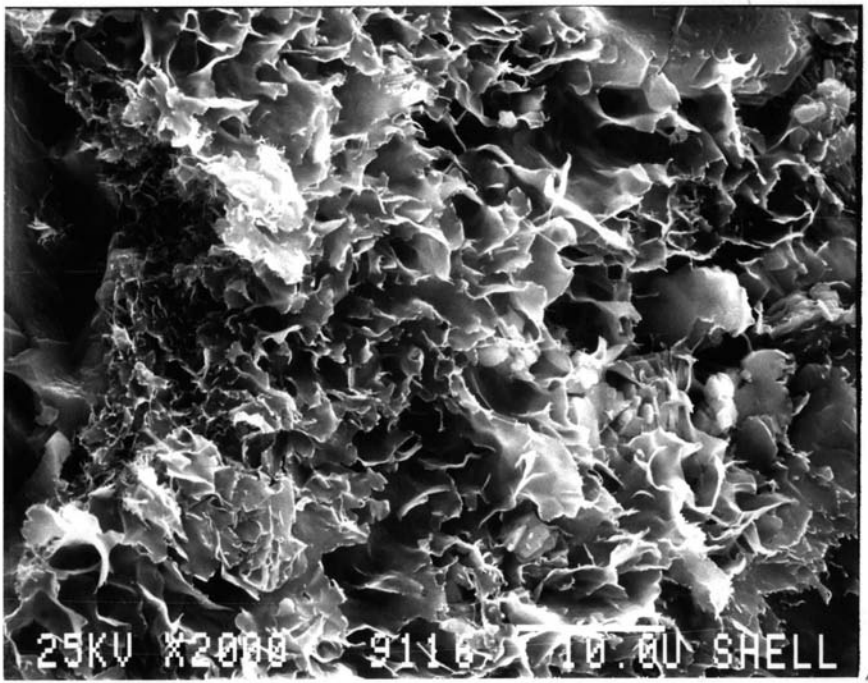
100X



9116'

3

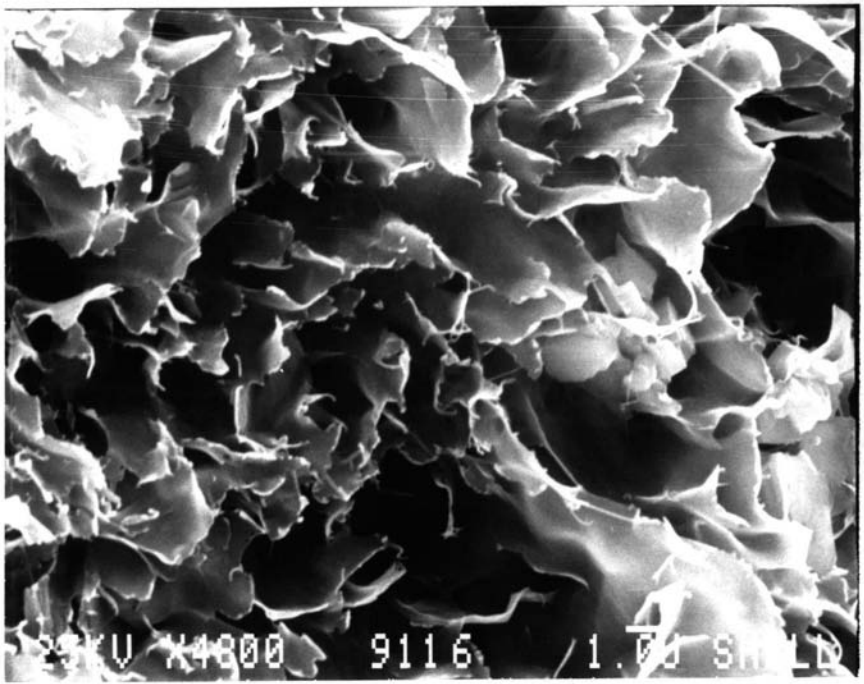
500 Y



9116'

3

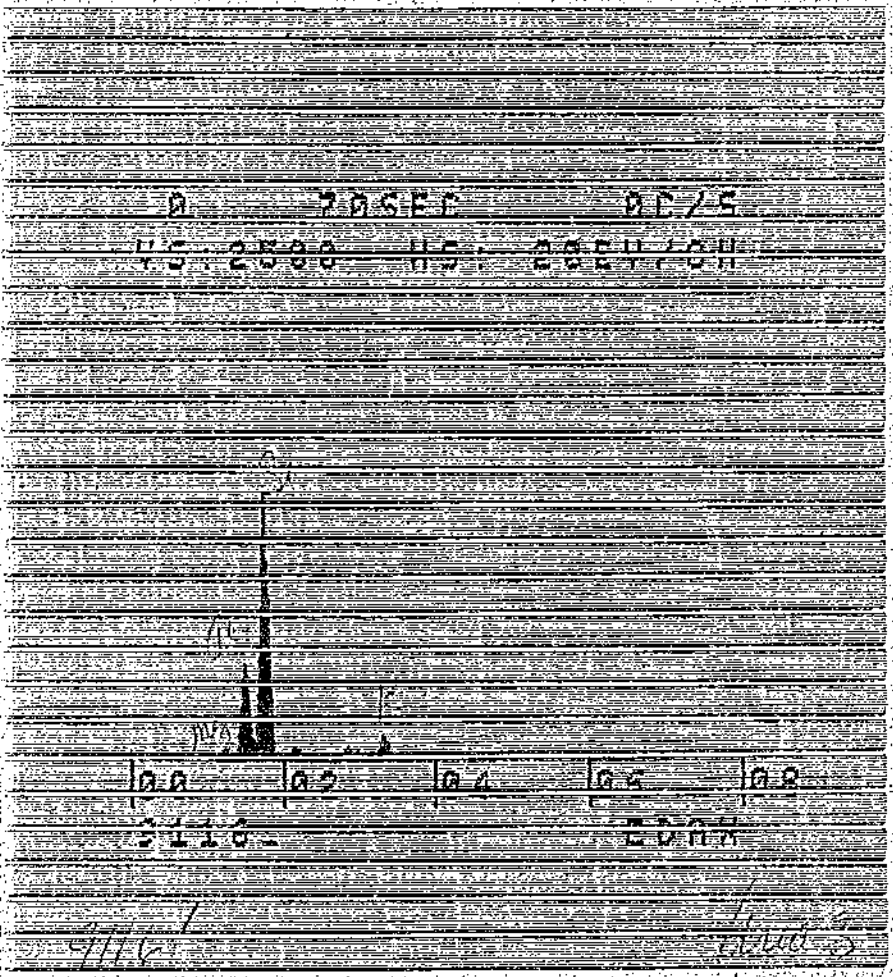
2000 X



9116 1

3

5000


0 20SEC DC/S
0.0
0.2
0.4
0.6
0.8

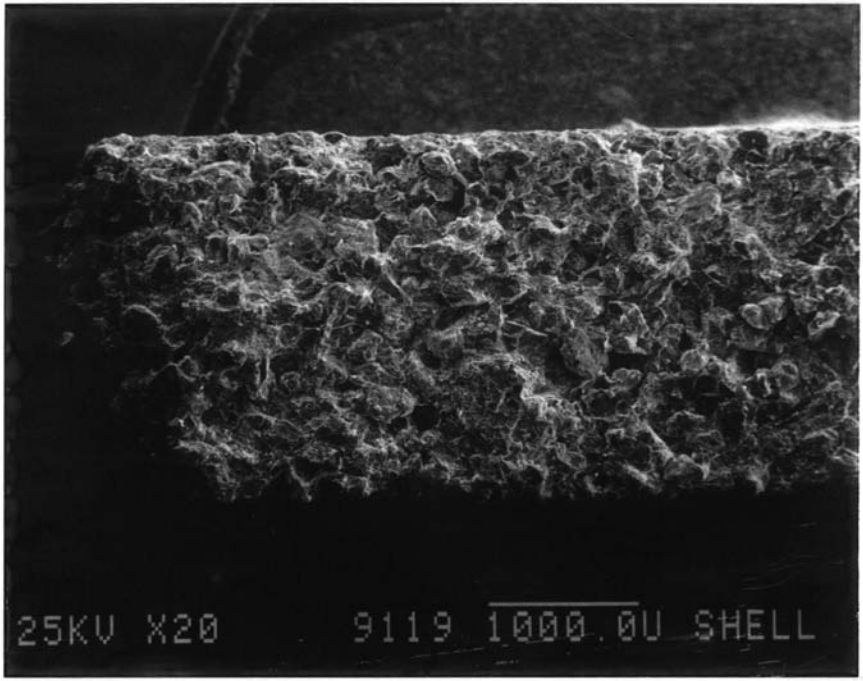
N. Belridge 43-27

9116'

Area 1 @ 5000 x - Kaolinite

Area 2 @ 10000 x - Pyrite / Illmenite's.

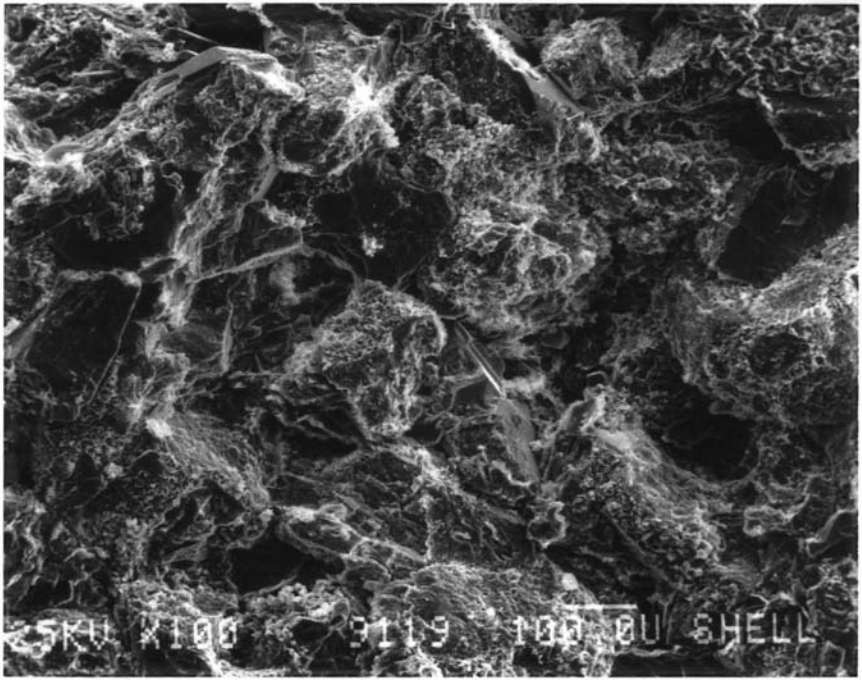
Area 3 @ 5000 x - Illite



9119'

1

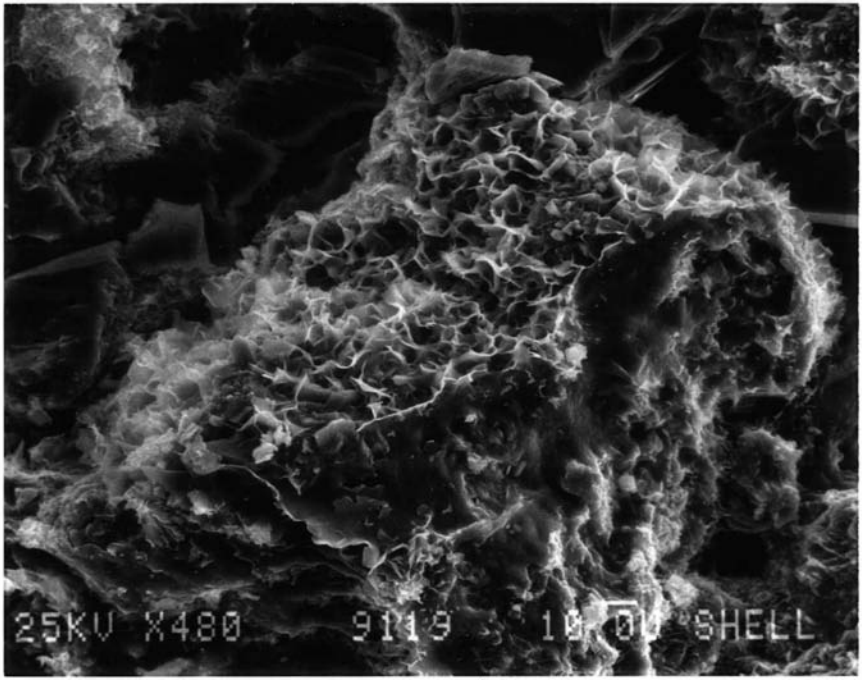
20X



9119

1

100X

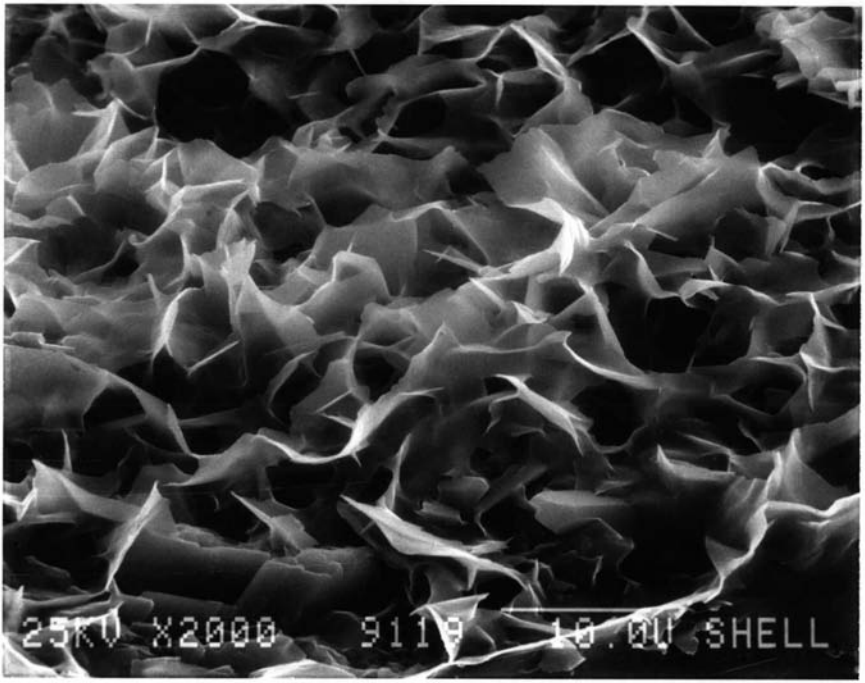


9119'

-1a

500X

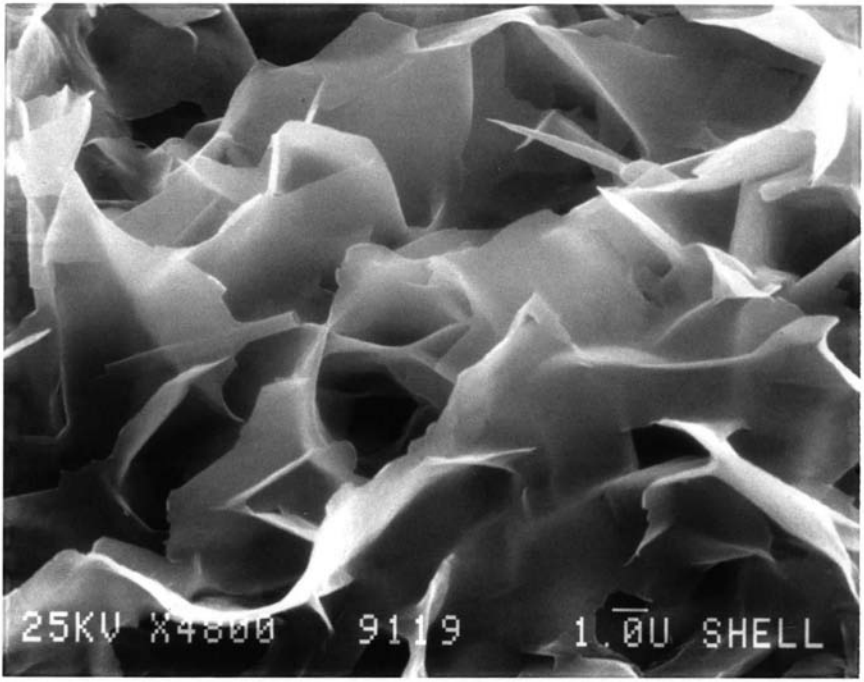
1a



9119'

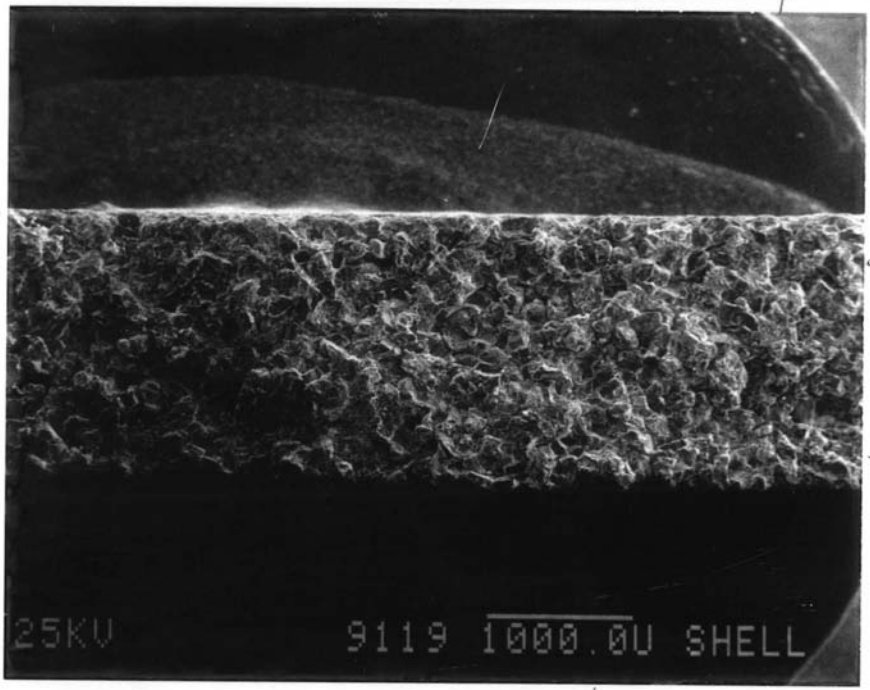
1

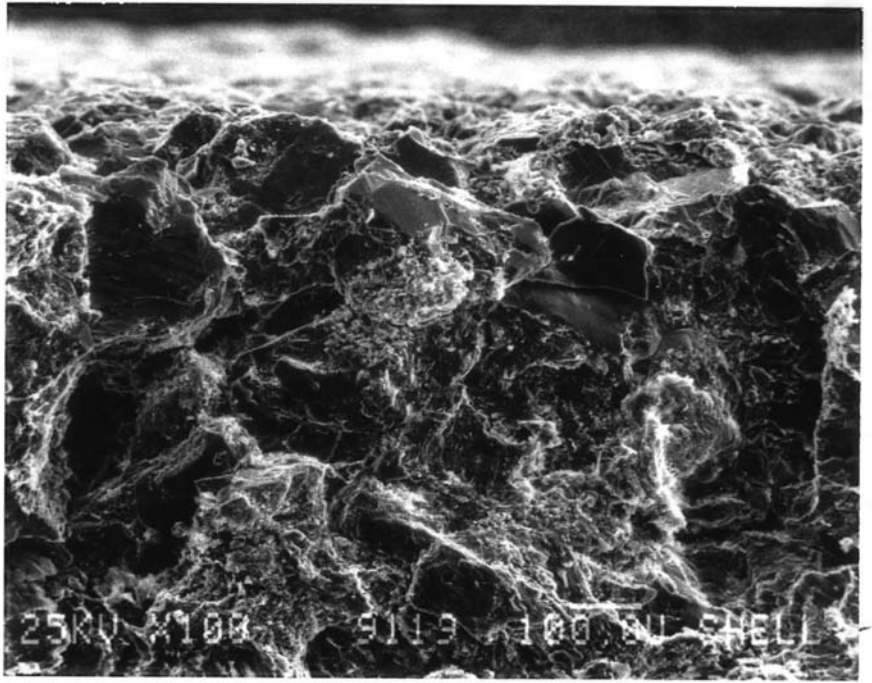
20004



9119

5000X


25KV
9119 1000.0U SHELL



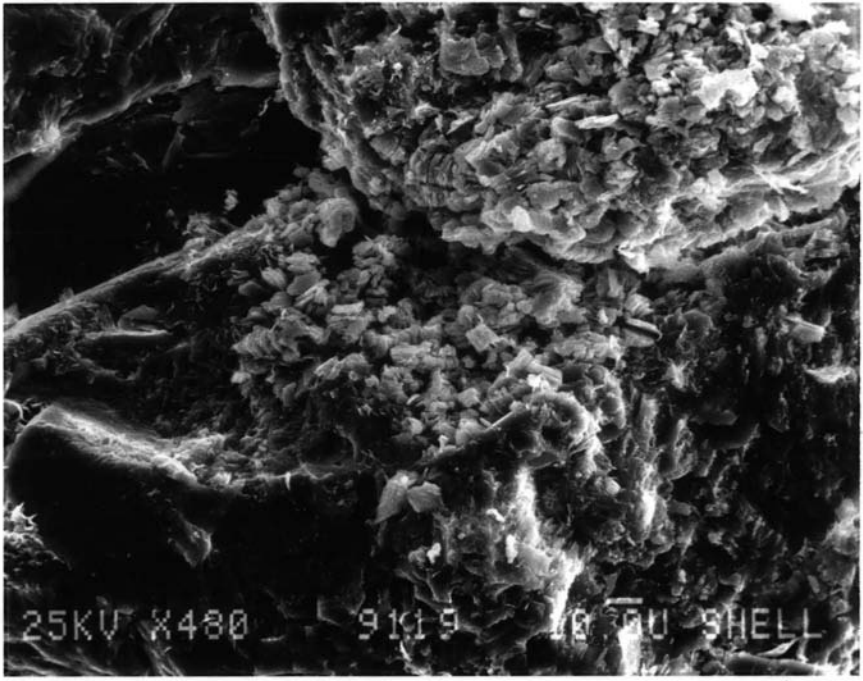
9119'

2

100X

SPECIAL HANDLING

POLAROID E5050240050470



9119

2

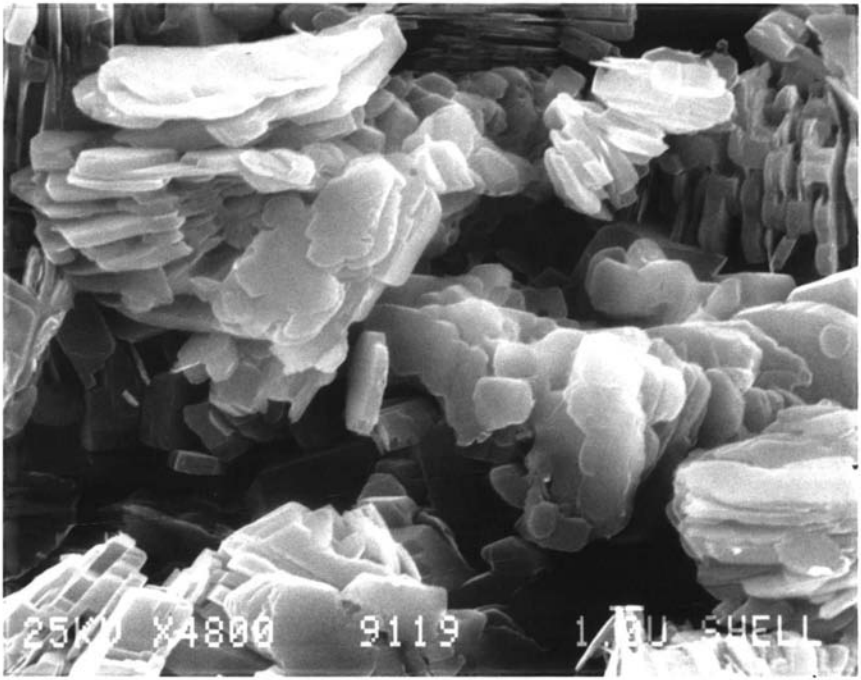
500X



9119'

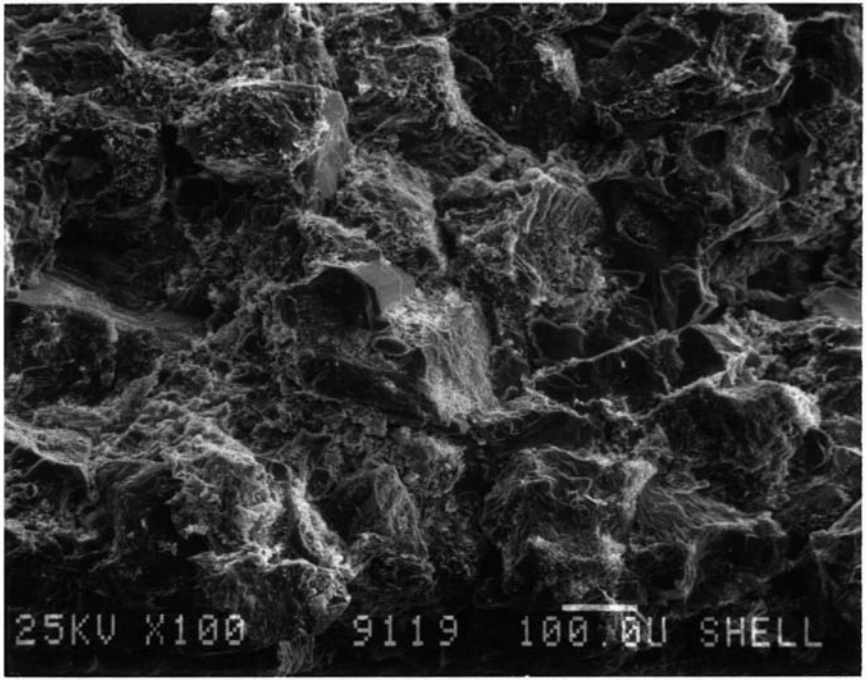
2

2000X



9119'

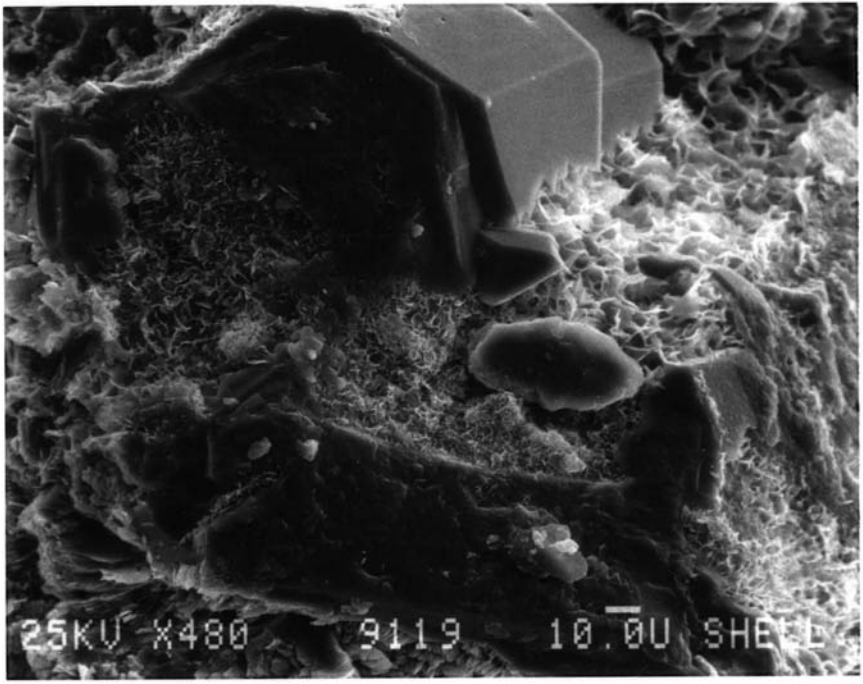
5000X



9119'

3

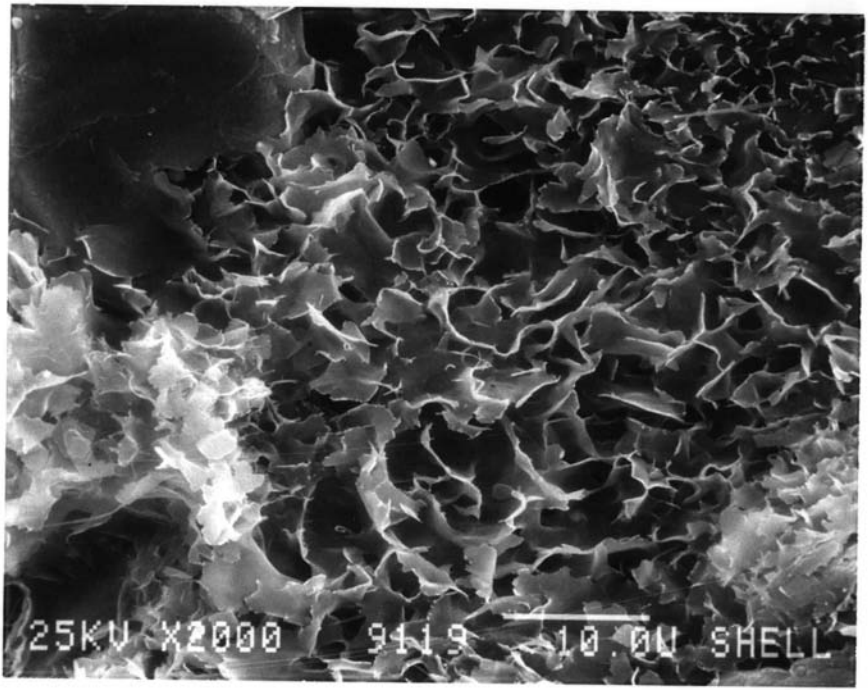
100X



9119'

B

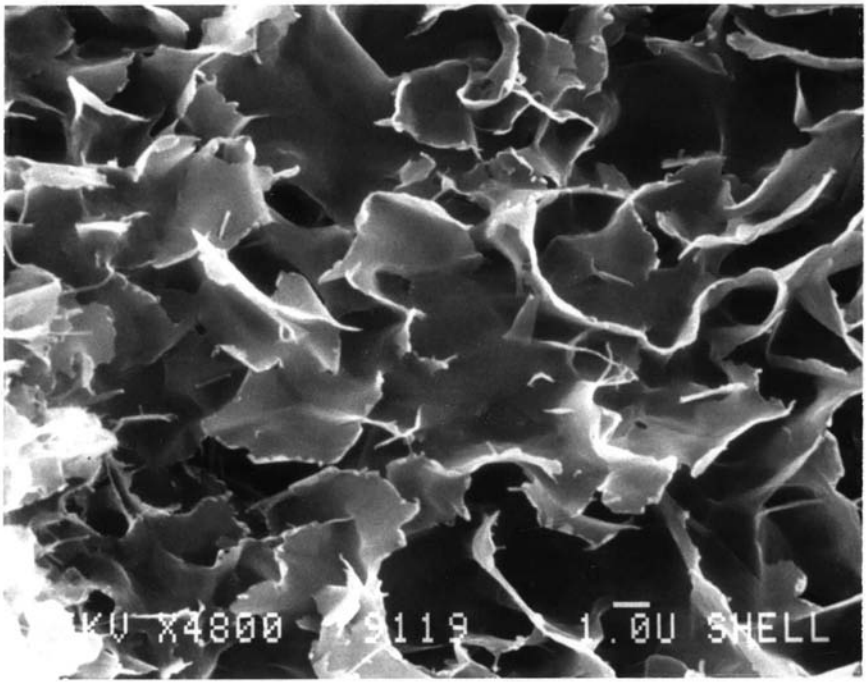
500X



9119

B

2000X

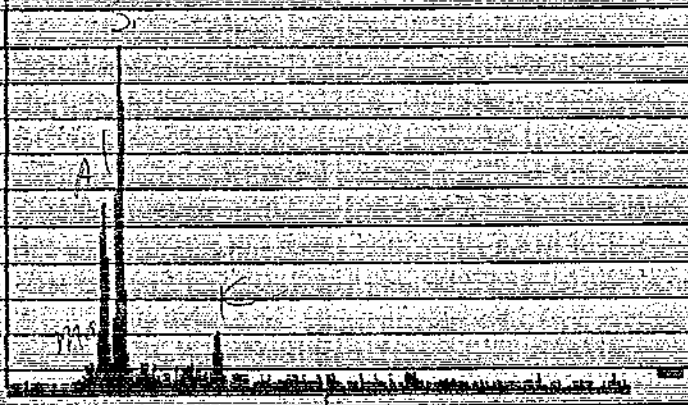


9119

3

5000X

26-NOV-85 09:40:19 EDAX READY
RATE: 15CPS TIME: 16LSEC
00-20KEV 10EV/CH PRST: OFF
A: B:
FS= 263 MEM: A FS= 200
00 02 04 06 08



CURSOR (KEV)=05.080 EDAX

9.119
Area 1

25-NOV-85 12:30:27 EDAX READY

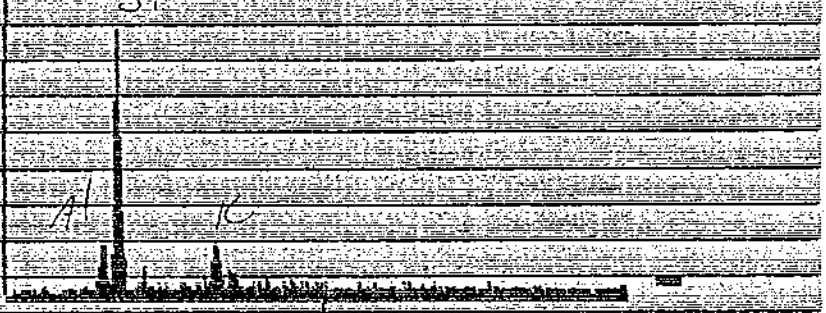
RATE= 303CPS TIME= 25LSEC

00-20KEV 10EV/CH PRET= OFF

A B

FS= 200 MEM= A FS= 200

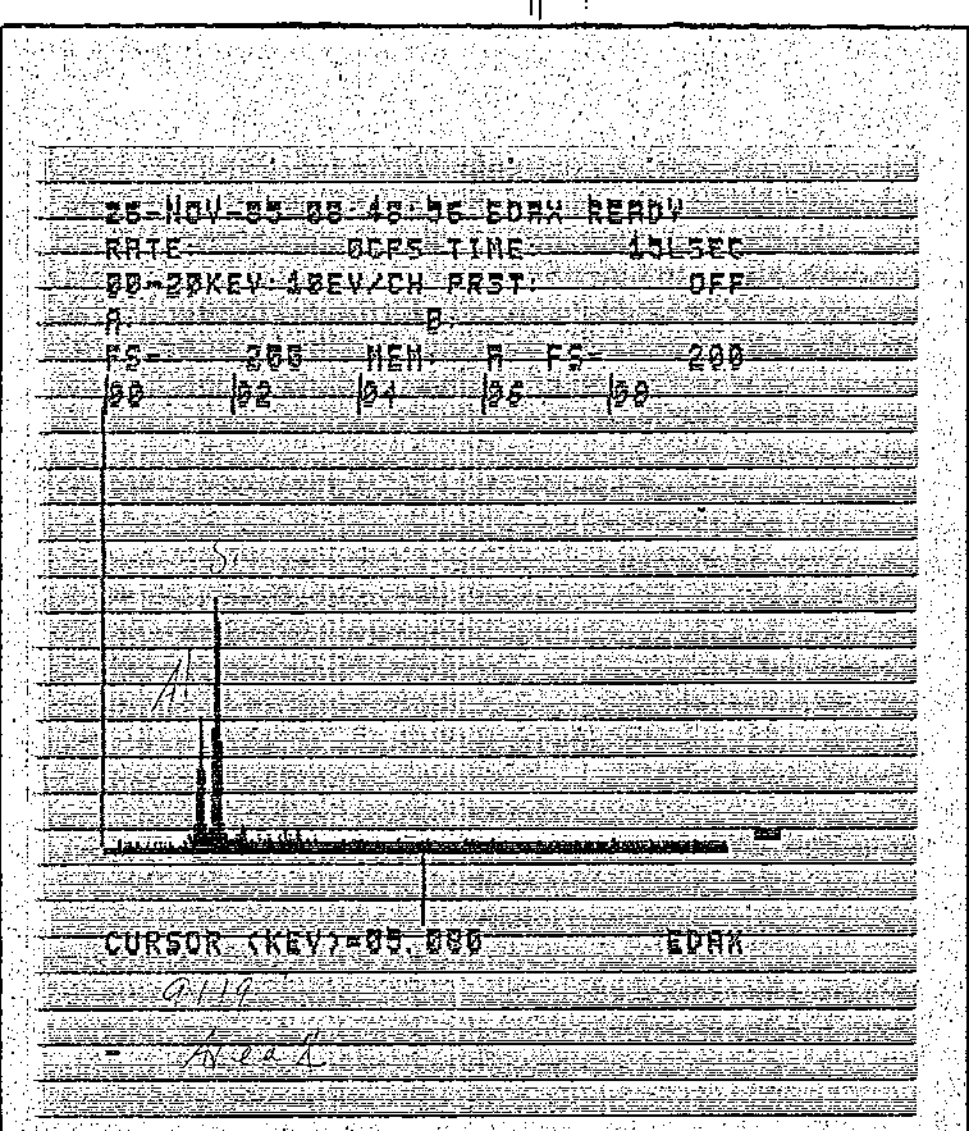
|00 |02 |04 |06 |08



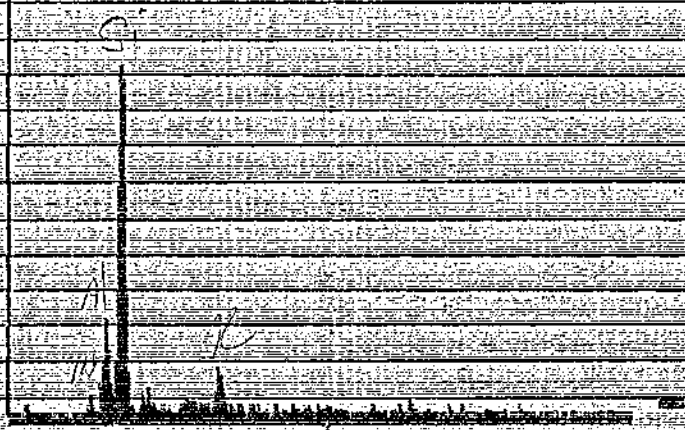
CURSOR (KEV)=05.000 EDAX

9-19

Area 1A


26-NOV-85 08:46:56 EDAX READY
RATE= 0CPS TIME 10LSEC
00-20KEV 10EV/CH PRST: OFF
A B
FS= 200 MEM= A FS= 200
00 02 04 06 00
CURSOR (KEV)=05.000 EDAX

26-NOV-85 09:12:02 EDAX READY
RATE: 34CPS TIME: 15LSEC
00-20KEV-10EV/CH FRST: OFF
A: B:
FS= 237 MEM: A FS= 200
|00 |02 |04 |06 |08



CURSOR (KEV)=05.000 EDAX

9/19

Area 3

N. Belridge
43-27

9119'

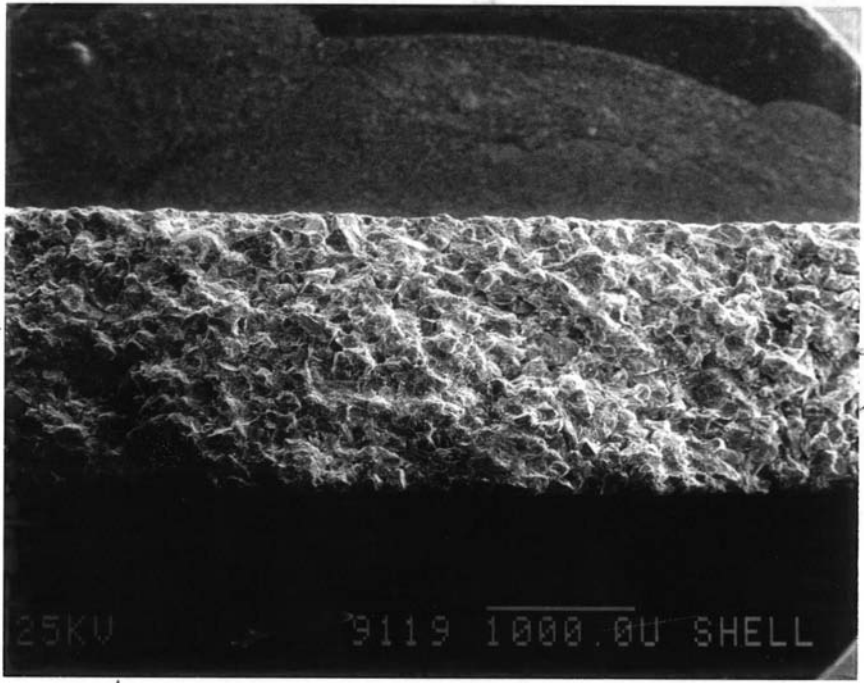
Area 1 @ 5000 X –

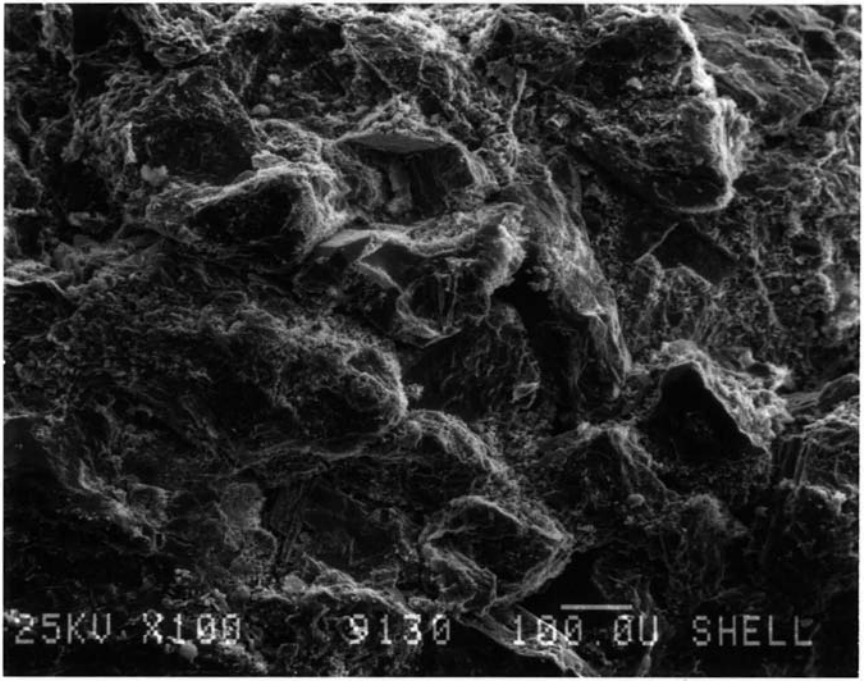
Illite ((Chlorite?)

1a - K feldspar

2 @ 5000x - Kaolinite

3 @ 5000x - Illite

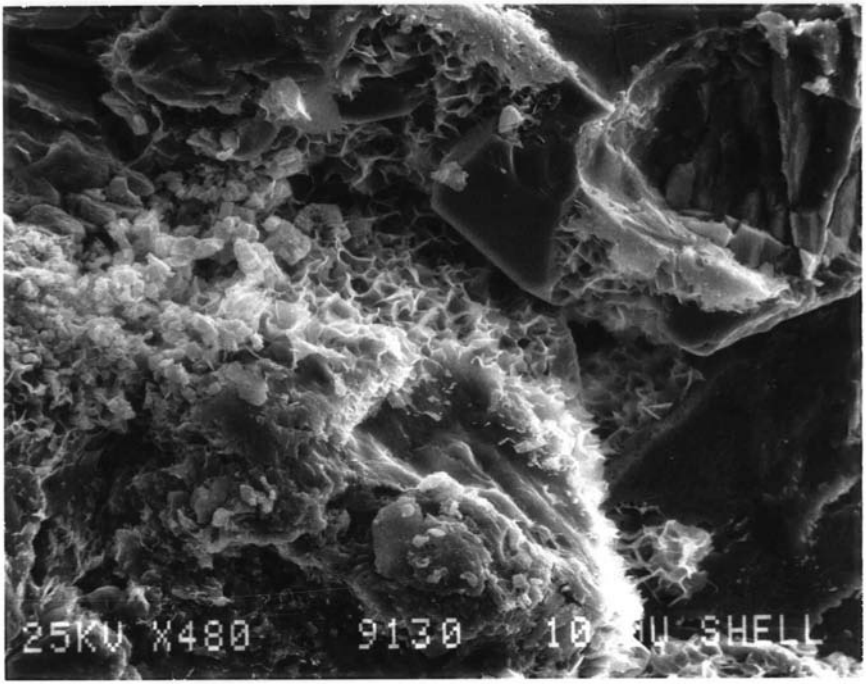

25KV
9119 1000.0U SHELL



9130'

1

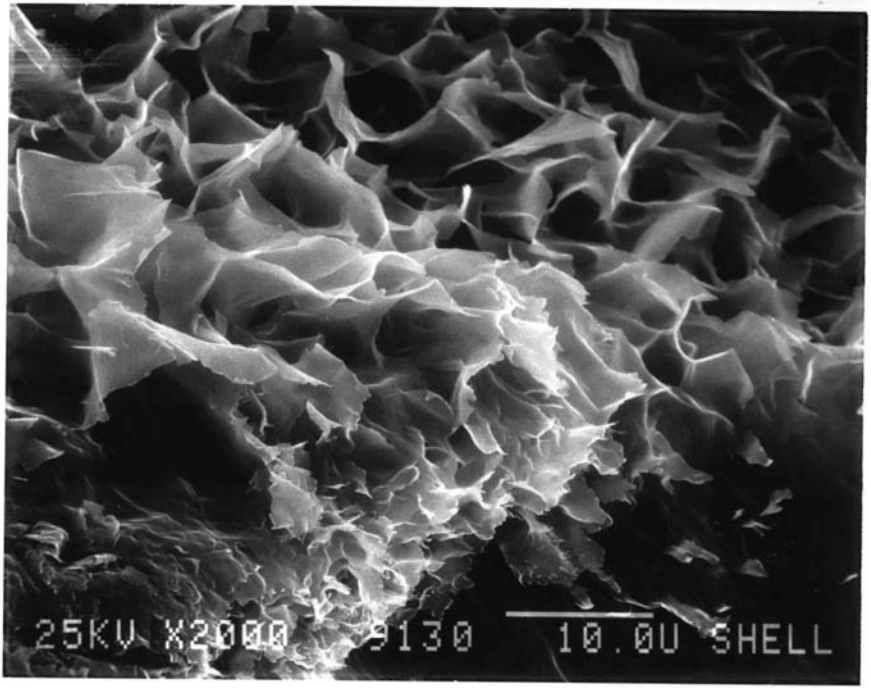
100X



9130'

1

500X

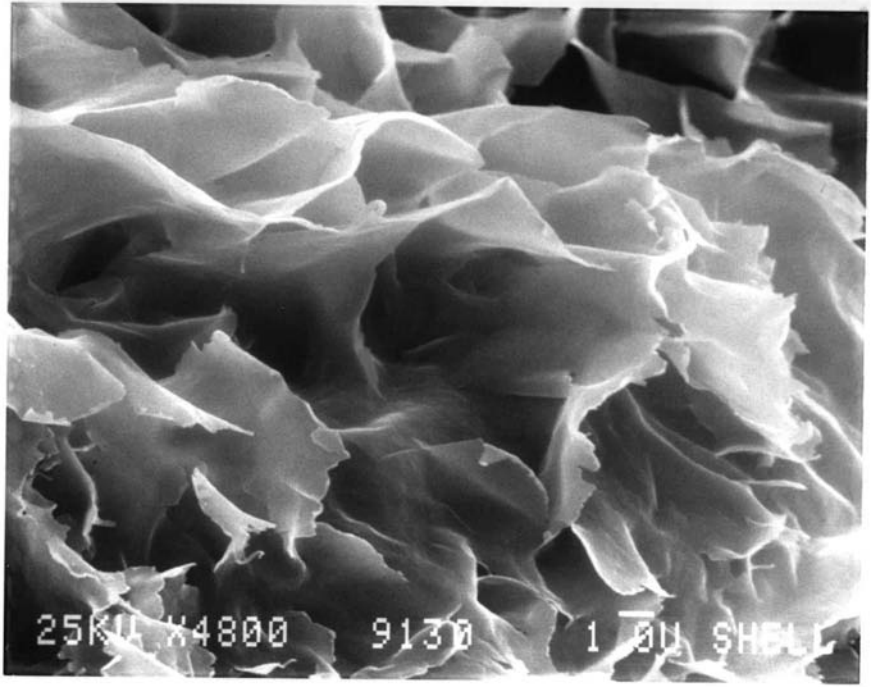


9130'

1

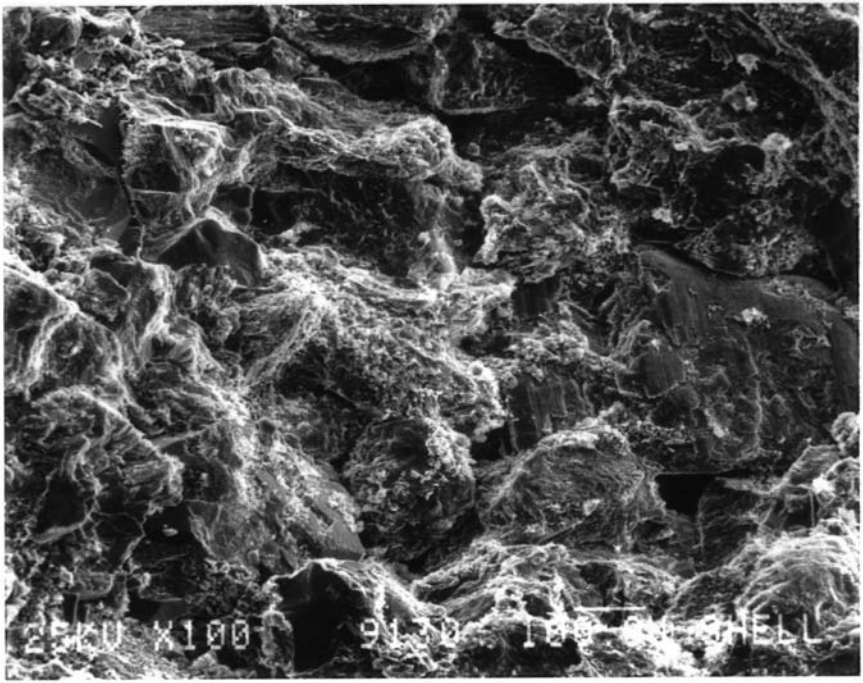
over

2000X



9130'

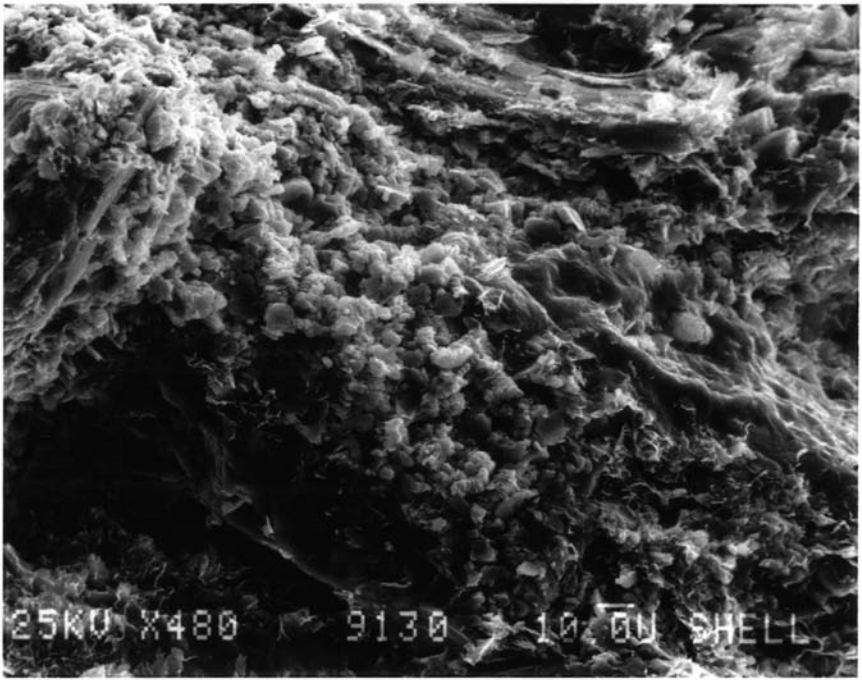
5000X



9130'

γ

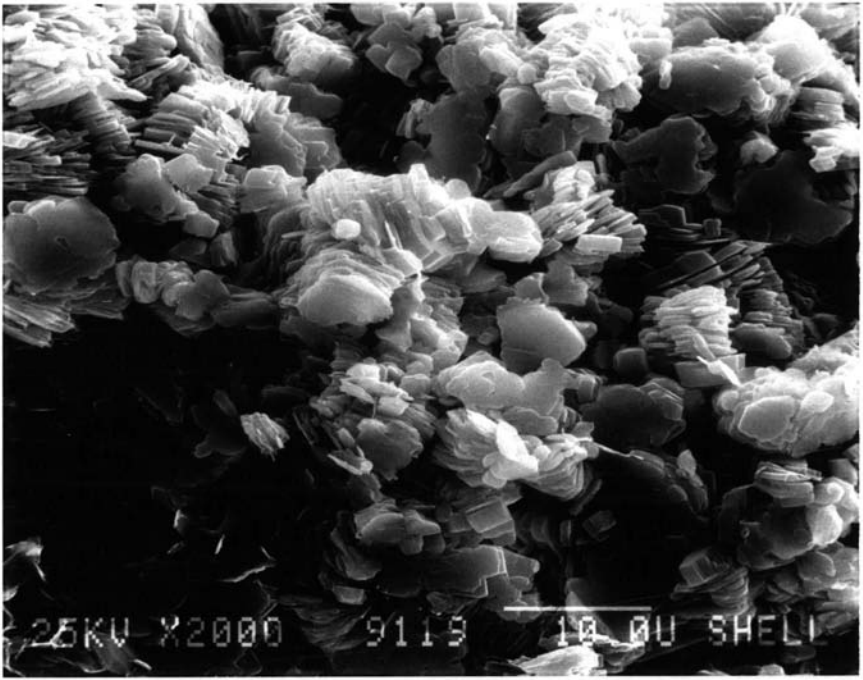
100X



9130'

2

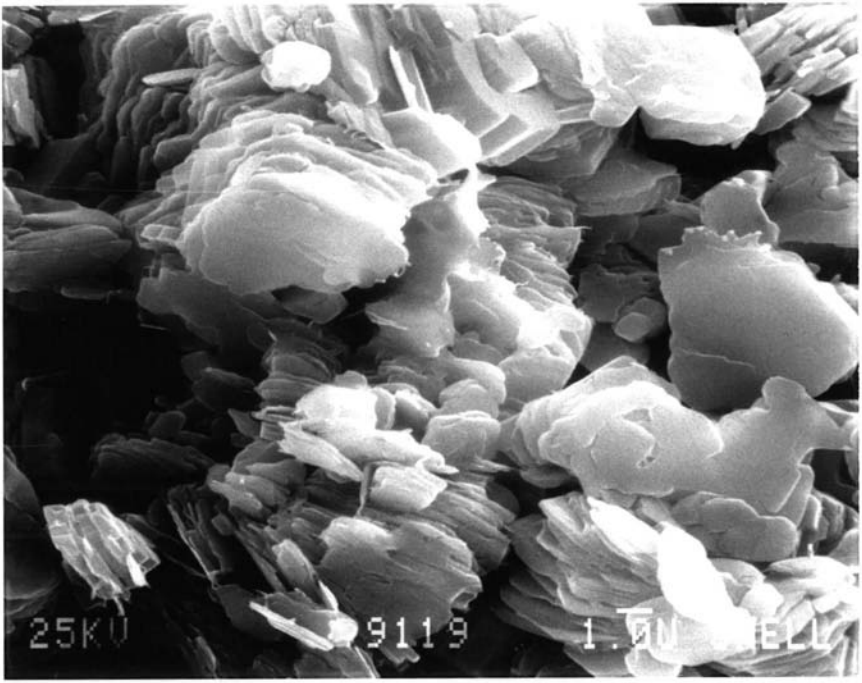
500X



9130'

8

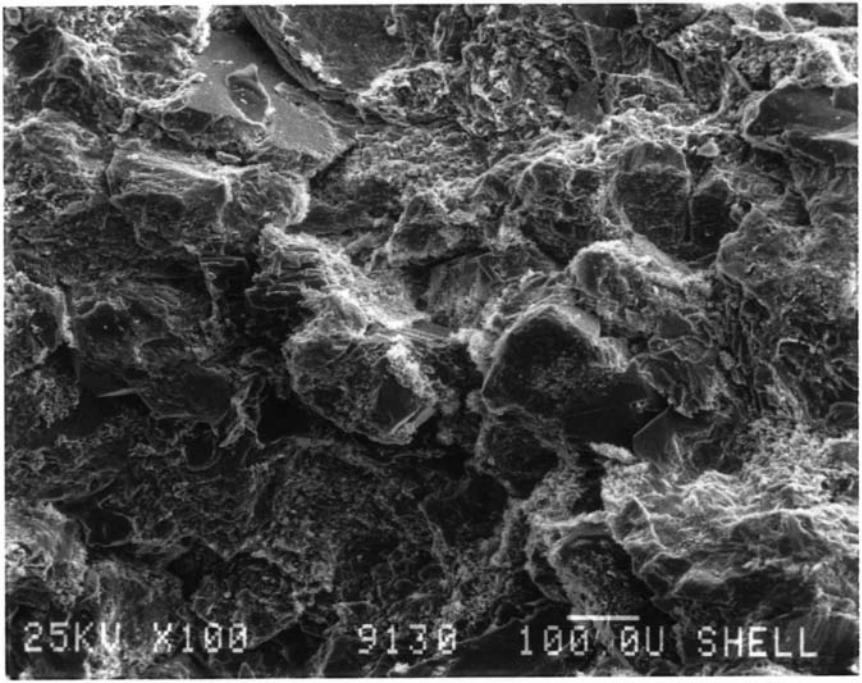
2000X



9130'

2

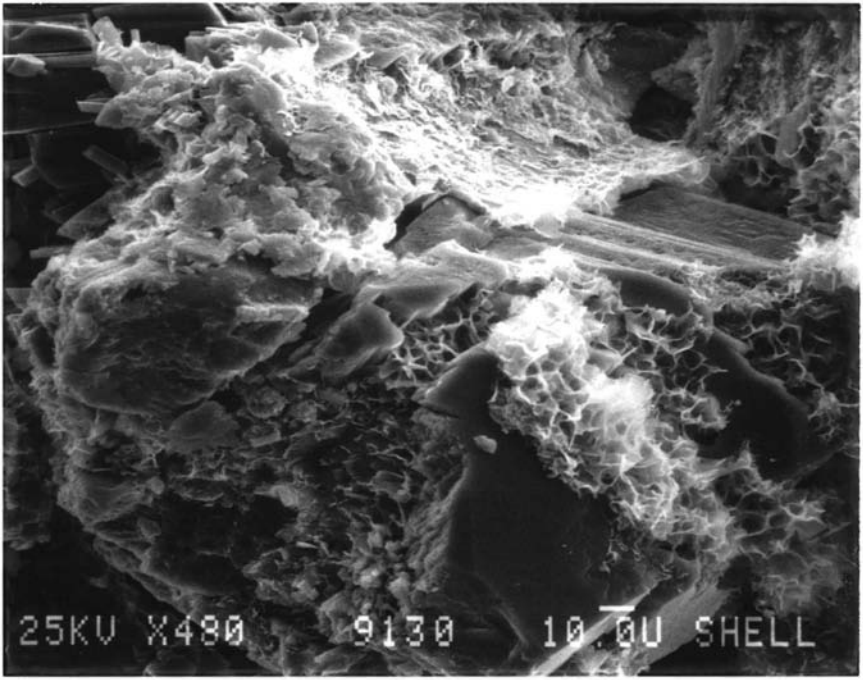
500X



9130'

S

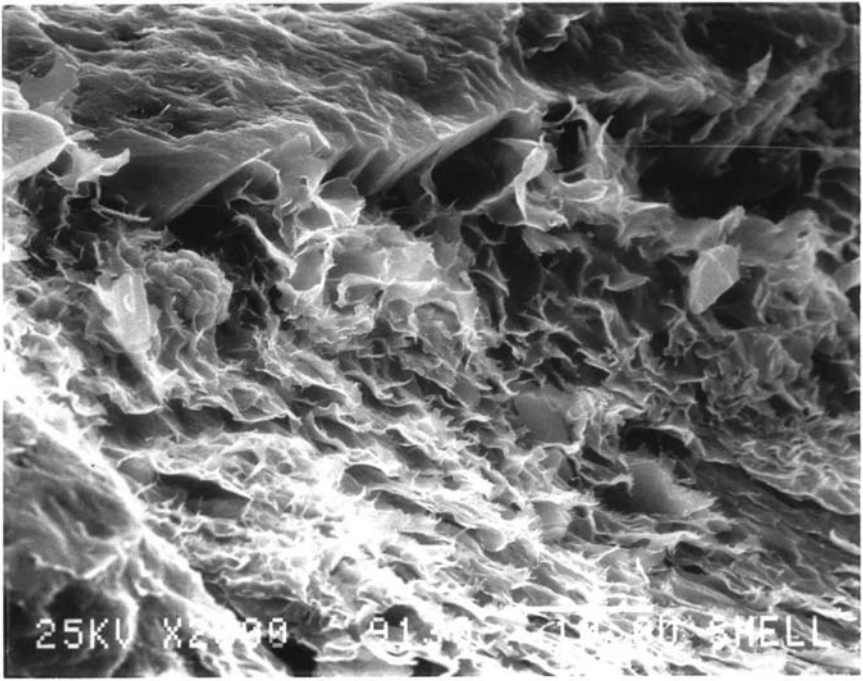
100X



9130'

3

500X



9130'

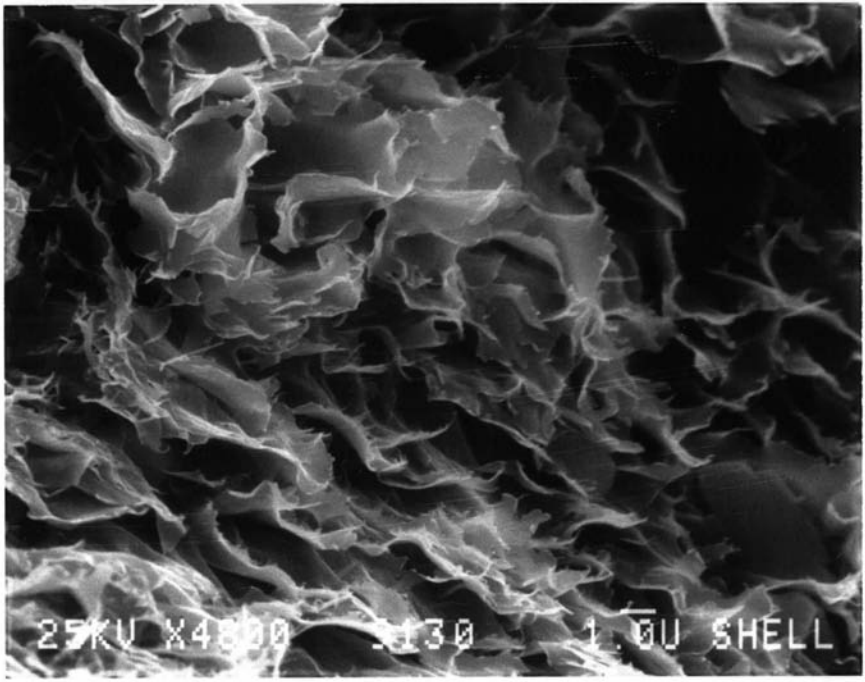
3
face

2000X

K feldspar

PEEL AUTOMATIC

POLAROID L00302A050470



9130'

3

5000X

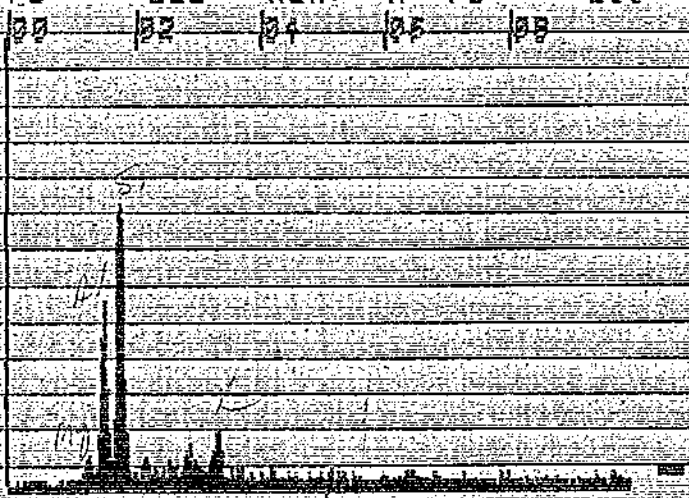
26-NOV-85 11:06:47 EDAX READY

RATE: 296CPS TIME: 1BLSEC

00-20KEV 10EV/CH PRST: OFF

A: B:

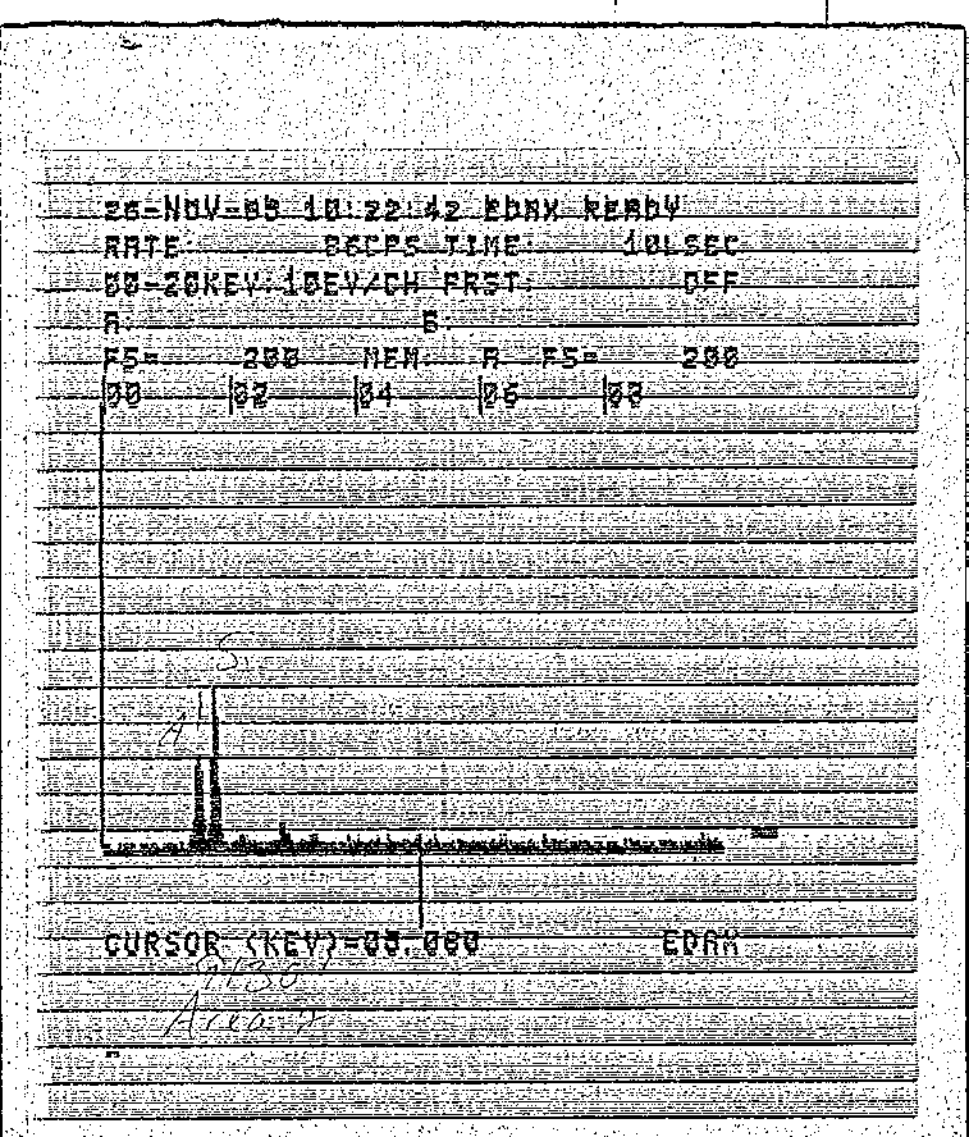
FS= 222 MEM: A FS= 200

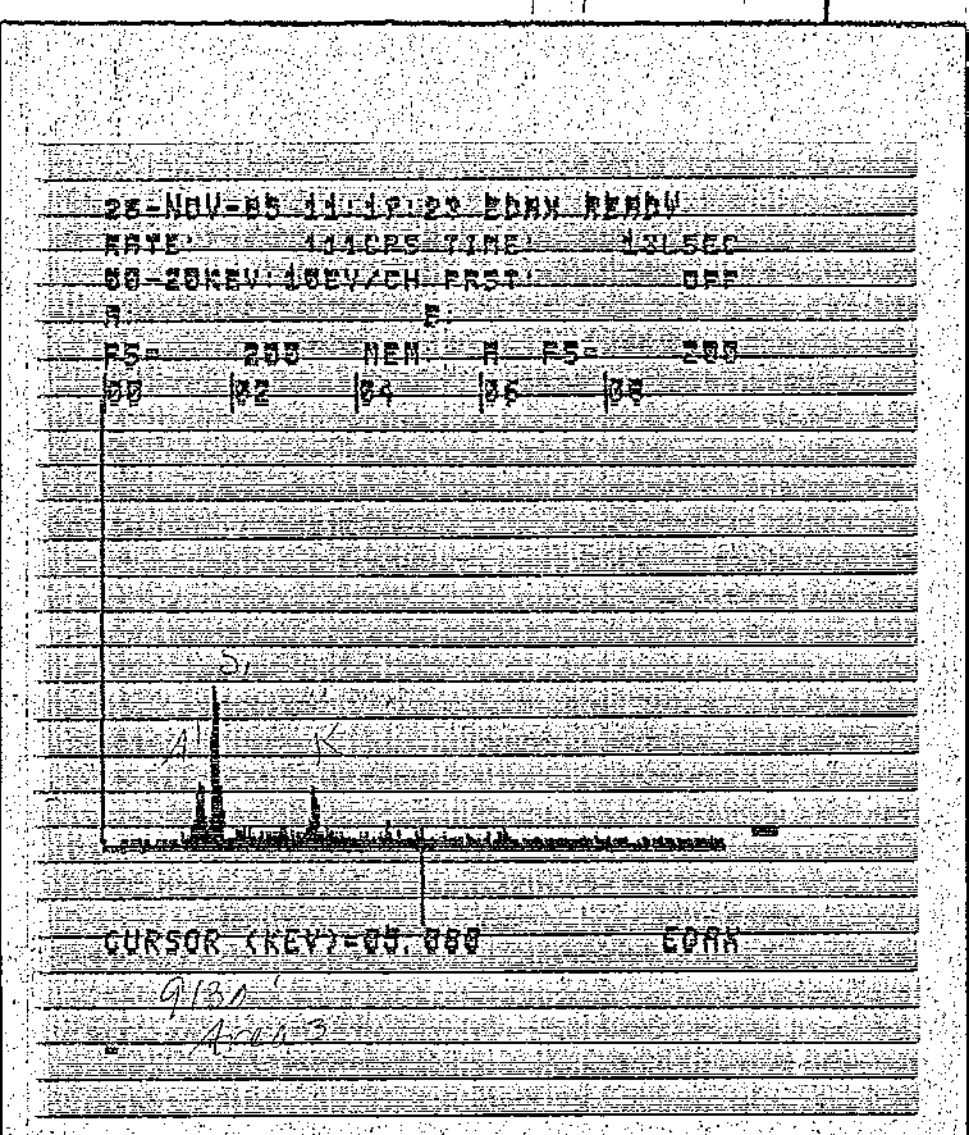


CURSOR (KEV)=05.000 EDAX

9730

Area


26-NOV-85 10:22:42 EDAX READY
RATE= 26CPS TIME= 10LSEC
00-20KEV 10EV/CH PRST. OFF
A B
F5= 200 MEM A F5= 200
00 02 04 06 08
CURSOR (KEV)=00.000 EDAX
Area A
Area B


25-NOV-85 11:17:23 BANK READY
RATE: 1114CPS TIME: 131.5SEC
60-20KEV 10EV/CH PRST: OFF
R: E:
F5= 200 MEM R F5= 200
00 02 04 06 08
CURSOR (KEV)=05.000 BANK

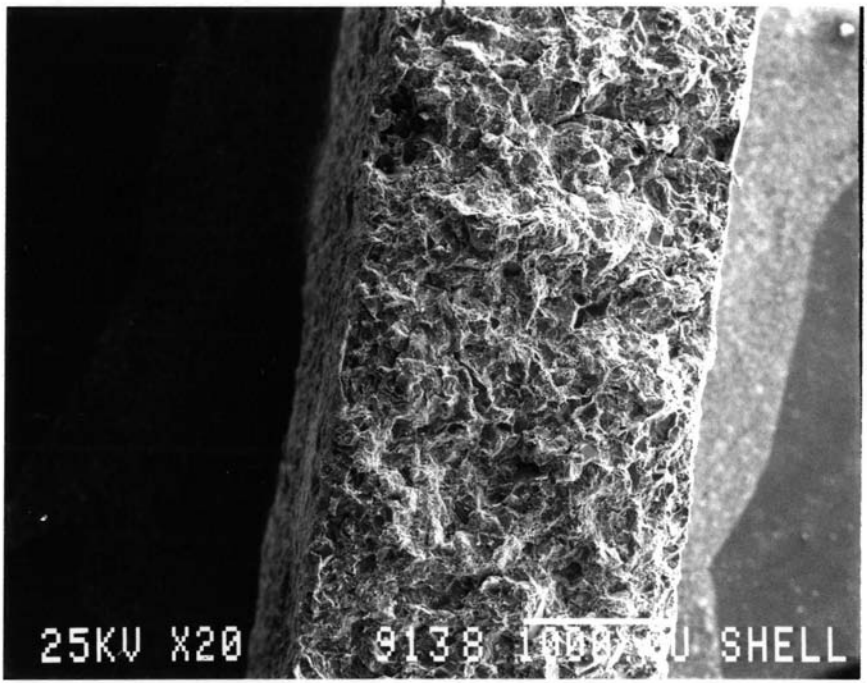
N. Belridge
43-27

9130'

Area 1 @ 5000x-
Illite (+chlorite?)

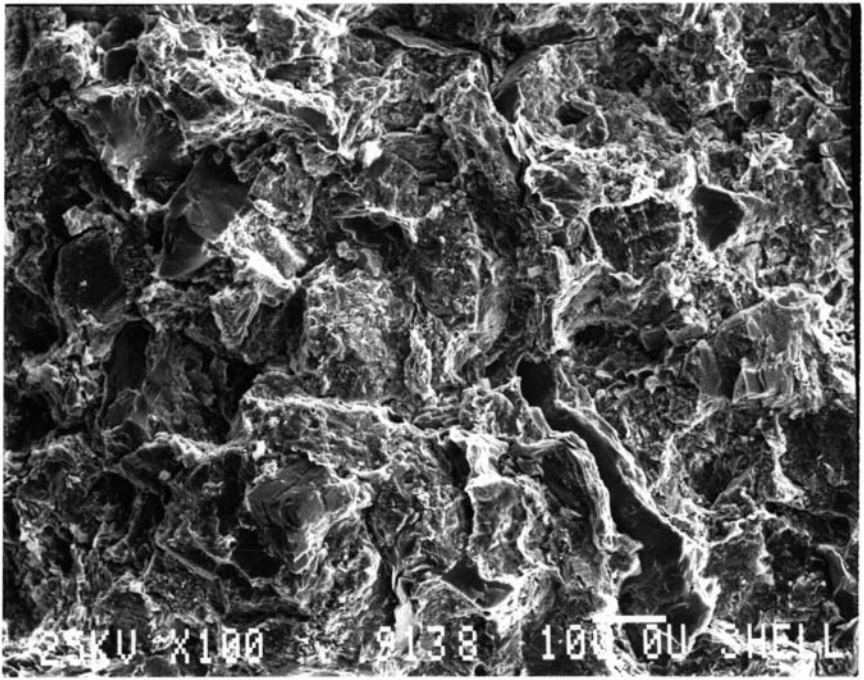
2 @ 5000x-
Kaolinite

3 @ 5000x - Illite



9138'

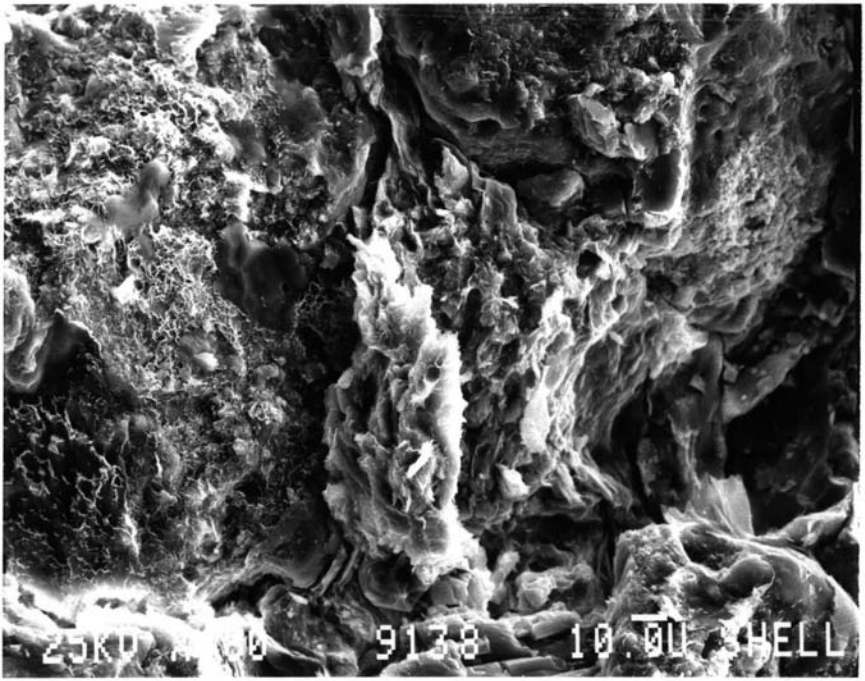
20X



91381

1

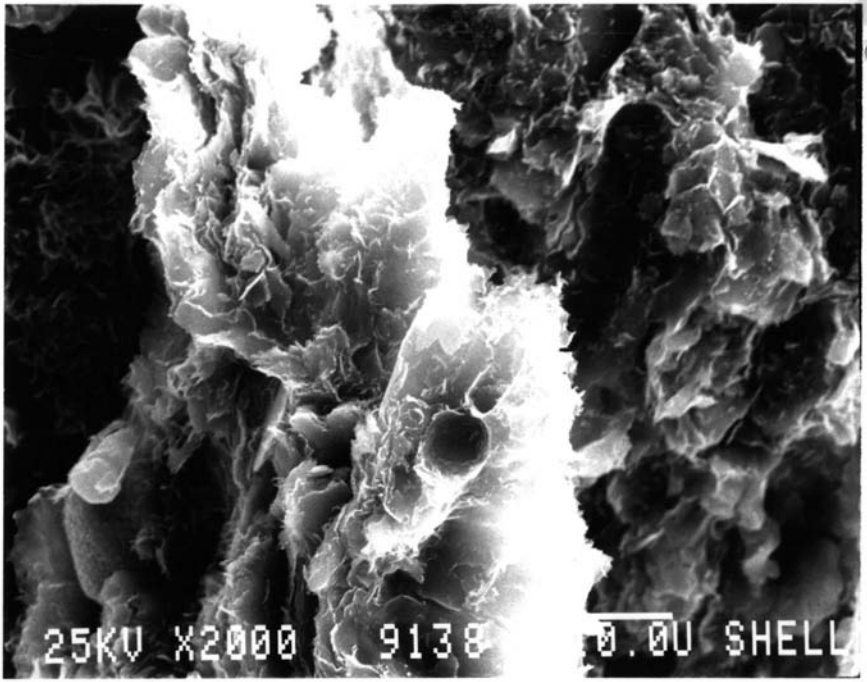
100X



91381

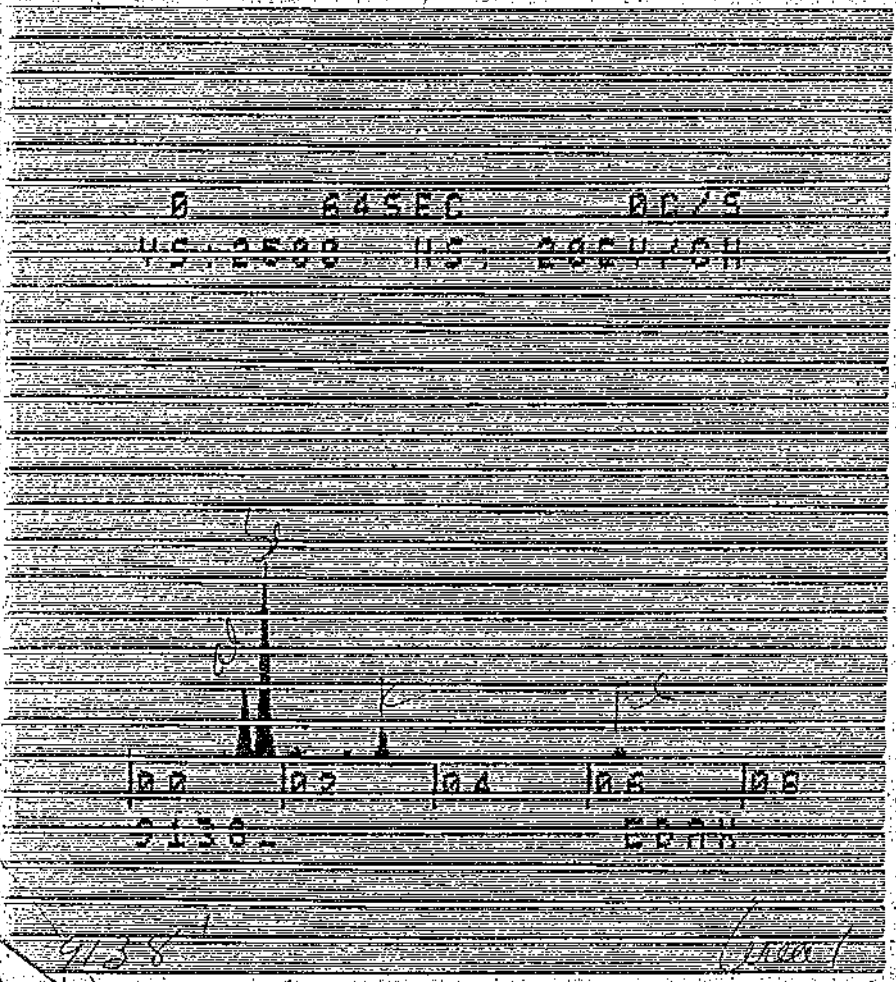
1

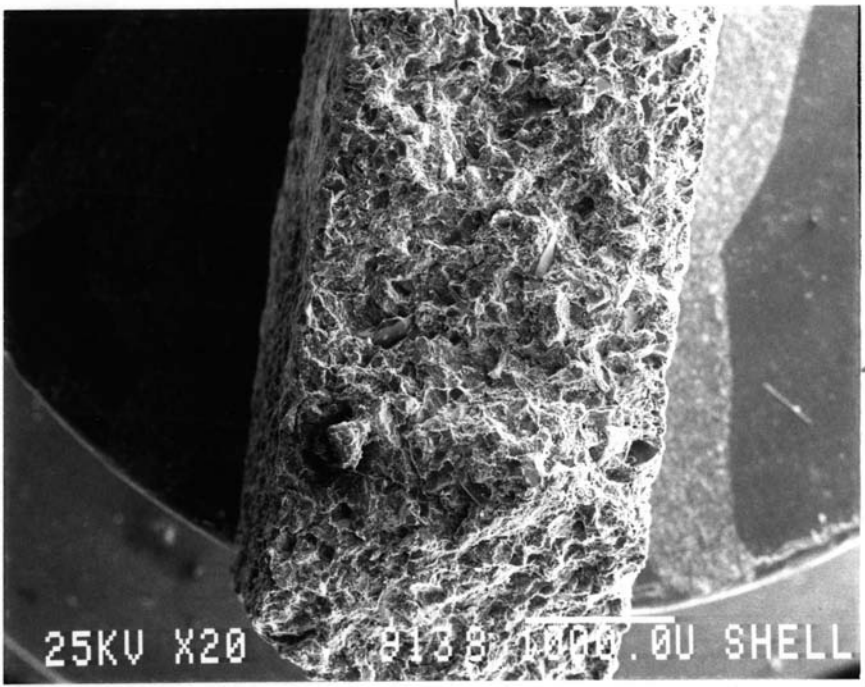
500 X

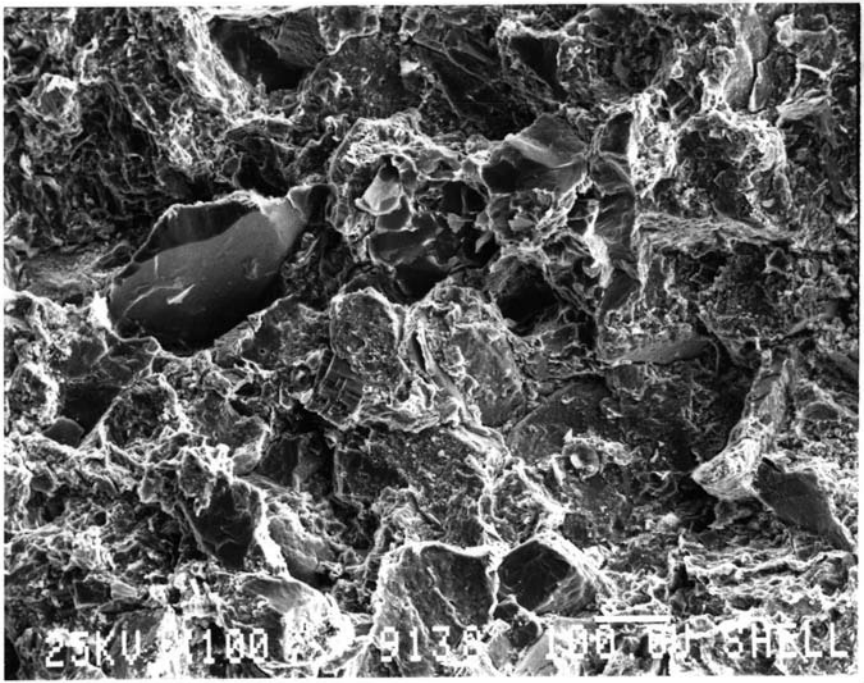


9138 I

2000 X



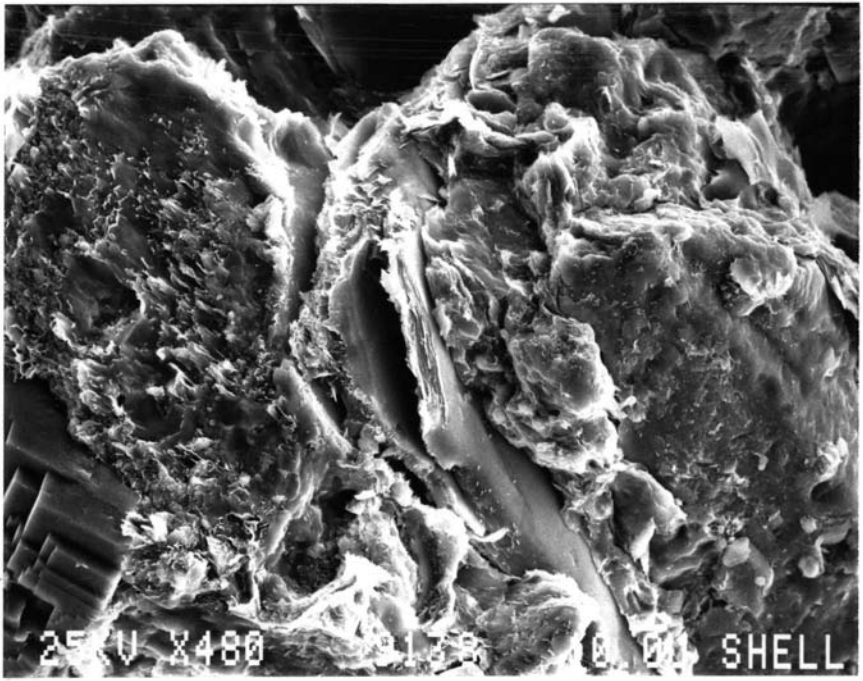

25KV X20
SHELL

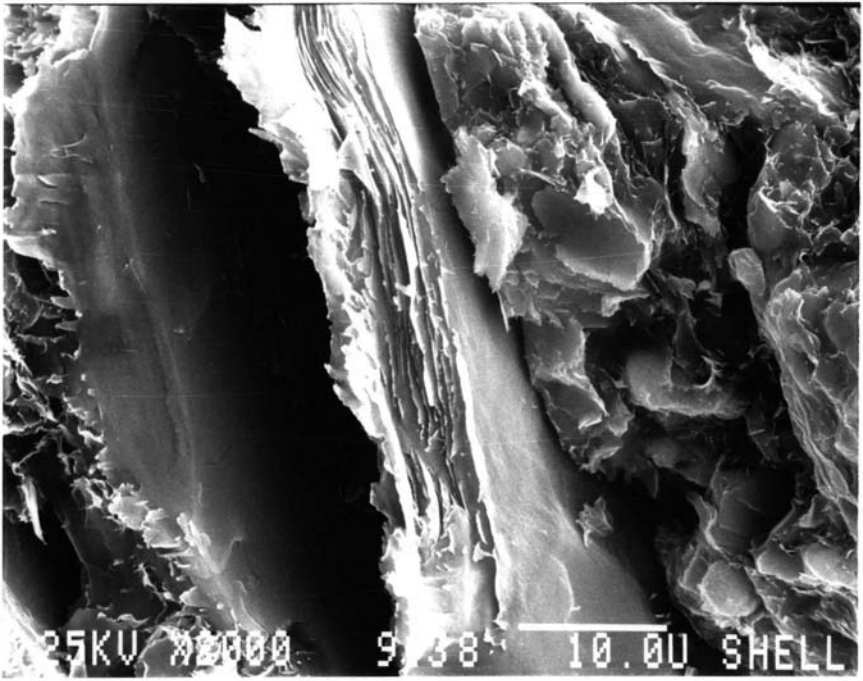


9138'

2

100X

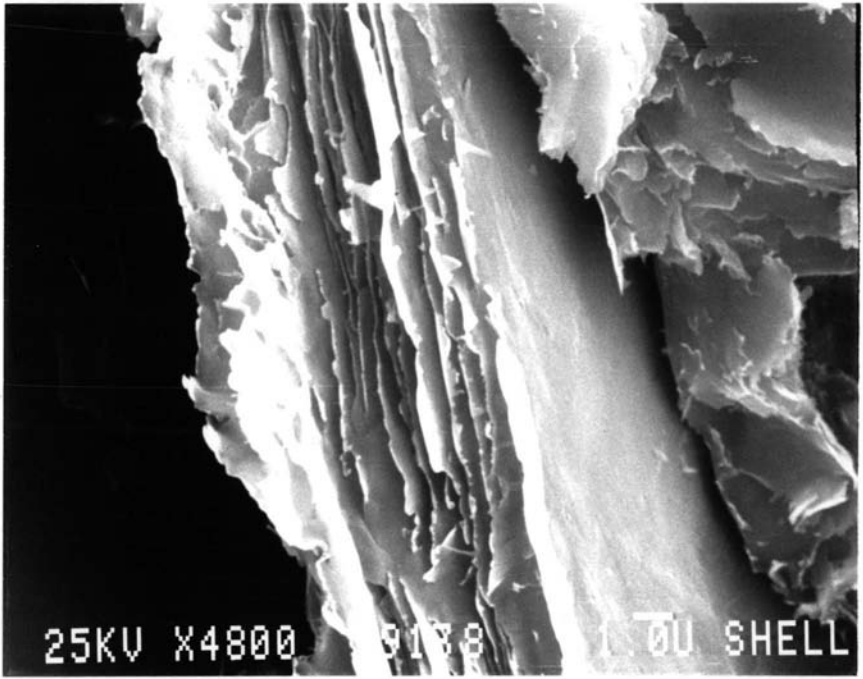

9138
2
3
SHELL
5-00X
1/3



91381

2

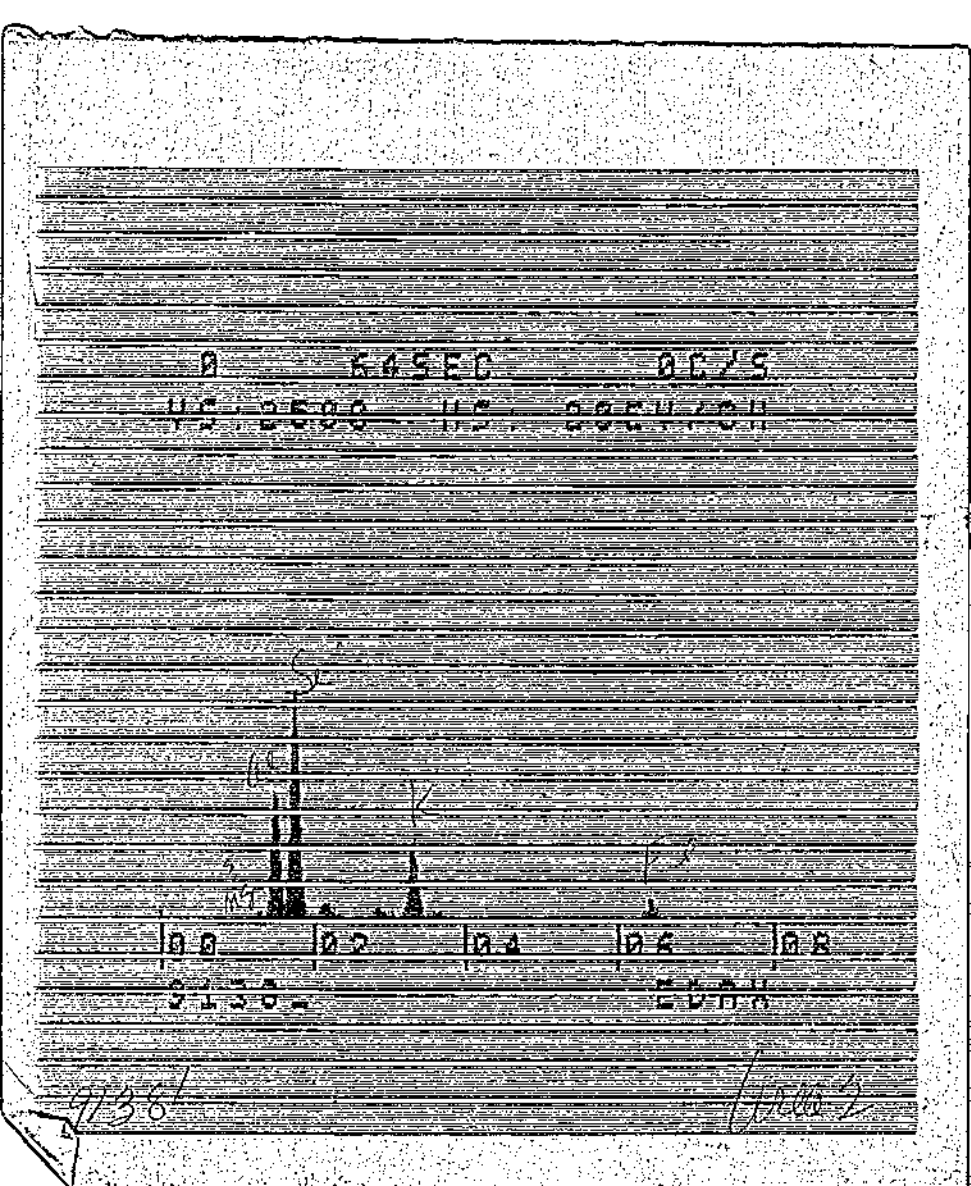
2000 X

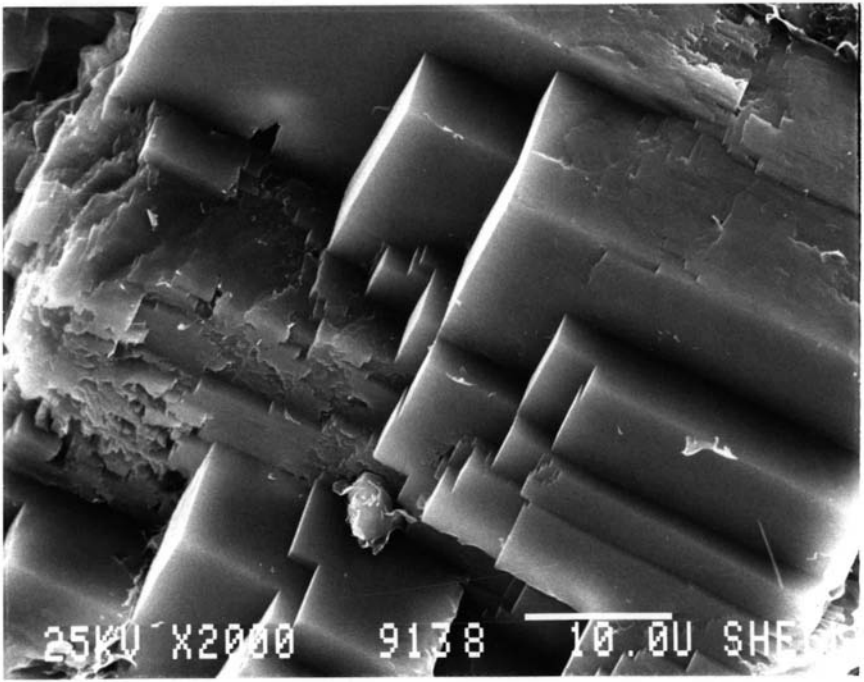


91381

2

5000 X

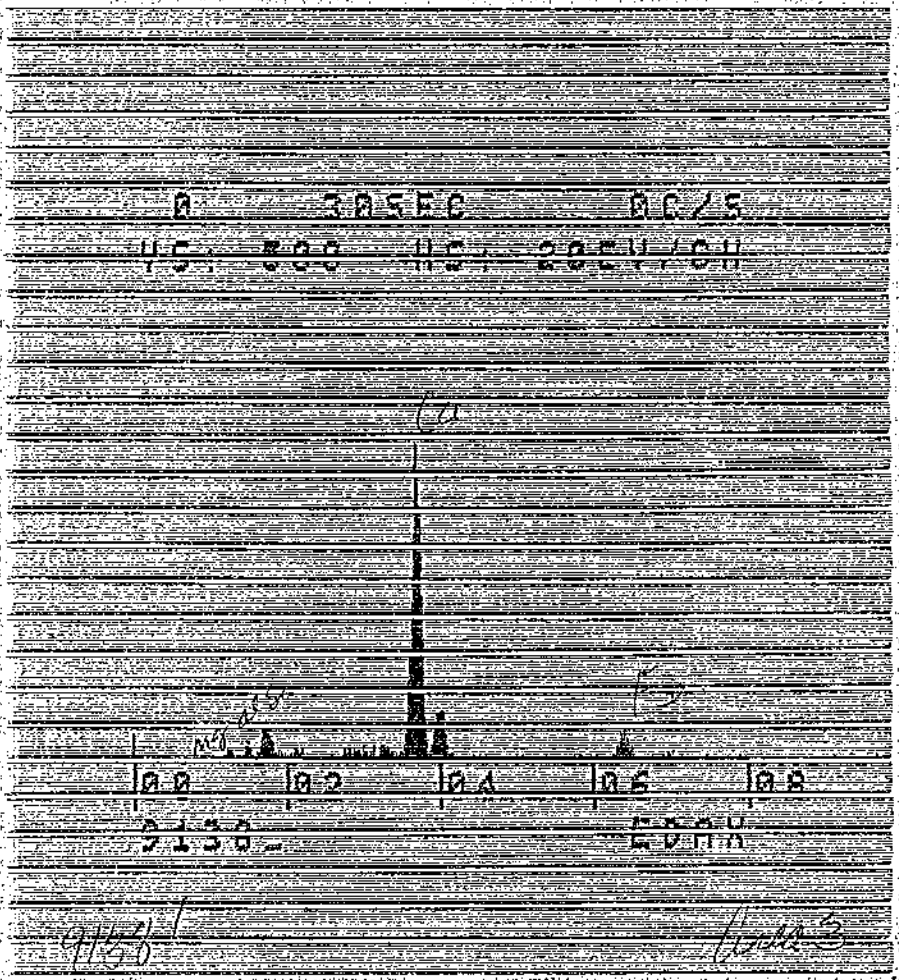




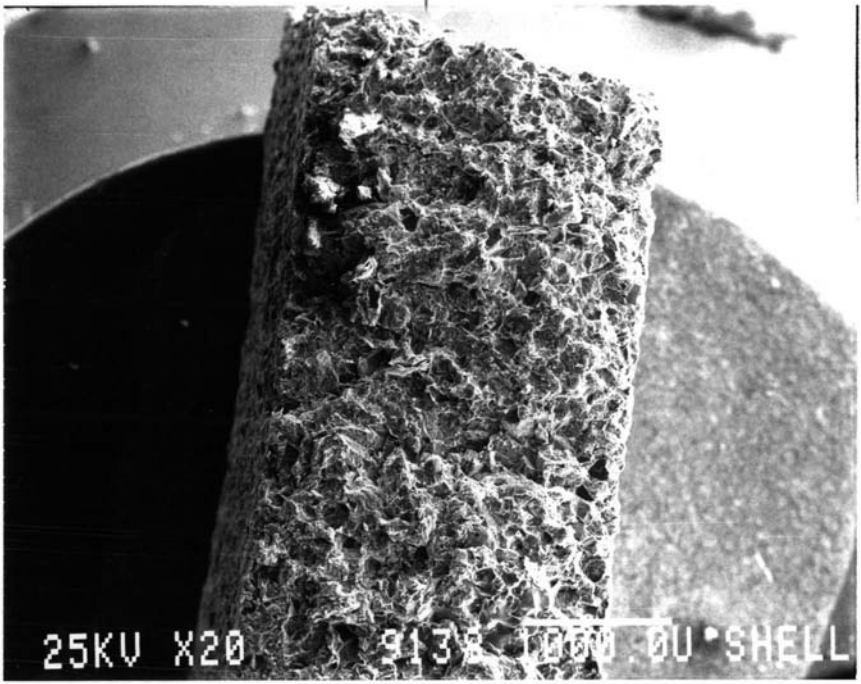
9138'

3

2000 Y



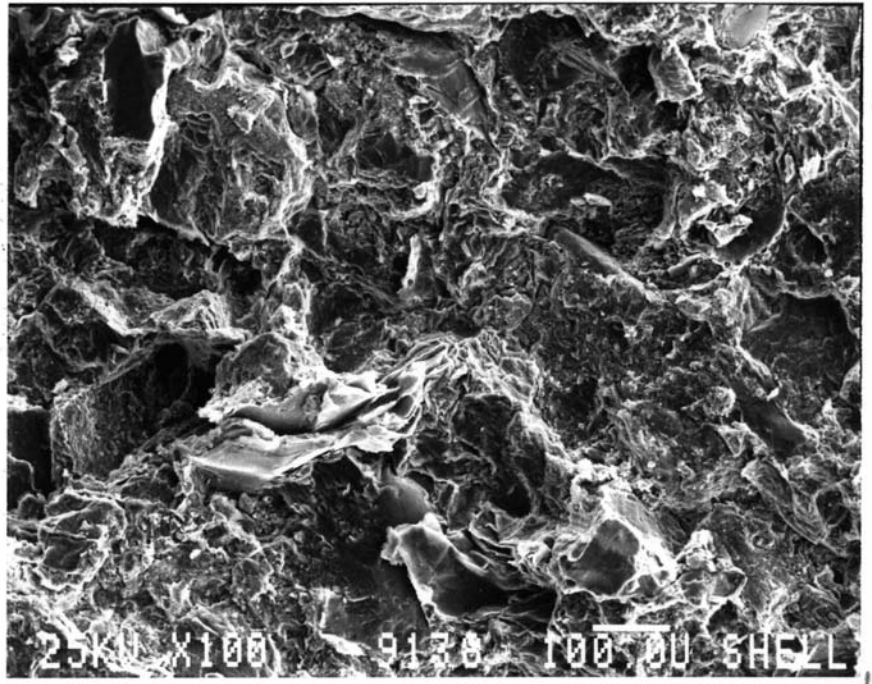
4



9138'

-4

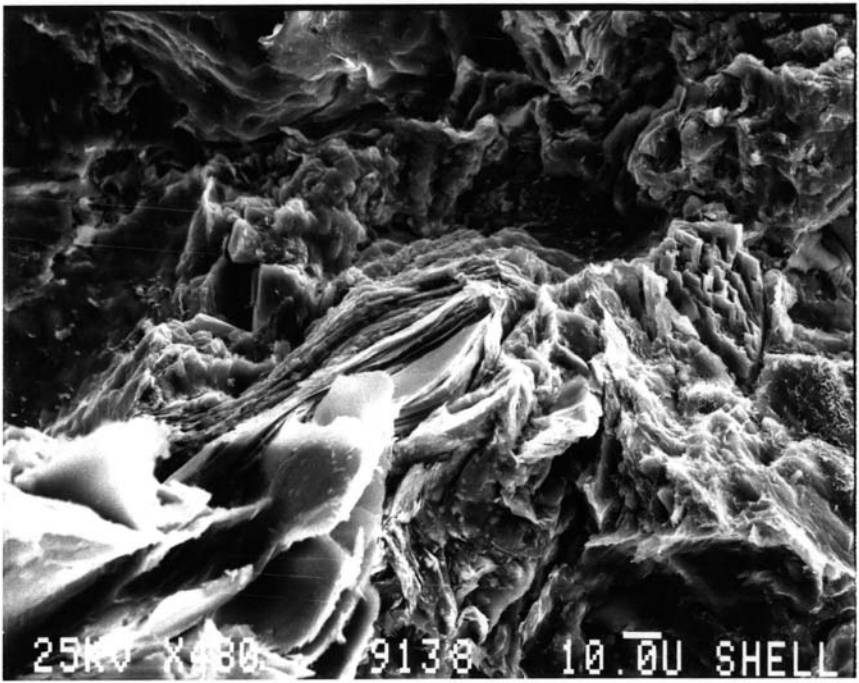
20x



9138'

4

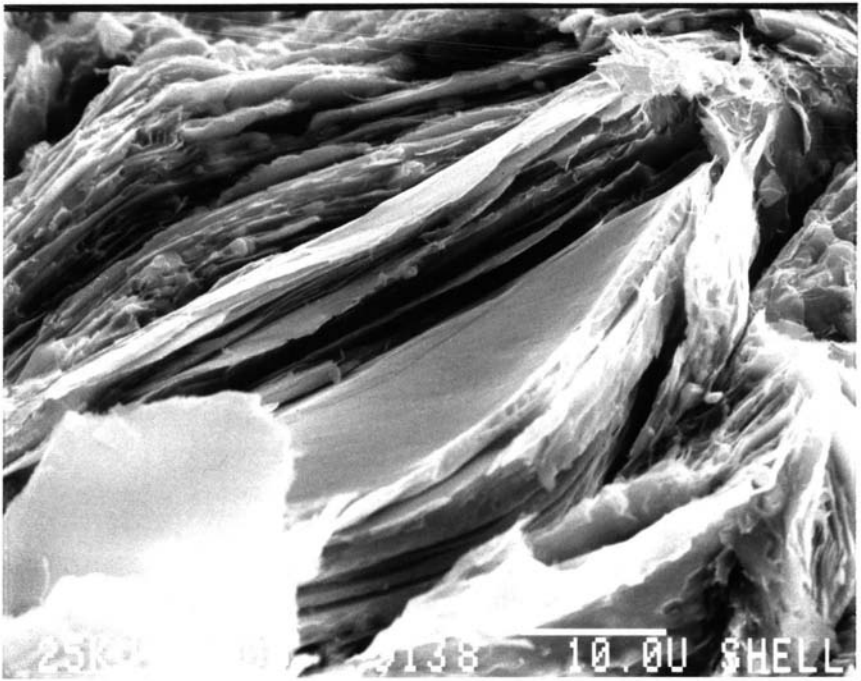
100 X



9138'

4

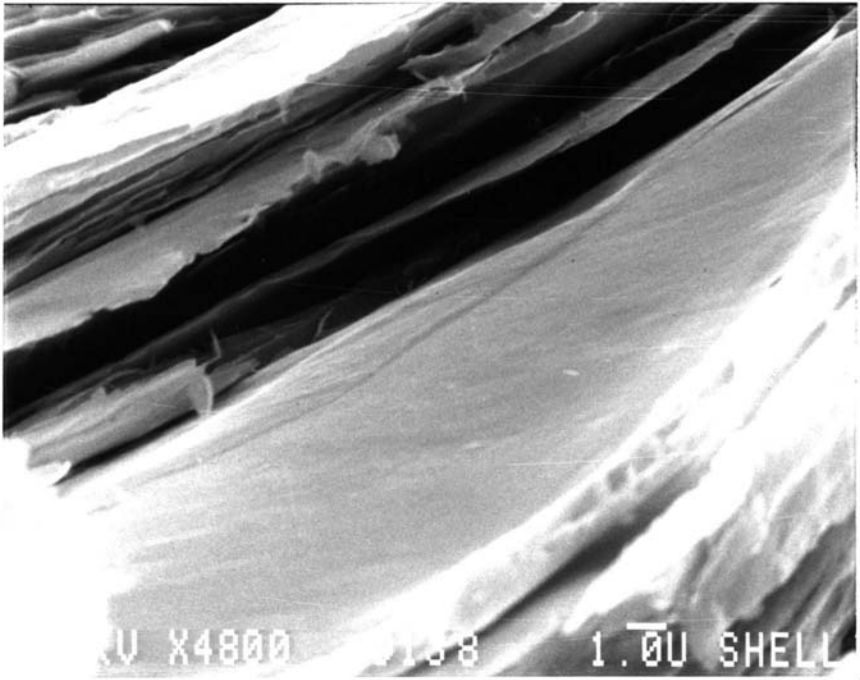
500Y



91381

4

2000 X

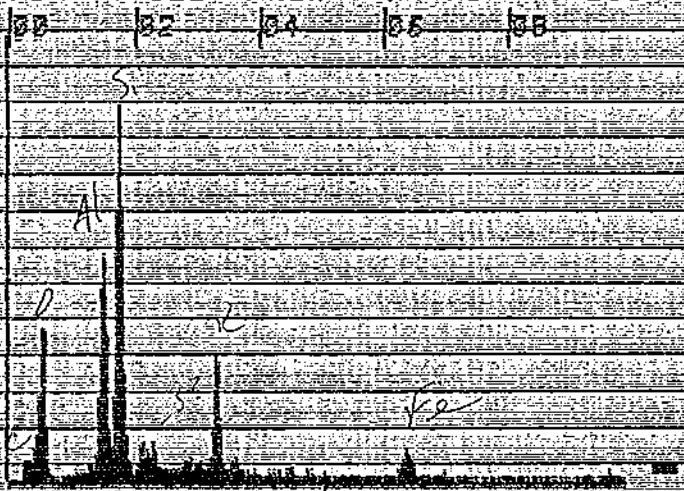


9138'

4

5000X

26-NOV-05 15:31:32 EDAX READY
RATE: 829CPS TIME: 25LSEC
00-20KEV:10EV/CH PRST: OFF
A: B:
FS= 511 MEM: A FS= 200



CURSOR (KEV)=05.000 EDAX

9138
Area 4

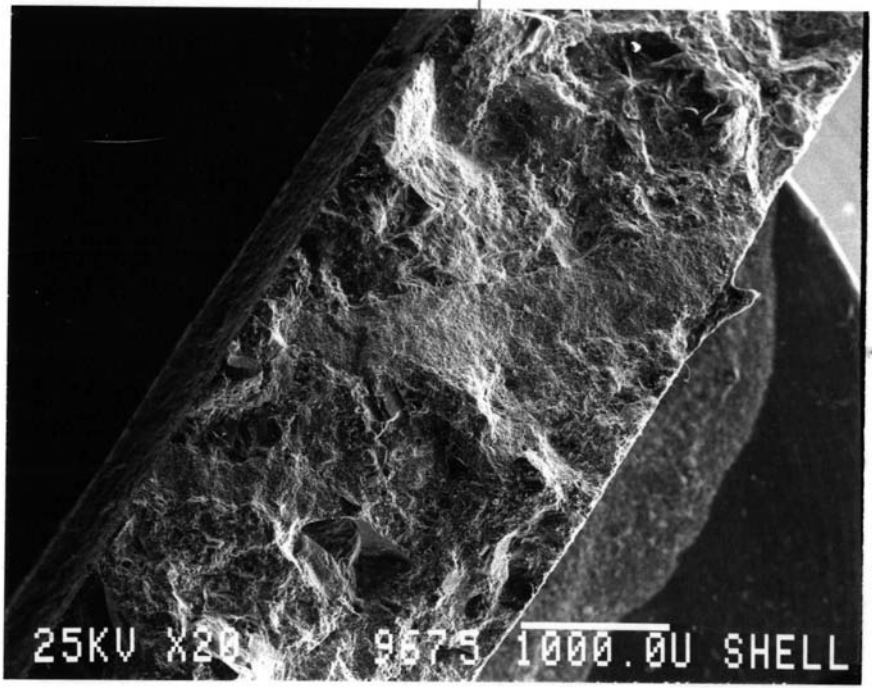
N. Belridge, 73-27.
9138'

Area 1 @ 2000x - Illite

Area 2 @ 5000x - Biotite?

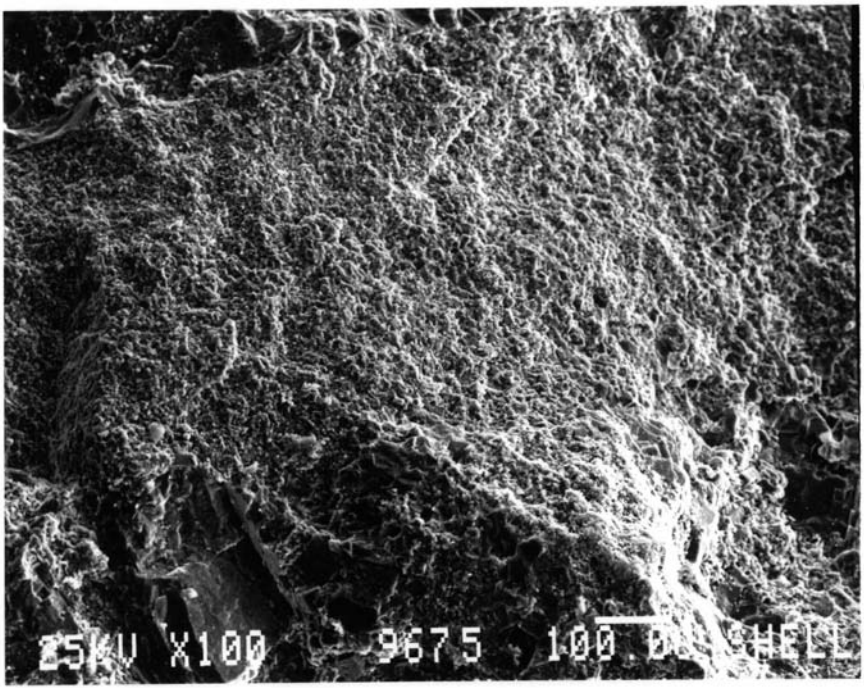
Area 3 @ 2000x - Dolomite?

Area 4 @ 5000x - Biotite?



9675 1

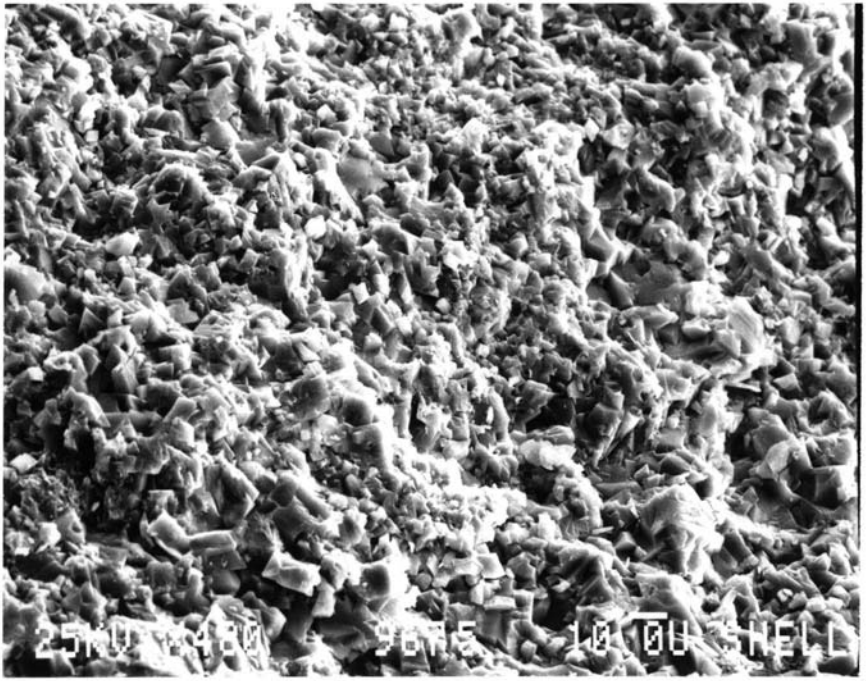
20 X

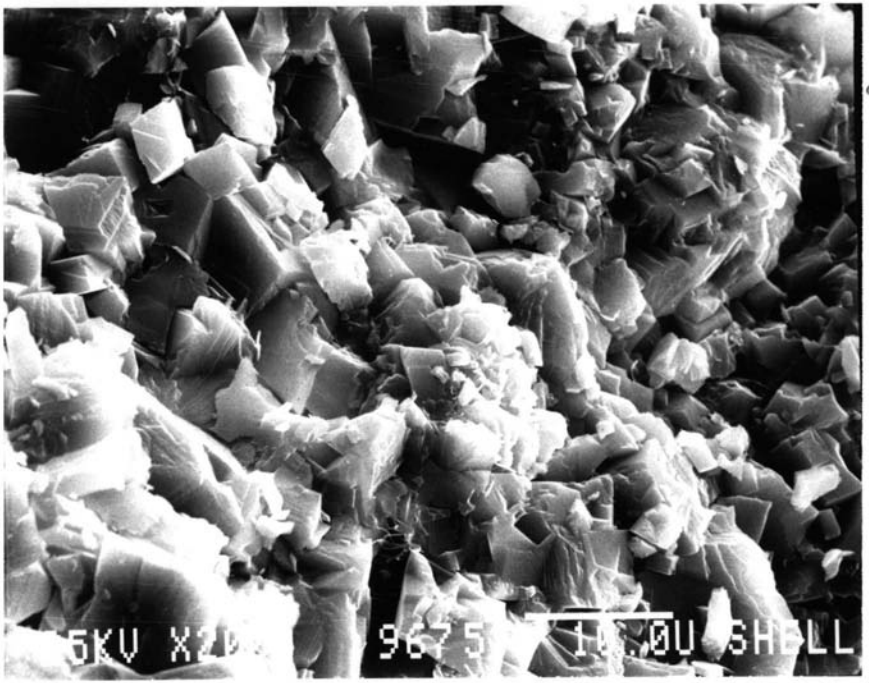


9675'

1

100X

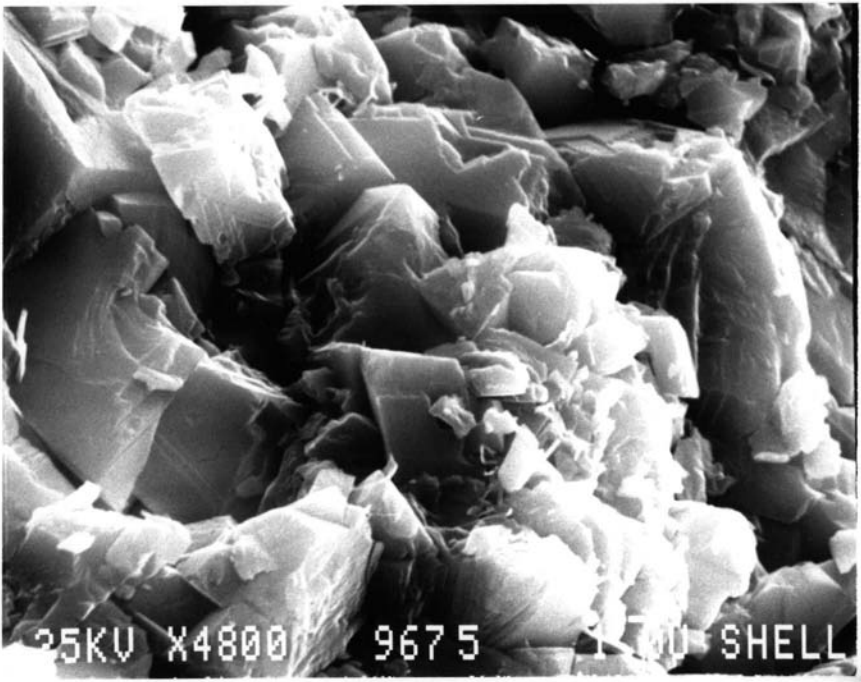

96751
1
500 X



9675'

Y

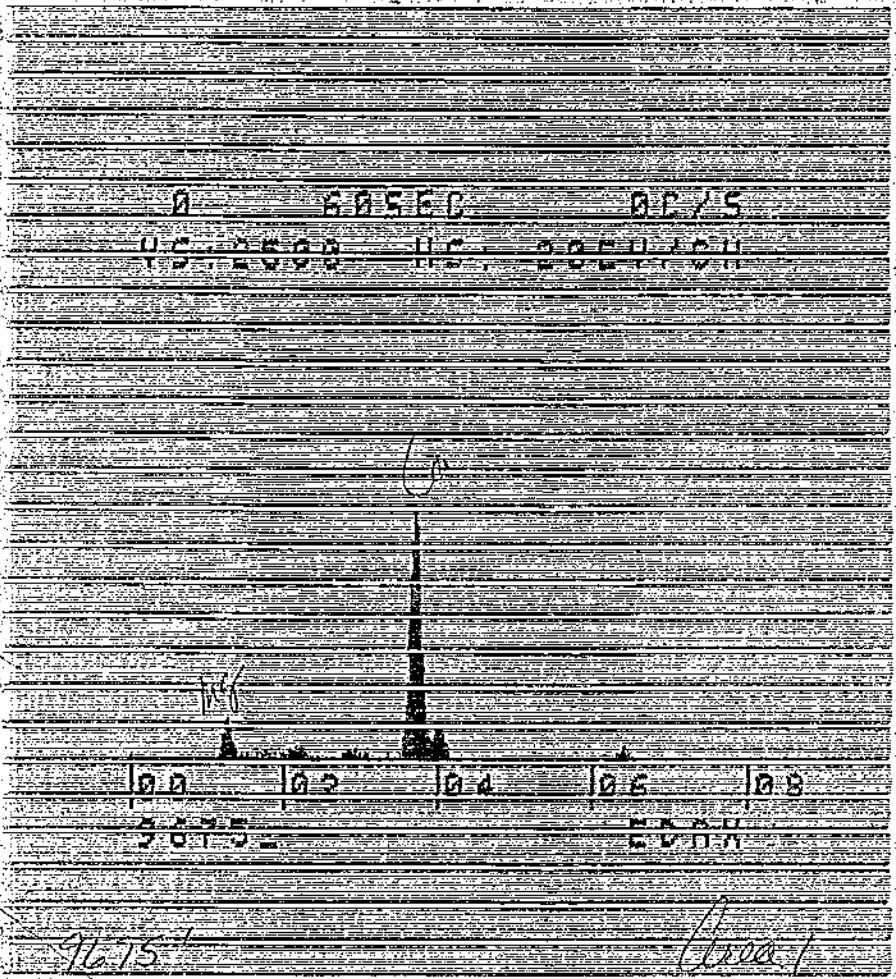
2000 X

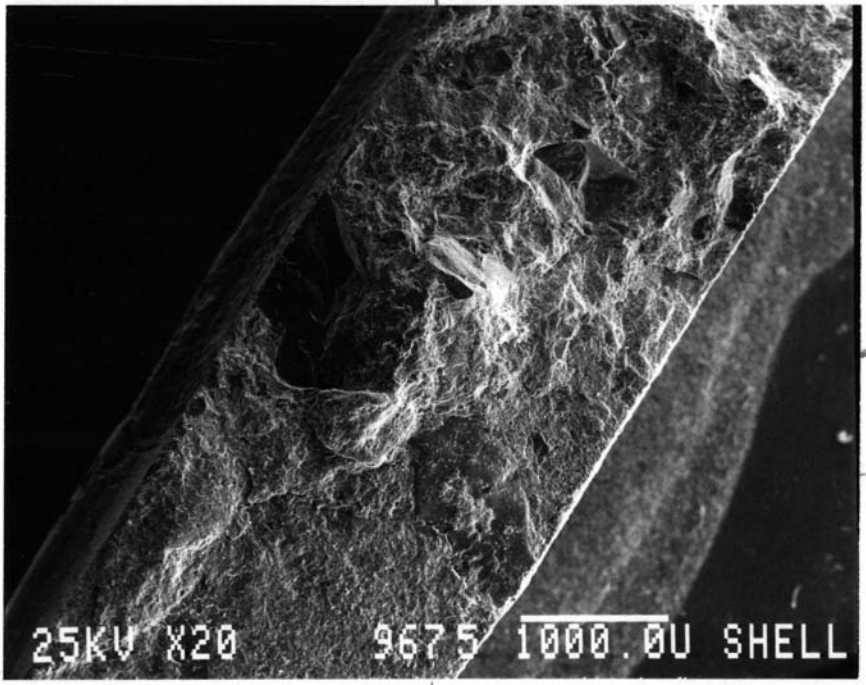


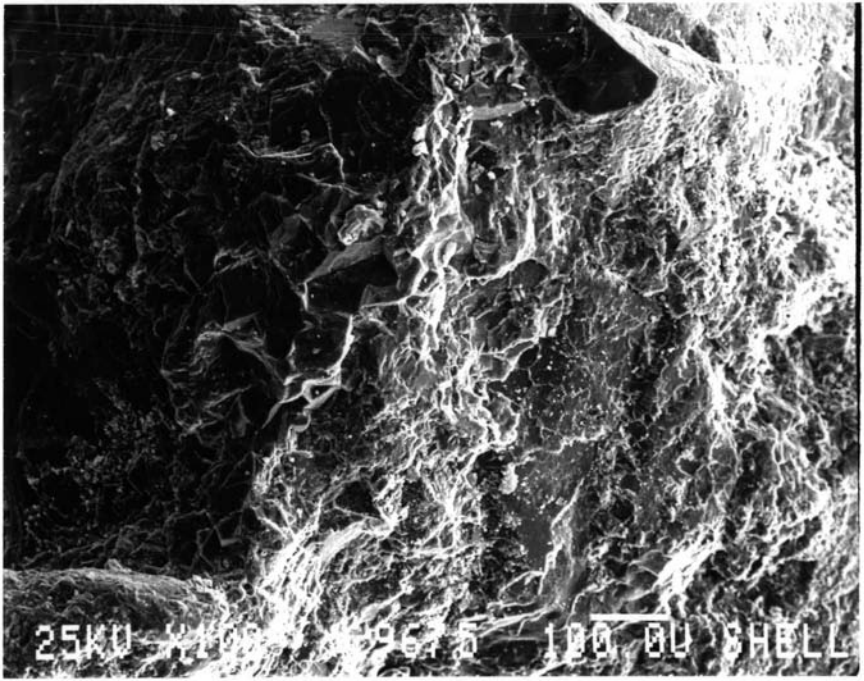
9675

1

5000X



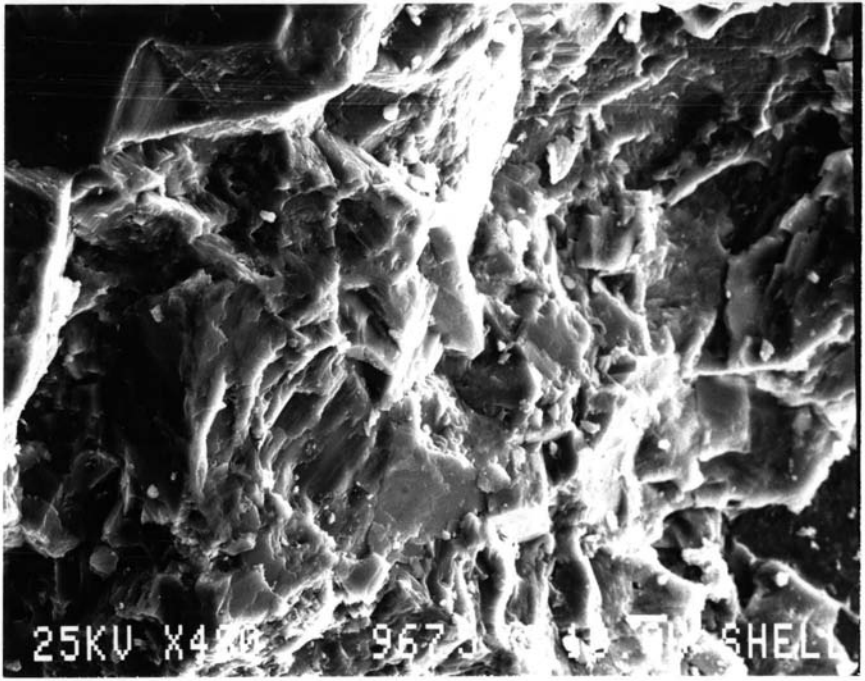

25KV X20
9675
1000.0U SHELL



9675'

2

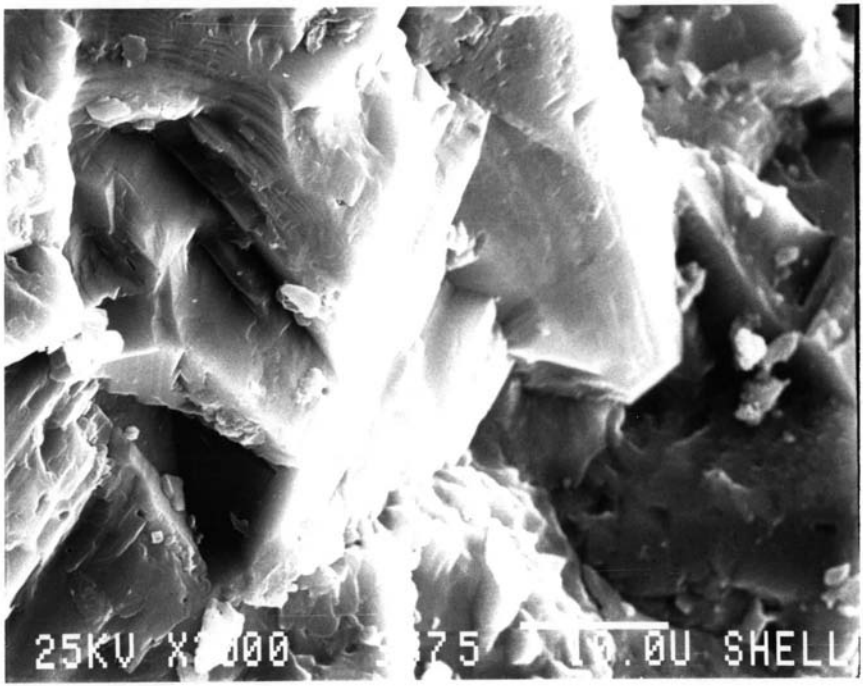
100 X



9675'

2

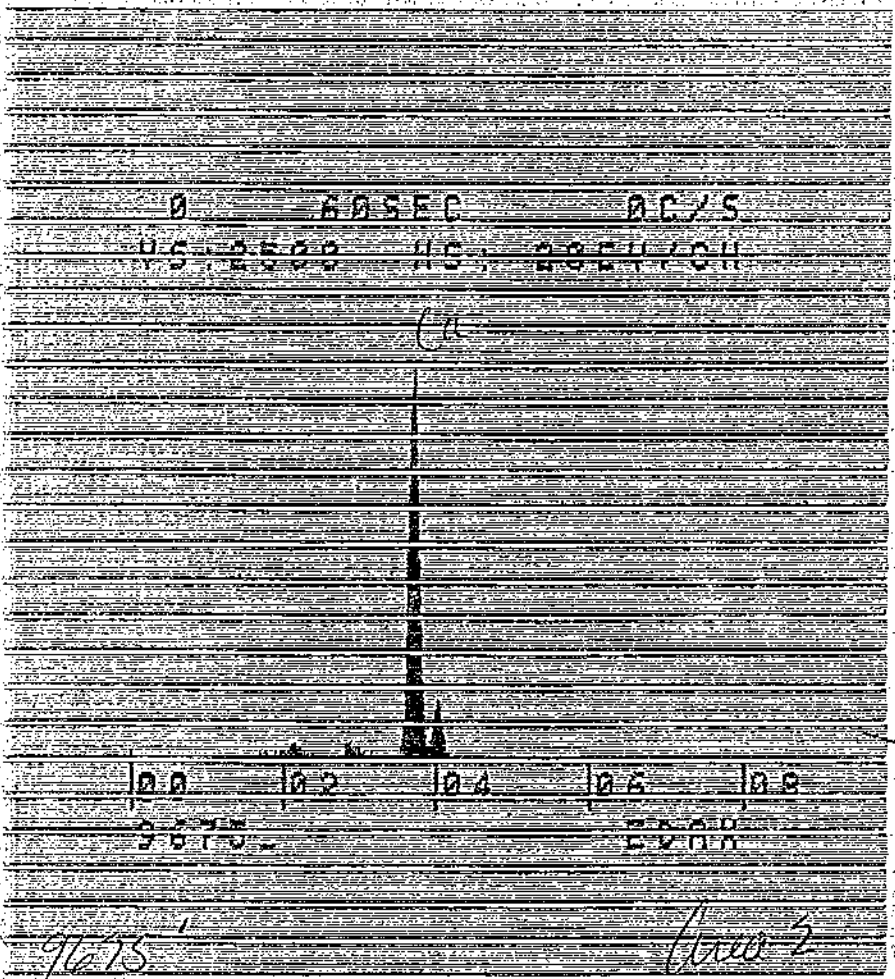
500X



9678'

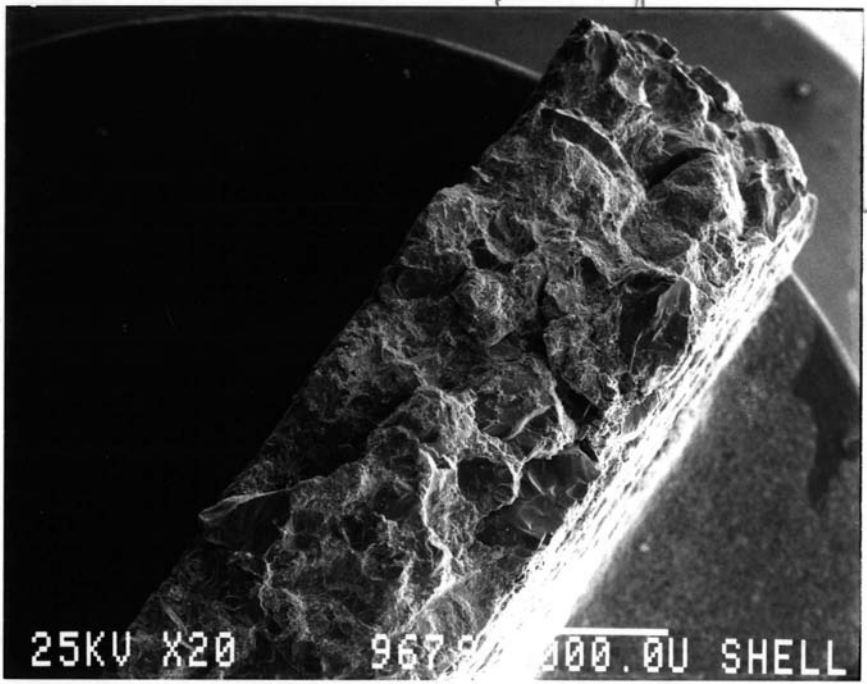
2

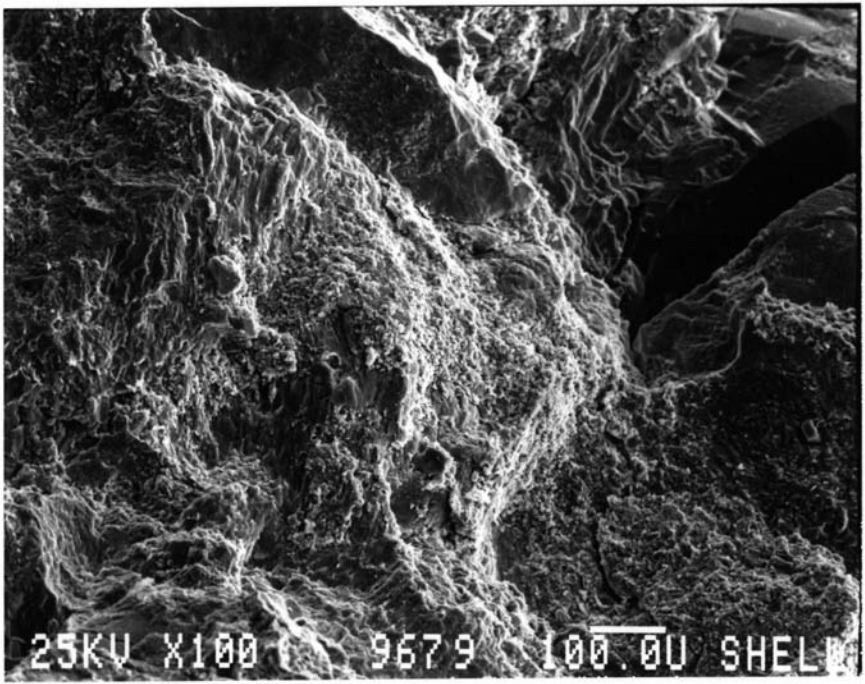
2000X


0
.6 0 5 E C
0 C / S
0 0
0 2
0 4
0 6
0 8

N. Belridge 43-27
96751

Area 1 @ 5000x - Dolomite
Area 2 @ 2000x - Calcite

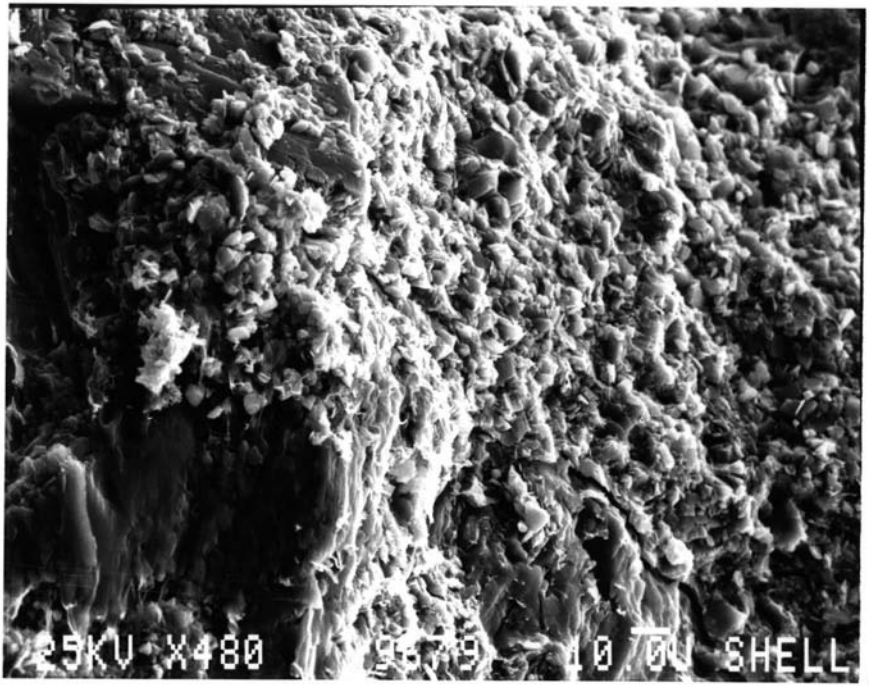

25KV X20
967
000.0U SHELL



96791

1

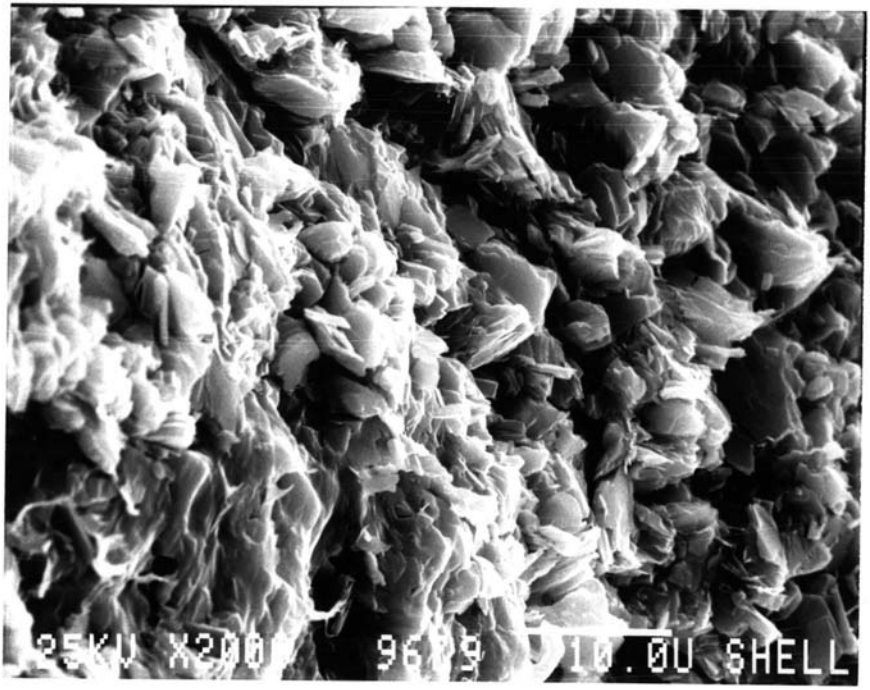
100X



96791

1

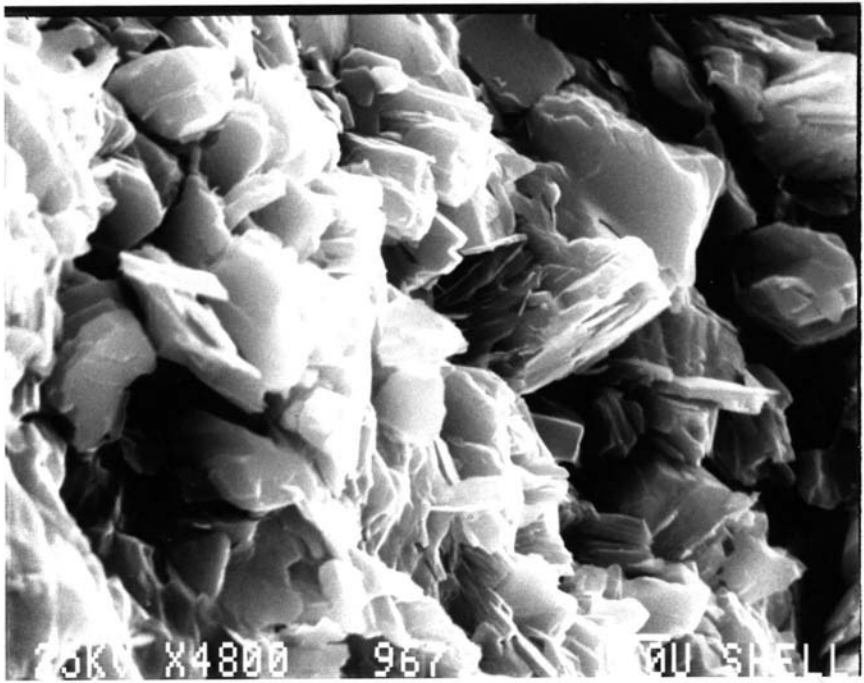
500X



96791

1

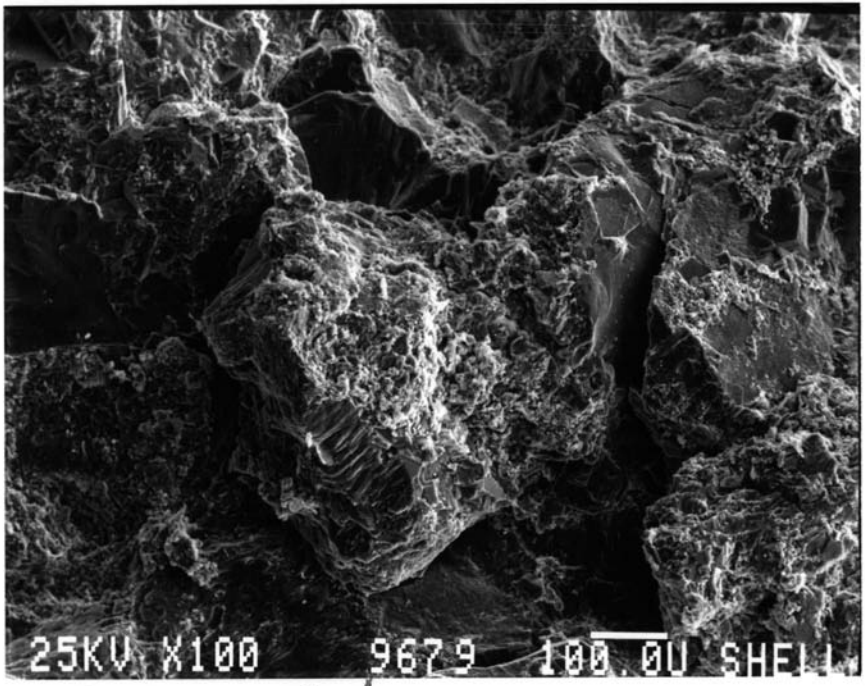
2000X



9679 1

1

5000X

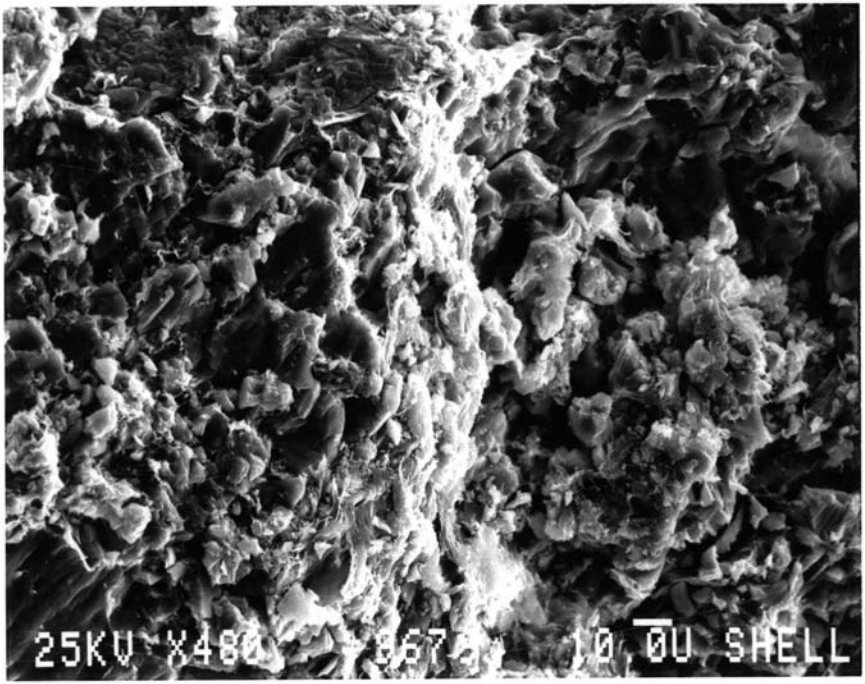


96791

2

100Y

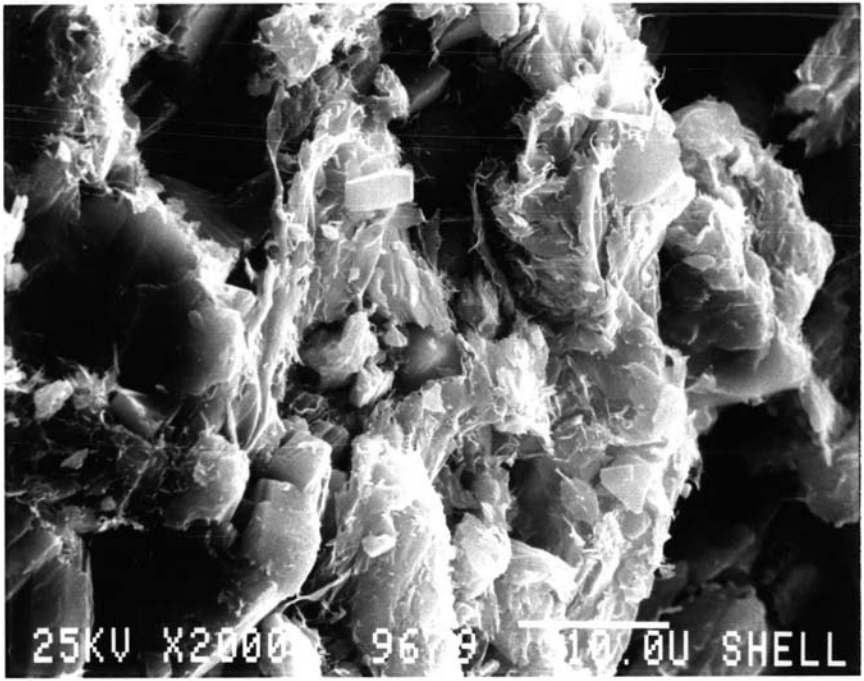
Ca
Feldspar.



96791

2

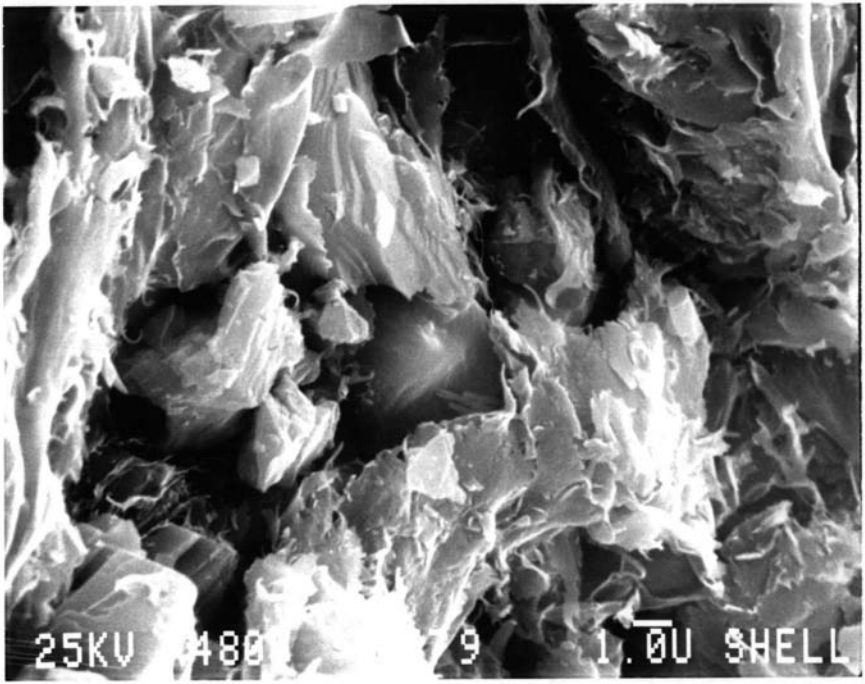
500X



96791

2

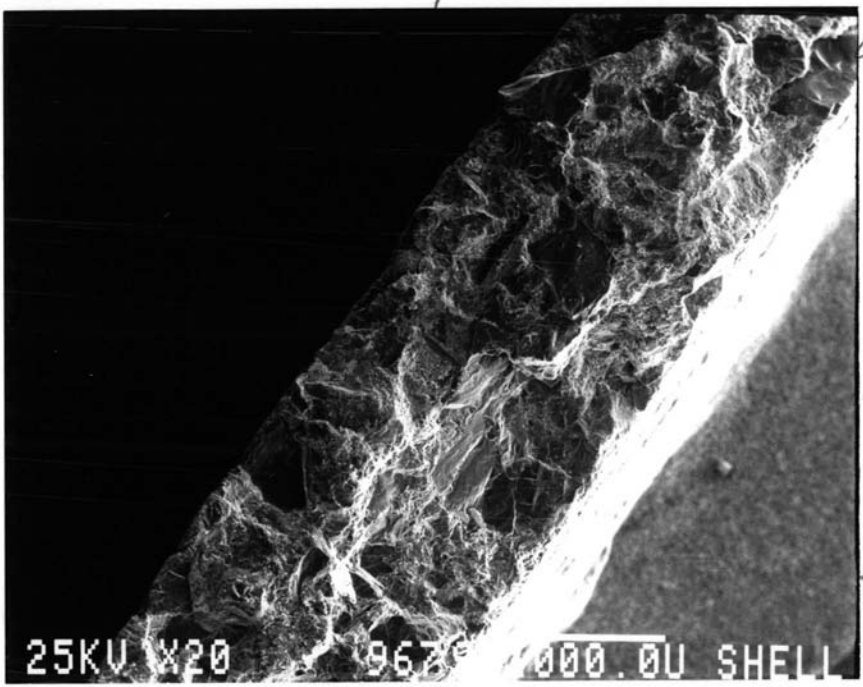
2000X

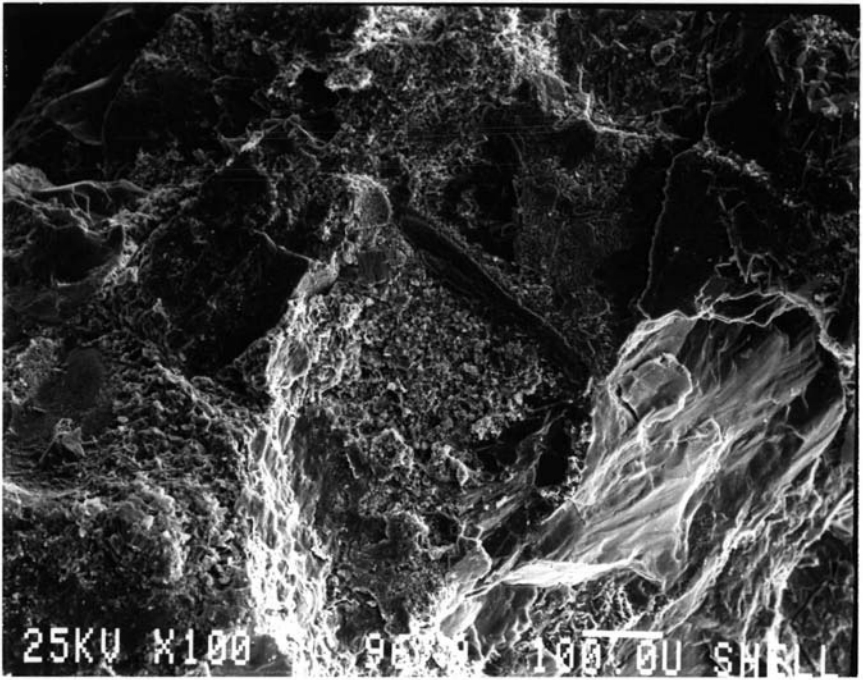


9679!

2

5000X

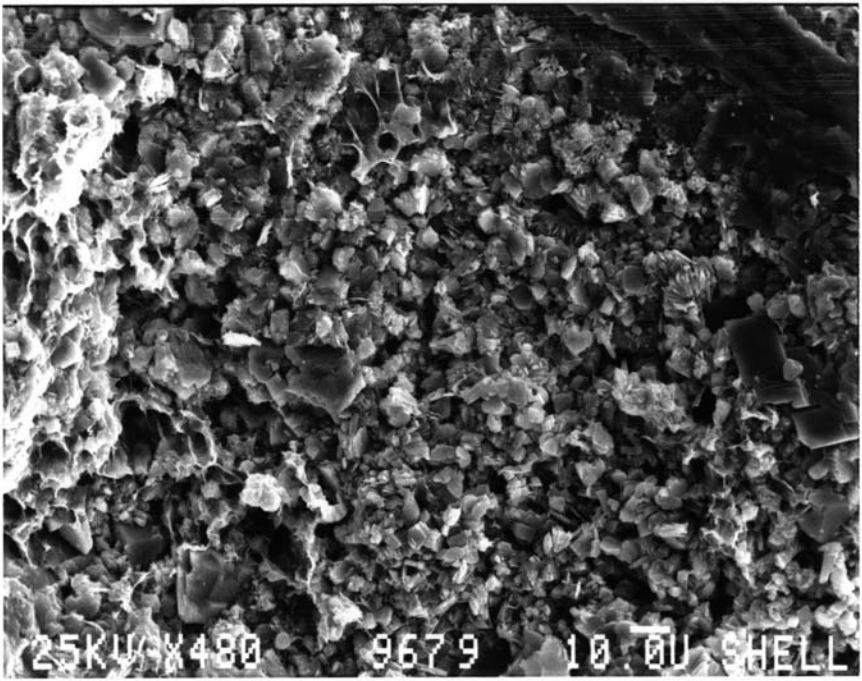

3
9679'
3
K
feldspar
25KV X20
000.0U SHELL
1
20 x



9679'

3

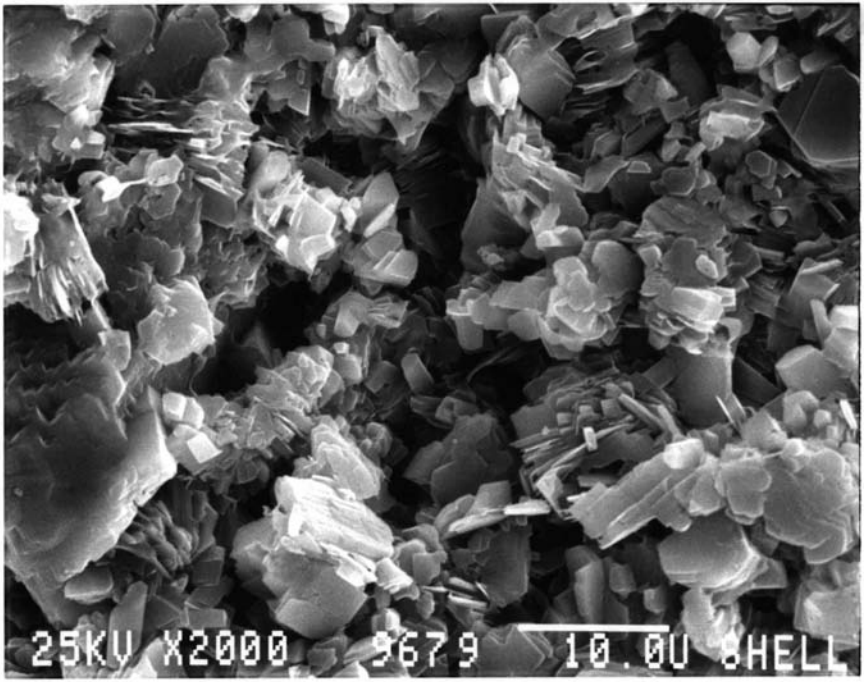
100 X



9679'

3.

500Y

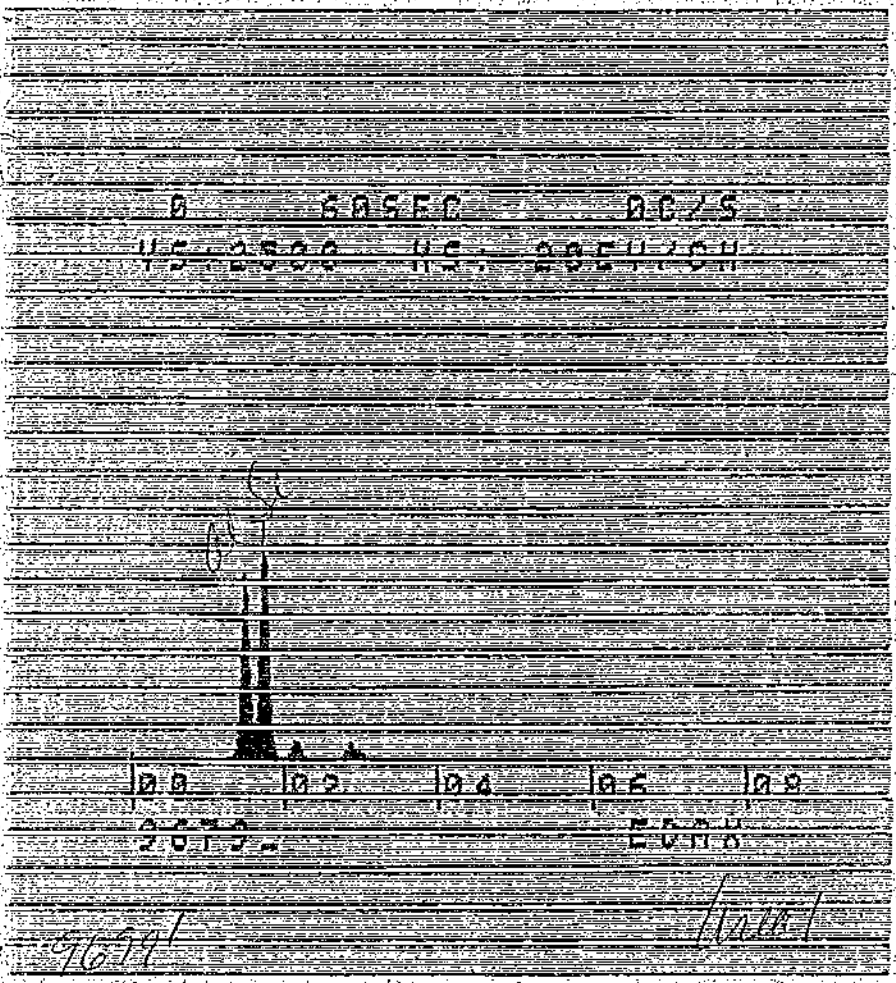


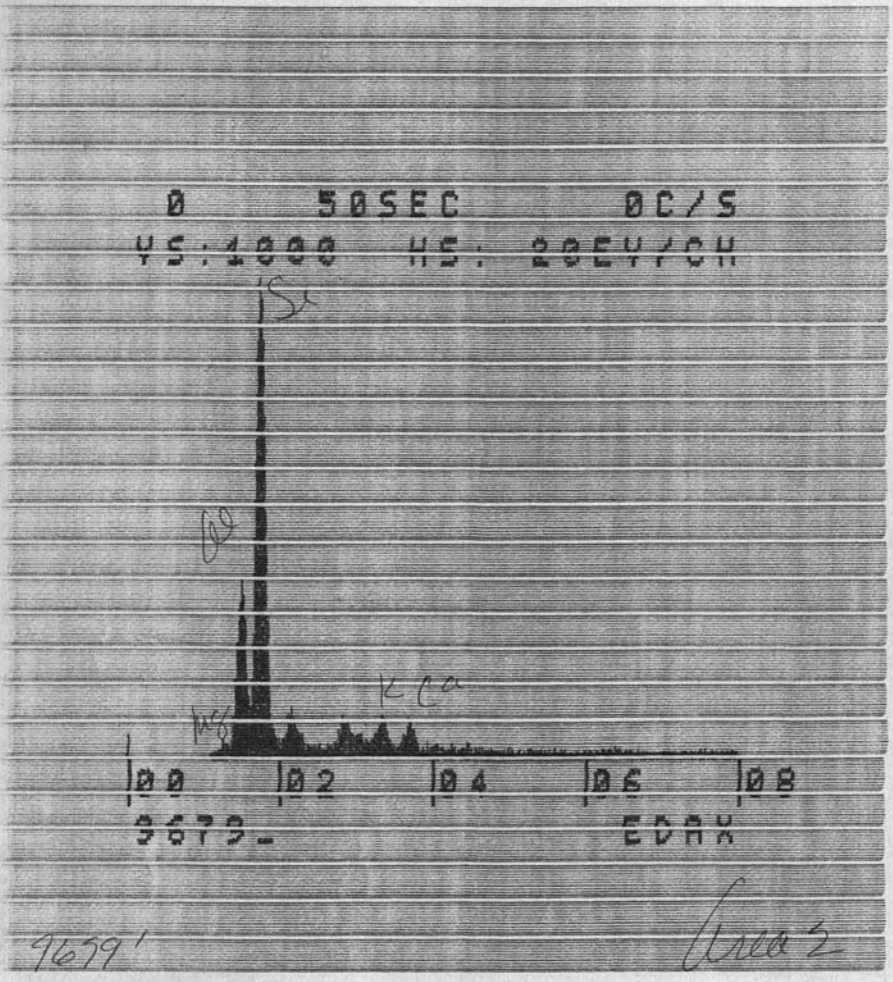
96791

3

2000 x

EDS similar to Area 1



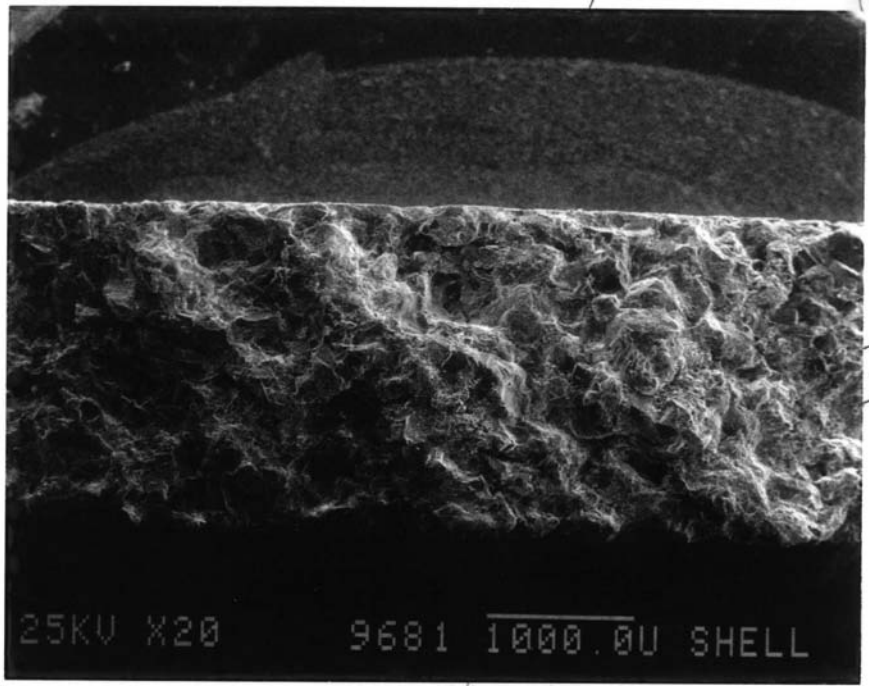

0 50SEC 0C/S
YS:1000 HS: 20EV/CH
Si
Cl
K Ca
Mg
00 02 04 06 08
9679_ EDAX
9659'
Area 2

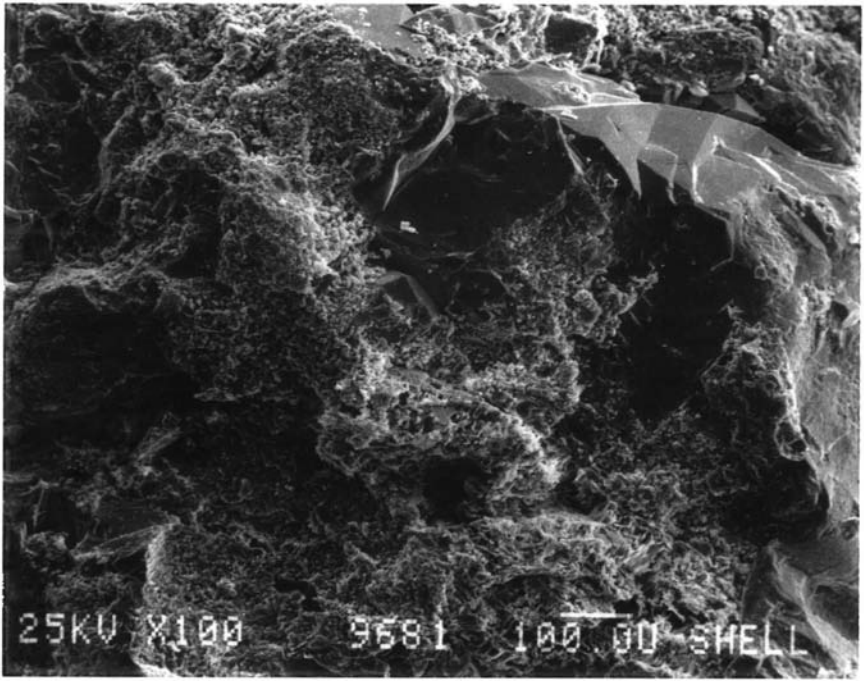
Belridge 43-27
9679'

Area 1 @ 5000x - Kaolinite

Area 2 @ " - Illite / Smectite ?

Area 3 @ 2000x - Kaolinite

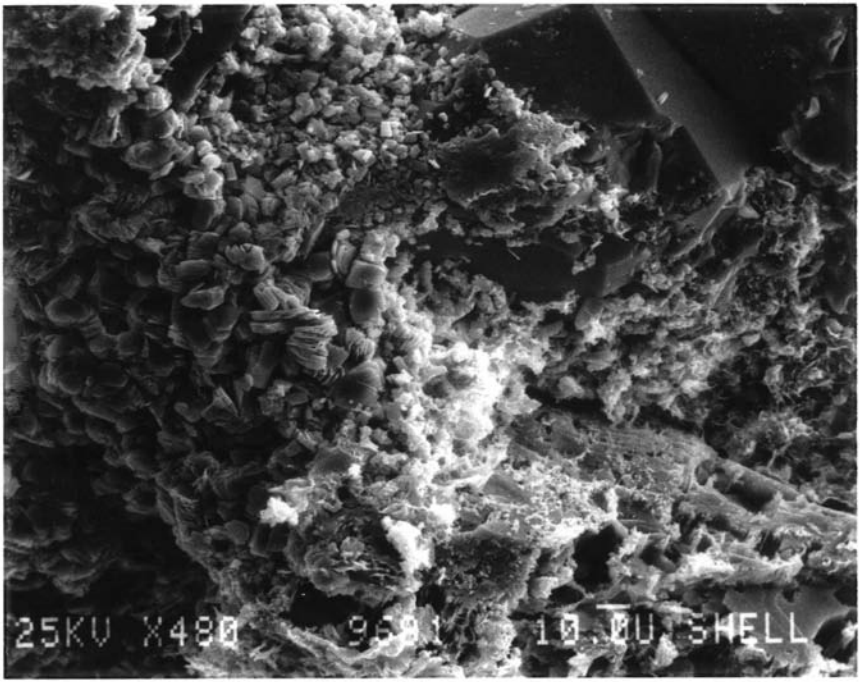

25KV X20
9681 1000.0U SHELL



9681

1

100X



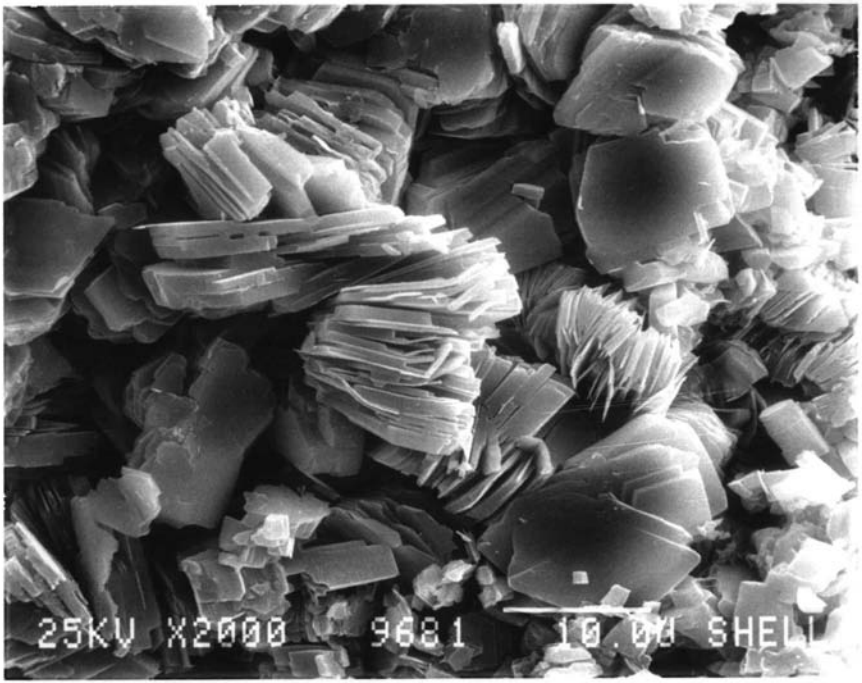
9681'

1

-2

500X

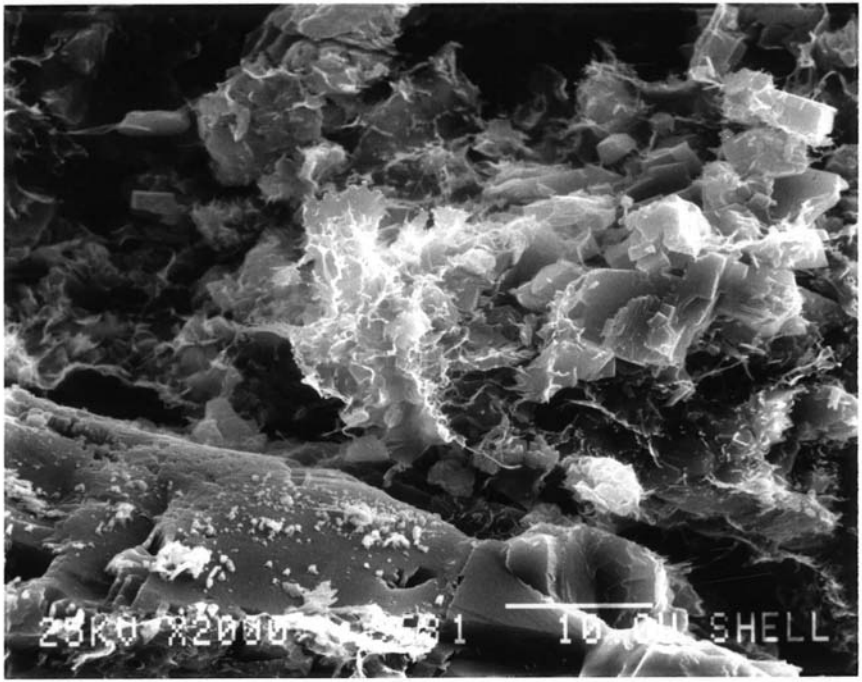
2



9681

1

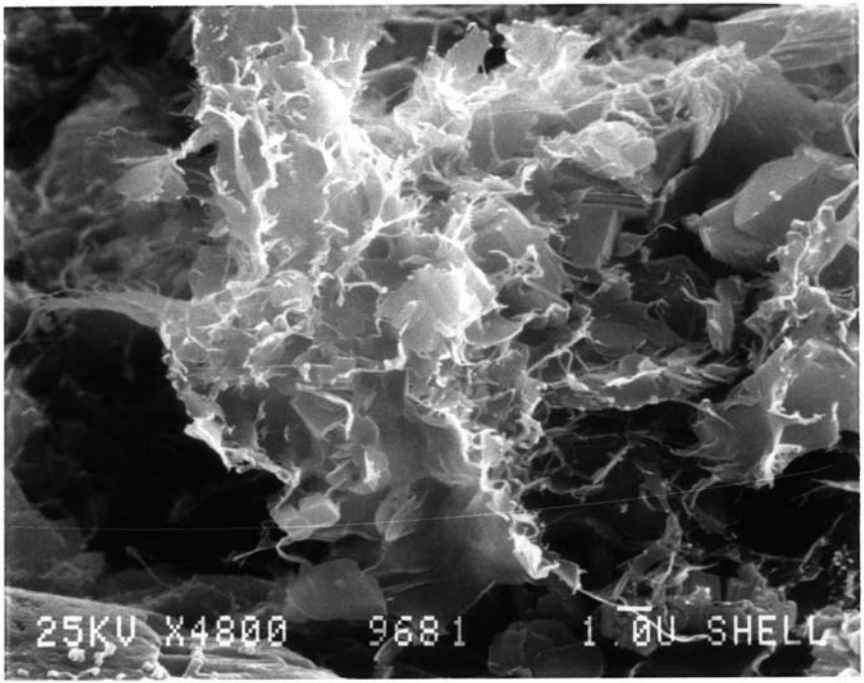
2000X



9681'

2 over

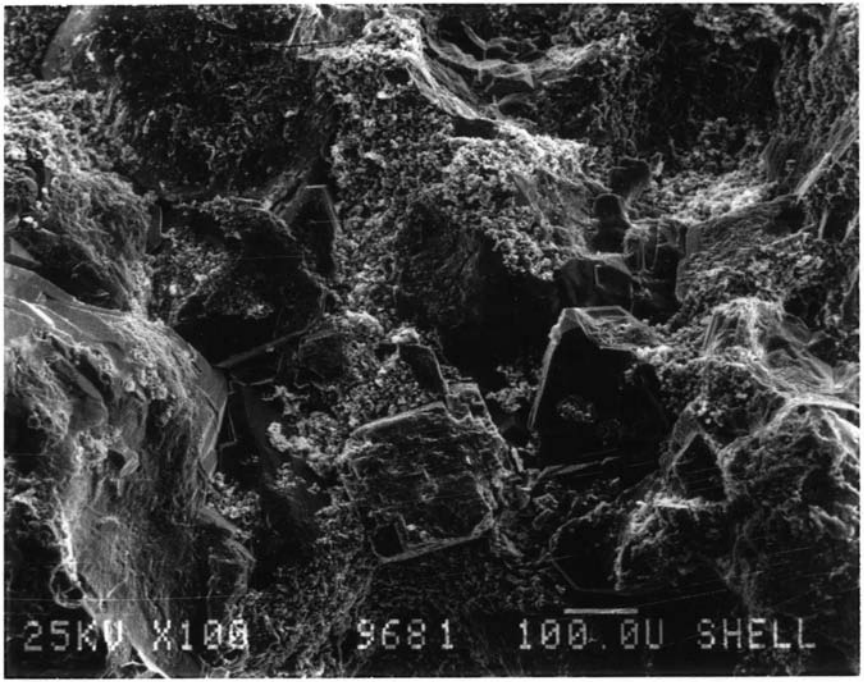
2000X



9681'

2

5000X



9681

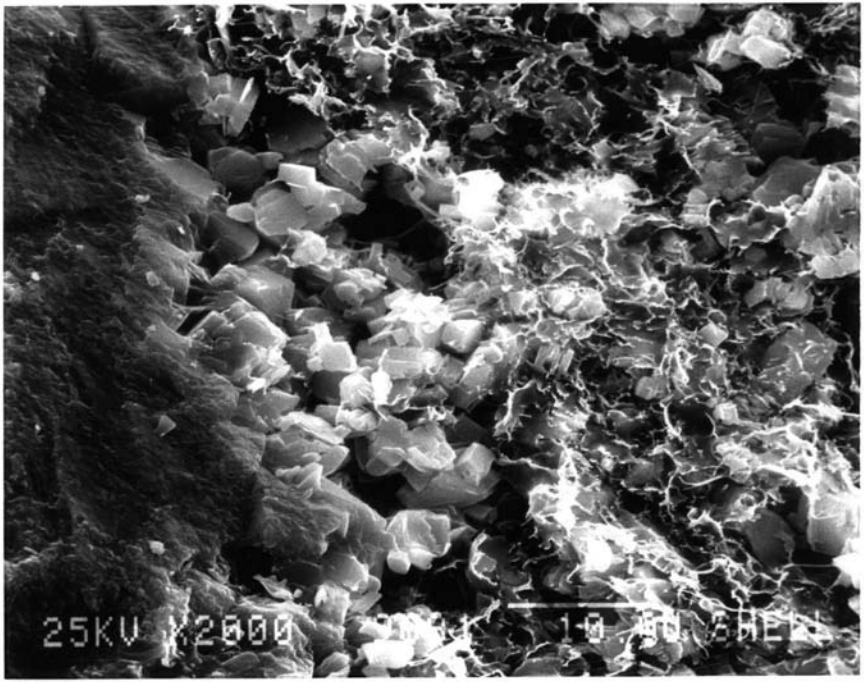
3

100Y

9681'

3

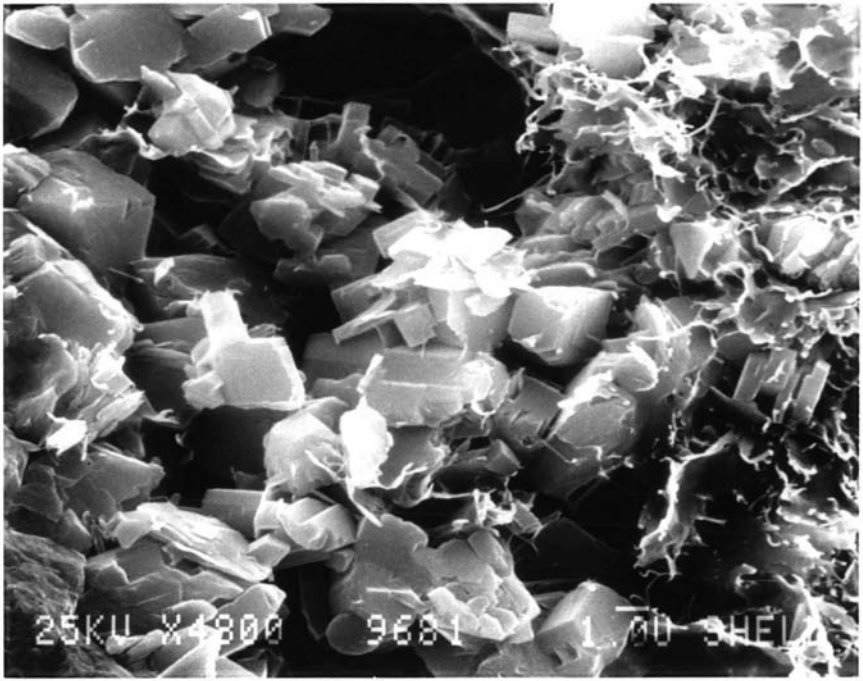
500X



9L81'

3

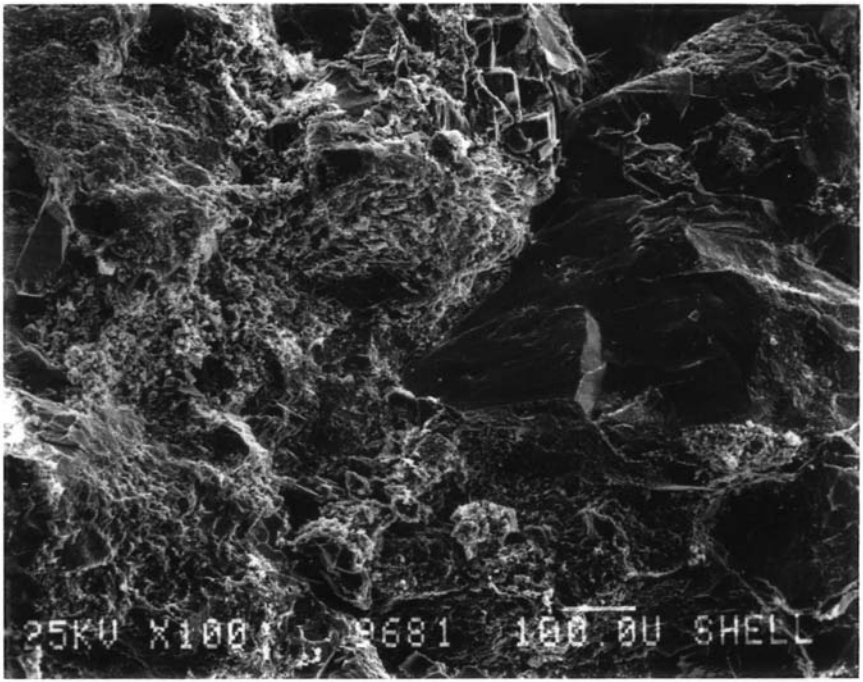
2000X



9681

3

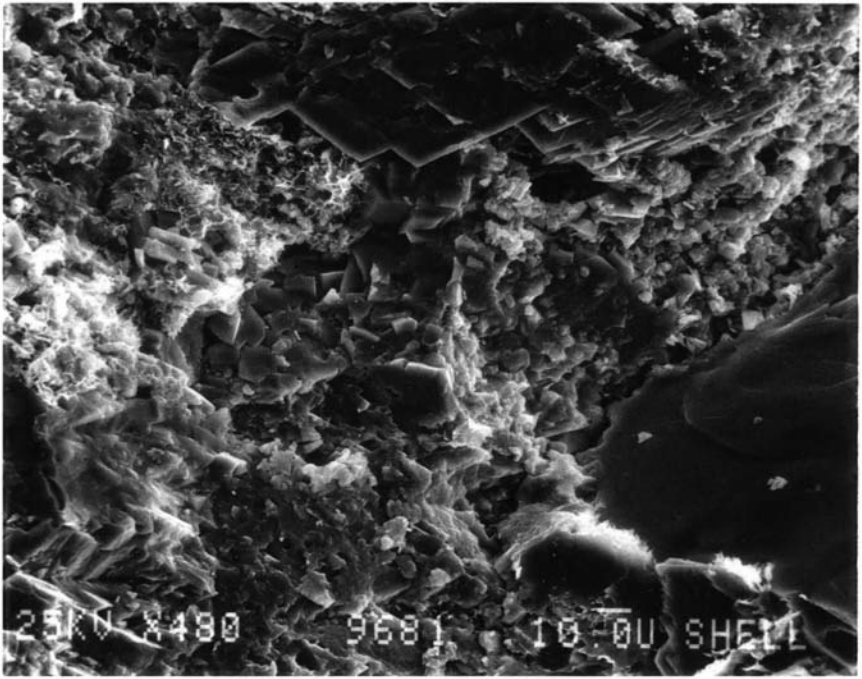
5000X



9681'

4

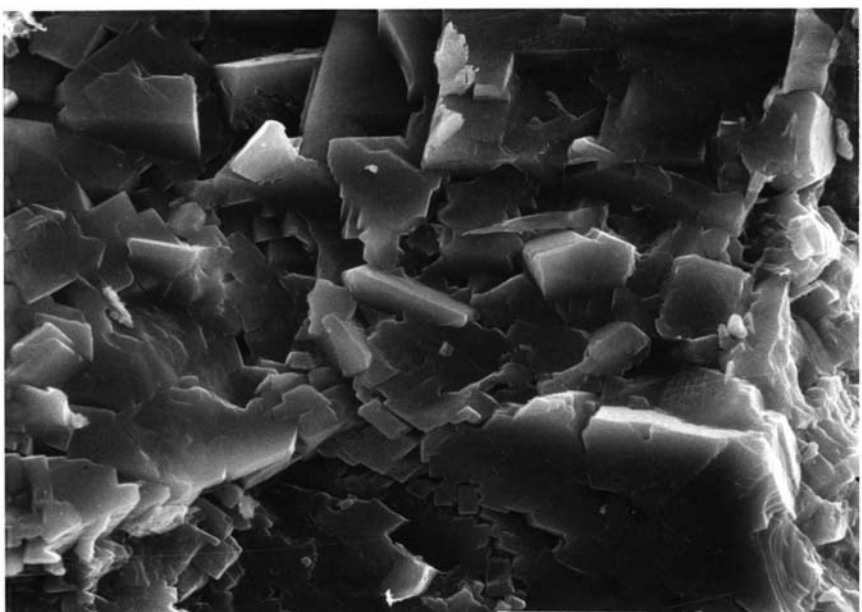
100X



9681'

4

500X



9681

4

2000X

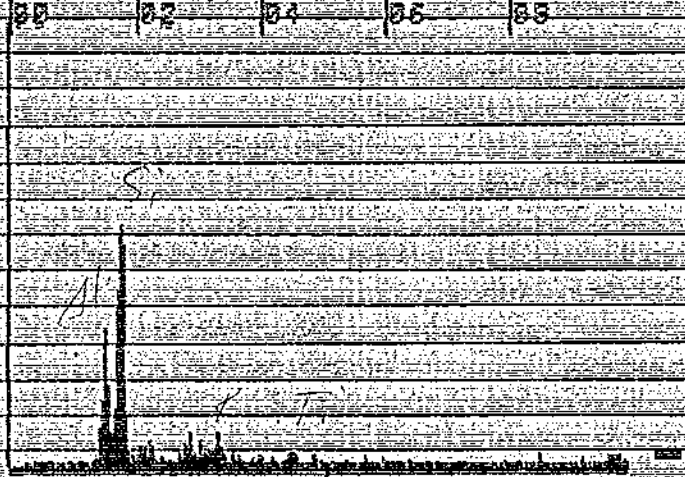
26-NOV-85 14:43:39 EDAX READY
RATE: 41CPS TIME: 15LSEC
50-20KEV 10EV/CH PRST: OFF
A: B:
FS= 200 MEM: A FS= 200
00 02 04 06 08



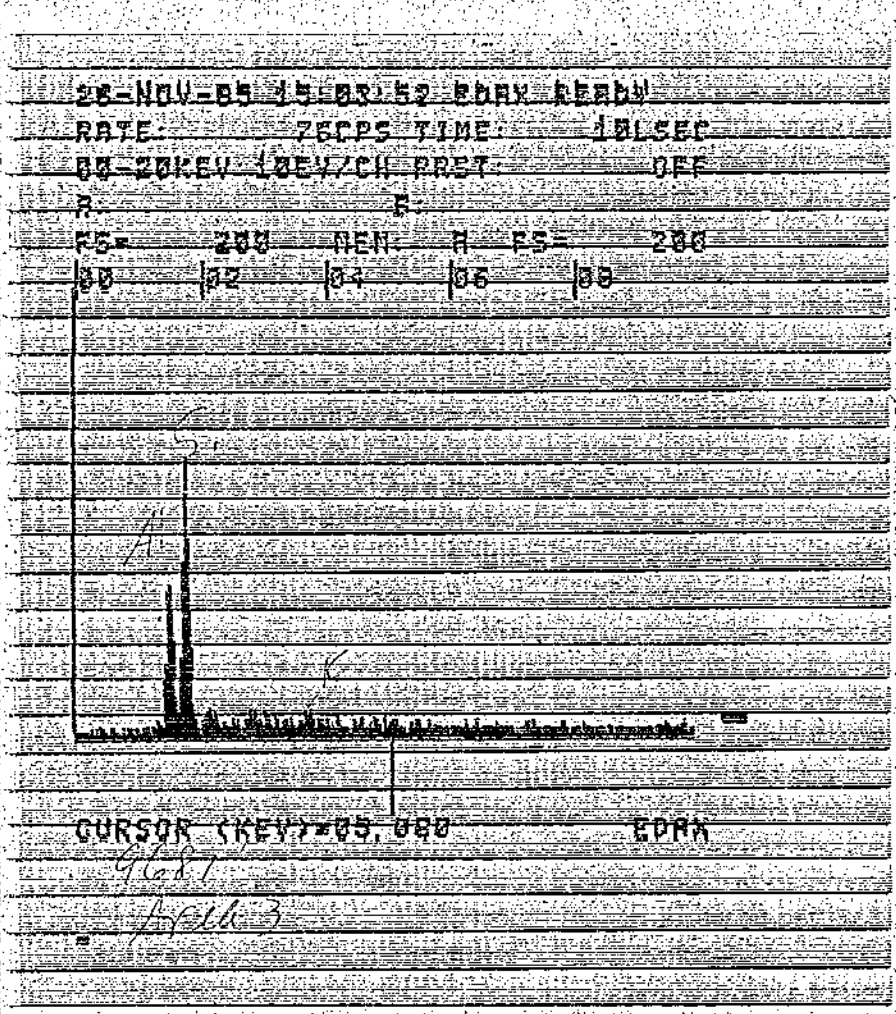
CURSOR (KEV)=05.000 EDAX

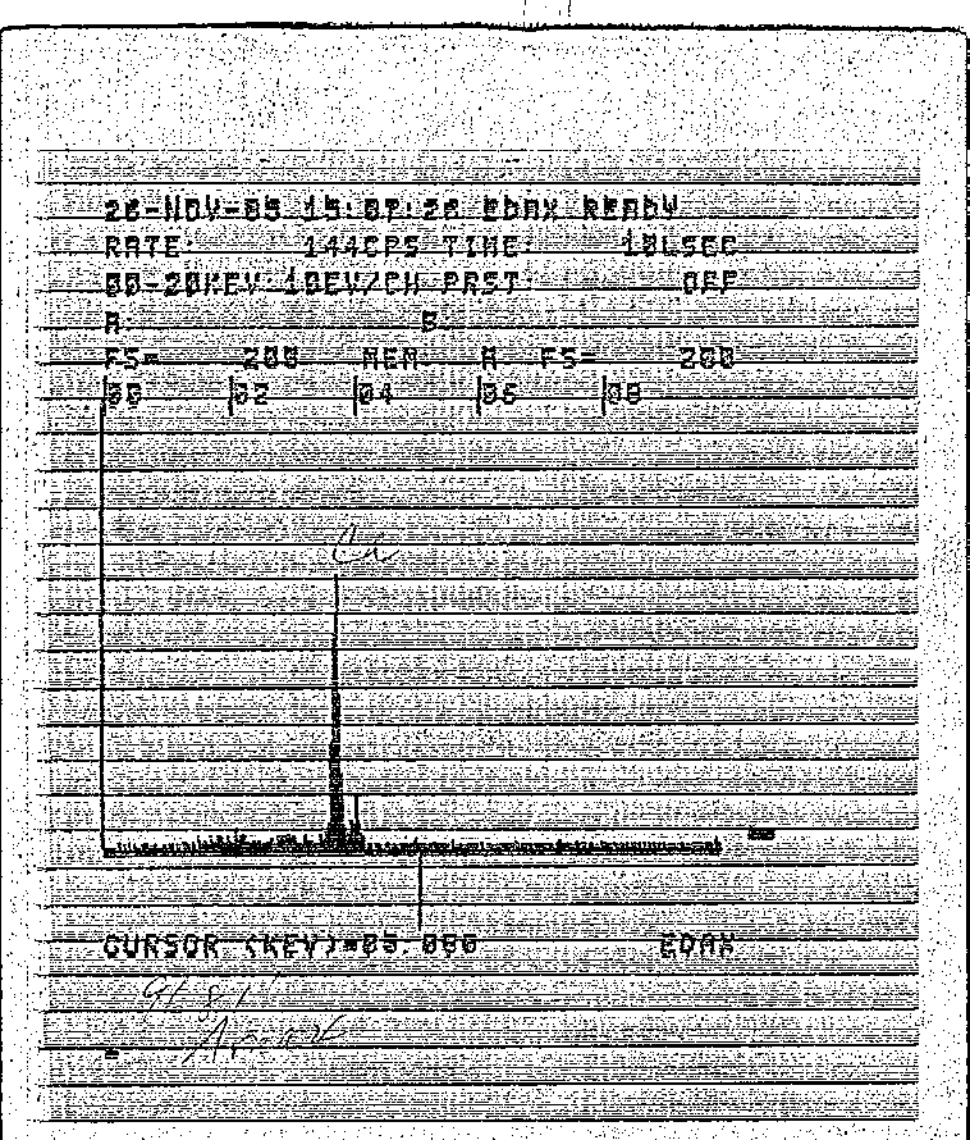
9681
Area 1

26-NOV-85 14:47:24 PEAK IDENT
RATE 10&CPS TIME 10LSEC
00-20KEV 10EV/CH PRST OFF
A: B:
FS= 200 MEM A FS= 200



CURSOR (KEV)=05.000 EDAX


28-NOV-85 15:03:52 EDAX READY
RATE: 76CPS TIME: 101SEC
00-20KEV 10EV/CH PRST: OFF
A: B:
FS= 200 DEN: A FS= 200
00 02 04 06 08
CURSOR (KEV)=05.060 EDAX


26-NOV-85 15:07:26 EDAX READY
RATE: 1446CPS TIME: 181SEC
00-20KEV 10EV/CH PRST OFF
A: B:
FS= 200 MEM A FS= 200
00 02 04 06 08
CURSOR (KEV)=05.050 EDAX

N. Belridge
4/3-27

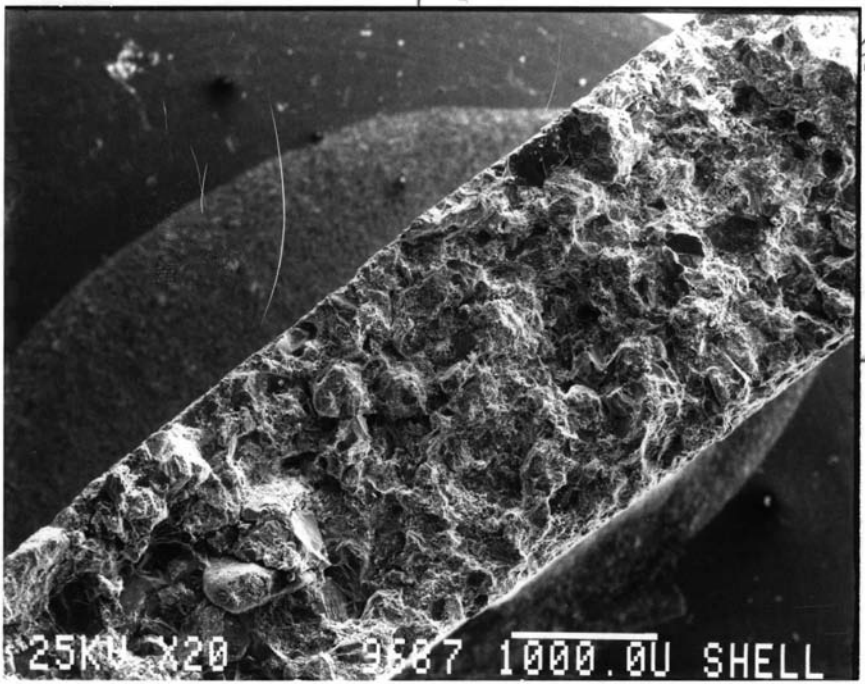
9681

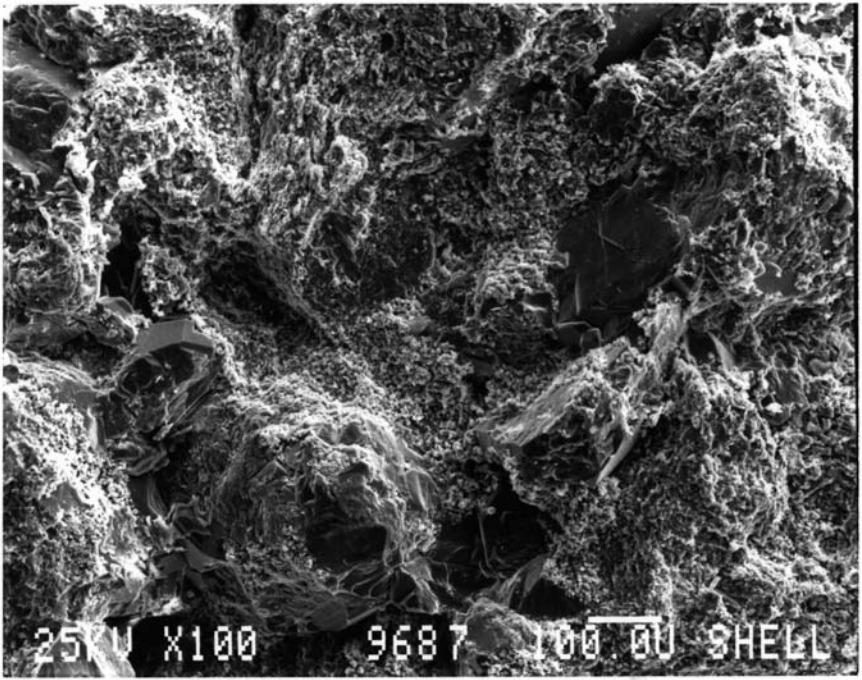
Area 1 @ 2000 x-
Kaolinite

2 @ 5000x-
Illite

3 @ 5000x-
Feldspar/Kaolinite

4 @ 2000x- Calcite

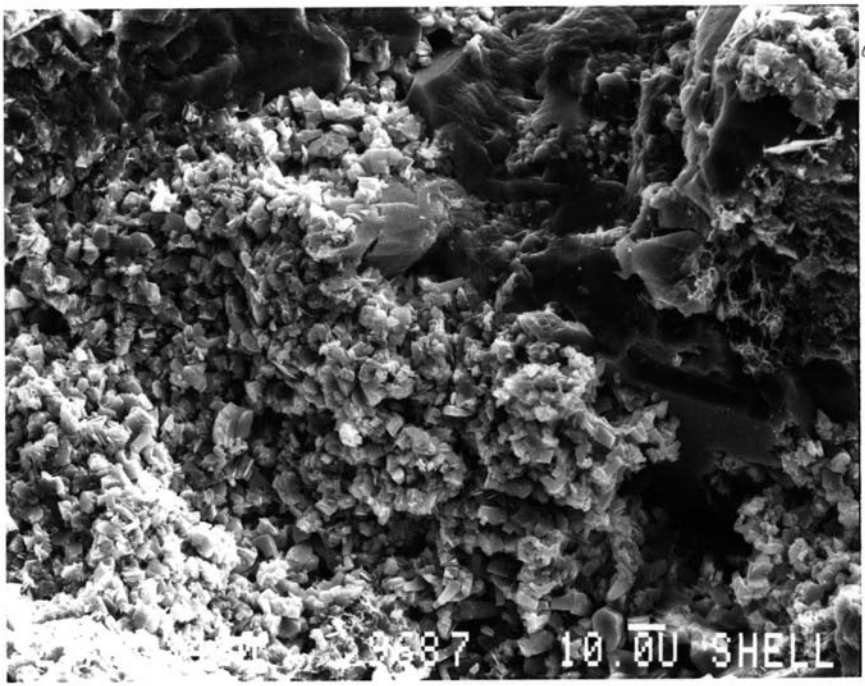

25KV X20 9687 1000.0U SHELL



9687.91

1

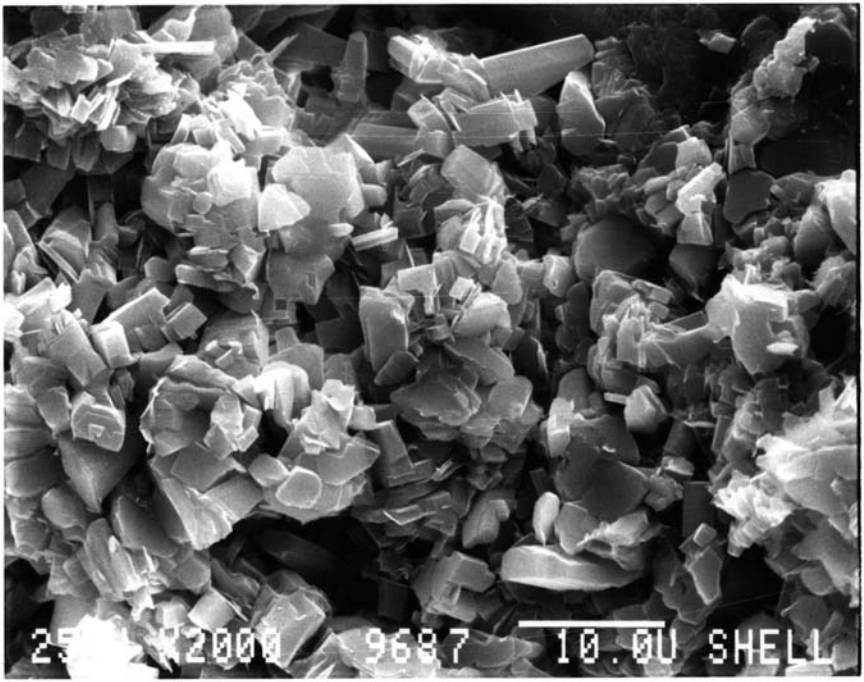
100 X



9687.91

1

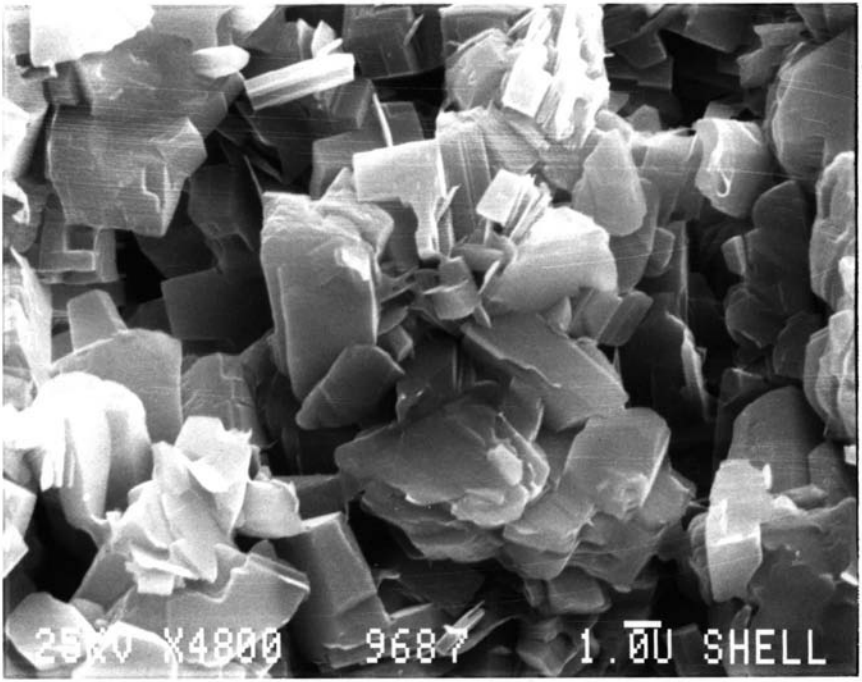
500 X



9687.9'

1

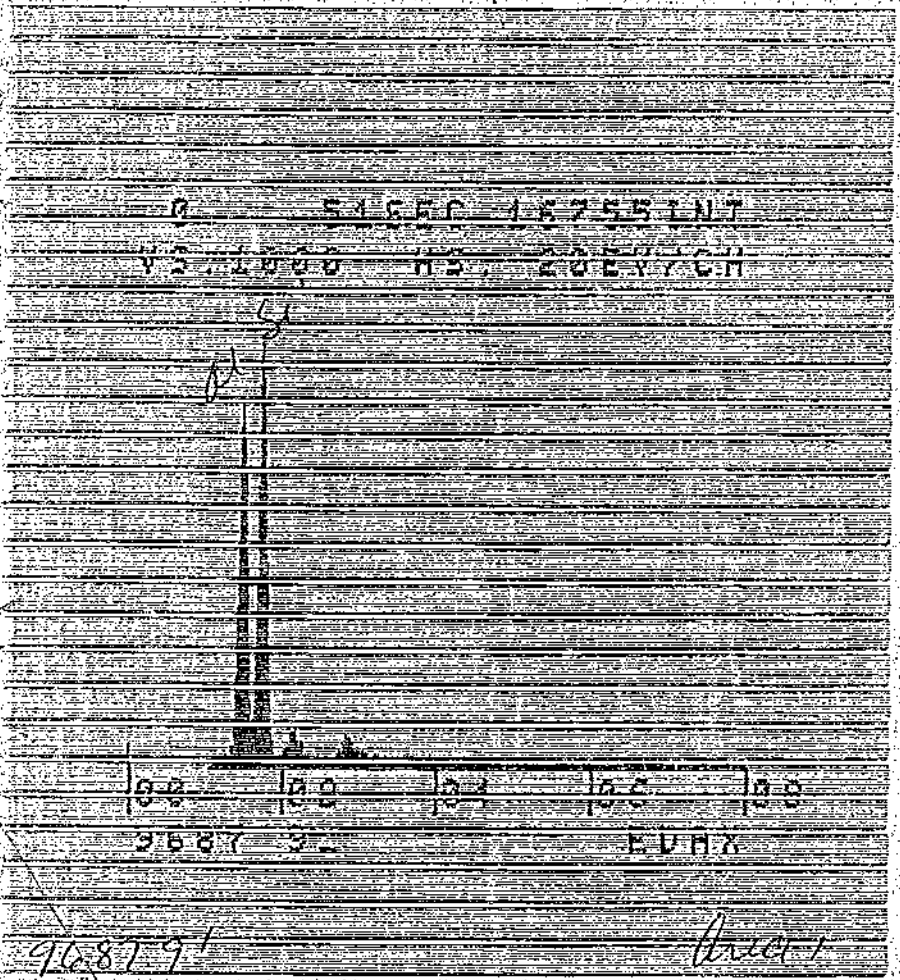
2000 X

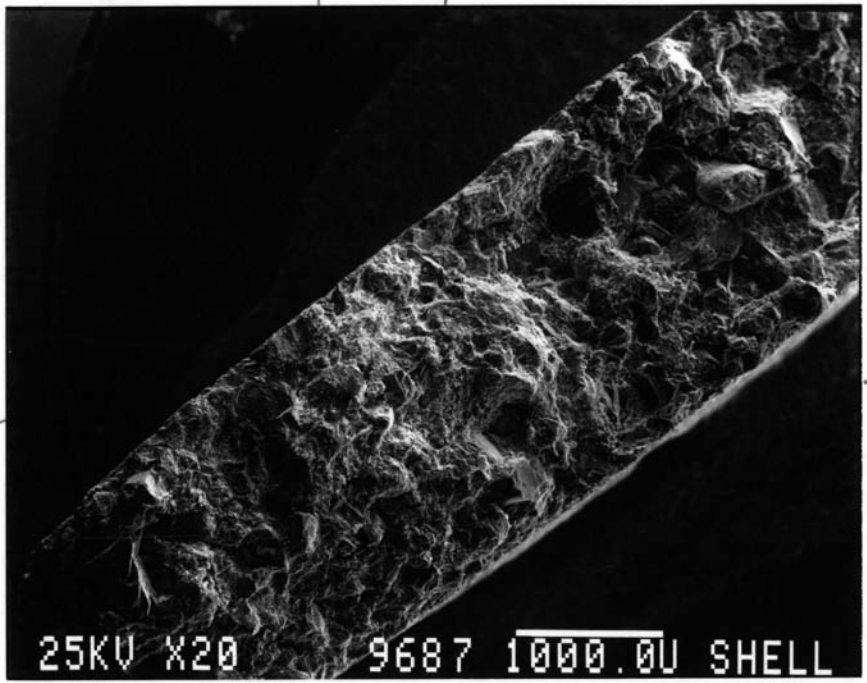


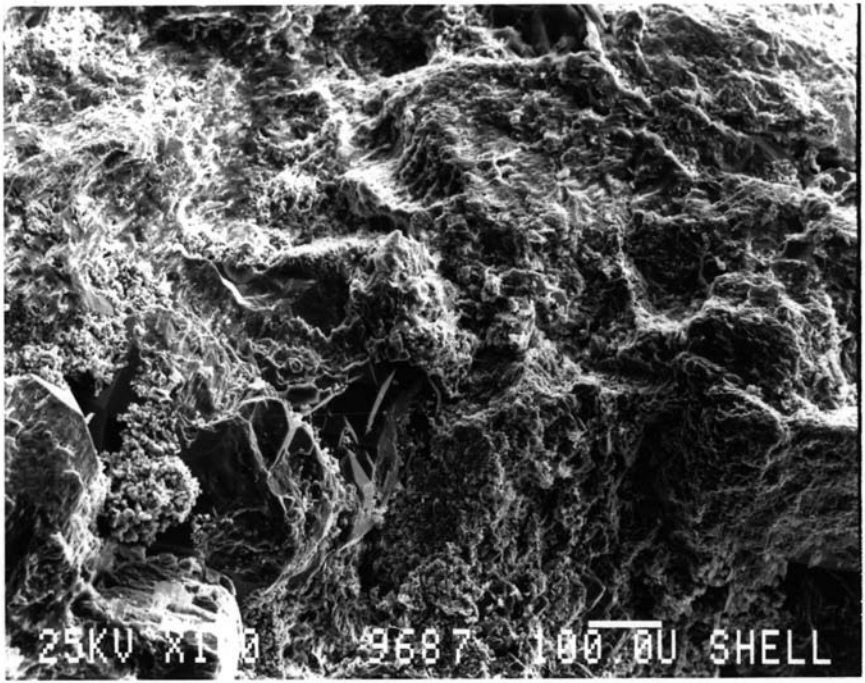
9687.91

1

5000 X


0 S1EEC 16755INT
VS.1000 HS. 20EV/CM
00 00 04 05 08
9687 9 EDAX
96879
Area 1

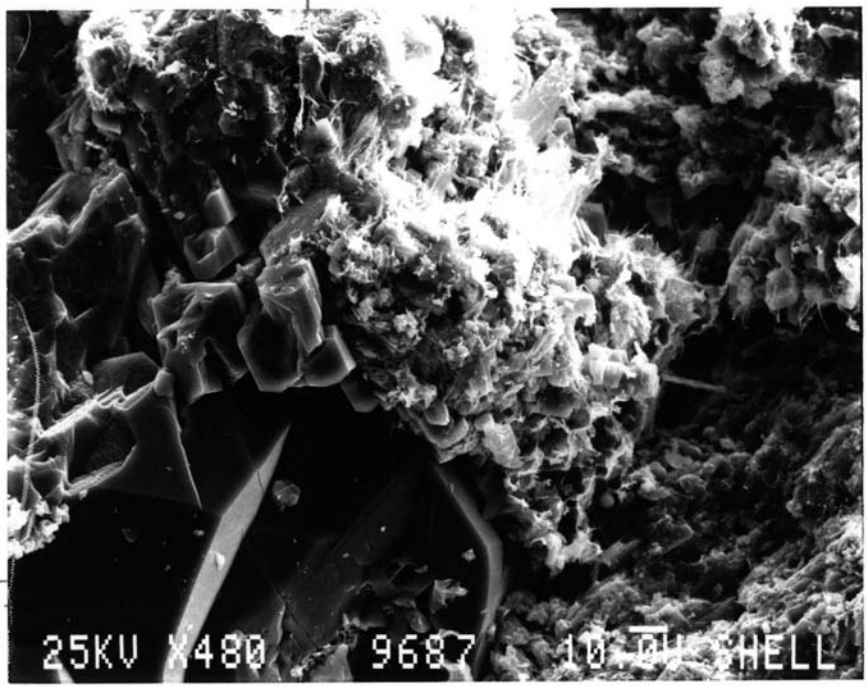

25KV X20
9687 1000.0U SHELL

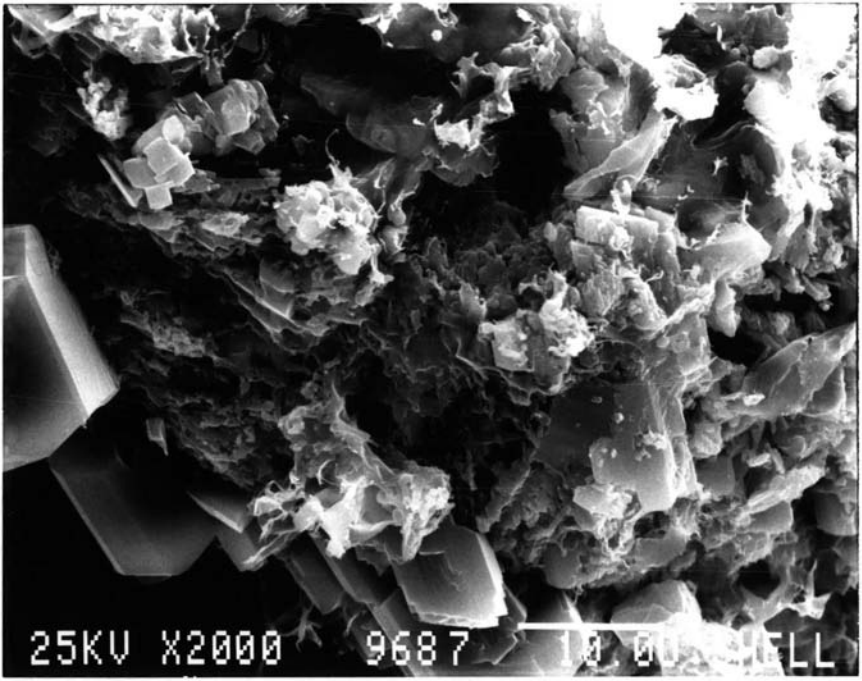


9687.9'

2

100 X

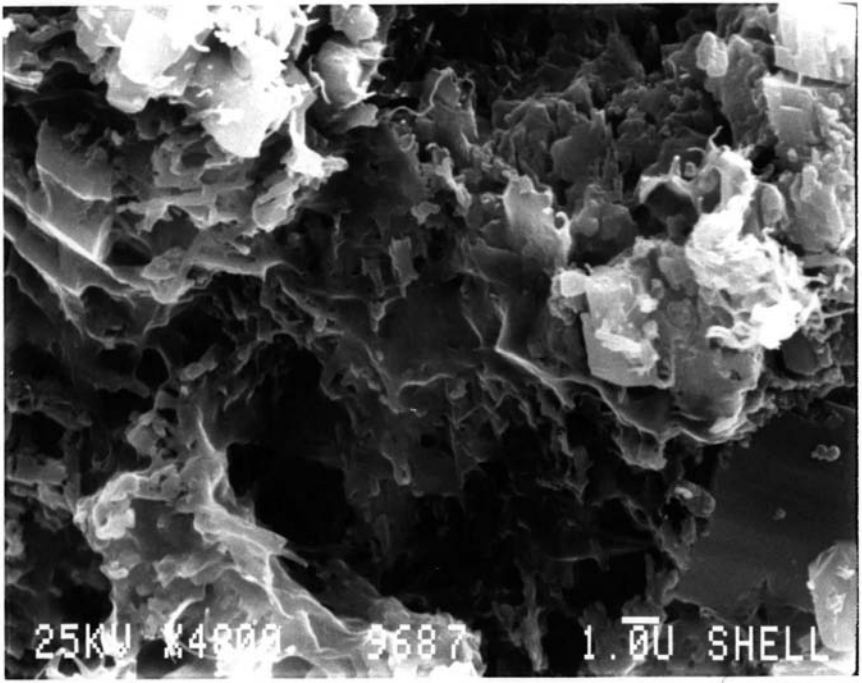

Feldspar
768791
2
qtz
25KV X480 9687 10.0U SHELL
qtz
500 Y



9687.9'

2

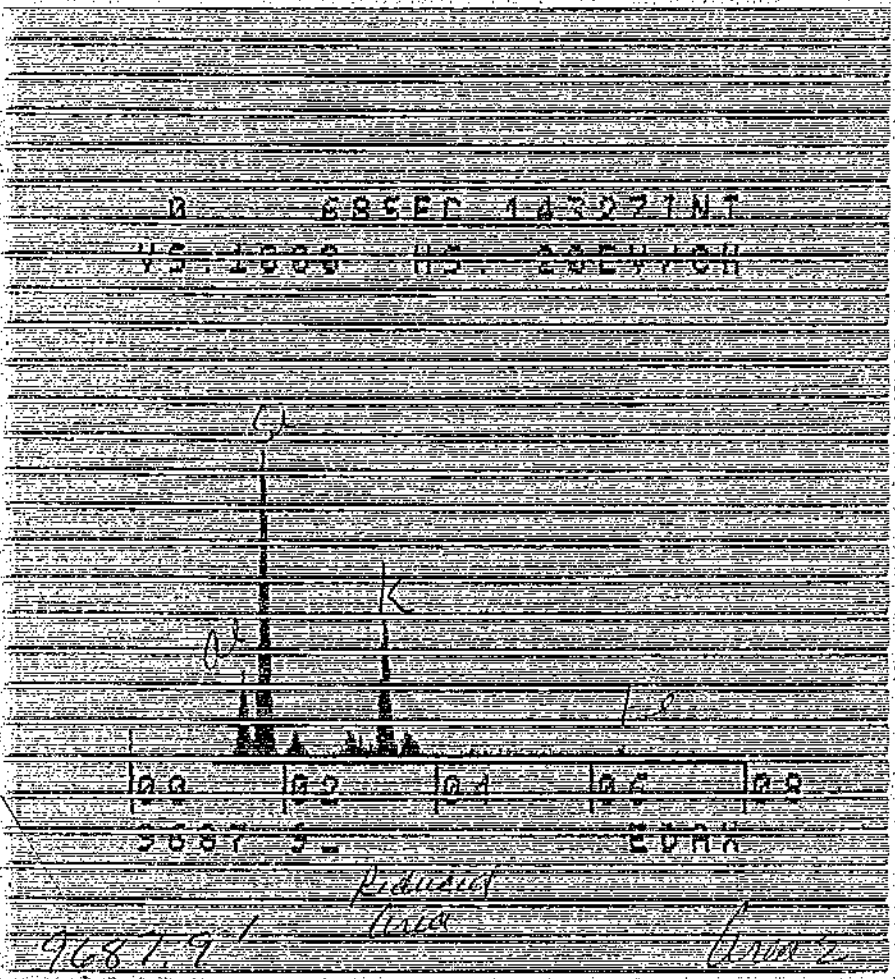
2000 X

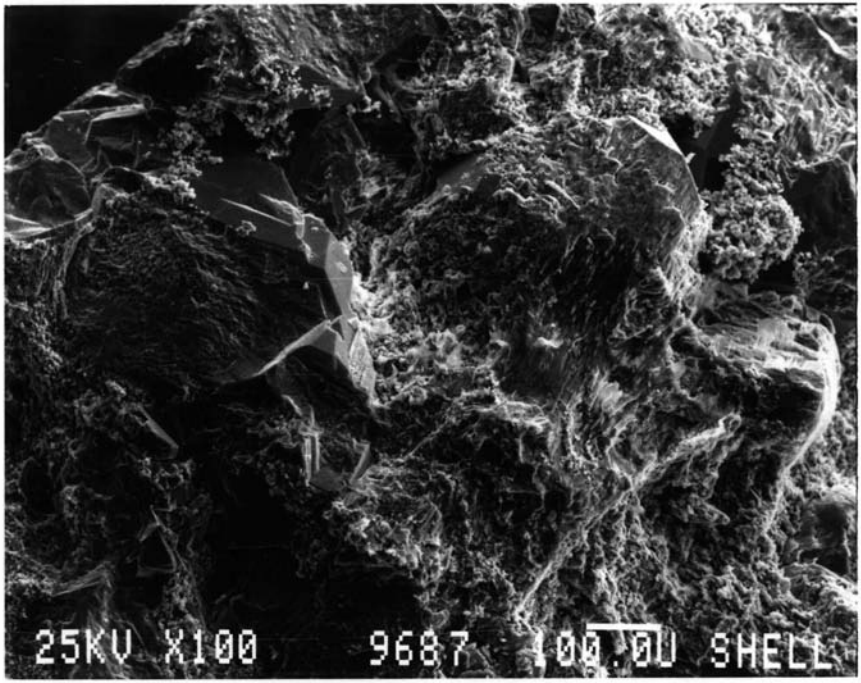


9687.9

2

5000 X



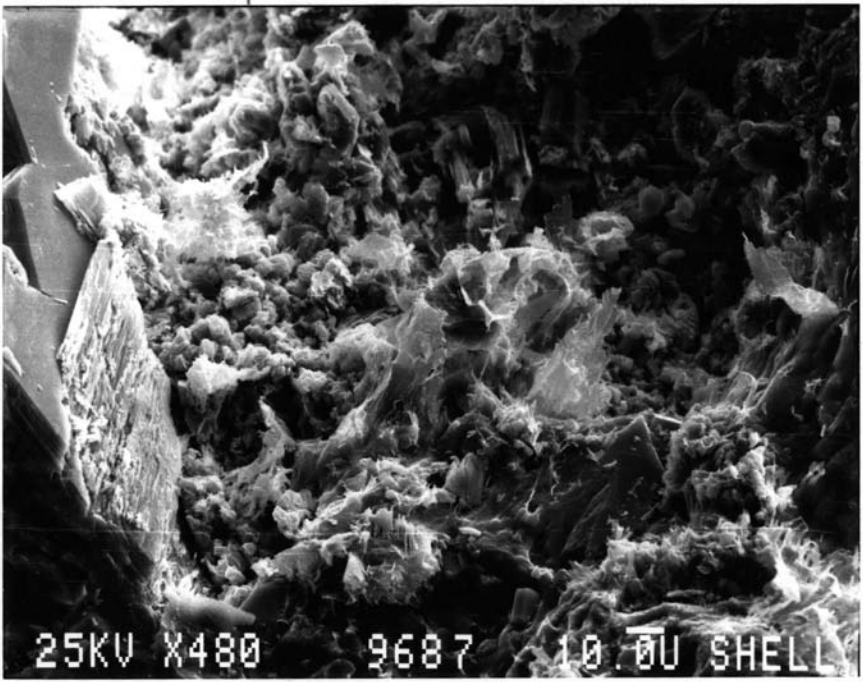


9687.91

3

100X

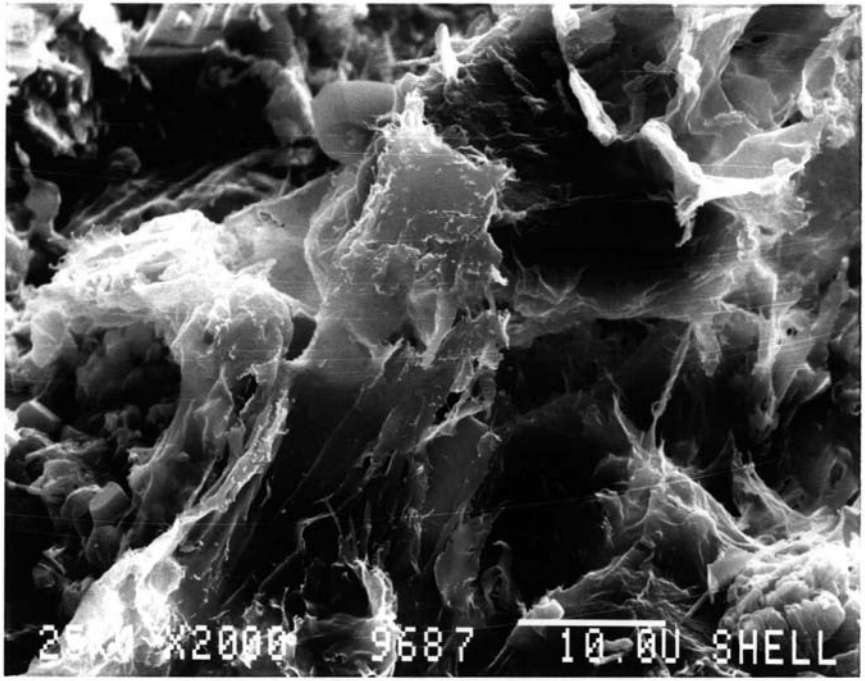
Kaolinite



9687.9'

3

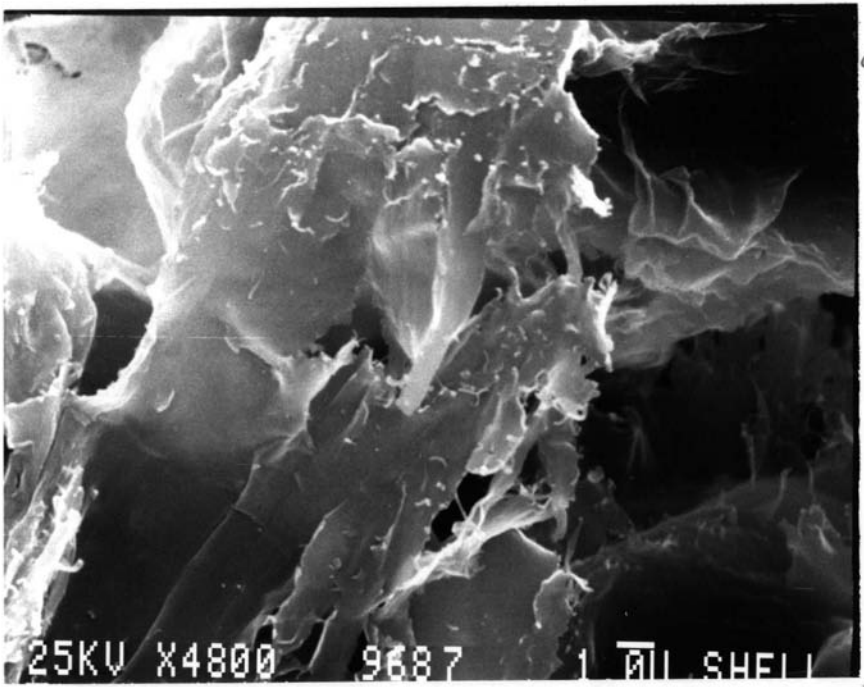
500 μ



9687.91

3

2000 X



9687.91

3

5000 V

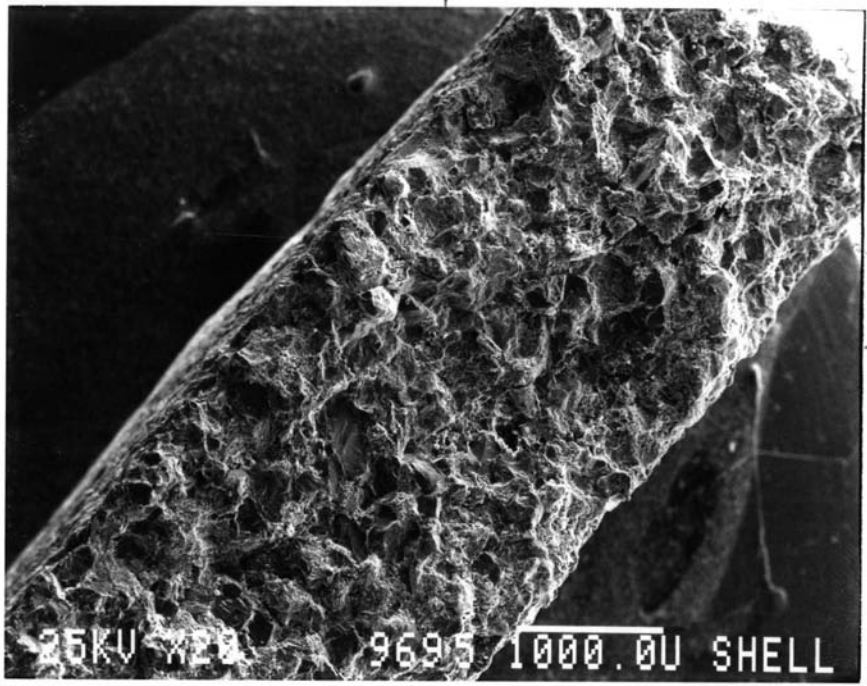
EDS similar to Area 2

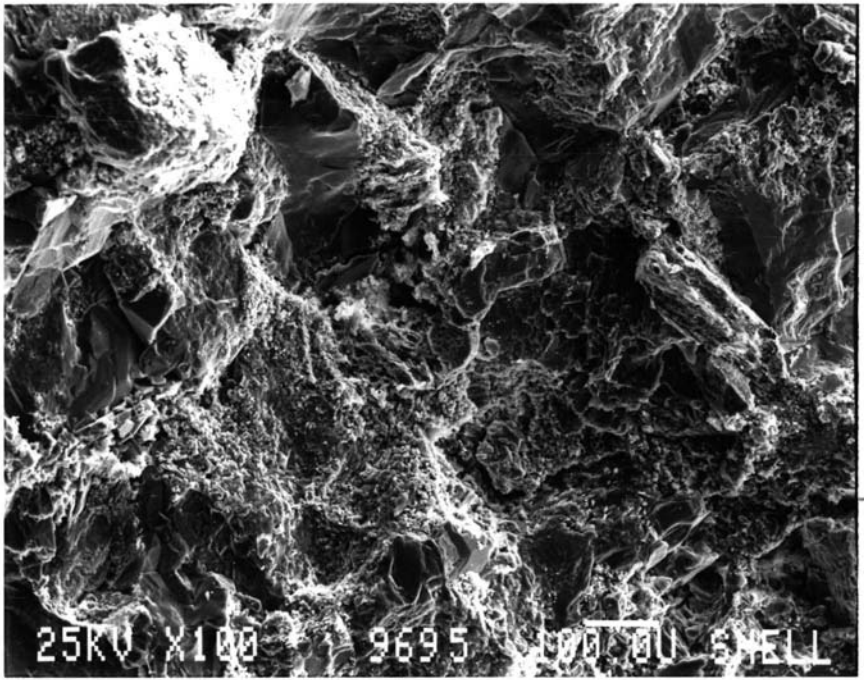
N. Belridge 43-27
9687'

Area 1 @ 5000x - Kaolinite

Area 2 @ " - Illite

Area 3 @ " - "


25KV X20
9695
1000.0U SHELL



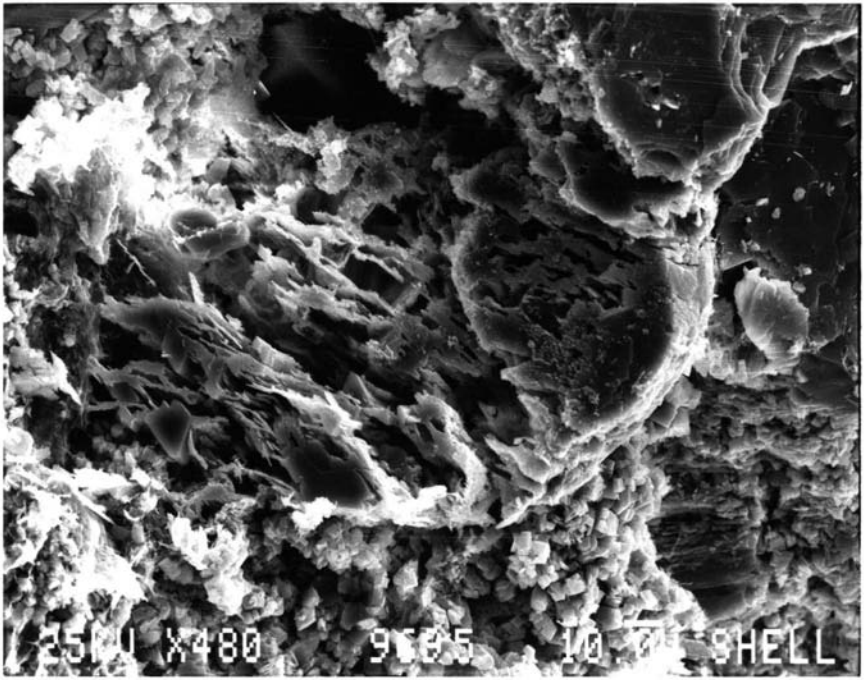
9695 1

1

2

100X

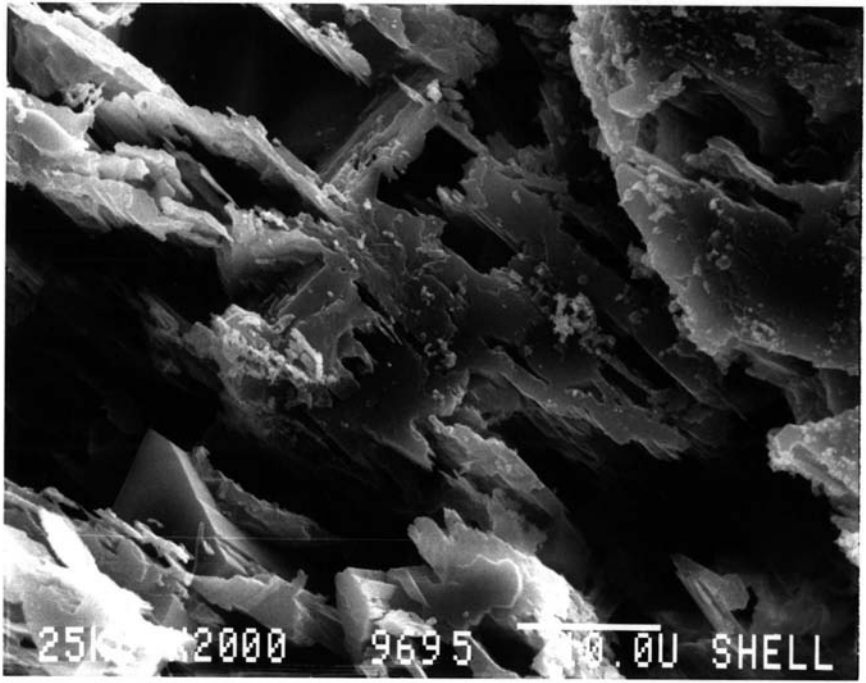
1/2



96951

1

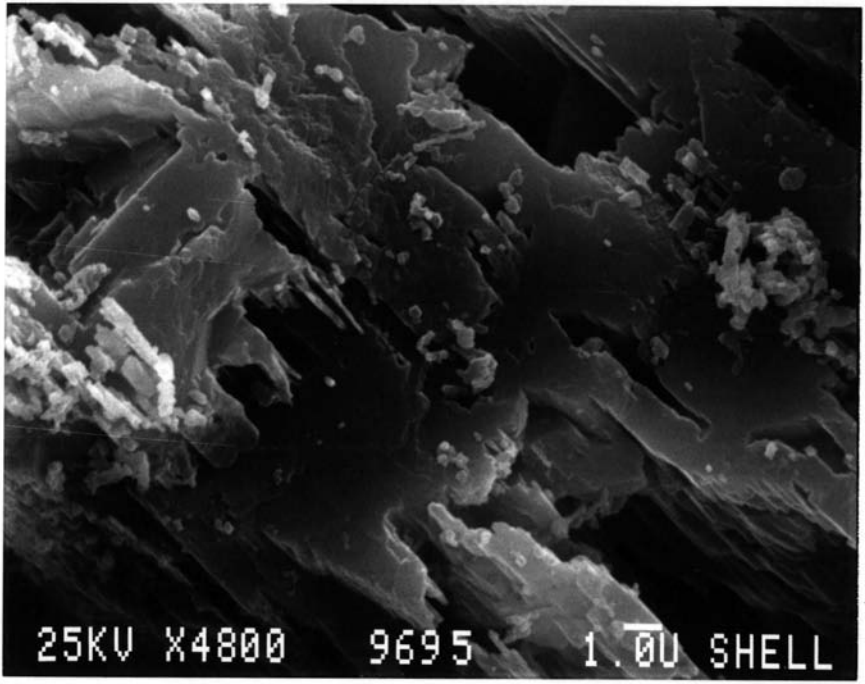
500X



9695'

1

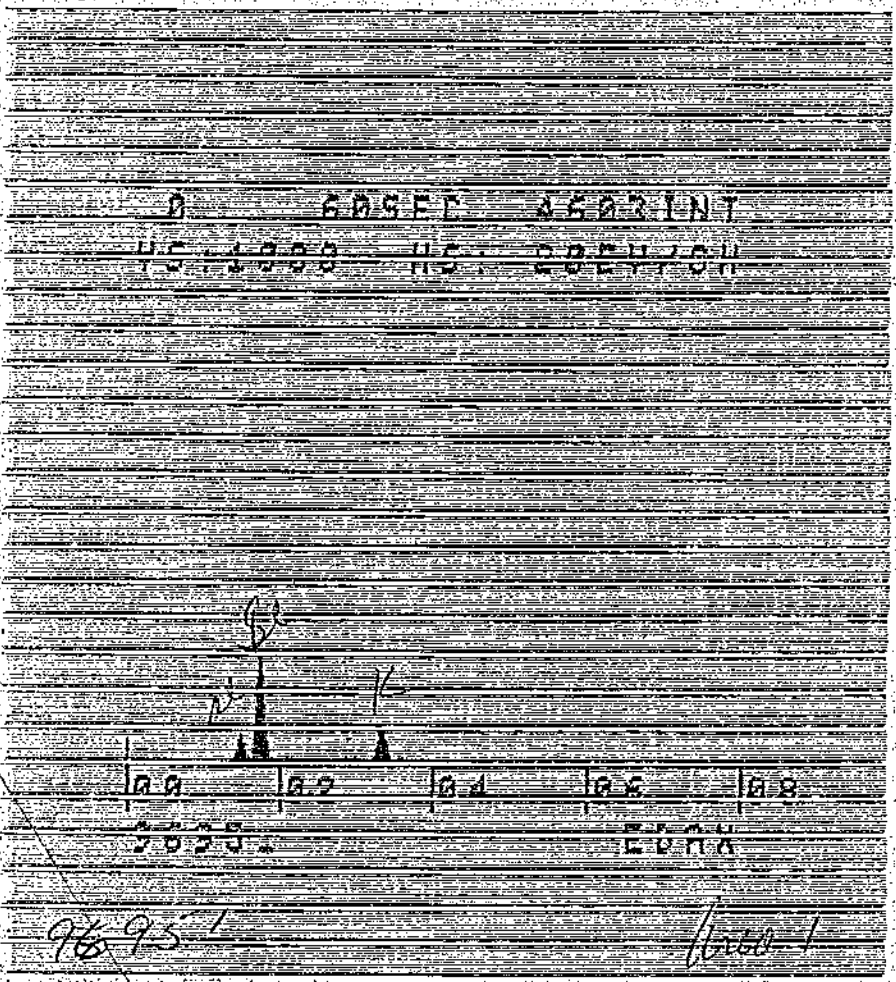
2000 X

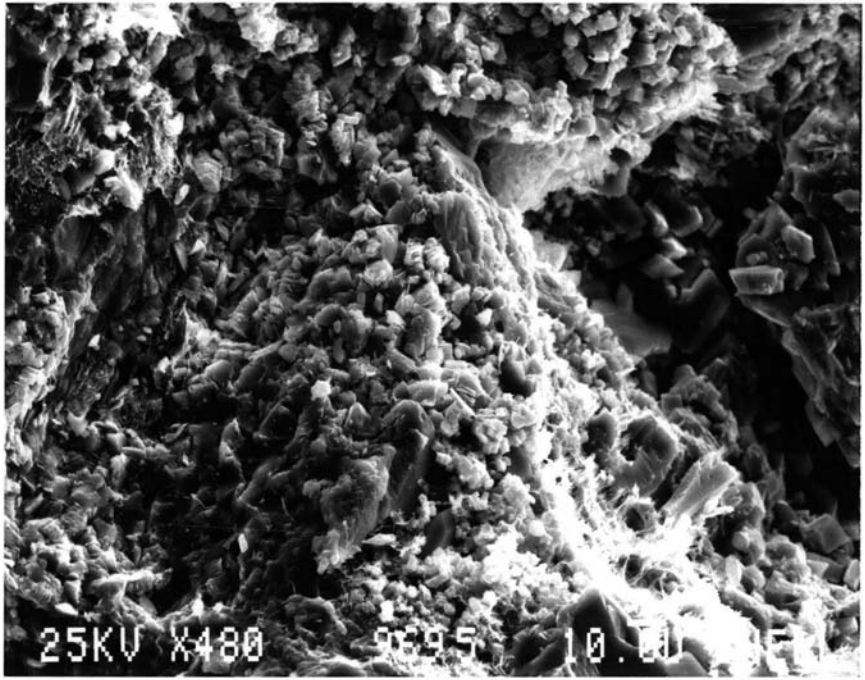


9695'

1

5000 X

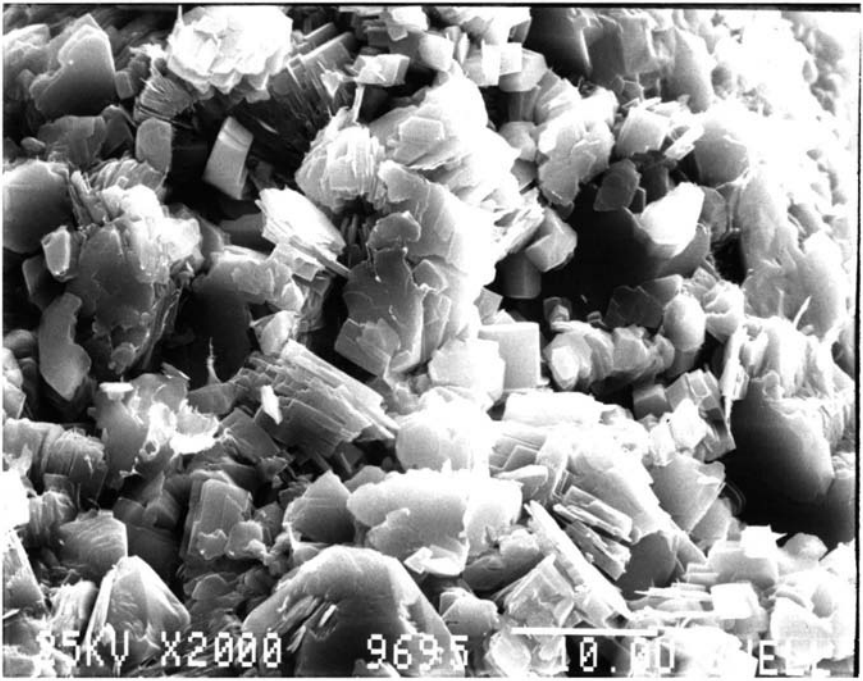

0 60SEC 4603INT
VS:1000 HS: 20EV/CH
0.0
0.2
0.4
0.6
0.8
EDAX



9695'

Σ

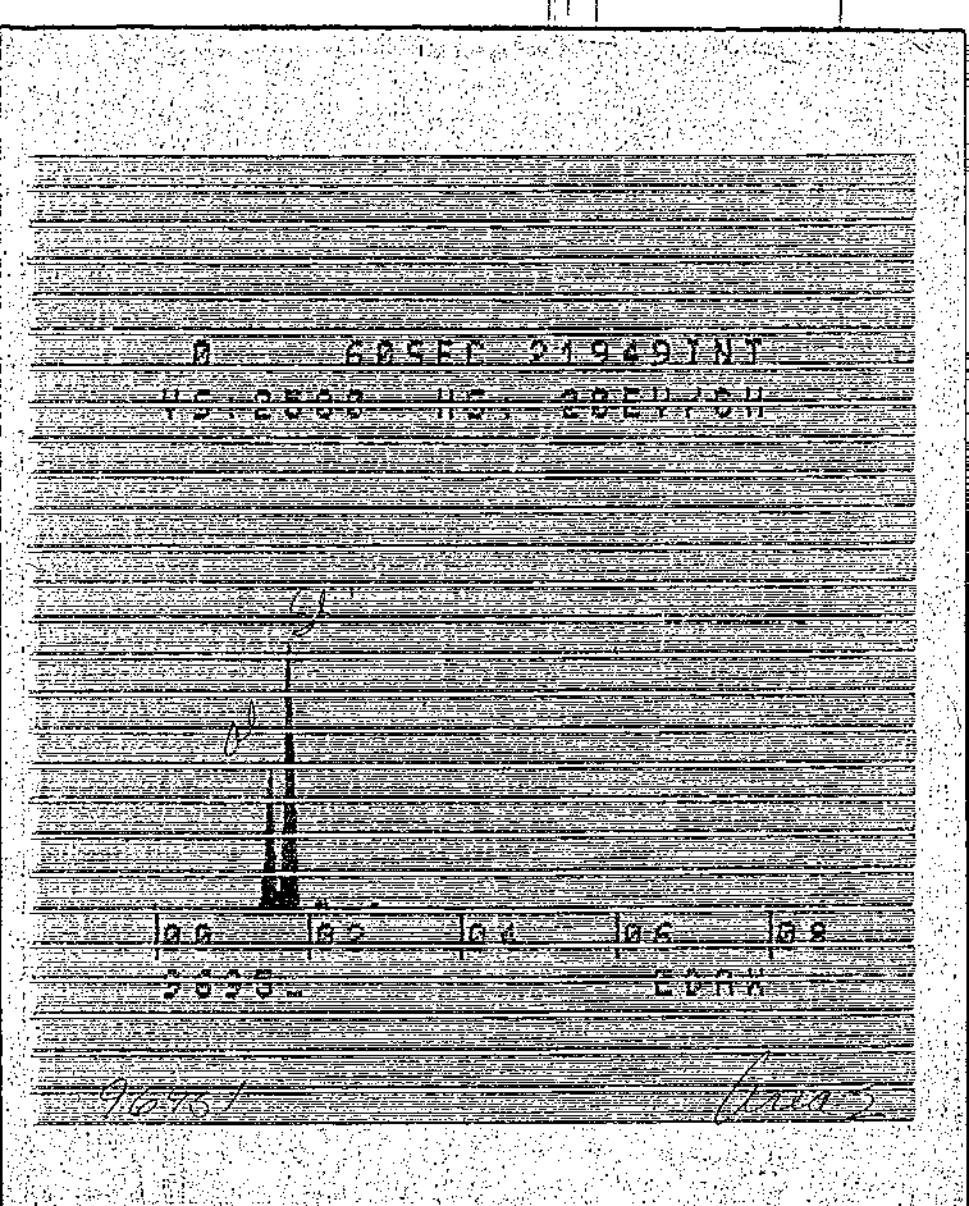
500Y



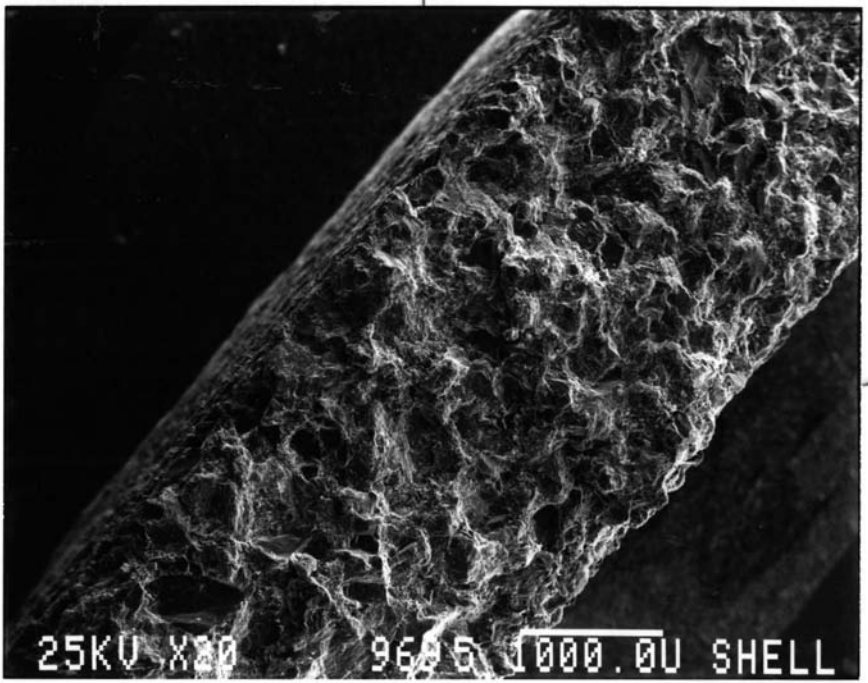
9695'

2

2000X



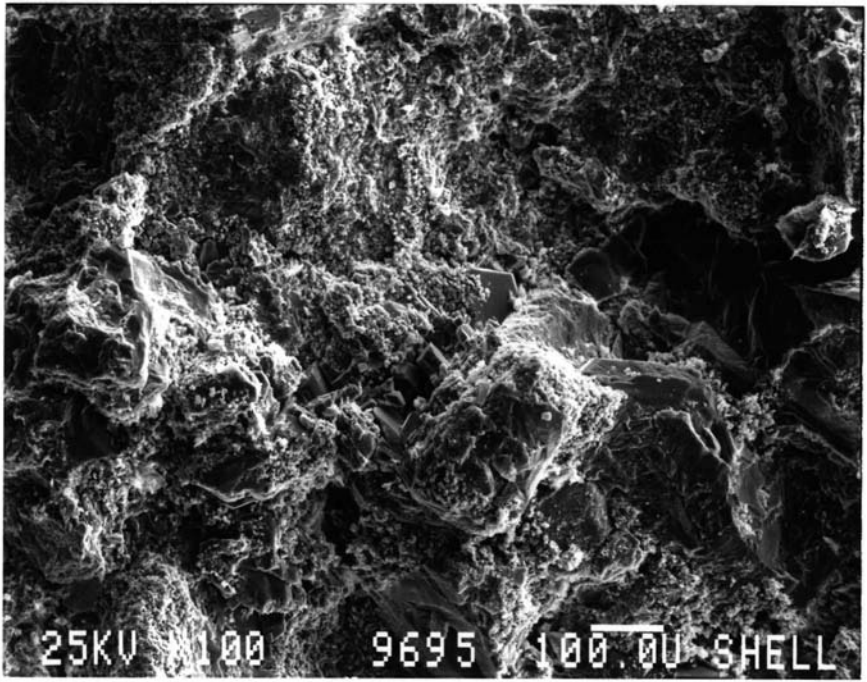
3.



9695'

3

20X

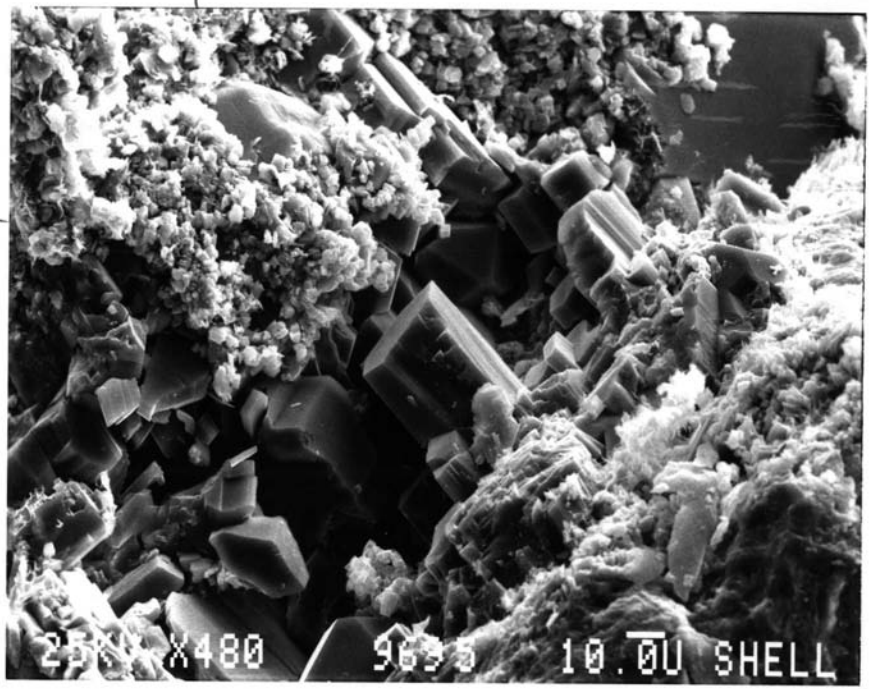


9695'

3

100 Y

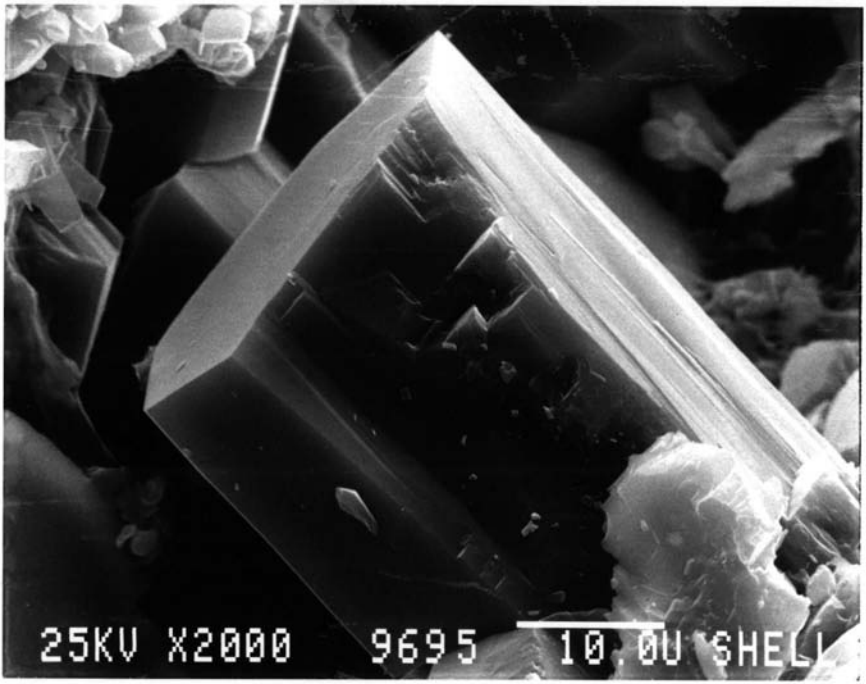
Kaolinite



9695 1

3

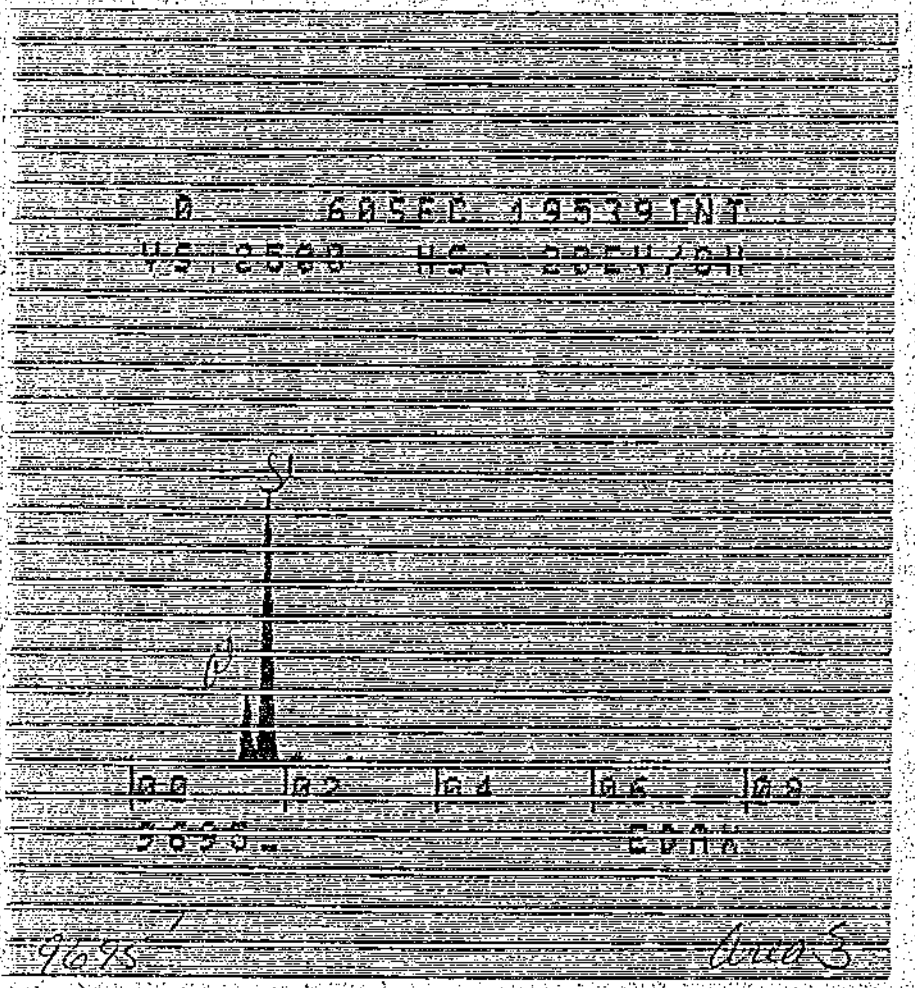
500 X



96951

3

2000X

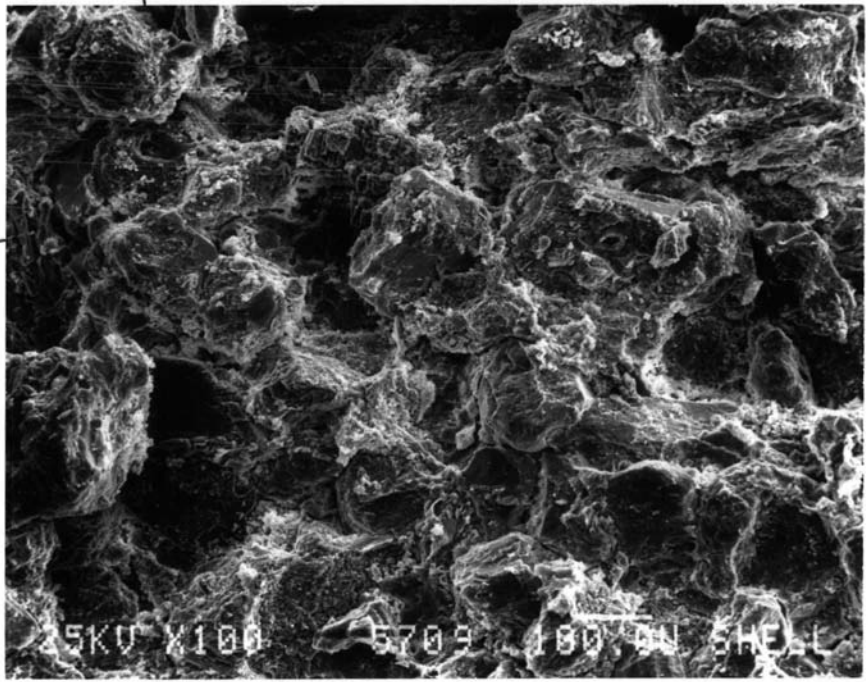

0 60SEC 19539INT
VS 2500 HS: 20EV/CH
00
02
04
06
08
9695
EDAX
9695
Area 3

N. Belridge 43-27
9695'

Area 1 @ 5000X - K Feldspar dissolving K spar

Area 2 @ 2000X - Kaolinite

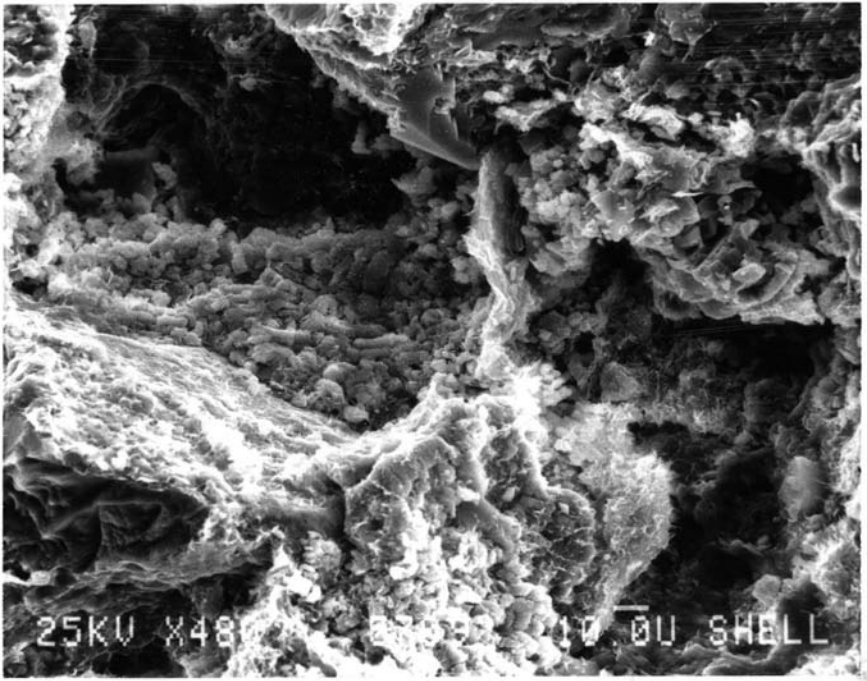
Area 3 @ " - Feldspar.



93-27

1

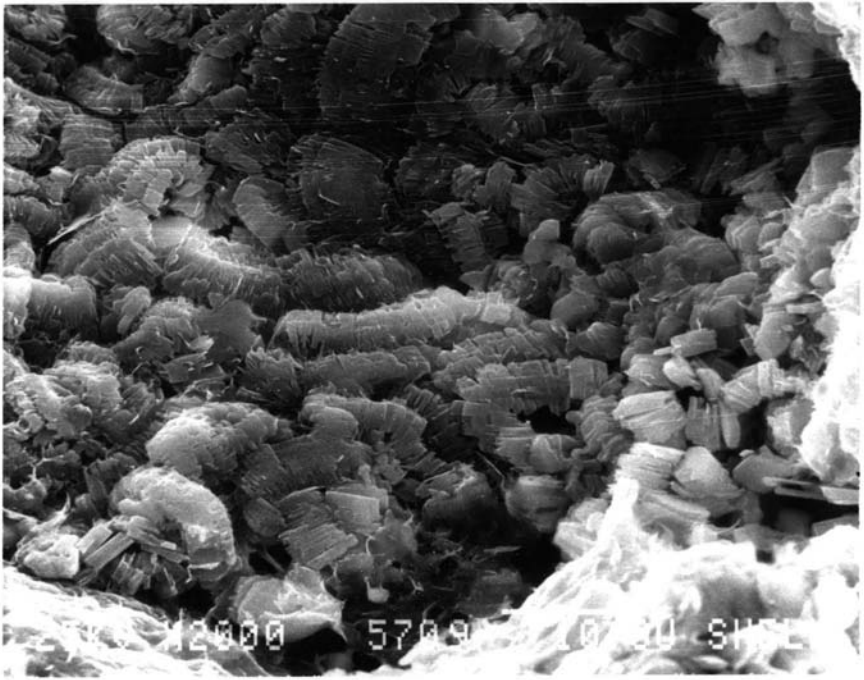
100X



43-27

1

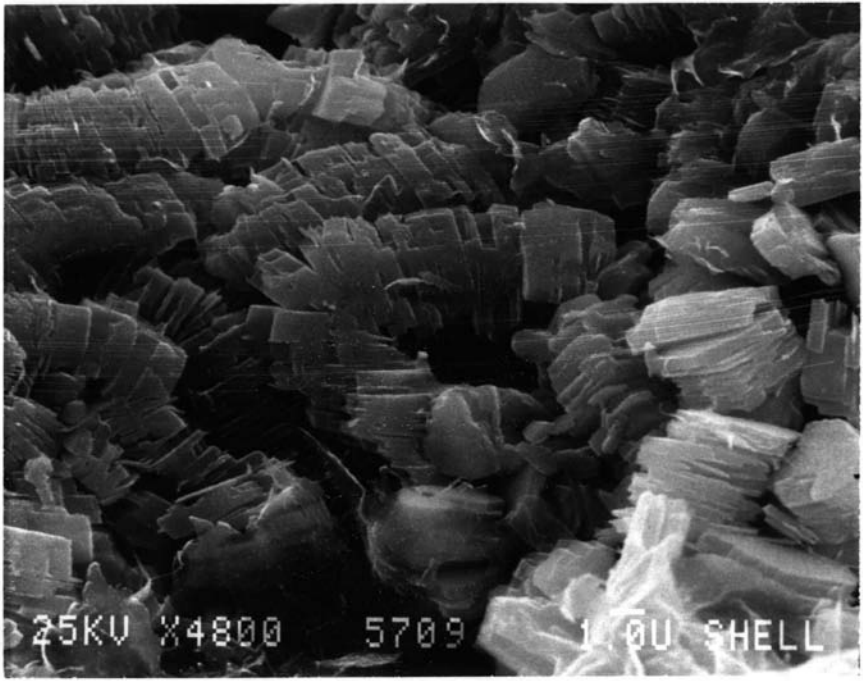
500 1



43-27

1

2000X



43-27

1

5709'

area 1 @ 5000X

13-NOV-85 14:13:03 EDAX READY

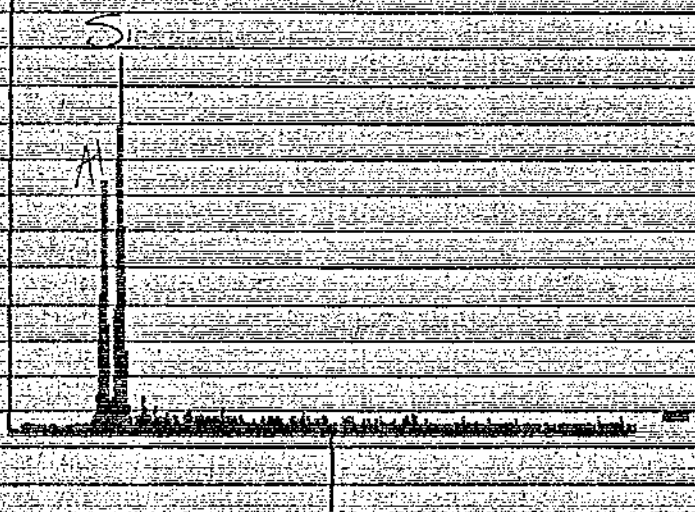
RATE: 96CPS TIME: 48LSEC

00-20KEV 10EV/CH PRST: OFF

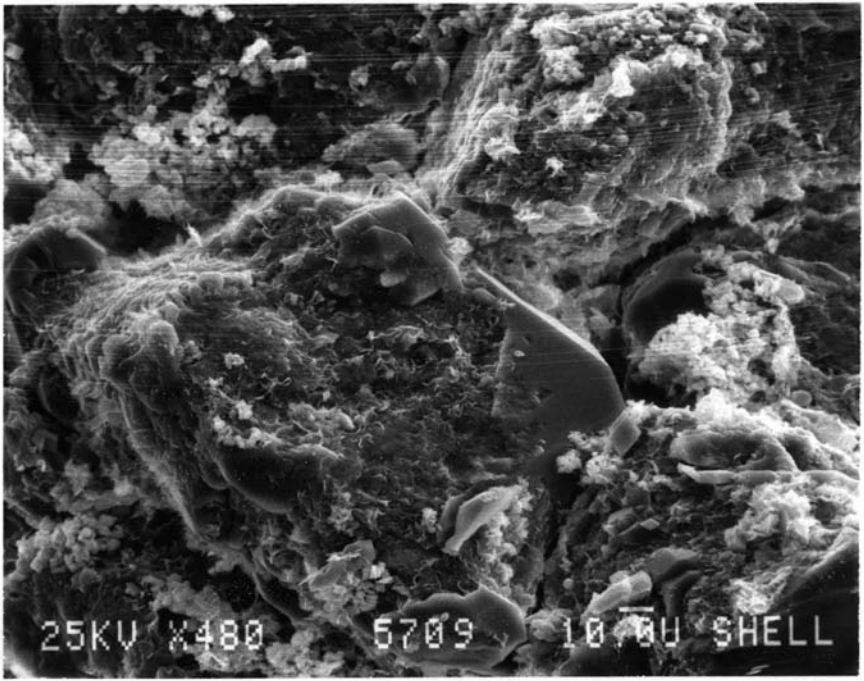
A 43-27 5709' B:

FS= 393 MEM: A FS= 200

00 02 04 06 08



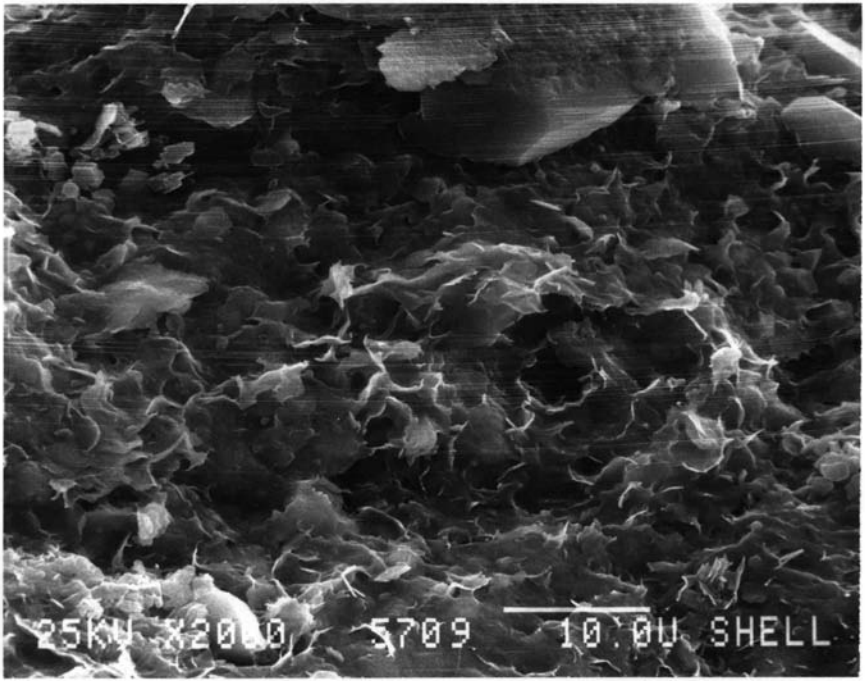
CURSOR (KEV)=05.120 EDAX



93-27

2

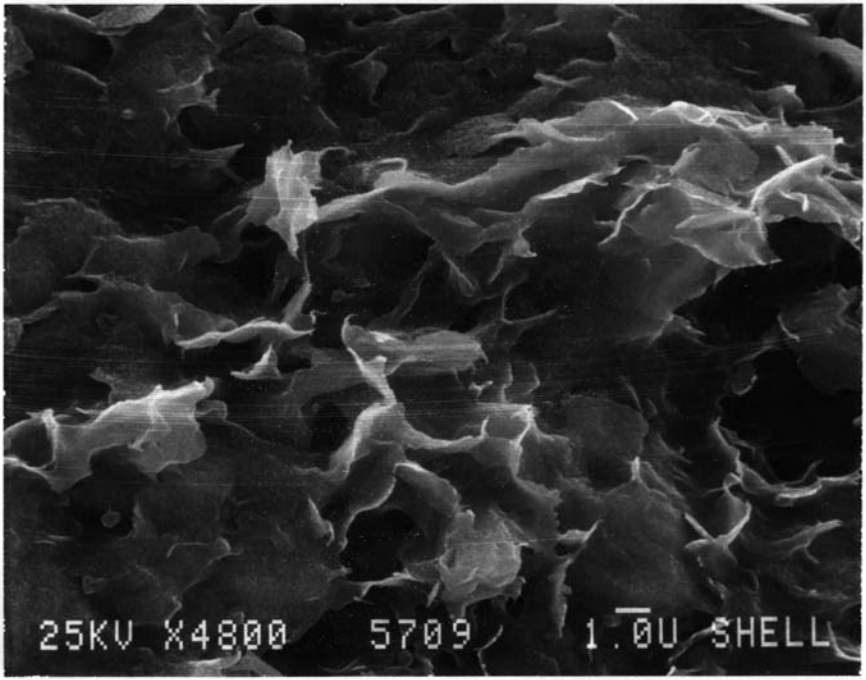
500x



43-27

2

2000X



43-27

2

5709'

area 2 @ 5000X

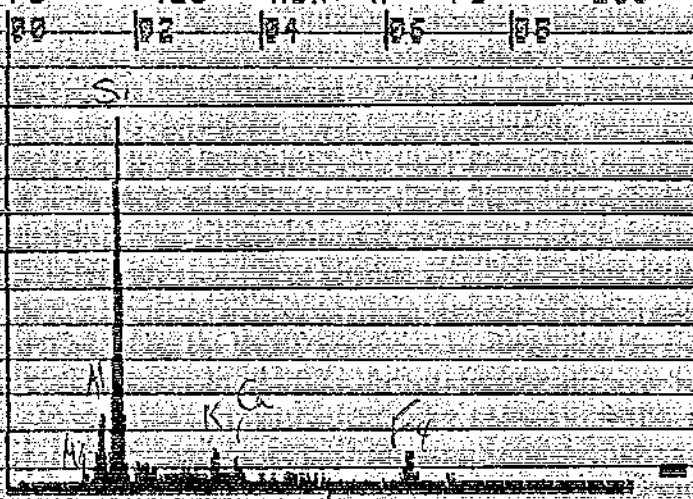
13-NOV-85 15:52:22 EDAX READY

RATE: 79CPS TIME: 32LSEC

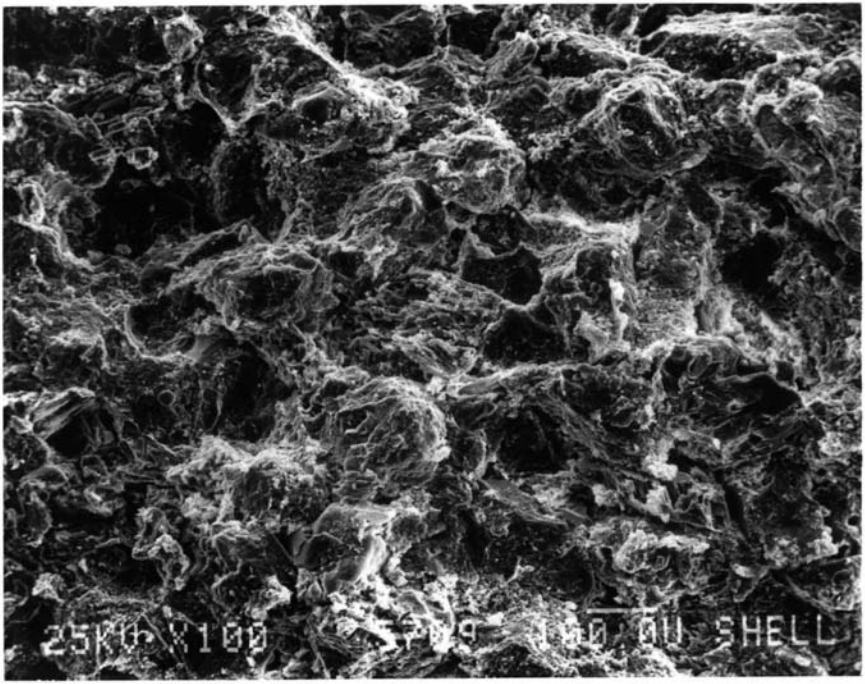
00-20KEV 10EV/CH PRST: OFF

A: 43-27 5907' B:

FS= 428 MEM: A FS= 200



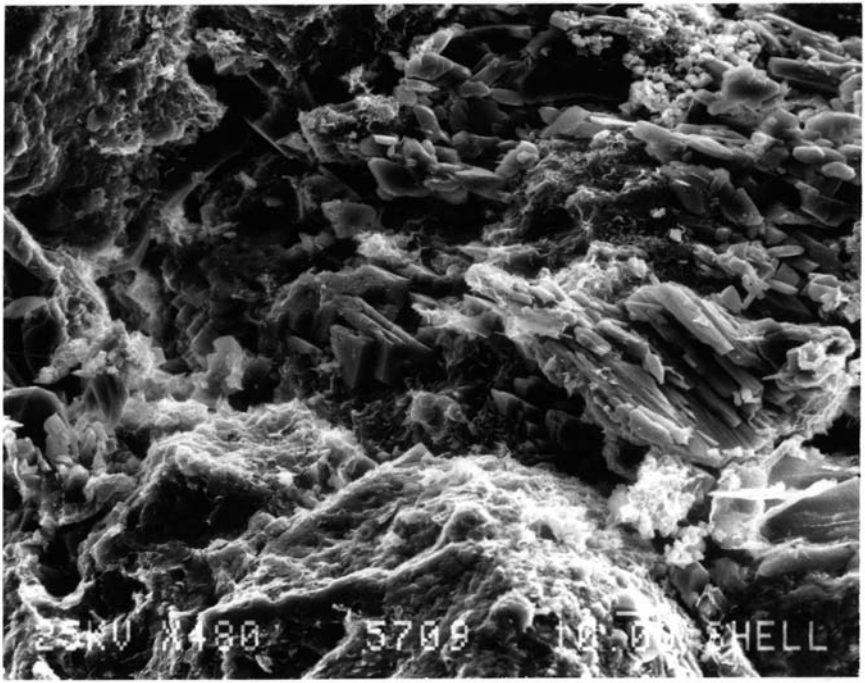
CURSOR (KEV)=05.120 EDAX



43-27

3

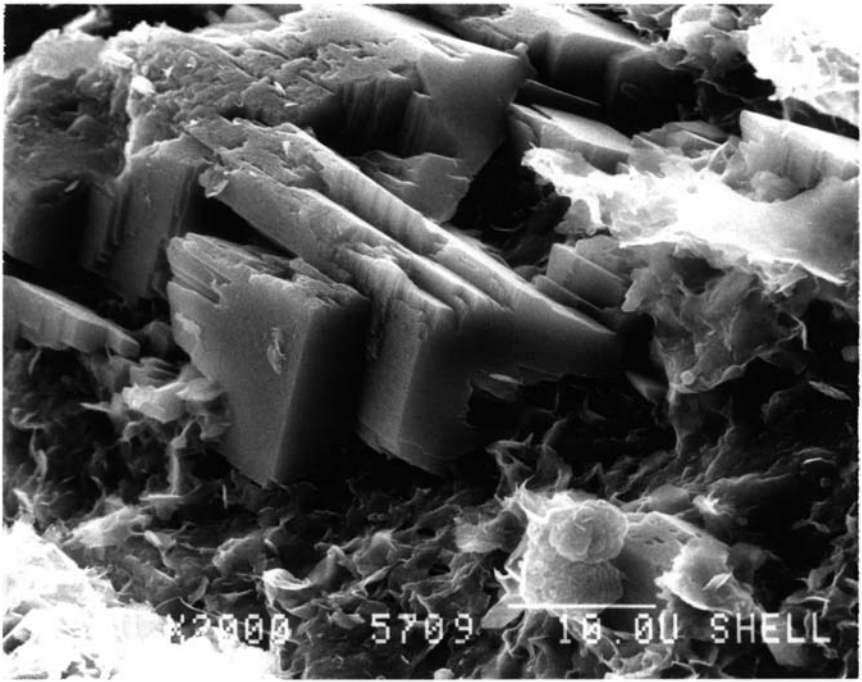
100X



93-27

3

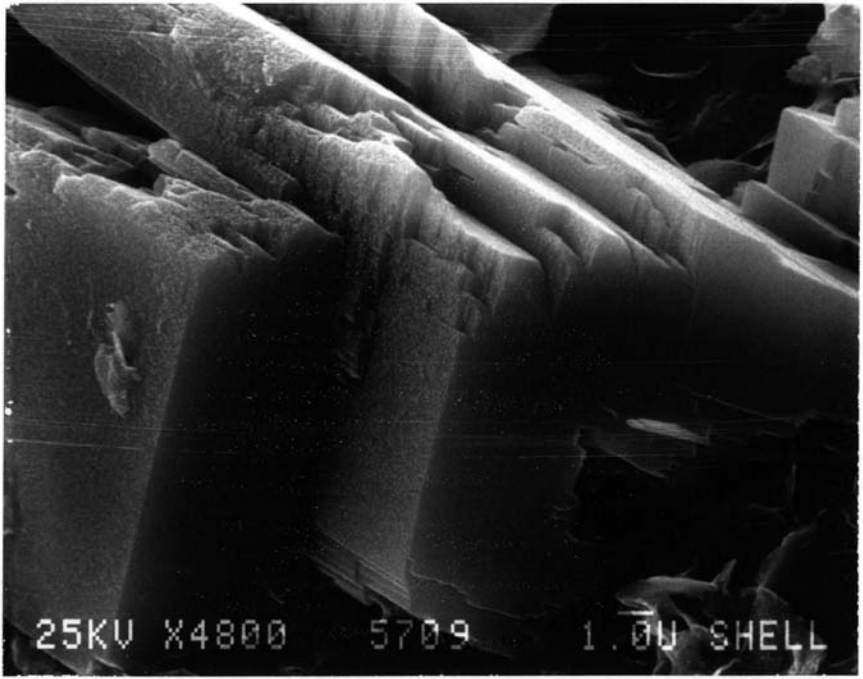
500X



93-27

3

2000X



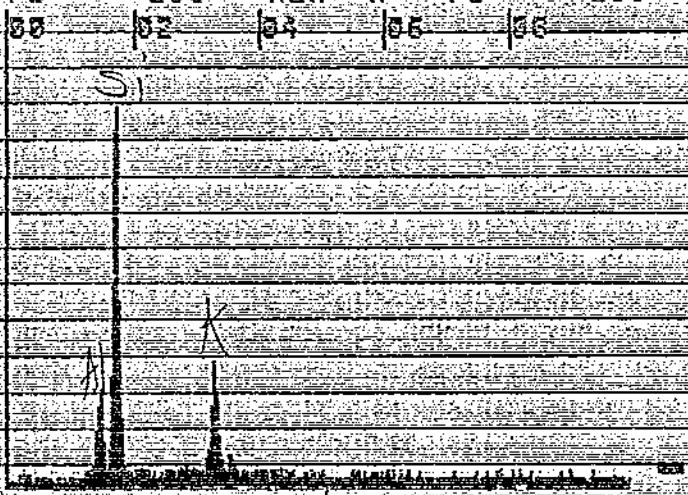
43-27

3

5000X

5709'
area 3 @ 5000X

14-NOV-85 10:20:31 EDAX READY
RATE: 94CPS TIME: 16LSEC
00-20KEV 10EV/CH PRST: OFF
A:43-27 5709' B:
FS= 205 MEM: A FS= 200



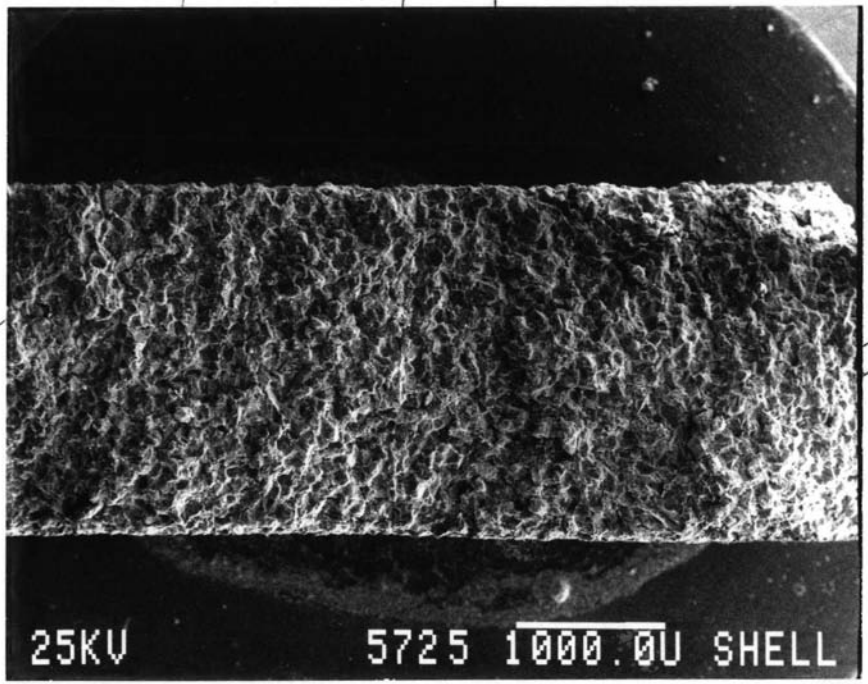
CURSOR (KEV)=05.120 EDAX

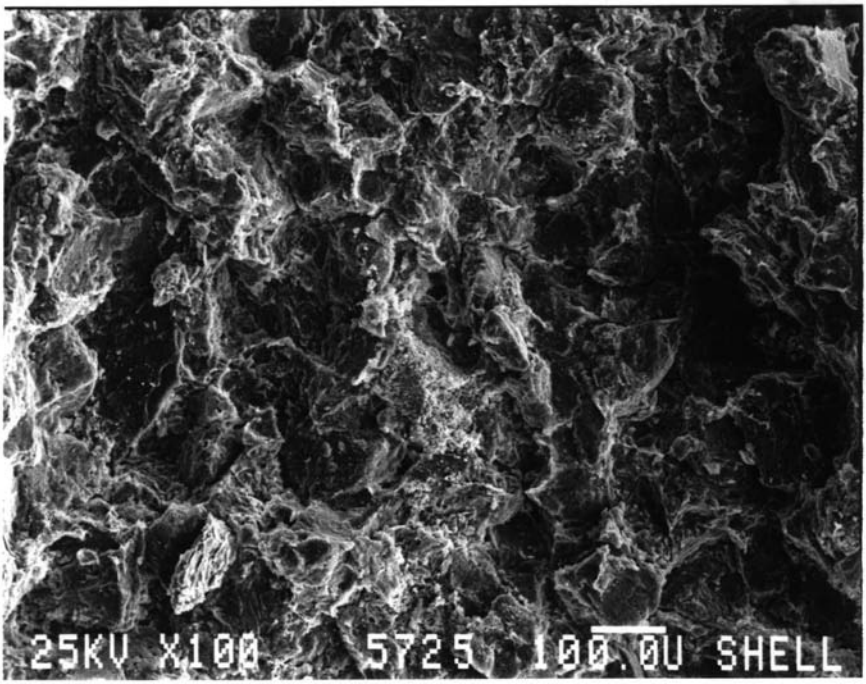
N. Belridge 43-27
5709'

area 1 @ 5000X - Kaolinite

area 2 @ 5000X - Illite, tr dolomite

area 3 @ 5000X - K Feldspar

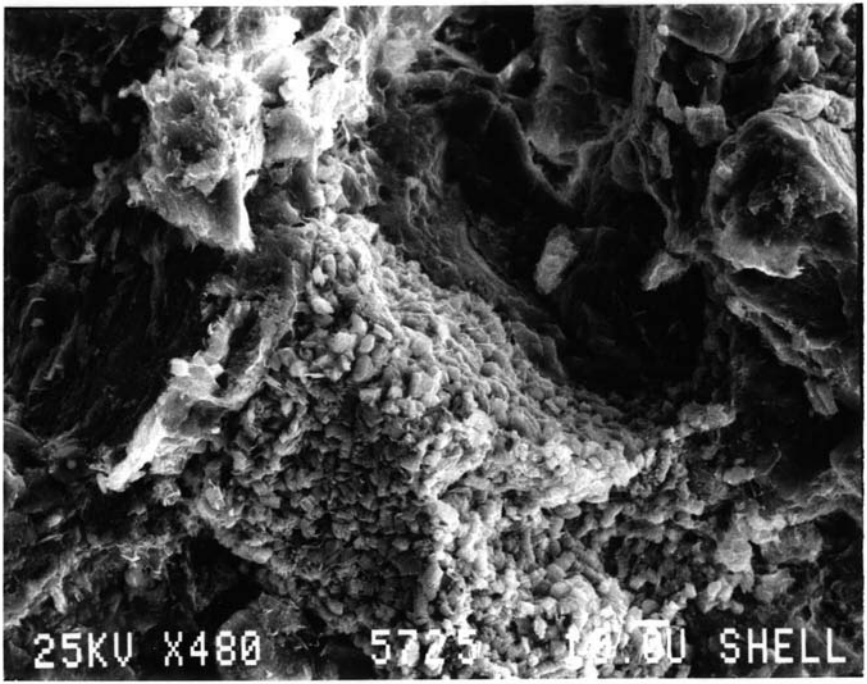

3
2
1
5725'
3
2
1
25KV
5725 1000.0U SHELL
15X



5725'

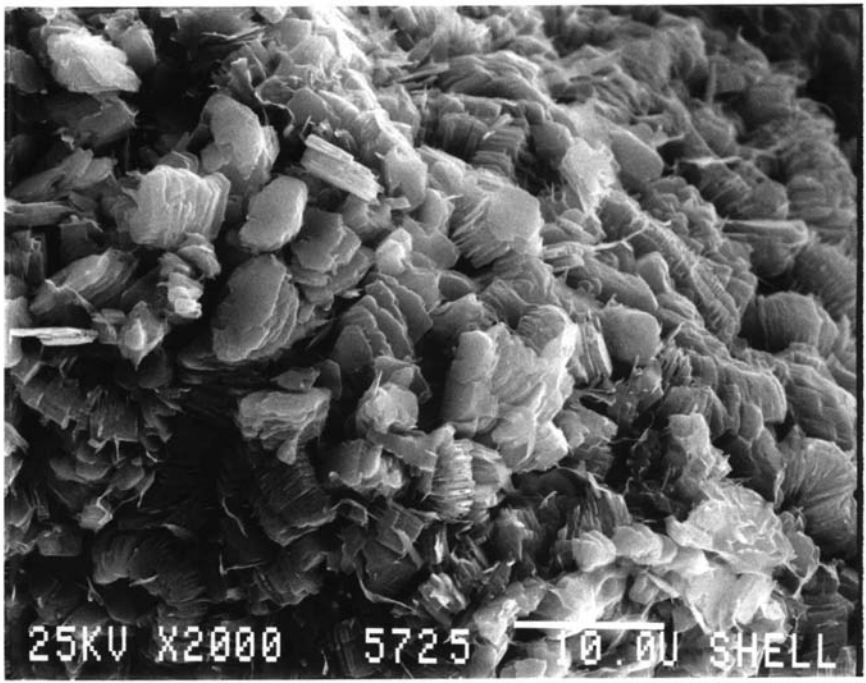
1

100X



5725'

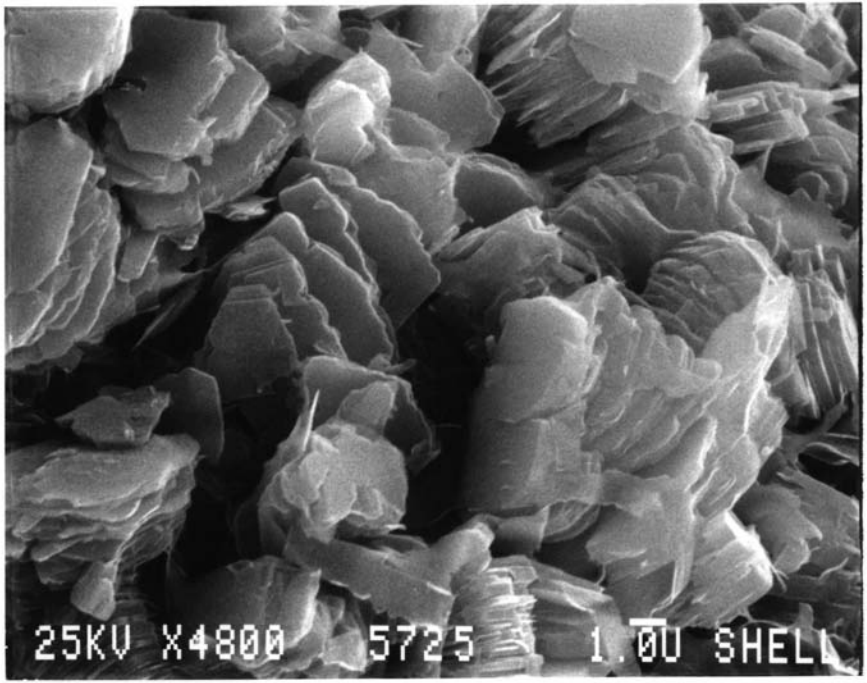
5.00X



5725'

1

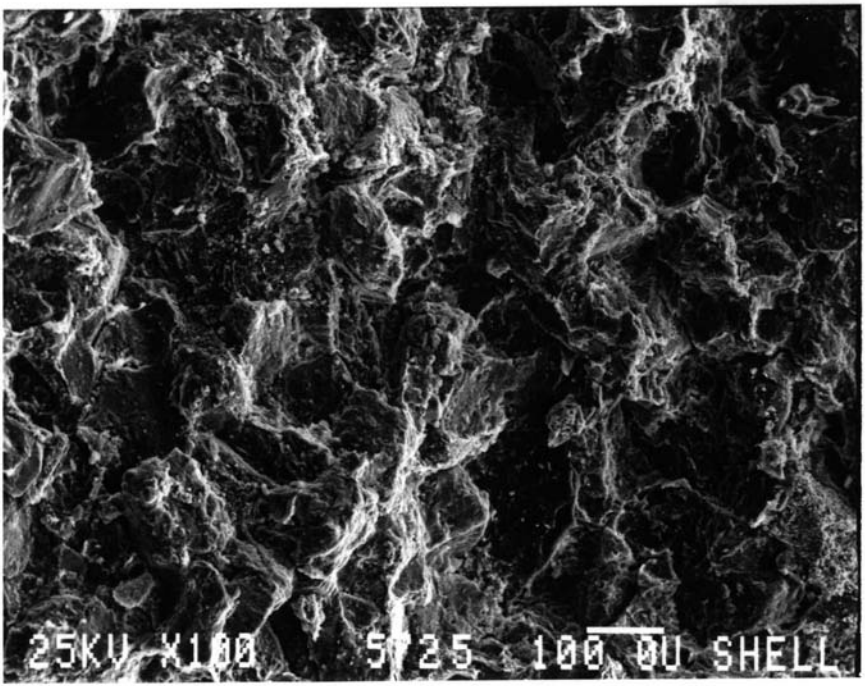
2000x



5725-1

1

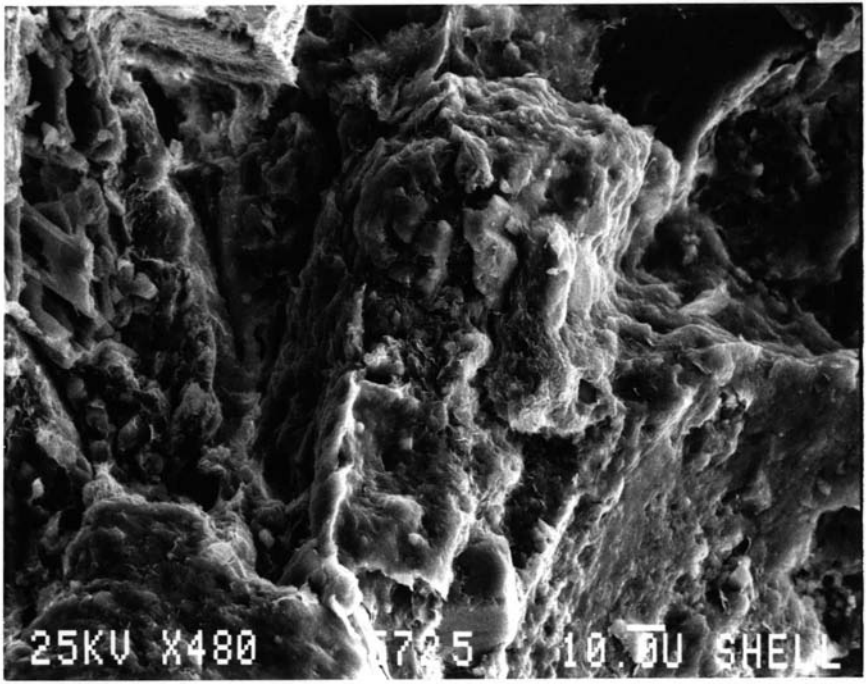
5000X



5725-1

2

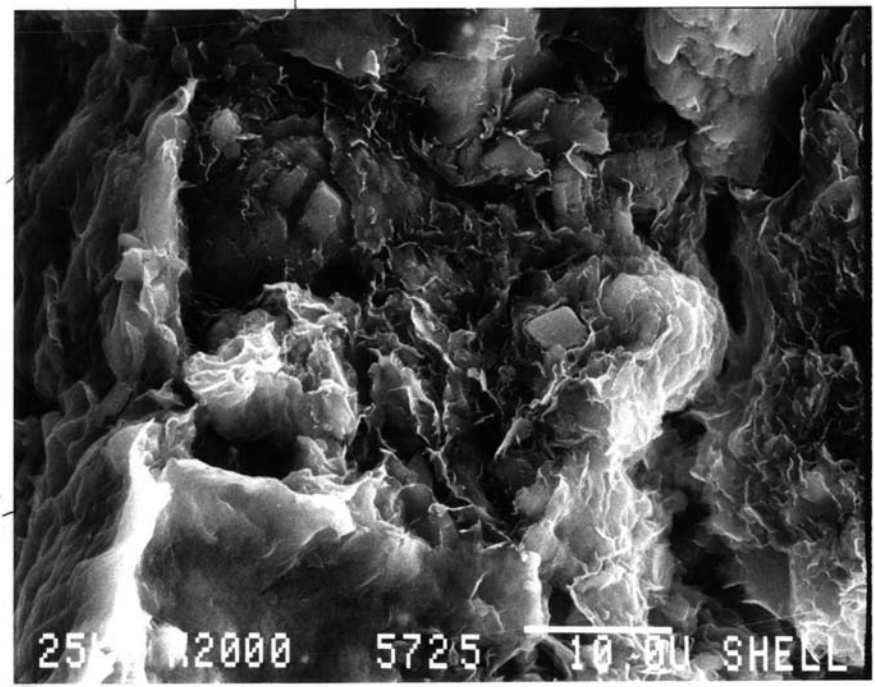
100X

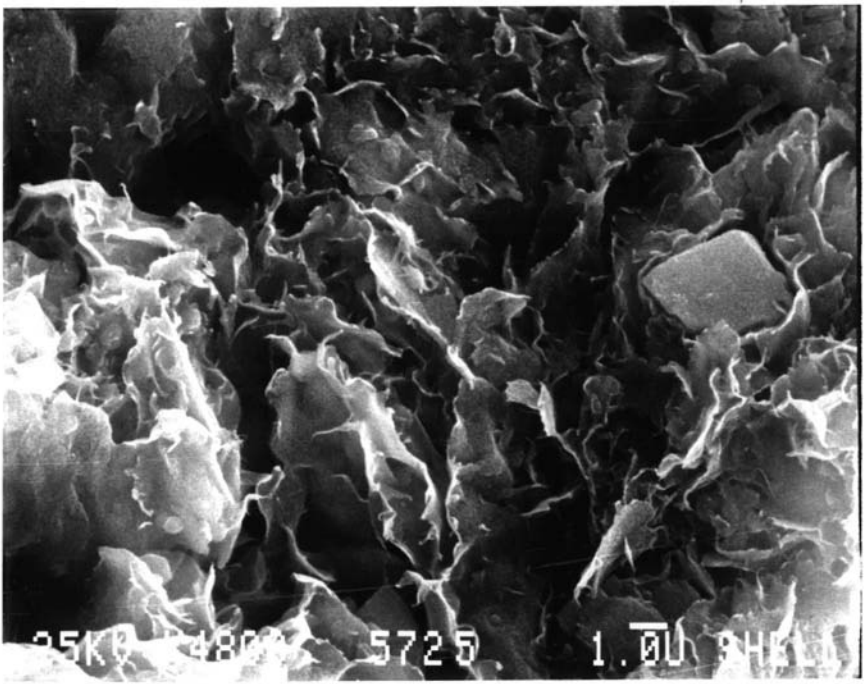


5725'

8

500X


2000
5725
SHELL



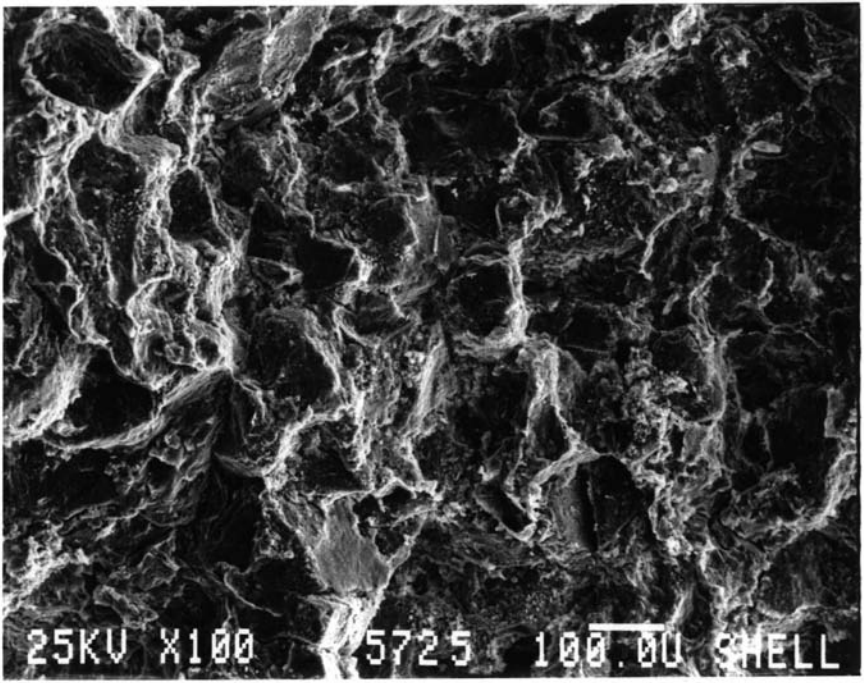
2a

5725'

-2a

Y

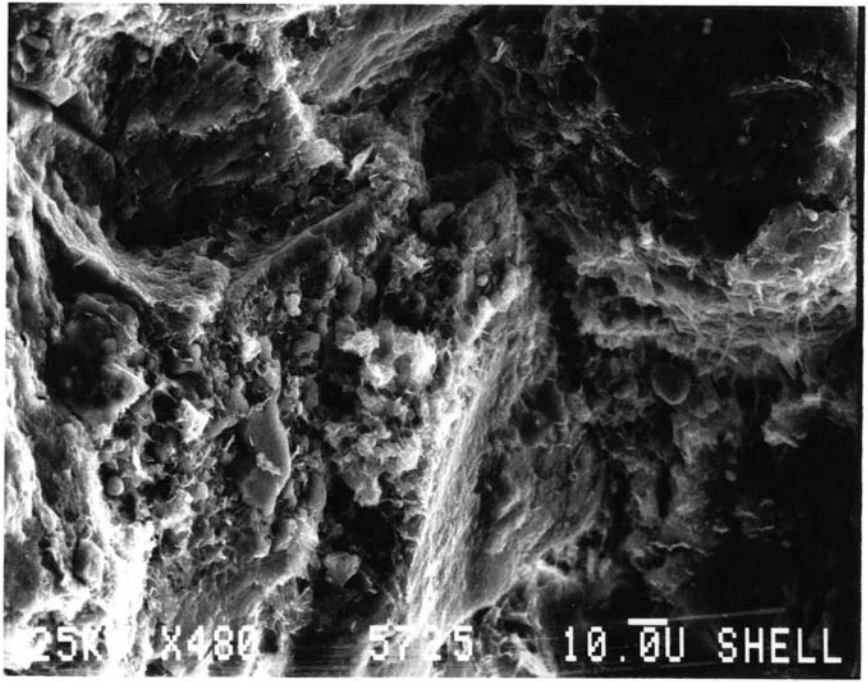
5000X



5725'

3

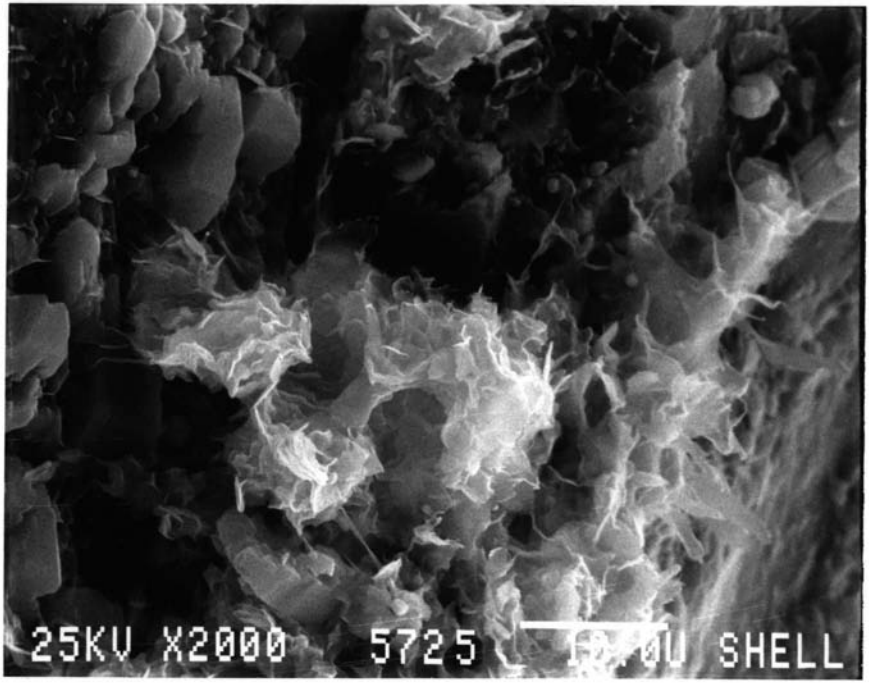
100X



5725'

3

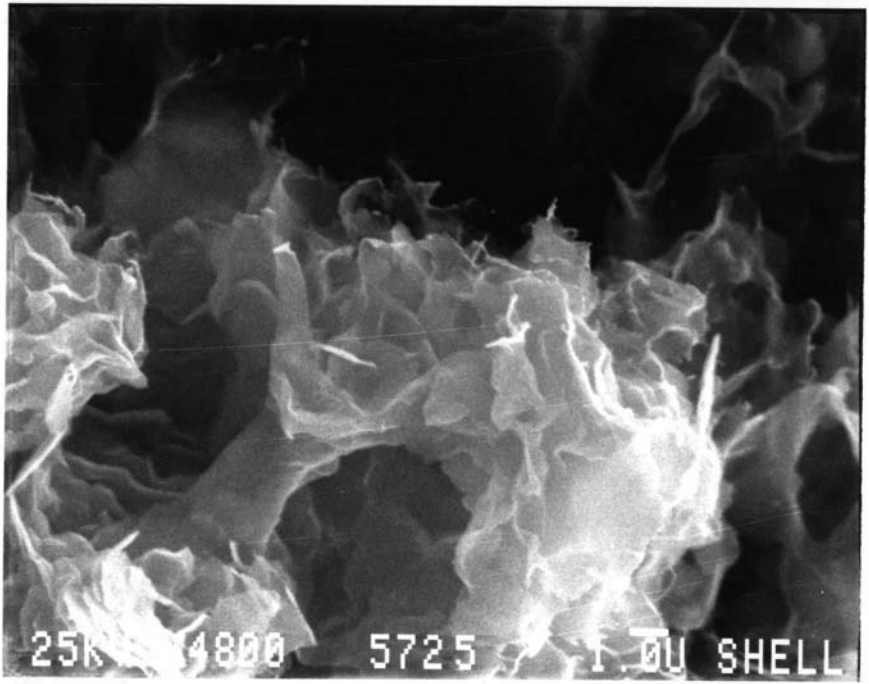
500X



5725

3

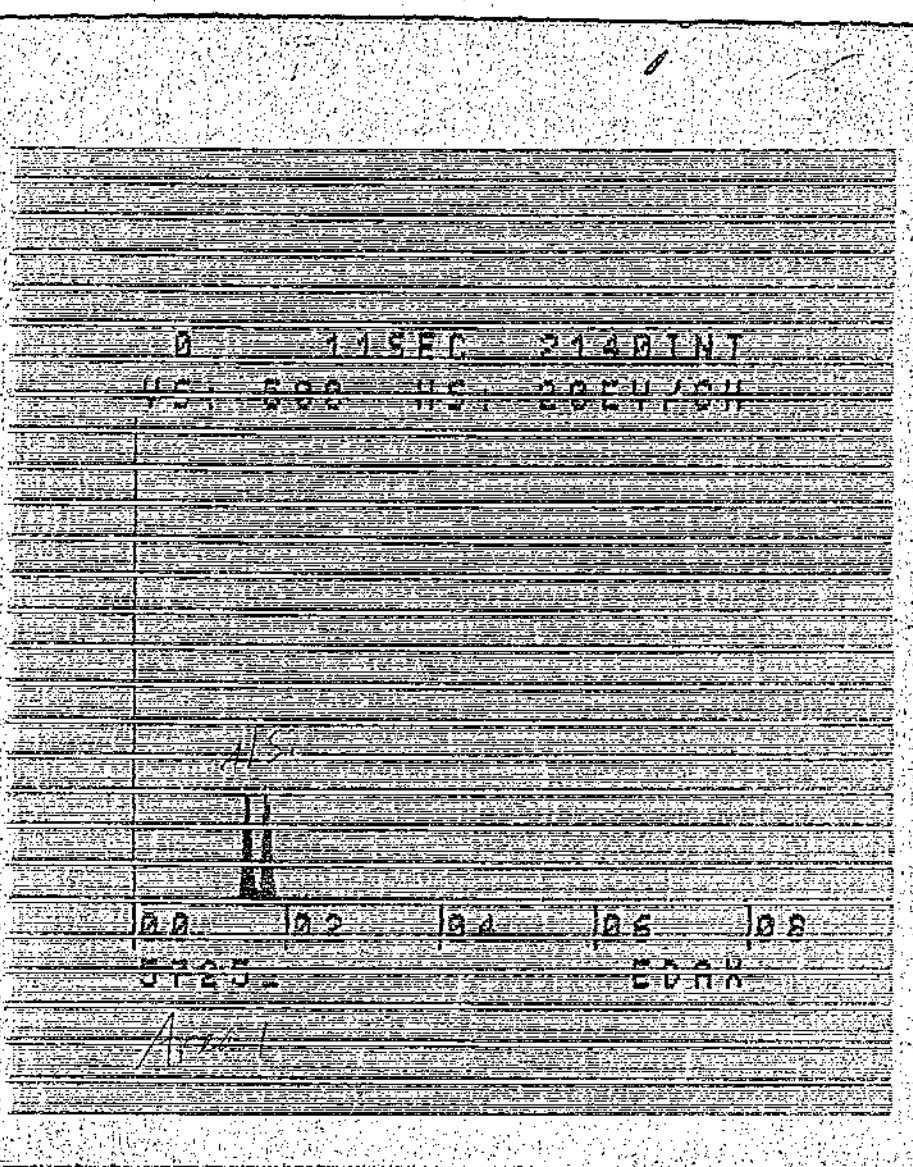
2000X



5725-1

3

5000X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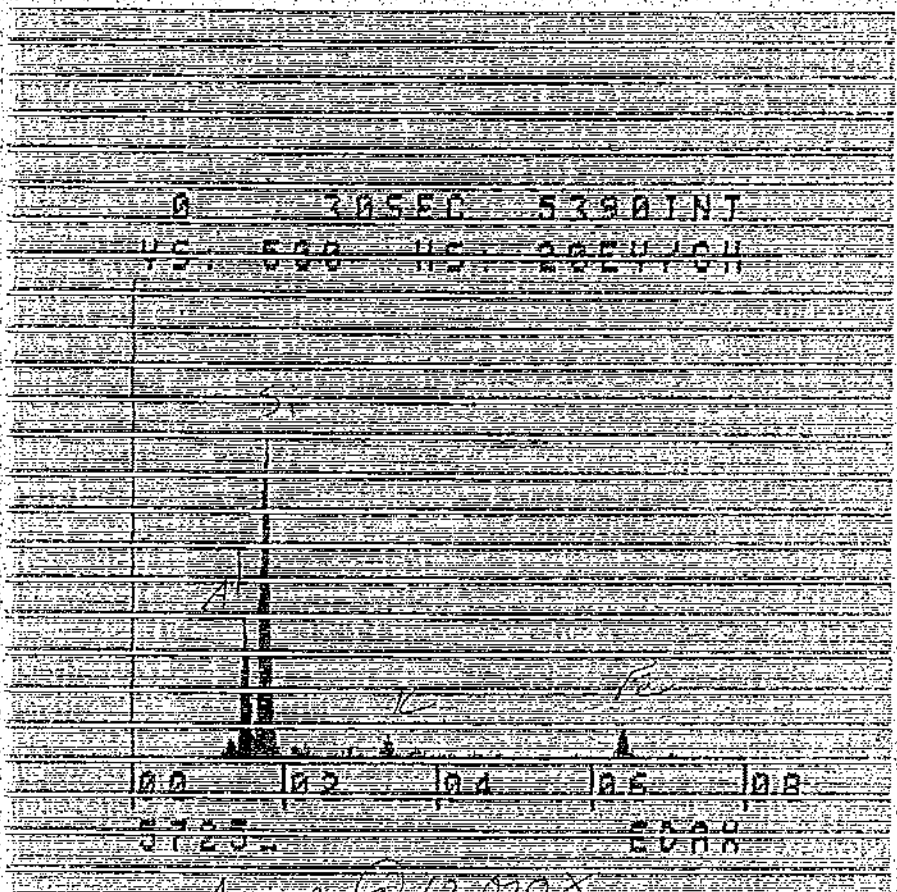
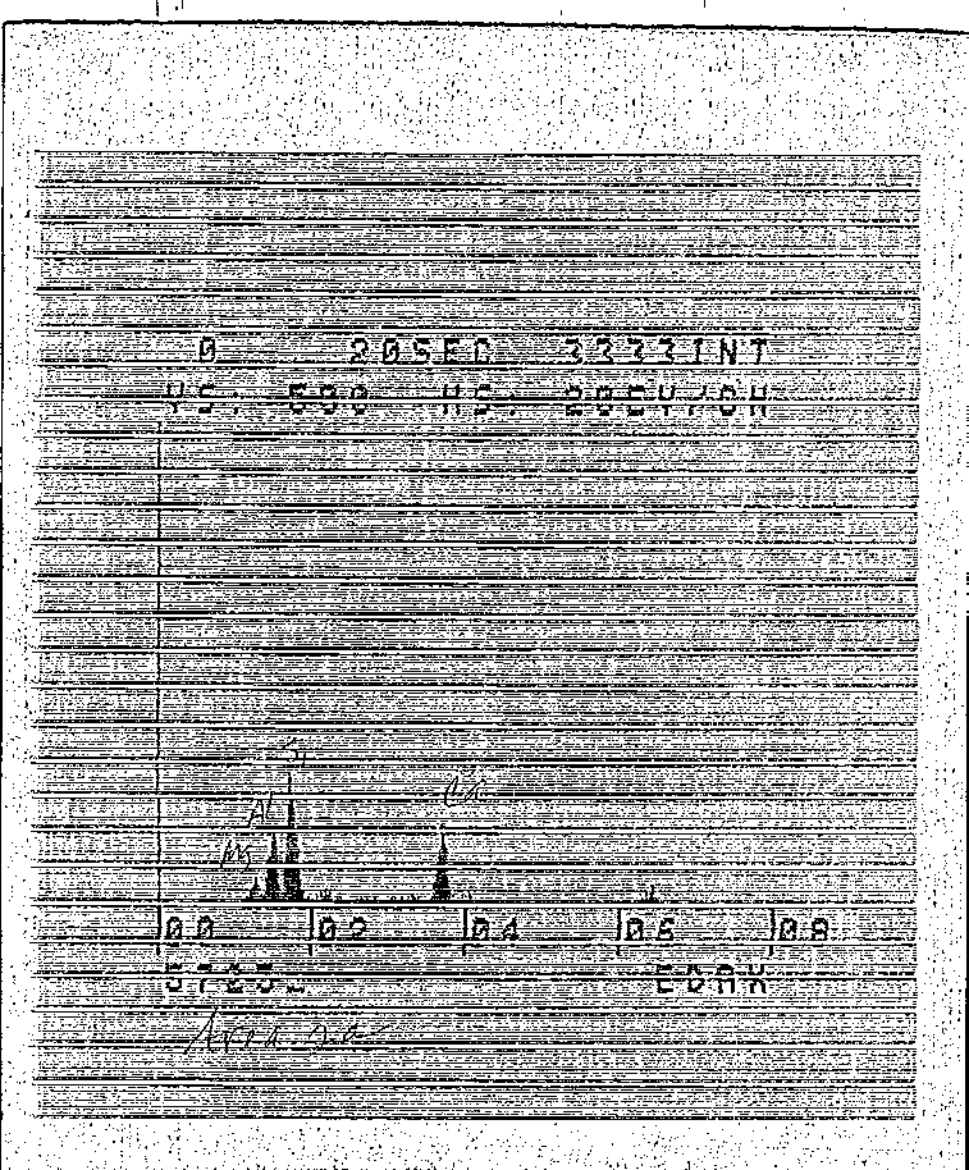
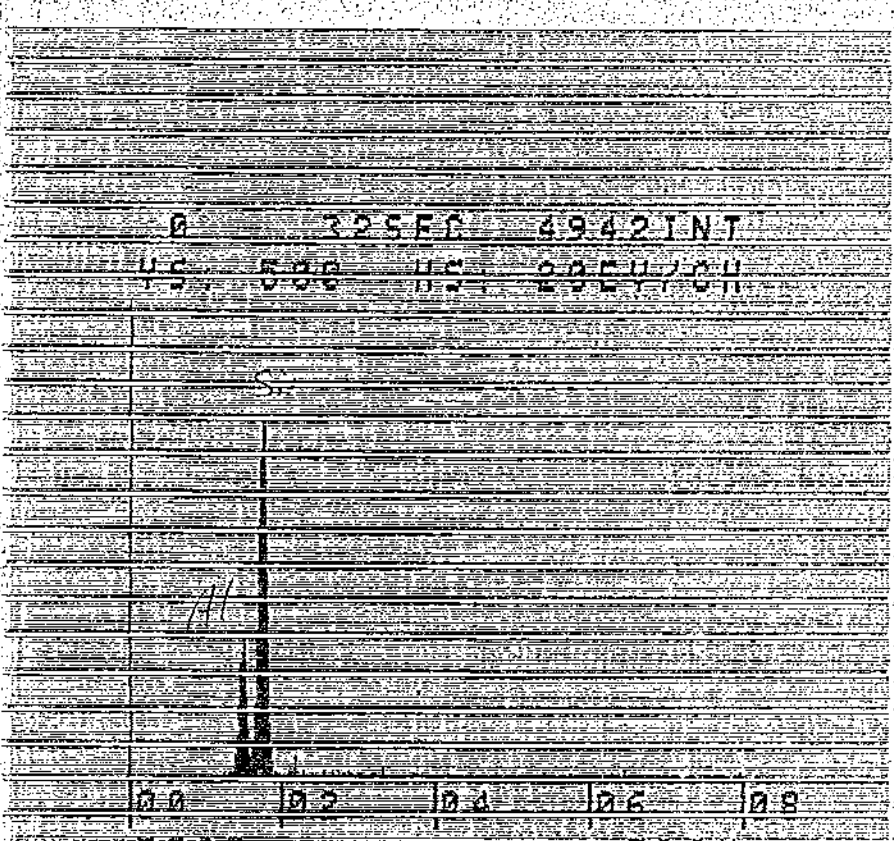
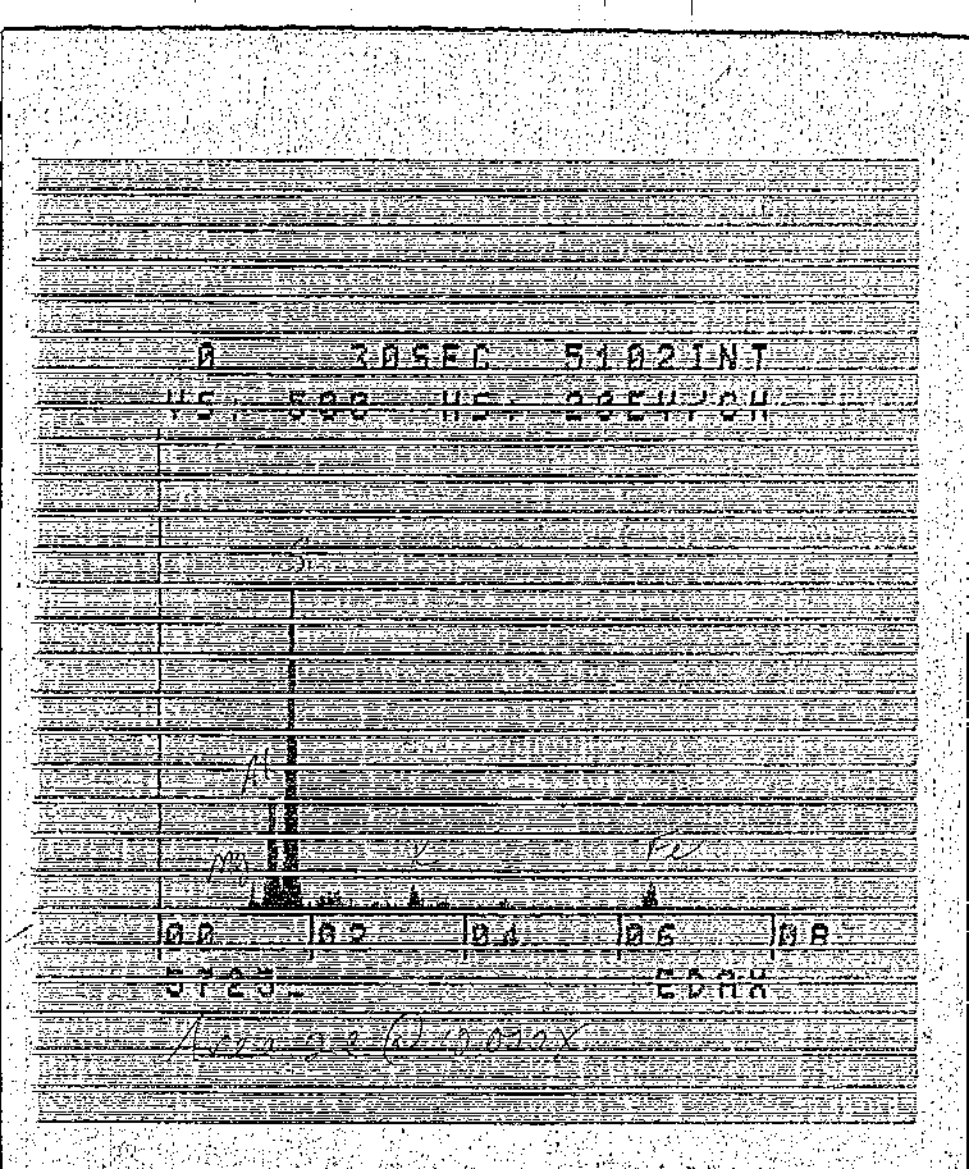
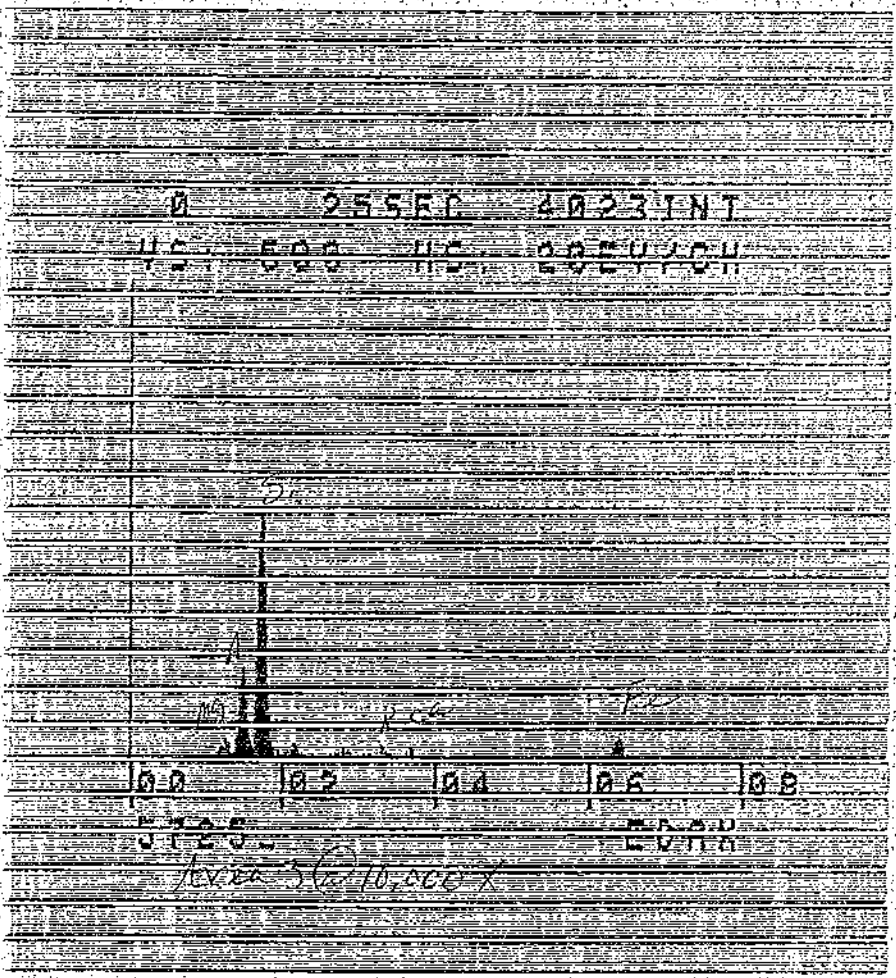
00 02 04 06 08


0 30SEC 5390INT
0.0
0.2
0.4
0.6
0.8


0 2SEC 3333INT
00 02 04 06 08


0 325EC 4942INT
00
02
04
06
08


0 20SEC 5102INT
0.0
0.2
0.4
0.6
0.8


0 2556C 4023INT
00 02 04 06 08

N. Belridge 43-27

Soule. 5725'

Area 1 @5000x-
Kaolinite

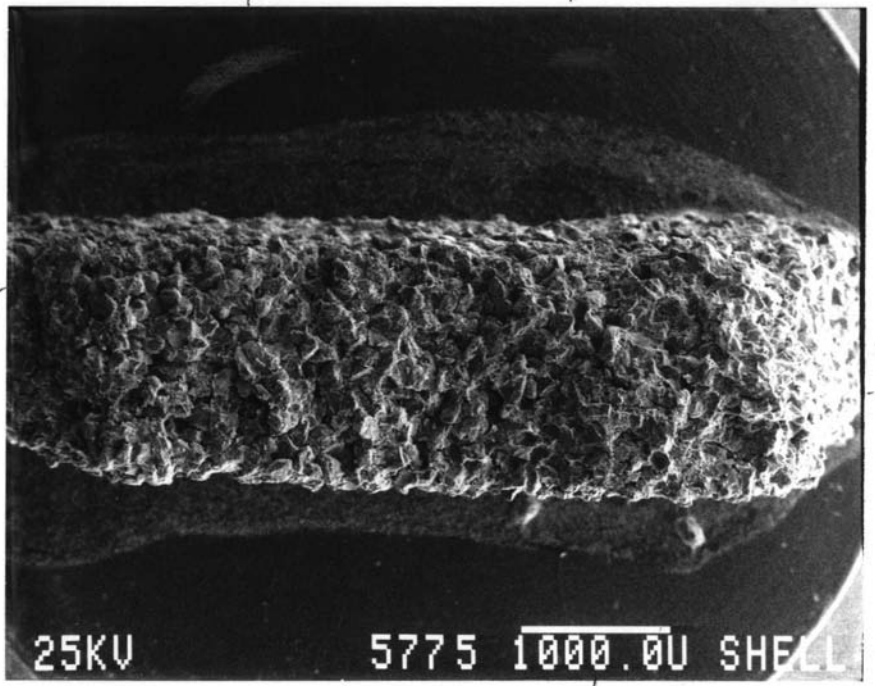
2 @5000x-Ill.te

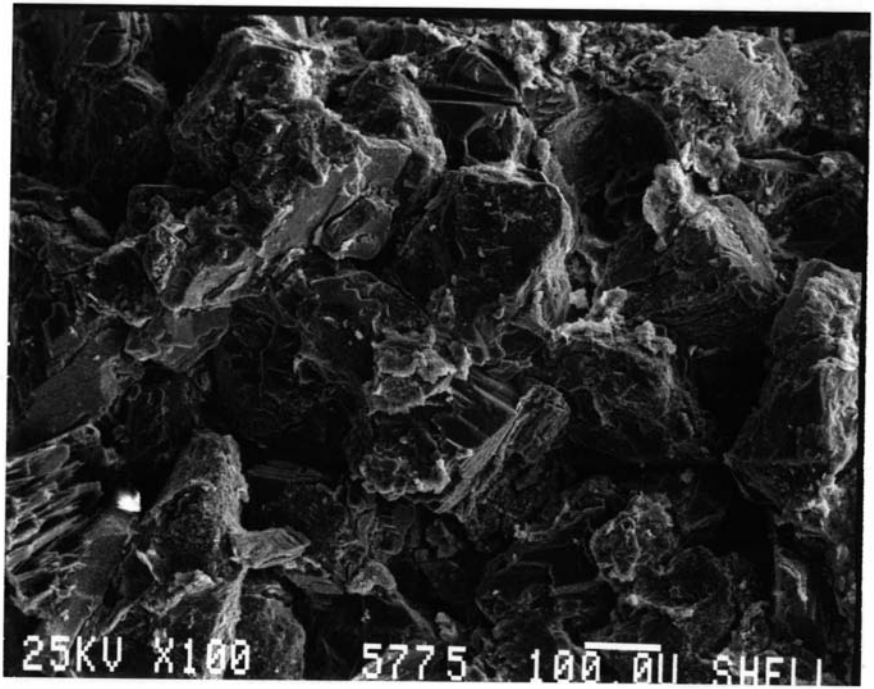
2a-?

2b-Feldspar

2c-?

3 @5000x-
Ill.te/Chlo..te?

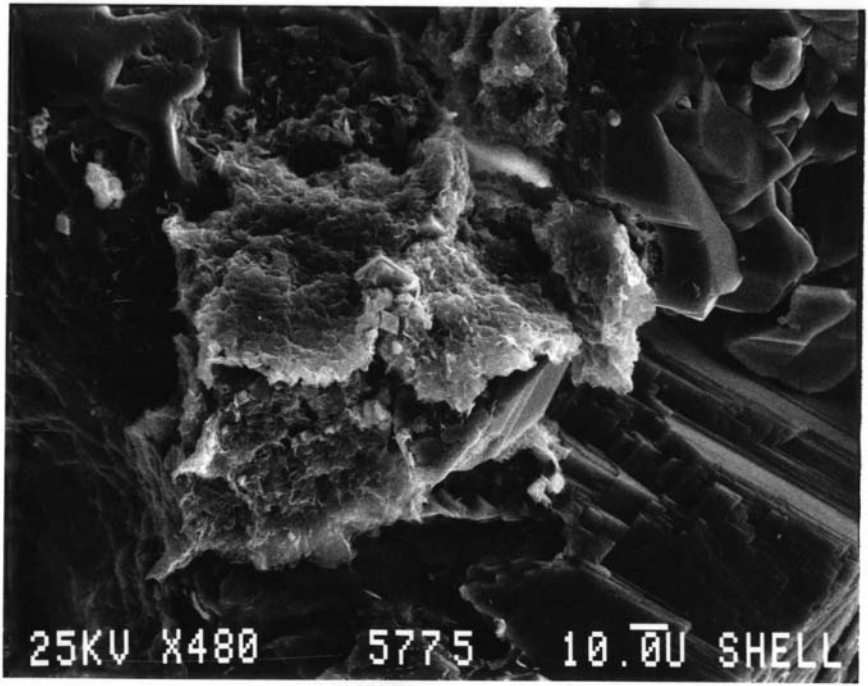

25KV
5775 1000.0U SHELL



5775'

1

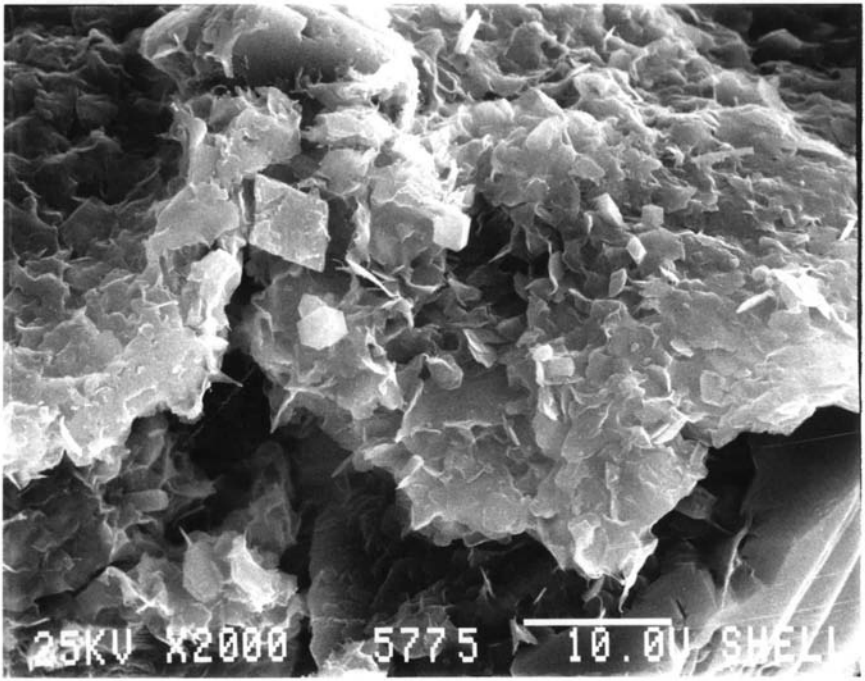
100X



5775'

1 over

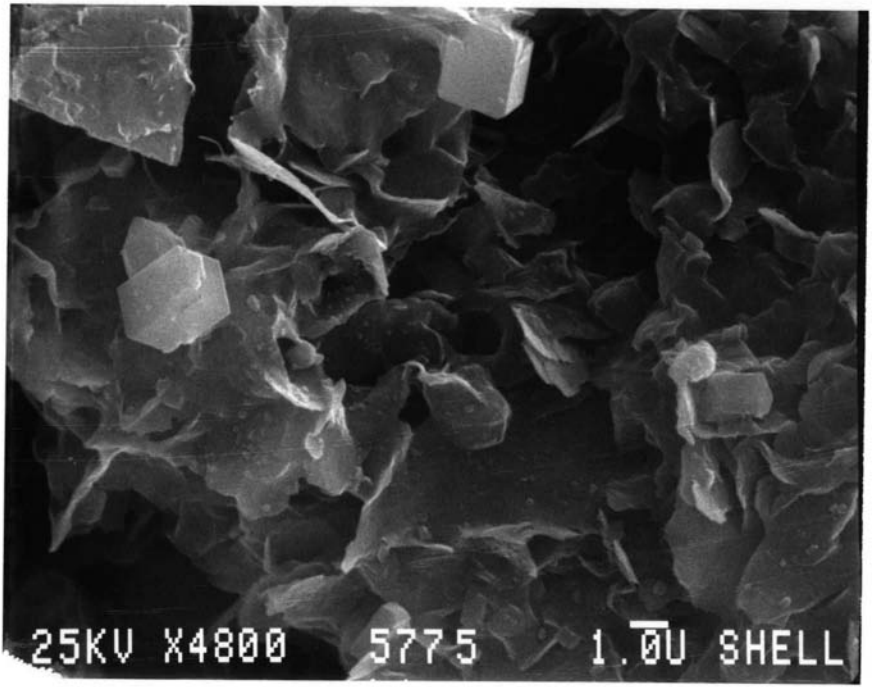
500X



5775'

1

2000X

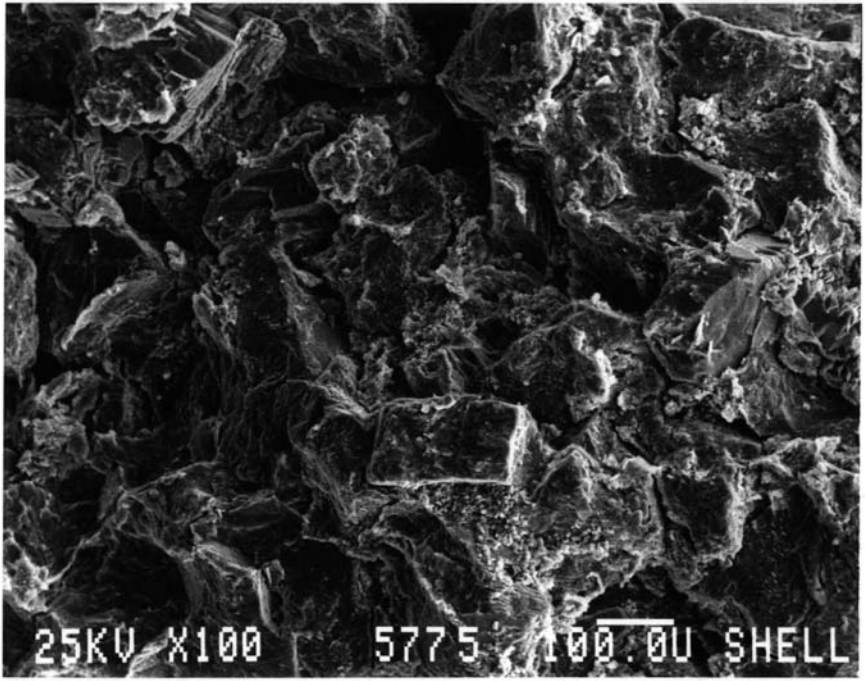


5775'

1

Over

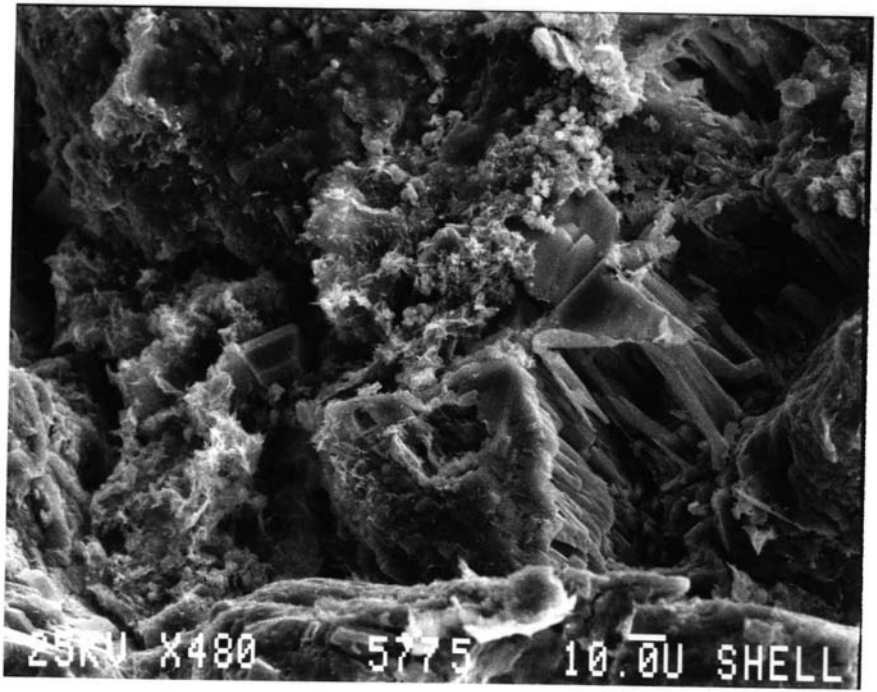
5000x



5775

2

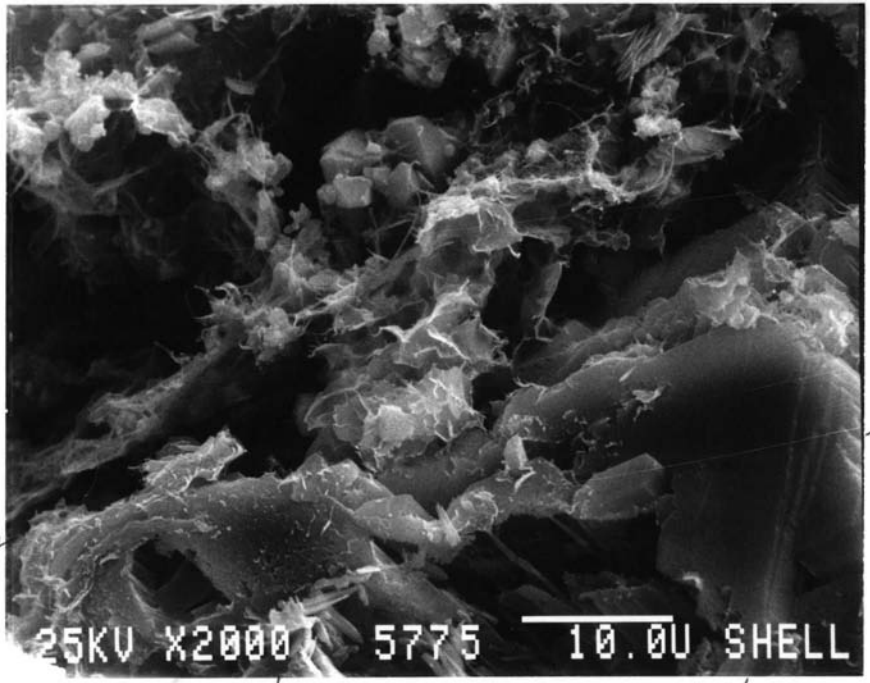
100X



5775'

2

500Y



5775-1

2

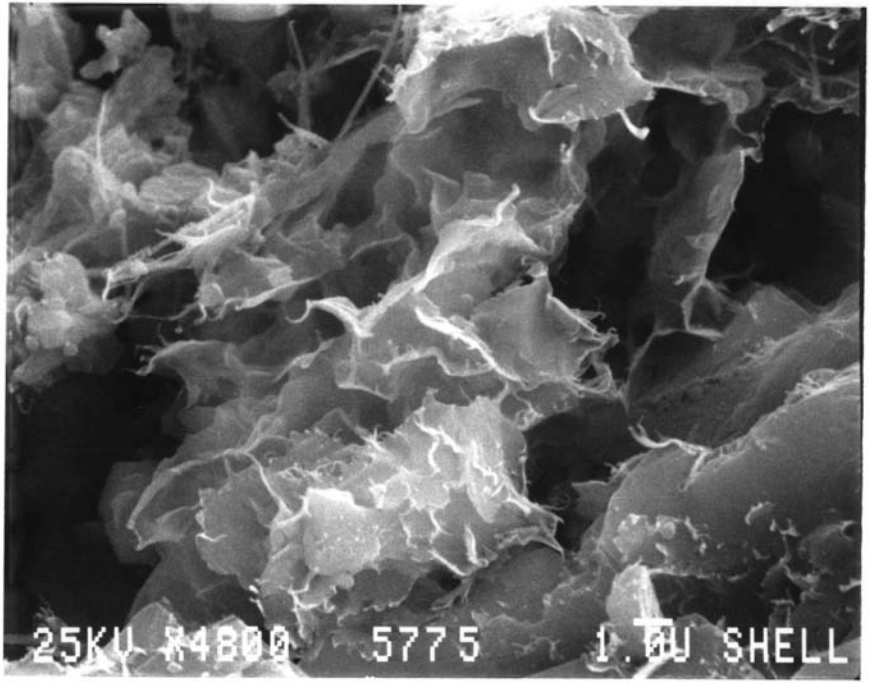
2000X

2a

2b

2a

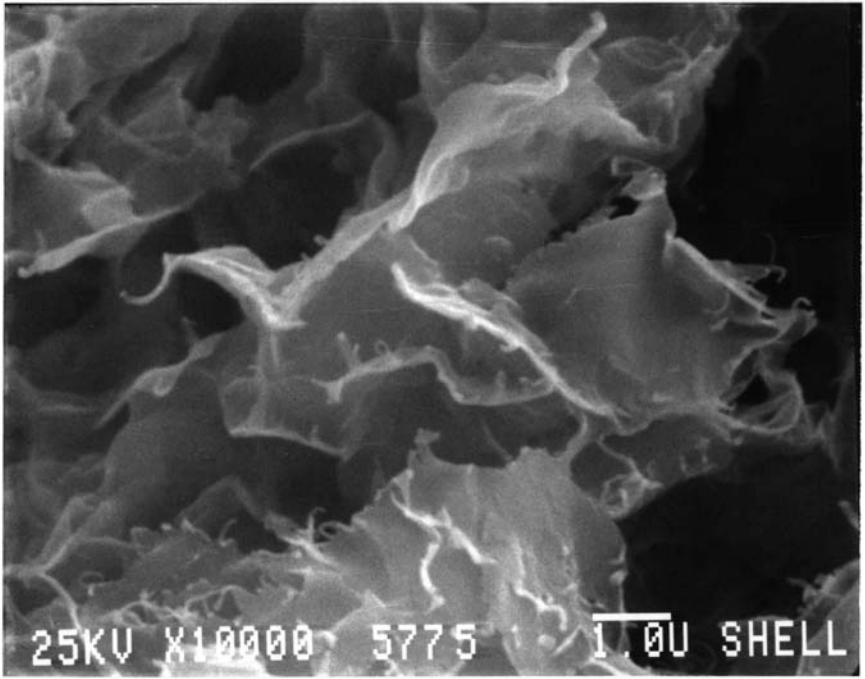
2b



5775'

2

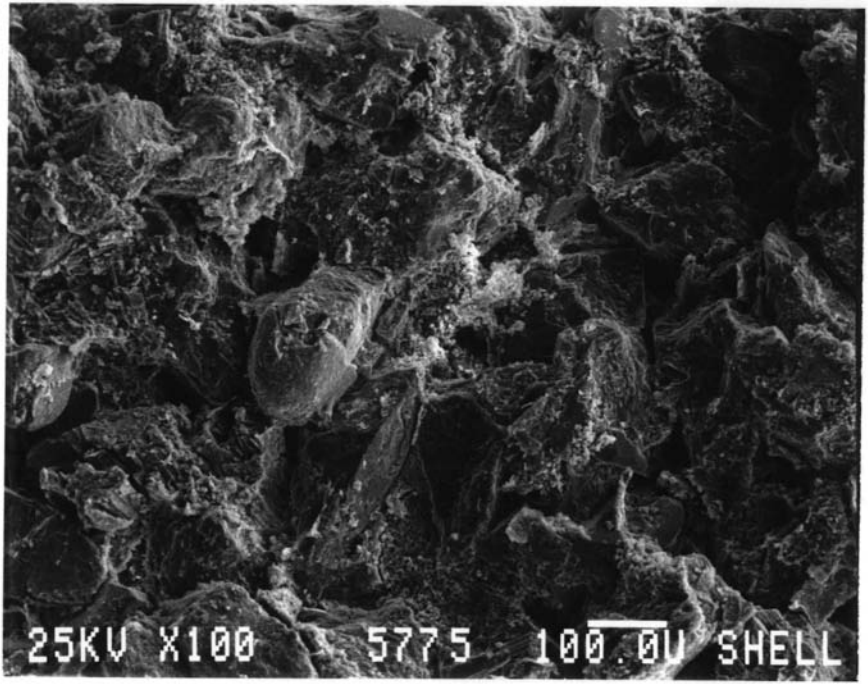
5000X



5775'

2

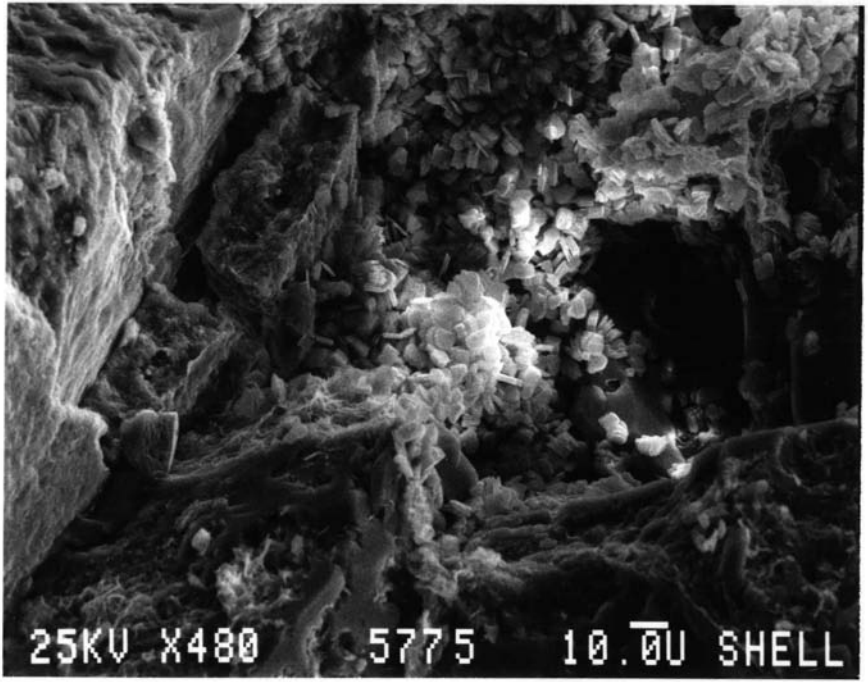
10,000X



5775'

3

100X



5775

B

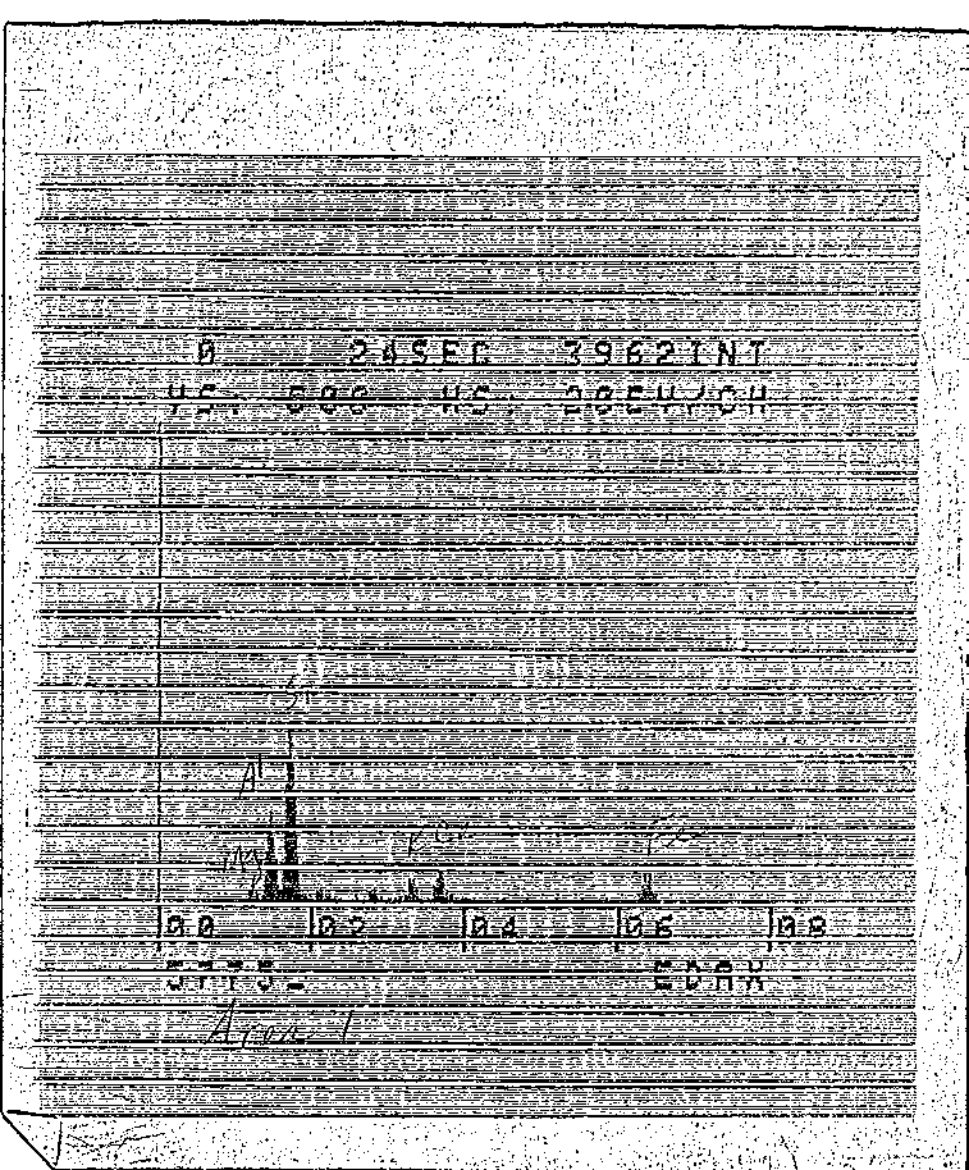
500X

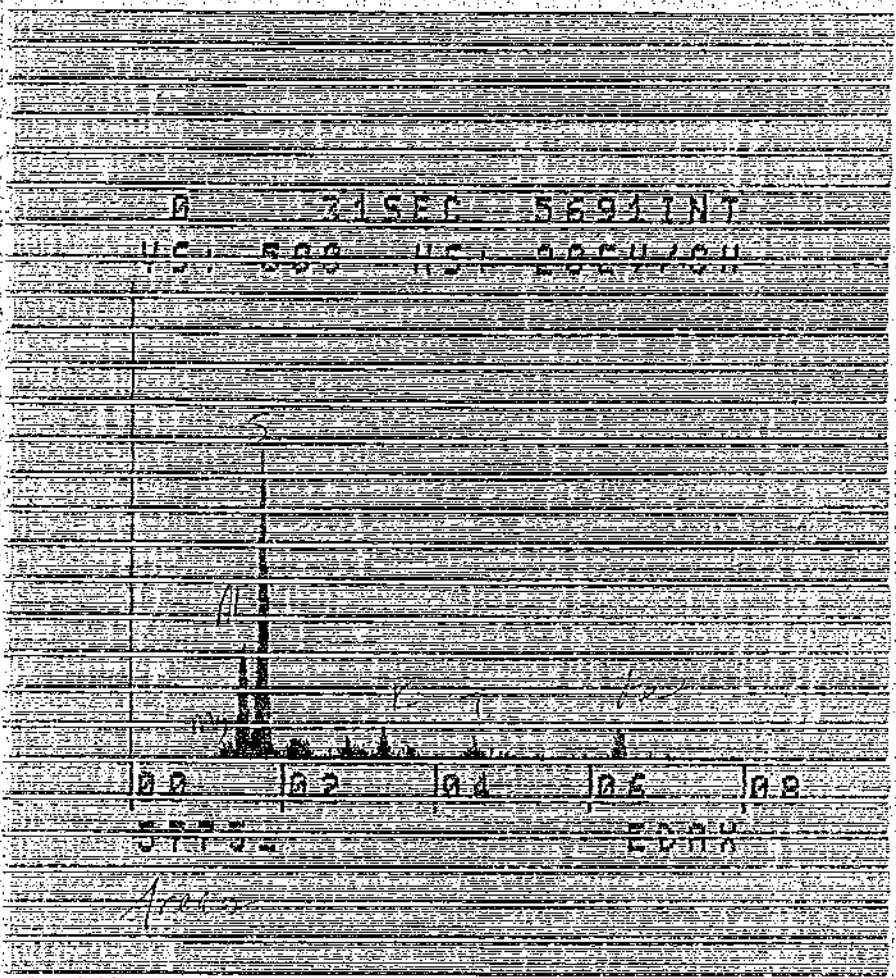


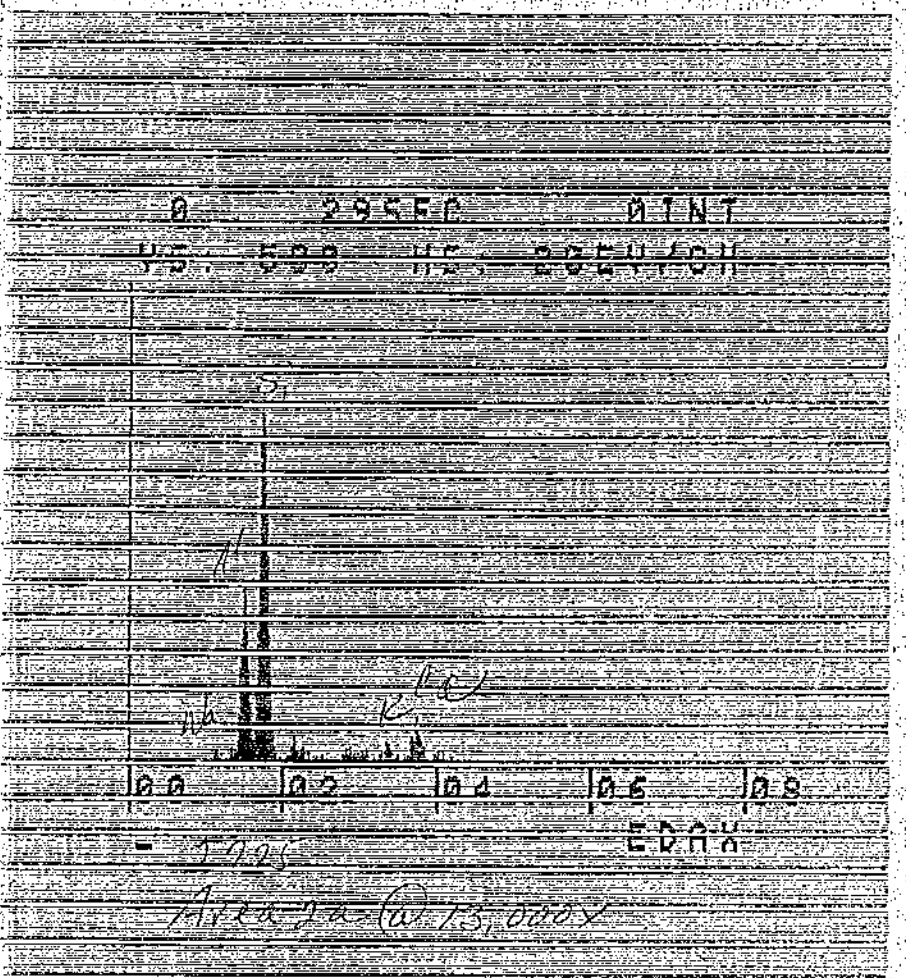
5775'

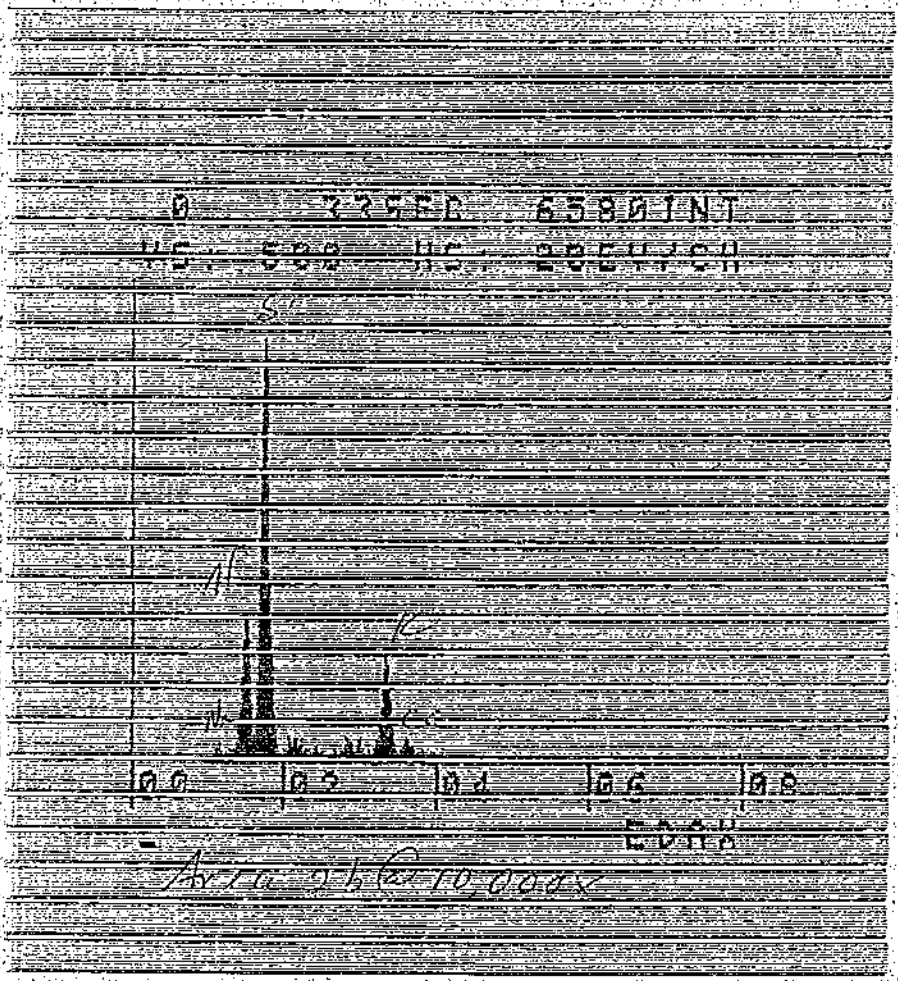
3

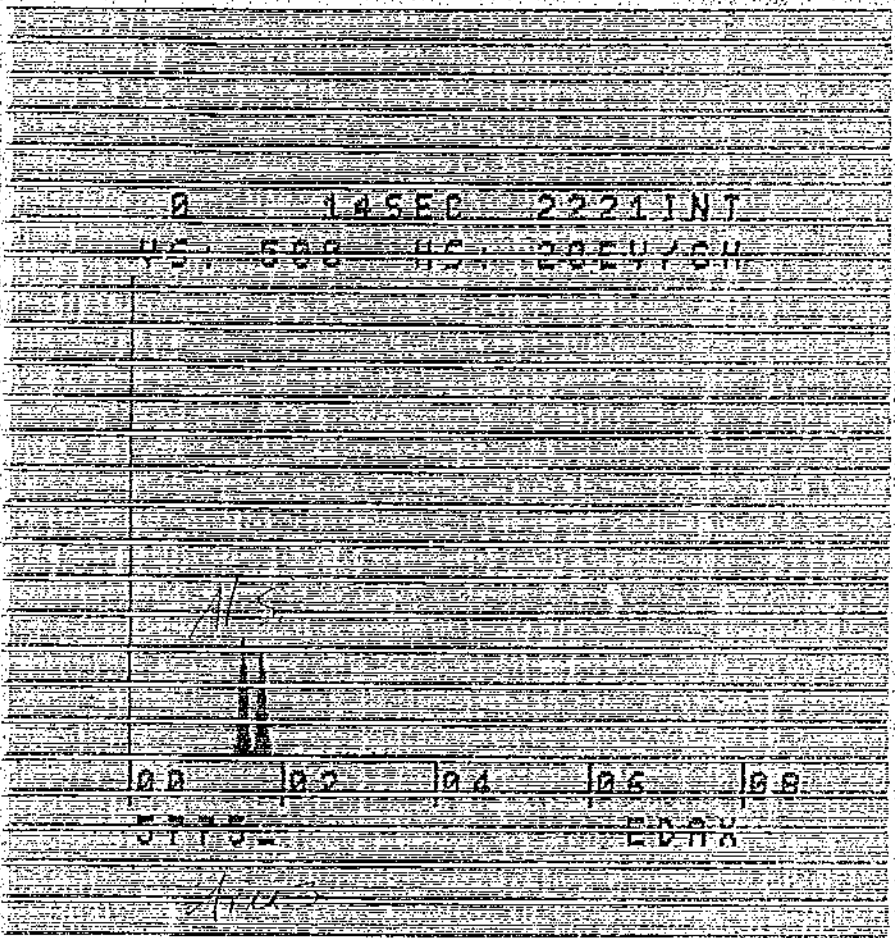
2000X


0 2 SEC 3962 INT
0 0
0 2
0 4
0 6
0 8




0 29SEC 0INT
YS: 500 HS: 20E4YOH
S1
00
02
04
06
08
EDAX
1925
Area 2a @ 13,000x




0 1ASEC 2221INT
00 02 04 06 08

N. Belridge 43-27

5775'

Area 1 @ 5000x -

Illite / Chlorite

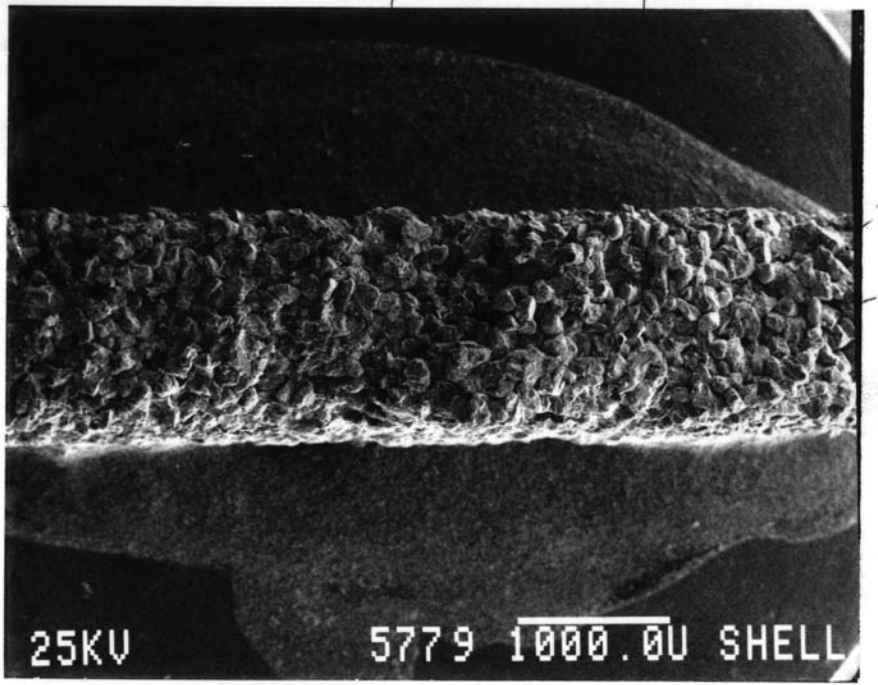
2 @ 10,000x -

Illite

2a @ 2000x - Feldspar (plagioclase

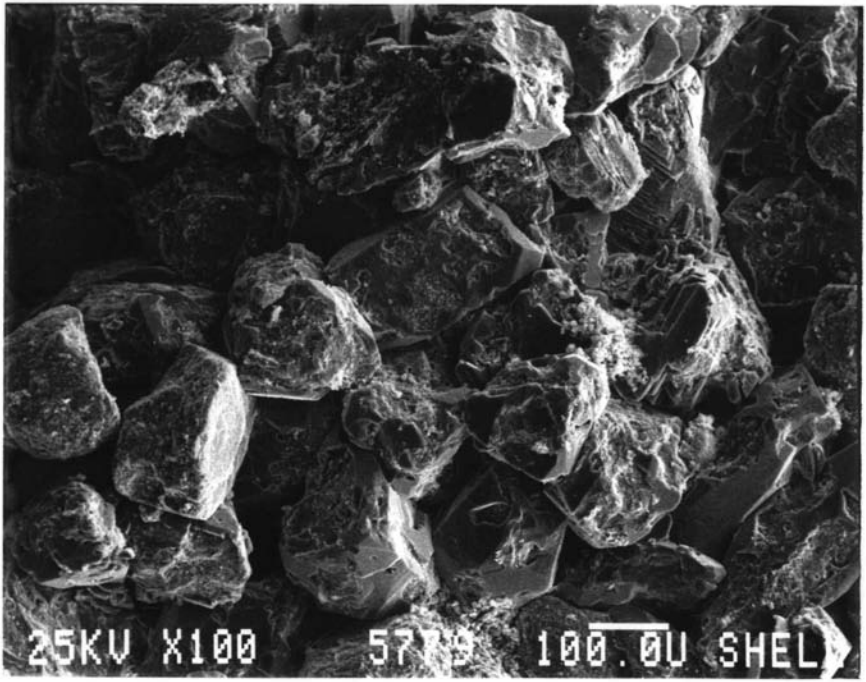
2b @ 2000x - Feldspar (K)

3 @ 2000x - Kaolinite



5779'

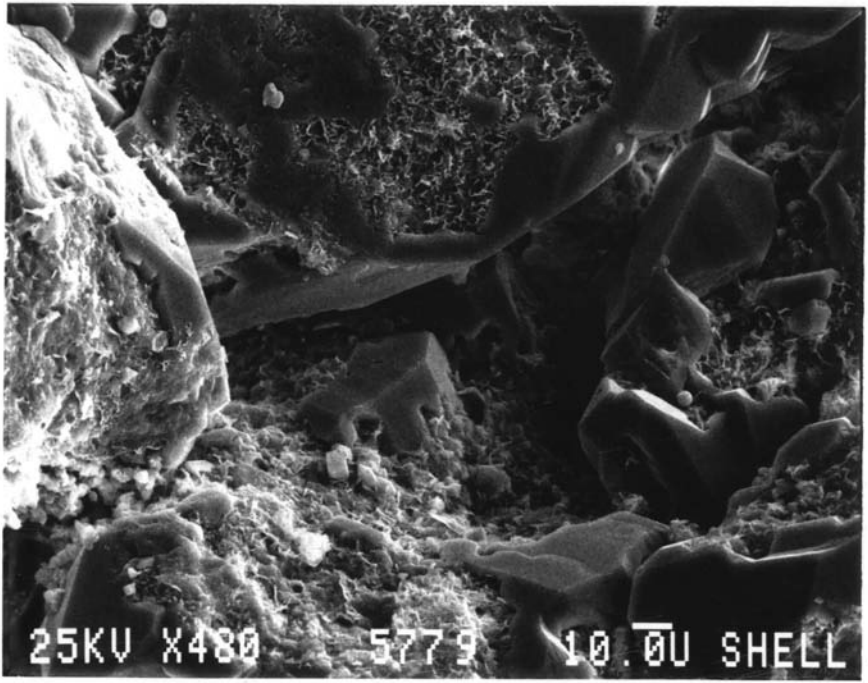
15X



5774'

1

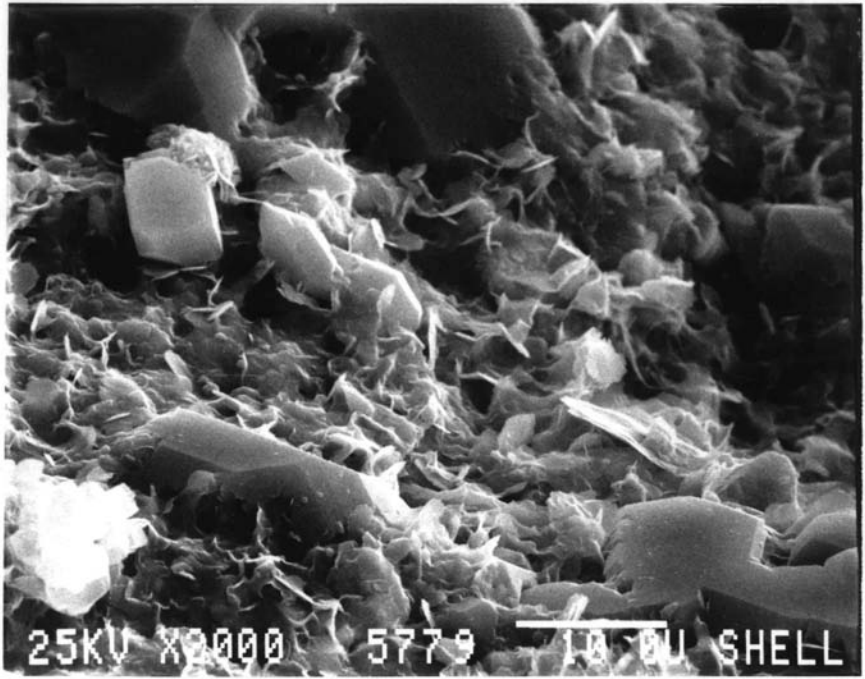
100X



5779'

1

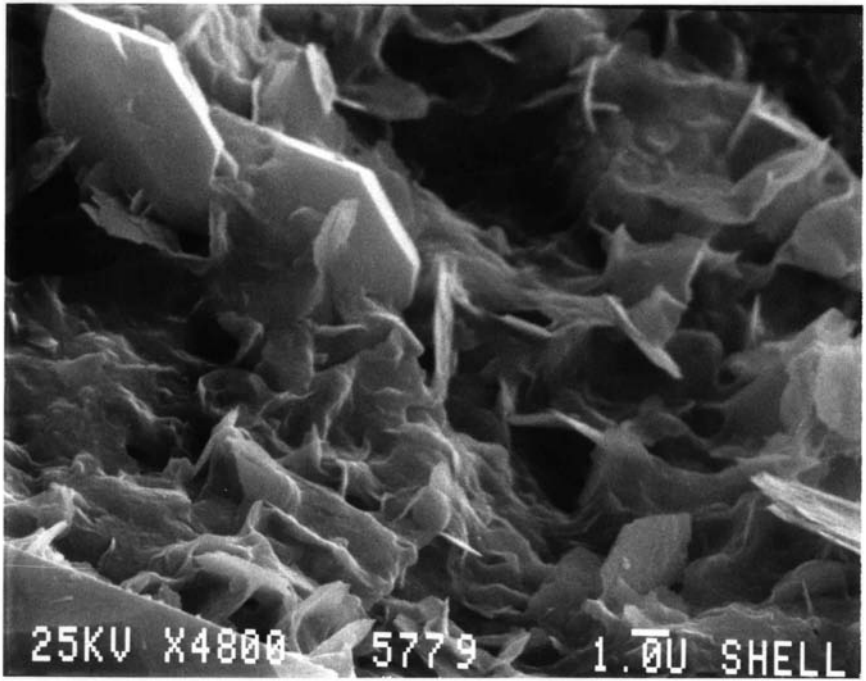
500X



5774'

1

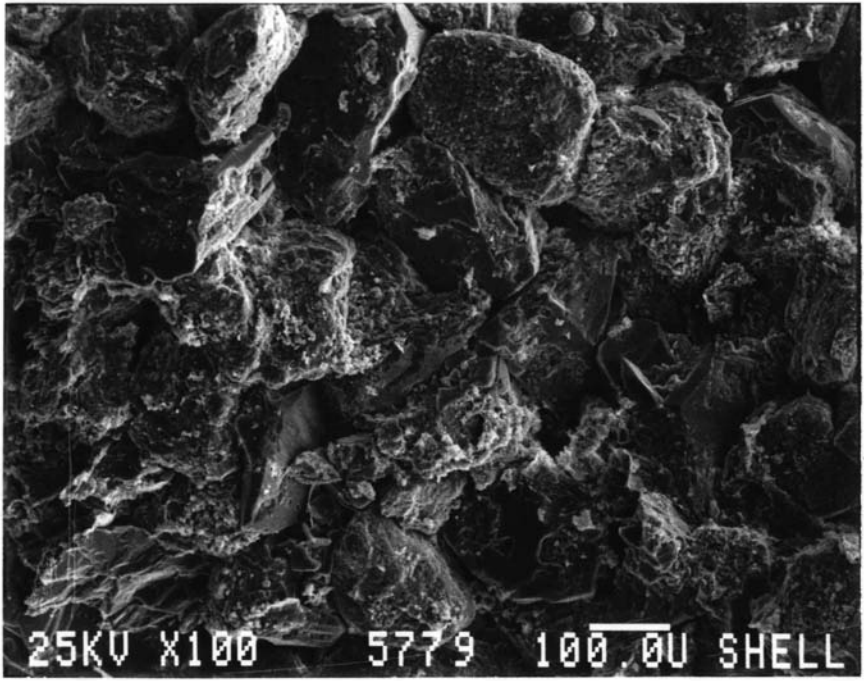
9000X



5779'

1

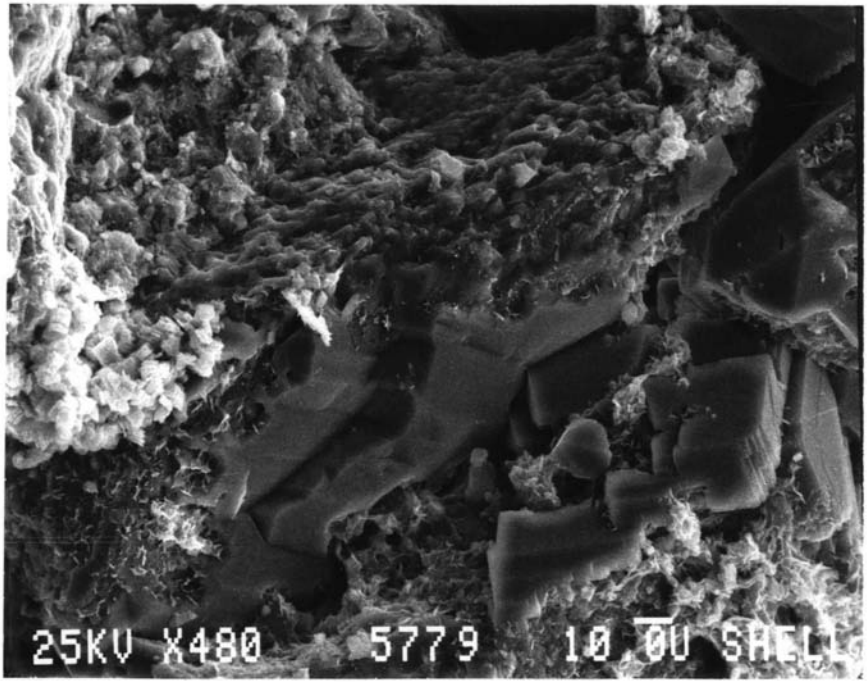
5000X



5779'

8

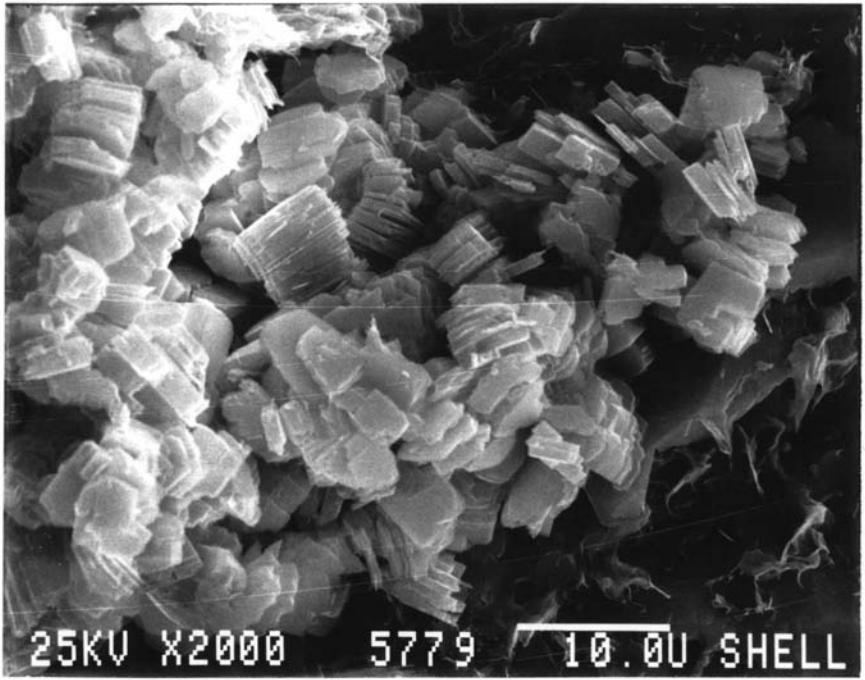
100X



5779'

8

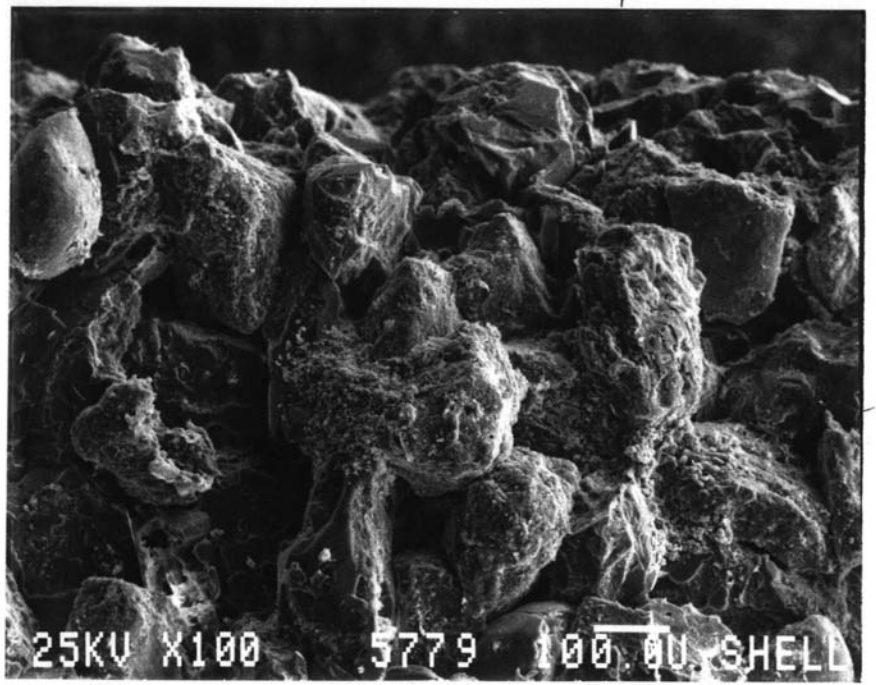
500X

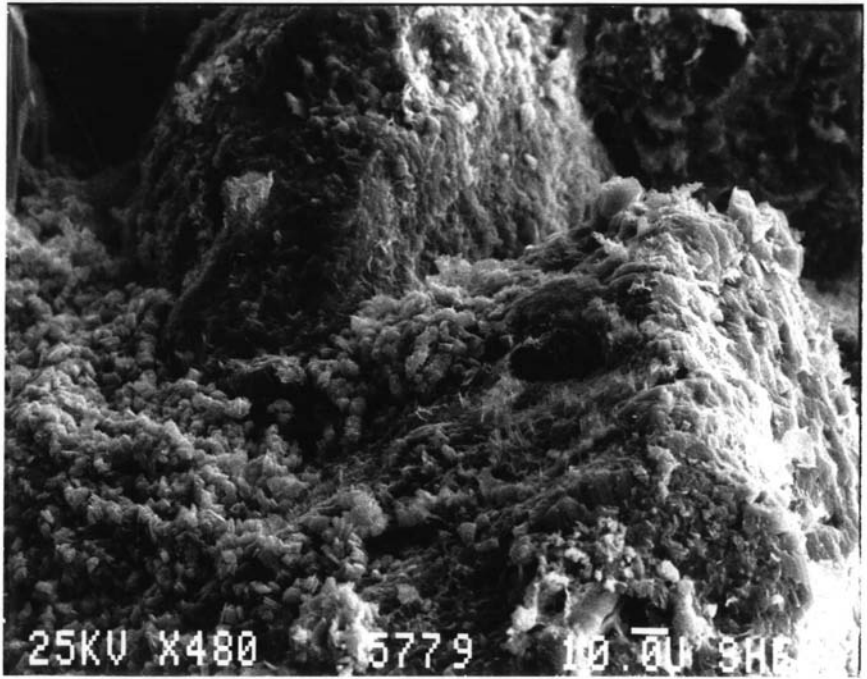


5779'

2

2000x

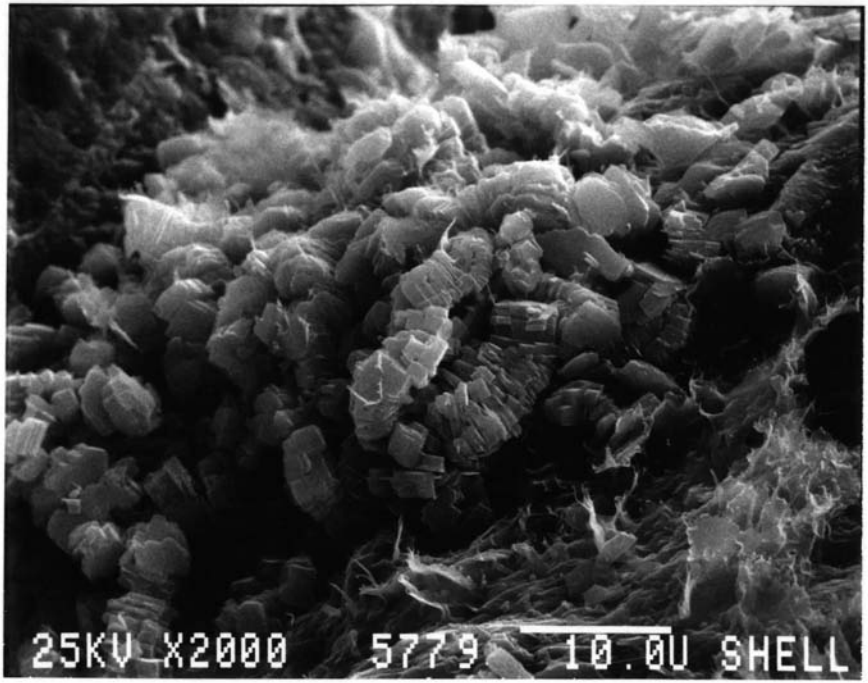

25KV X100 5779 100.0U SHELL



5779'

3

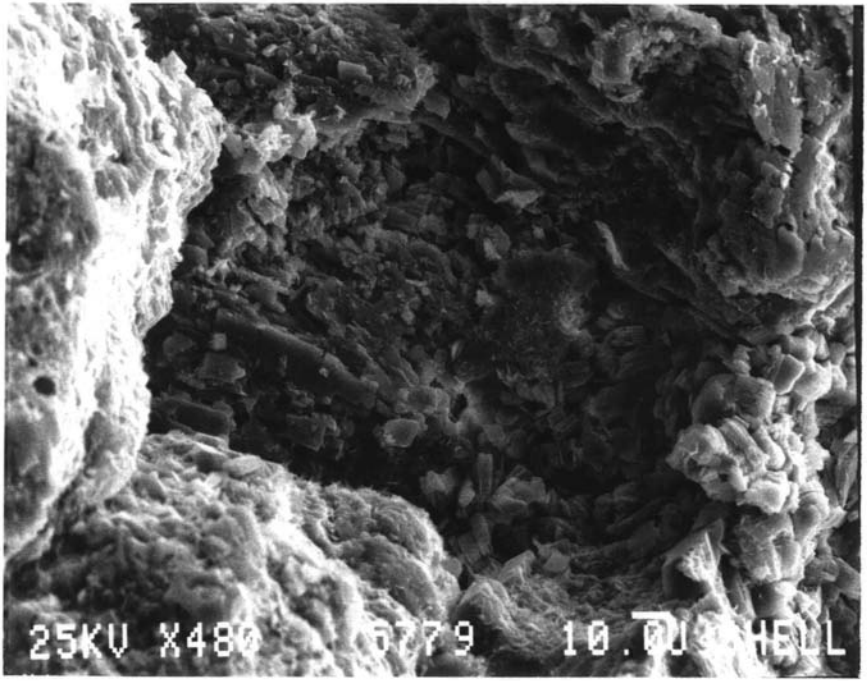
500X



5779'

3 Spect. Sim to Area 2

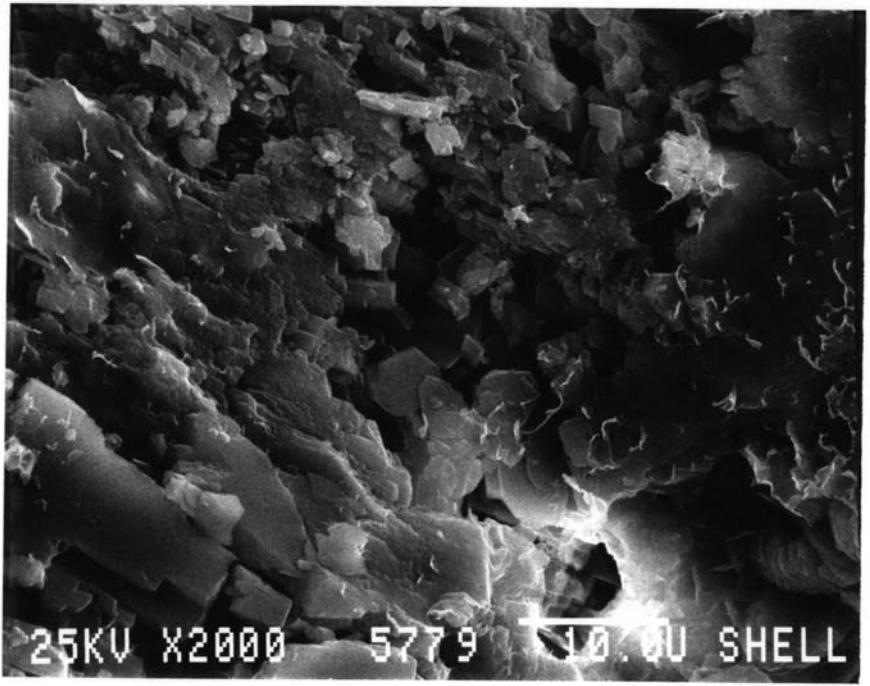
2000X



5779'

4

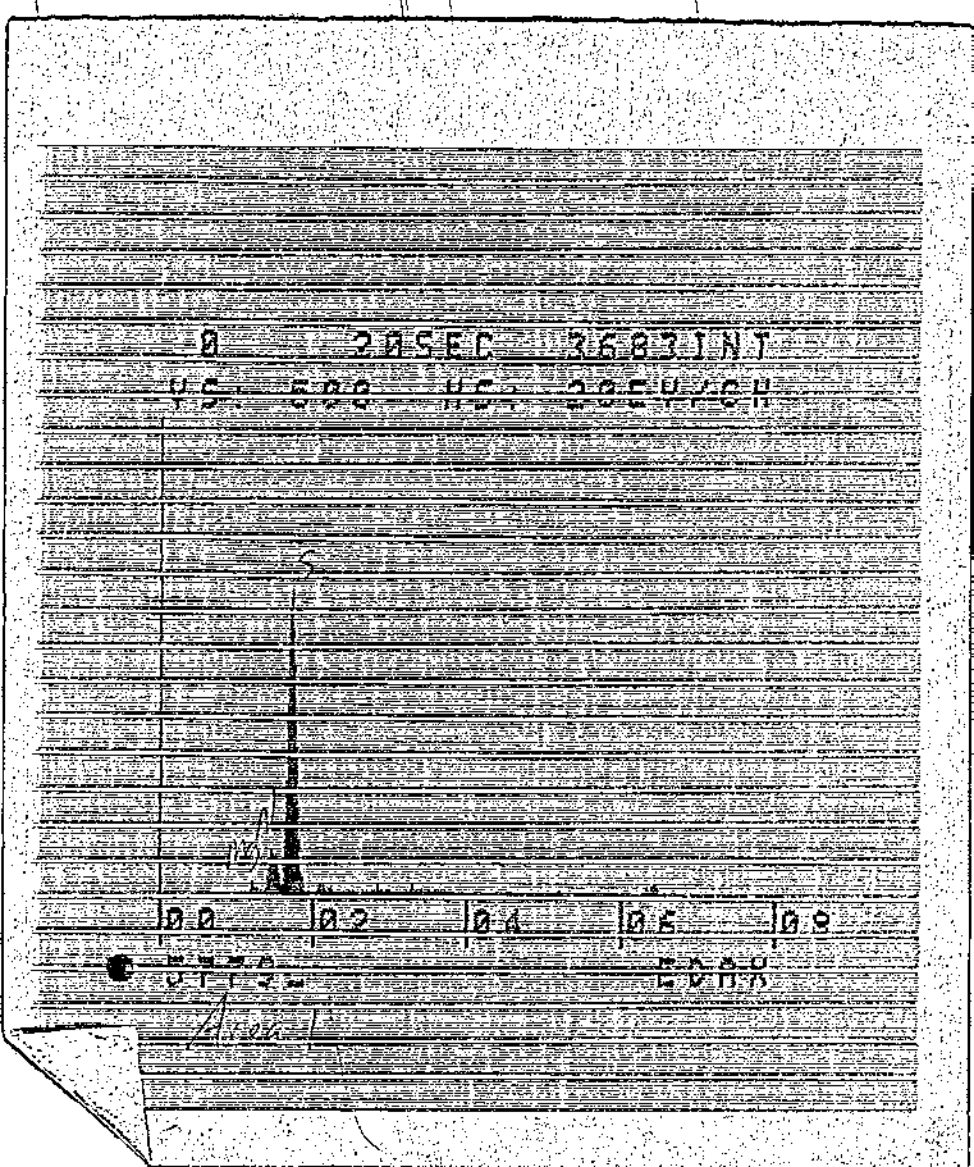
500'

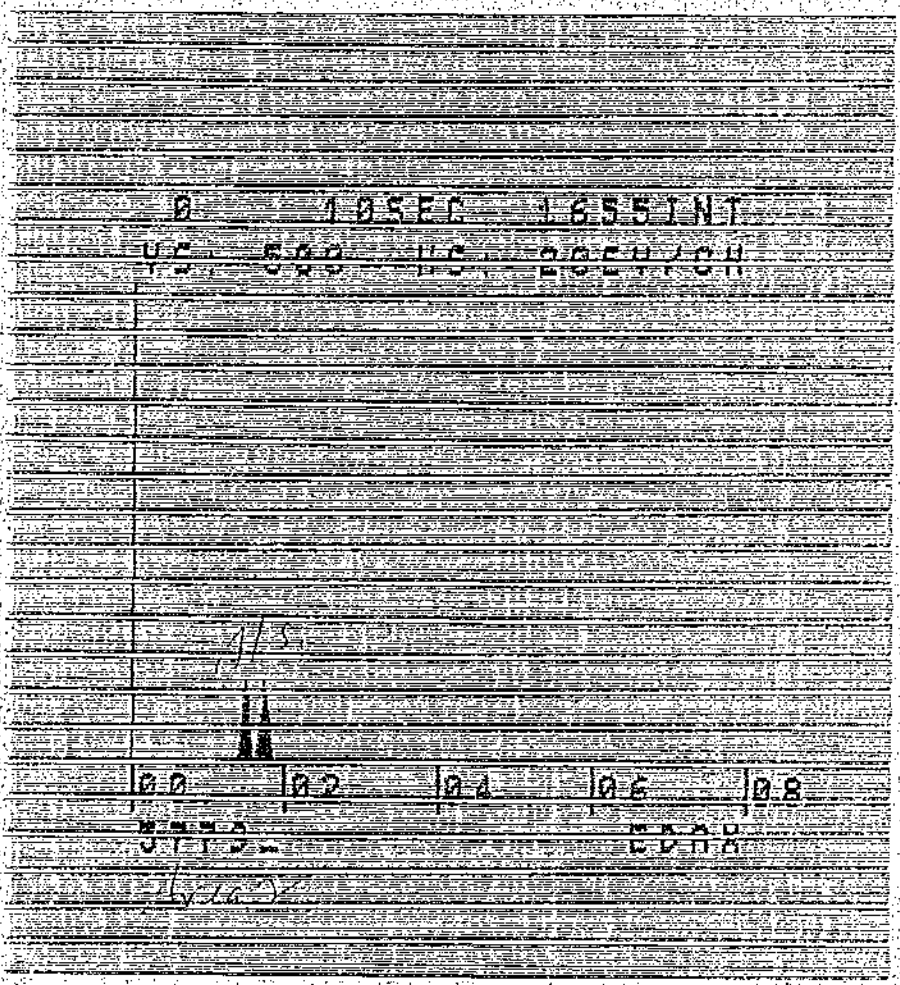


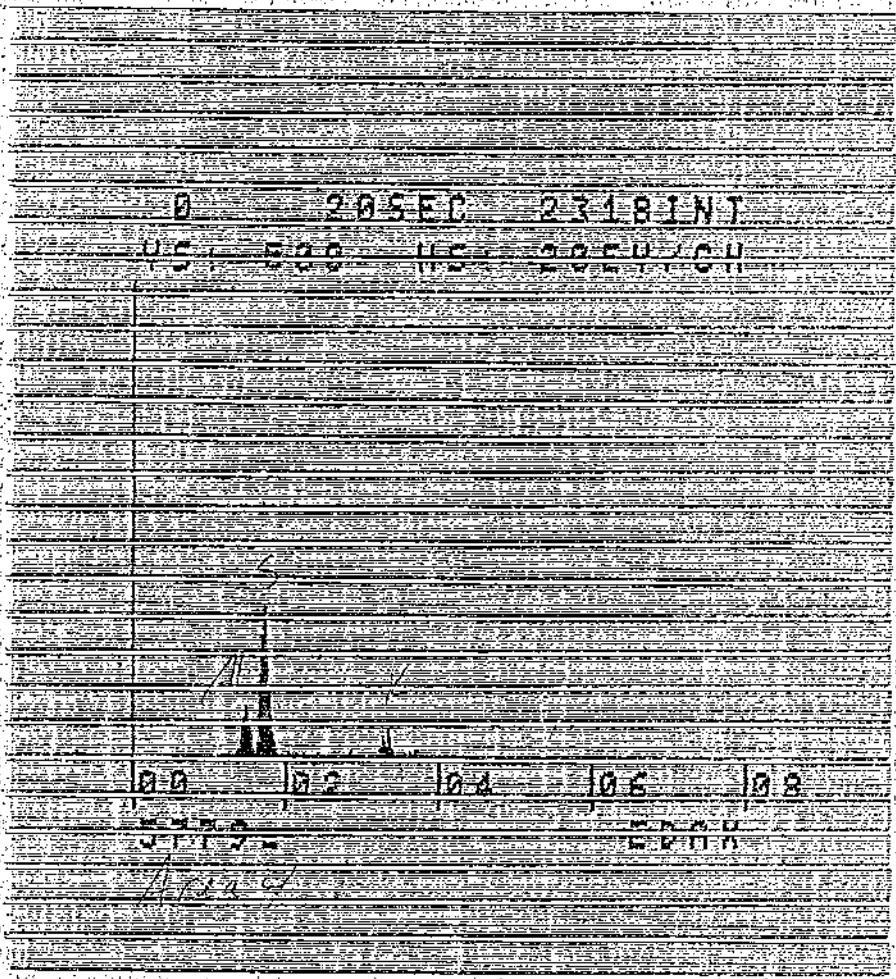
5779'

4

2000X

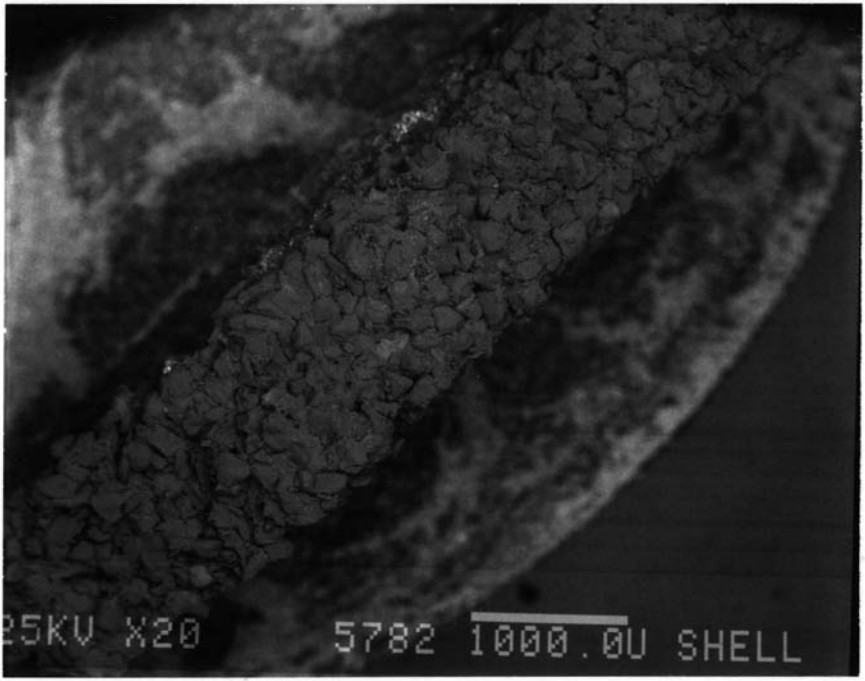

0 20SEC 3683INT
00 02 04 06 08


0 10SEC 1655INT
00 02 04 06 08


0
20SEC
2318INT
00
02
04
06
08

N. Belridge 43-25
Sand 5779'

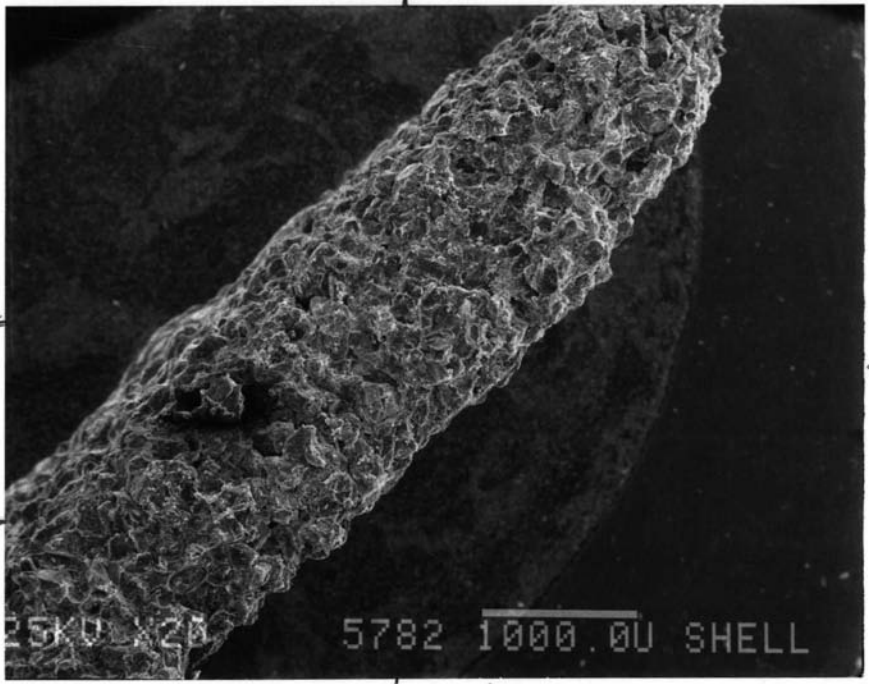
Area 1 @ 5000x
Chlorite / Illite
2 @ 2000x - Kaolinite
3 @ 2000x - "
4 @ 2000x -
K feldspar



5782'

B&I.

30Y



1

57821

4

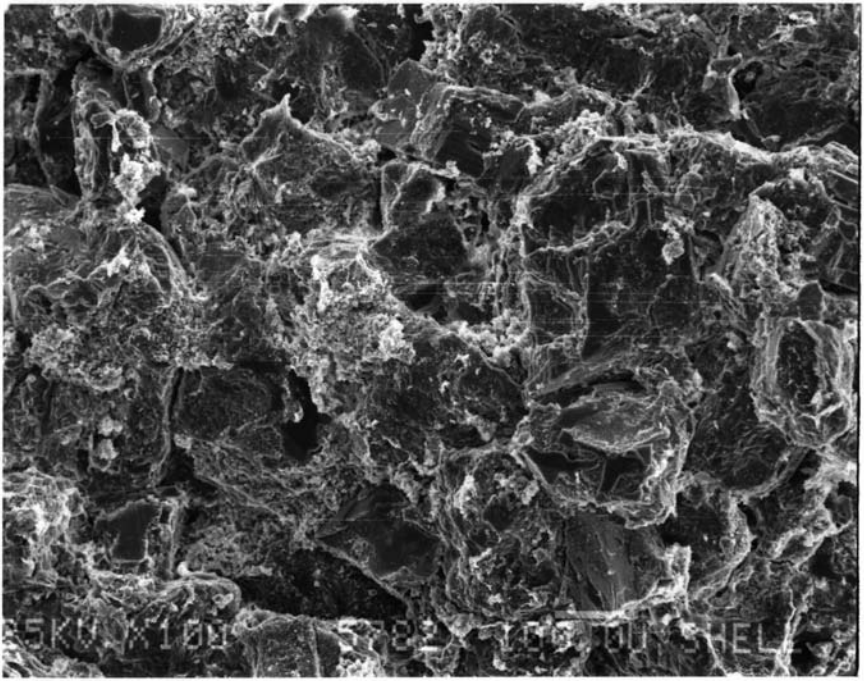
1

2

1/2

1/4

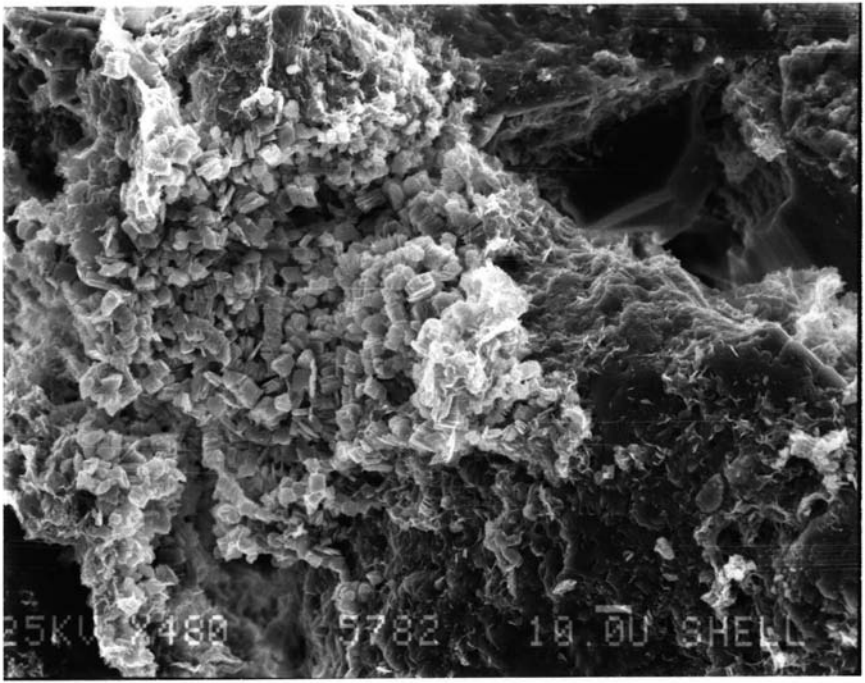
20X



57821

1

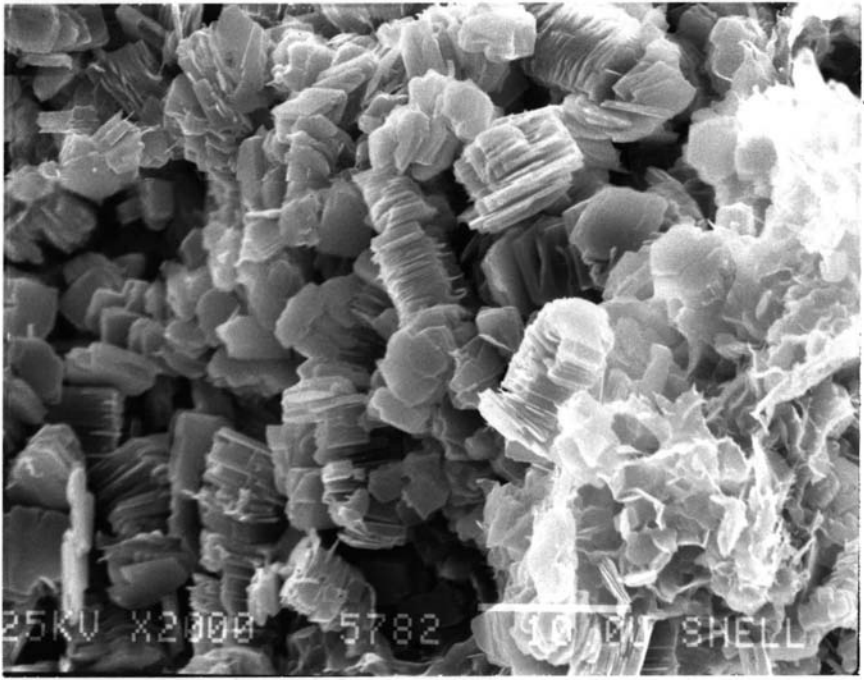
100 X



57821

1

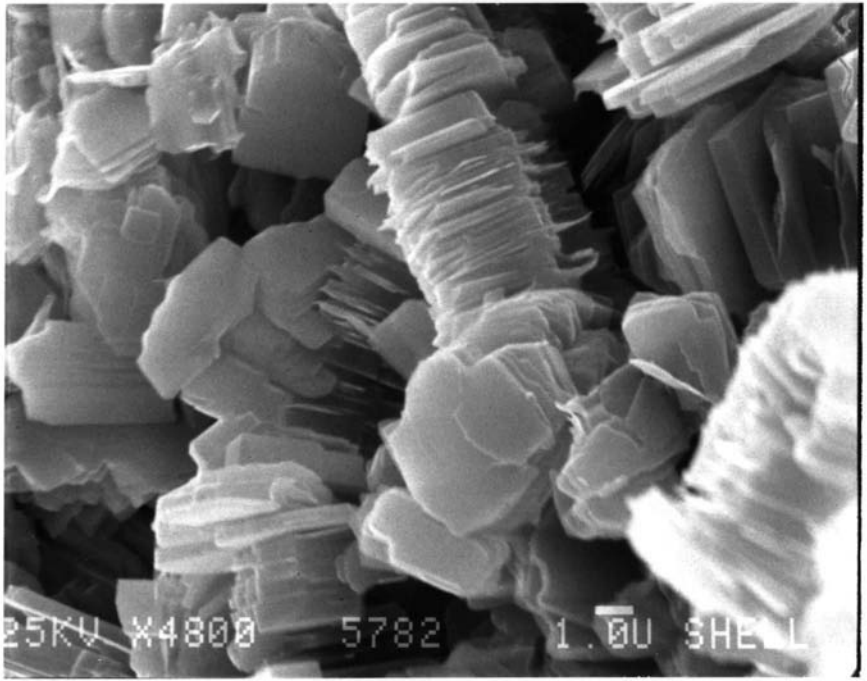
500X



5782 1

1

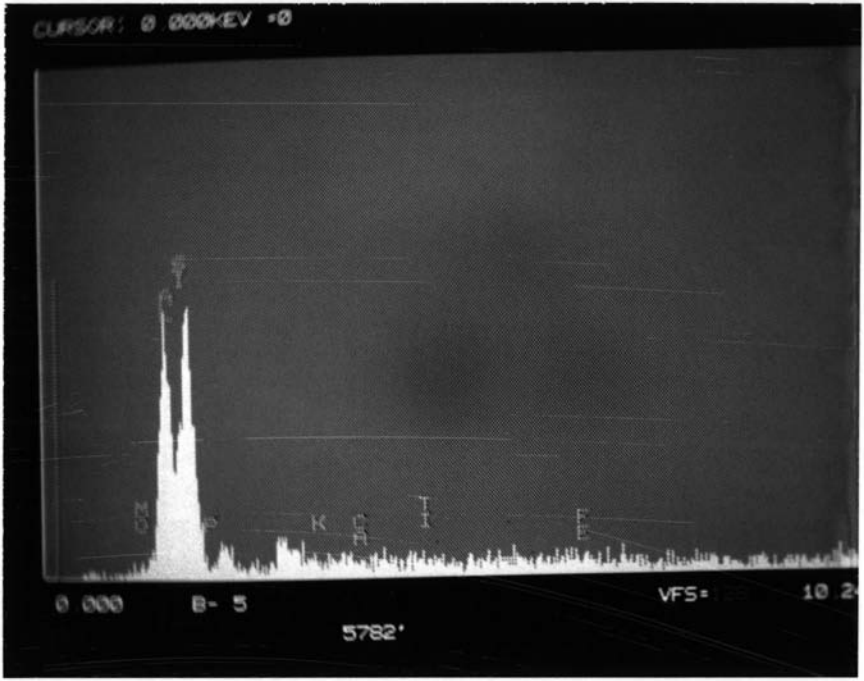
2000 X



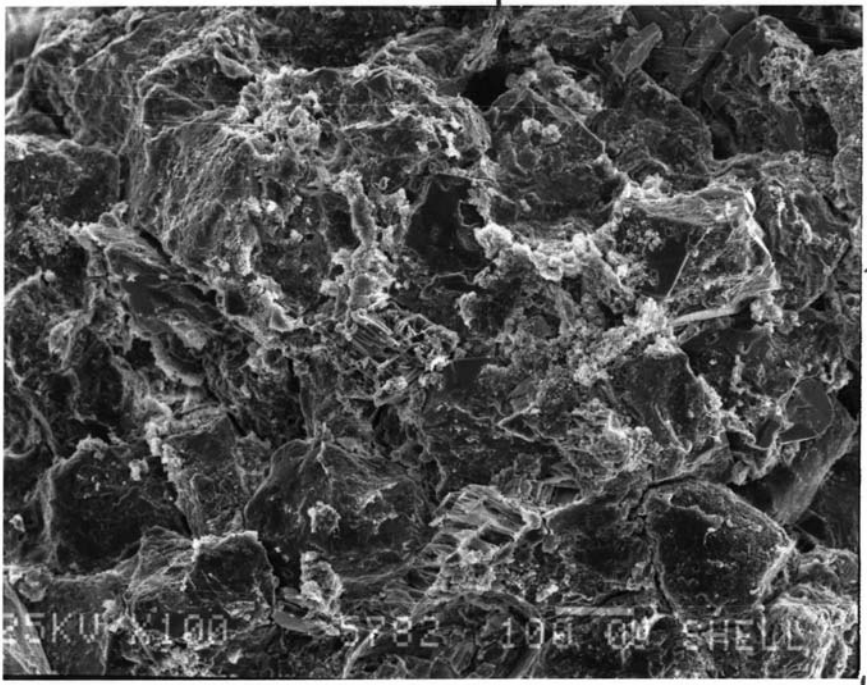
5782'

1

5000X


CURSOR: 0.000KEV =0
CA
P
K
TI
FE
0.000
B- 5
VFS=
10.2
5782'

3



57821

-3

2

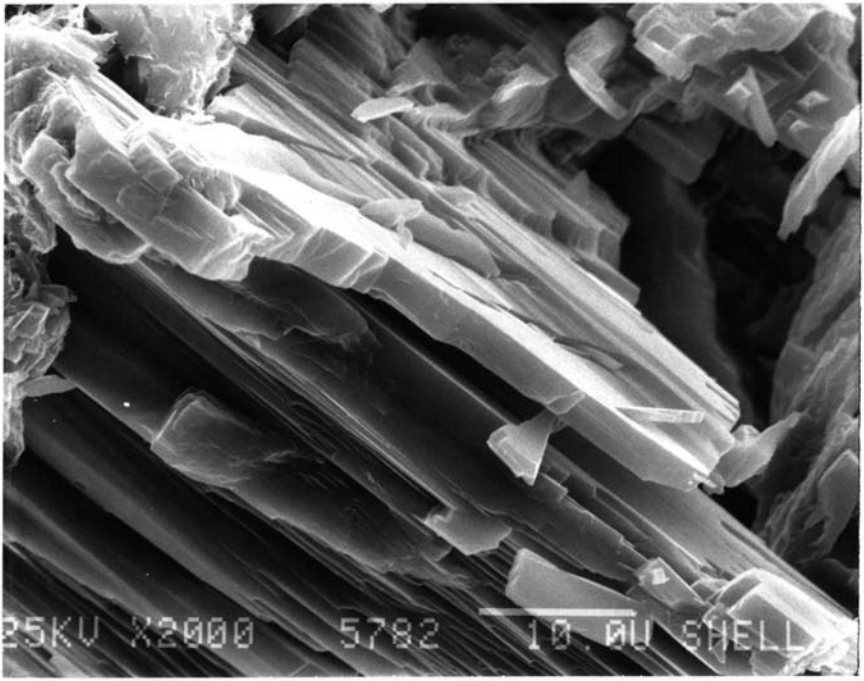
100X



57821

2

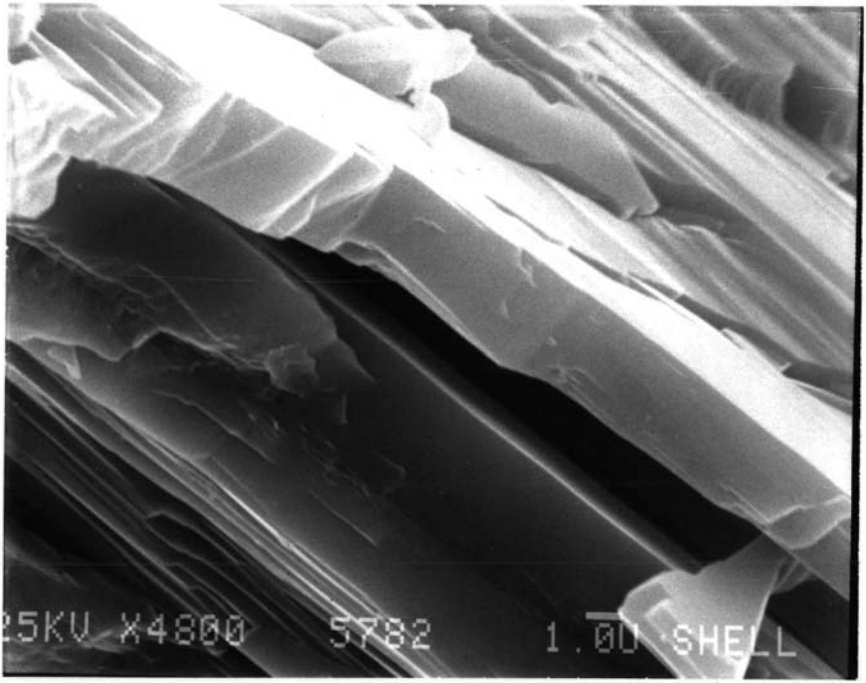
500X



5782'

2

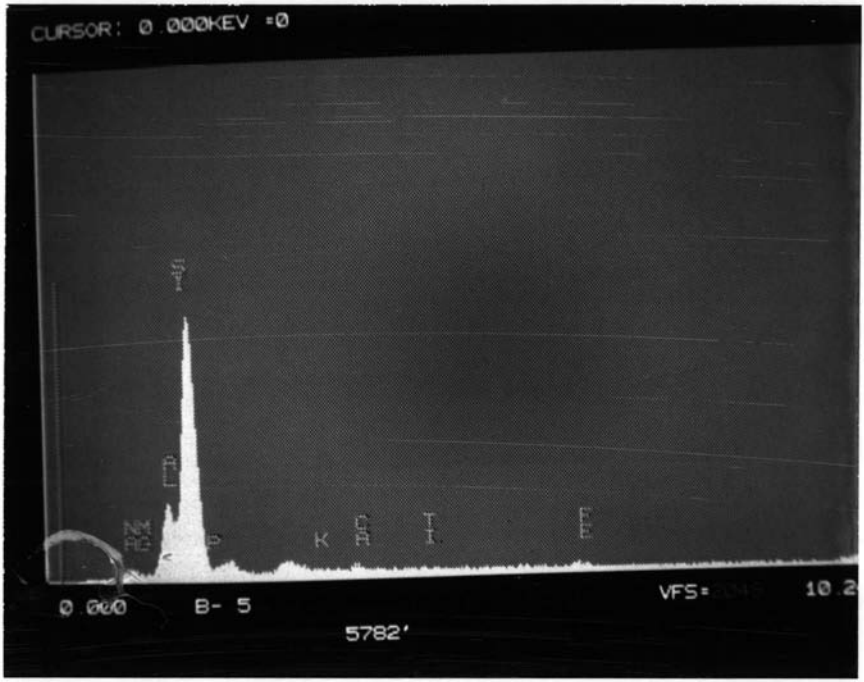
2000X

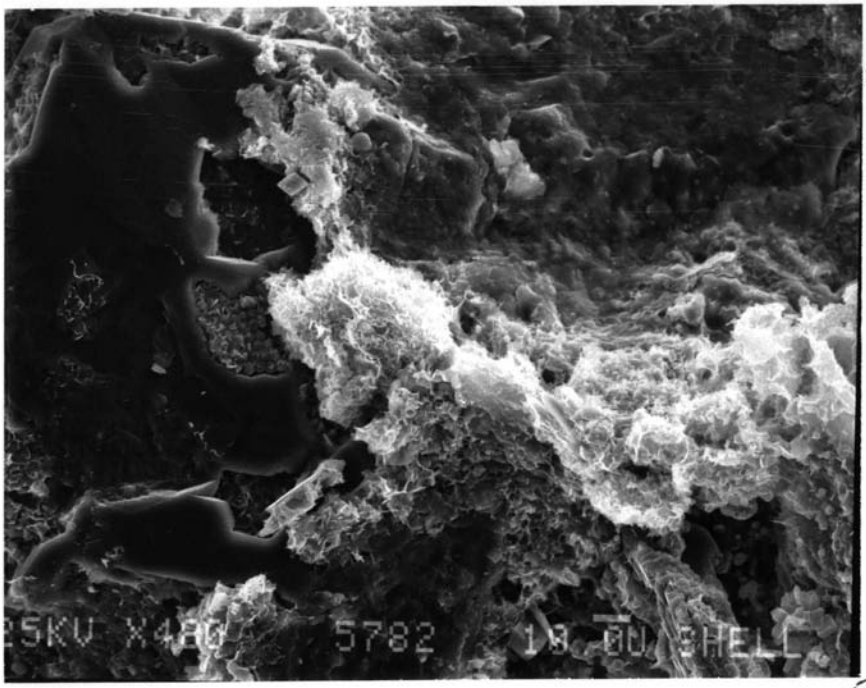


5782'

2

5000 X

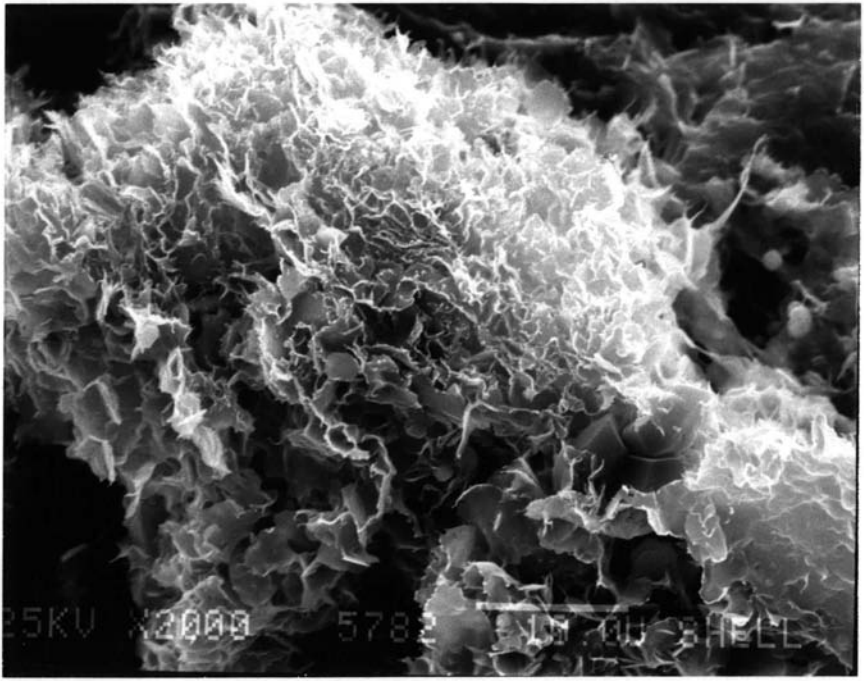

CURSOR: 0.000KEV =0
Si
Ca
Ti
Fe
K
0.000
B- 5
VFS=
10.2
5782'

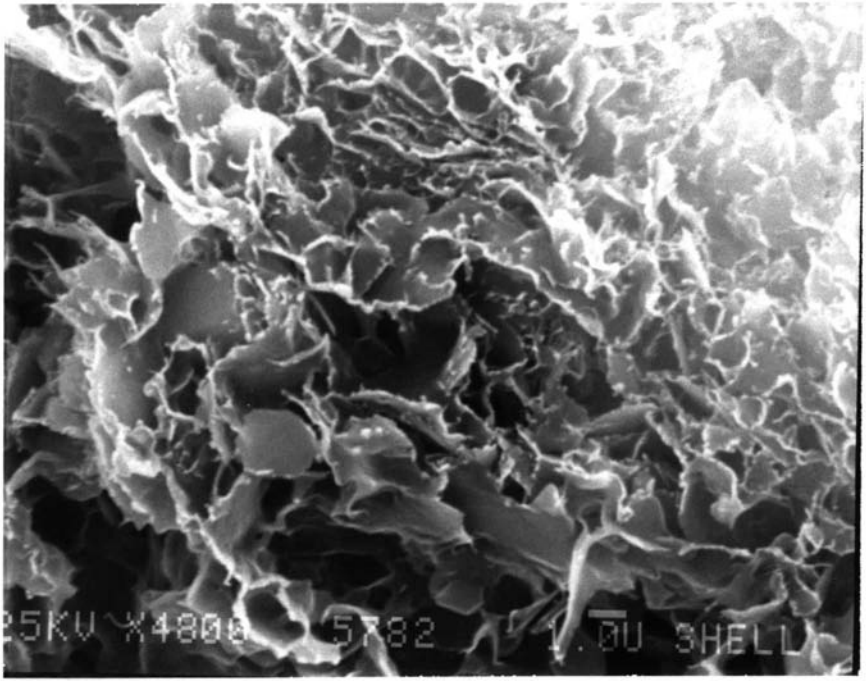


5782'

3

500X

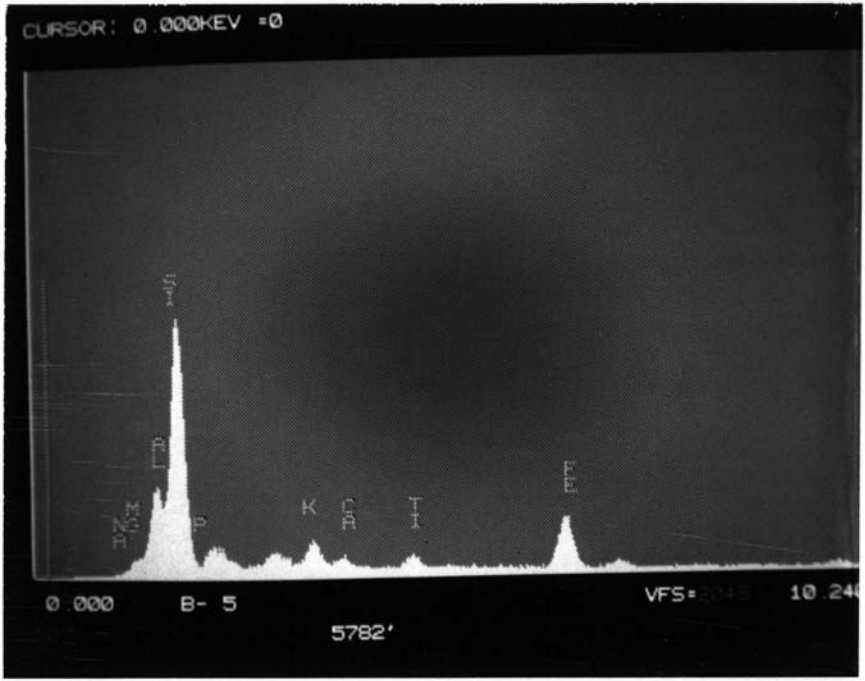

5782
3
2000X



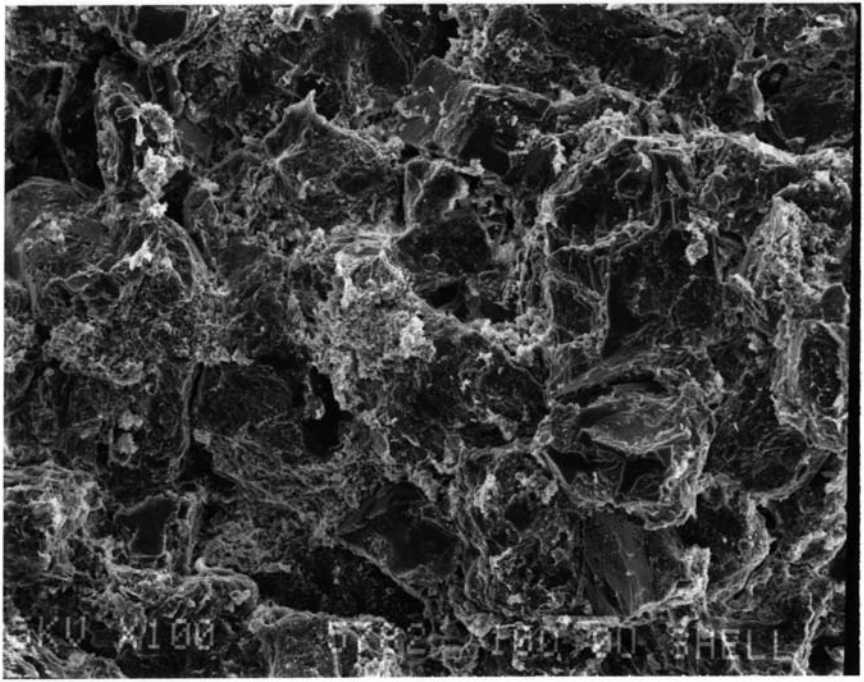
57831

3

5000 X



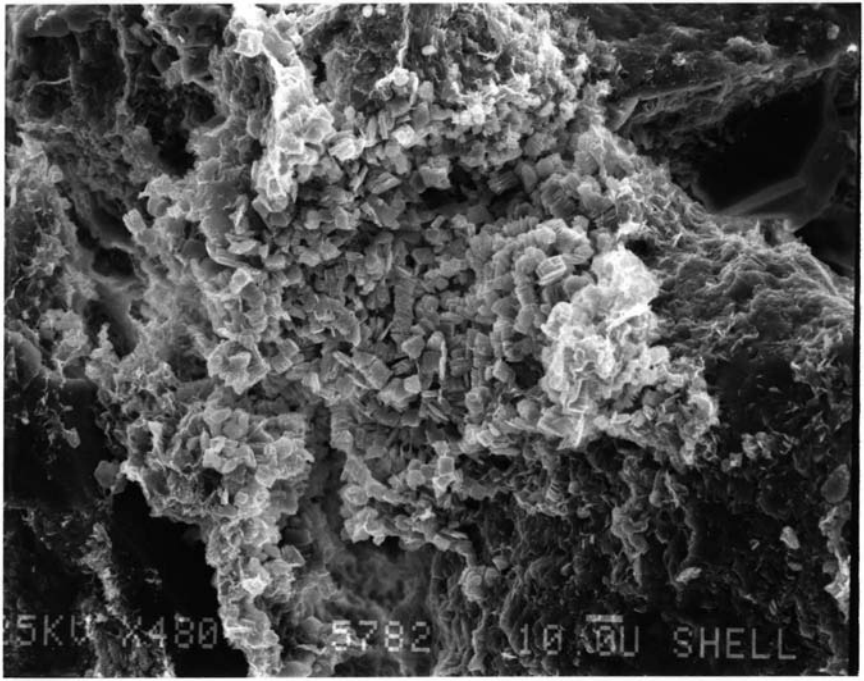
3



5-7821

4

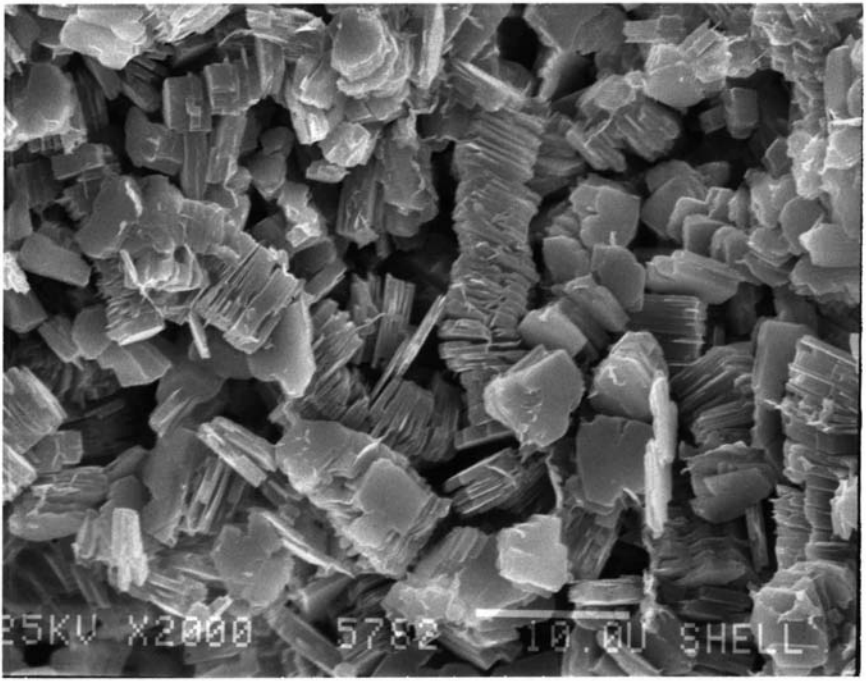
100 X



57821

4

500 X

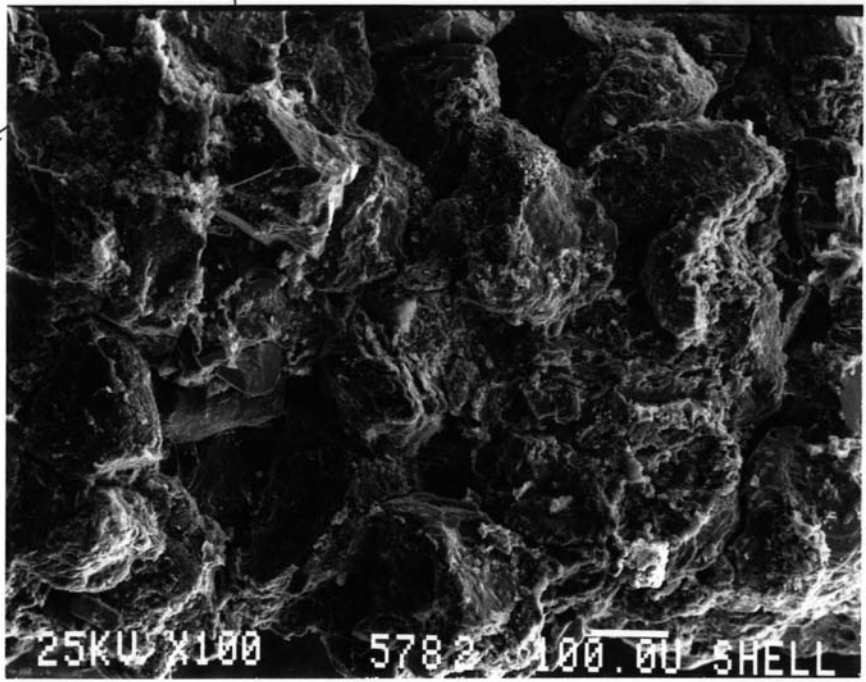


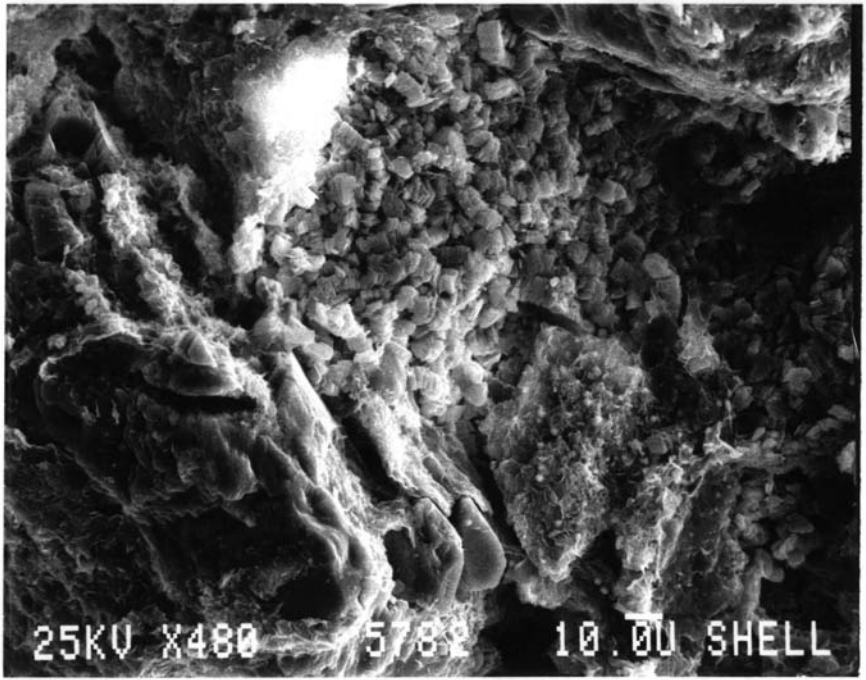
5782'

4

2000 Y

EDS similar to Area1


25KV X100 5782 100.0U SHELL



5782'

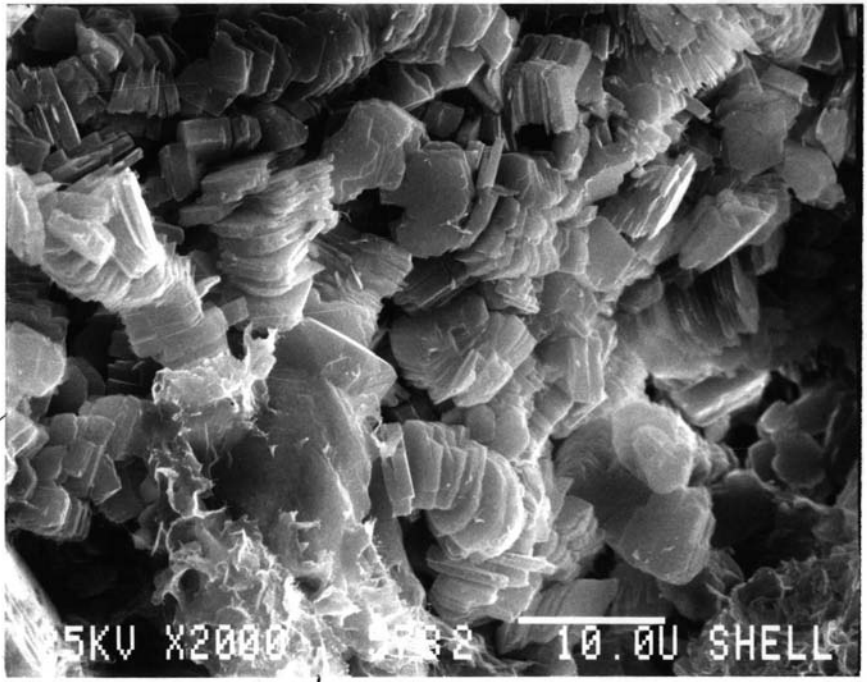
S

500X

5742'

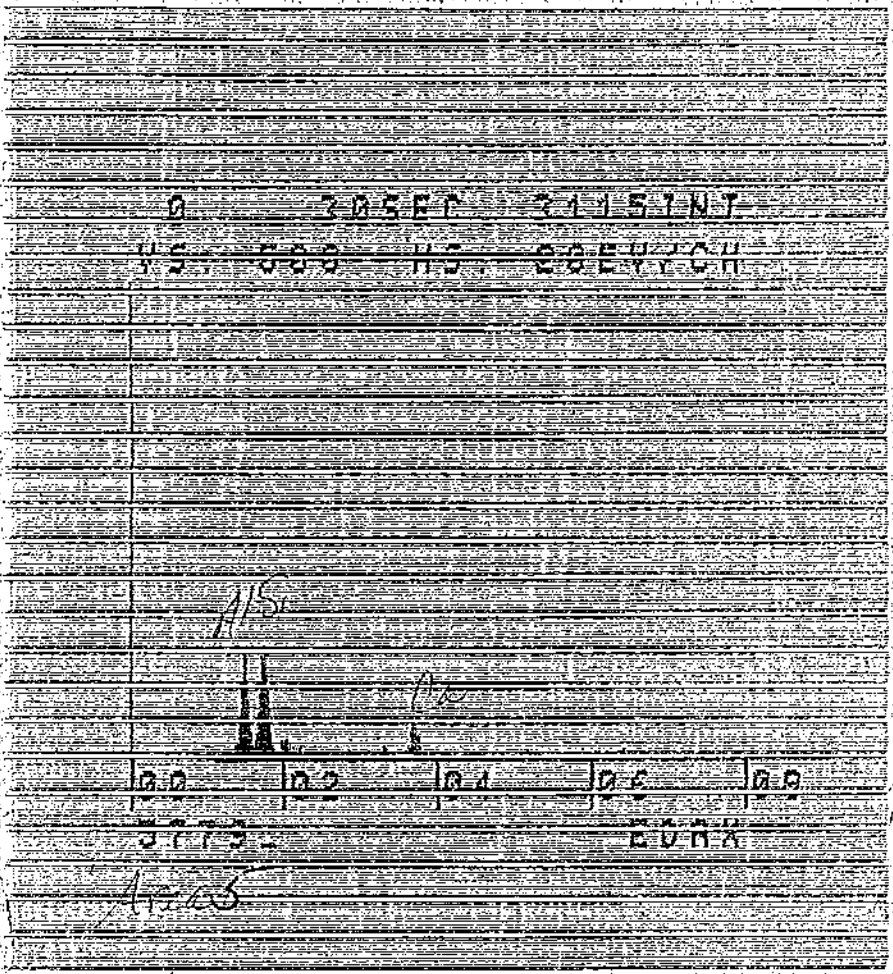
5

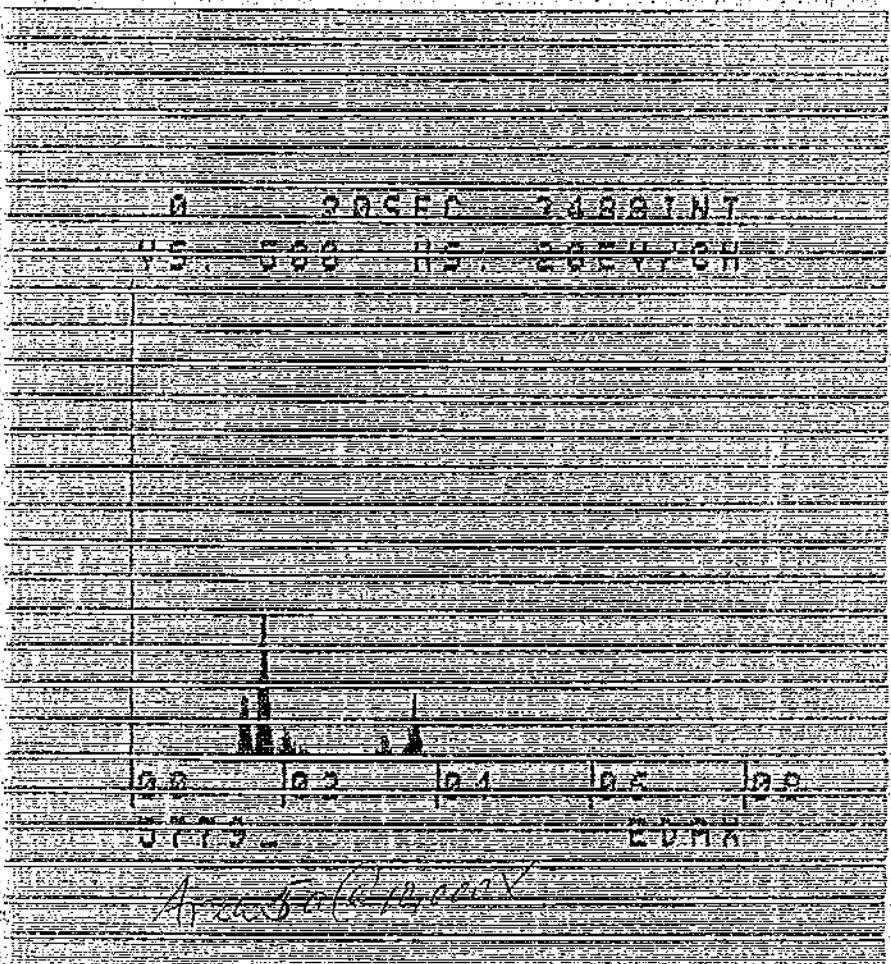
5'a

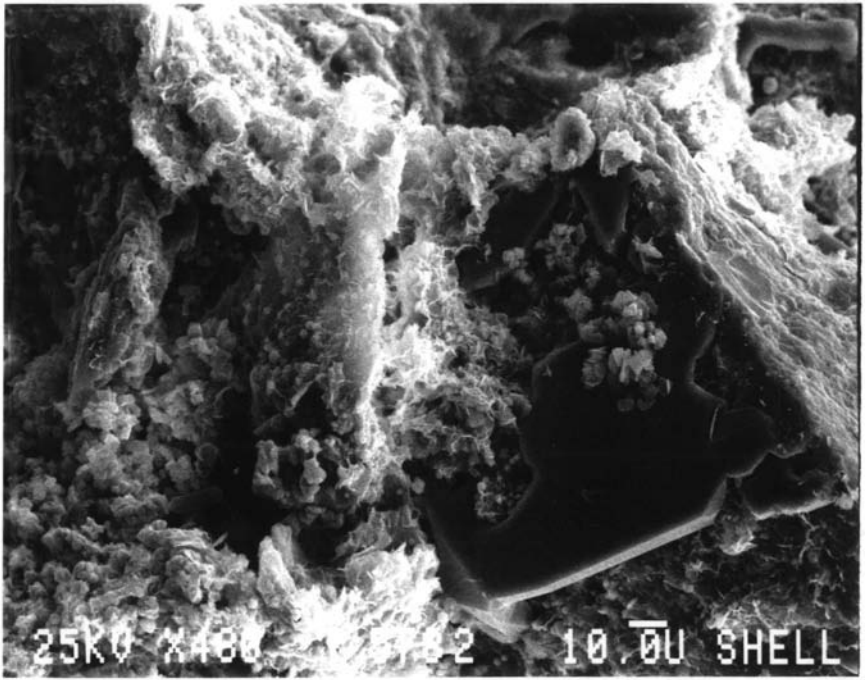


5'a

2000X


0 30SEC 3115INT
VS. 500 HS. 20EVVCH
00
02
04
06
08
EDAX

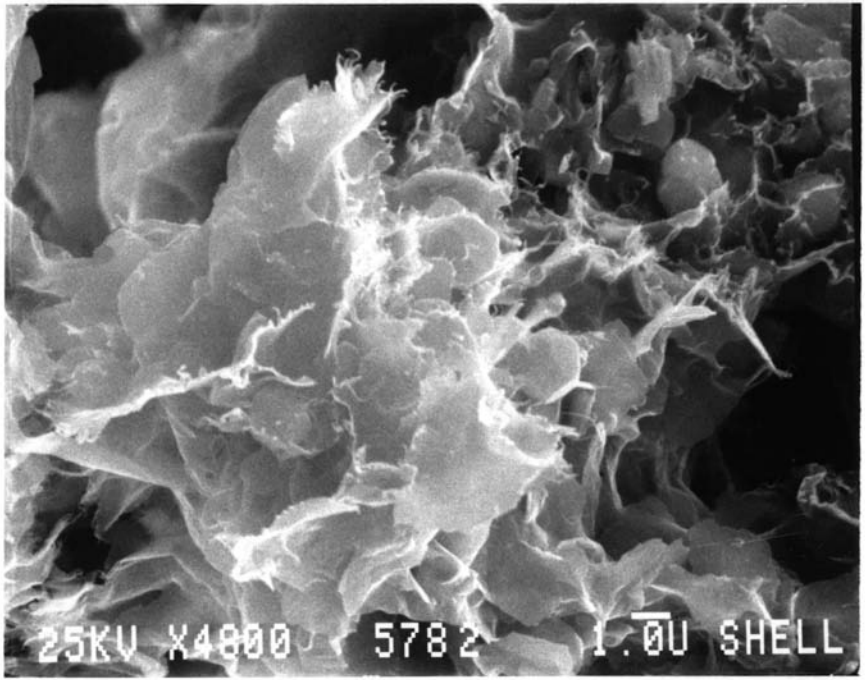




5782'

6

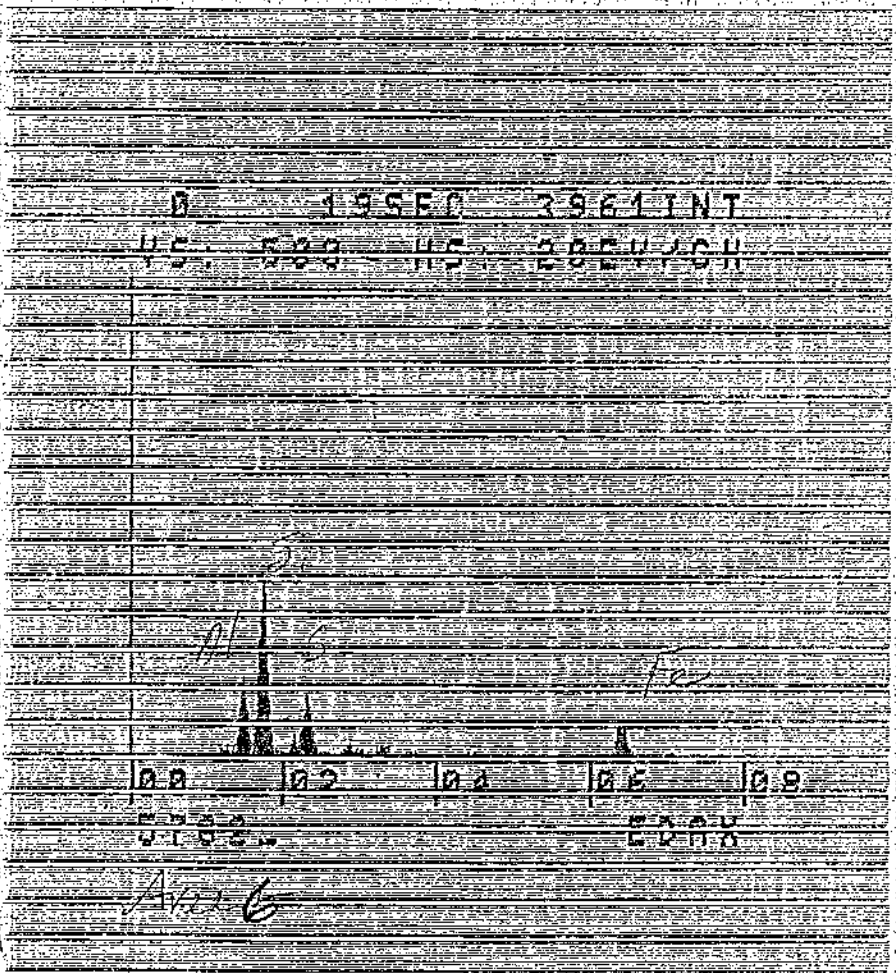
500X



5782

4

5000X


0 1SEC 3961INT
00 02 04 06 08

N. Belridge 43-27
5782'

Area 1 @ 5000x - Kaolinite

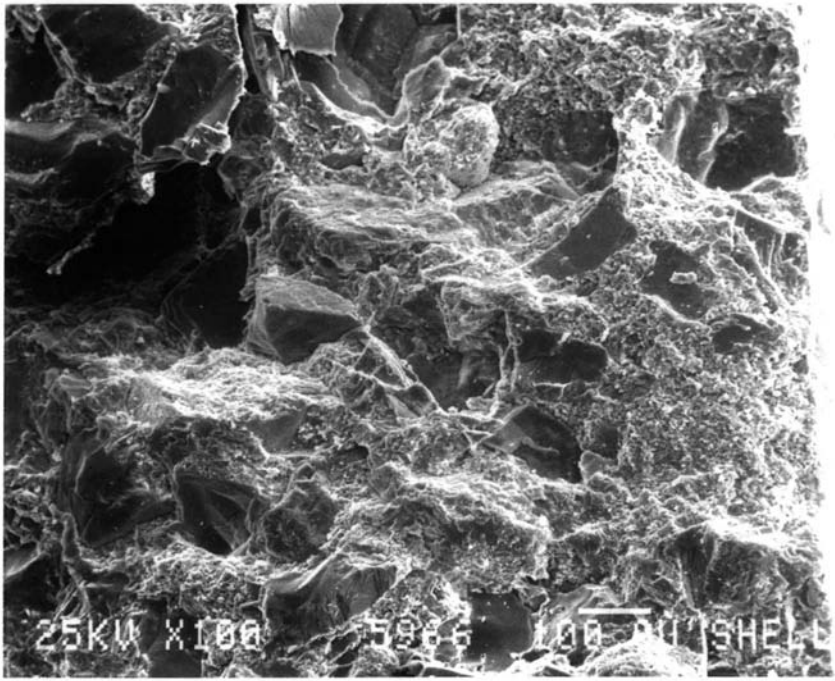
Area 2 @ 5000x - Na or Ca Feldspar?

Area 3 @ " - Illite/Smectite? / Trace Ti

Area 4 @ 2000x - Kaolinite

Area 5 @ " - "

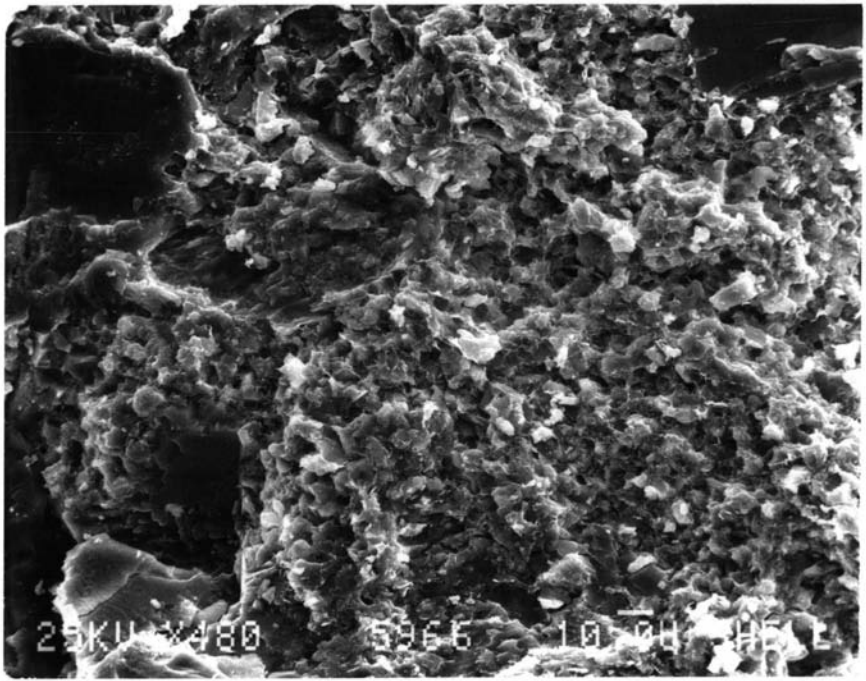
Area 6 @ 5000x - Clay/pyrite



43-27

1

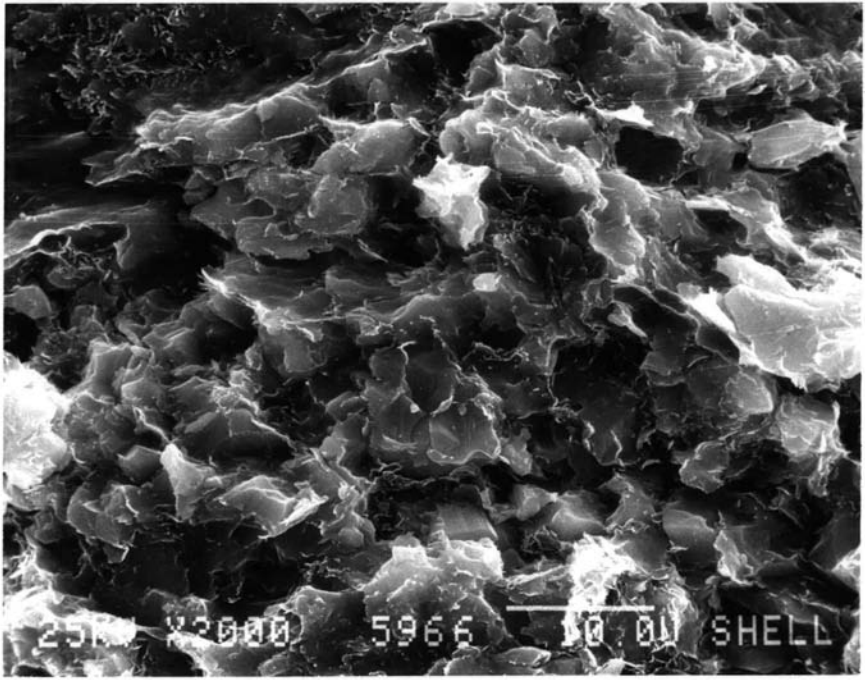
100X



43-27

1

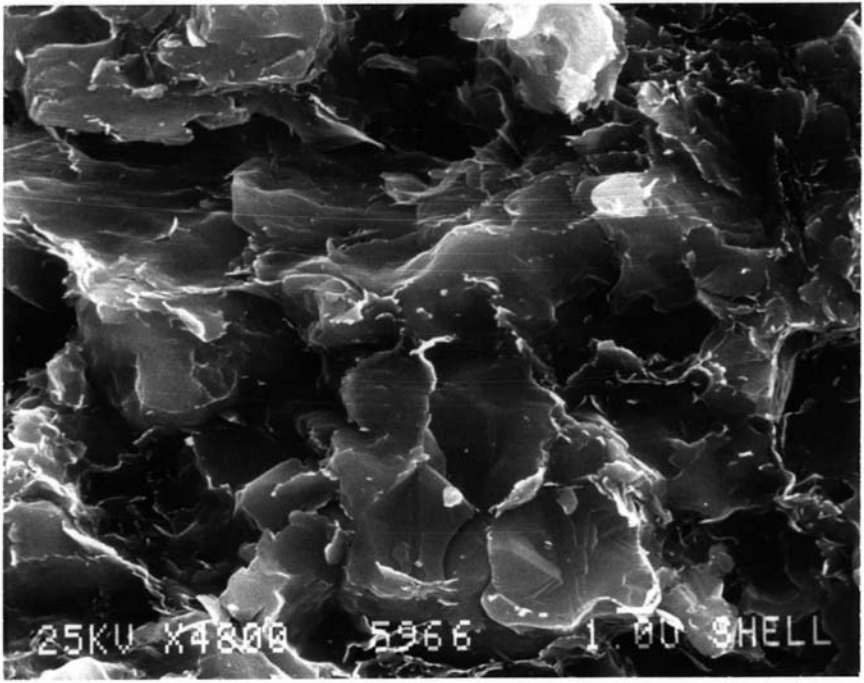
500X



43-27

1

2000X



43-27

1

5000X

area 1 @ 5000X

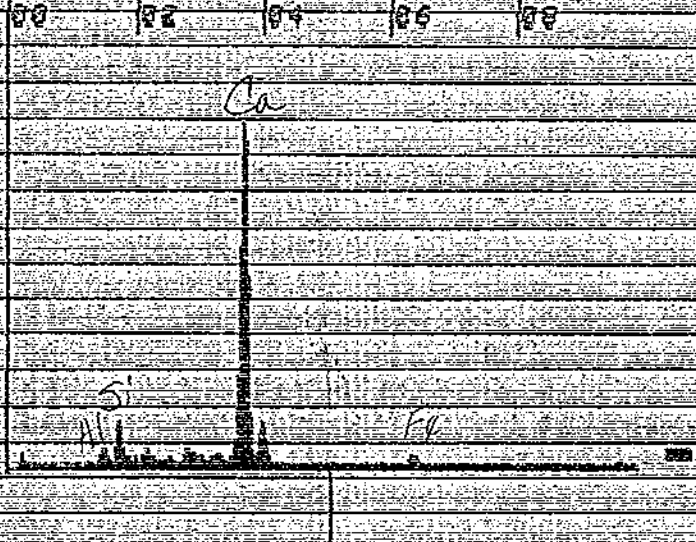
15-NOV-85 13:34:10 EDAX READY

RATE: 130CPS TIME: 75LSEC

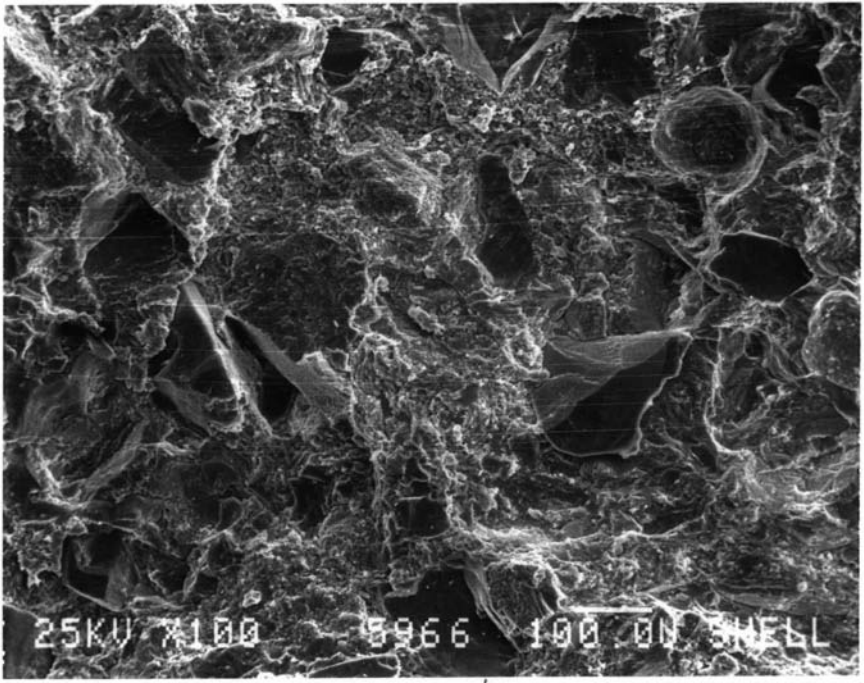
00-20KEV:10EV/CH PRST: OFF

A: B:

FS= 1500 MEM. A FS= 200



CURSOR (KEV)=05.120 EDAX



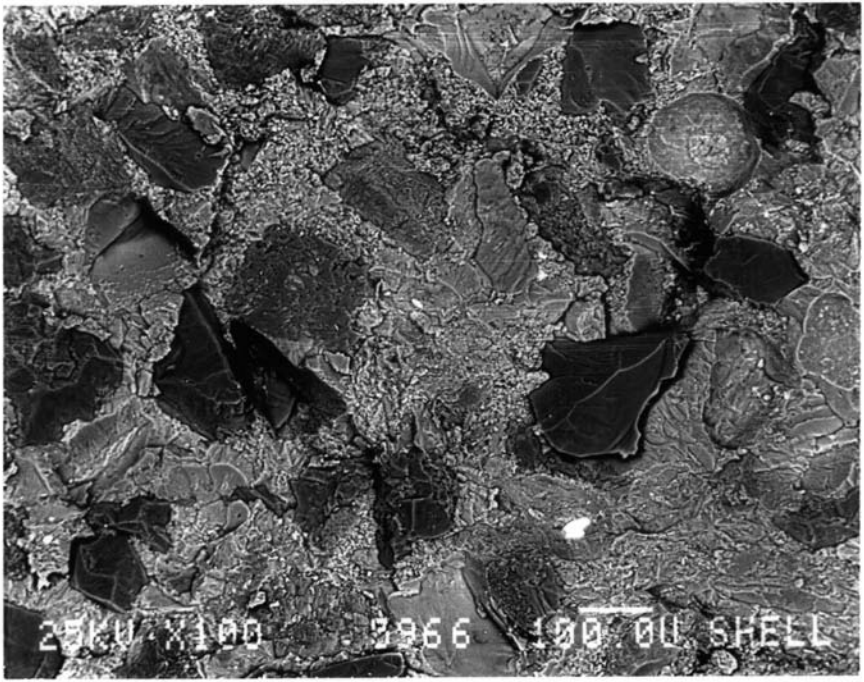
43-27

2

-3

100X

1/3

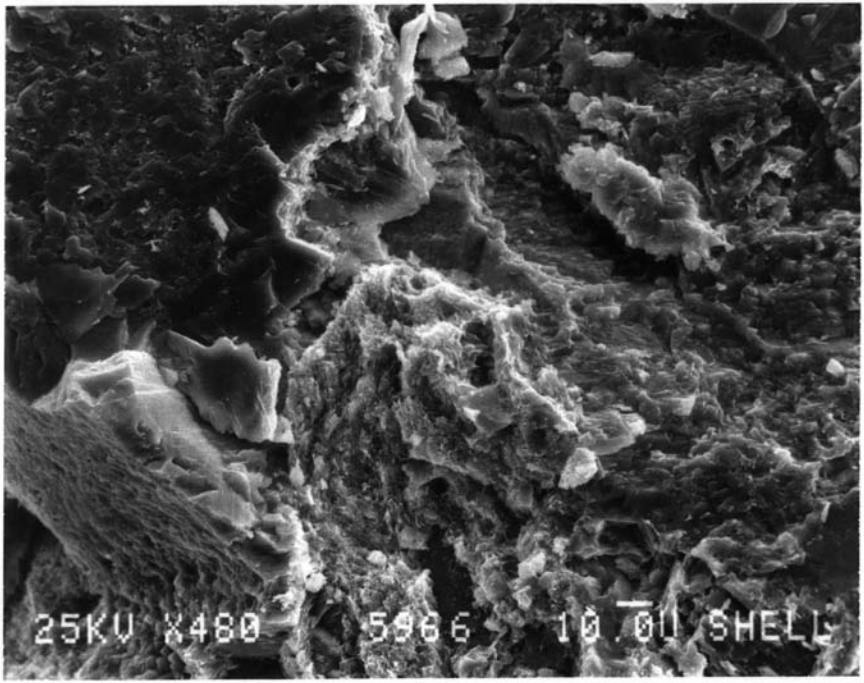


43-27

2

BS

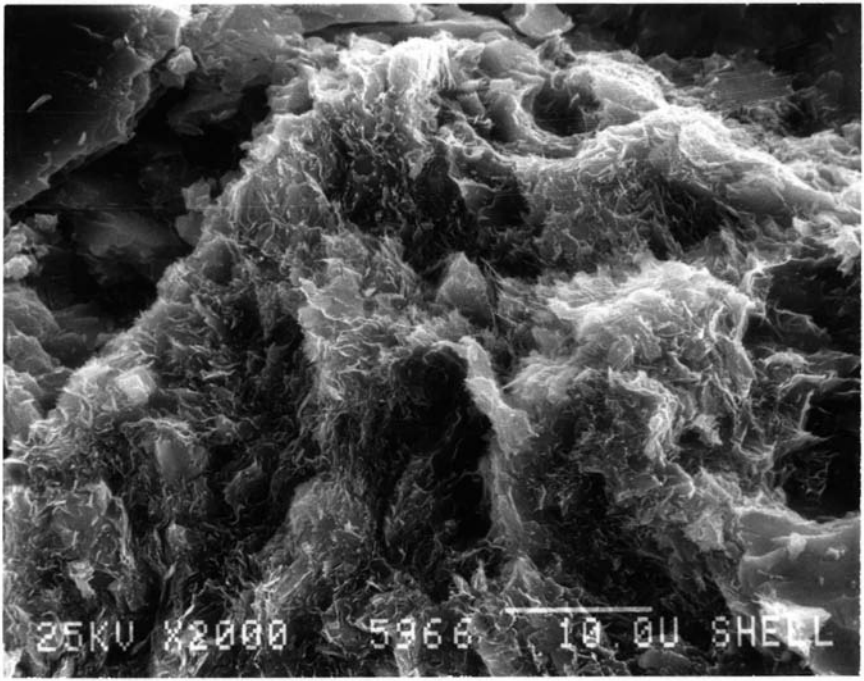
100X



43-27

2

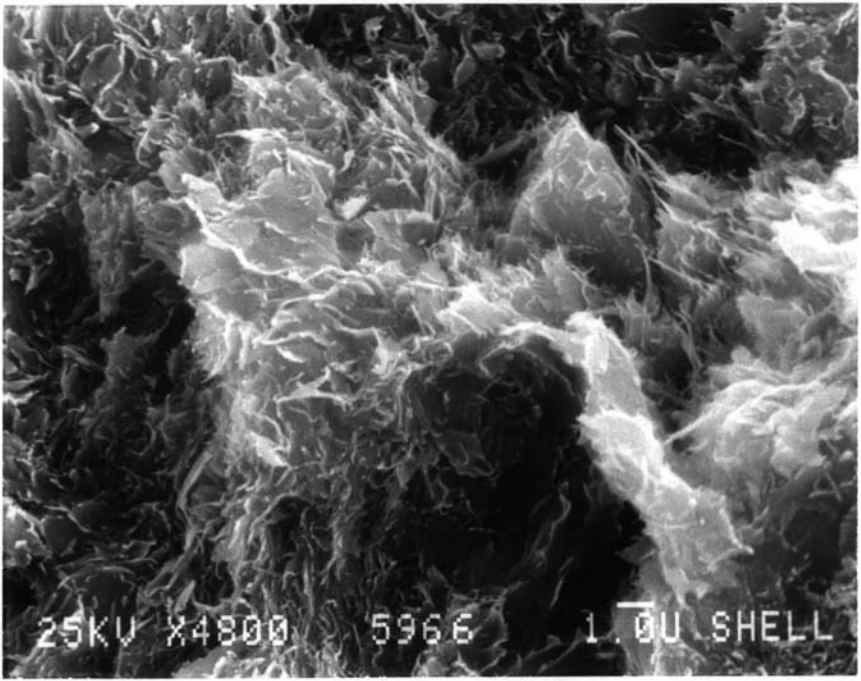
500X



43-27

2

2000X

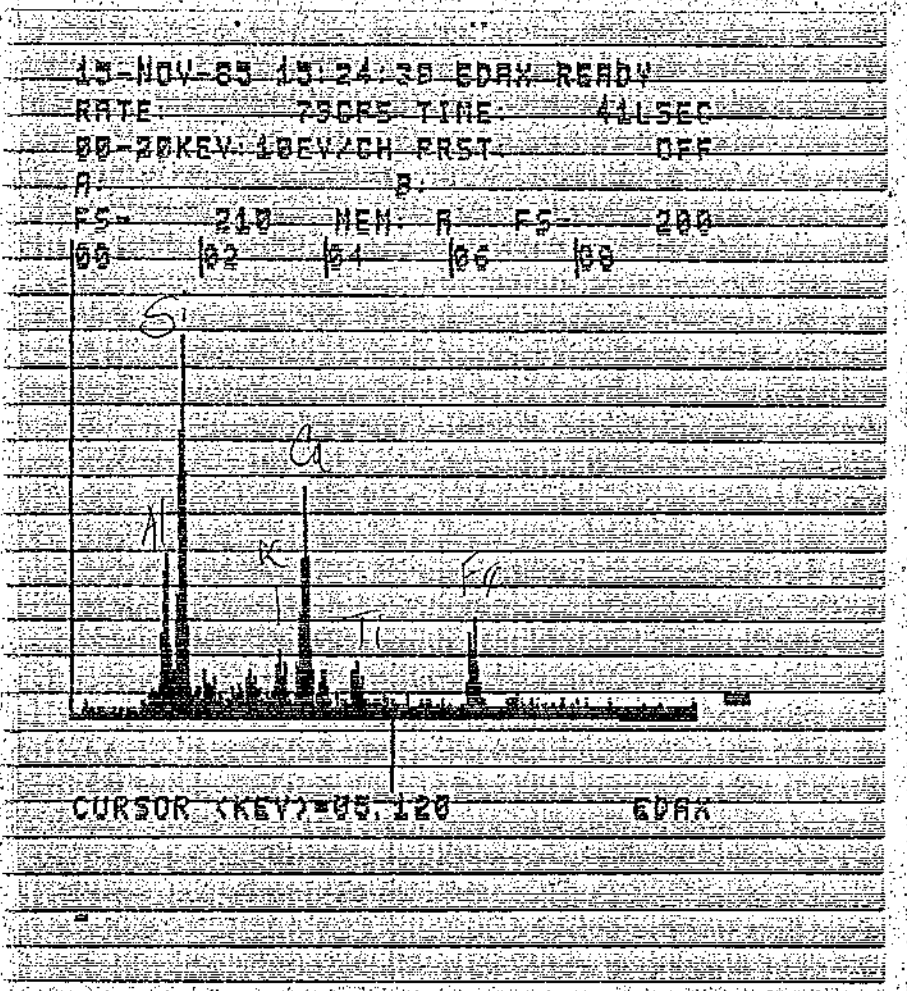


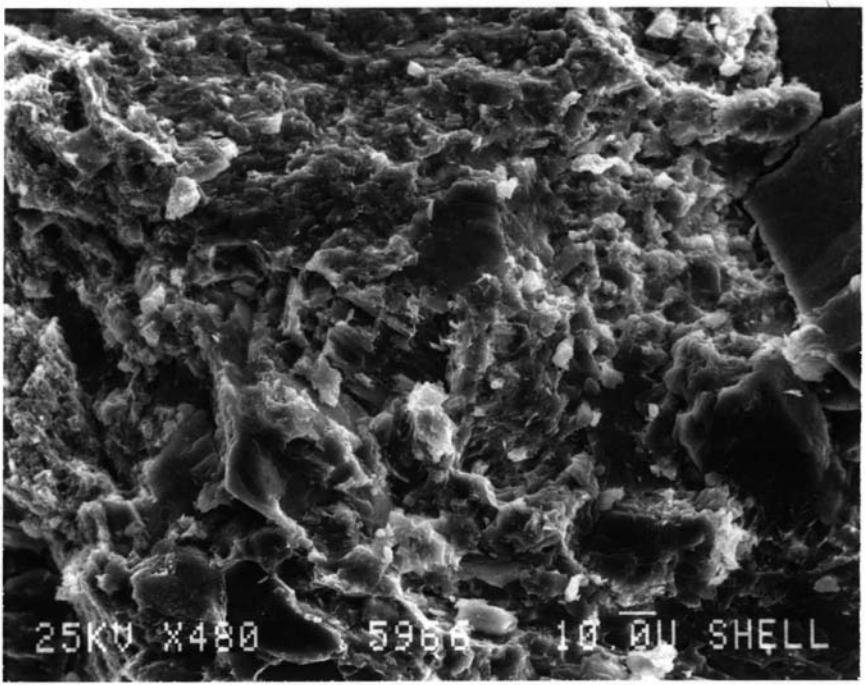
43-27

2

5000X

5966' 2@ area 15000X

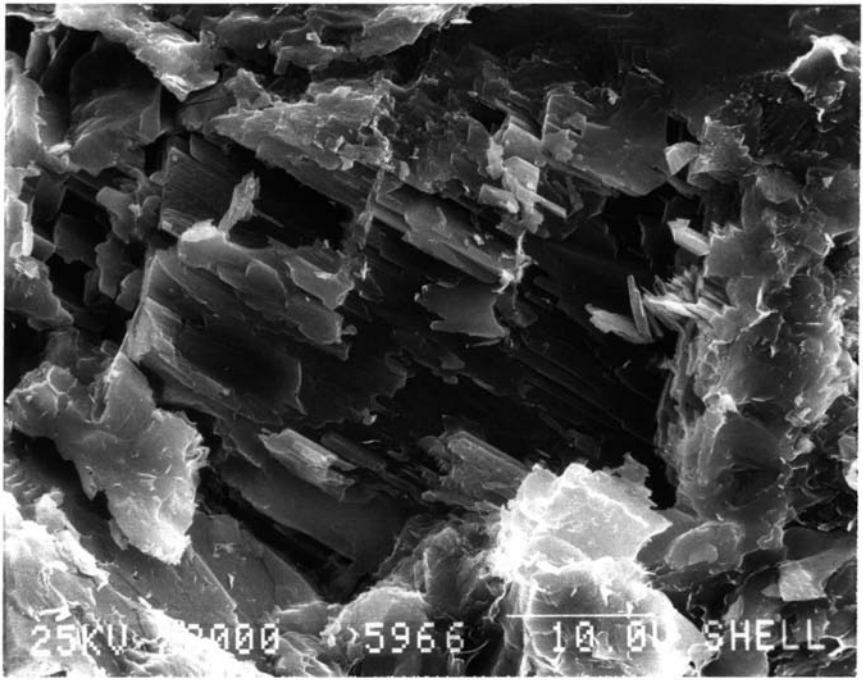




93-27

3

500X

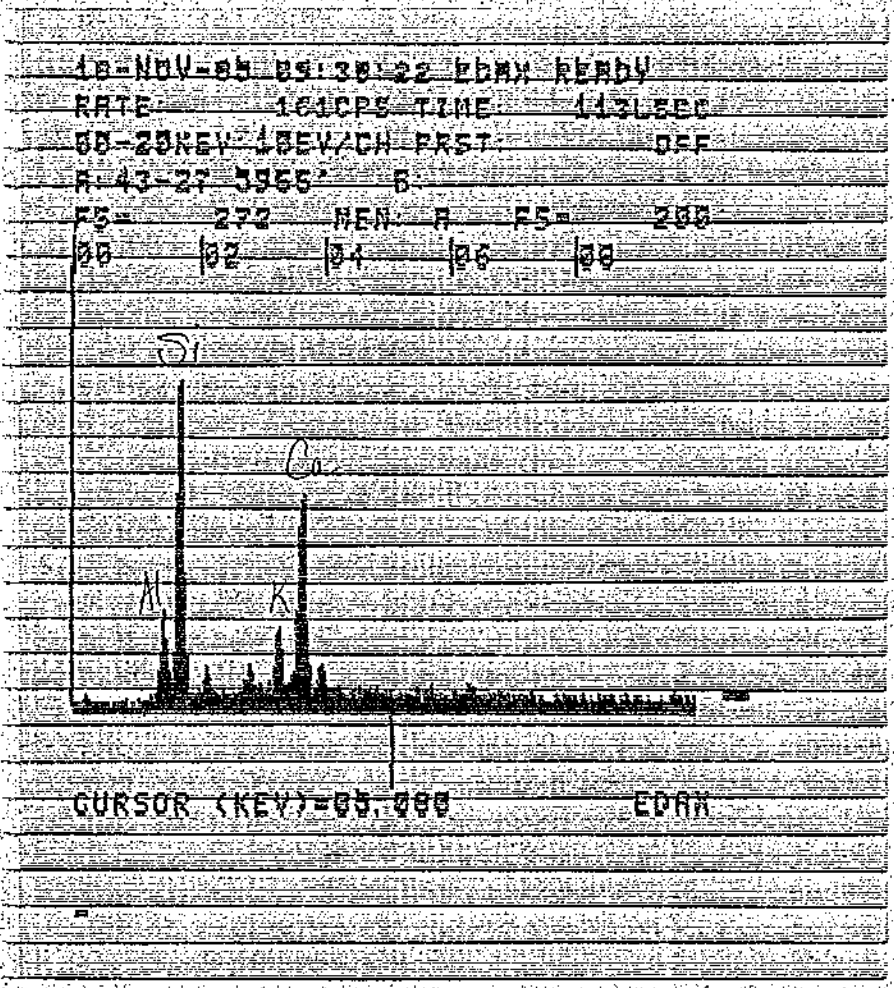


93-27

3

2000X

area 3 @ 5000x



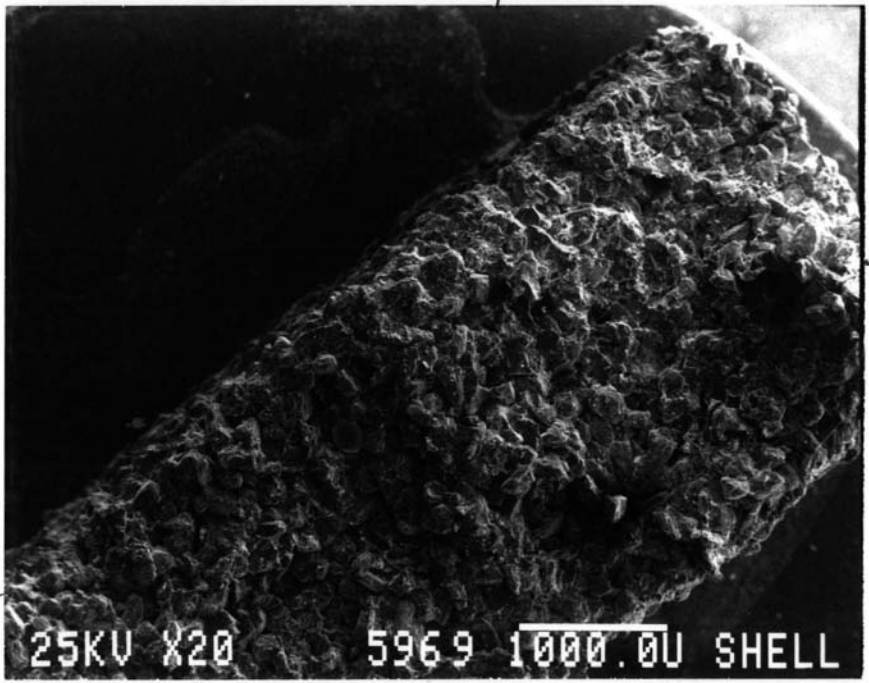
18-NOV-85 09:38:22 EDAX READY
RATE: 161CPS TIME: 113LSEC
00-20KEV 10EV/CH PRST: OFF
A:43-27 5965' B:
FS= 272 MEN: A FS= 200
00 02 04 06 08
Si
Ca
Al
K
CURSOR (KEV)=05.000 EDAX

N. Eldridge 43-27
5966'

area 1 @ 5000X — Calcite, small amnt Illite

area 2 @ 5000X — Illite, calcite

area 3 @ 5000X — K Feldspar, calcite



1'

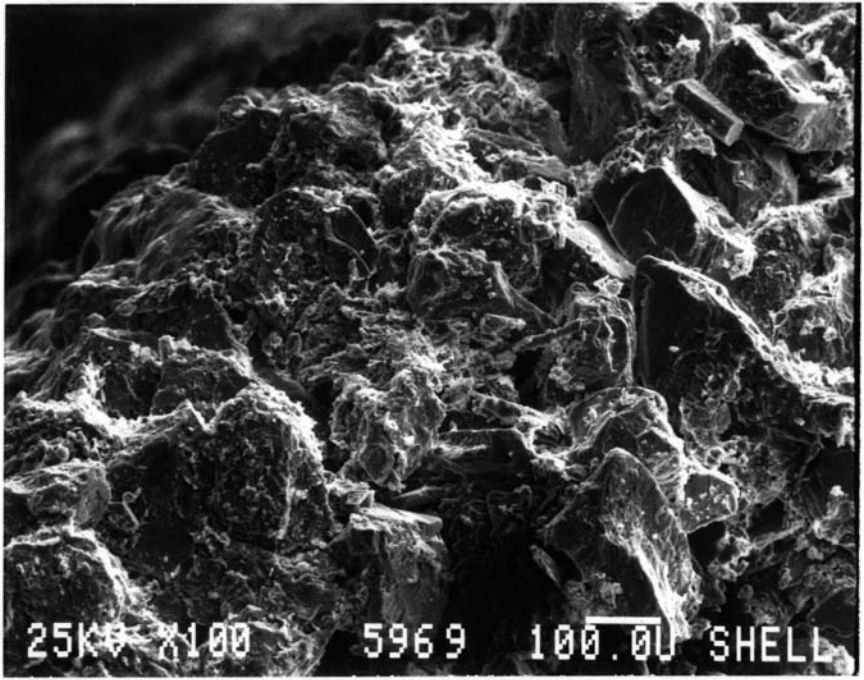
5969'

1

2

1
2

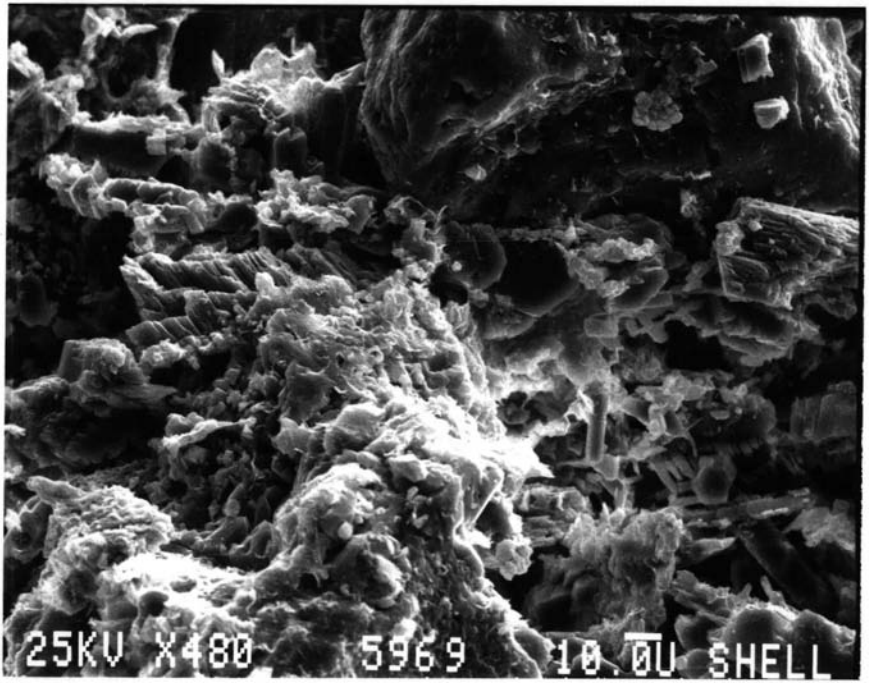
20X



59691

1

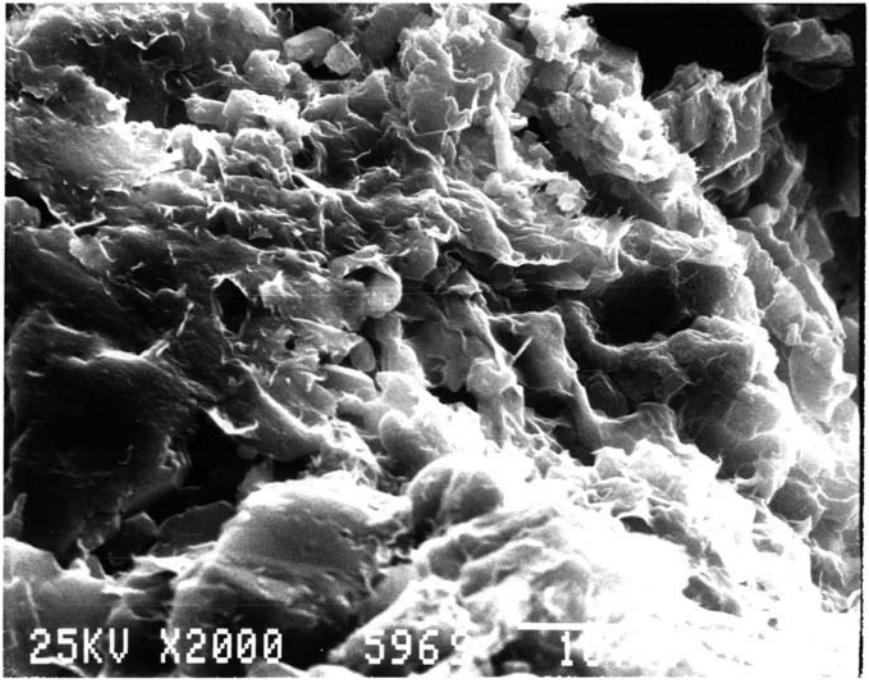
100X



5969l

1

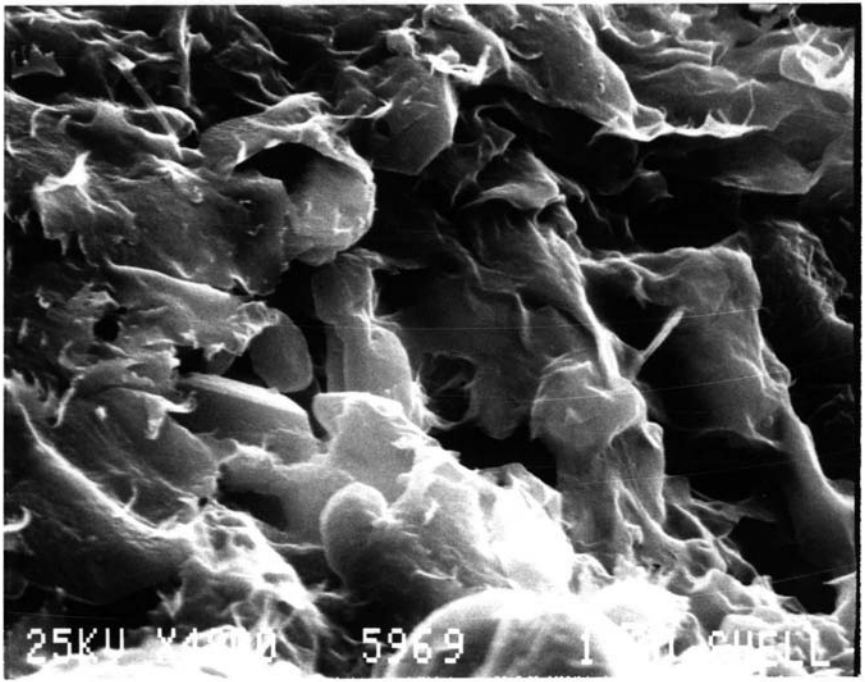
500 X



59691

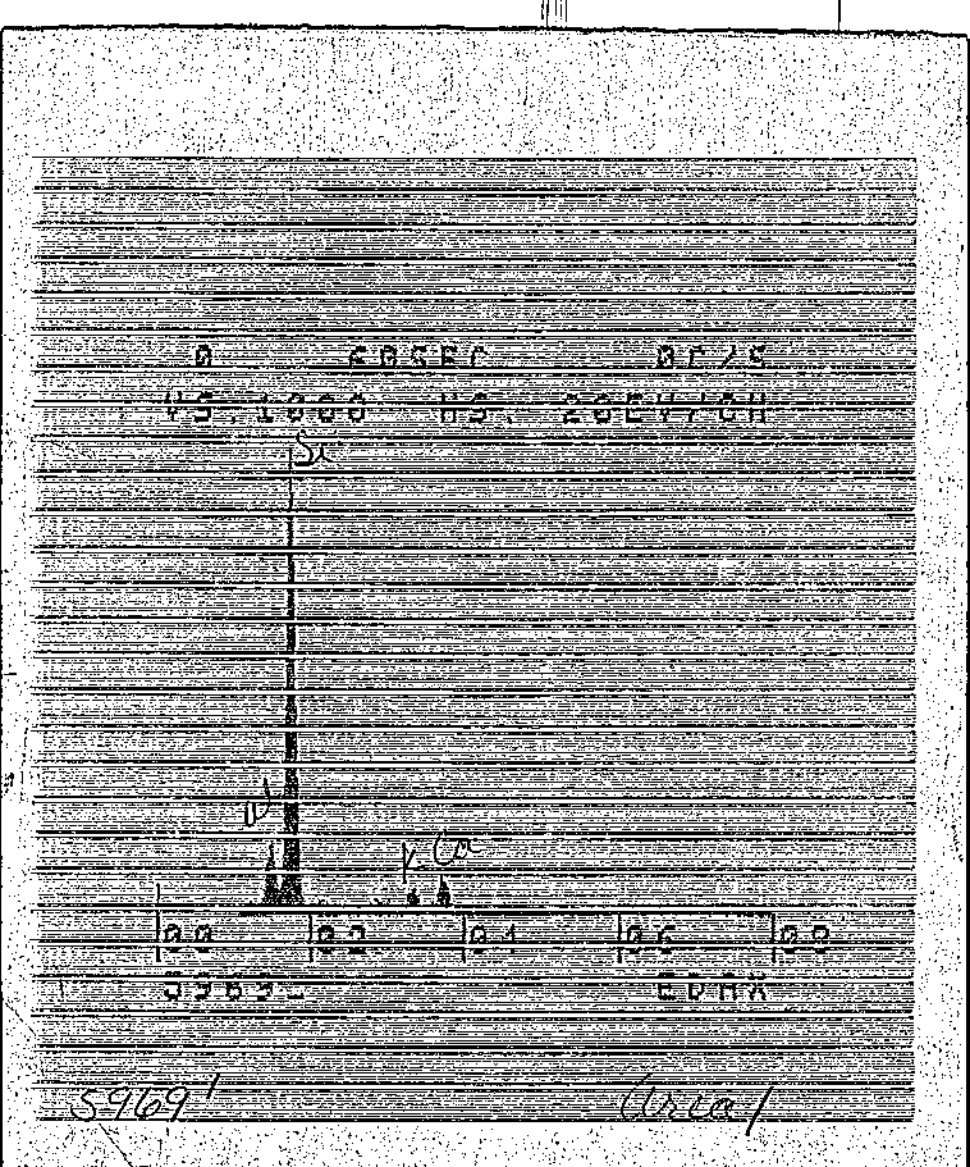
1

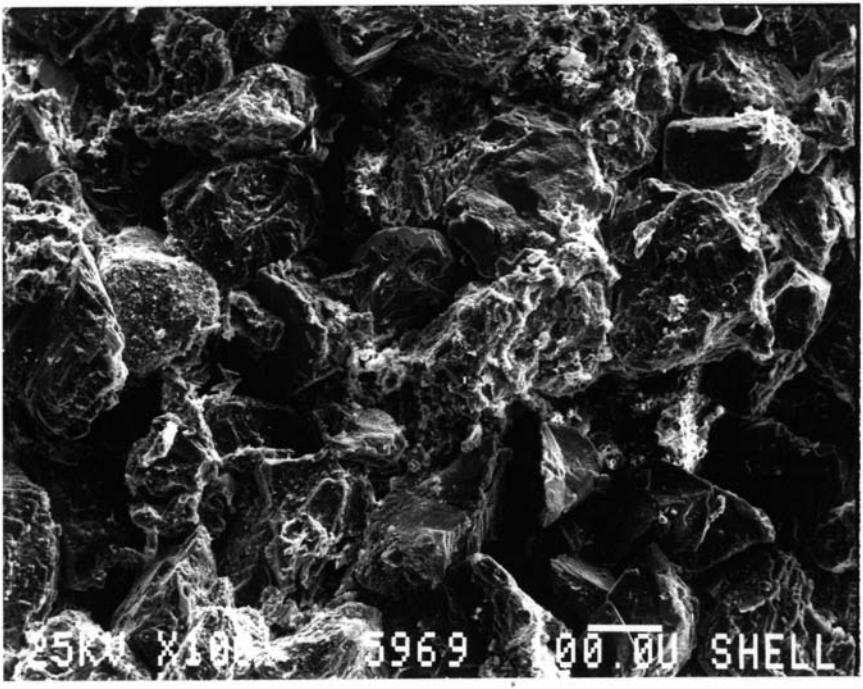
2000X



5969 1

5000X

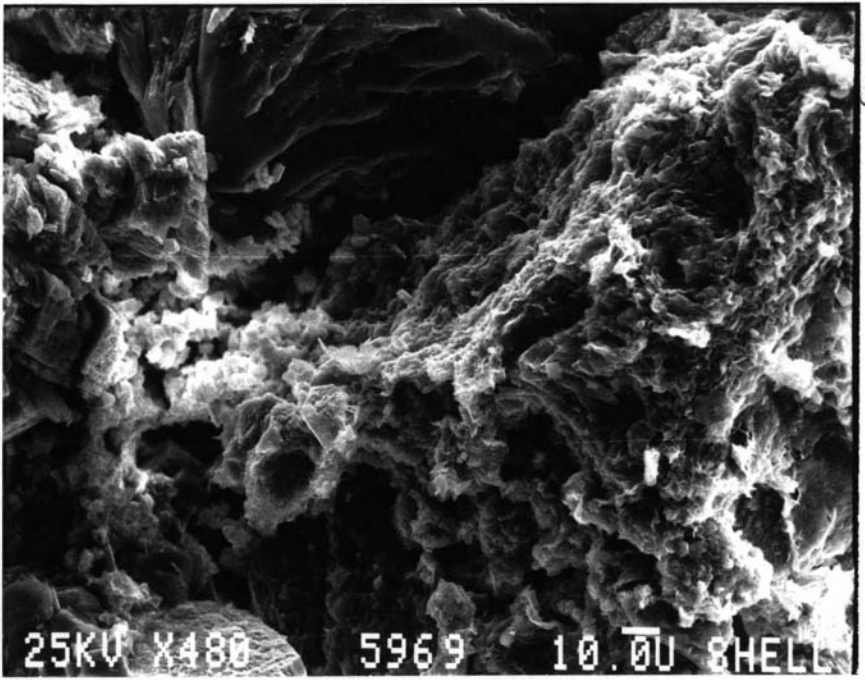

5969'
Area



59691

2

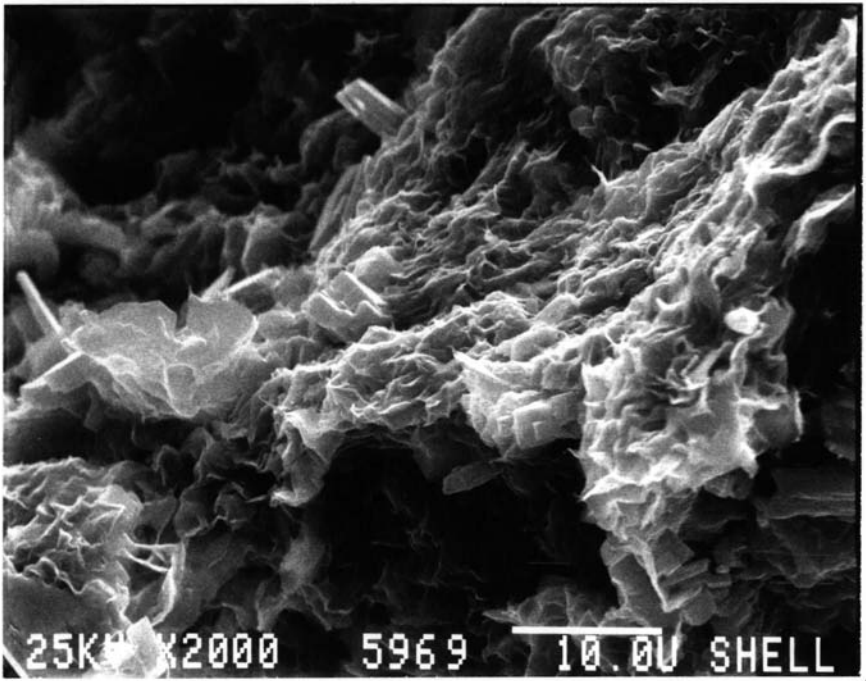
100X



5969'

Σ

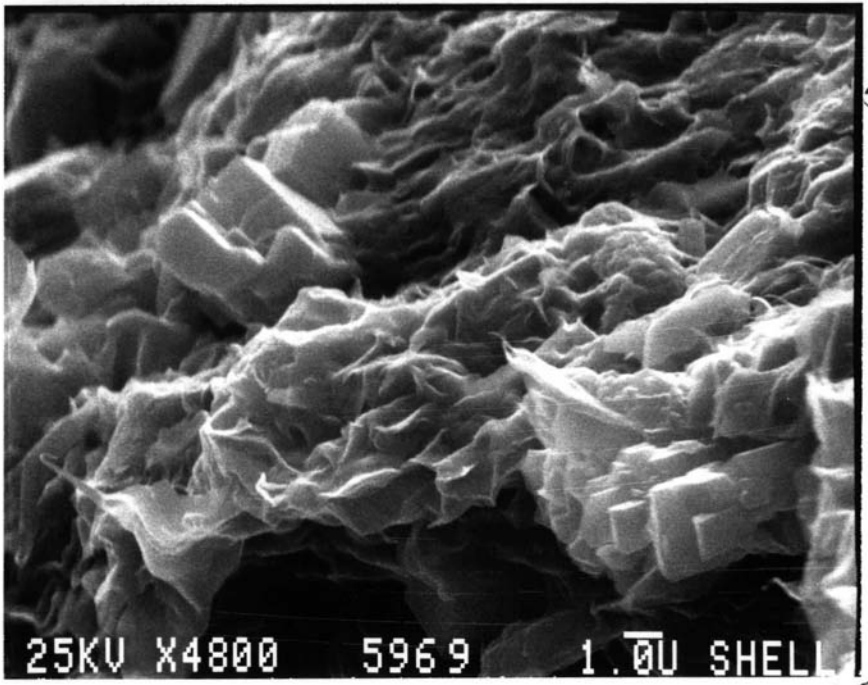
500 Y



5969'

2

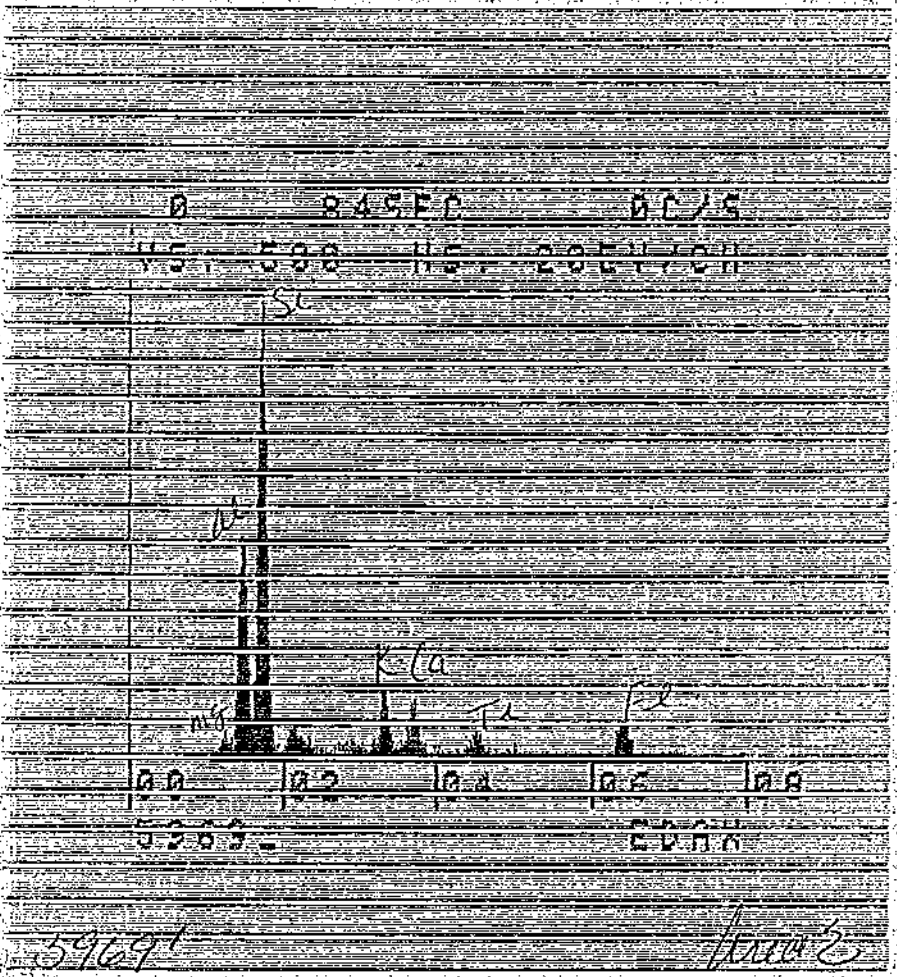
2000Y



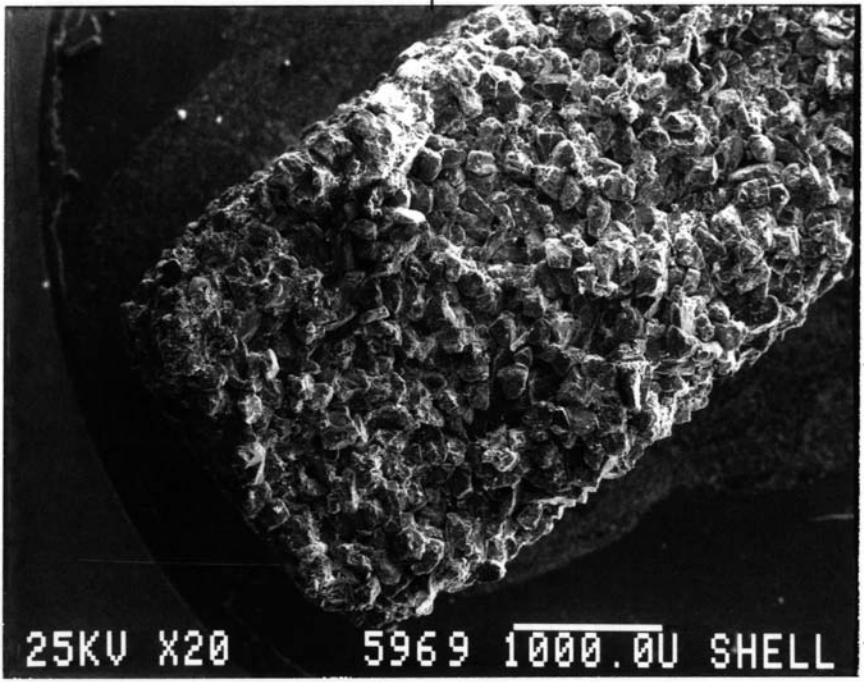
59691

3

5000X



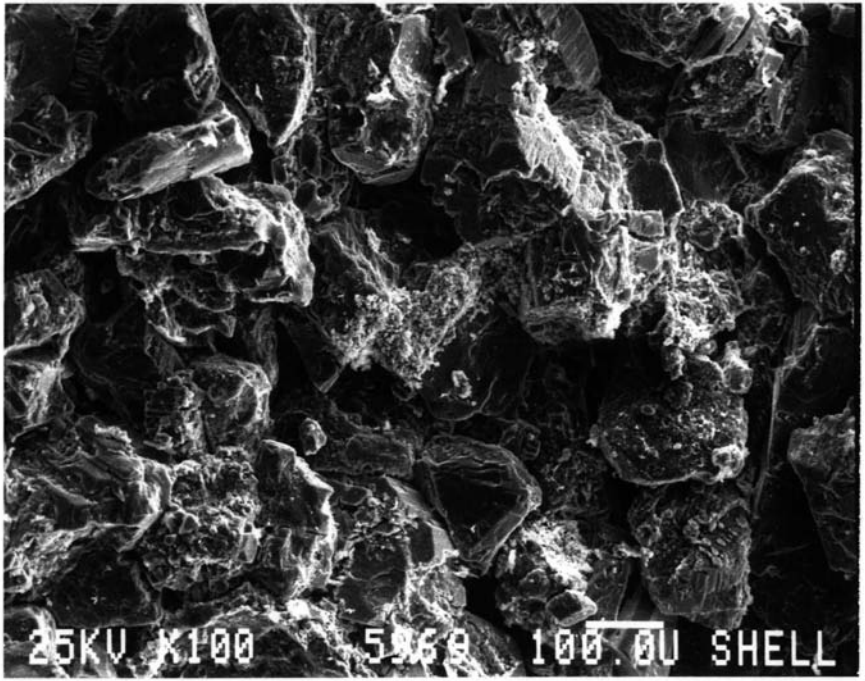
3.



59691

-3

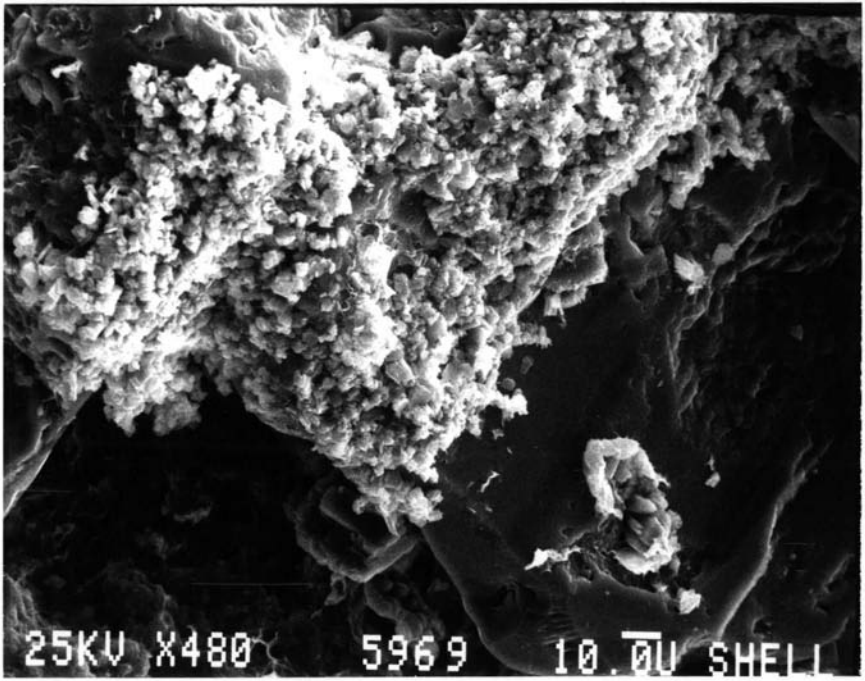
20 Y



59691

3

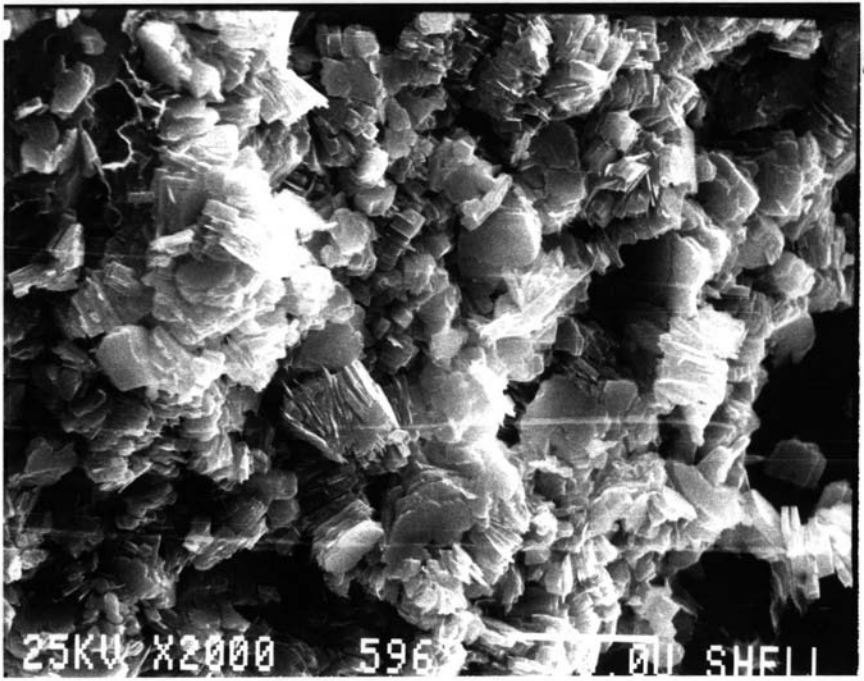
100X



5969'

3

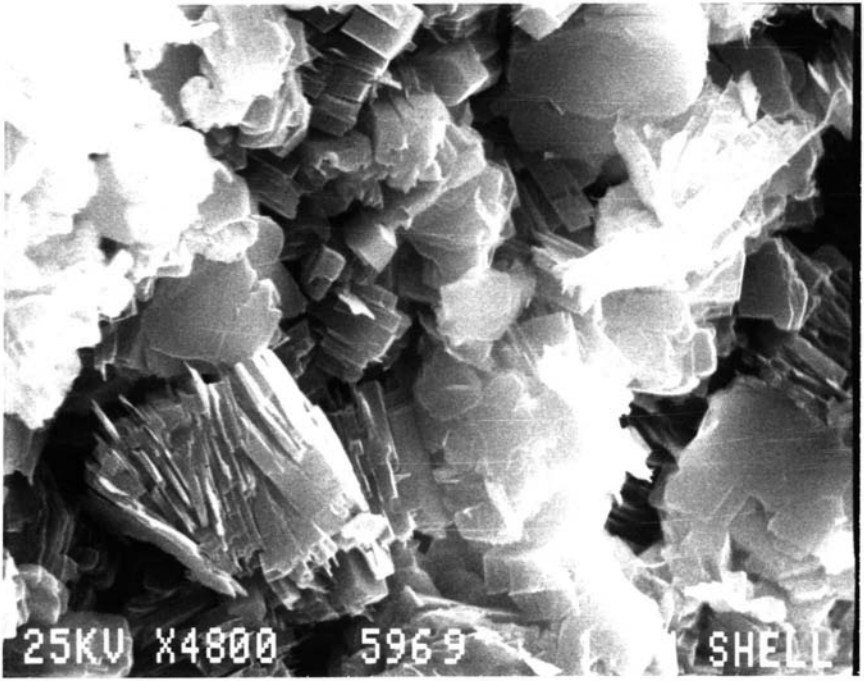
500Y



5969'

3

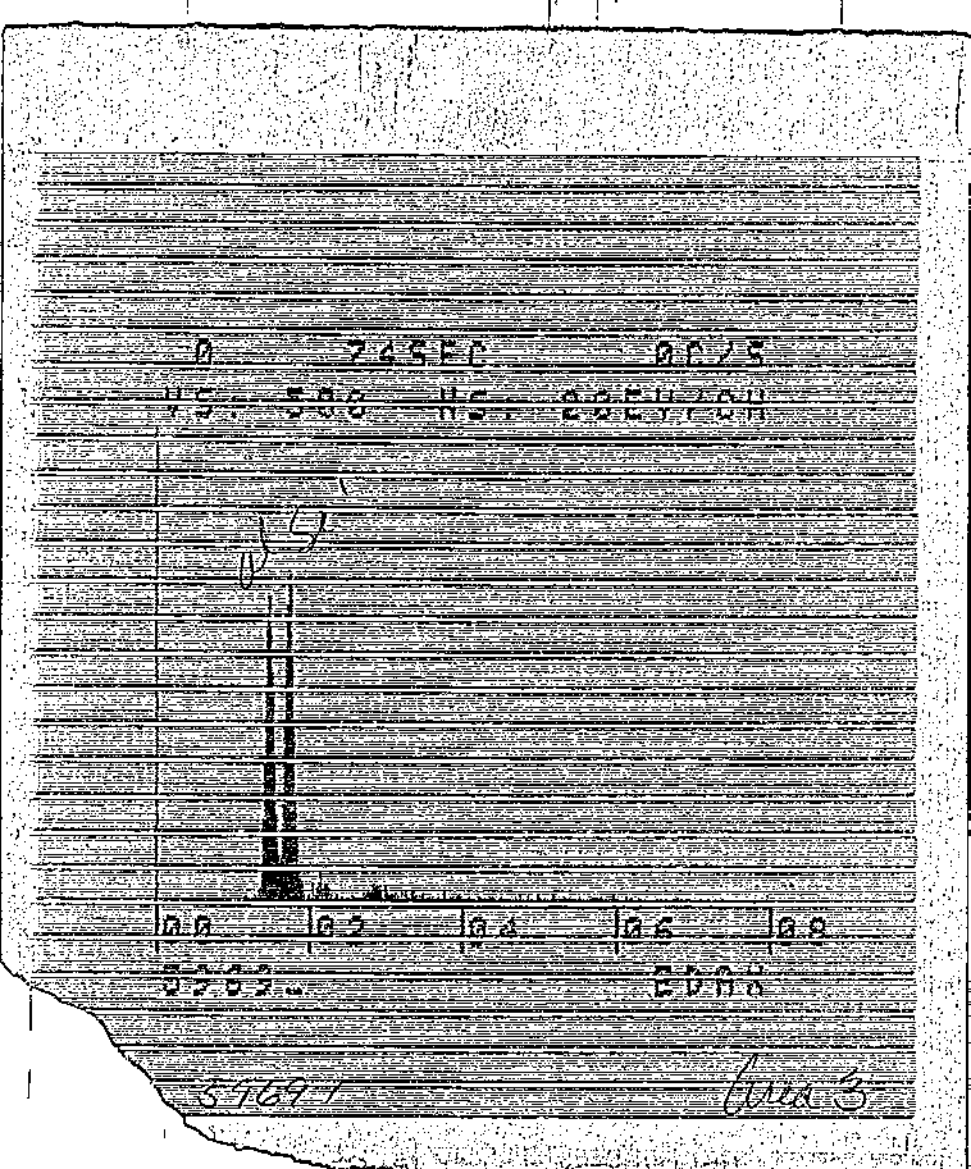
2000X



5969'

3

5000X

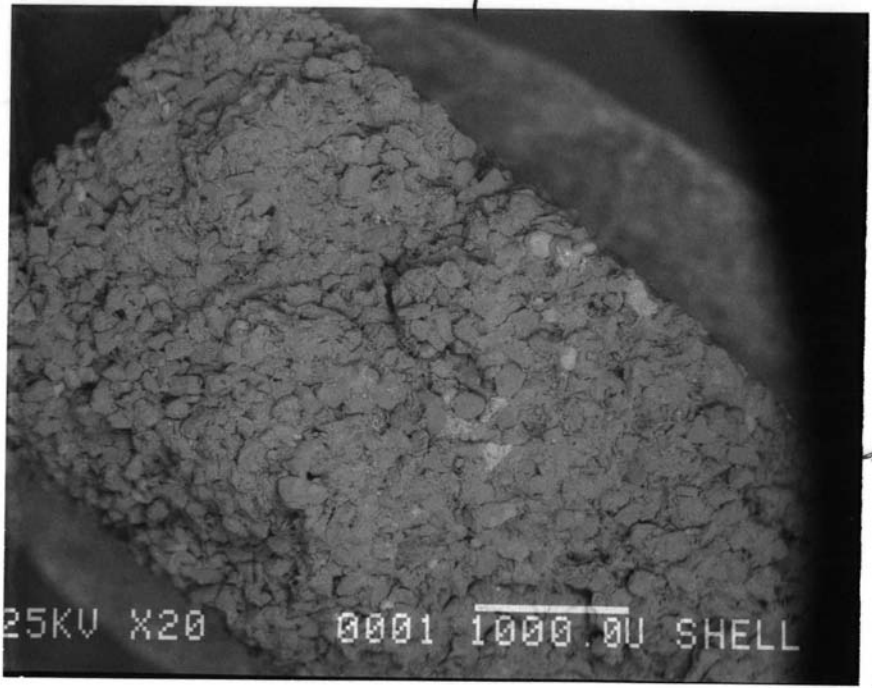

0 74SEC 0C/S
00
02
04
06
08
59691
Area 3

N. Belridge 43-27
5-9691

Area 1 @ 5000X - Smectite?

Area 2 @ " - Illite/Smectite/Ti

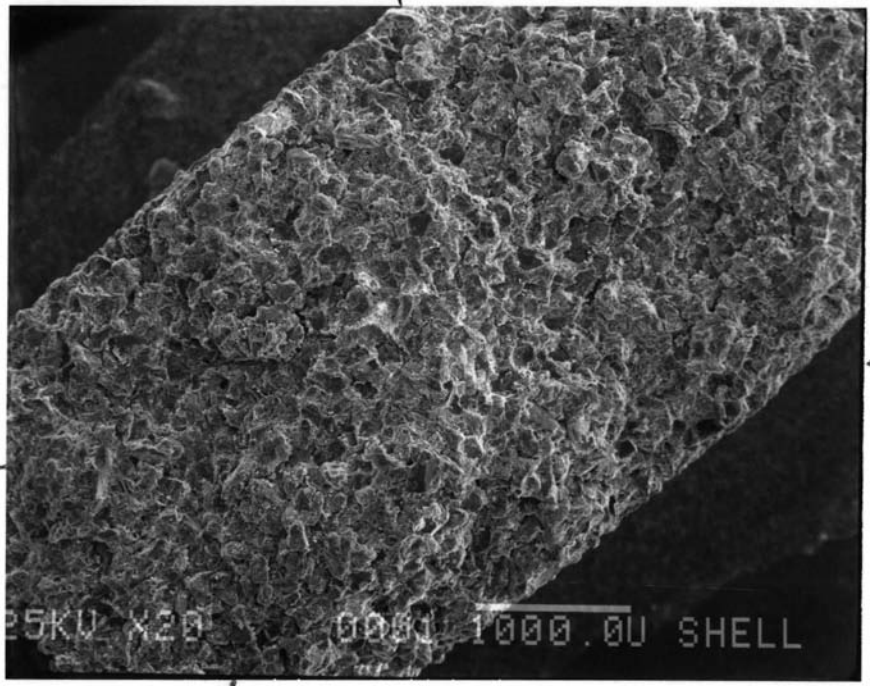
area 3 @ " - Kaolinite

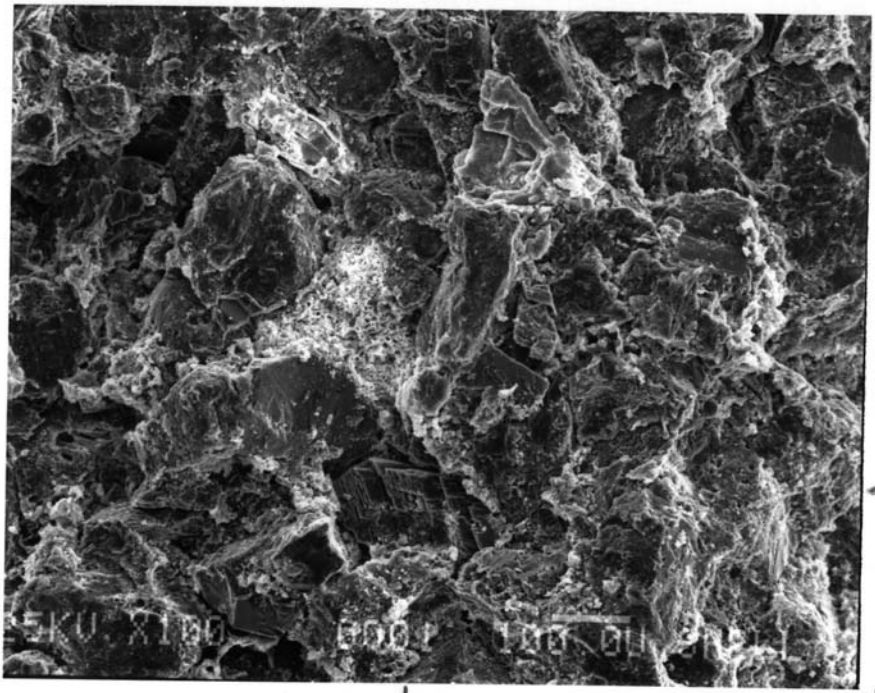


5977'

BEI

20X


25KV X20 0001 1000.0U SHELL



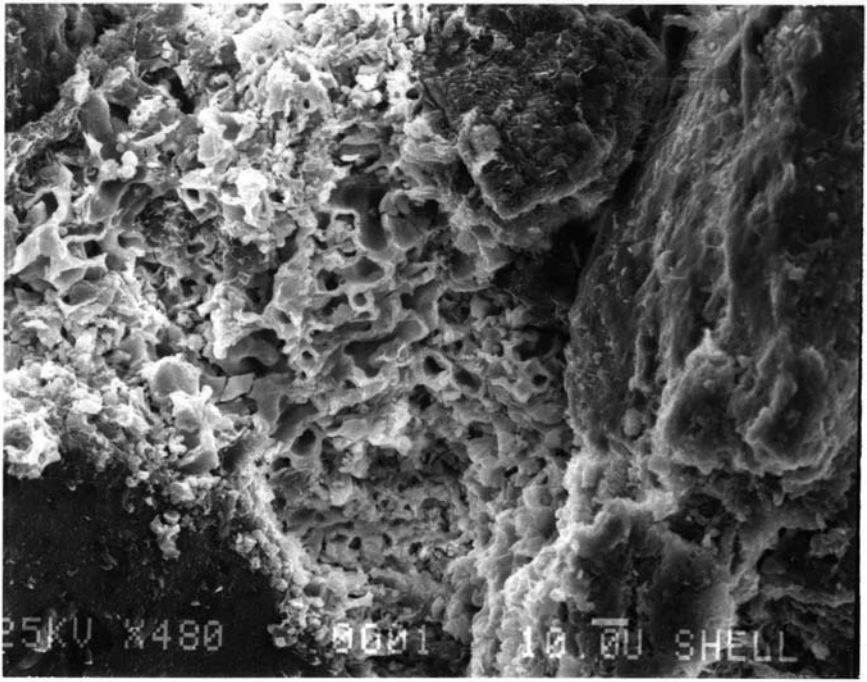
5977 1

1

← K feldspars

100 X

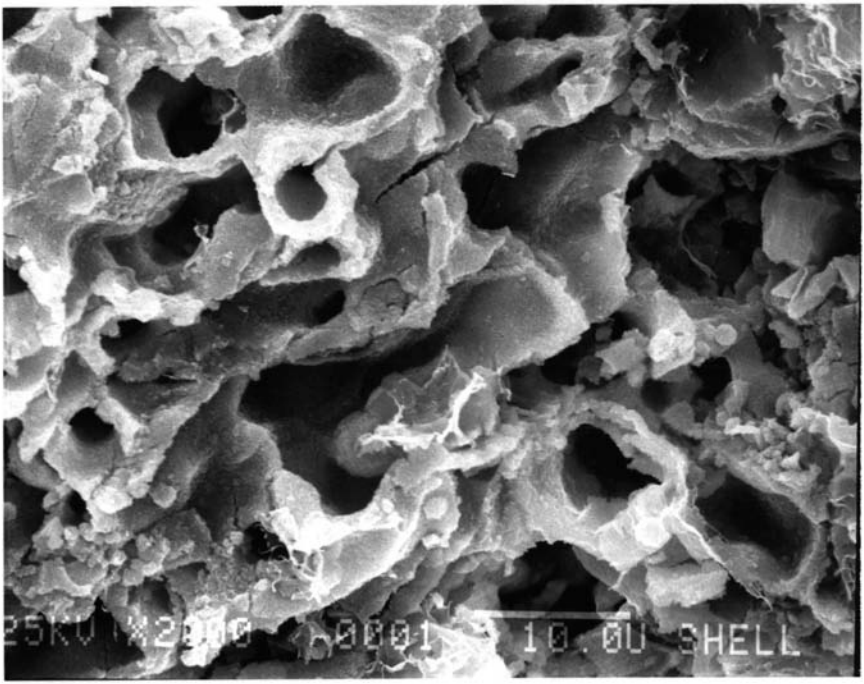
1



59771

1

500X

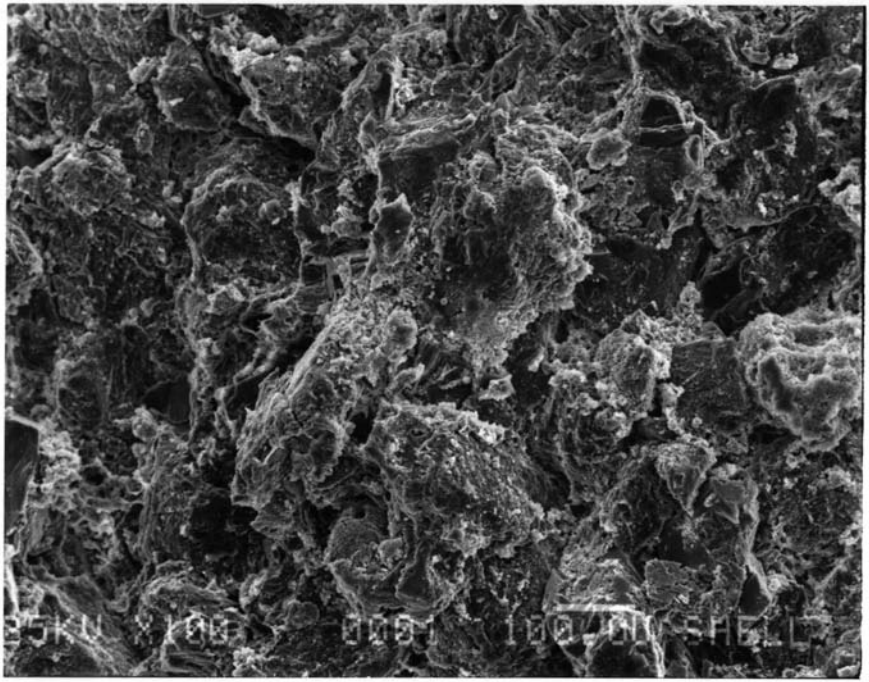


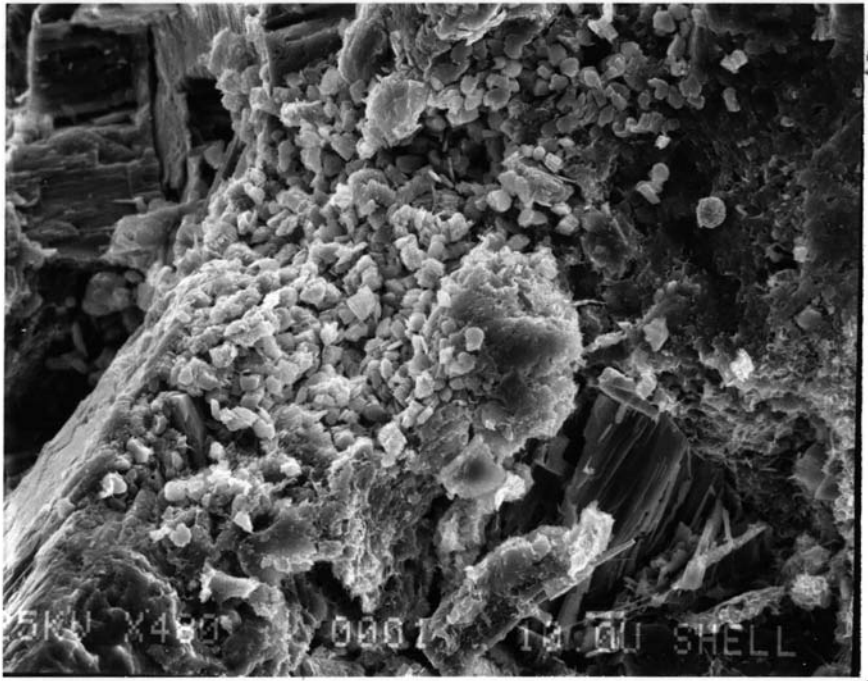
59771

1

20004


CA
P
S
AL
MG
K
FE
0.000
B- 5
VFS=
10.24
5977'

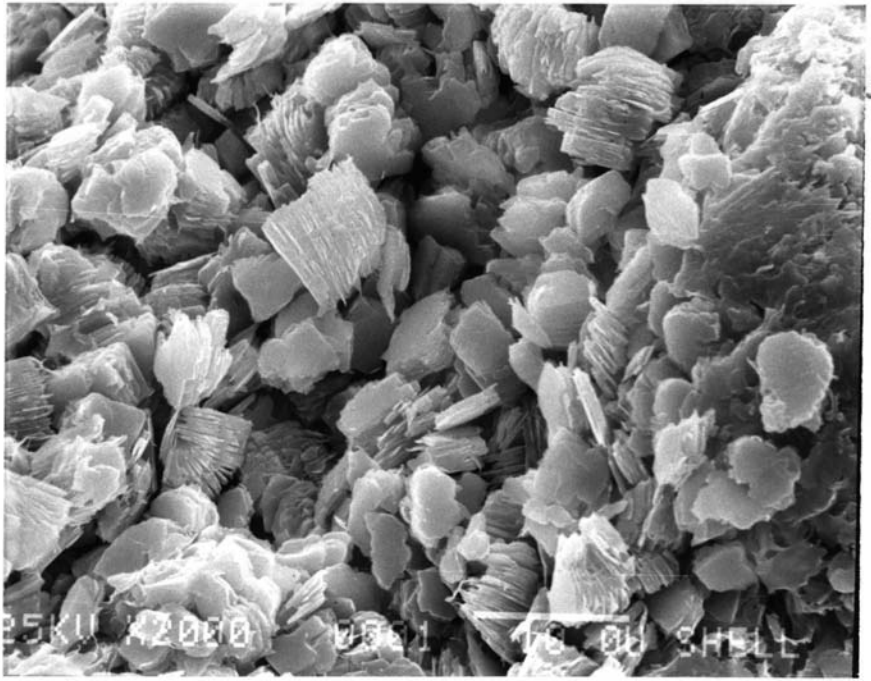

5977 1
2
100 X



5977'

2

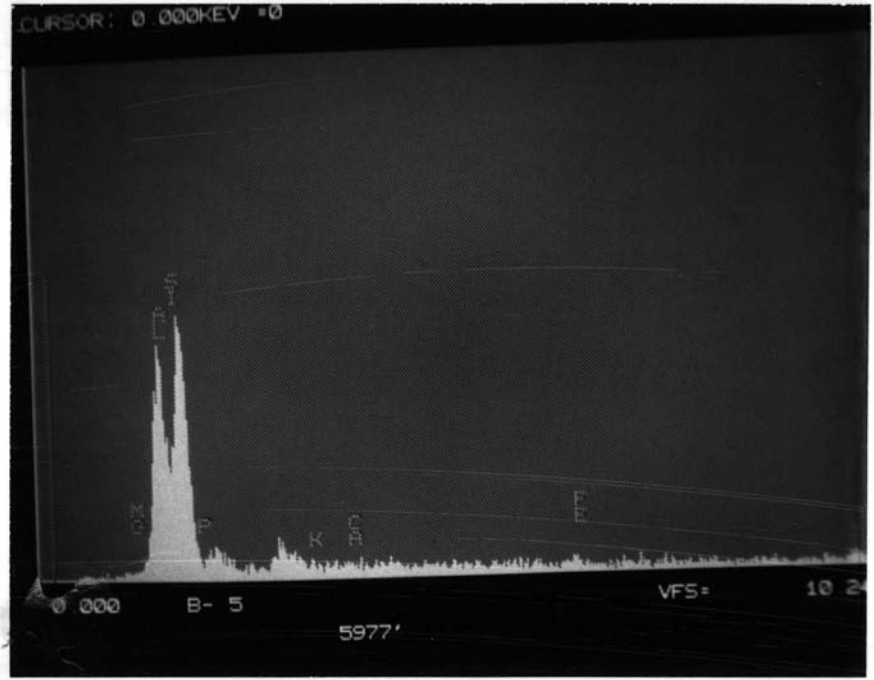
500X



5977'

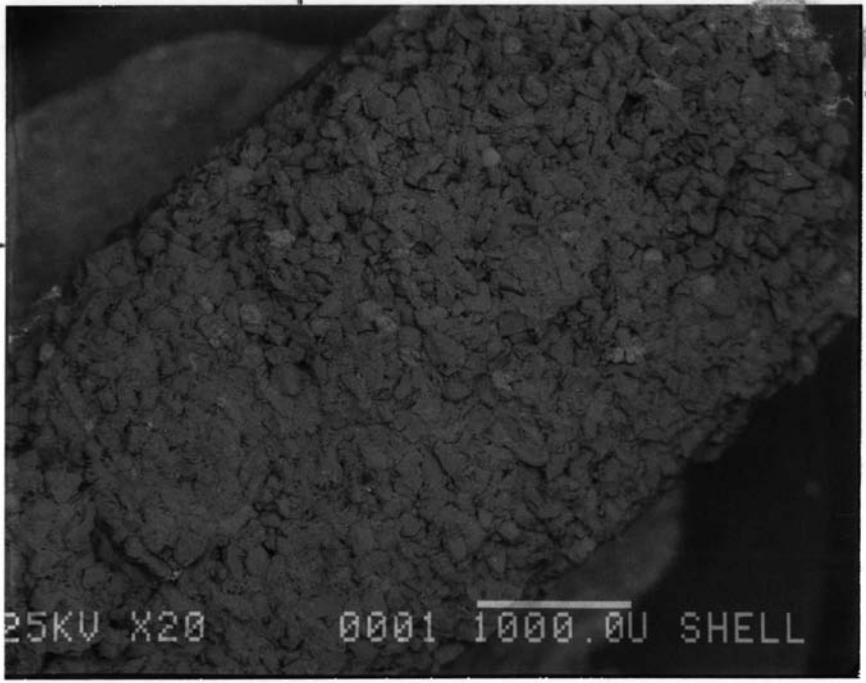
2

2000X



2

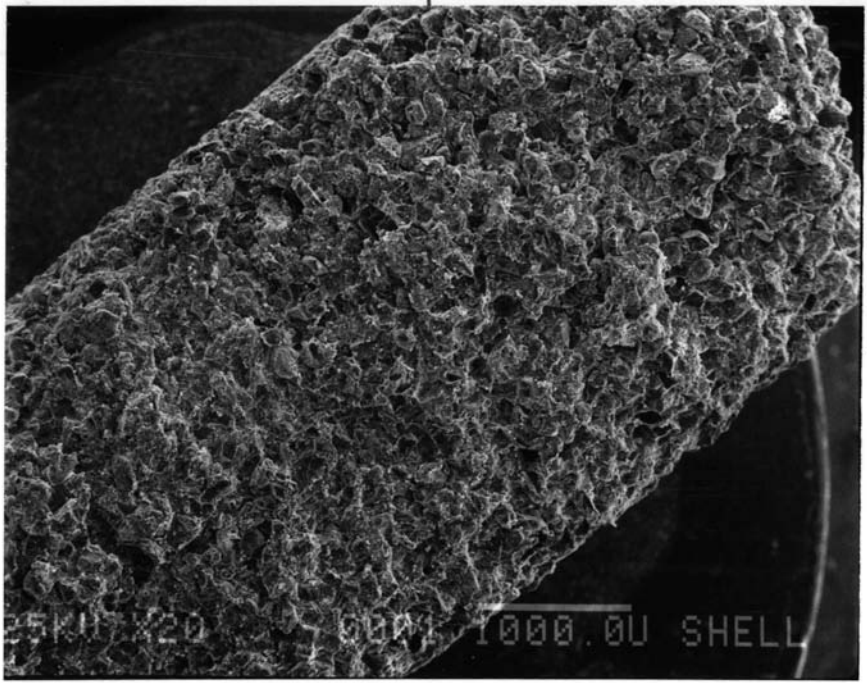
apatite

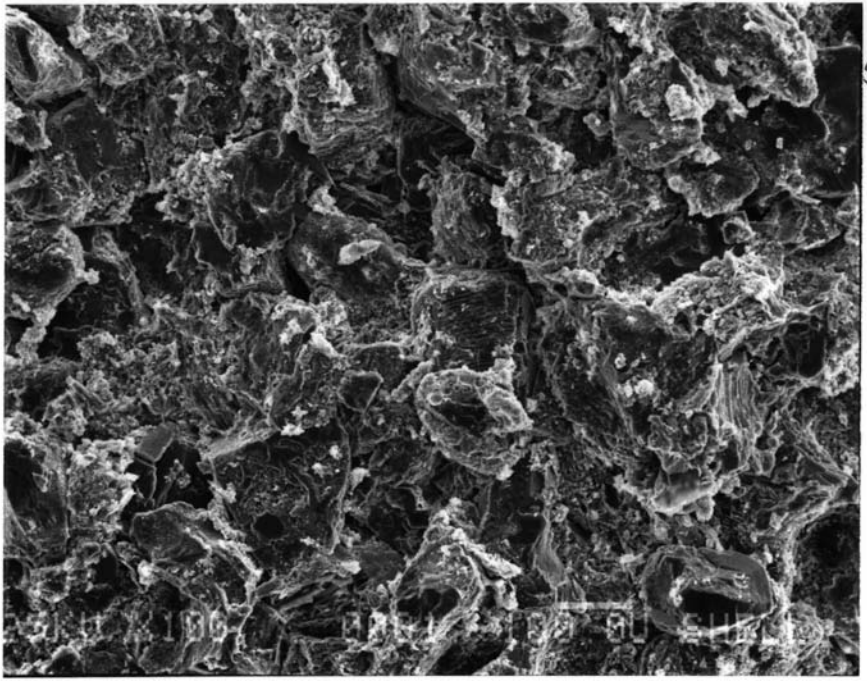


5977'

BEI

20X

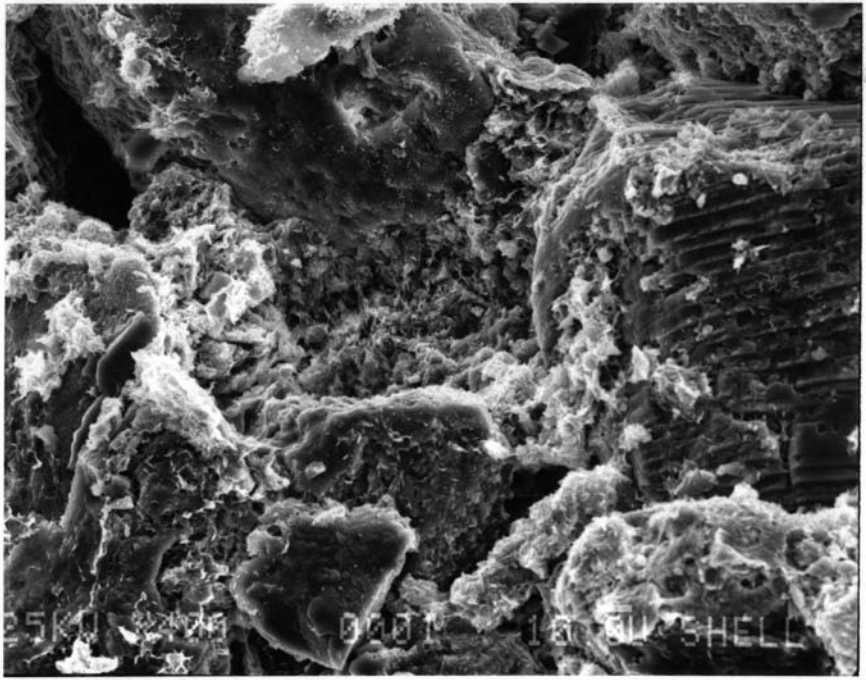

3
5977'
-3
25KV X20 0001 1000.0U SHELL
20 X

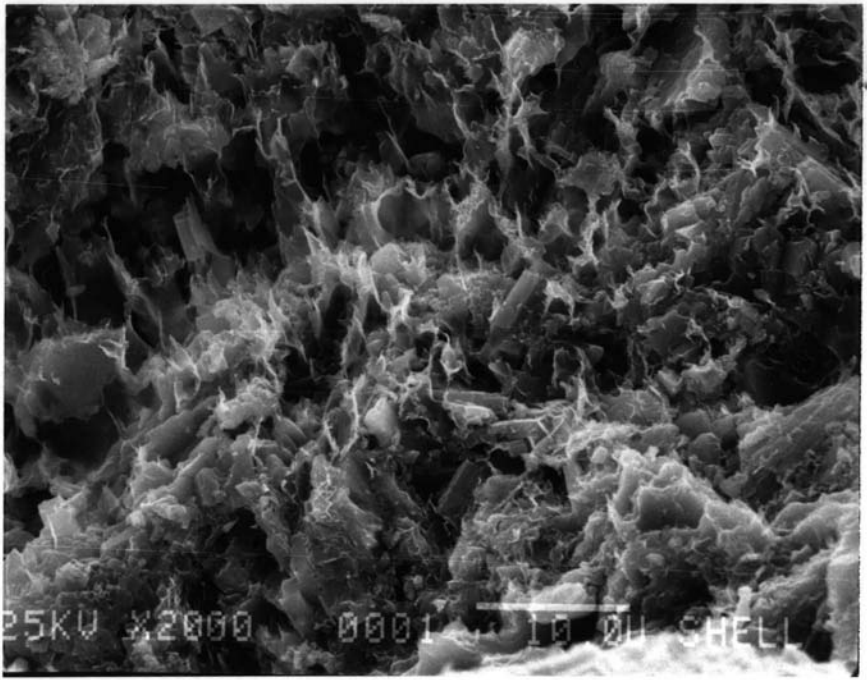


5977'

3

100X

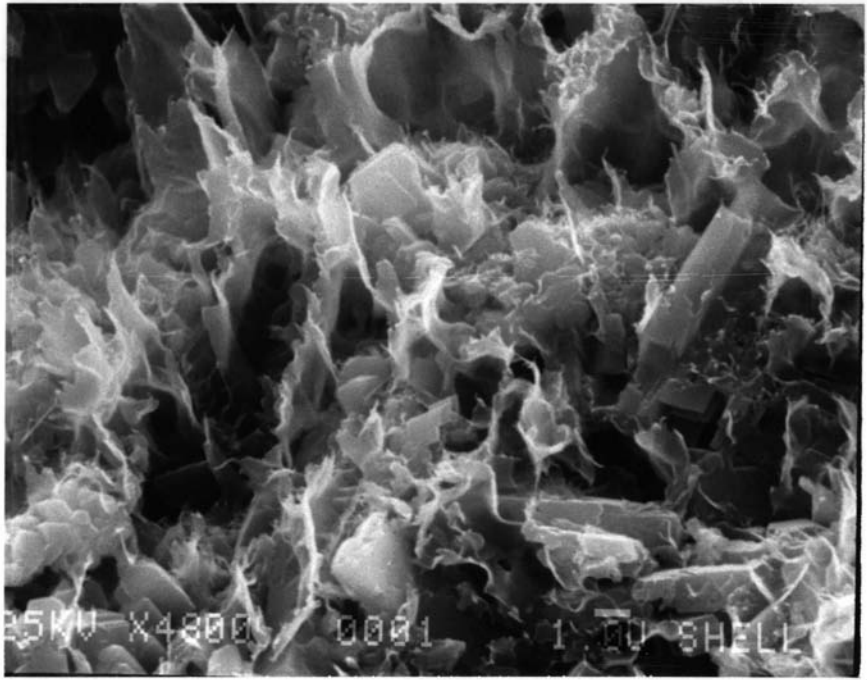

5977'
3
400X



5977 1

3

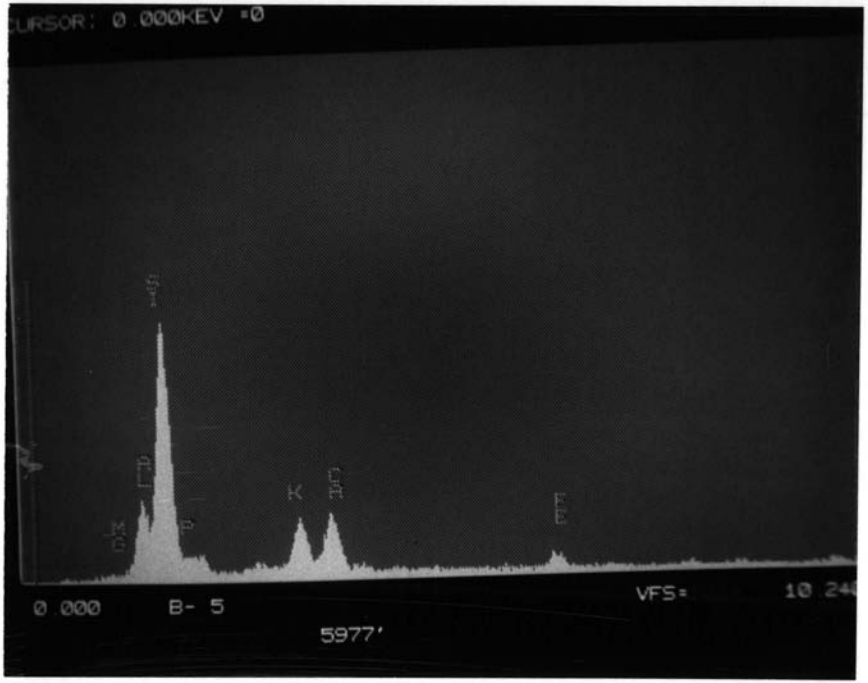
2000X



59771

3

5000X



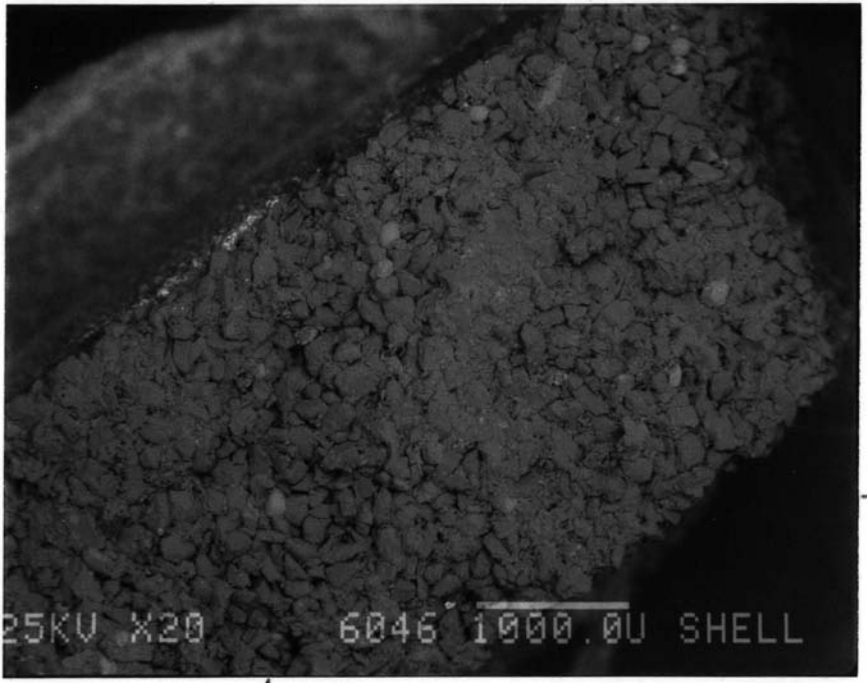
3

N. Belridge 43-27
5977'

Area 1 @ 2000X - Apatite

Area 2 @ 2000X - Kaolinite

Area 3 @ 5000X - Illite/Smectite

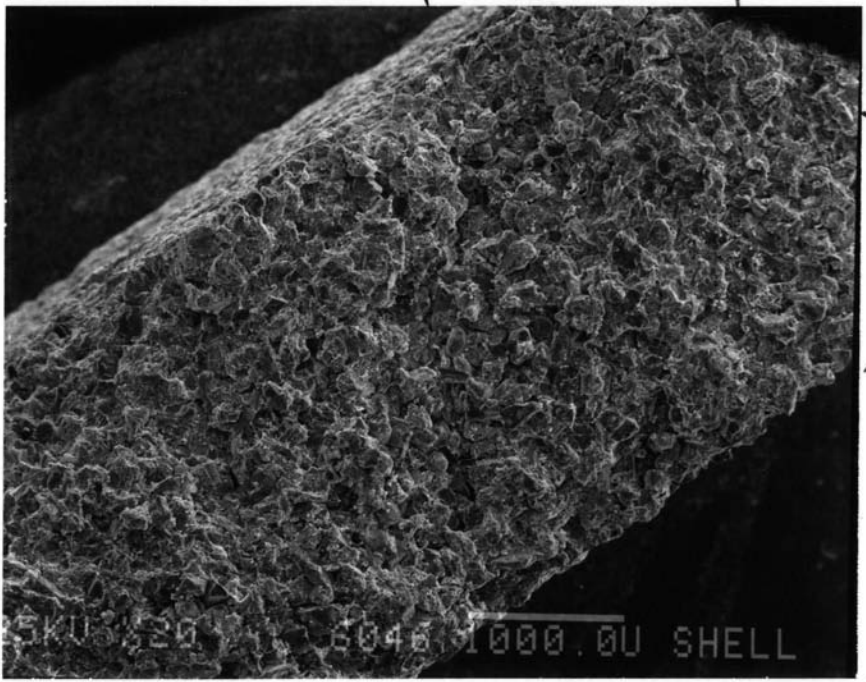


6046'

BEI

-apatite

20X



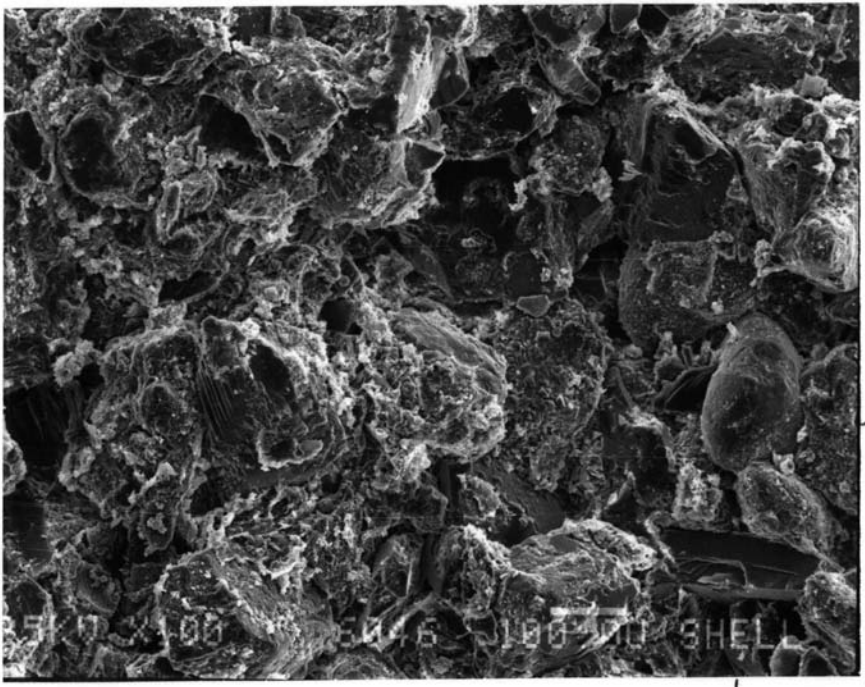
1 2

60461

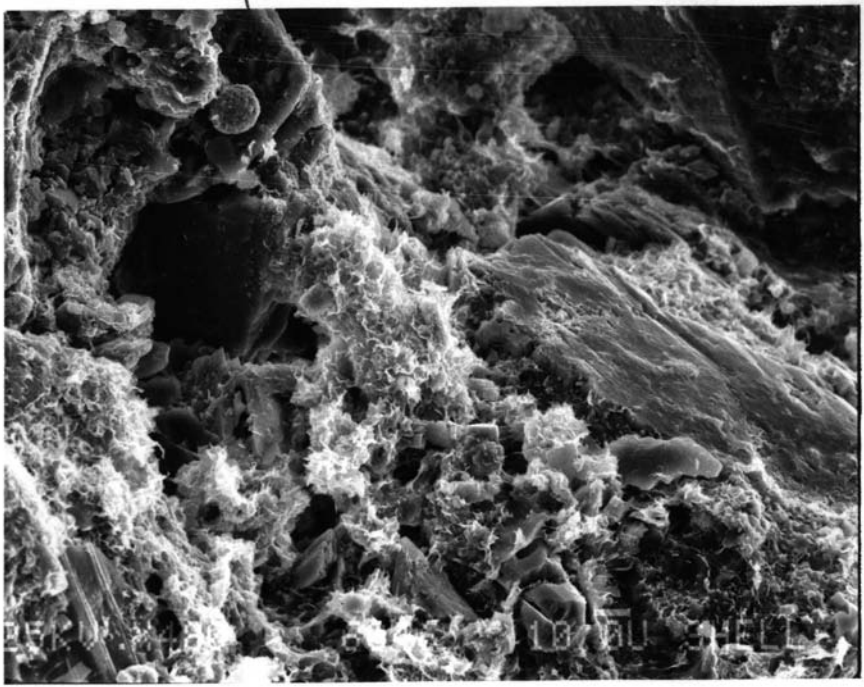
2

~1

20X


60461
1
apatite
100 X

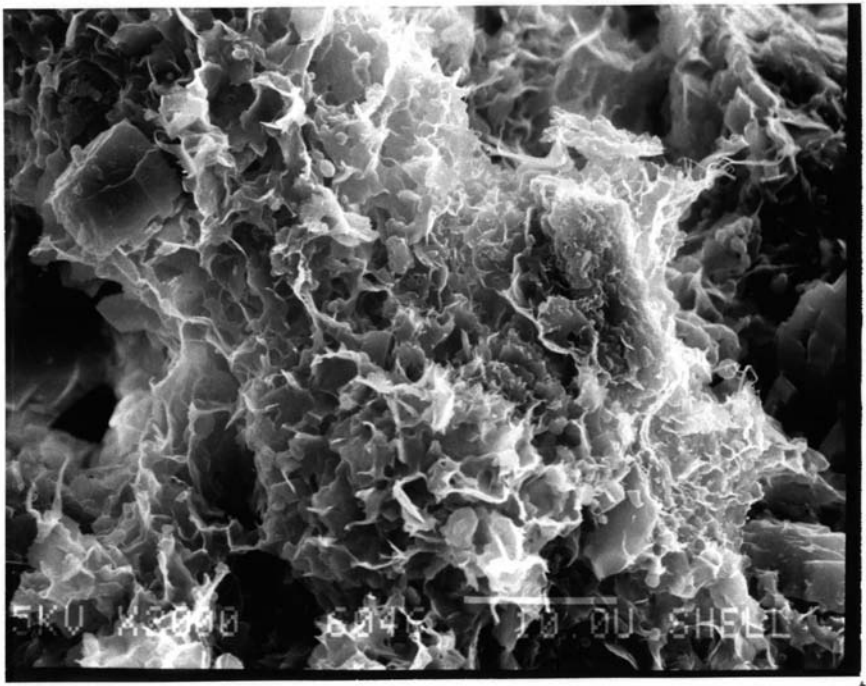
Pyrite



6046'

1

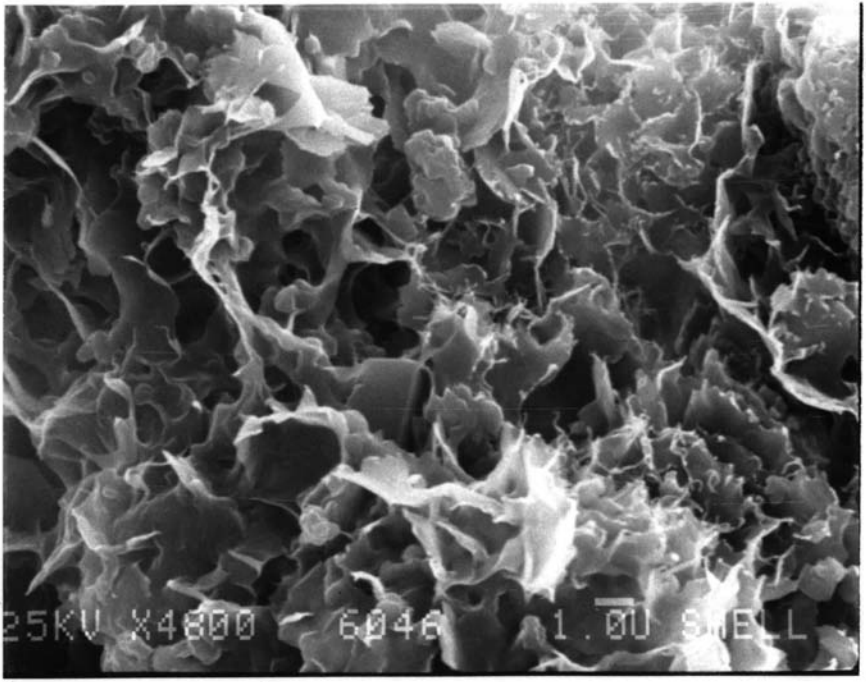
500X



6046'

1

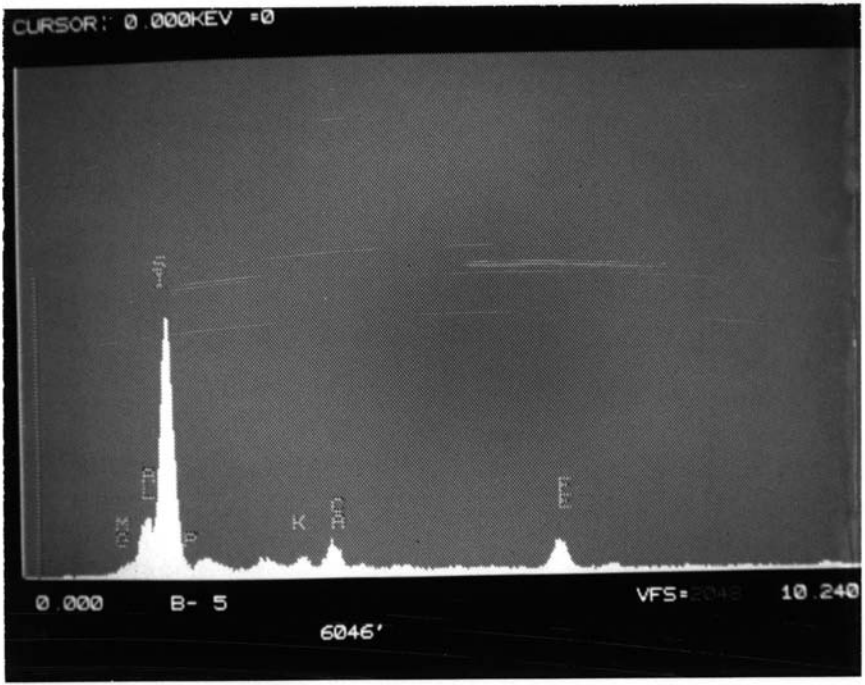
2000X

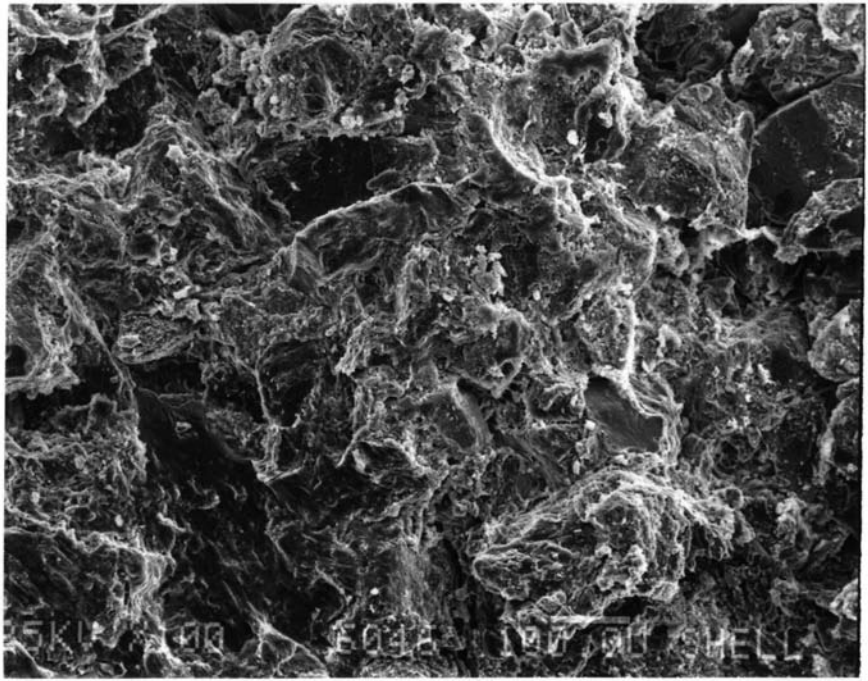


60461

1

5000

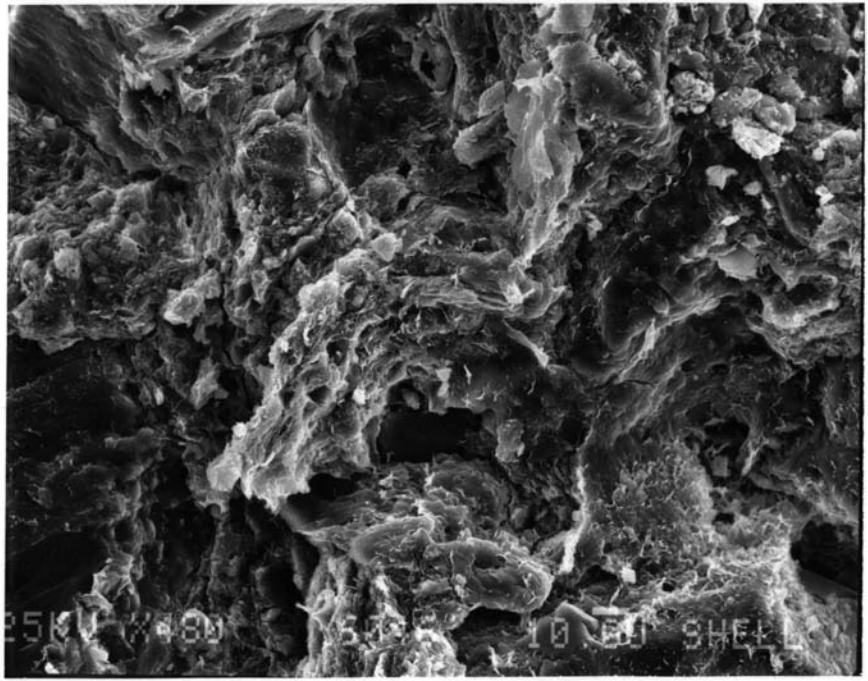

CURSOR: 0.000KEV =0
SP.
AL
MG
P
K
CA
FE
0.000
B- 5
VFS=
10.240
6046'



6046'

2

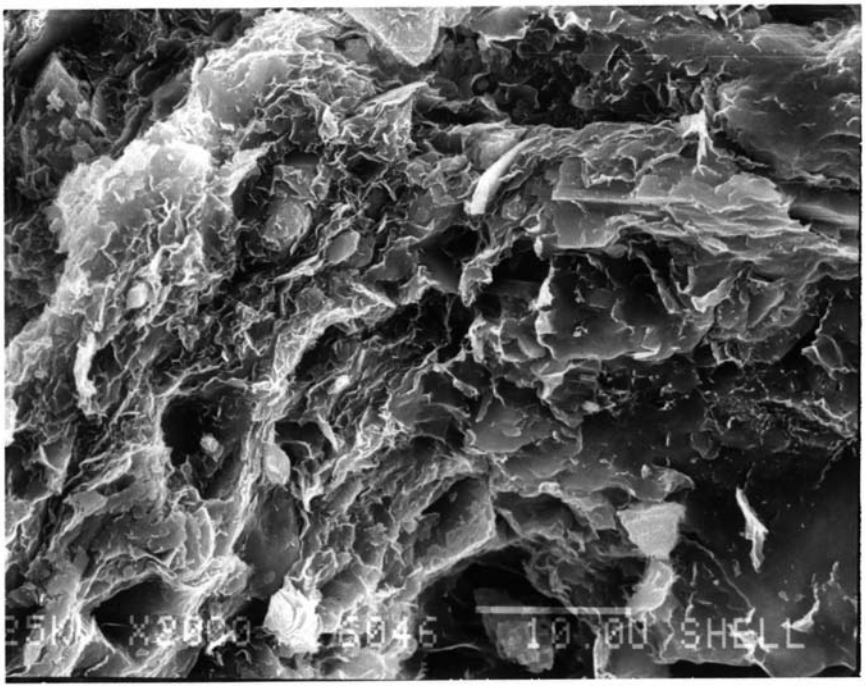
100X



60461

2

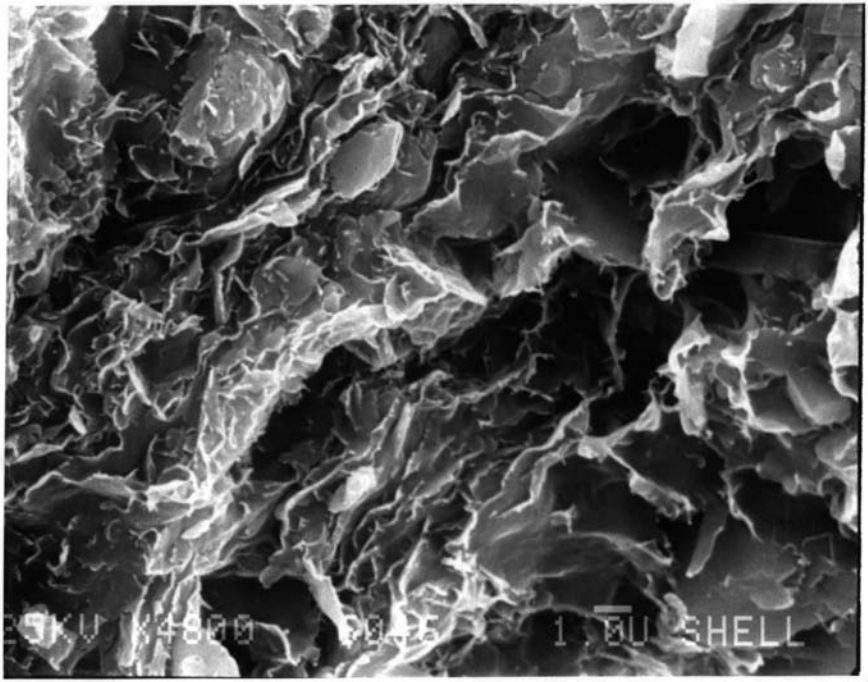
500X



60461

2

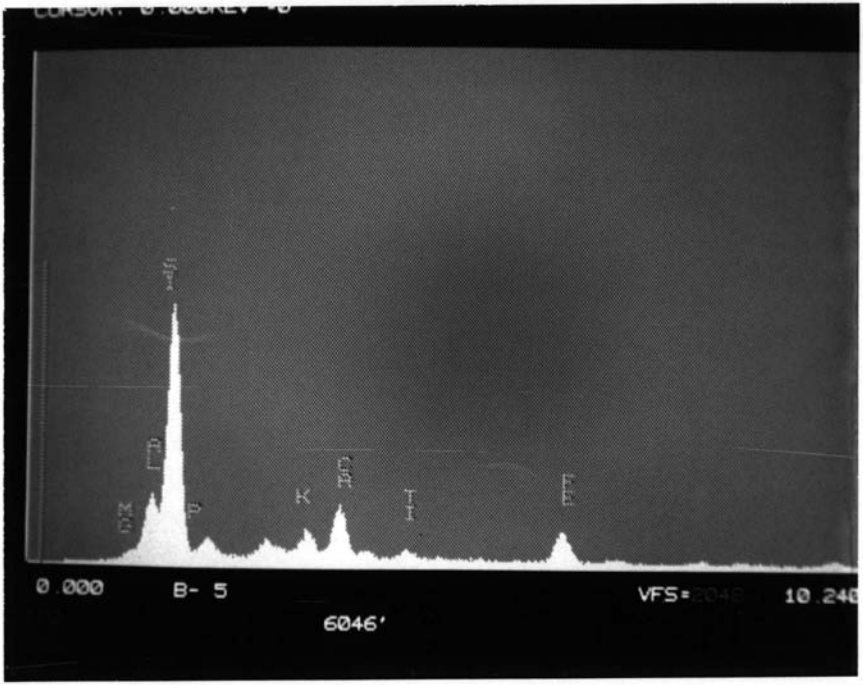
2000X



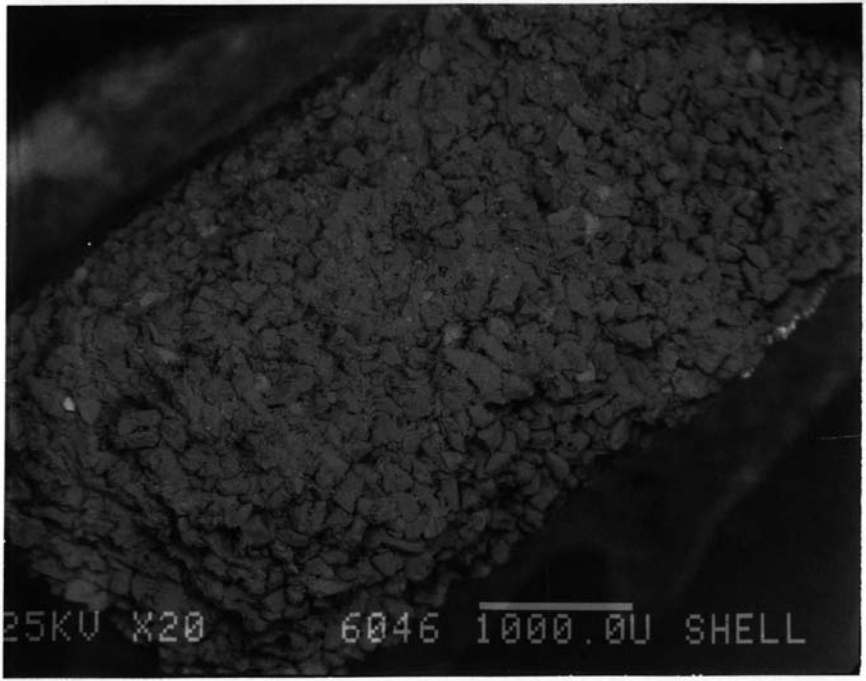
60461

2

5000X



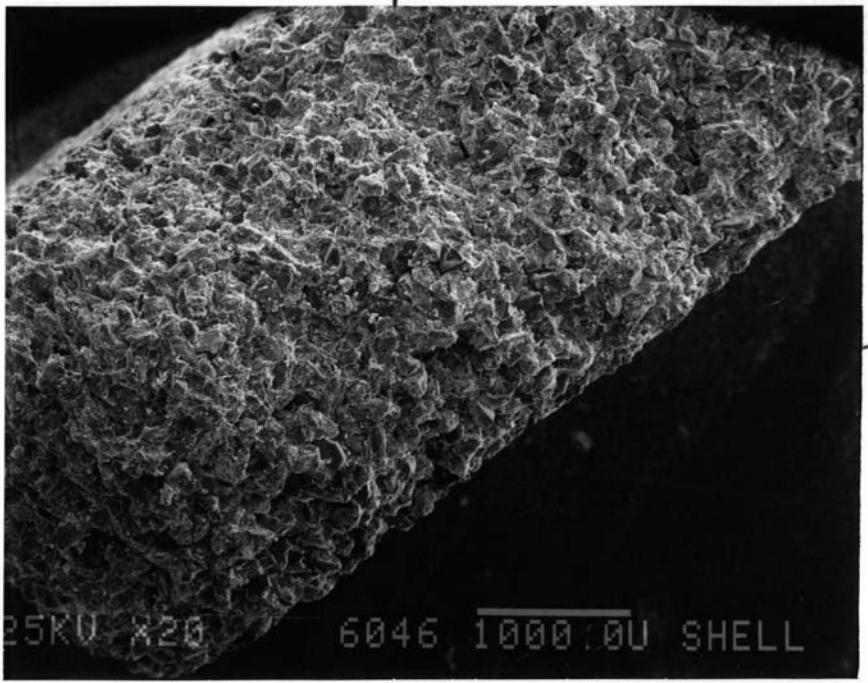
2



6046'

B&I.

20Y



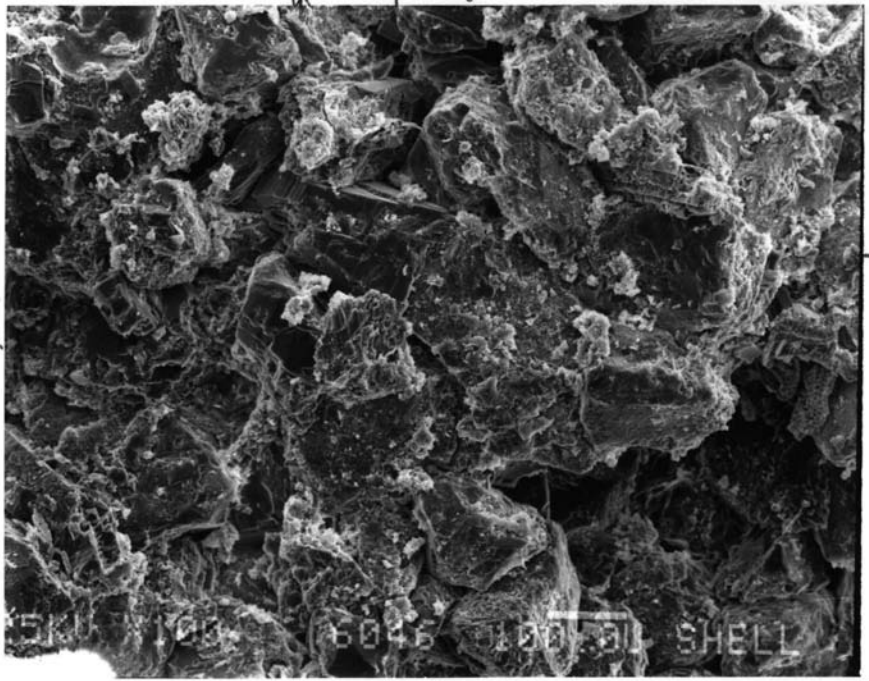
3

60461

3

20X

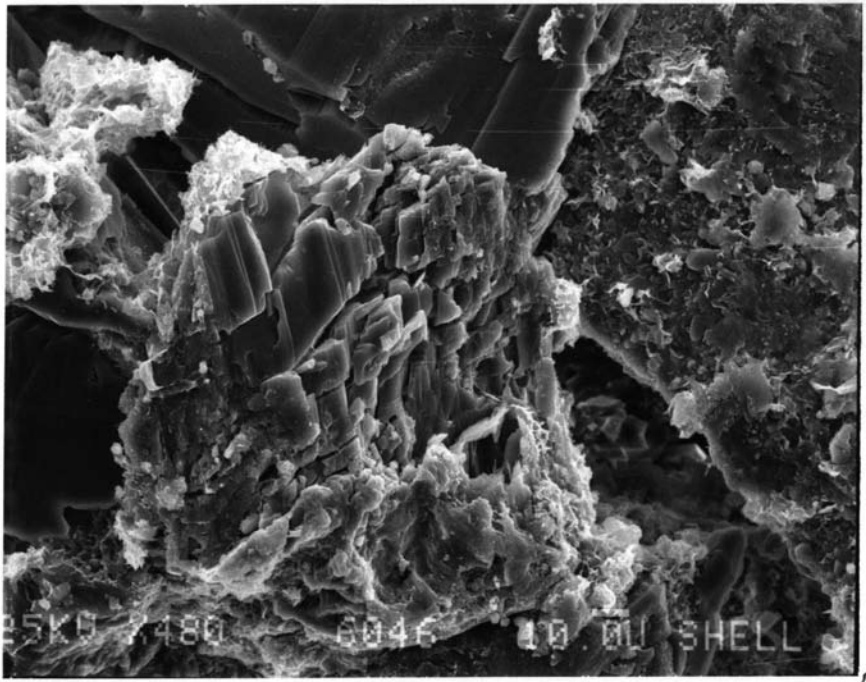
qtz | K feldspar



6046'

3

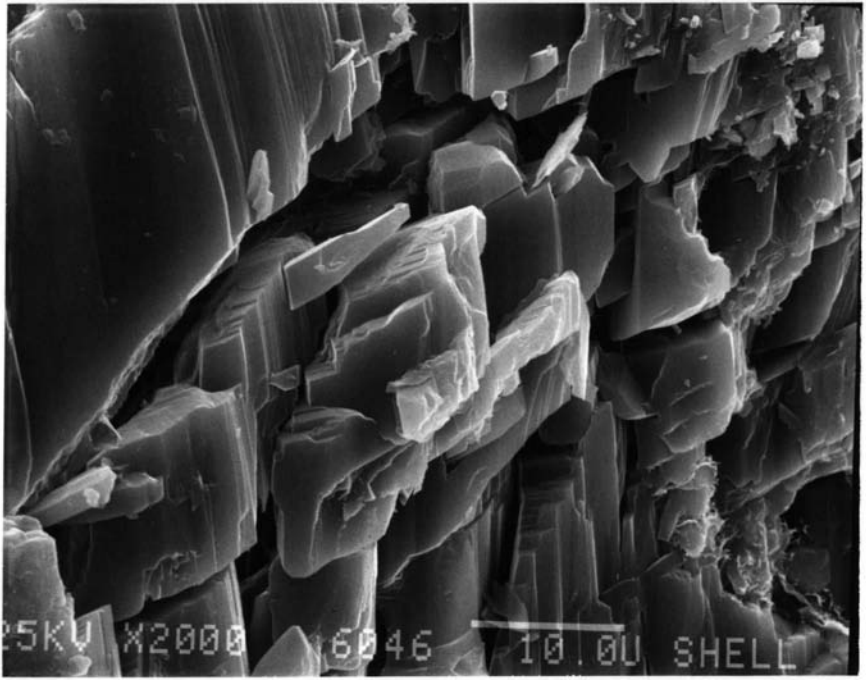
100 X



6046'

3

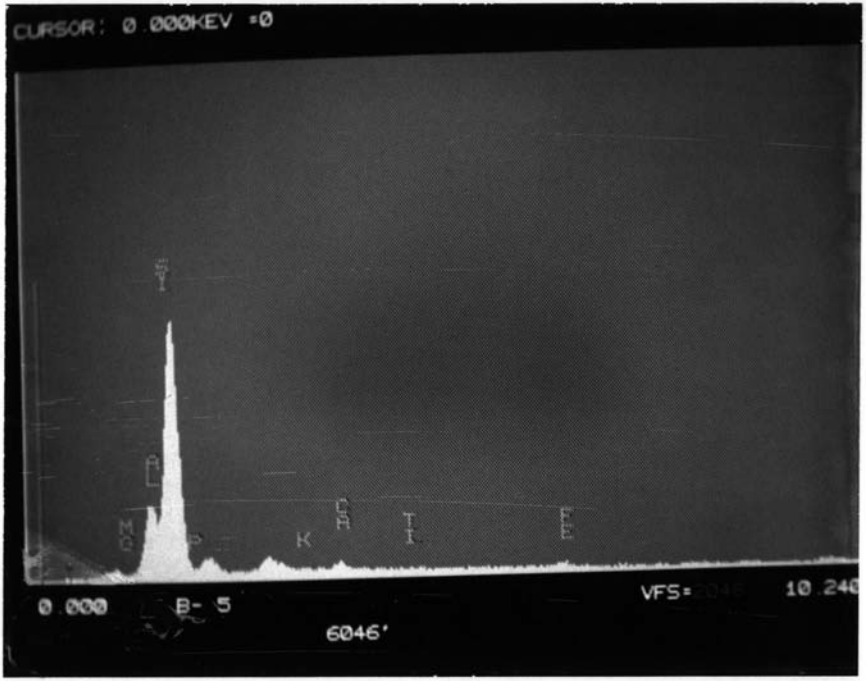
500X



6046'

3

2000 X



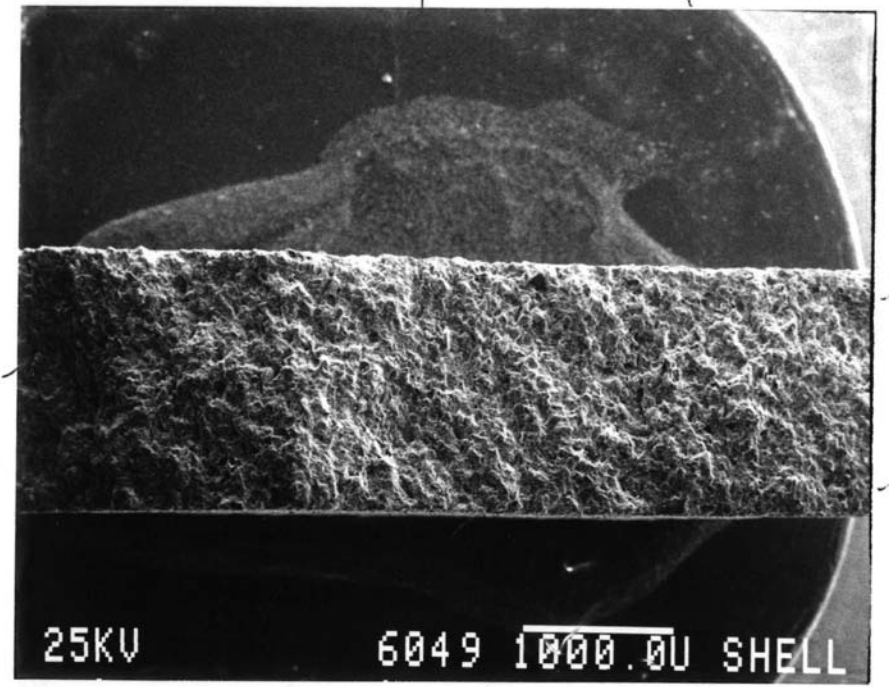
3

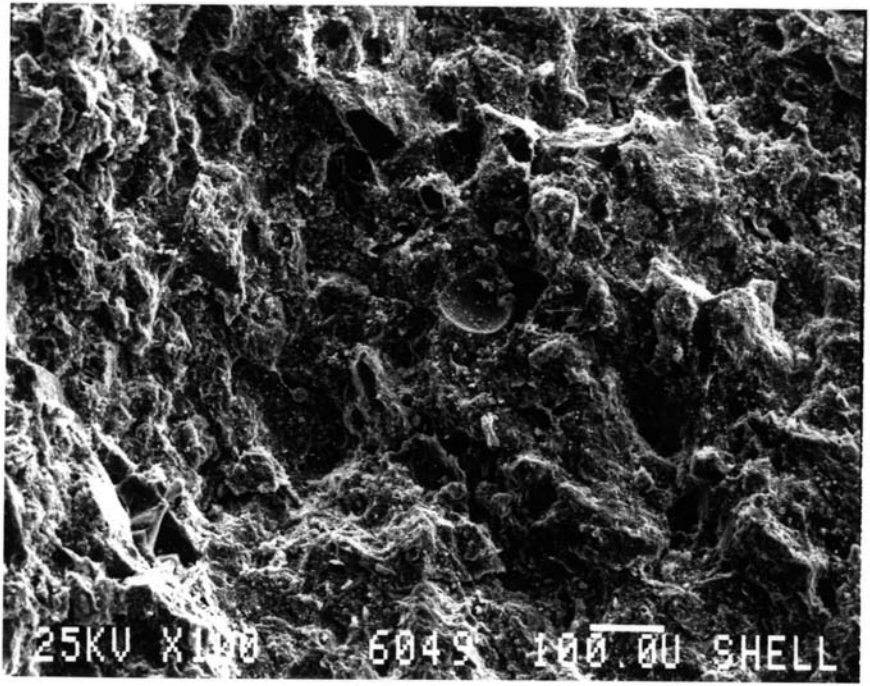
N. Belridge 43-27
6046'

Area 1 @ 5000X – Illite/Smectite?

Area 2 @ .5000X – " "

Area 3 @ " – Ca Feldspar?

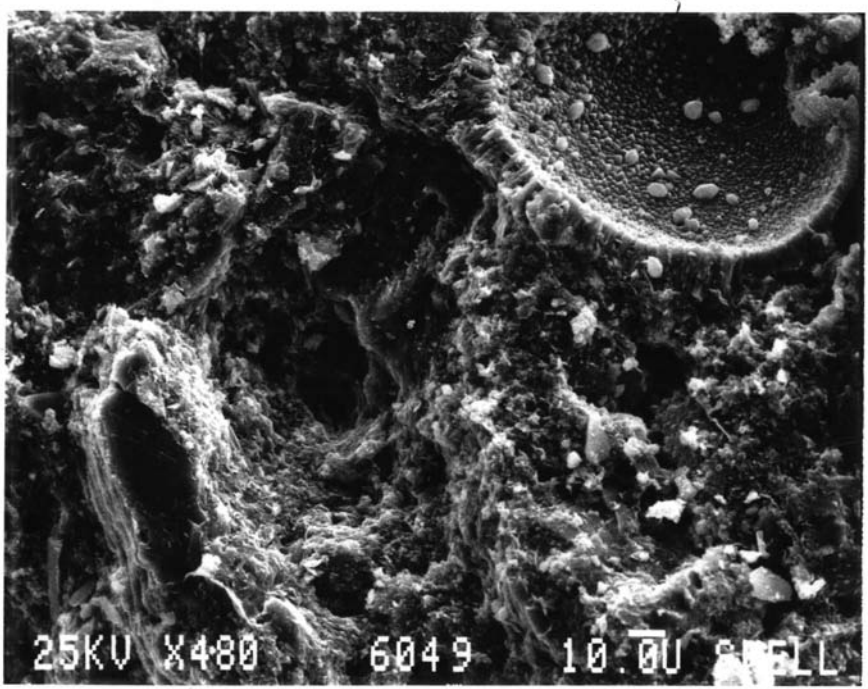

25KV
6049 1000.0U SHELL



6049'

1

100X



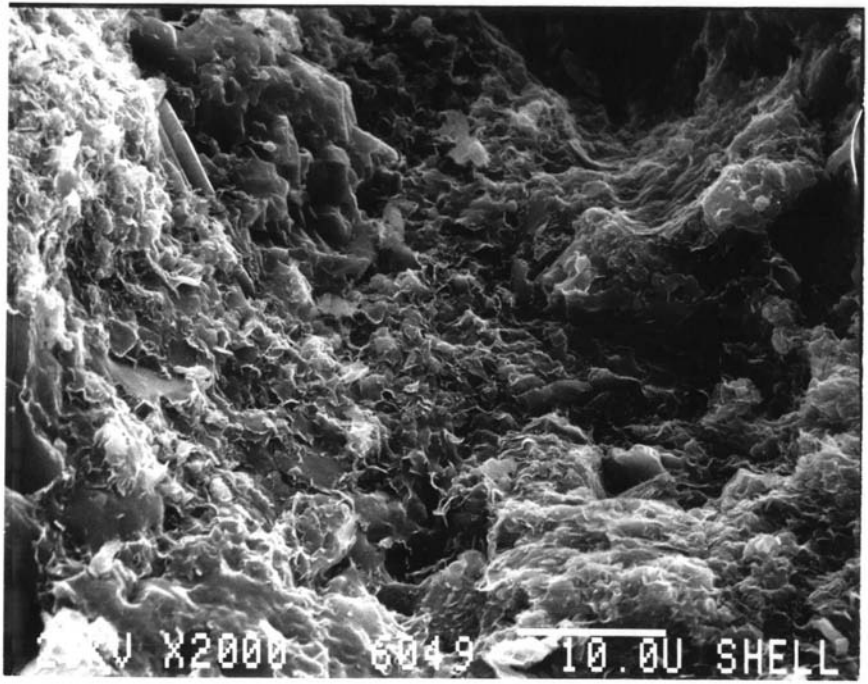
1a

6049'

-1a

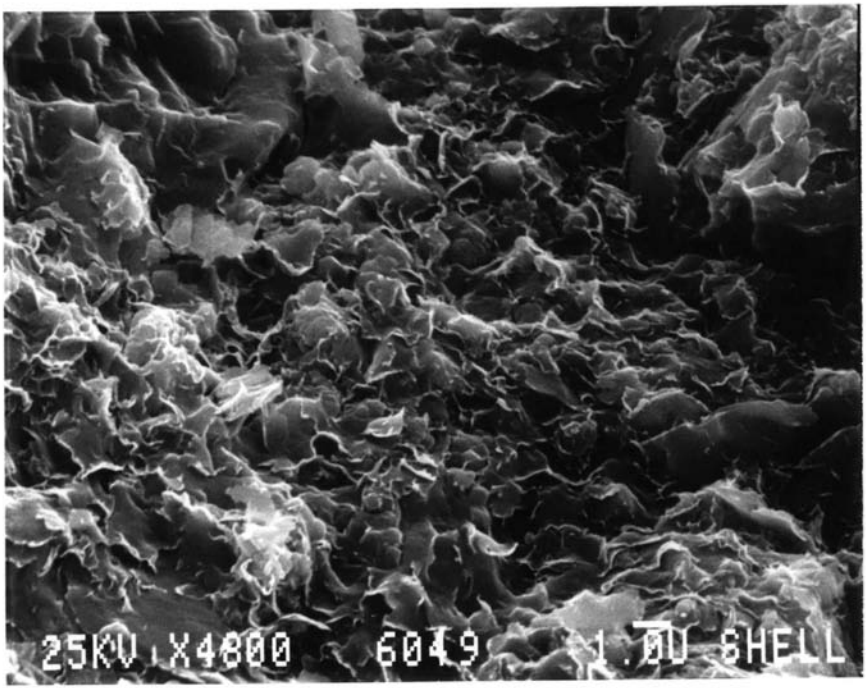
1

500X



6049'

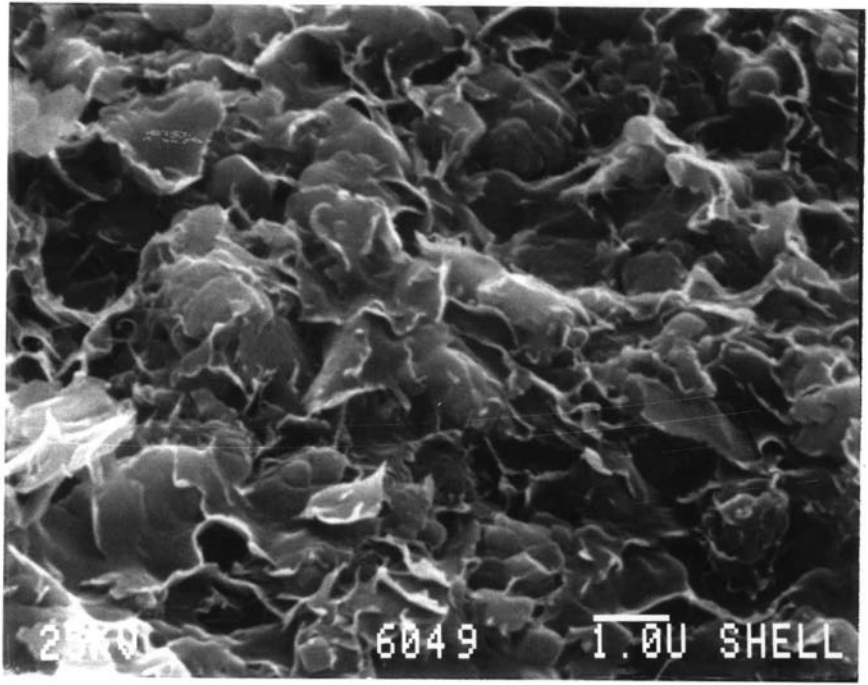
2000X



6049'

1

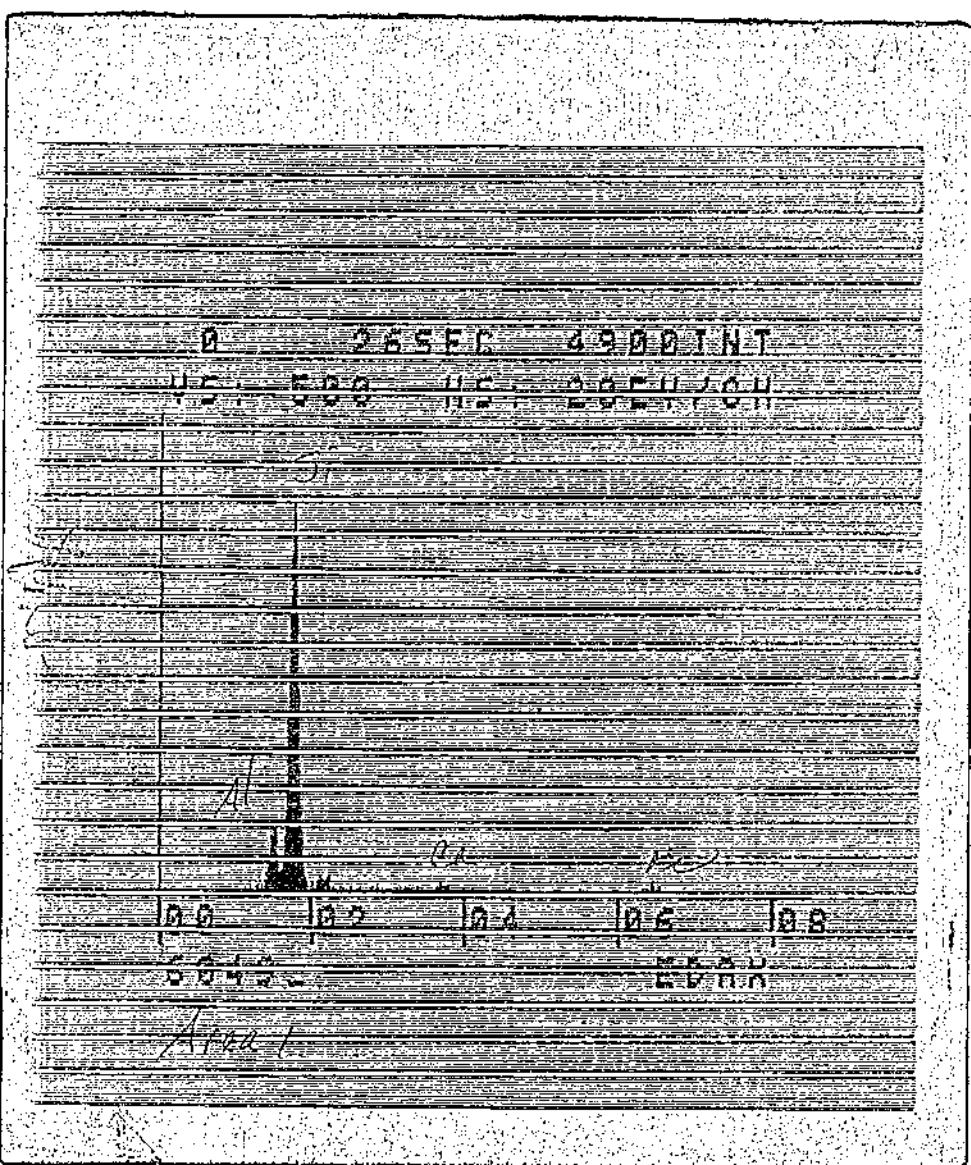
5000X

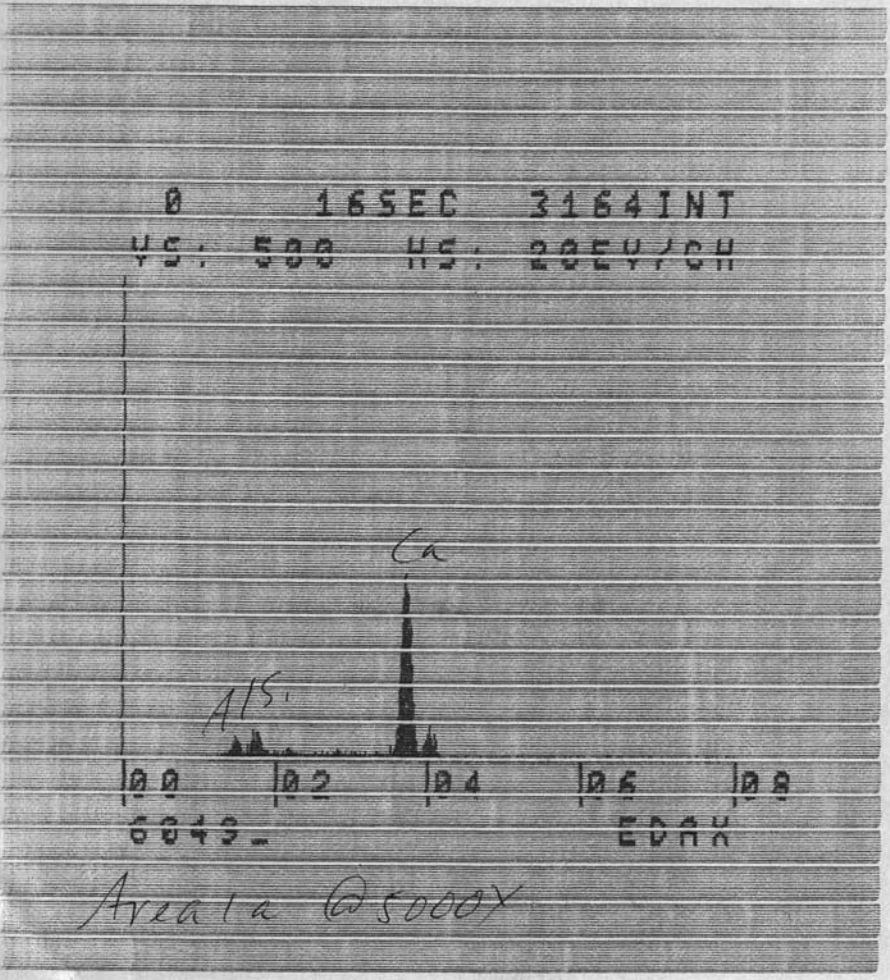


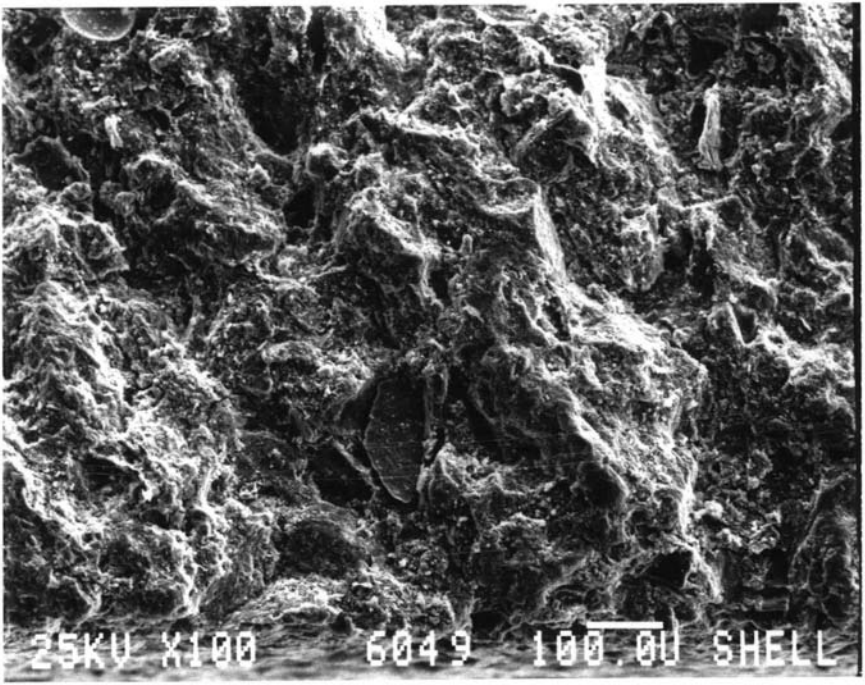
6049

1

10,000X


0 2 SEC 4900 INT
0 0
0 2
0 4
0 6
0 8

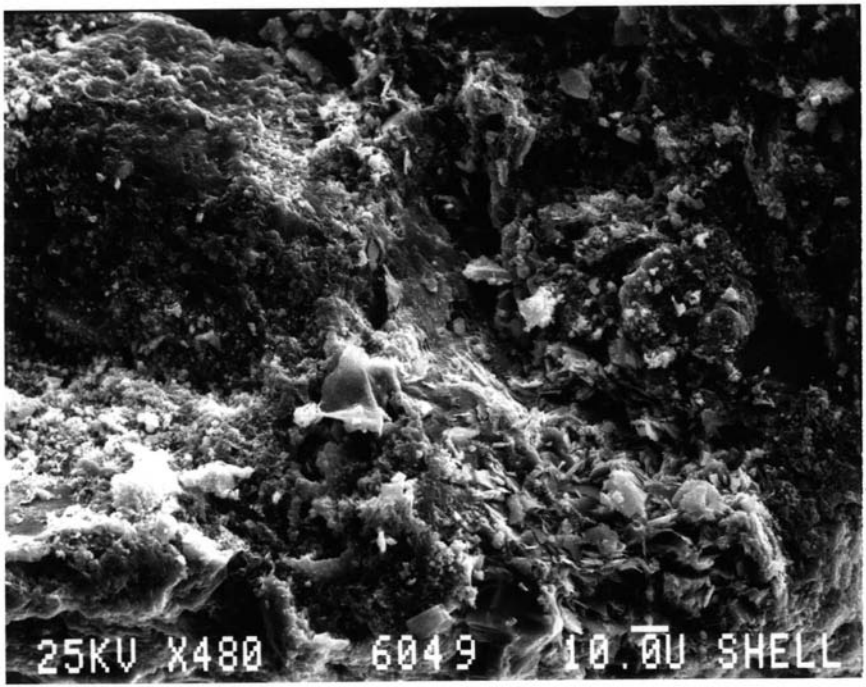

0 16SEC 3164INT
VS: 500 HS: 20EV/CH
Ca
Al Si
00
02
04
06
08
6049_
EDAX
Area 1a @5000X



6049

γ

100X



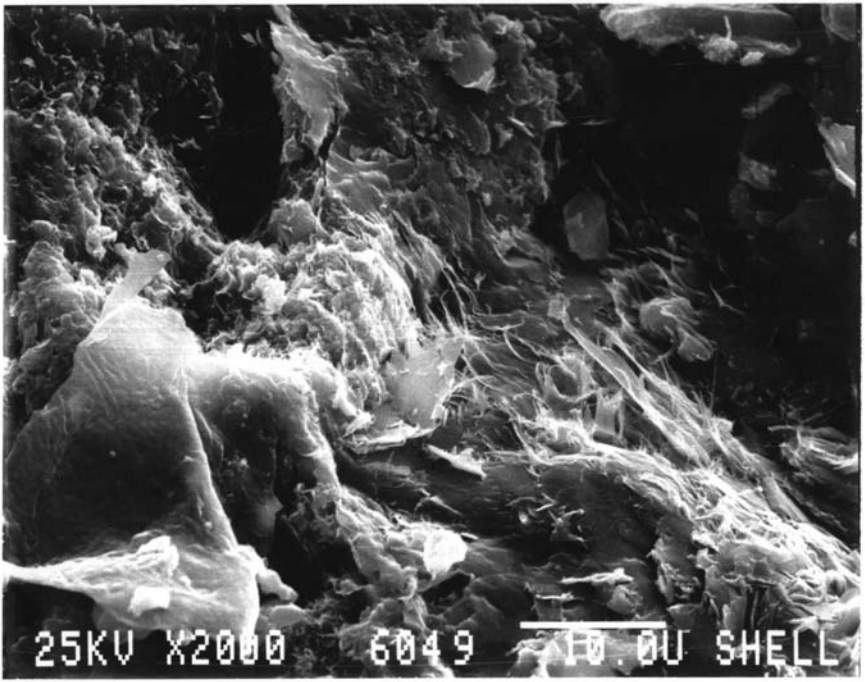
6049'

2

-2a

500X

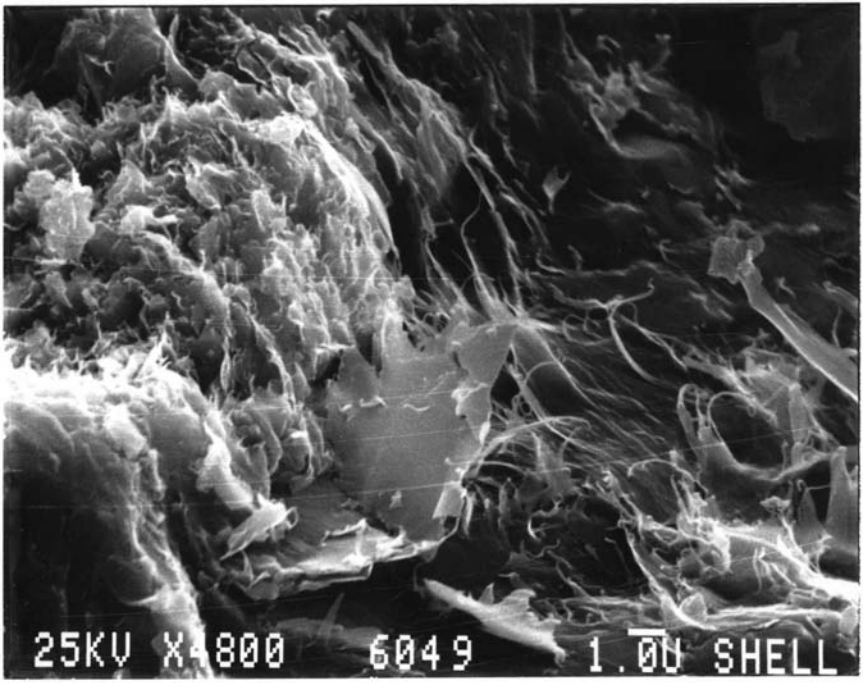
2a



6044'

2

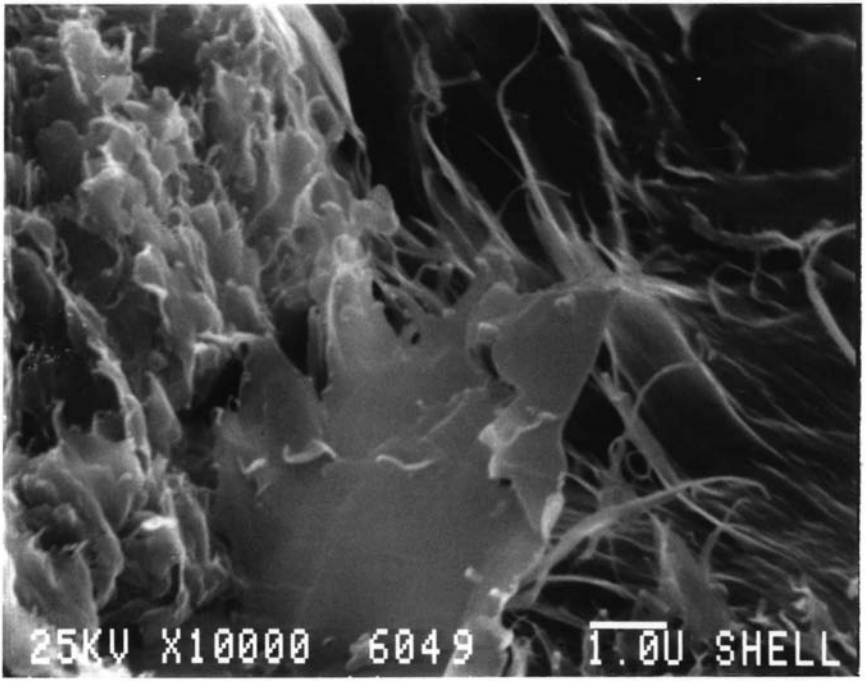
2000X



6049'

2

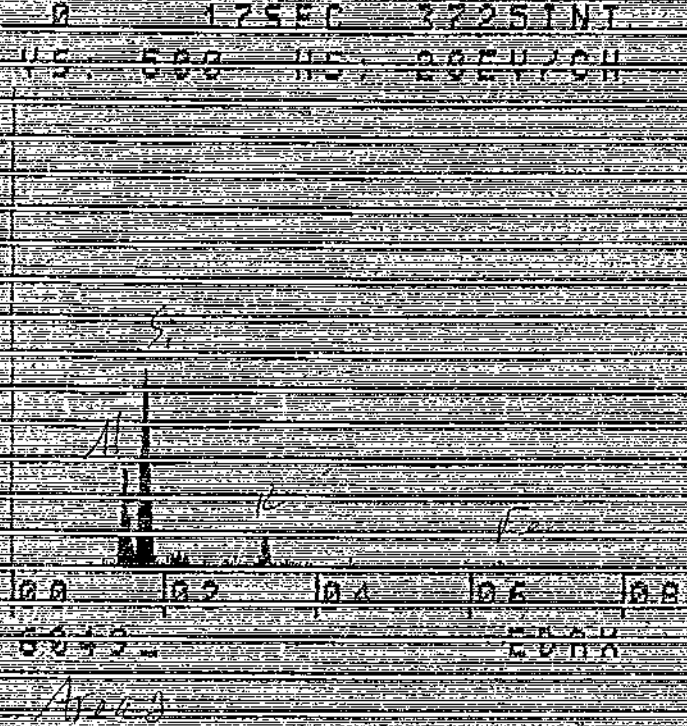
5000X

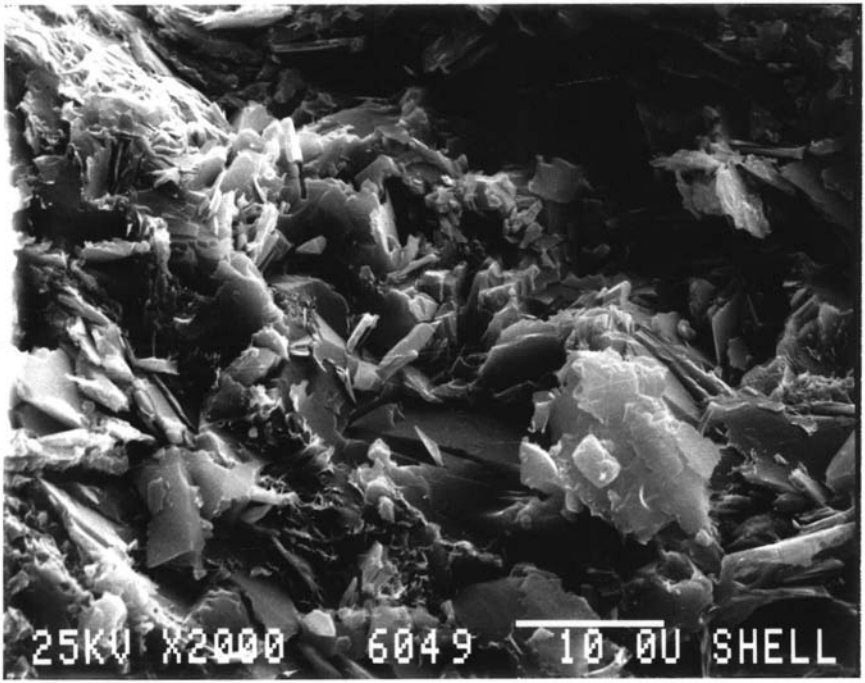


6049'

2

10,000X

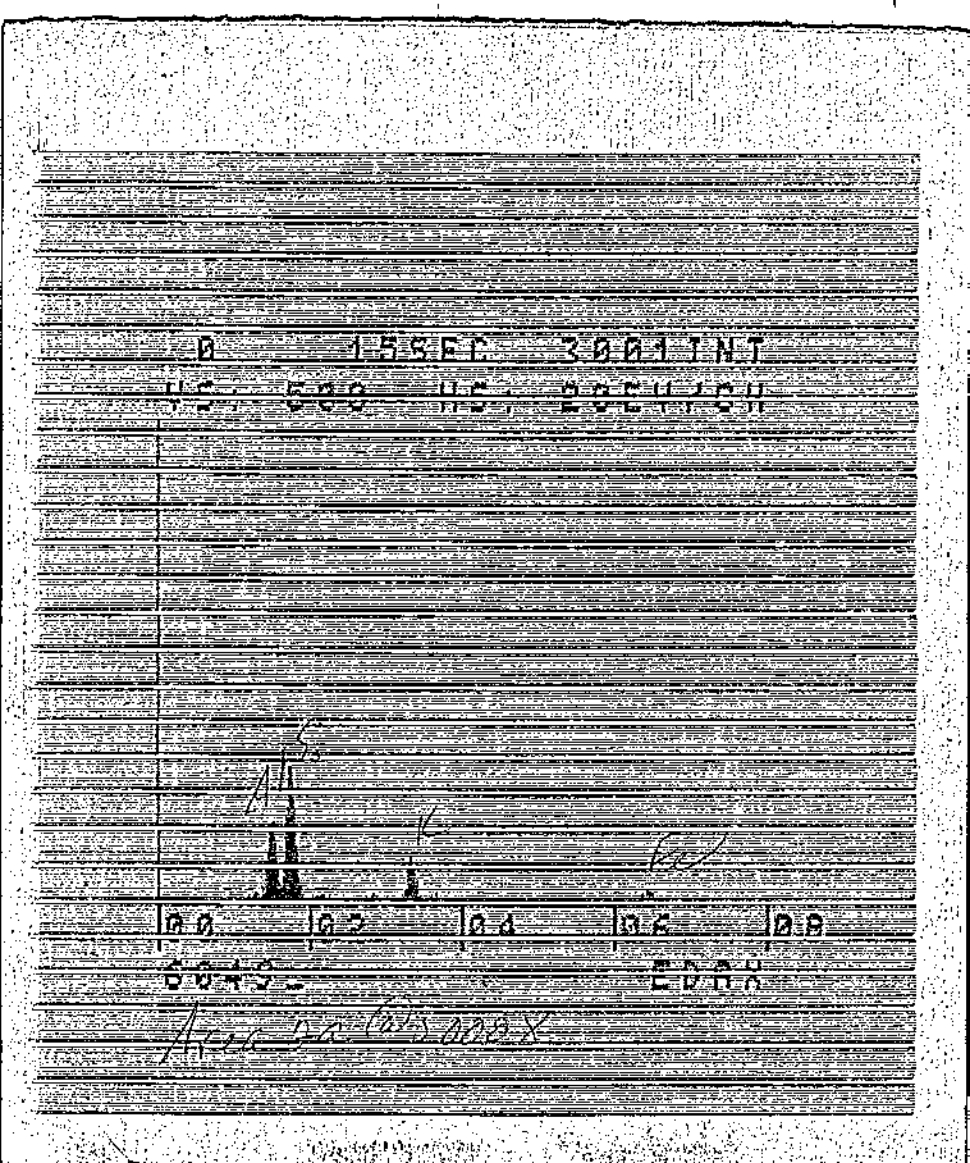

0 17SEC 3725INT
VS: 500 HS: 20EV/CH
00
02
04
06
08
EDAX

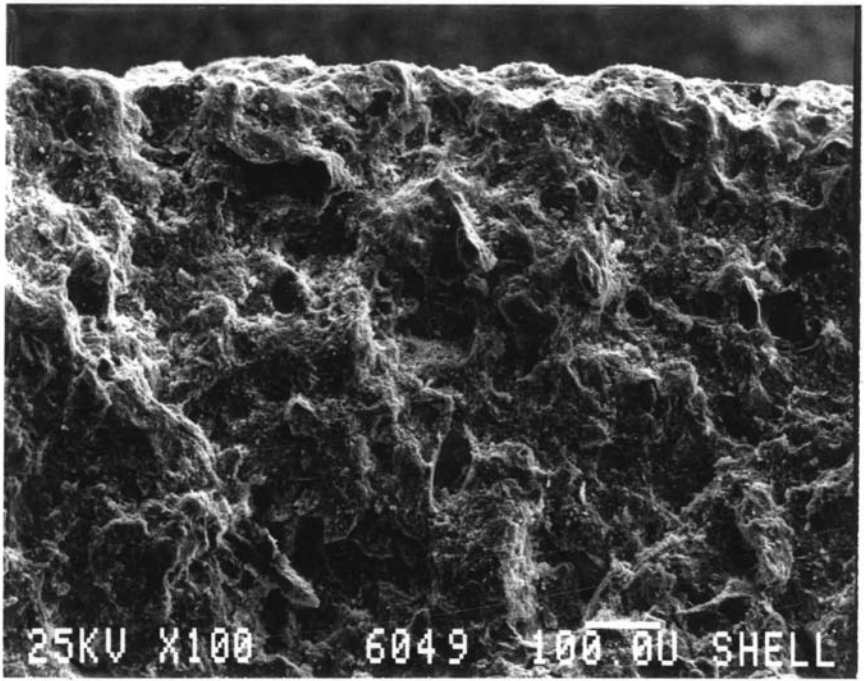


6049'

2a

2000X

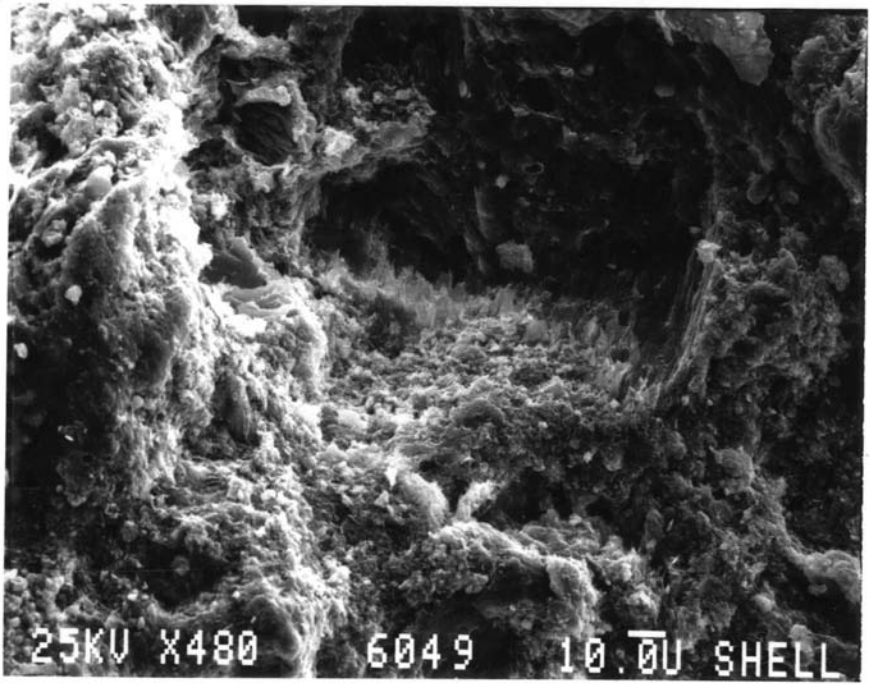




6049'

3

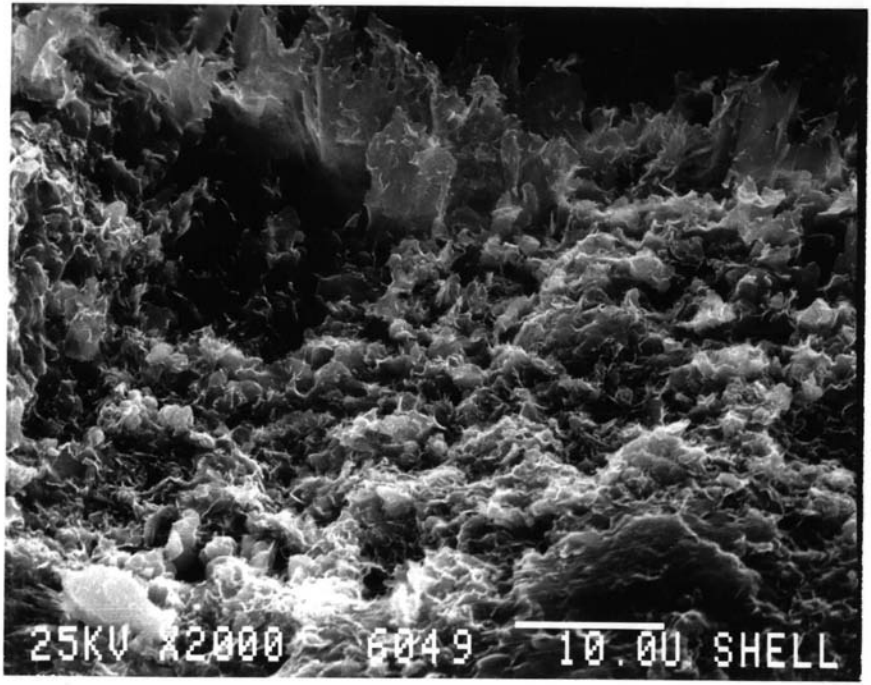
100X



6049

3

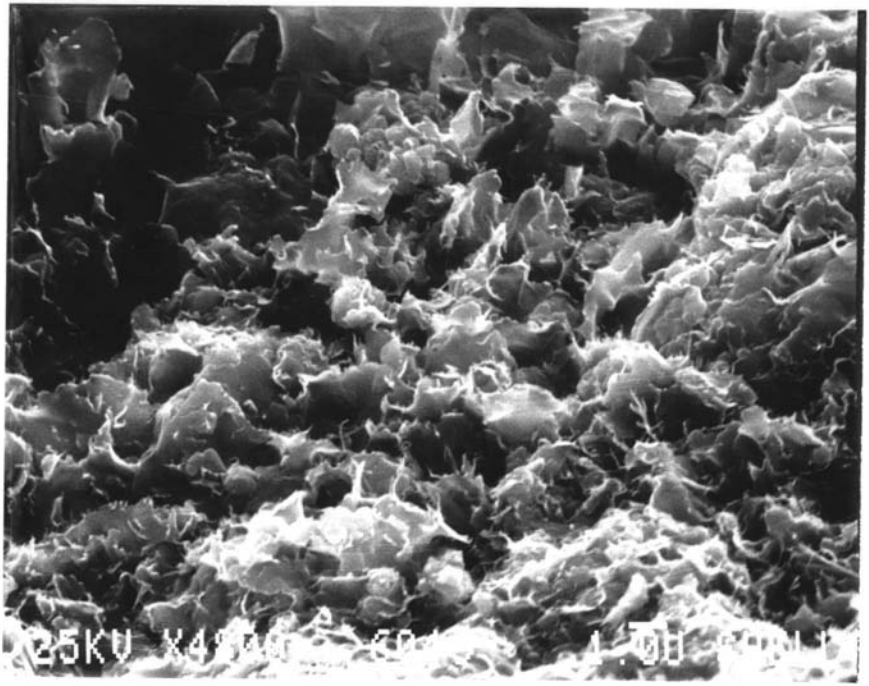
500X



6049

3

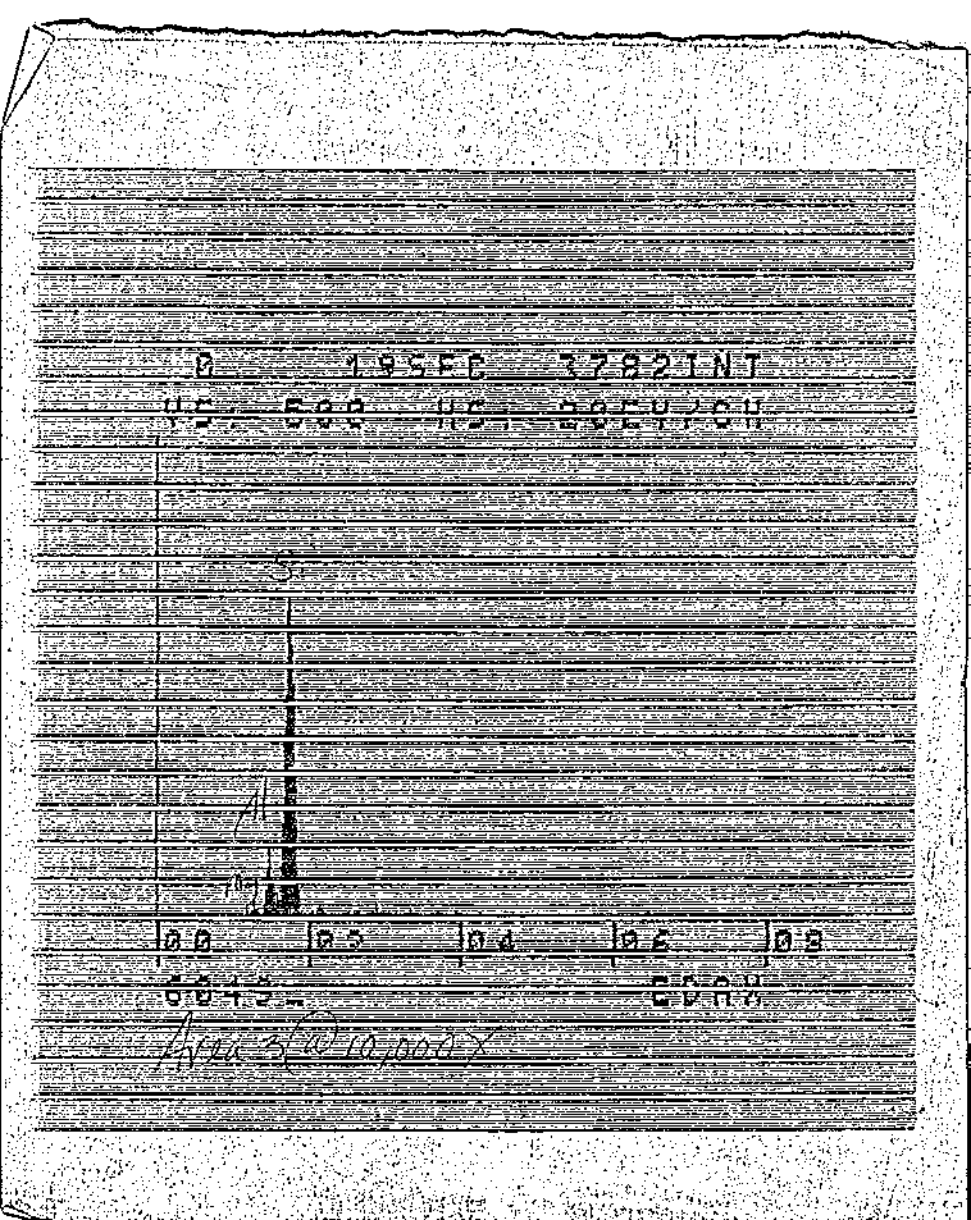
2000X



6049'

3

5000X



N. Belridge 43-27
6049'

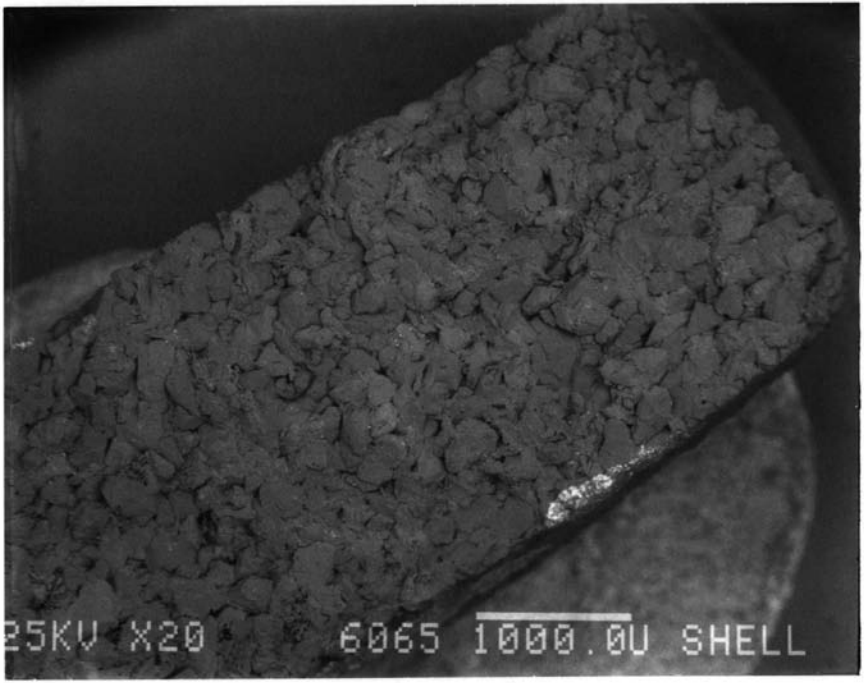
Area 1 @ 10000X - Smectite?

Area 1a @ 5000X - "

Area 2 @ 10000X - Illite"

Area 2a @ 2000X - "

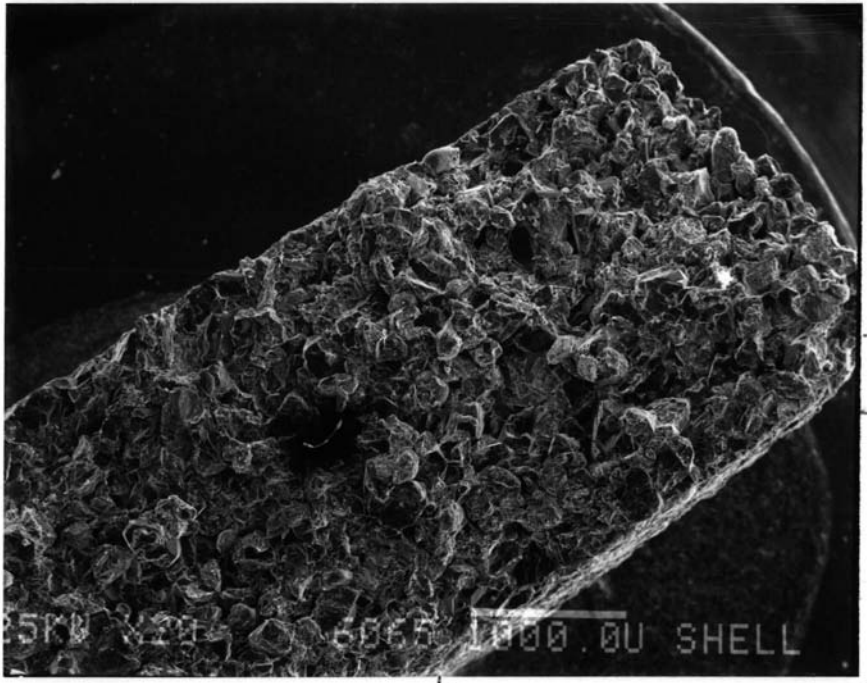
Area 3 @ 5000X - Clay?



6065'

BtI

20 x

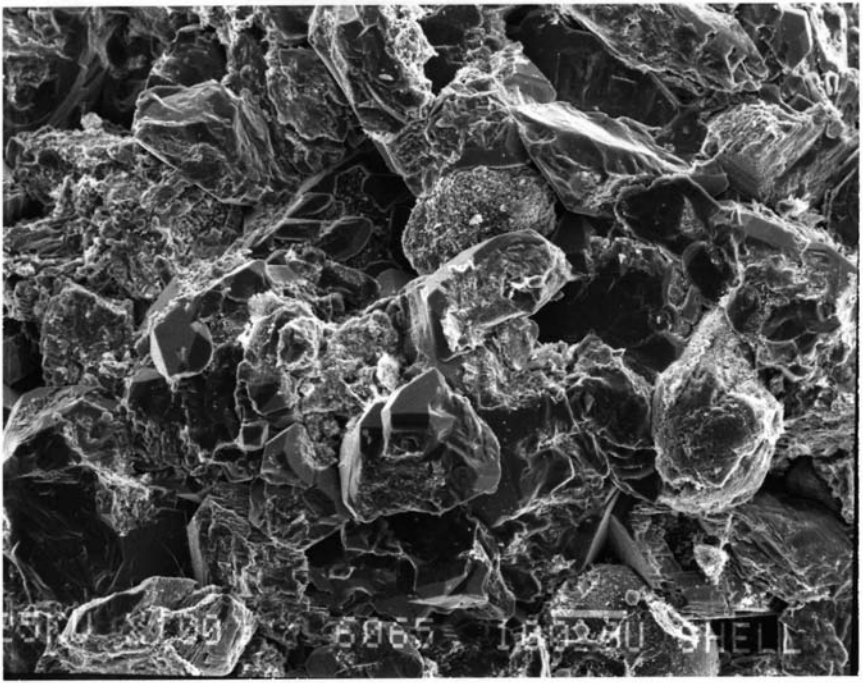


6065'

1

2

20 X



6065'

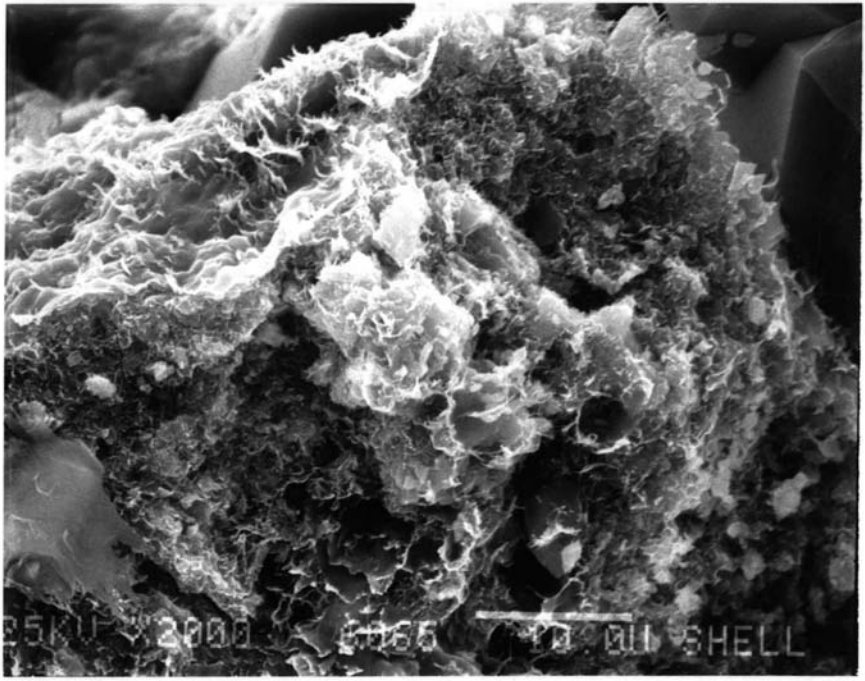
1

100 X

6065'

1

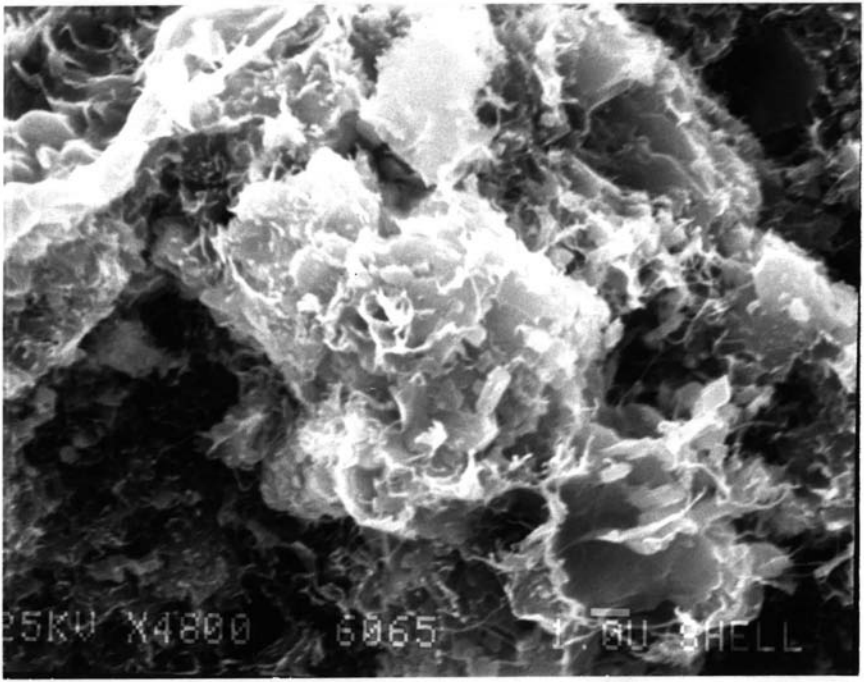
500 X



6065'

1

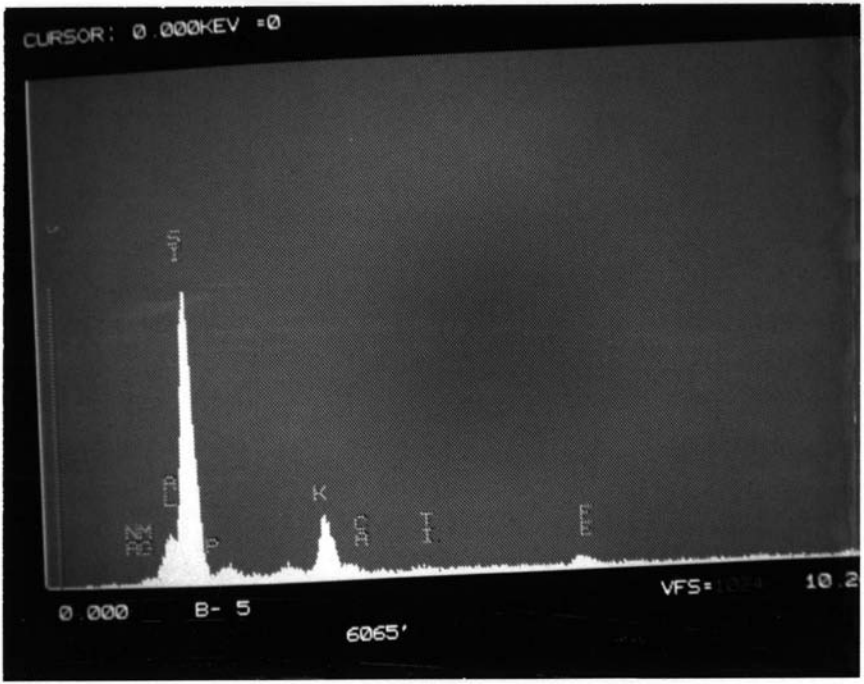
2000X



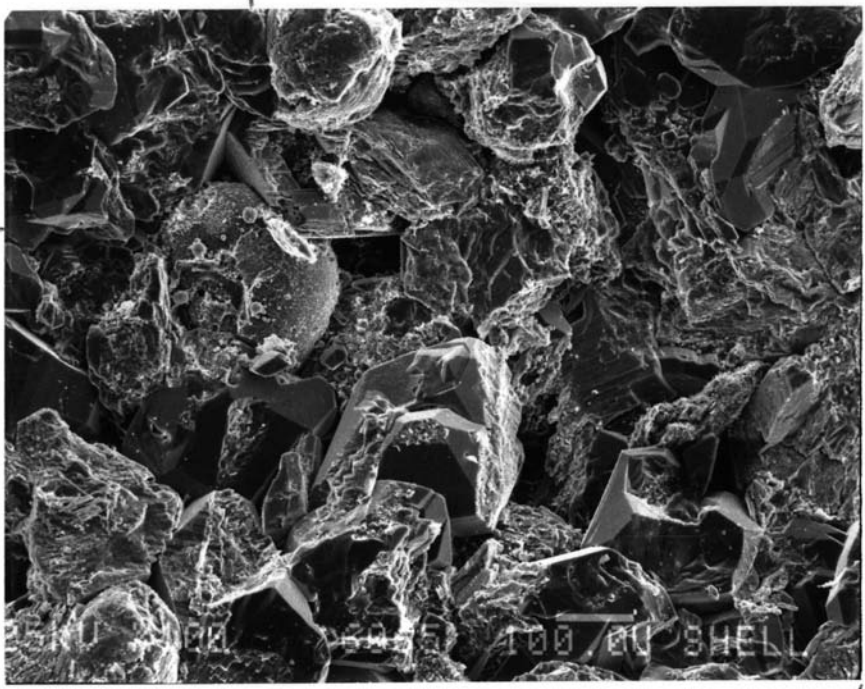
6065'

.1

5000X


CURSOR: 0.000KEV =0
K
0.000
B- 5
6065'
VFS=
10.2

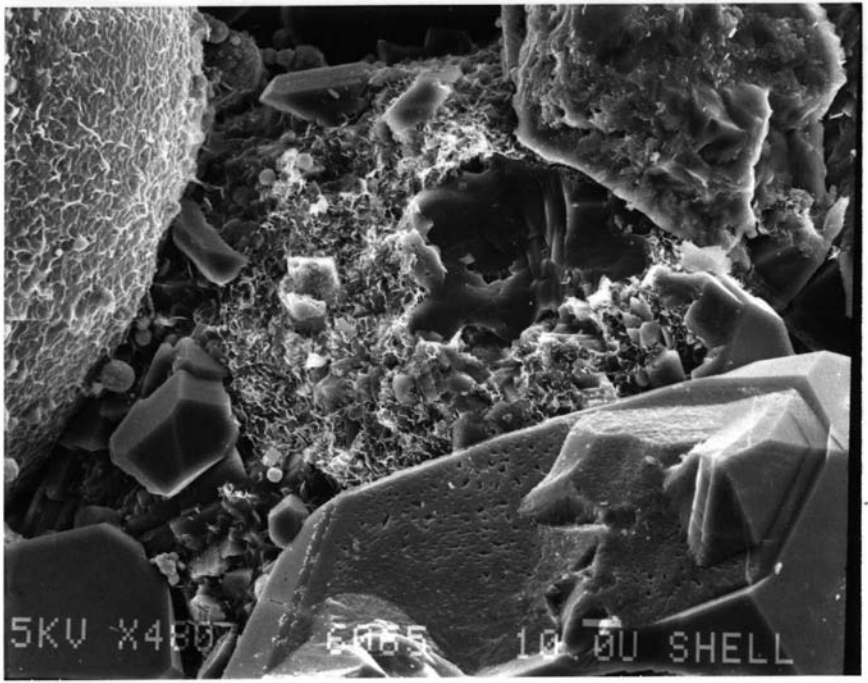
Pyrite



6065'

2

100X



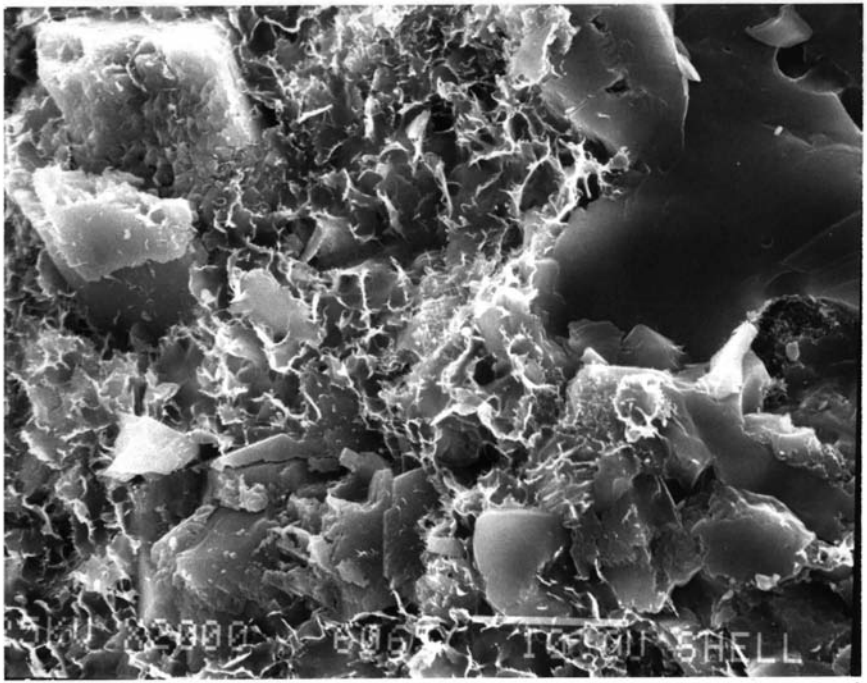
6065 1

2

-qtz

500X

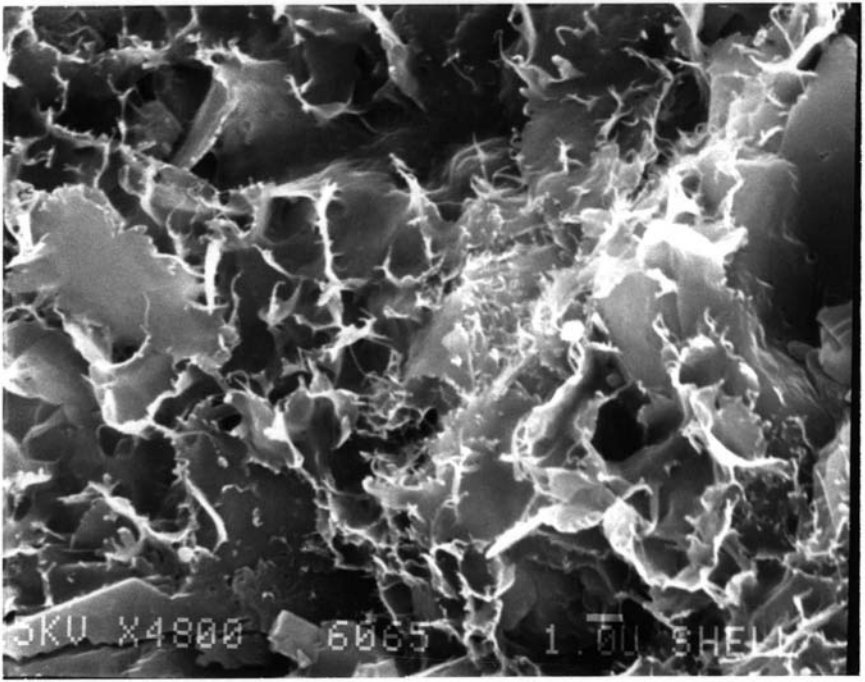
qtz



60651

2

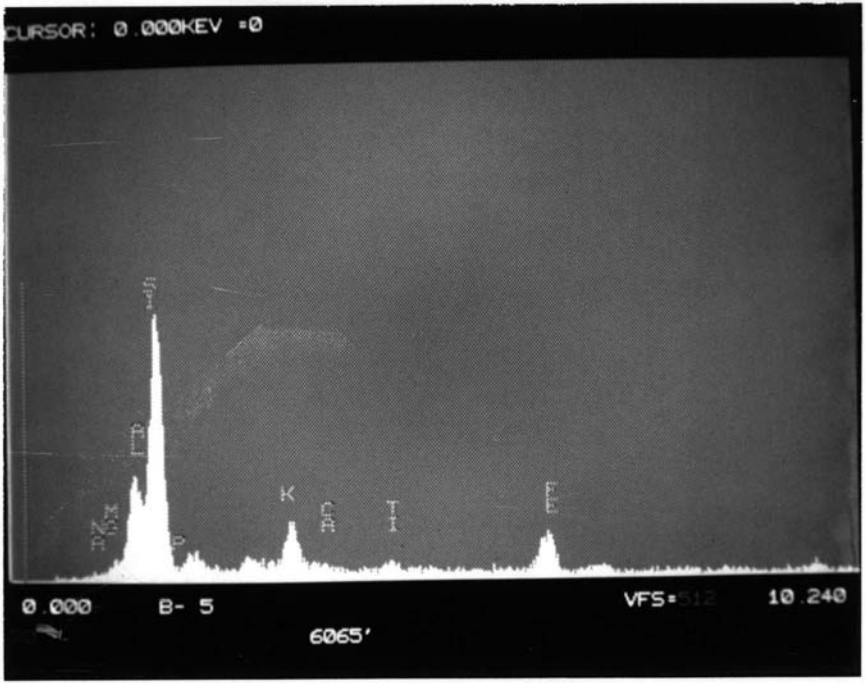
2000 X



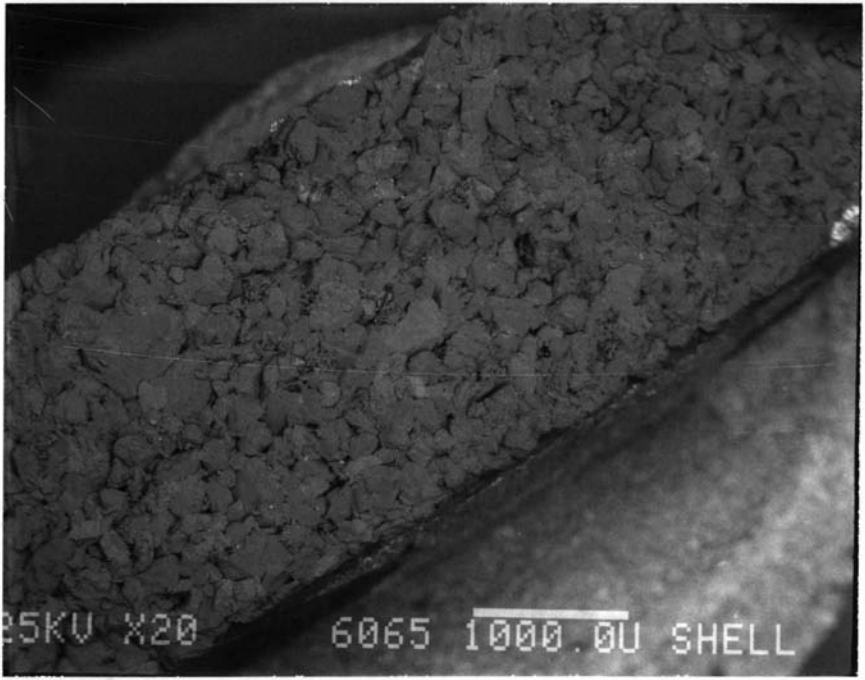
60651

2

5000X



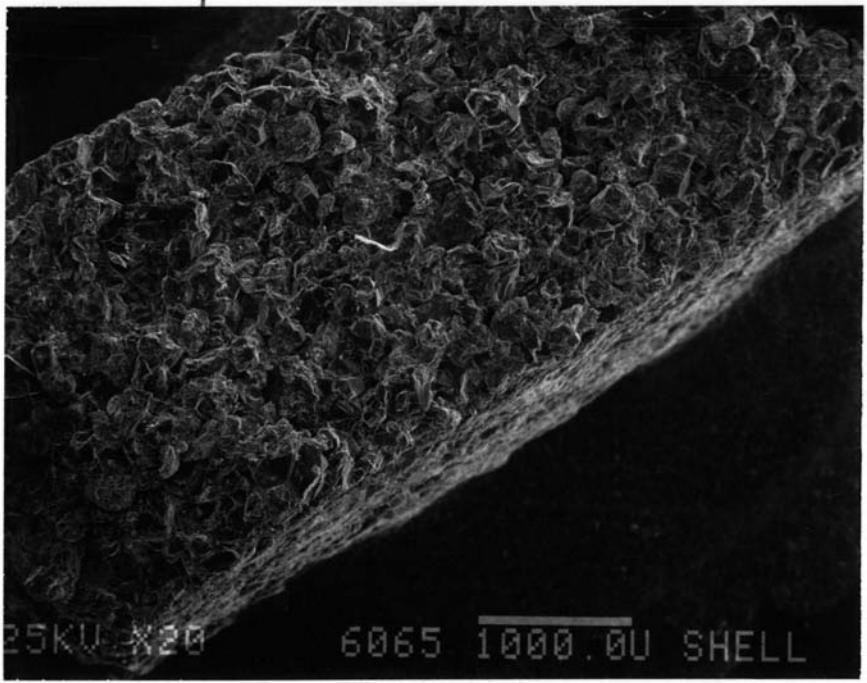
2

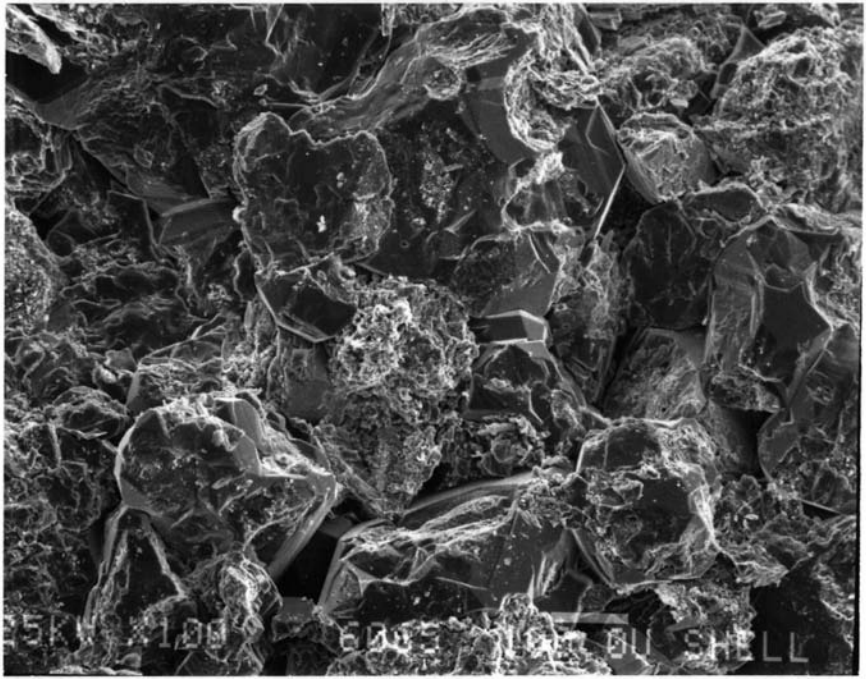


6065-1

BEI

30 X

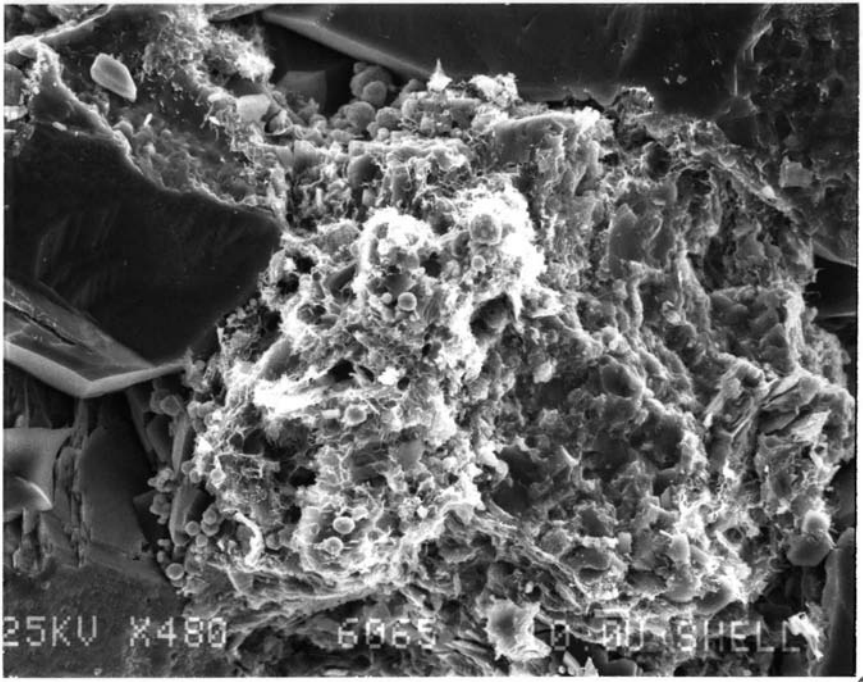

25KV X20
6065 1000.0U SHELL



6065'

3

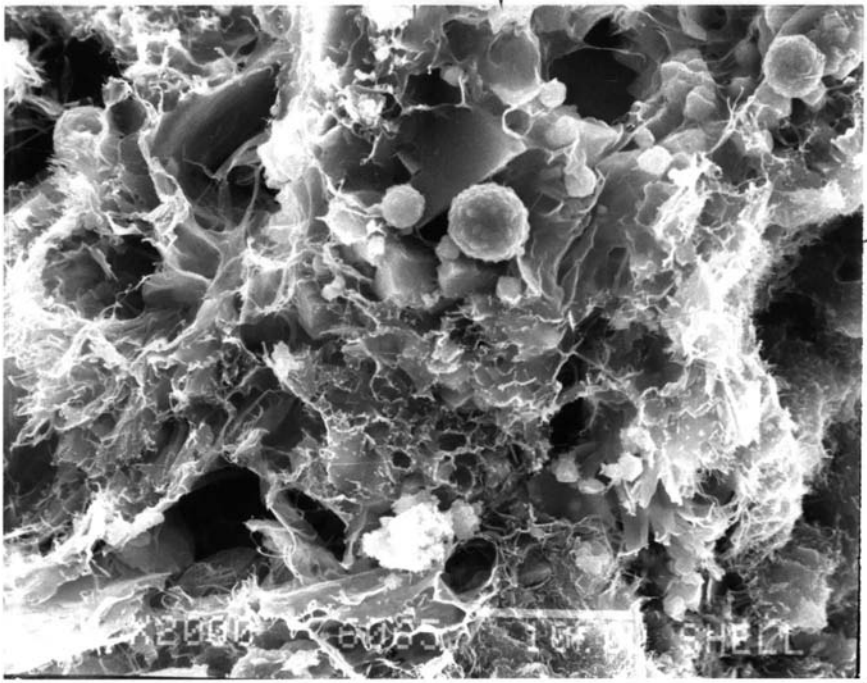
100X



6065'

3

500X

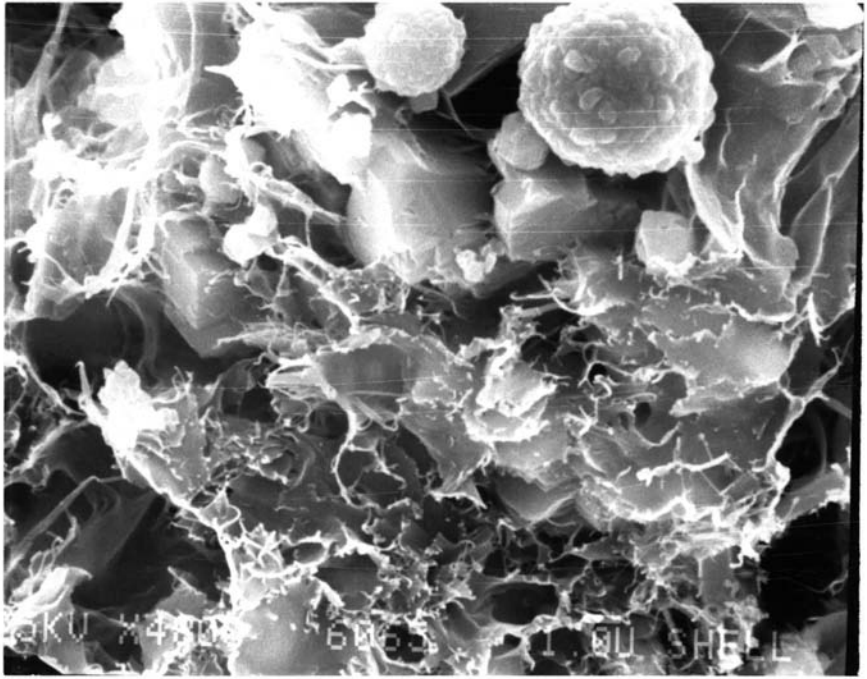


6065'

pyrite

3

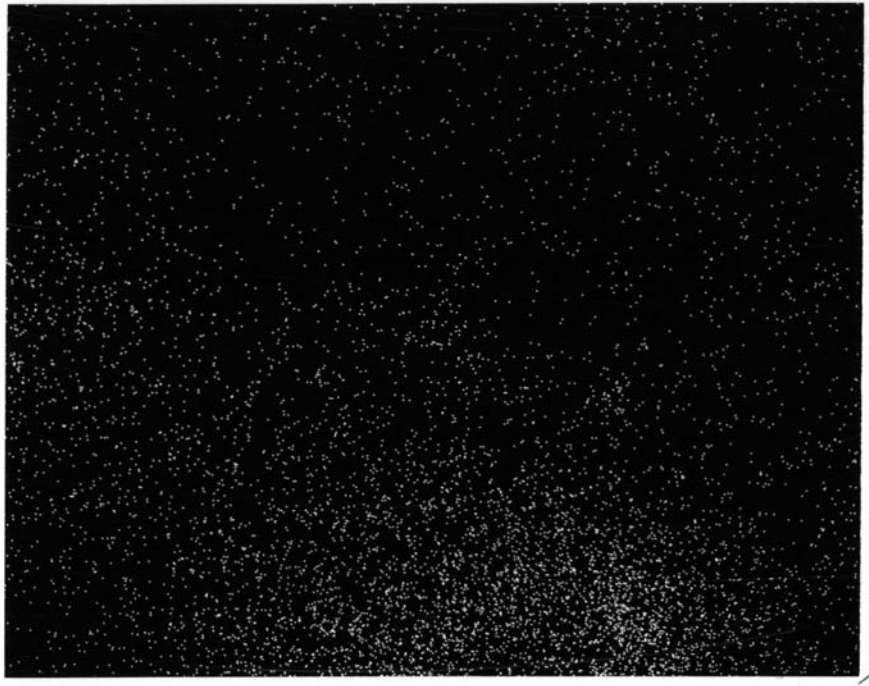
2000X



60651

3

5000X

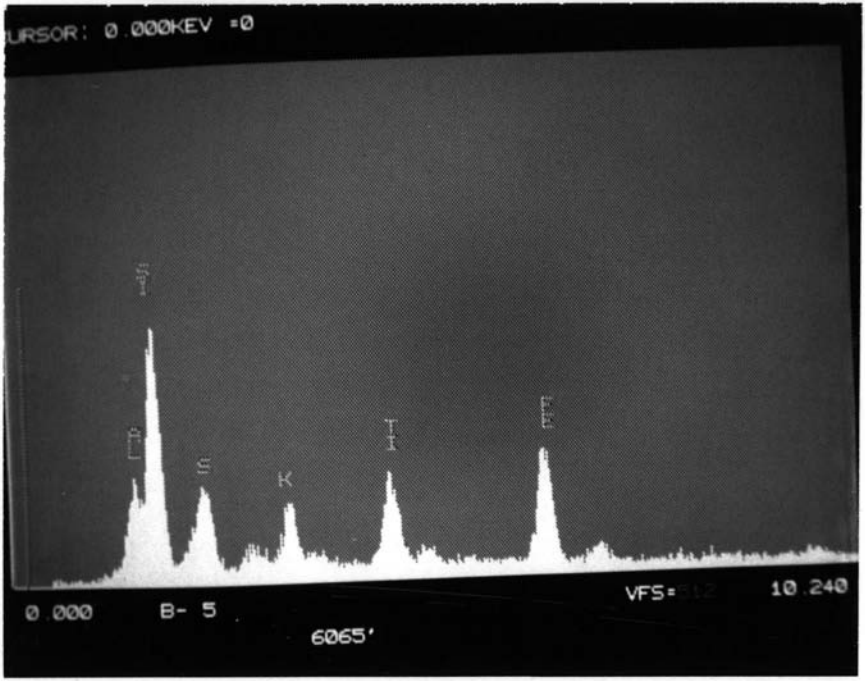


6065'

3

5000X

Ti
map


URSOR: 0.000KEV =0
0.000
B- 5
6065'
VFS=
10.240

N. Belridge 43-27
6065'

Area 1 @ 5000x - Illite

Area 2 @ " - Illite / Ti. Ti

Area 3 @ " - Illite / Ti / Pyrite

Appendix 2D
Injection and Confining Zone Supporting Data

888N-12 Elemental Capture Spectroscopy Log

Schlumberger

Company: **Aera Energy LLC**

Well: **888N−12**
Field: **SOUTH BELRIDGE**
County: **KERN** State: **CALIFORNIA**

ELEMENTAL CAPTURE SPECTROSCOPY LOG

County: KERN
Field: SOUTH BELRIDGE
Location: 495.60' W & 401.78' N
Well: 888N−12
Company: Aera Energy LLC

LOCATION

495.60' W & 401.78' N
From the SE CNR of SEC 12
X: 1475560.47 Y: 732536.79

Elev.: K.B. 654.34 ft
G.L. 631.84 ft
D.F.

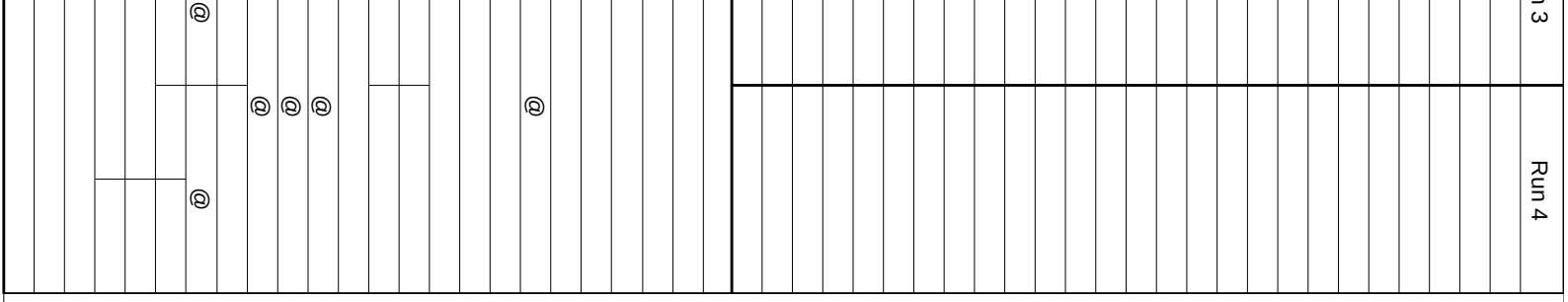
Permanent Datum: GL
Log Measured From: KB
Drilling Measured From: KB

Elev.: 631.84 ft
22.50 ft above Perm. Datum

API Serial No.	Section	Township	Range
0403042630	12	28S	20E

Logging Date		2011−03−14				
Run Number		THREE				
Depth Driller		11182 ft				
Schlumberger Depth		11180 ft				
Bottom Log Interval		11171 ft				
Top Log Interval		6847 ft				
Casing Driller Size @ Depth		9.625 in	@	6939 ft	@	
Casing Schlumberger		6847 ft				
Bit Size		8.750 in				
Type Fluid In Hole		PertoDrill				
MUD Density	Viscosity	11.4 lbm/gal	46 s			
MUD Fluid Loss	PH					
MUD Source Of Sample		MUD TANK				
RM @ Measured Temperature		@			@	
RMF @ Measured Temperature		@			@	
RMC @ Measured Temperature		@			@	
Source RMF	RMC	MEASURED	MEASURED			
RM @ MRT	RMF @ MRT	@ 273	@ 273	@	@	
Maximum Recorded Temperatures		273 degF				
Circulation Stopped	Time	13−Mar−2011	2:00			
Logger On Bottom	Time	2011−03−14	0:35			
Unit Number	Location	2363	BAKERSFIELD			
Recorded By		ANDY P. / JARROD L.				
Witnessed By		ROBERT FAIRMAN				

		Run 1	Run 2	Run
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth		@		
Casing Schlumberger				
Bit Size				
Type Fluid In Hole				
MUD Density	Viscosity			
MUD Fluid Loss	PH			
MUD Source Of Sample				
RM @ Measured Temperature		@		
RMF @ Measured Temperature		@		
RMC @ Measured Temperature		@		
Source RMF	RMC			
RM @ MRT	RMF @ MRT	@	@	
Maximum Recorded Temperatures				
Circulation Stopped	Time			
Logger On Bottom	Time			
Unit Number	Location			
Recorded By				
Witnessed By				



DEPTH SUMMARY LISTING

Date Created: 14−MAR−2011 13:42:22

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−B	Type:	CMTD−B/A	Type:	7−46A XS
Serial Number:	6213	Serial Number:	2205	Serial Number:	7131
Calibration Date:	08−JAN−2011	Calibration Date:	02−MAR−2011	Length:	19900 FT
Calibrator Serial Number:	33	Calibrator Serial Number:	185		
Calibration Cable Type:	7−46A XS	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	−3	Calibration RMS:	9	Rig Type:	LAND
Wheel Correction 2:	−6	Calibration Peak Error:	14		

Depth Control Parameters

Log Sequence:	Subsequent Trip To the Well
Reference Log Name:	PLATFORM EXPRESS
Reference Log Run Number:	TWO
Reference Log Date:	13−Feb−2011
Subsequent Trip Down Log Correction:	10.00 FT

Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES FOLLOWED.
2. IDW USED AS PRIMARY DEPTH REFERENCE, Z−CHART USED AS SECONDARY.
3. RULS AND RULB NOT PERFORMED DUE TO SHALLOW CASING DEPTH.
4.
5.
6.

DISCLAIMER
THE USE OF AND RELIANCE UPON THIS RECORDED−DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED−DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED−DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED−DATA.

OTHER SERVICES1	OTHER SERVICES2
OS1: FPEXT/PPC/ADT	OS1:
OS2: OBMI/MAST/PPC	OS2:
OS3: MSCT	OS3:
OS4: CST	OS4:
OS5: USIT	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Header Data E−Transferred from Aera Logging Request	

LOG TIED IN TO RUN #3 PLATFORM EXPRESS logged 3/14/2011

Rig: NABORS M38

PM #: 850000663

THANK YOU FOR USING SCHLUMBERGER!

RUN 1		RUN 2	
SERVICE ORDER #:	BC0R-00149	SERVICE ORDER #:	
PROGRAM VERSION:	19C0-187	PROGRAM VERSION:	
FLUID LEVEL:		FLUID LEVEL:	

RUN 1 LOGGED INTERVAL	START	STOP	RUN 2 LOGGED INTERVAL	START	STOP

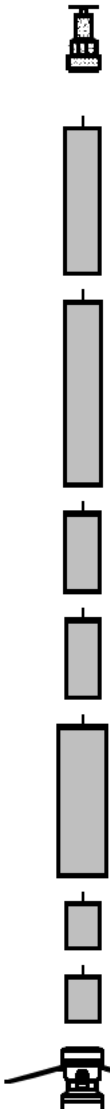
EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT

GSR-U 873
WITM (EDTS)-A

DOWNHOLE EQUIPMENT



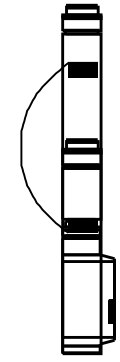
RUN 2

PPC_CAL_STD

PPC_Cartr — 22.6

CMRT−B — 22.6

CMRH−AA 68
CMRS−BA 49
CMRC−B 68
EME−F



CMR−B Raw
CMR−B Sen — 9.0

CMR−B Dia — 7.0

PPC1 — 7.0

PPC1−B
PPC_CAL_STD

Calipers — 5.9

PPC_Cartr — 0.5

DF ACCZ

BNS−CCS — 0.5

Tension HV — 0.0

TOOL ZERO

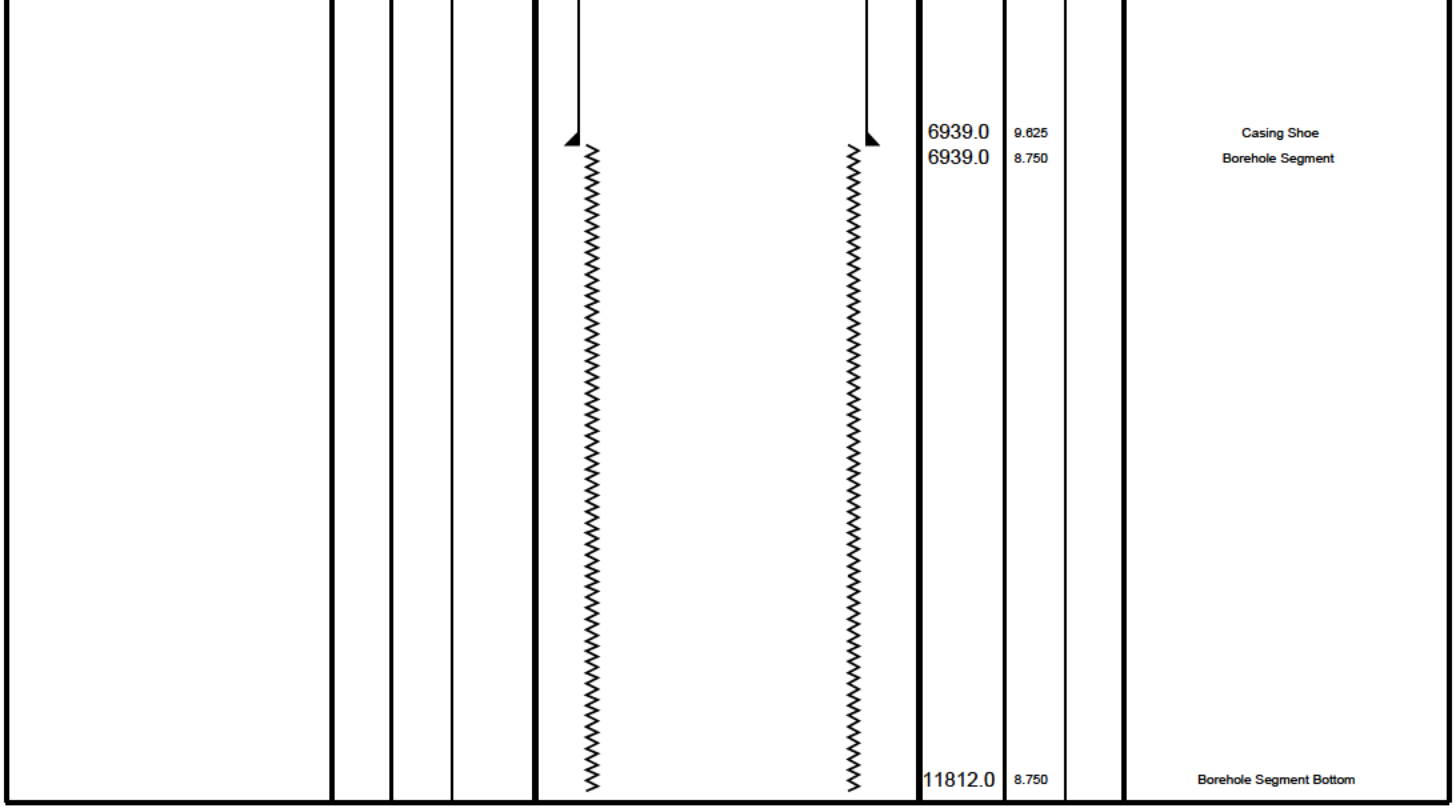
MAXIMUM STRING DIAMETER 6.60 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Client: Aera Energy LLC
Well: 888N−12
Field: SOUTH BELRIDGE
State: CALIFORNIA
Country: USA

Drawing Date: 3/13/2011
API #: 403042630

Rig Name: NABORS M38
Reference Datum: Kelly Bushing
Elevation: 631.8 ft

Production String	(in) OD	(in) ID	(ft) MD	Well Schematic	(ft) MD	(in) OD	(in) ID	Casing String
					0.0	9.625		Casing String



All depths are driller's depths

Schlumberger

ECS SPECROLITH

MAXIS Field Log

Input DLIS Files

DEFAULT	SPLICE_OBMI_IS_MAXS_222	FN:1	PRODUCER	16-Mar-2011 08:59	11207.5 FT	6300.1 FT

Output DLIS Files

DEFAULT	OBMI_IS_MAXS_MAPC_223PUP	FN:335	PRODUCER	16-Mar-2011 09:01	11207.5 FT	6300.5 FT

OP System Version: 18C0-147

OBMT-B	18C0-147	GPIT-F	SRPC-4072-Q4_2010_OP18_b
MAXS-B	SKK-3935-MAST_b	MAPC-B	SKK-3935-MAST_b
PPC2	18C0-147	ECS-A	18C0-147
ECC-B	18C0-147	HNGC-B	18C0-147
HNGS-BA	18C0-147	EDTC-B	SRPC-4072-Q4_2010_OP18_b
ECRD	SRPC-4072-Q4_2010_OP18_b		

PIP SUMMARY

Time Mark Every 60 S

Matrix Density (RHGE_WALK2)
2.5 (G/C3) 3

Salt

Siderite

Q-F-M

Pyrite

Coal

Carbonate

Clay

Anhydrite

Dry Wt. Iron

Dry Wt. Excess Iron

LQC I1--->I3

error

warning

normal

Tension (TENS) (LBF)
10000 0

Dry Wt. Aluminum

Dry Wt. Silicon

Dry Wt. Calcium

DWFE (DWFE_WALK2)
0 (W/W) 0.2

Dry Wt. Sulfur

Dry Wt. Titanium

Cable Speed (CS) (F/HR)
0 5000

DWAL (DWAL_WALK2)
0 (W/W) 0.2

DWSI (DWSI_WALK2)
0 (W/W) 0.5

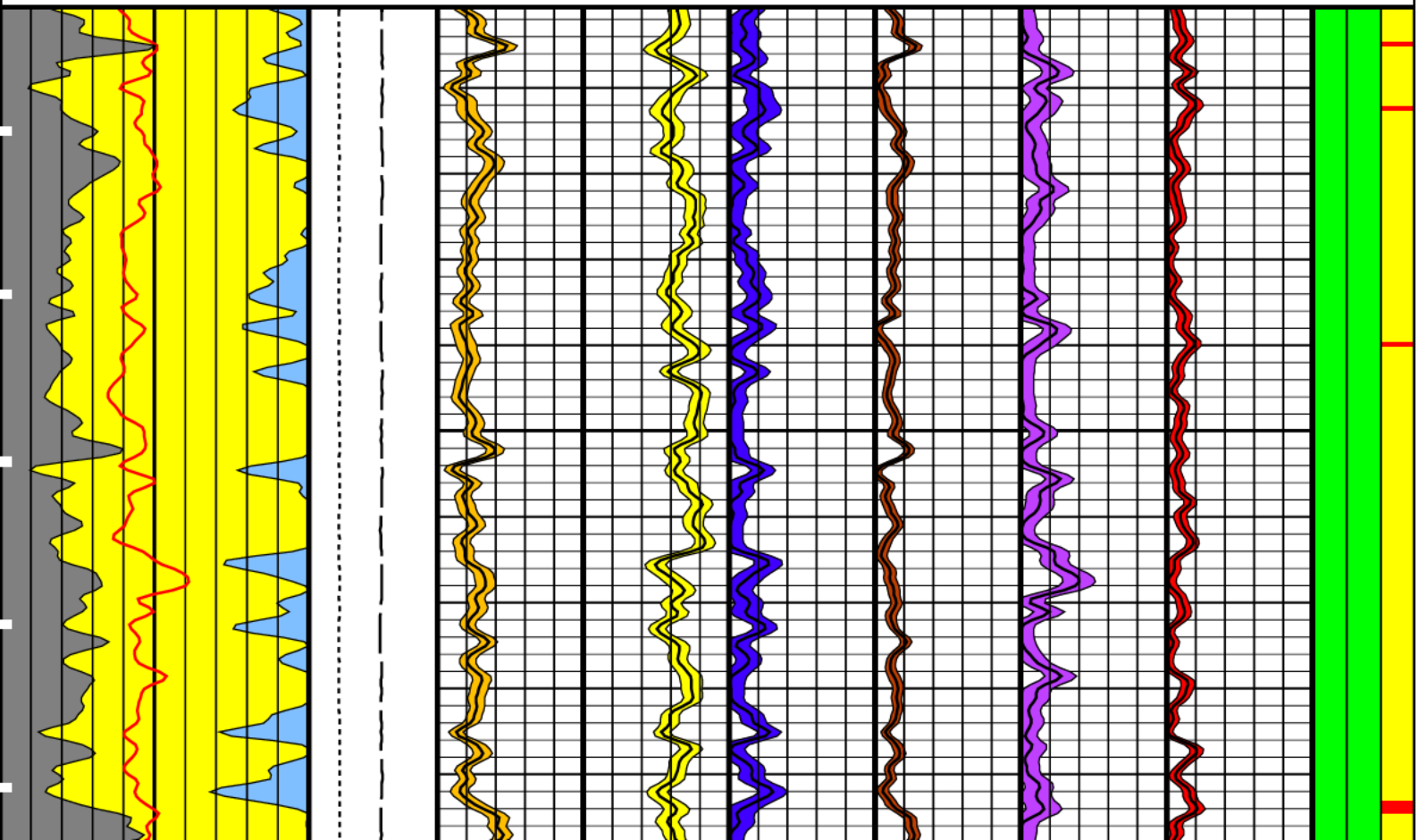
DWCA (DWCA_WALK2)
0 (W/W) 0.5

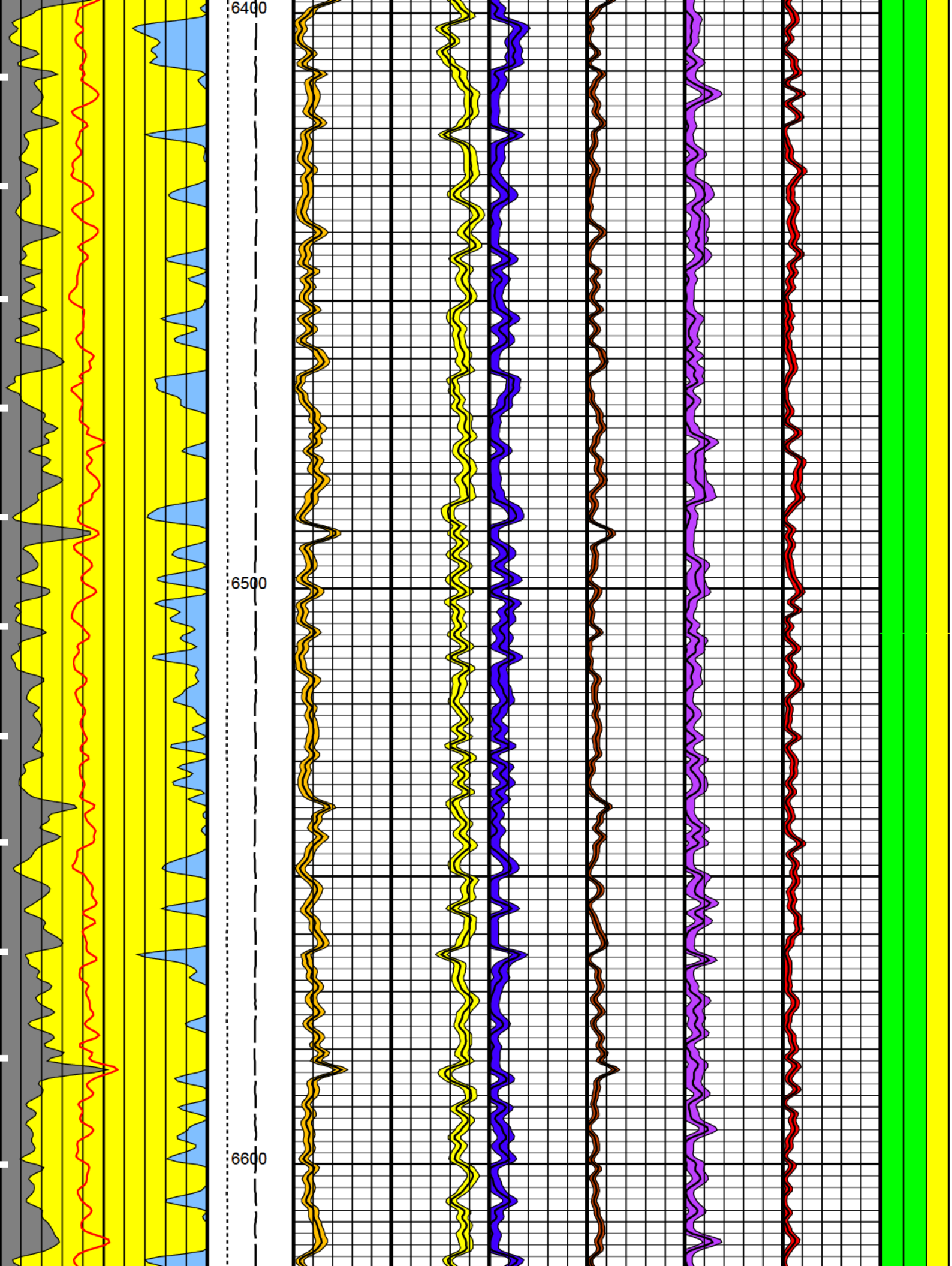
DXFE (DXFE_WALK2)
0 (W/W) 0.2

DWSU (DWSU_WALK2) (W/W)
0 0.25

DWTI (DWTI_WALK2) (W/W)
0 0.05

LQC Track
Left(I1) ---> Right(I3)
I1: ECS Hardware: Photomultiplier (QC_PMT)
I2: ECS Hardware: BGO Crystal Temperature (ECST)
I3: ECS Data Quality: Elemental Statistical Uncertainty (ESUF_WALK2)

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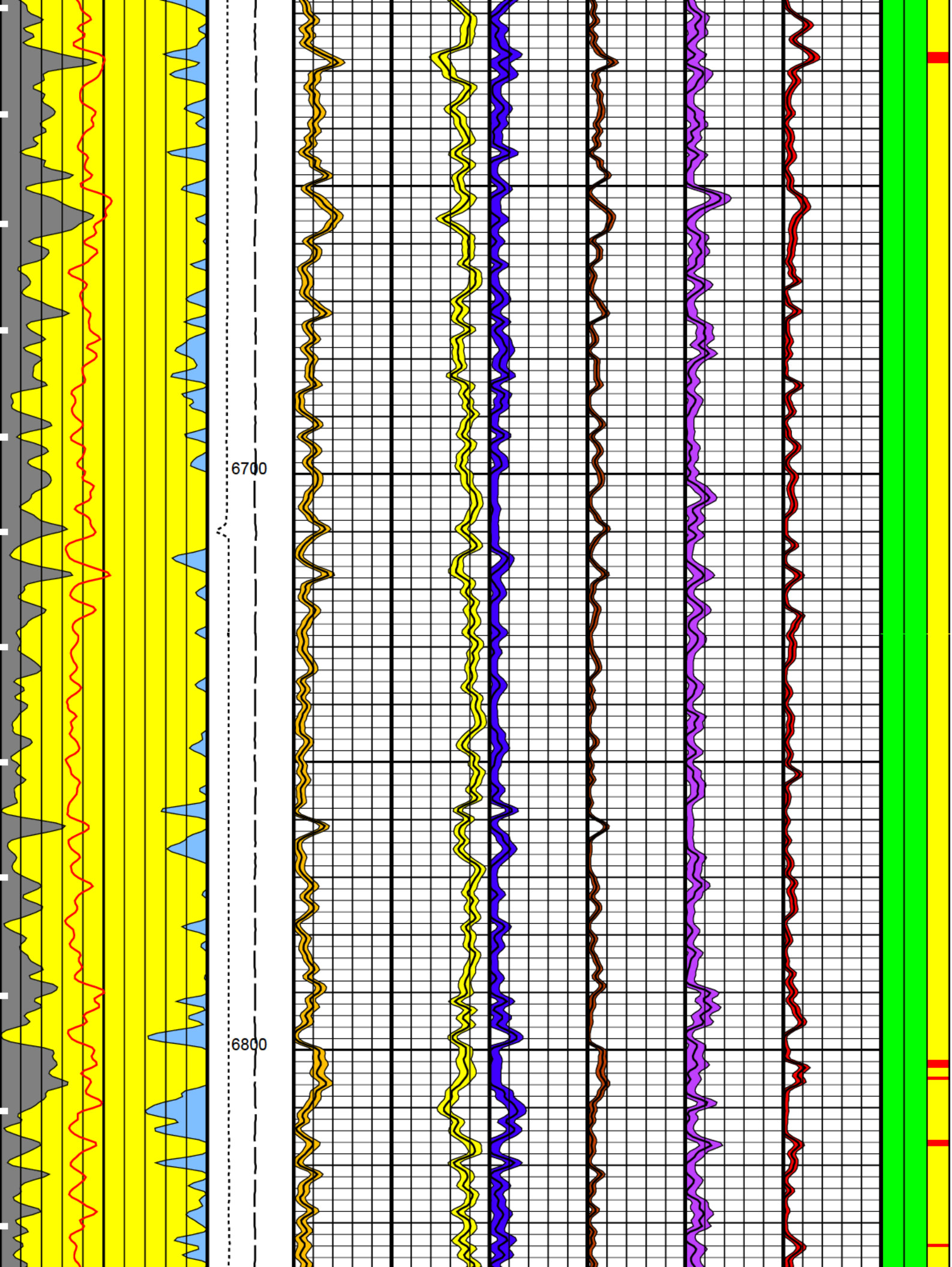
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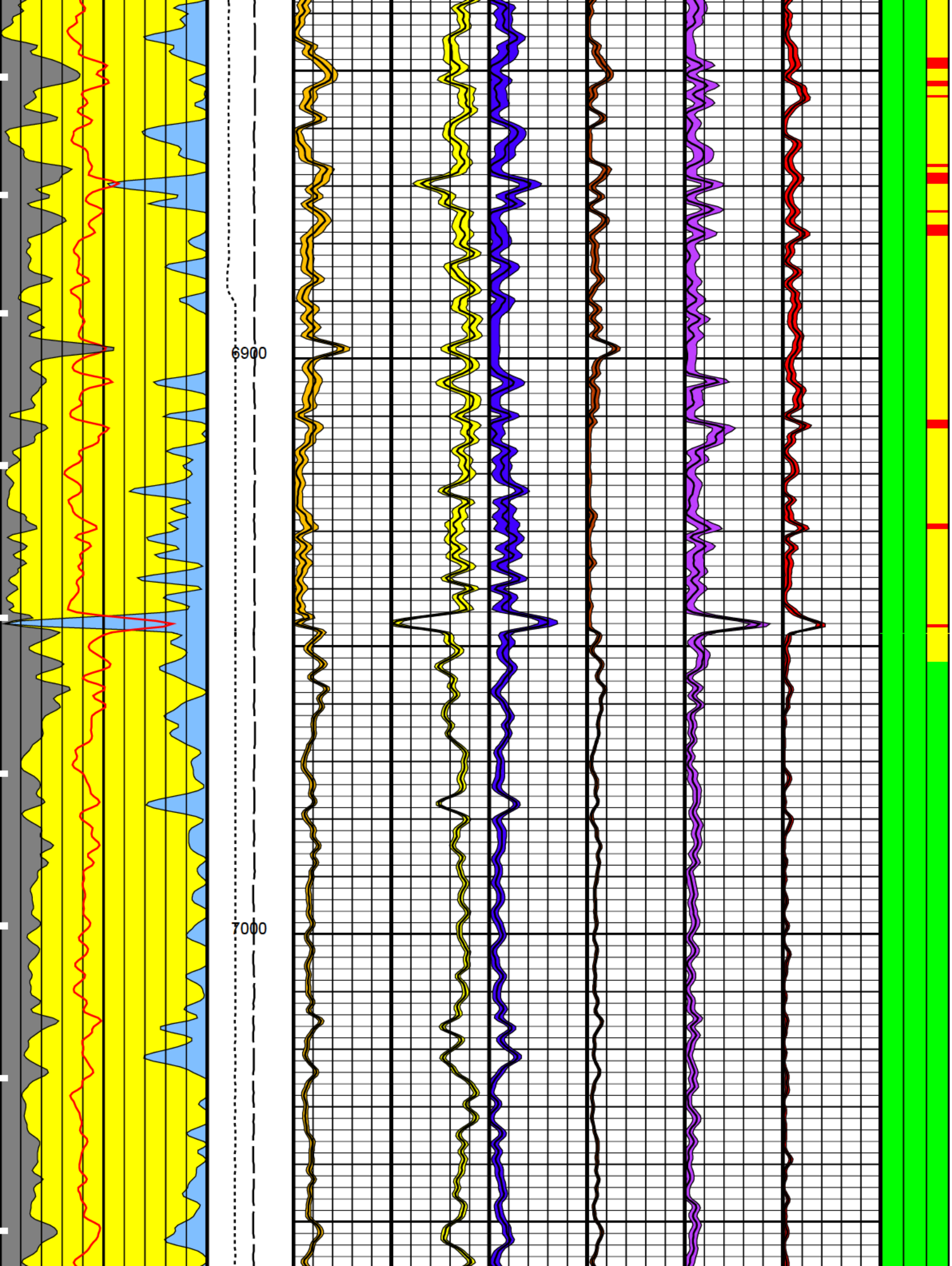
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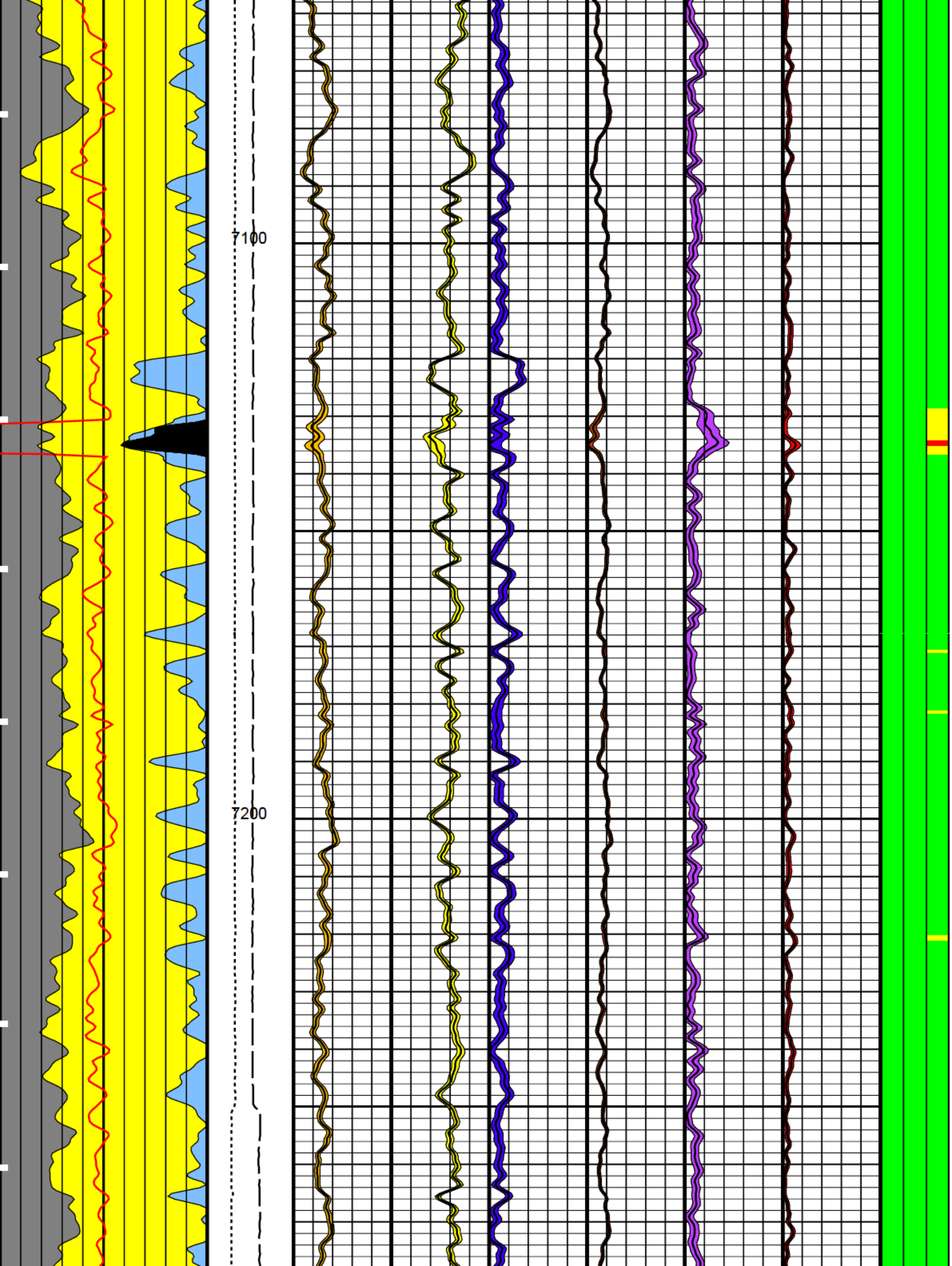
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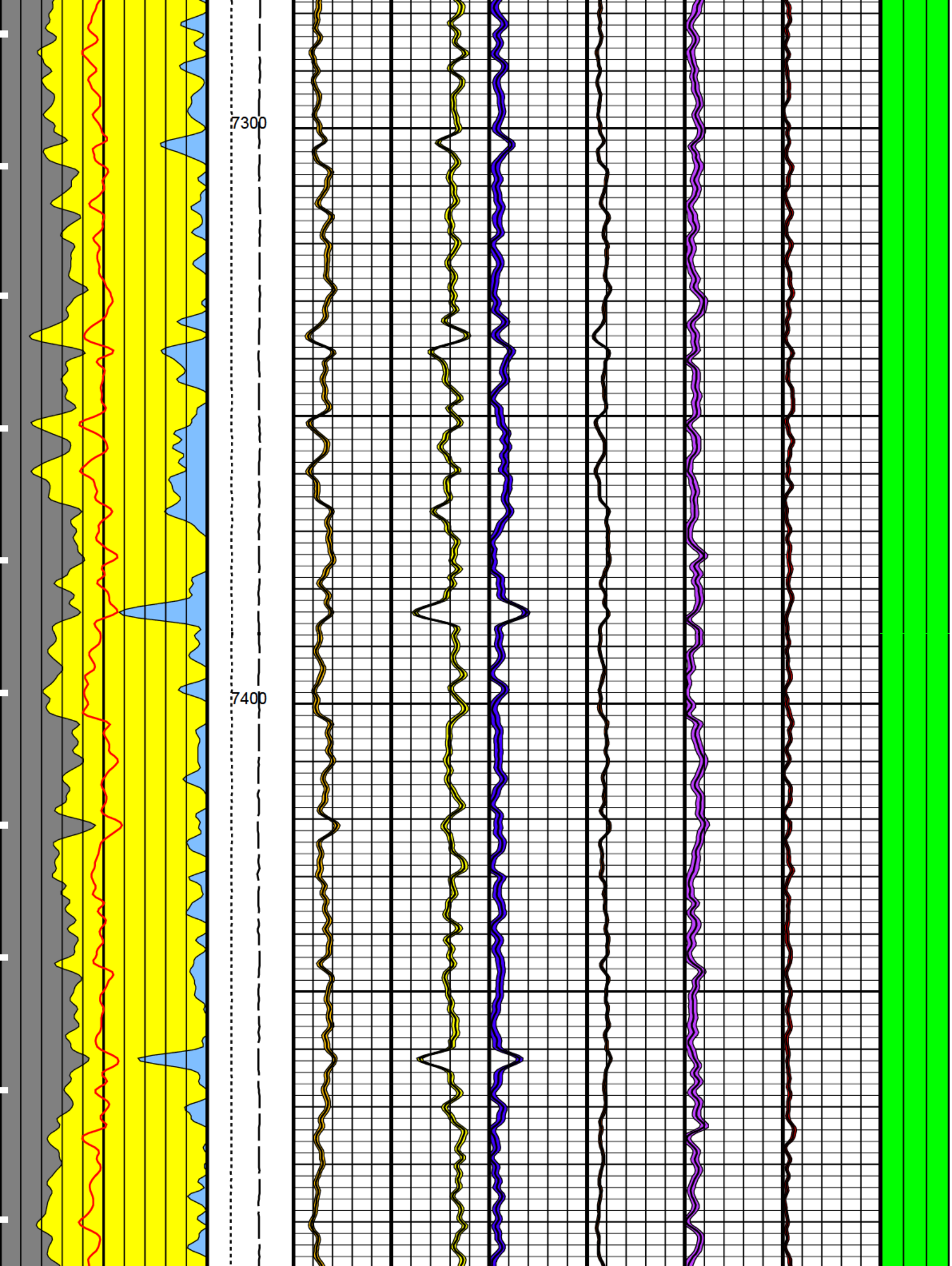
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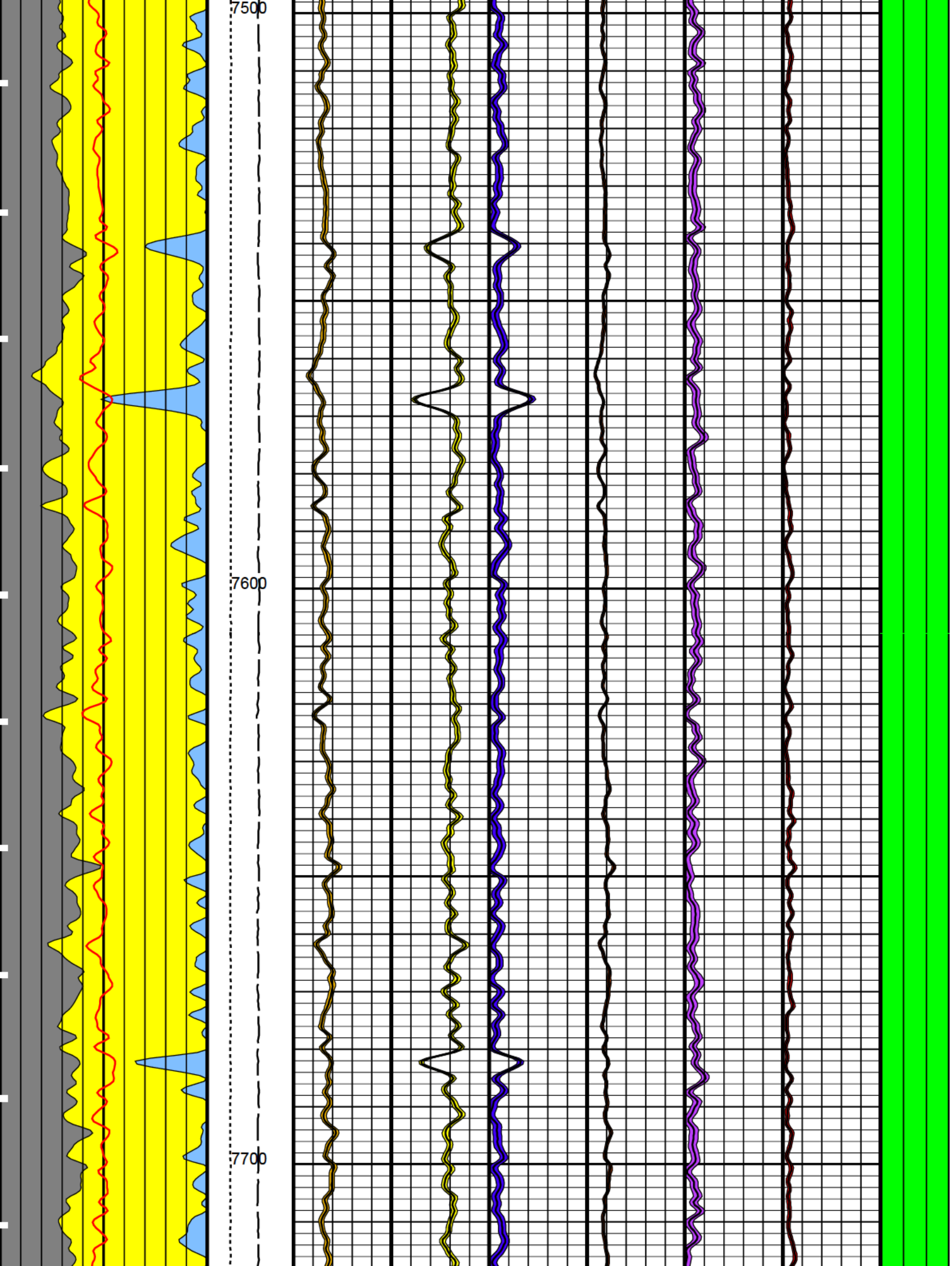
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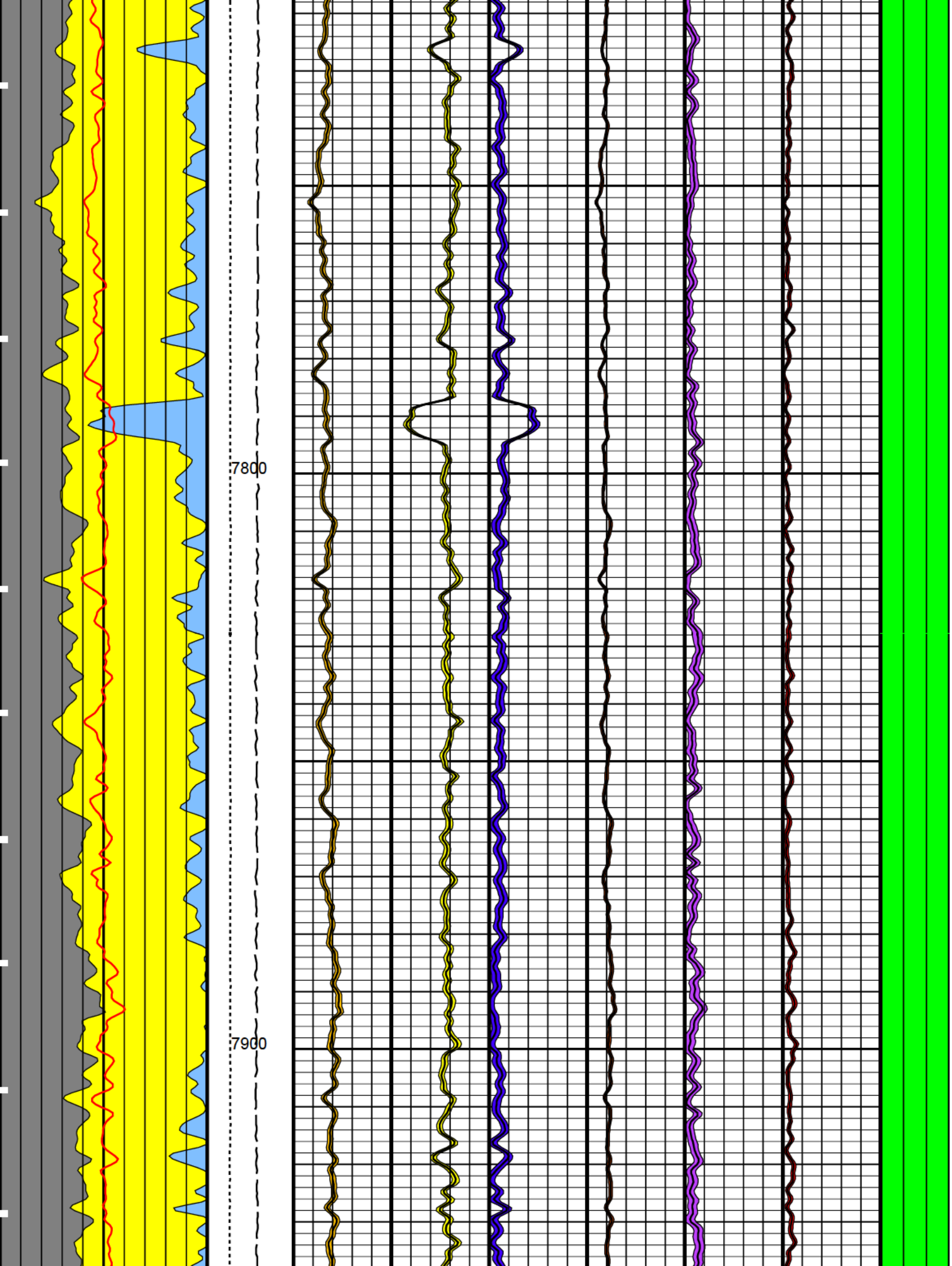
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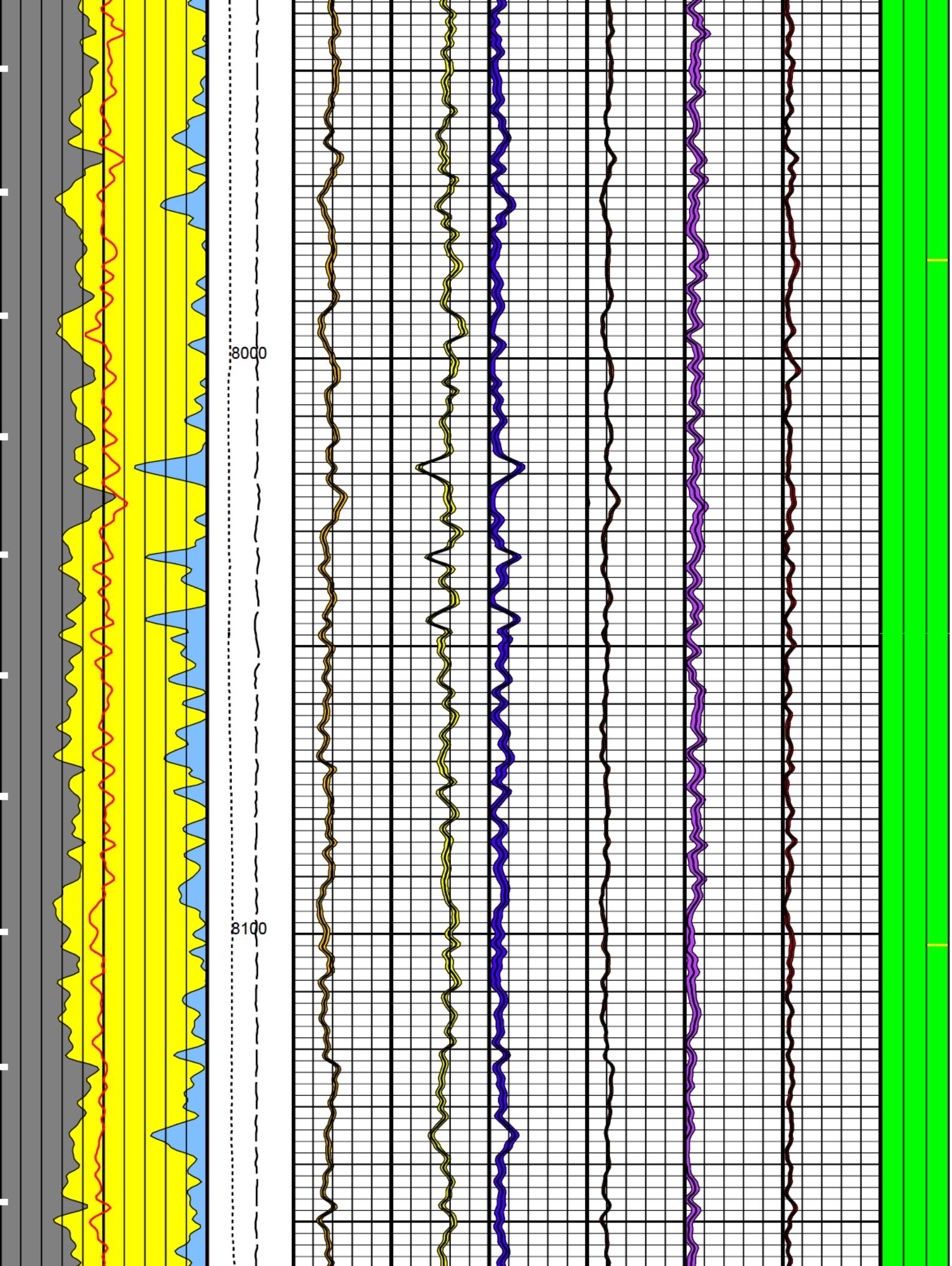
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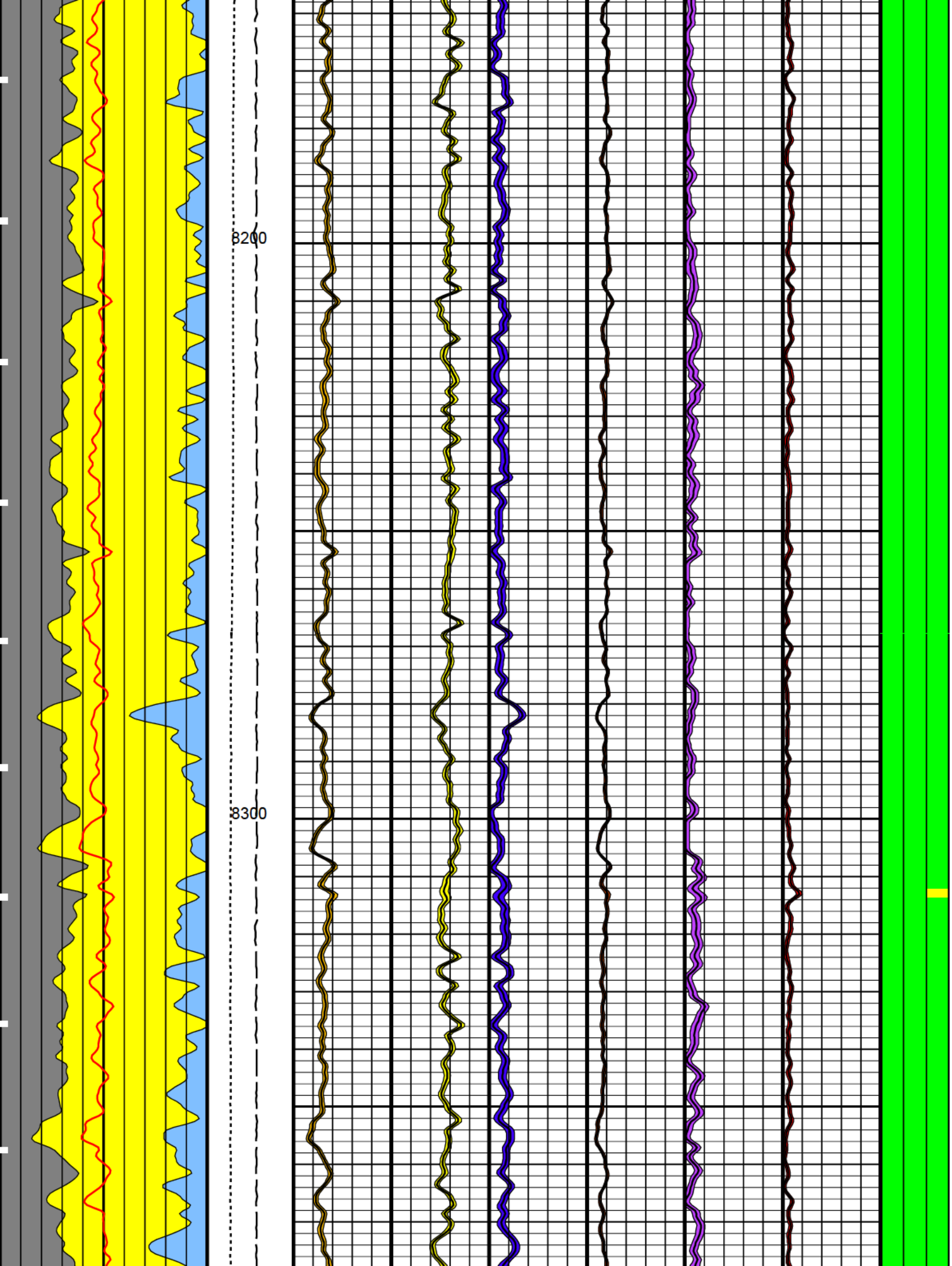
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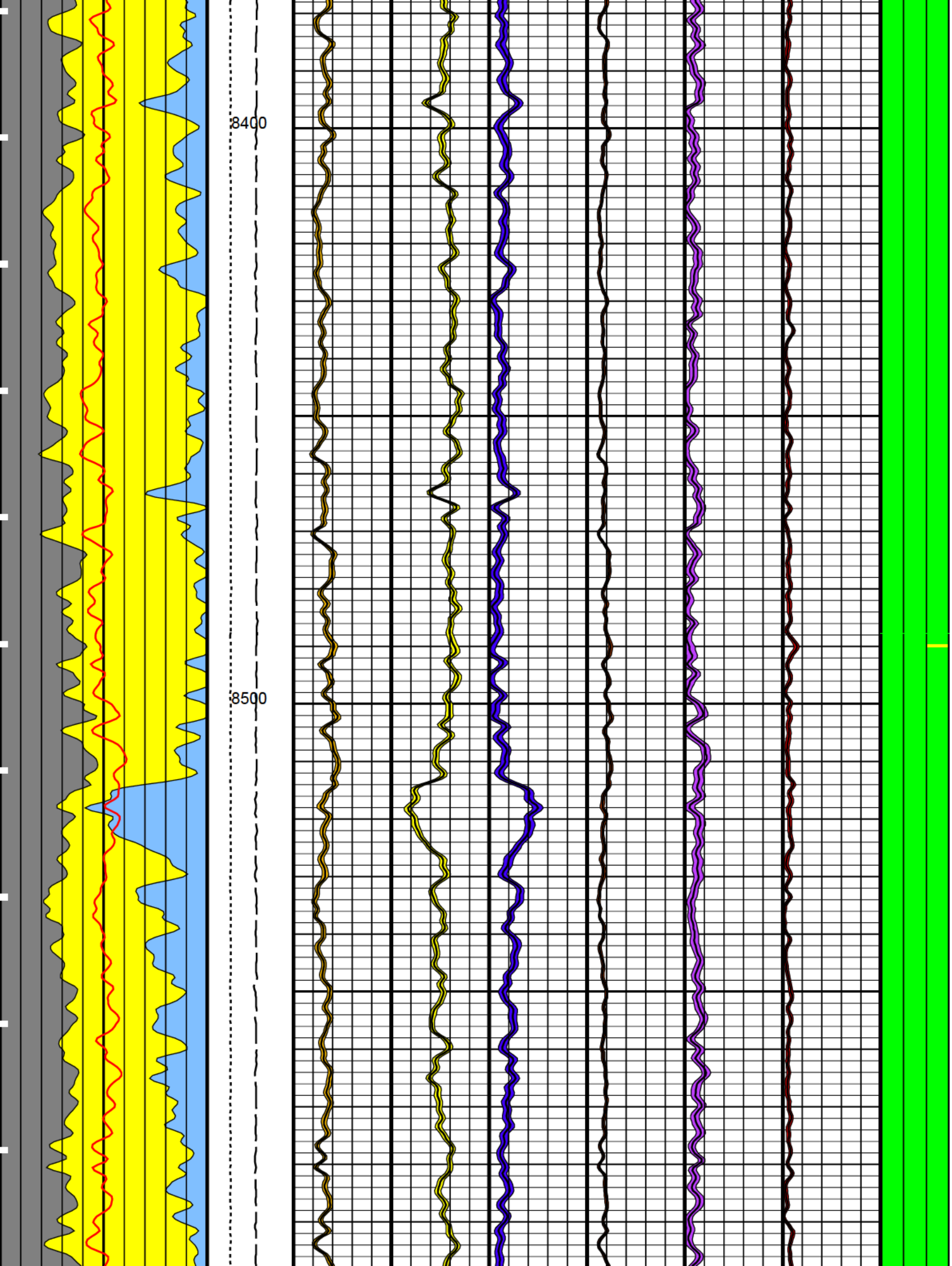
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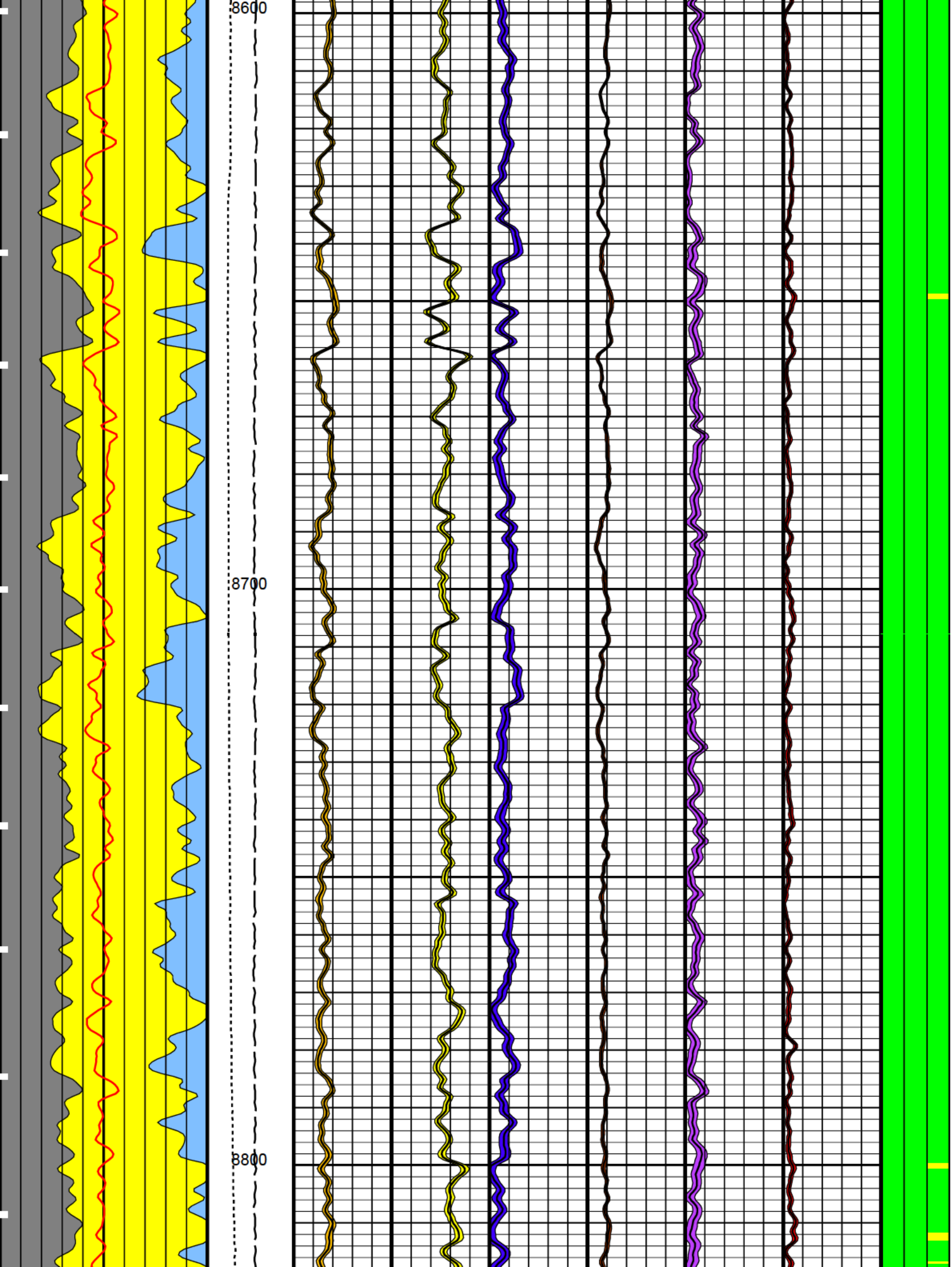
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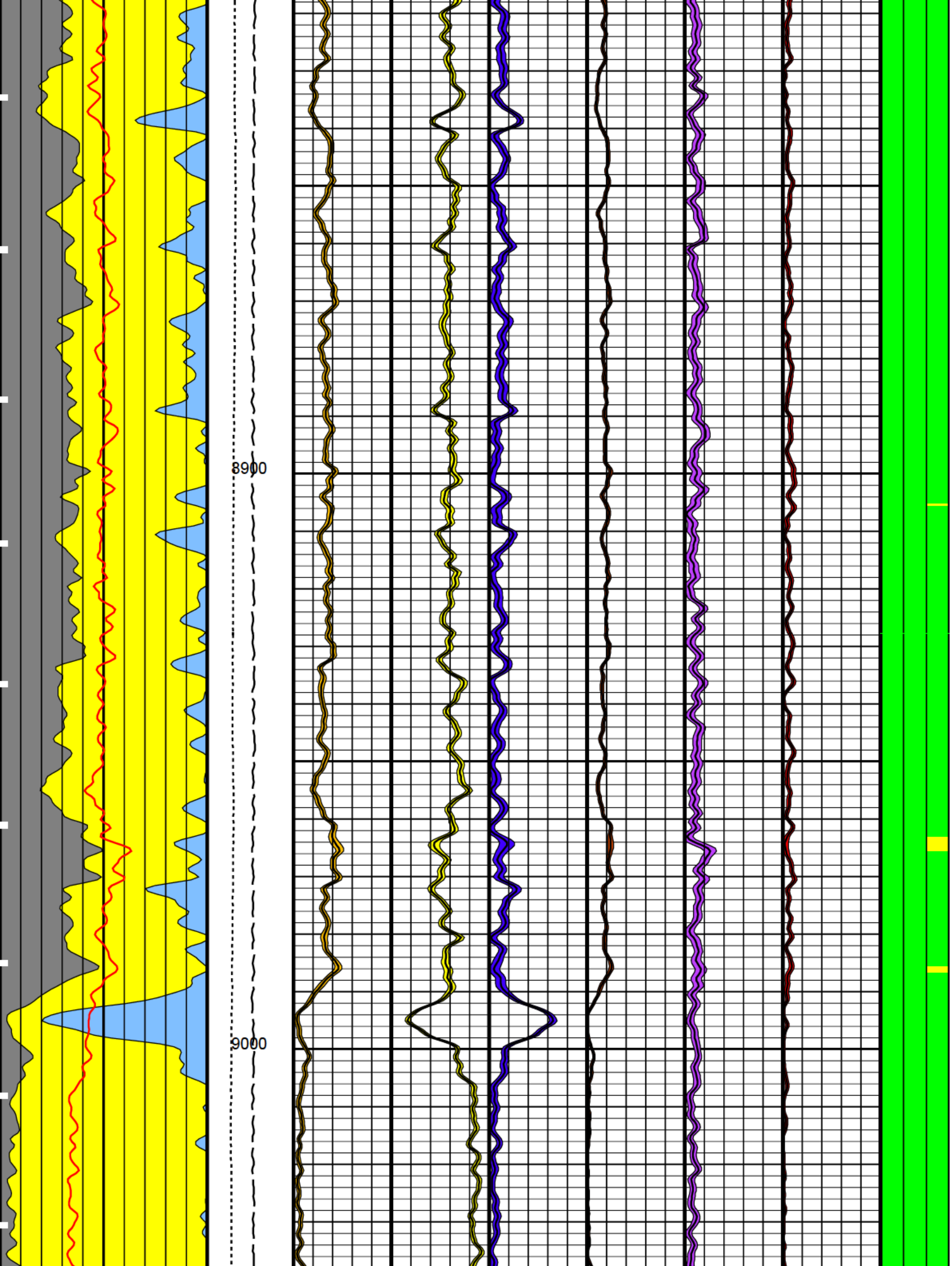
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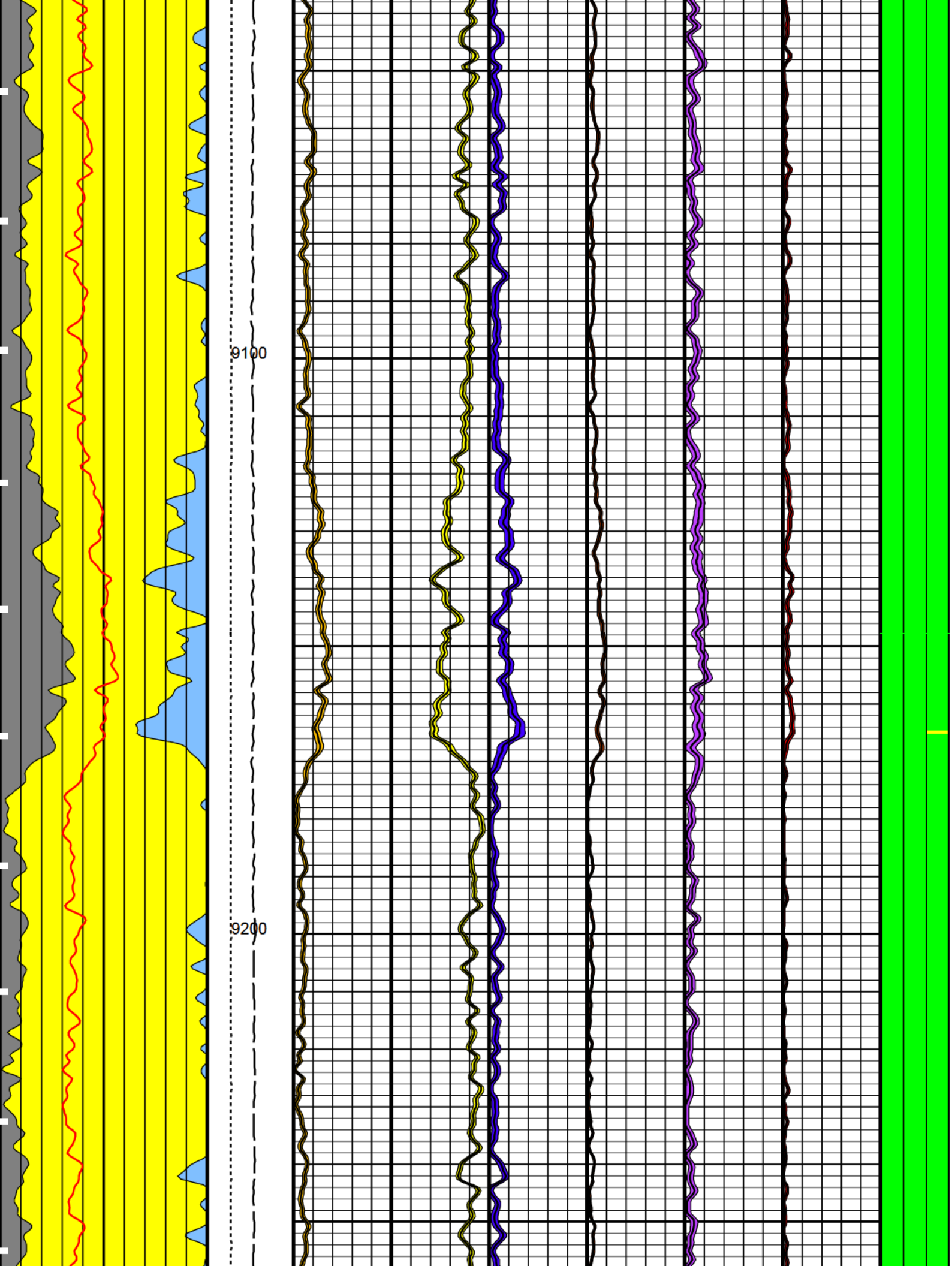
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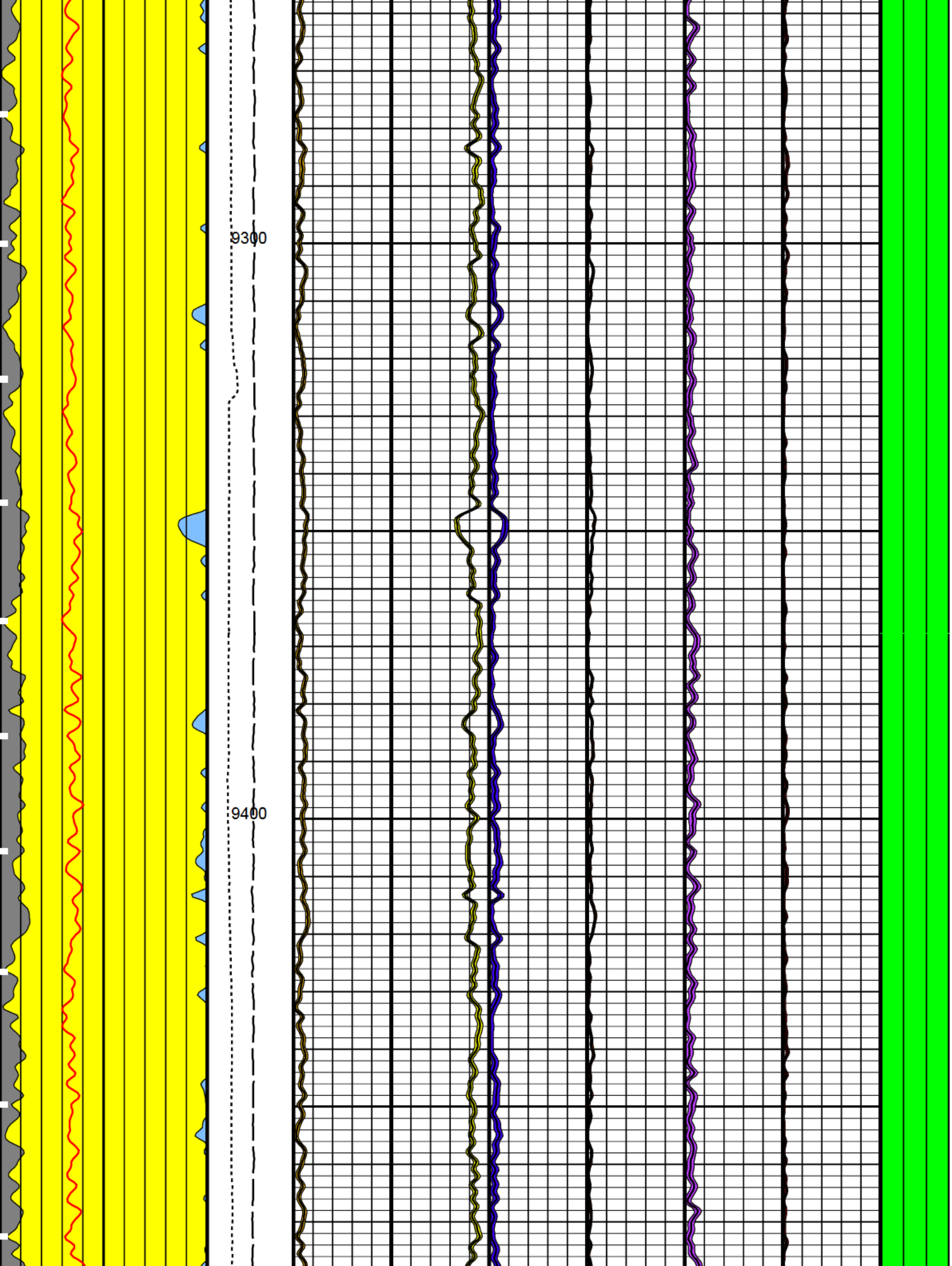
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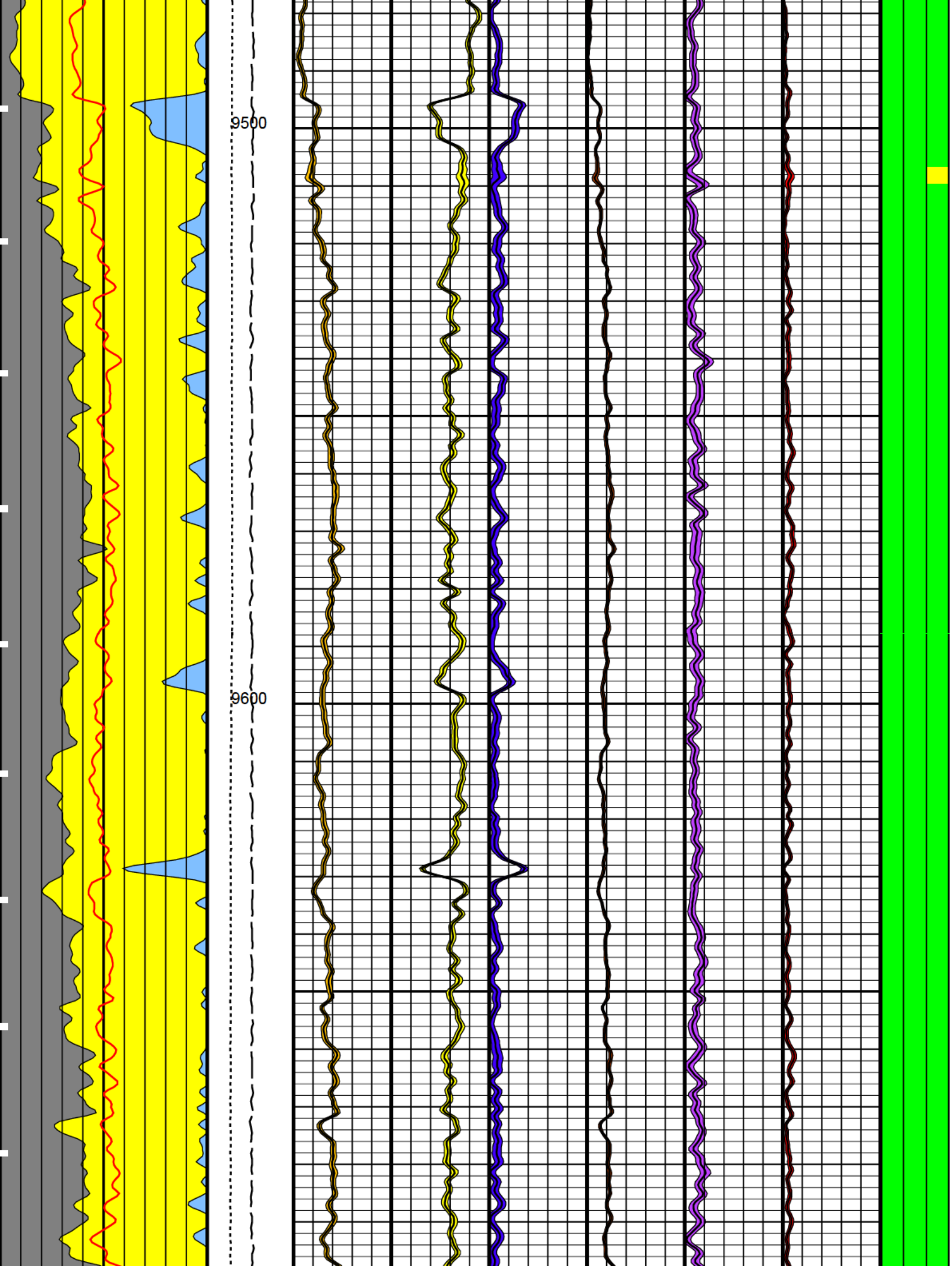
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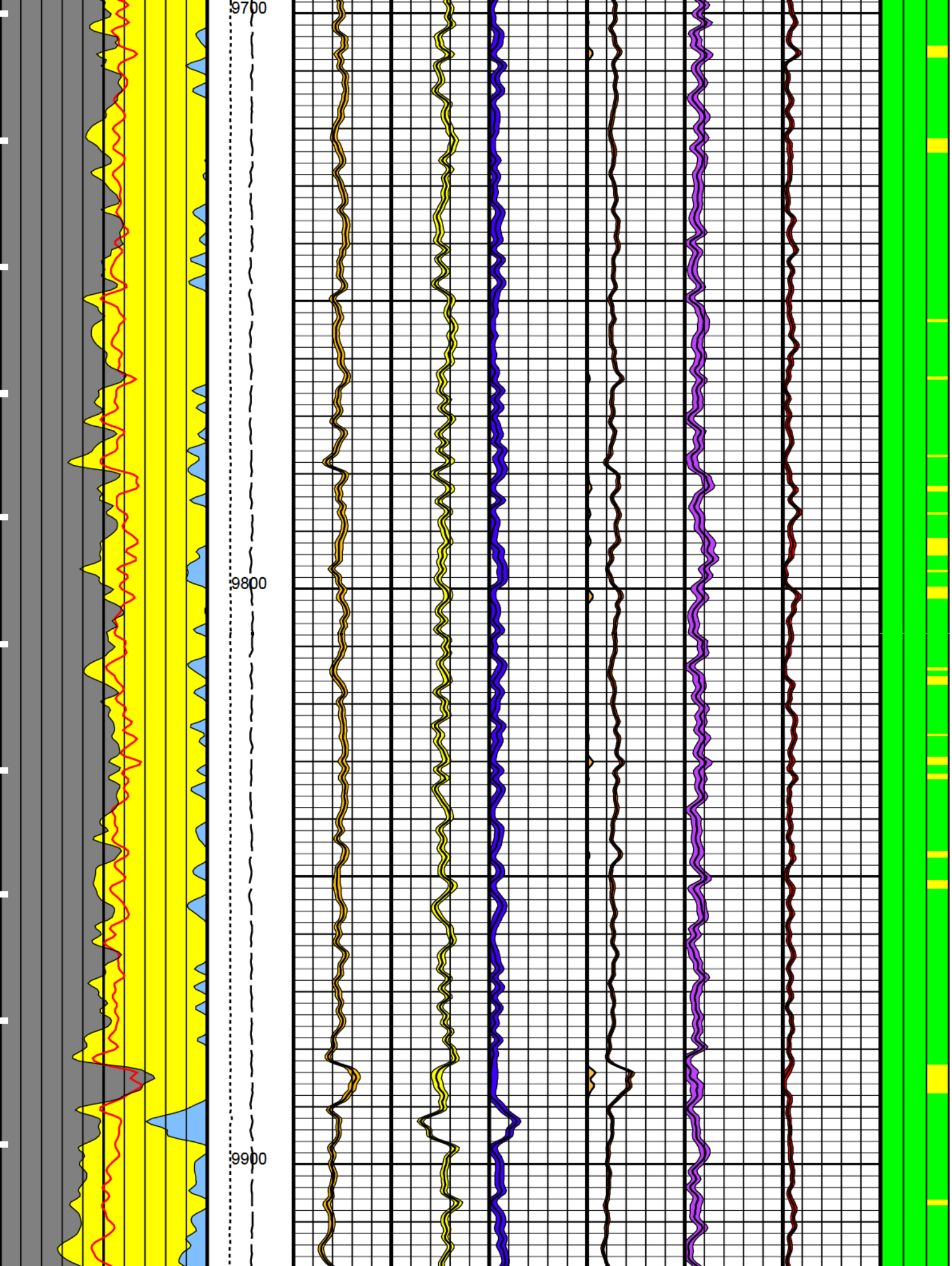
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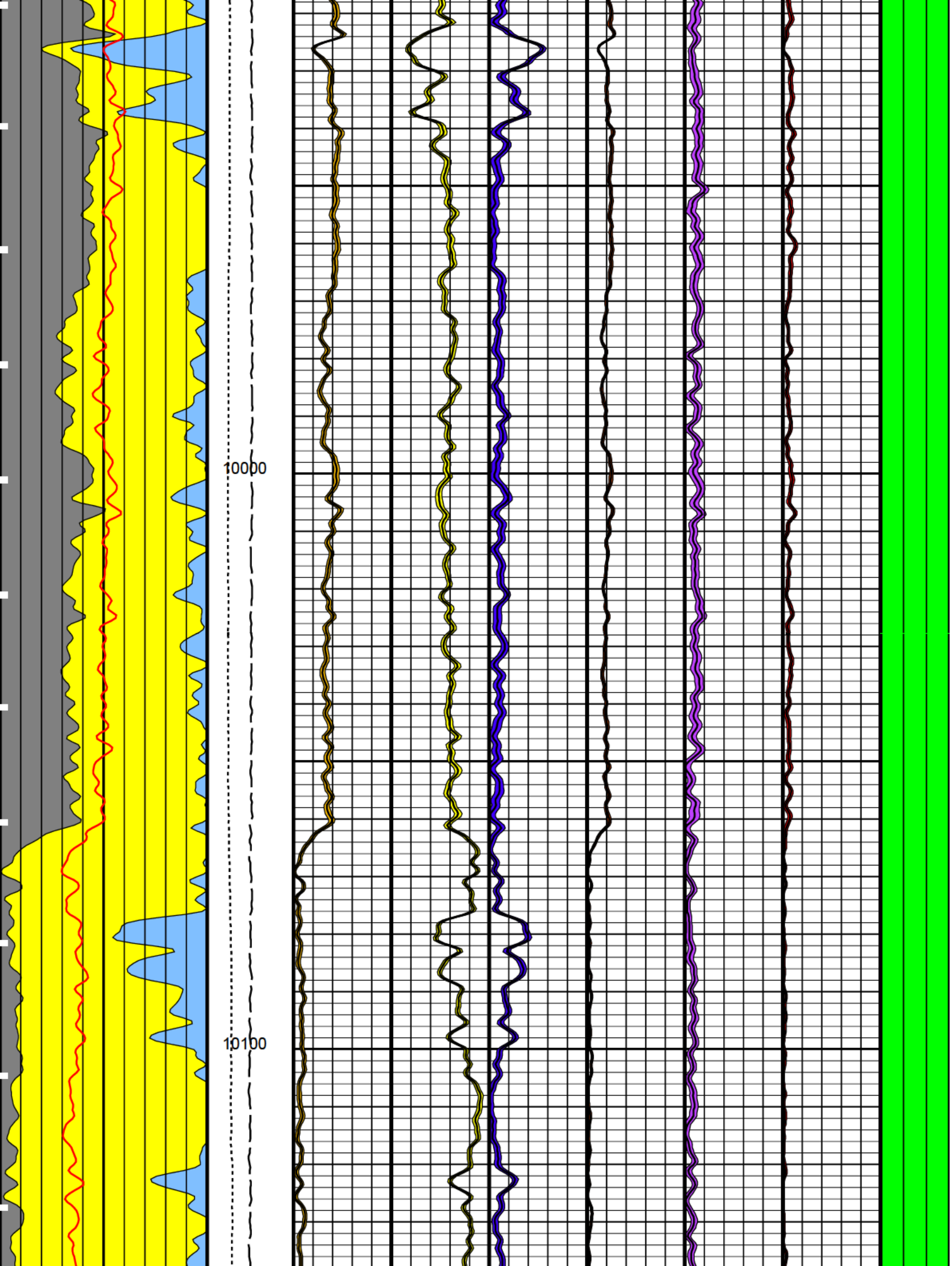
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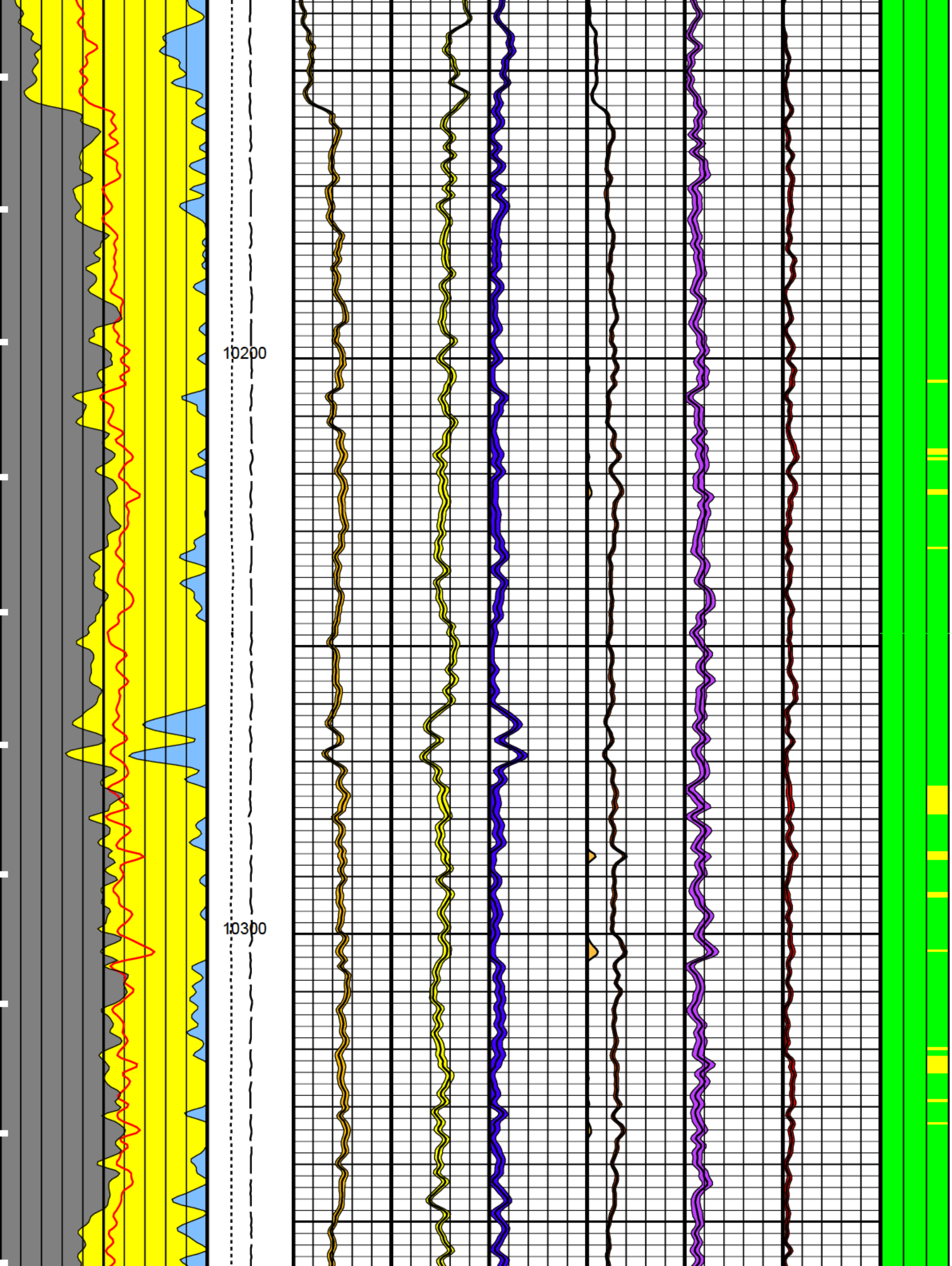
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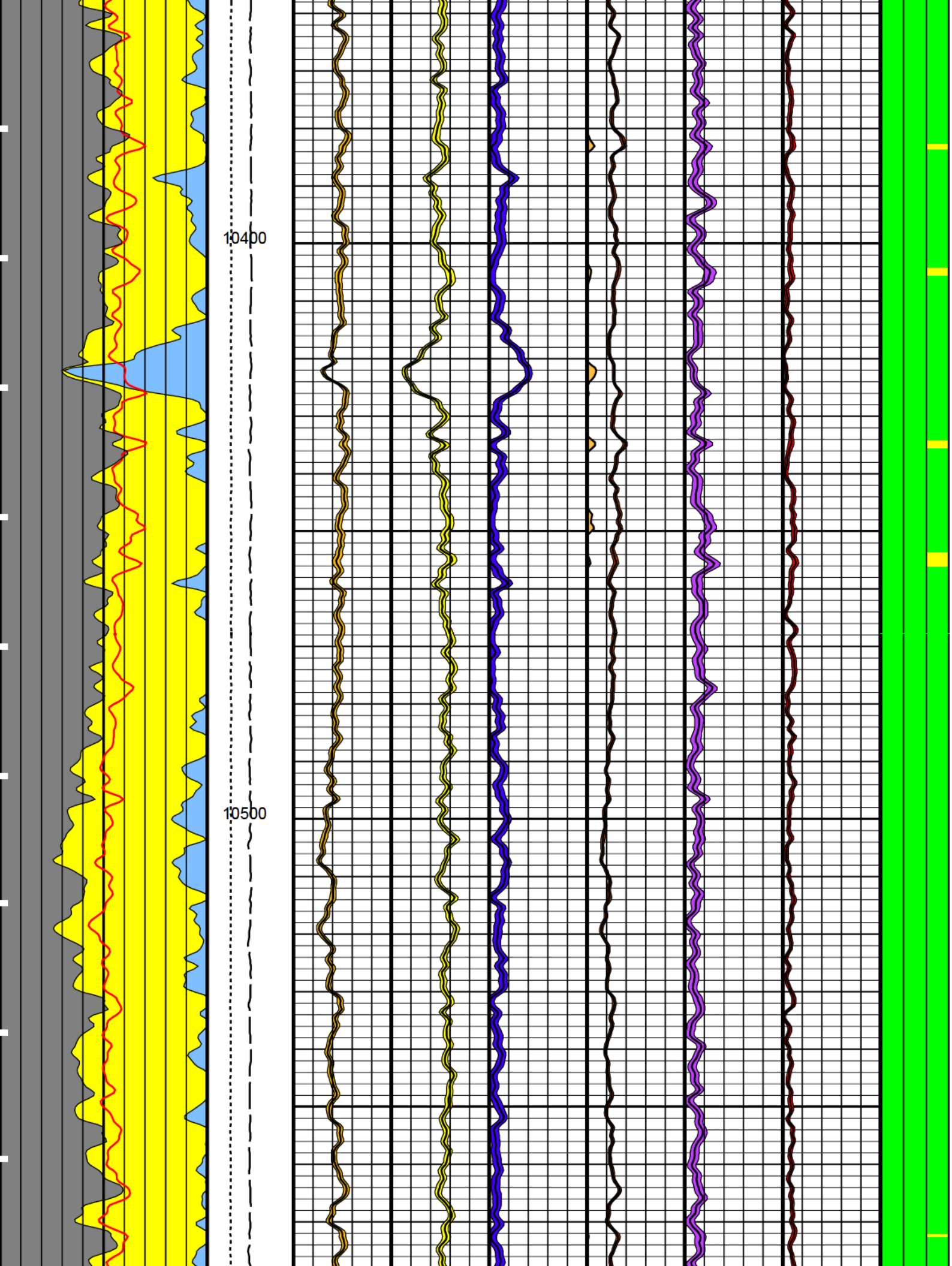
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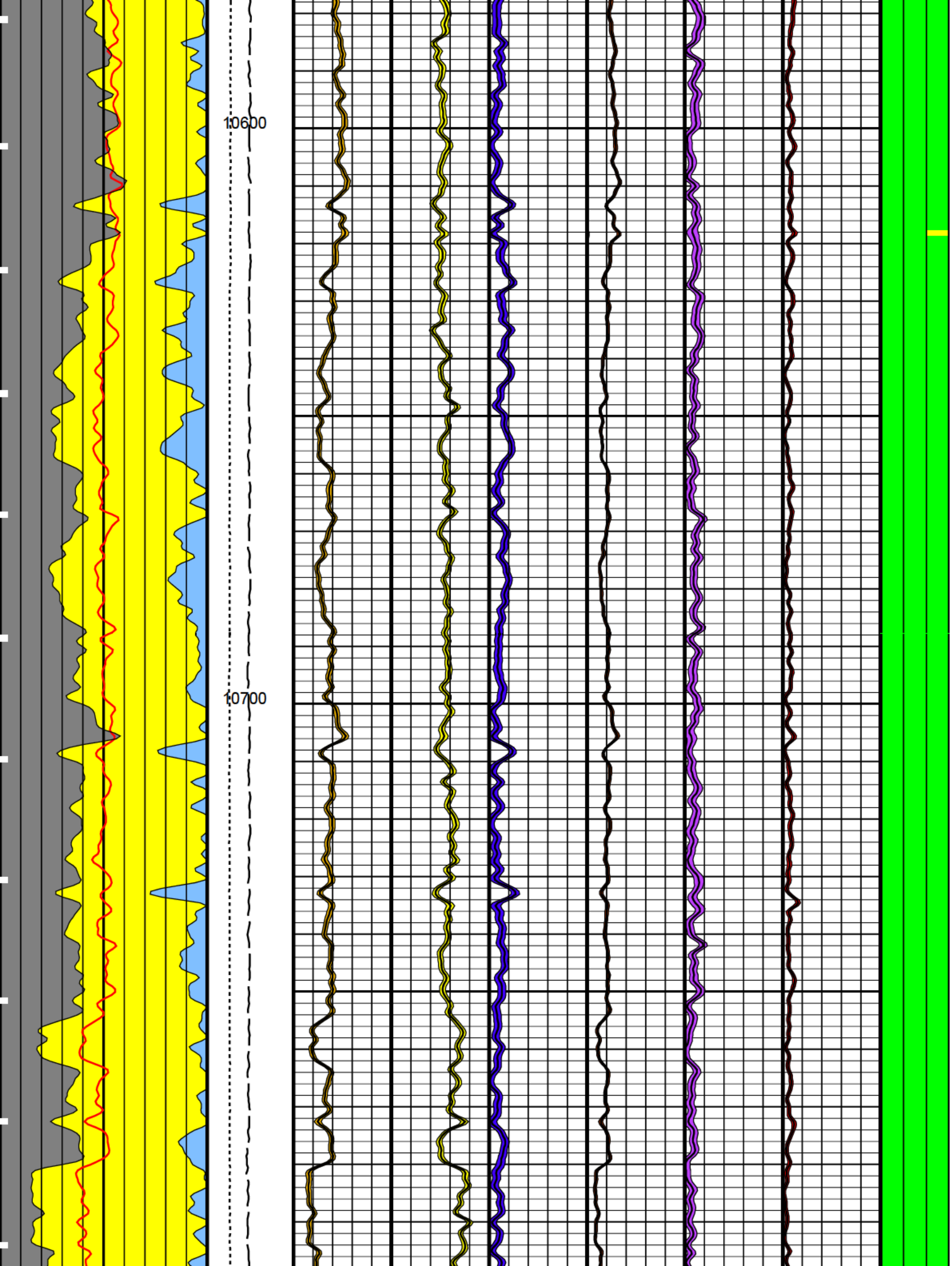
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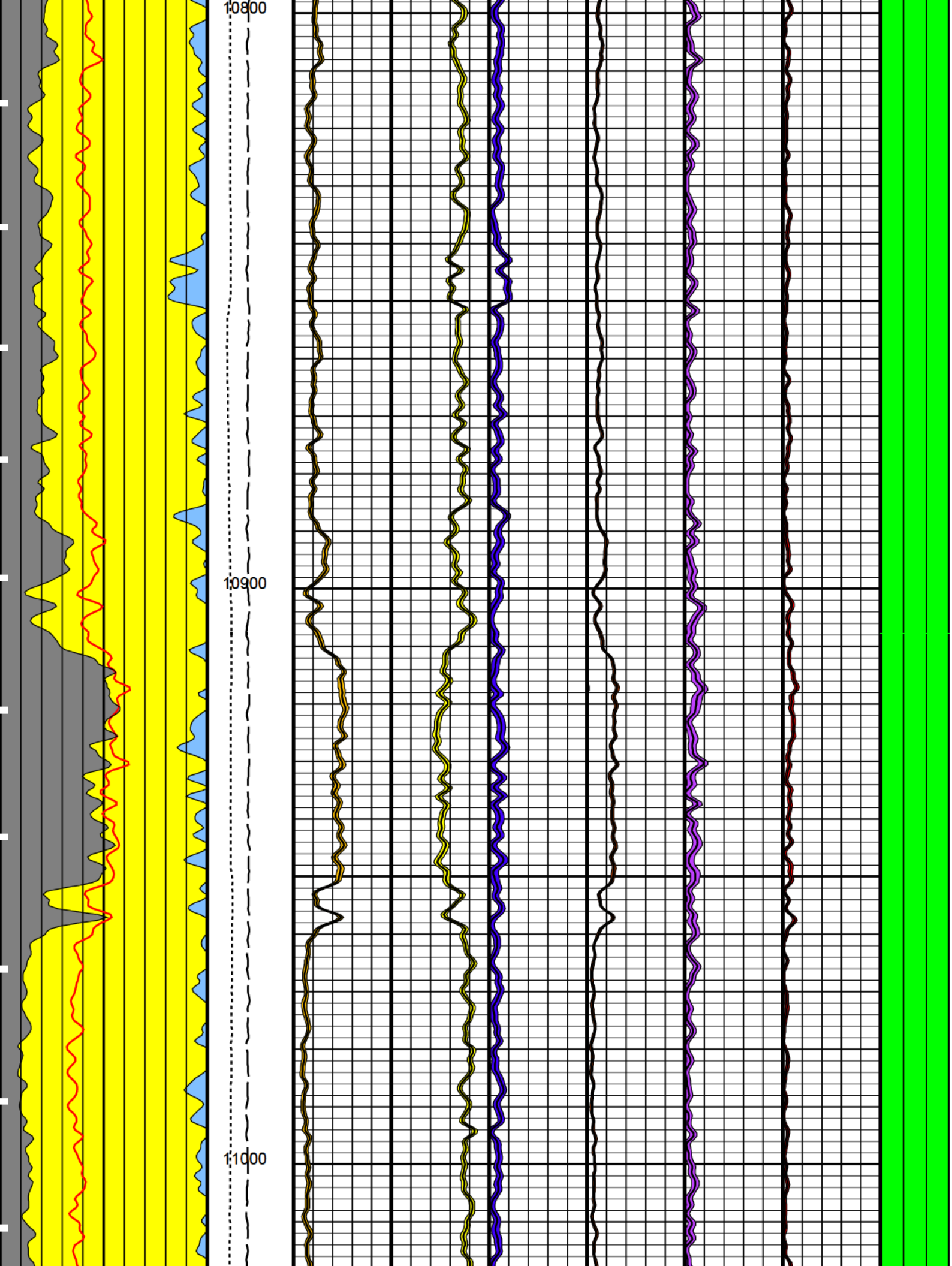
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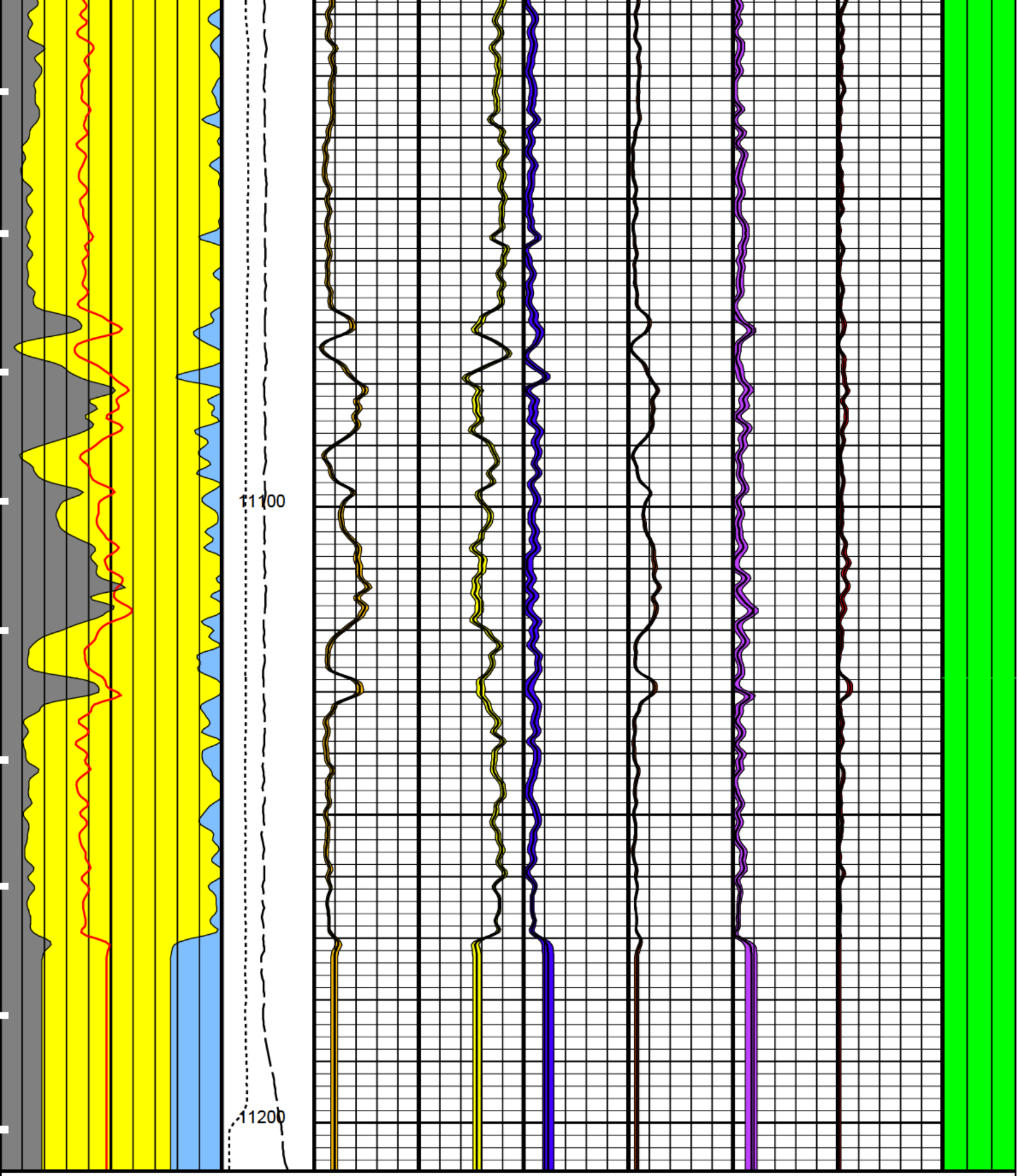


LQC Track

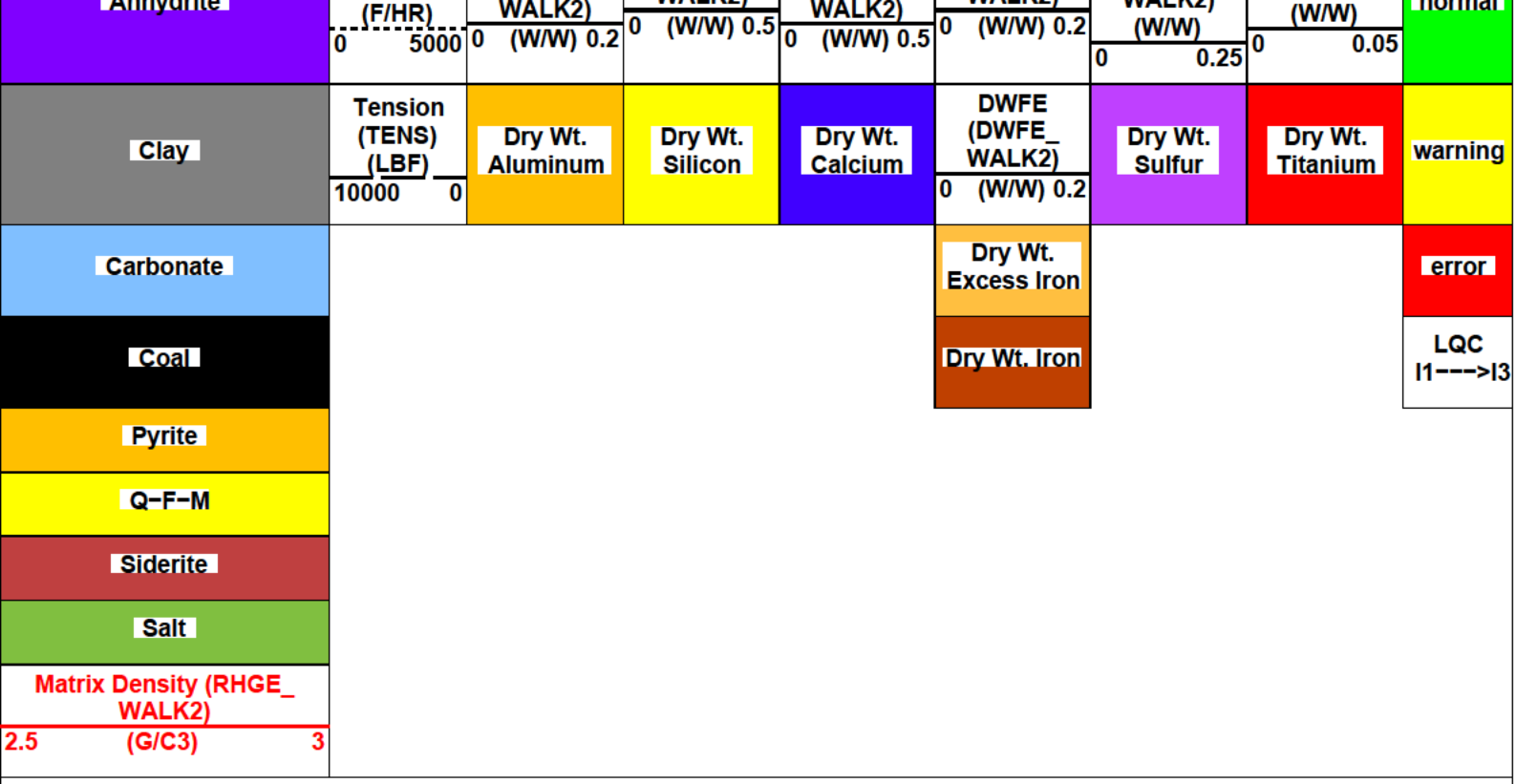
Left(I1) ---> Right(I3)

I1: ECS Hardware: Photomultiplier (QC_PMT)

I2: ECS Hardware: BGO Crystal Temperature (ECST)

I3: ECS Data Quality: Elemental Statistical Uncertainty (ESUF_WALK2)

Anhydrite	Cable Speed (CS)	DWAL (DWAL_	DWSI (DWSI_ WALK2)	DWCA (DWCA_	DXFE (DXFE_ WALK2)	DWSU (DWSU_ WALK2)	DWTI (DWTI_ WALK2)	normal



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	ECS-A: Elemental Capture Spectroscopy Tool		
SPEC_BARITE_MUD_FLAG	Barite Mud Flag for Spectroscopy Processing	Off	
SPEC_CSG_DEPTH	Casing Depth for Spectroscopy Processing	6947	FT
SPEC_ELE_STD_SHFT_FAC	Calibration Factor for Elemental Spectral Standards	1.06841	
SPL_CLAY_MODEL	SpectroLith Clay Model	Arenite	
SPL_SULFUR_MINERAL	SpectroLith Sulfur Mineral Option	None	
	DIR: Directional Survey Computation		
SPVD	TVD of Starting Point	0	FT
TIMD	Along-hole depth of Tie-in Point	0	FT
TIVD	TVD of Tie-in Point	0	FT
	System and Miscellaneous		
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	

Format: ECS_SpectroLith_PB Vertical Scale: 5" per 100' Graphics File Created: 16-Mar-2011 09:01

OP System Version: 18C0-147

OBMT-B	18C0-147	GPIT-F	SRPC-4072-Q4_2010_OP18_b
MAXS-B	SKK-3935-MAST_b	MAPC-B	SKK-3935-MAST_b
PPC2	18C0-147	ECS-A	18C0-147
ECC-B	18C0-147	HNGC-B	18C0-147
HNGS-BA	18C0-147	EDTC-B	SRPC-4072-Q4_2010_OP18_b
ECRD	SRPC-4072-Q4_2010_OP18_b		

Input DLIS Files

DEFAULT	SPLICE_OBMI_IS_MAXS_222	FN:1	PRODUCER	16-Mar-2011 08:59	11207.5 FT	6300.1 FT

Output DLIS Files

DEFAULT	OBMI_IS_MAXS_MAPC_223PUP	FN:335	PRODUCER	16-Mar-2011 09:01

Schlumberger

REPEAT SECTION

MAXIS Field Log

Input DLIS Files

DEFAULT	SPLICE_OBMI_IS_MAXS_219	FN:1	PRODUCER	16-Mar-2011 08:50	7520.0 FT	6300.0 FT

Output DLIS Files

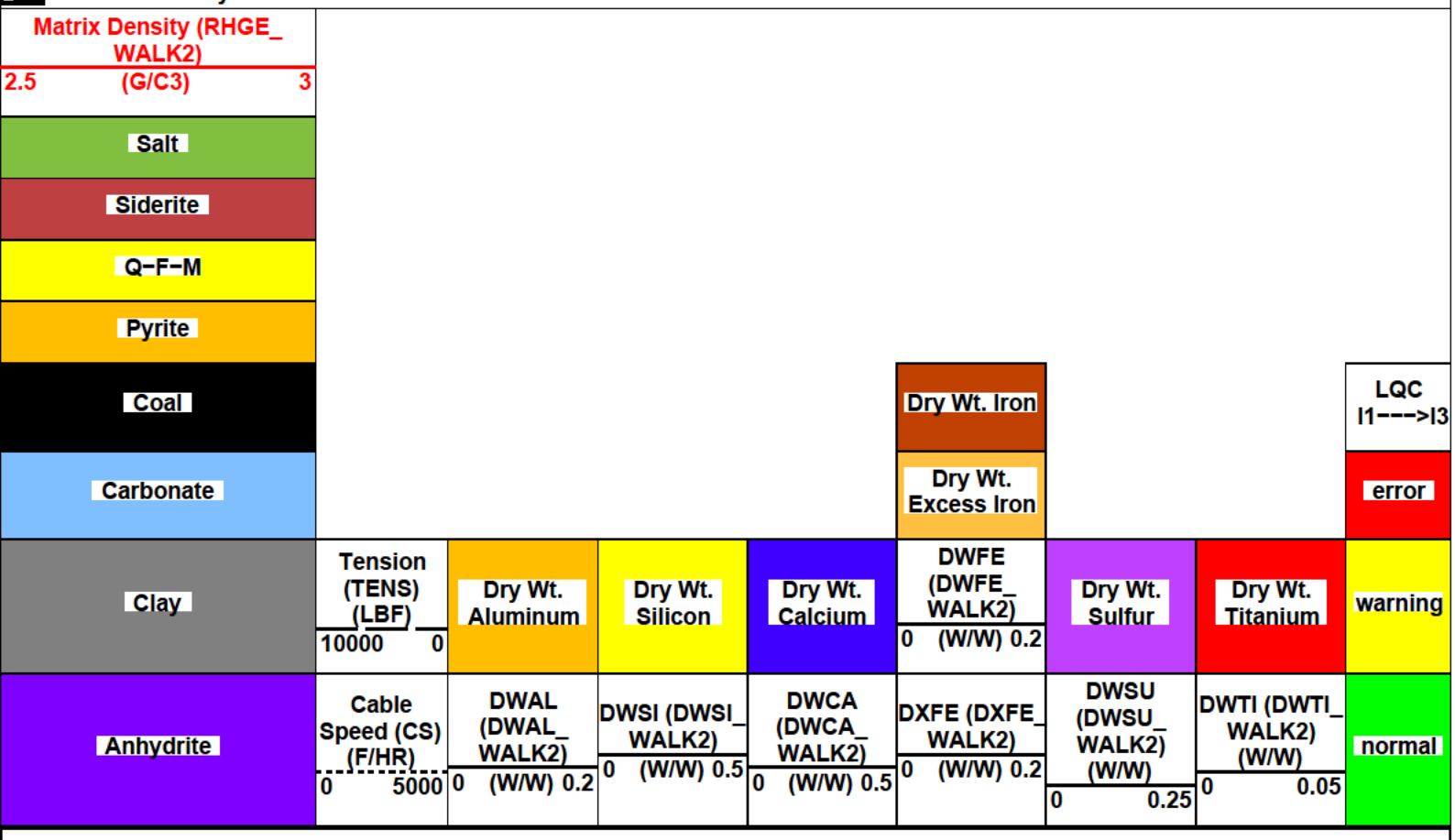
DEFAULT	OBMI_IS_MAXS_MAPC_221PUP	FN:334	PRODUCER	16-Mar-2011 08:55	7520.0 FT	6300.0 FT

OP System Version: 18C0-147

OBMT-B	18C0-147	GPIT-F	SRPC-4072-Q4_2010_OP18_b
MAXS-B	SKK-3935-MAST_b	MAPC-B	SKK-3935-MAST_b
PPC2	18C0-147	ECS-A	18C0-147
ECC-B	18C0-147	HNGC-B	18C0-147
HNGS-BA	18C0-147	EDTC-B	SRPC-4072-Q4_2010_OP18_b
ECRD	SRPC-4072-Q4_2010_OP18_b		

PIP SUMMARY

Time Mark Every 60 S



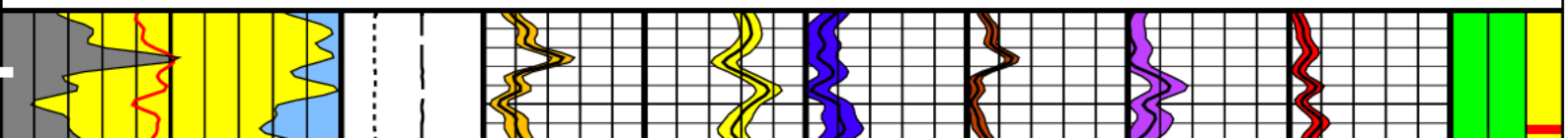
LQC Track

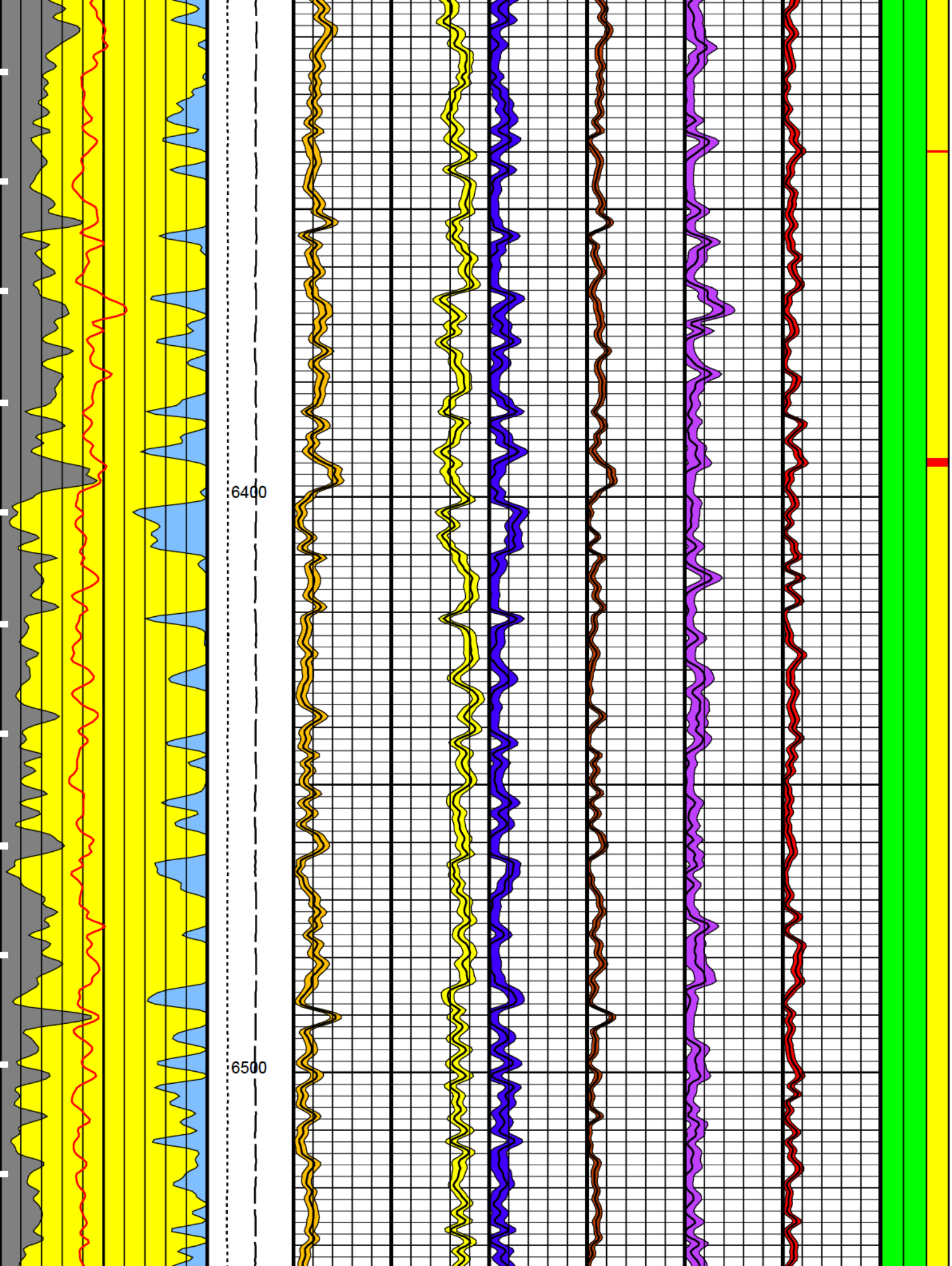
Left(I1) ---> Right(I3)

I1: ECS Hardware: Photomultiplier (QC_PMT)

I2: ECS Hardware: BGO Crystal Temperature (ECST)

I3: ECS Data Quality: Elemental Statistical Uncertainty (ESUF_WALK2)

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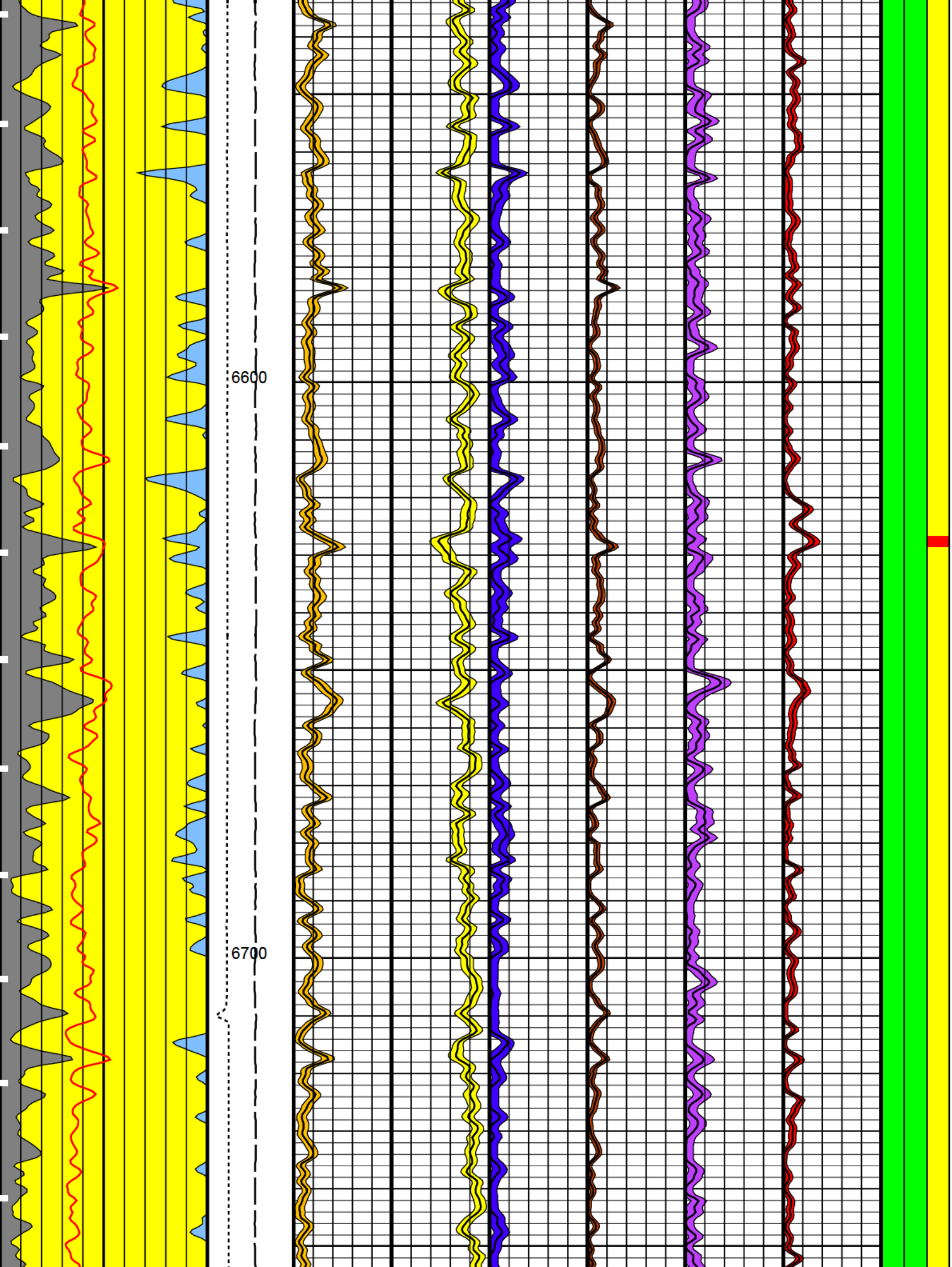
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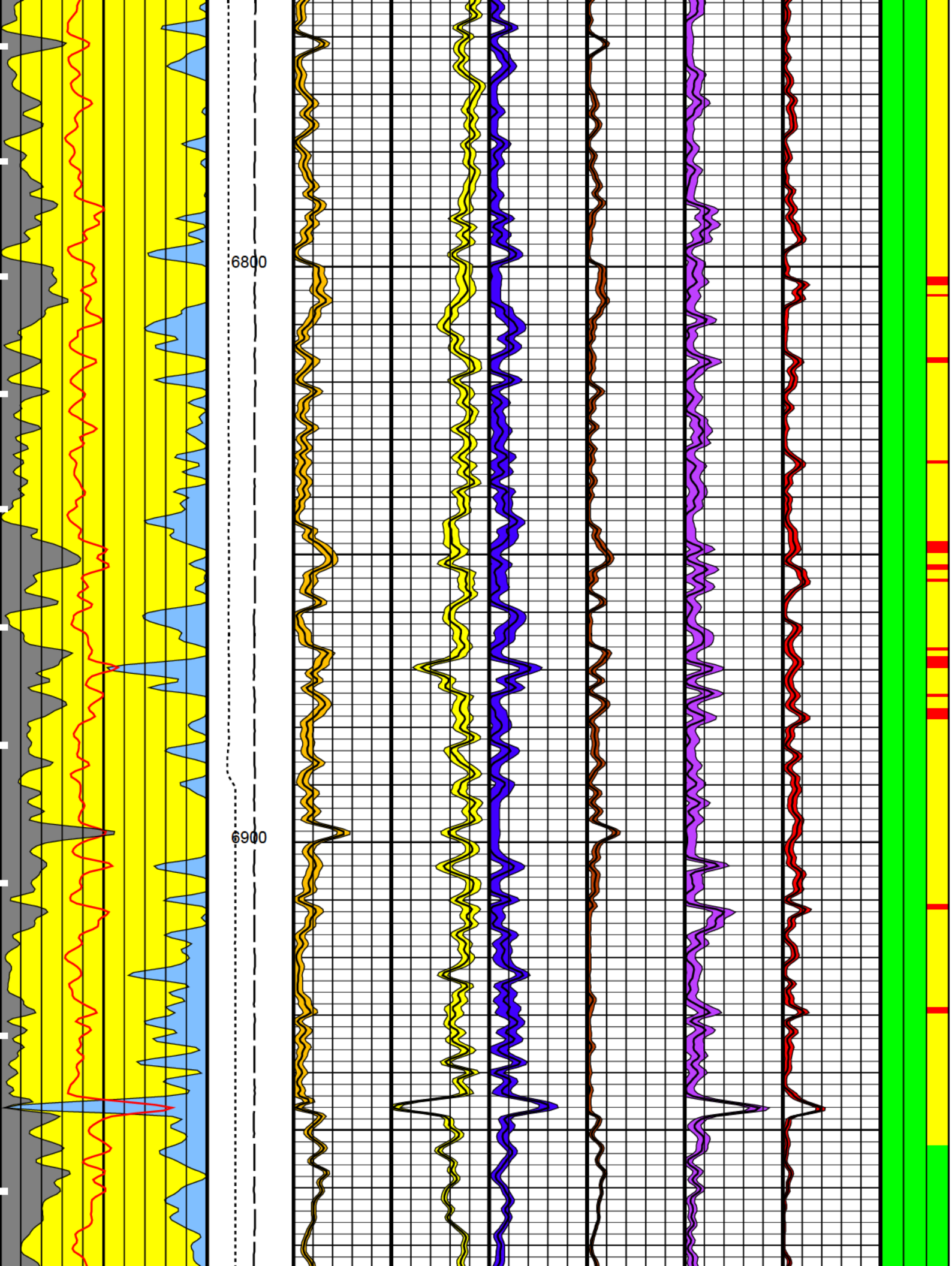
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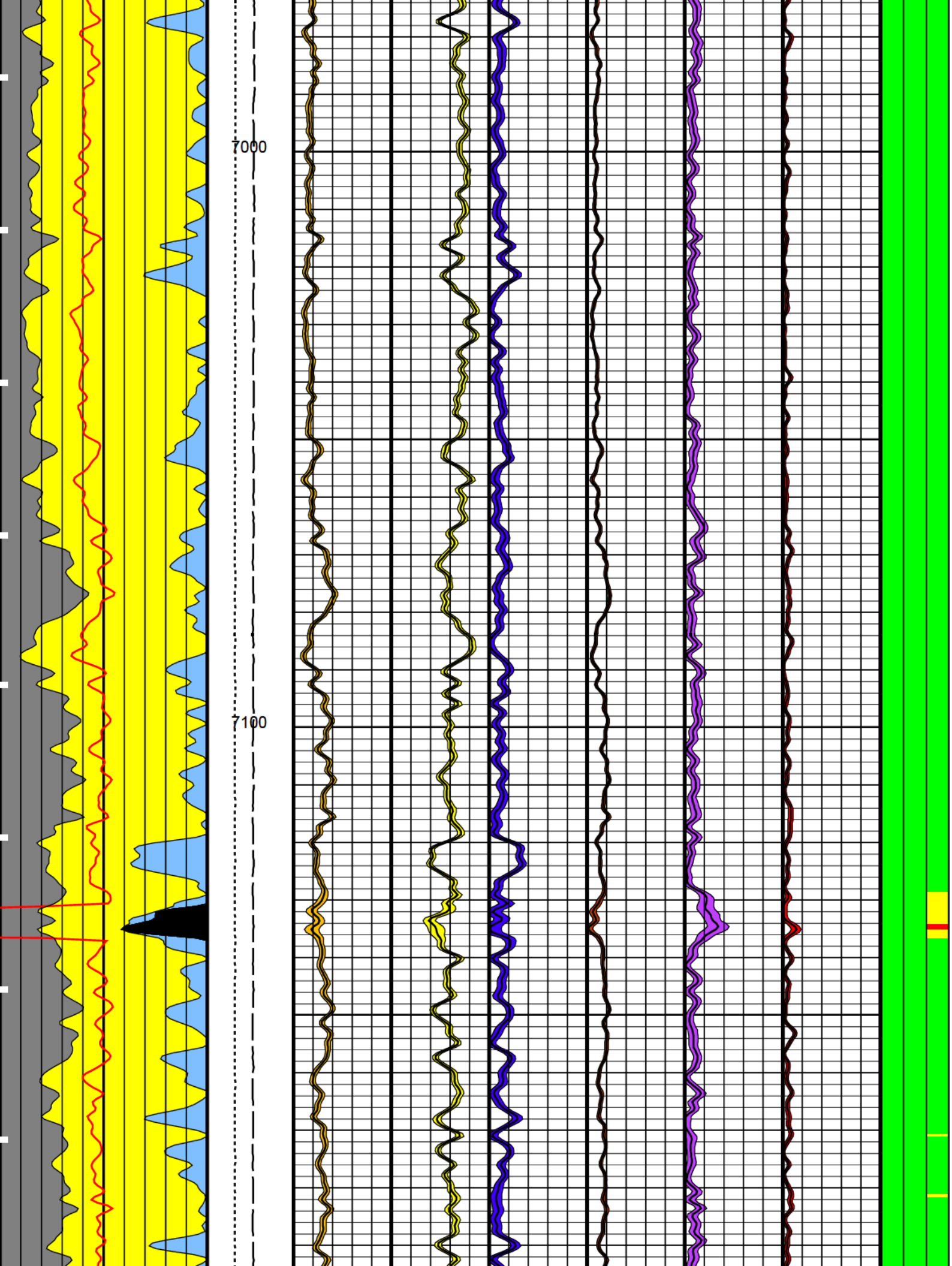
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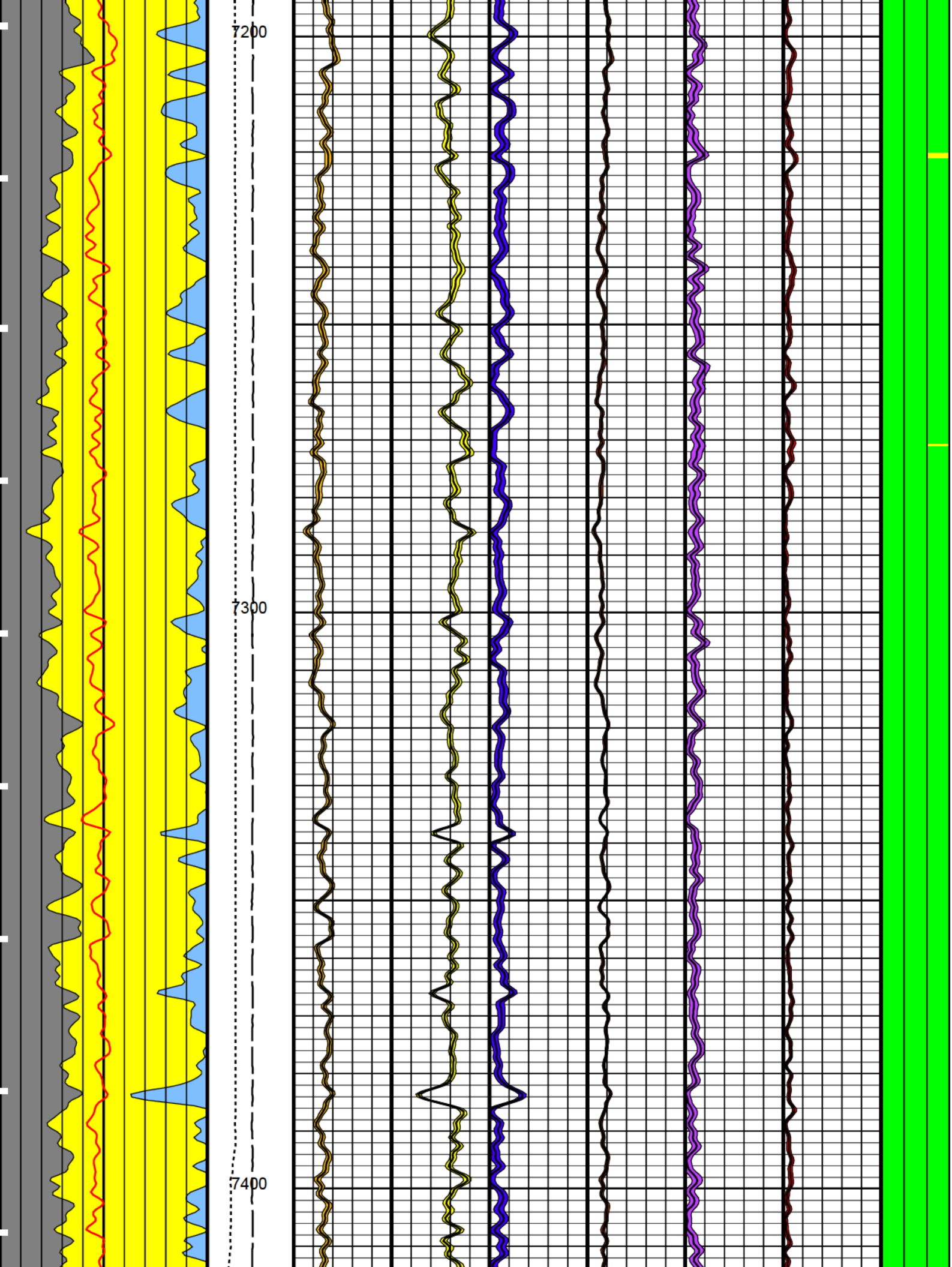
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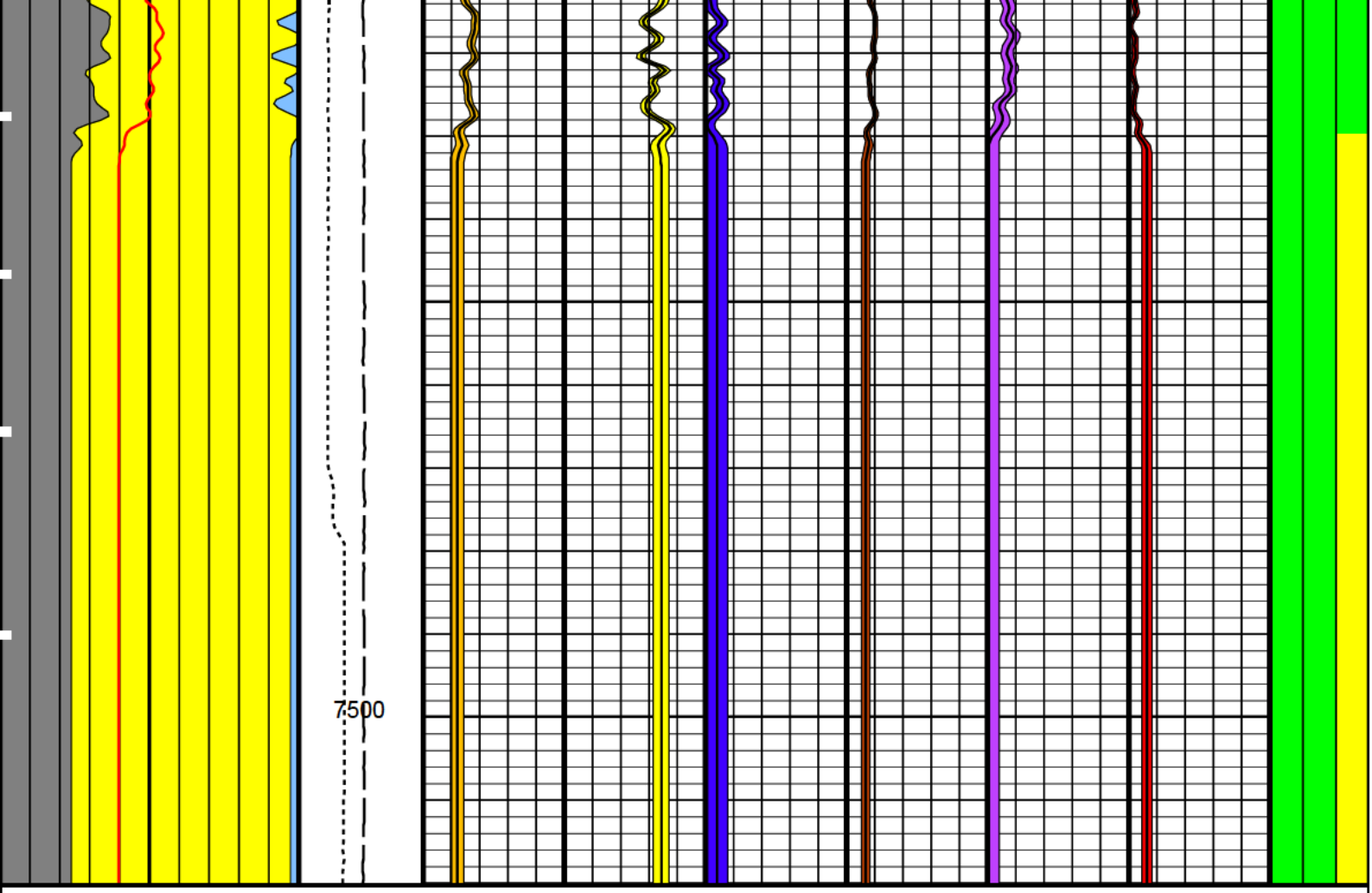

LQC Track
Left(I1) ---> Right(I3)
I1: ECS Hardware: Photomultiplier (QC_PMT)
I2: ECS Hardware: BGO Crystal Temperature (ECST)
I3: ECS Data Quality: Elemental Statistical Uncertainty (ESUF_WALK2)

Anhydrite	Cable Speed (CS) (F/HR) 0 5000	DWAL (DWAL_WALK2) 0 (W/W) 0.2	DWSI (DWSI_WALK2) 0 (W/W) 0.5	DWCA (DWCA_WALK2) 0 (W/W) 0.5	DXFE (DXFE_WALK2) 0 (W/W) 0.2	DWSU (DWSU_WALK2) (W/W) 0 0.25	DWTI (DWTI_WALK2) (W/W) 0 0.05	normal
Clay	Tension (TENS) (LBF) 10000 0	Dry Wt. Aluminum	Dry Wt. Silicon	Dry Wt. Calcium	DWFE (DWFE_WALK2) 0 (W/W) 0.2	Dry Wt. Sulfur	Dry Wt. Titanium	warning
Carbonate					Dry Wt. Excess Iron			error
Coal					Dry Wt. Iron			LQC I1--->I3
Pyrite								
Q-F-M								
Siderite								
Salt								
Matrix Density (RHGE_WALK2) 2.5 (G/C3) 3								

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	ECS-A: Elemental Capture Spectroscopy Tool		
SPEC_BARITE_MUD_FLAG	Barite Mud Flag for Spectroscopy Processing	Off	
SPEC_CSG_DEPTH	Casing Depth for Spectroscopy Processing	6947	FT
SPEC_ELE_STD_SHFT_FAC	Calibration Factor for Elemental Spectral Standards	1.06841	
SPL_CLAY_MODEL	SpectroLith Clay Model	Arenite	
SPL_SULFUR_MINERAL	SpectroLith Sulfur Mineral Option	None	
	DIR: Directional Survey Computation		
SPVD	TVD of Starting Point	0	FT
TIMD	Along-hole depth of Tie-in Point	0	FT
TIVD	TVD of Tie-in Point	0	FT
	System and Miscellaneous		
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	

Format: ECS_SpectroLith_PB Vertical Scale: 5" per 100' Graphics File Created: 16-Mar-2011 08:55

OP System Version: 18C0-147

OBMT-B	18C0-147	GPIT-F	SRPC-4072-Q4_2010_OP18_b
MAXS-B	SKK-3935-MAST_b	MAPC-B	SKK-3935-MAST_b
PPC2	18C0-147	ECS-A	18C0-147
ECC-B	18C0-147	HNGC-B	18C0-147
HNGS-BA	18C0-147	EDTC-B	SRPC-4072-Q4_2010_OP18_b
ECRD	SRPC-4072-Q4_2010_OP18_b		

Input DLIS Files

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Output DLIS Files

DEFAULT	OBMI_IS_MAXS_MAPC_221PUP	FN:334	PRODUCER	16-Mar-2011 08:55

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CALIBRATIONS

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check							
Before: 12-Mar-2011 15:58							
Na 511 Peak Loc	40.00	N/A	39.60	N/A	N/A	1.000	
Na 511 Peak Res	15.50	N/A	16.92	N/A	N/A	2.000	%
High Voltage	1150	N/A	1235	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	N/A	143.4	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	N/A	10.10	N/A	N/A	2.000	%
Temperature	59.90	N/A	66.15	N/A	N/A	N/A	DEGF
Na Count Rate	45.00	N/A	13.01	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check							
Before: 12-Mar-2011 15:58							
Na 511 Peak Loc	40.00	N/A	39.66	N/A	N/A	1.000	

Na 511 Peak Res	15.50	N/A	14.43	N/A	N/A	2.000	%
High Voltage	1150	N/A	1415	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	N/A	143.2	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	N/A	9.559	N/A	N/A	2.000	%
Temperature	59.90	N/A	66.17	N/A	N/A	N/A	DEGF
Na Count Rate	45.00	N/A	12.98	N/A	N/A	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2
Before: 12–Mar–2011 15:58

Coincidence Count Rate Ratio	1.000	N/A	1.002	N/A	N/A	0.05000

Combinable Magnetic Resonance Tool – B / Equipment Identification

Primary Equipment:		
CMR Cartridge	CMRC – B	68
CMR–B Sonde	CMRS – BA	49
Auxiliary Equipment:		
CMR Housing	CMRH – AA	68

Elemental Capture Spectroscopy Tool / Equipment Identification

Primary Equipment:		
ECS Sonde	ECS – A	31
ECS Detector Package	ECSD – A	31
ECS AmBe Source	NSR – F	2573
Auxiliary Equipment:		
ECS Sonde Housing	ECSH – A	

Elemental Capture Cartridge – B / Equipment Identification

Primary Equipment:		
ECC Cartridge	ECC – B	28
Auxiliary Equipment:		
ECC Housing	ECH – A	

Hostile Natural Gamma Ray Cartridge – B / Equipment Identification

Primary Equipment:		
HNGC Cartridge	HNGC – B	404
Auxiliary Equipment:		
HNGC Housing	HNGH – A	345

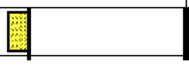
Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:		
HNGS Sonde	HNGS – BA	112
Auxiliary Equipment:		
HNGS Sonde Housing	HNSH – BA	116
Gamma Source Radioactive	GSR – U	873

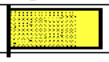
Hostile Natural Gamma Ray Sonde Wellsite Calibration

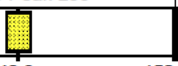
Detector 1 Check

Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value
Before		39.60	Before		16.92	Before		1235
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGF	Value

Phase	Na 511 Peak Loc	Value
Before		39.66
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)	

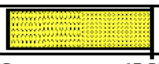
Phase	Na 511 Peak Res %	Value
Before		14.43
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Before		1415
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Before		143.2
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Before		9.559
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGF	Value
Before		66.17
	−20.00 (Minimum) 59.90 (Nominal) 140.0 (Maximum)	

Phase	Na Count Rate CPS	Value
Before		12.98
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Before: 12−Mar−2011 15:58

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Before		1.002
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	

Before: 12−Mar−2011 15:58

Company: **Aera Energy LLC**

Well: **888N−12**
Field: **SOUTH BELRIDGE**
County: **KERN**
State: **CALIFORNIA**

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ELEMENTAL CAPTURE SPECTROSCOPY LOG

Appendix 2D
Injection and Confining Zone Supporting Data

888N-12 Petrology Report

Test Report

Client:	Best Core Services	MI#:	22341
Project:	Company: AERA / Well: 888N-12 / Field: Coalinga	Date:	01/13/23
BCS FIle No.	N/A	Transmittal#:	T2234

Client	Best Core Services		
	111 Lake Street		
	Bakersfield, CA 93305		
	Attn: Bryan Bell		
Email	bryan@bestcoreservices.com bryan.arval.bell@gmail.com	**Phone**	661-835-6001

Method(s)	**Timothy B. Murphy**
X-ray Diffraction Scanning Electron Microscopy Thin Section Petrography	

Summary	•
X-ray Diffraction	Table I.1
	Table I.2
8685.5 MI# 22341-01	SEM
	Thin Section Petrography
8697.5 MI# 22431-02	SEM
	Thin Section Petrography
8708.6 MI# 22341-03	SEM
	Thin Section Petrography
8715.5 MI# 22341-04	SEM
	Thin Section Petrography
8734.5 MI# 22341-05	SEM
	Thin Section Petrography

CONDITIONS AND QUALIFICATIONS

Mineralogy, Inc. will endeavor to provide accurate and reliable laboratory measurements of the samples provided by the client. The results of any x-ray diffraction, petrographic or core analysis test are necessarily influenced by the condition and selection of the samples to be analyzed. It should be recognized that geological samples are commonly heterogeneous and lack uniform properties. Mineralogical, geochemical and/or petrographic data obtained for a specific sample provides compositional data pertinent to that specific sampling location. Such "site-specific data" may fail to provide adequate characterization of the range of compositional variability possible within a given project area, thus the "projection" of these laboratory findings and values to adjoining, "untested" areas of the formation or project area is inherently risky, and exceeds the scope of the laboratory work request. Hence, Mineralogy, Inc. shall not assume any liability risk or responsibility for any loss or potential failure associated with the application of "site or sample-specific laboratory data" to "untested" areas of the formation or project area. Unless otherwise directed, the samples selected for analysis will be chosen to reflect a visually representative portion of the bulk sample submitted for analysis. Where provided, the interpretation of x-ray diffraction, petrographic or core analysis results constitutes the best geological judgment of Mineralogy, Inc., and is subject to the sampling limitations described above, and the detection limits inherent to semi-quantitative and/or qualitative mineralogical and microscopic analysis. Mineralogy, Inc. assumes no responsibility nor offers any guarantee of the productivity, suitability or performance of any oil or gas well, hydrocarbon recovery process, dimension stone, and/or ore material based upon the data or conclusions presented in this report.

This report is to only be replicated in its entirety.

Sample Retention: Samples will be stored for a period of 30 days and thereafter discarded. If additional sample storage time and/or return shipping is required, appropriate charges will be billed to the client.

Summary

Five matrix-rich conventional core plug samples from the AERA 888N-12 well within the Coalinga Field have been submitted for x-ray diffraction (XRD), thin section and scanning electron microscopy analysis. All five of the cores are classified as clay-rich, fossiliferous sandy siltstone. The siltstones are grain-supported, burrow mottled, locally ripple-bedded, fossiliferous and microporous. Detrital clay matrix is ubiquitous as a pore-filling constituent, occupying nearly all of the available intergranular spaces. The grain materials are closely spaced & exhibit common point-to-point and elongated intergranular contacts. Selected foram tests have been crushed due to burial compaction. Detrital grain materials include plagioclase feldspar & quartz silt grains, coupled with silt to sand-sized skeletal grain fragments, chert rock fragments (RFs), re-crystallized igneous RFs, organic matter particles, and glauconite pellets. Skeletal grain materials are calcareous & include scattered foram tests & fragments, echinoderm plates, and undifferentiated skeletal debris. The XRD data set indicates a mineralogy comprised of clay matrix minerals (~31-46.5%), plagioclase feldspar (11-23%), quartz (12-19%), calcite (7-16%), amorphous material (10-15%), dolomite (0-7%), k-feldspar (1-2%), and pyrite (1.5-3%). The clay mineral suite is dominated by mixed-layered illite/smectite (24-46%), together with moderate amounts of illite/mica (0.5-3%), chlorite (0-3%), and kaolinite (0-1%). The siltstone samples are microporous & are limited to small amounts of residual intergranular macroporosity and intra-particle dissolution porosity. The intergranular voids are limited to small (typically ~ 5-40 um) residual pores that are locally isolated due to the pore-filling clay matrix. The over-abundance of pore-filling detrital clay and the limited preservation of macroporosity indicates that these siltstone intervals are likely to perform as efficient permeability barriers capable of trapping hydrocarbons.

X-ray Diffraction

Table I.1

Client:	Best Core Services	MI#:	22341
Project:	Company: AERA / Well: 888N-12 / Field: Coalinga	P.O.#:	N/A
BCS No.:	N/A	Method:	X-ray Diffraction

	Well Name	888N-12	888N-12	888N-12
	Depth (ft)	8685.5	8697.5	8708.6
	Lab ID	22341-01	22341-02	22341-03
Mineral Constituent	Chemical Formula	Relative Abundance (%)		
Quartz	SiO_2	12	19	16
Plagioclase Feldspar	$(Na,Ca)AlSi_3O_8$	19	23	20
K-Feldspar	$KAlSi_3O_8$	1	2	2
Calcite	$CaCO_3$	12	11	11
Dolomite	$(Ca,Mg)(CO_3)_2$	7		2
Siderite	$FeCO_3$		1	
Pyrite	FeS_2	3	3	2.5
Kaolinite	$Al_2Si_2O_5(OH)_4$	1	1	0.5
Chlorite	$(Mg,Al)_6(Si,Al)_4O_{10}(OH)_8$	2	3	2
Illite / Mica	$KAl_2(Si_3AlO_{10})(OH)_2$	2	3	1
Mixed-Layered Illite/ Smectite	$K_{0.5}Al_2(Si,Al)_4O_{10}(OH)_2 \cdot 2H_2O$	29	24	31
Amorphous		12	10	12
Total		**100**	**100**	**100**
% Illite Layers in ML I/S		*40%*	*70%*	*20%*

X-ray Diffraction

Table I.2

Client:	Best Core Services	MI#:	22341
Project:	Company: AERA / Well: 888N-12 / Field: Coalinga	P.O.#:	N/A
BCS No.:	N/A	Method:	X-ray Diffraction

Mineral Constituent	Chemical Formula	Well Name	888N-12	888N-12
		Depth (ft)	8715.5	8734.5
		Lab ID	22341-04	22341-05
			Relative Abundance (%)	
Quartz	SiO_2		17	16.5
Plagioclase Feldspar	$(Na,Ca)AlSi_3O_8$		11	15
K-Feldspar	$KAlSi_3O_8$		1	2
Calcite	$CaCO_3$		7	16
Dolomite	$(Ca,Mg)(CO_3)_2$		1	3
Pyrite	FeS_2		1.5	2.5
Kaolinite	$Al_2Si_2O_5(OH)_4$			0.5
Chlorite	$(Mg,Al)_6(Si,Al)_4O_{10}(OH)_8$			1.5
Illite / Mica	$KAl_2(Si_3AlO_{10})(OH)_2$		0.5	1
Mixed-Layered Illite/ Smectite	$K_{0.5}Al_2(Si,Al)_4O_{10}(OH)_2 \cdot 2H_2O$		46	32
Amorphous			15	10
Total			**100**	**100**
% Illite Layers in ML I/S			*25%*	*25%*

AERA

Well: 888N-12 | Field: Coalinga

8685.5 ft.

MI#22341-01 - SEM

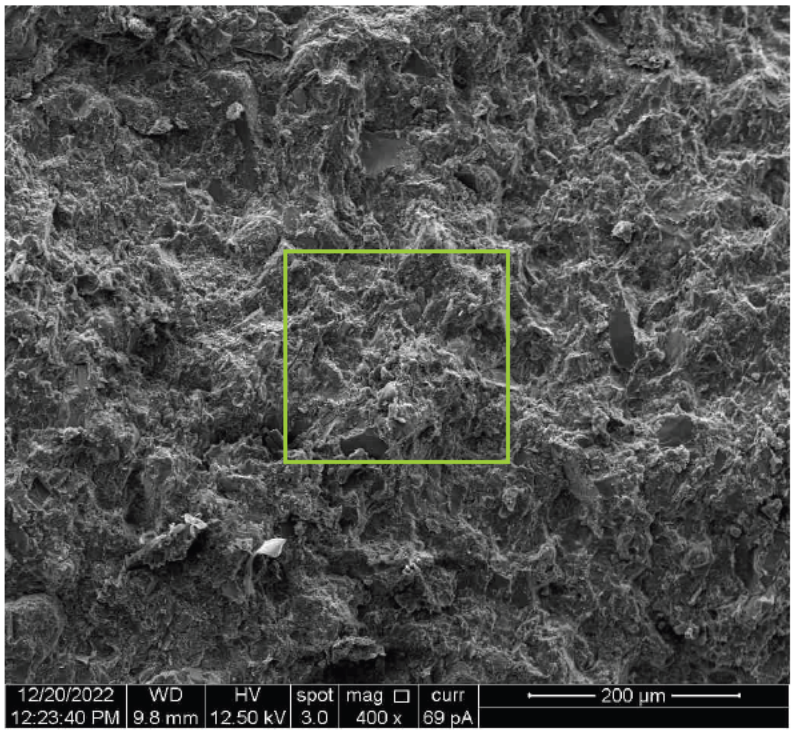
Summary: This core sample is characterized as a non-porous, matrix-rich, fossiliferous, sandy siltstone. The siltstone is well sorted, sub-angular, and densely packed, with a mean grain diameter of ~ 0.045 mm and a maximum grain diameter of 0.82 mm. Bioturbation has obscured the original ripple-bedded fabric and has distributed densely crystallized, organic-rich detrital clay matrix throughout the intergranular pore system. Calcareous foram tests are common throughout the fabric. A few of the forams are in-filled with pore-filling clay & have withstood burial compaction, while other skeletal grains have been subjected to fragmentation & collapse. Selected forams are partially to completely replaced with dolomite cement. Minor amounts of dolomite are also present as very fine subhedral crystals of cement that are locally admixed with the pore-filling clay matrix. The detrital assemblage includes quartz (monocrystalline & polycrystalline), feldspar (plagioclase > k-feldspar), calcareous skeletal fragments (mostly foram fragments & undifferentiated skeletal debris), shale / mudstone RFs, chert RFs, igneous RFs, organic matter particles, and glauconite. The mineralogy of the siltstone is comprised of plagioclase feldspar (~19%), quartz (~12%), calcite (~12%), dolomite (~7%), pyrite (~3%), k-feldspar (~1%), amorphous material (~12%) and clay minerals (~34%) [seeTable I]. The clay mineral suite is dominated by mixed-layered illite/smectite (29%) + subordinate amounts of chlorite (2%), illite/mica (2%), and kaolinite (1%). This interval is likely to serve as an effective reservoir seal.

22341-01 Photo Index:

Sample ID	Magnification
22341-01A	400X
22341-01B	1500X
22341-01C	6000X
22341-01D	500X
22341-01E	1300X
22341-01F	5000X

Intergranular macro-porosity	BP
Calcareous skeletal fragment	CS
Detrital clay	DM
Grain-replacement clay	AM

22341-01A 400X



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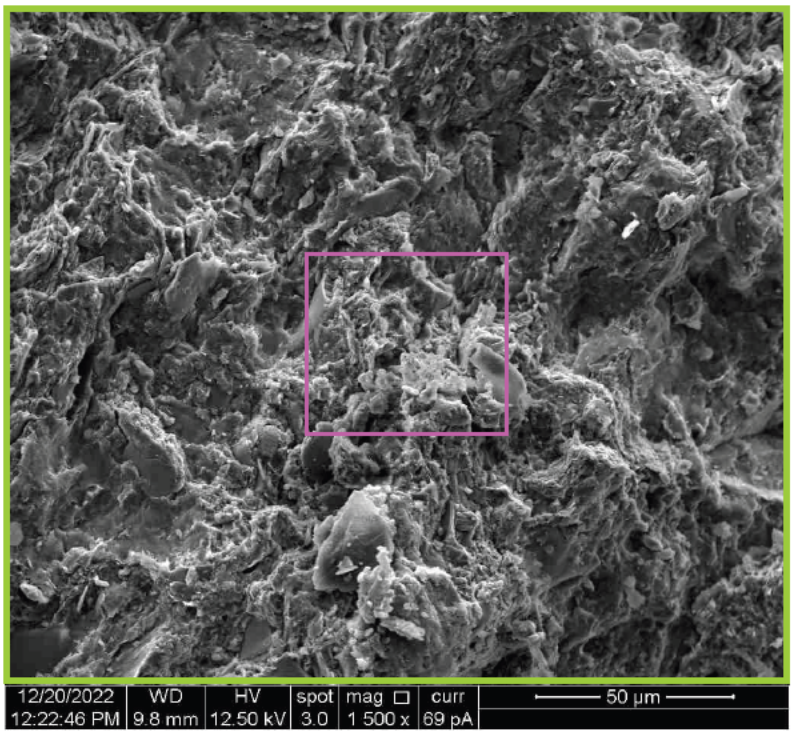

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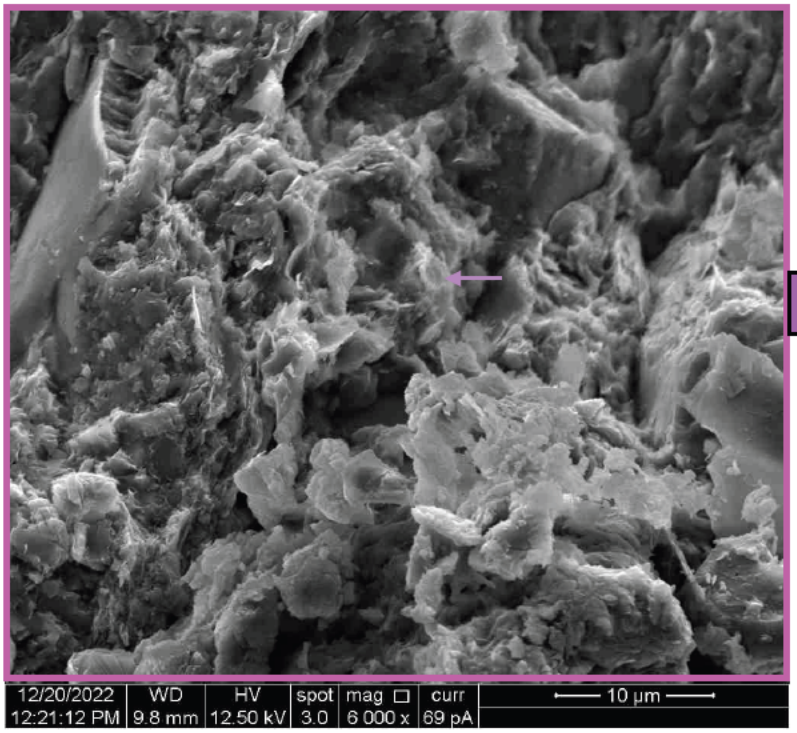

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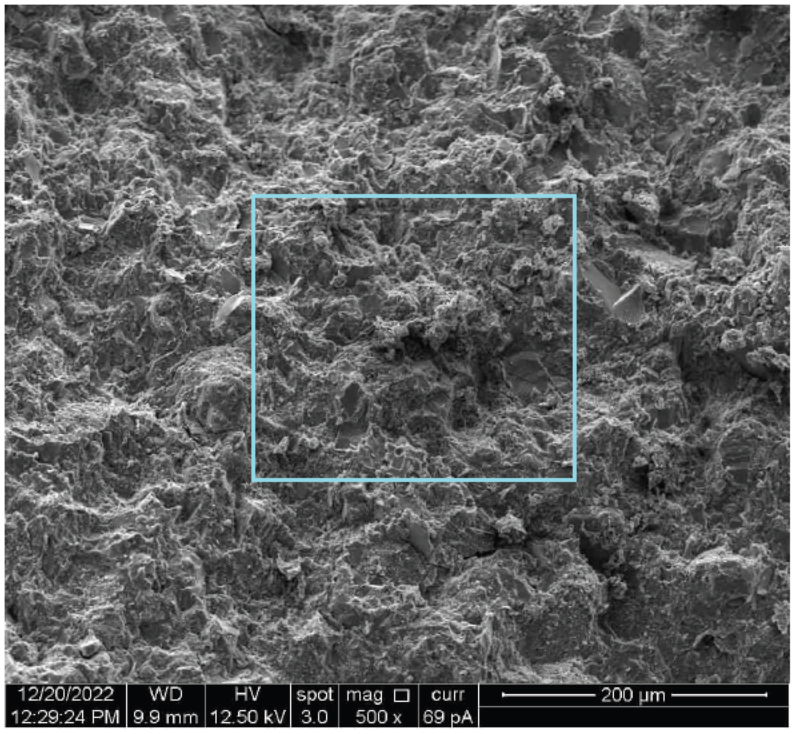
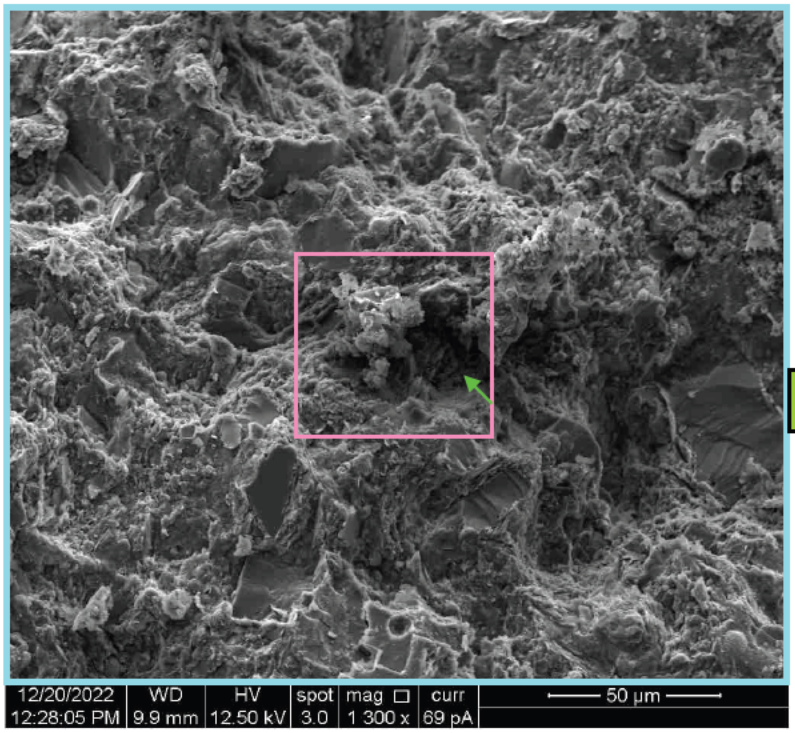
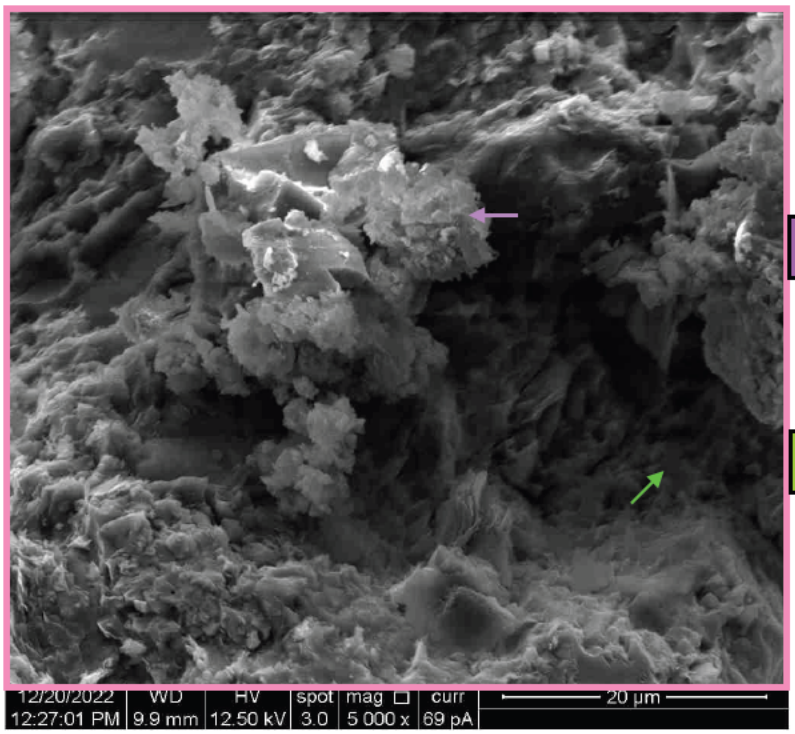


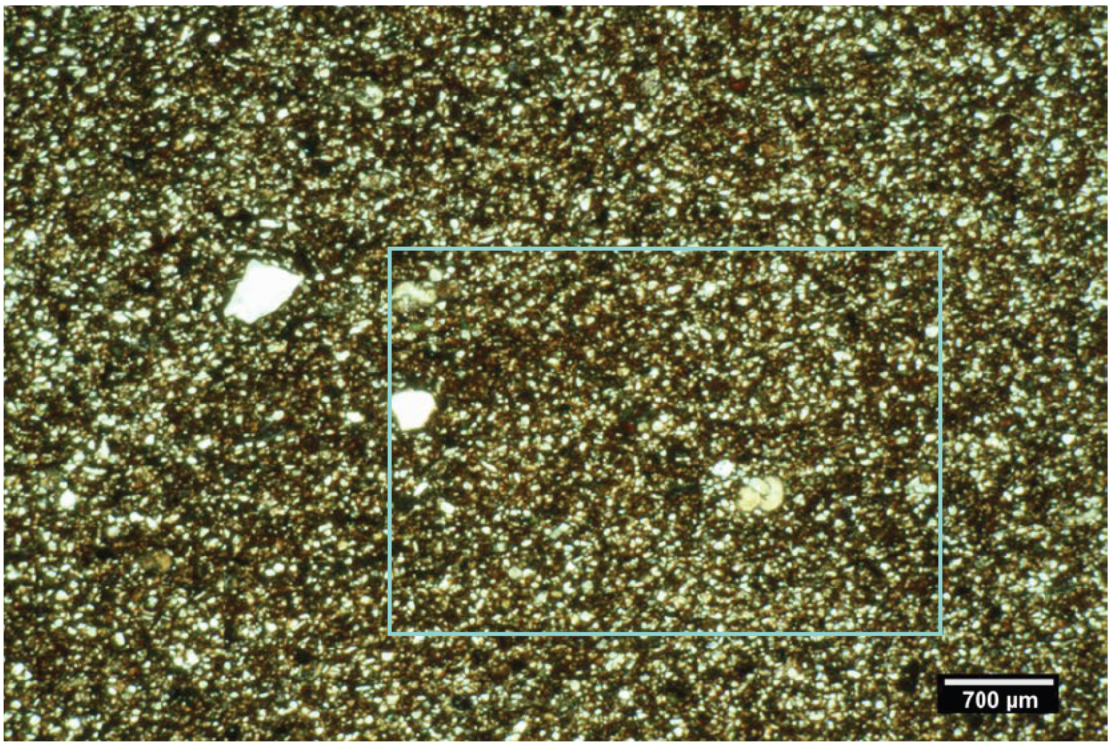
22341-01E 1300X



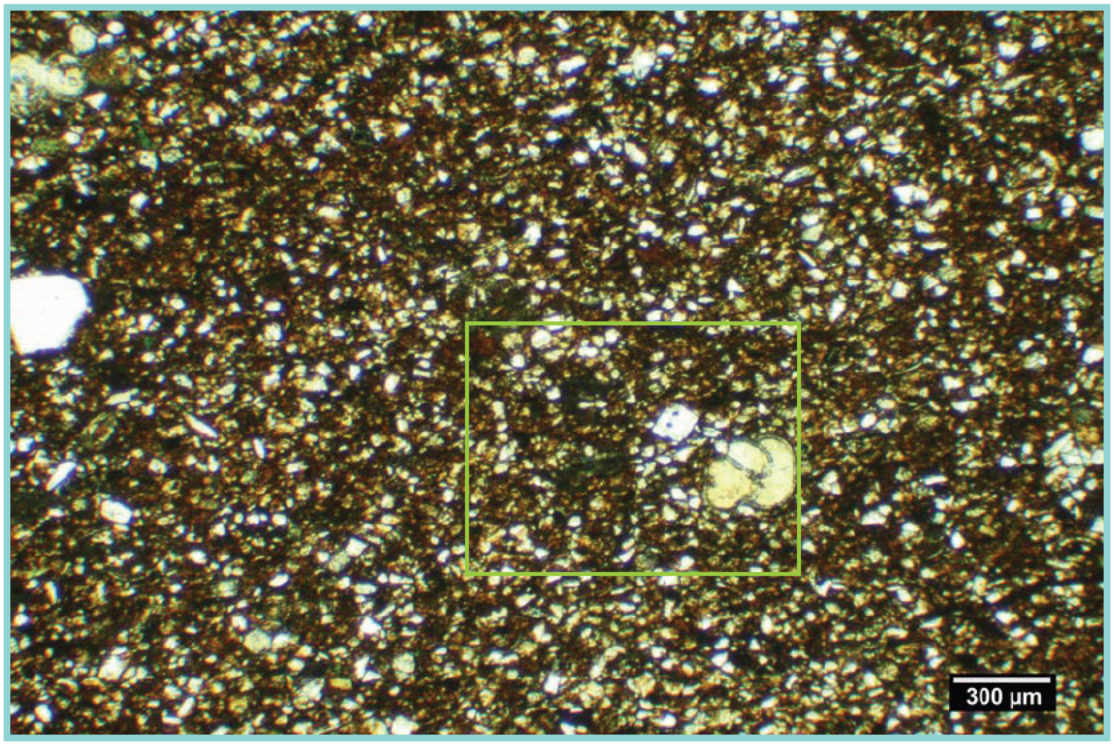
22341-01F 5000X



8685.5 ft.; MI#22341-01

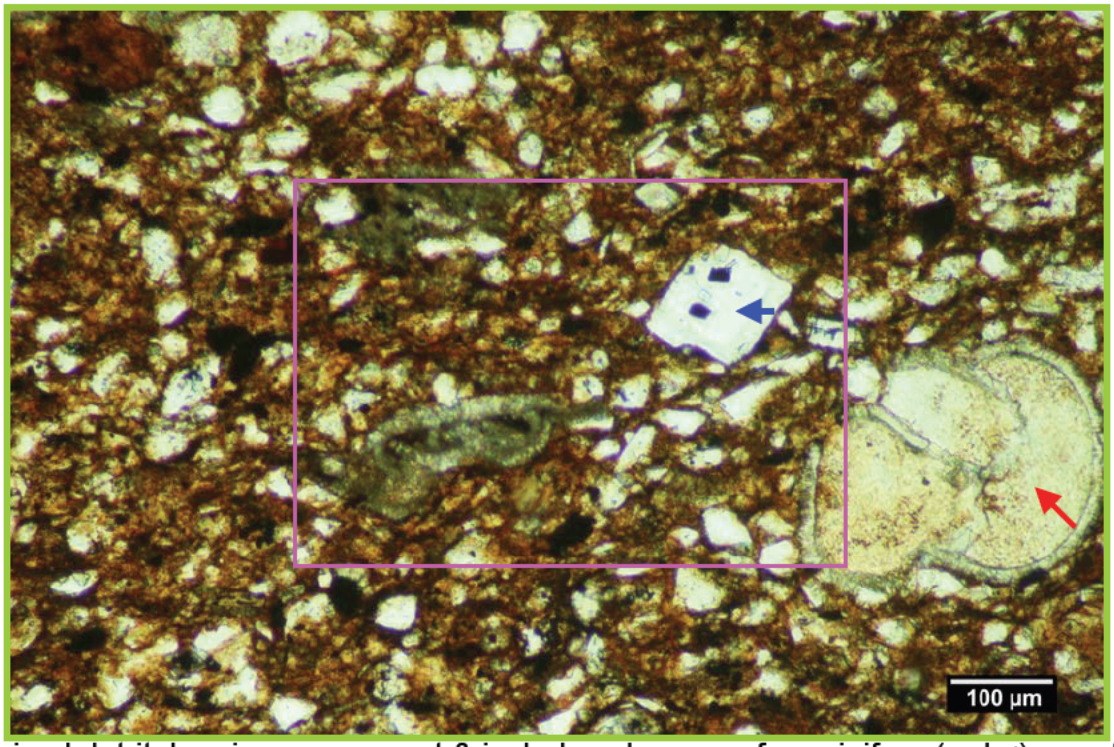


1A. Low magnification view of a non-porous, burrow-mottled, matrix-rich sandy siltstone. The highlighted area is detailed in Figure 1B.

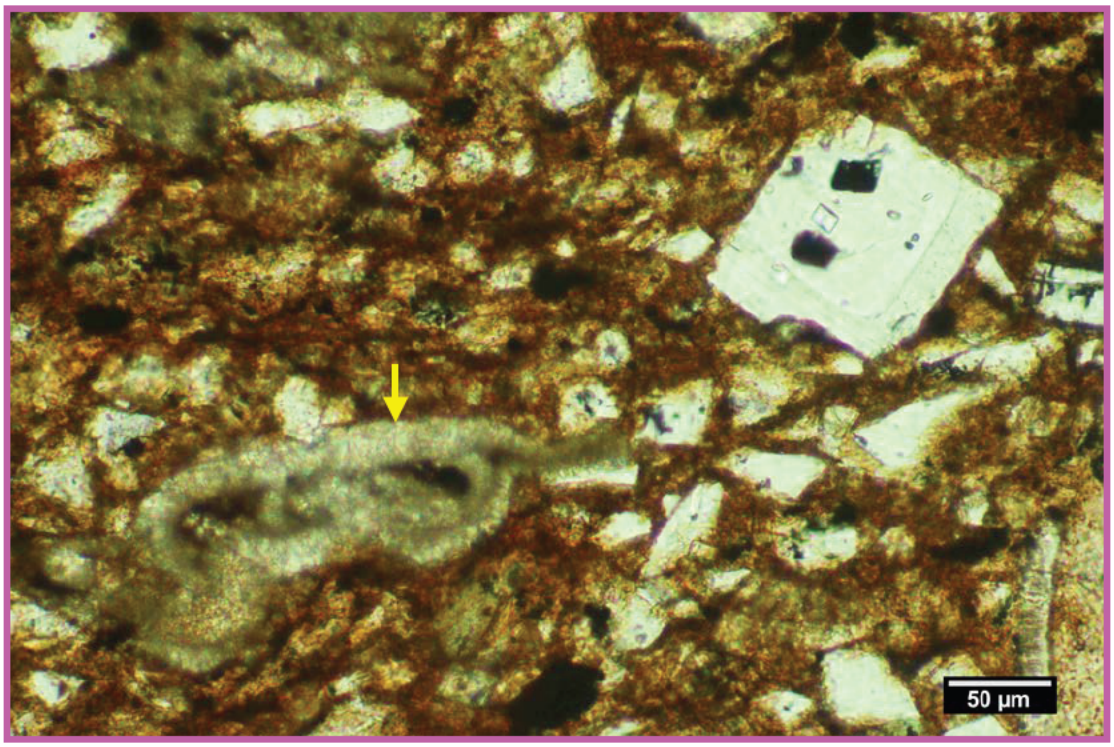


1B. The siltstone framework is moderately to densely packed, with organic-rich detrital clay filling all of the available intergranular space. The highlighted area is detailed in Figure 1C.

8685.5 ft.; MI#22341-01



1C. Sand-sized detrital grains are present & include calcareous foraminifera (red <), quartz feldspar grains (blue <) and altered igneous rock fragments. The highlighted area is detailed in Figure 1D.



1D. The framework is densely packed and non-porous. Burial compaction has locally collapsed selected (un-cemented) foram tests (yellow <).

AERA

Well: 888N-12 | Field: Coalinga

8697.5 ft.

MI#22341-02 - SEM

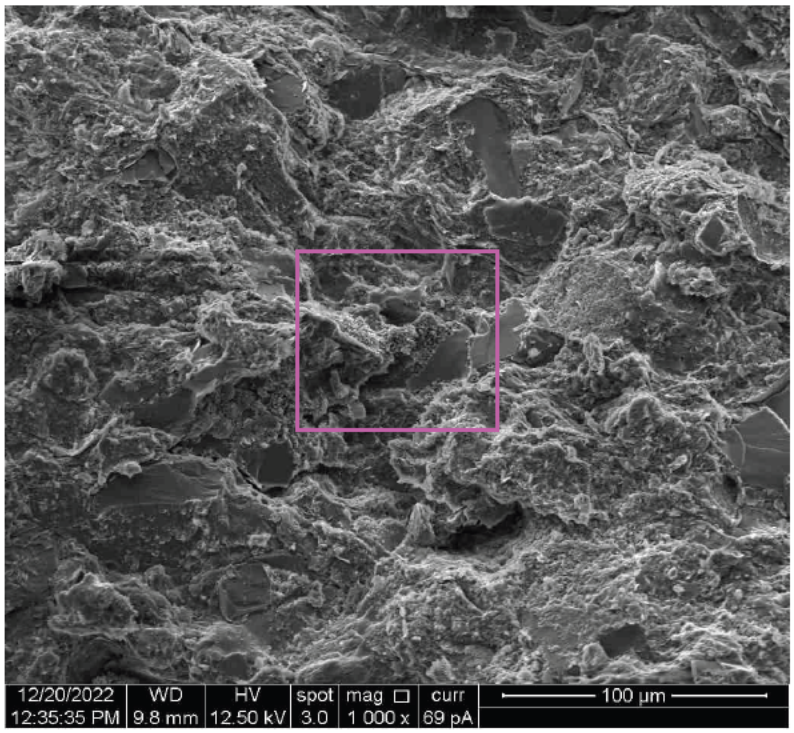
Summary: This core sample is characterized as a non-porous, matrix-rich, fossiliferous, sandy siltstone. The siltstone is moderately well sorted, sub-angular, and moderately packed, with a mean grain diameter of ~ 0.04 mm and a maximum grain diameter of 1.11 mm (echinoderm skeletal fragment). Bioturbation has obscured the original ripple-bedded fabric and has serve to homogenize the sedimentary fabric. Calcareous skeletal fragments include: foram tests, rare echinoderm plates, and undifferentiated skeletal debris). Selected forams are in-filled with pore-filling clay &/or calcite spar cement. Several of the skeletal grains are crushed due to burial compaction. The detrital assemblage includes quartz (monocrystalline & polycrystalline), feldspar (plagioclase > k-feldspar), calcareous skeletal fragments, shale / mudstone RFs, chert RFs, organic matter particles, and glauconite. The mineralogy of the siltstone is comprised of plagioclase feldspar (~23%), quartz (~19%), calcite (~11%), pyrite (~3%), k-feldspar (~2%), siderite (~1%), amorphous material (~10%) and clay minerals (~31%) [seeTable I]. The clay mineral suite is dominated by mixed-layered illite/smectite (24%) + subordinate amounts of chlorite (3%), illite/mica (3%), and kaolinite (1%). The siltstone lacks inter-connected macroporosity & is likely to serve as an effective reservoir seal.

22341-02 Photo Index:

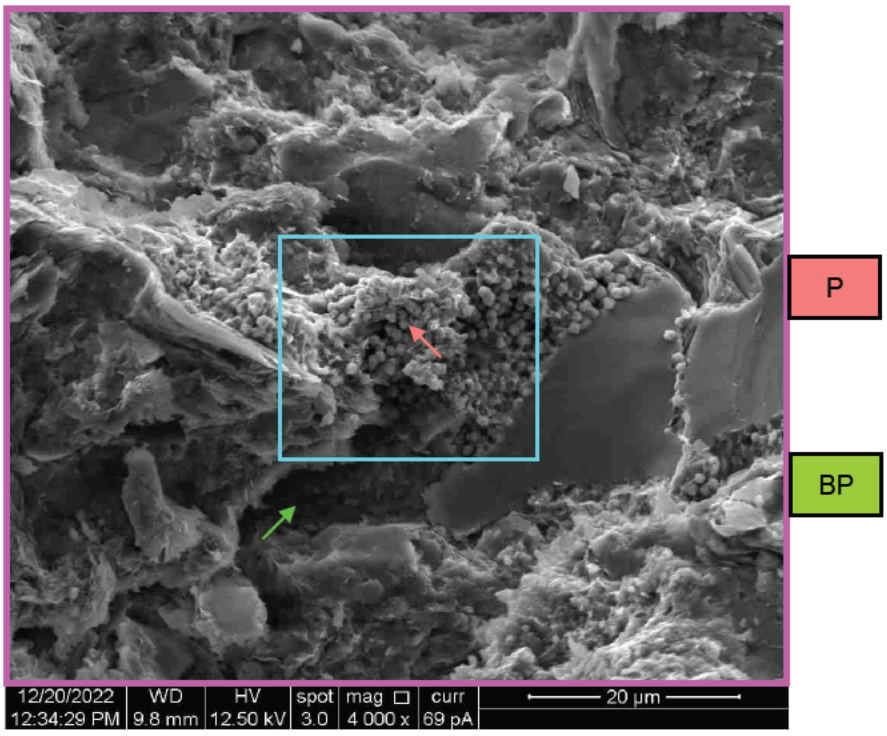
Sample ID	Magnification
22341-02A	1000X
22341-02B	4000X
22341-02C	12000X
22341-02D	700X
22341-02E	2000X
22341-02F	8000X

Intergranular macro-porosity	BP
Calcite spar cement	CS
Detrital clay	DM
Grain-replacement clay	AM
Pyrite cement	P

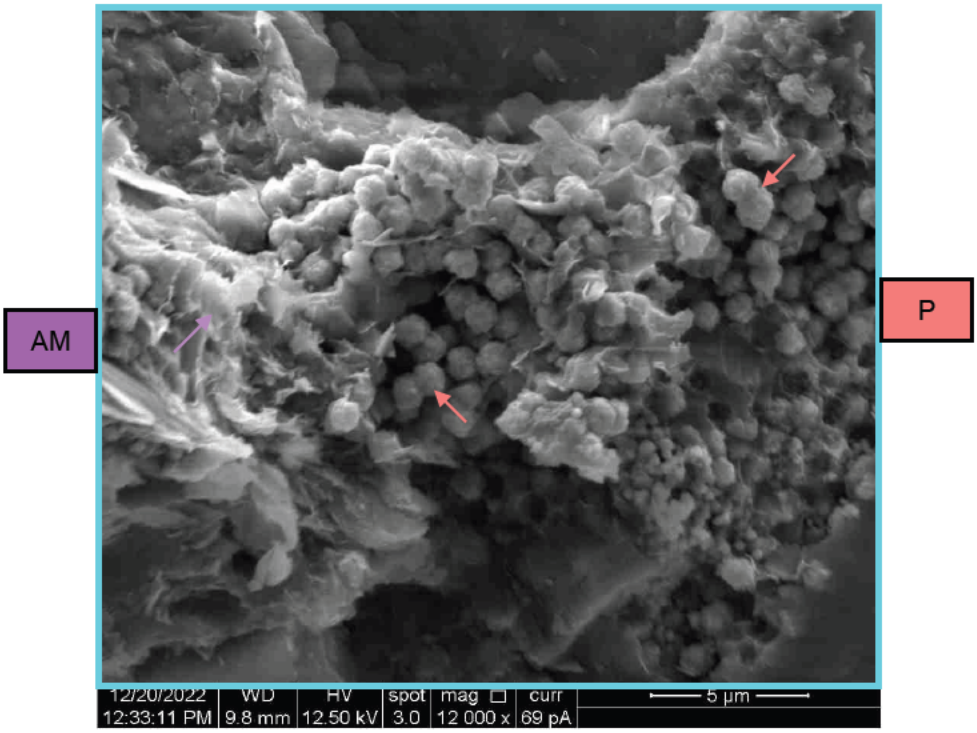
22341-02A 1000X



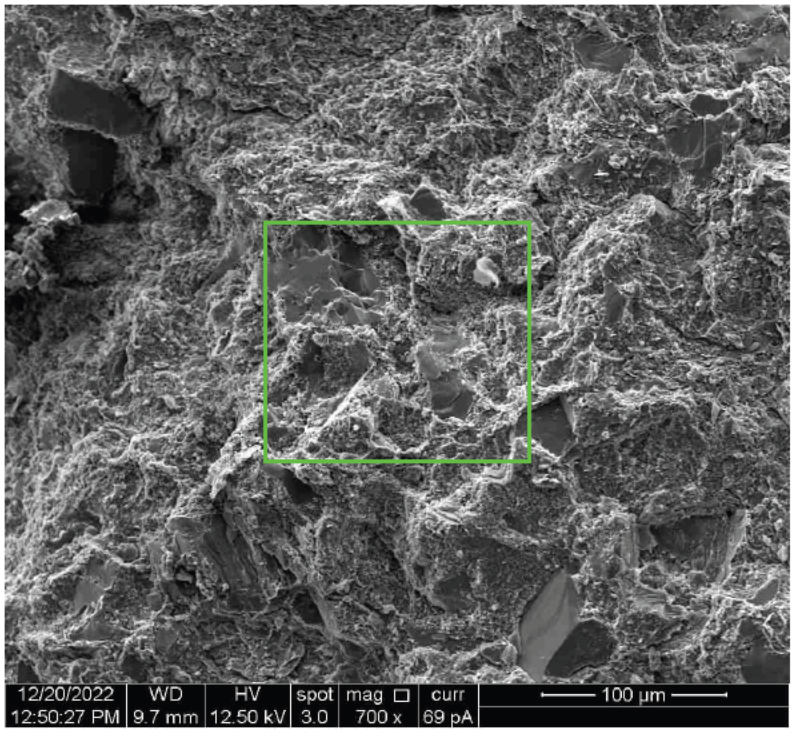
22341-02B 4000X



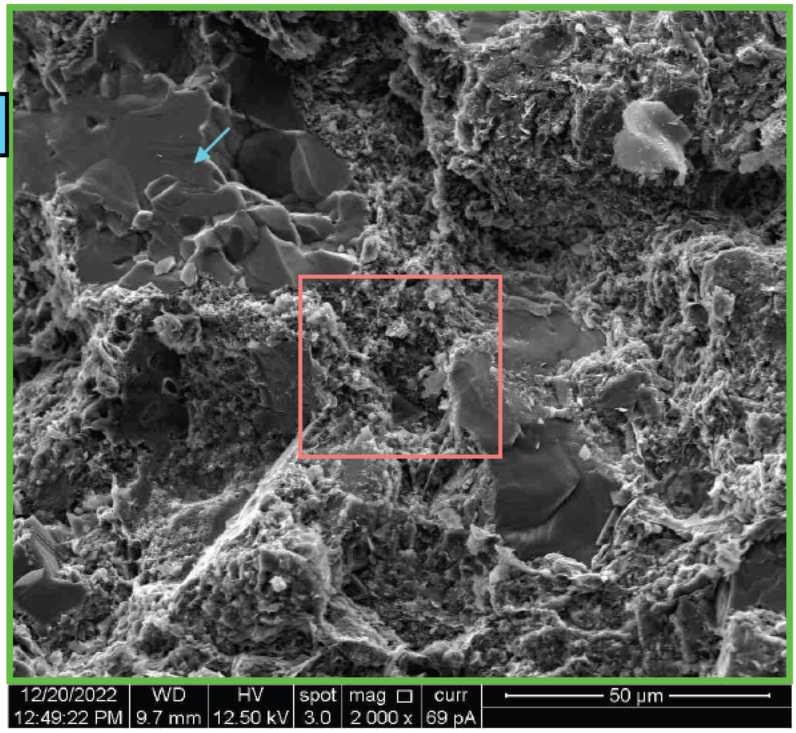
22341-02C 12000X



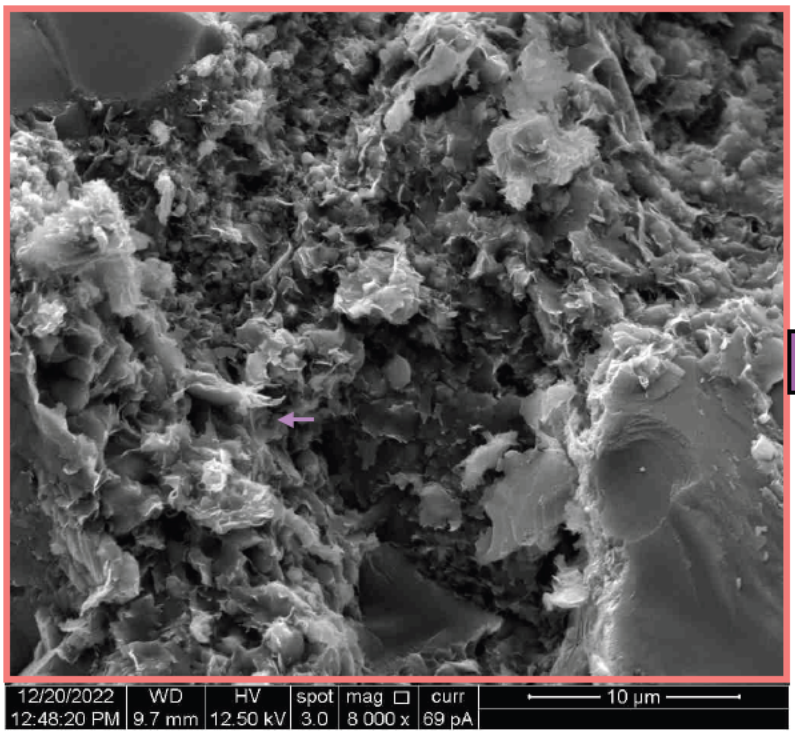
22341-02D 700X



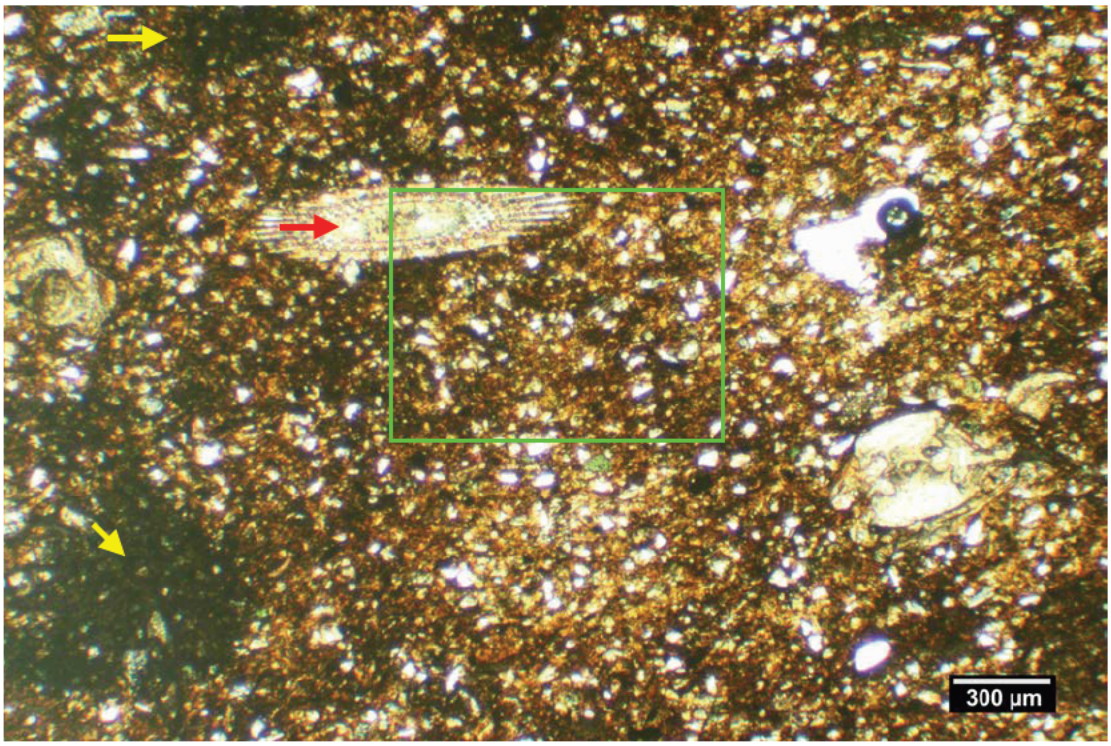
22341-02E 2000X



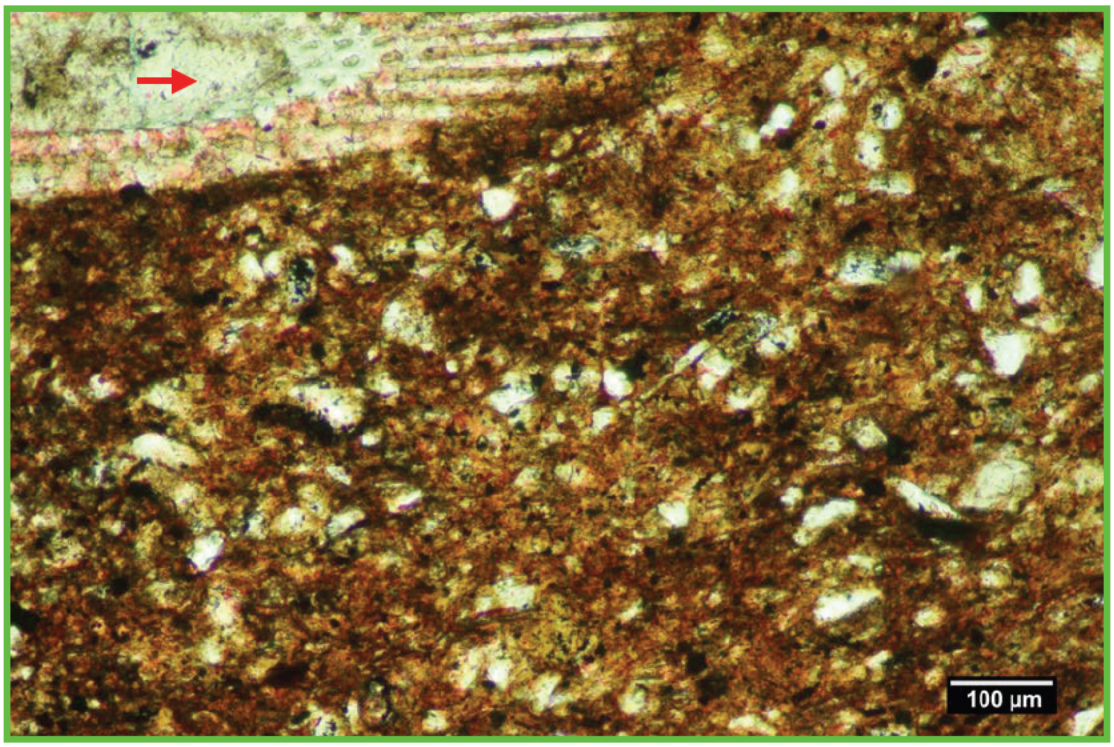
22341-02F 8000X



8697.5 ft.; MI#22341-02

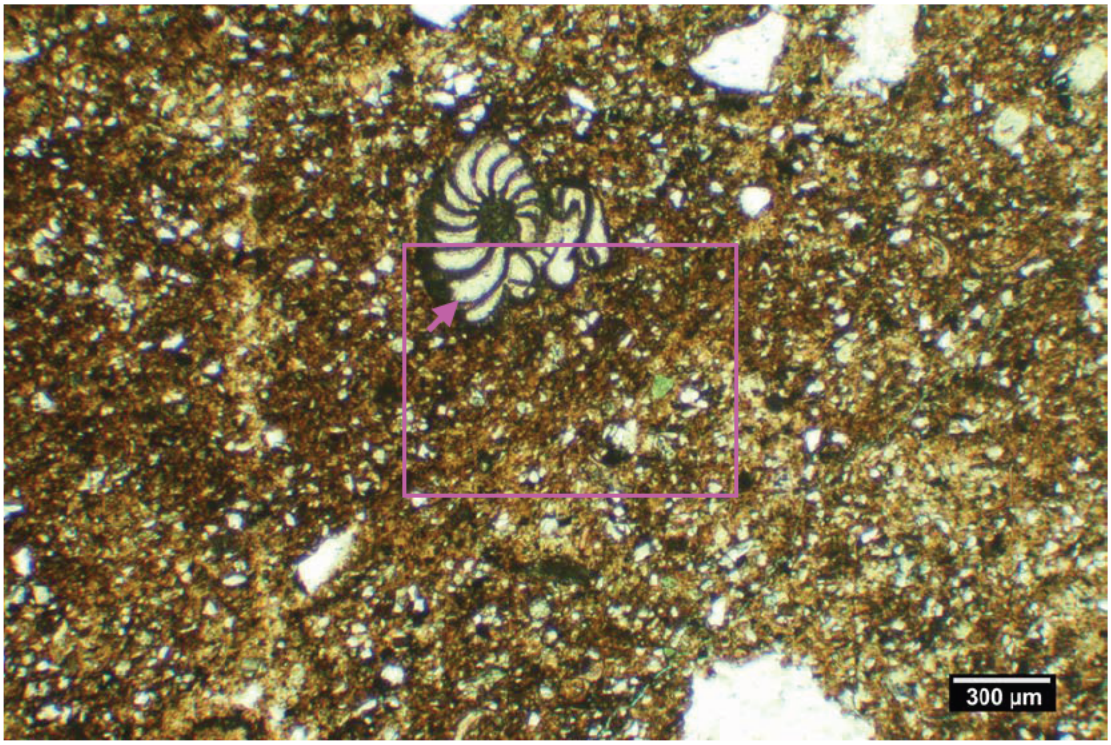


2A. A non-porous, burrow-mottled, matrix-rich, fossiliferous, sandy siltstone. Note the burrow molds in-filled with organic-rich matrix material (yellow <). The highlighted area is detailed in Figure 2B.

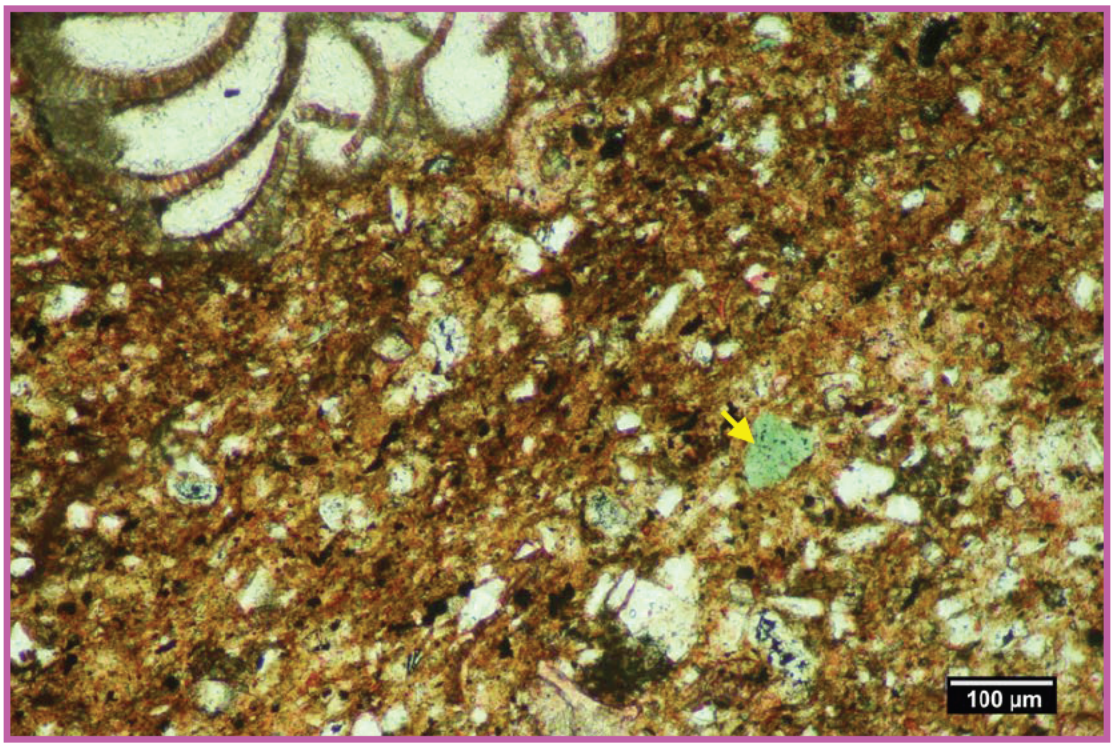


2B. An echinoderm plate (red <) supported in a groundmass of matrix-rich siltstone. Clay minerals & amorphous organic materials comprise ~ 41% of the siltstone mass.

8697.5 ft.; MI#22341-02



2C. A calcite spar-filled foram test (magenta <). Periodic storm events & bioturbation have influenced the grain distribution & sorting of this sandy siltstone.



2D. Silt-sized grains of glauconite (green; yellow <) are locally present. The pore system is largely limited to intercrystalline microporosity + traces of sheltered interparticle porosity.

AERA

Well: 888N-12 | Field: Coalinga

8708.6 ft.

MI#22341-03 - SEM

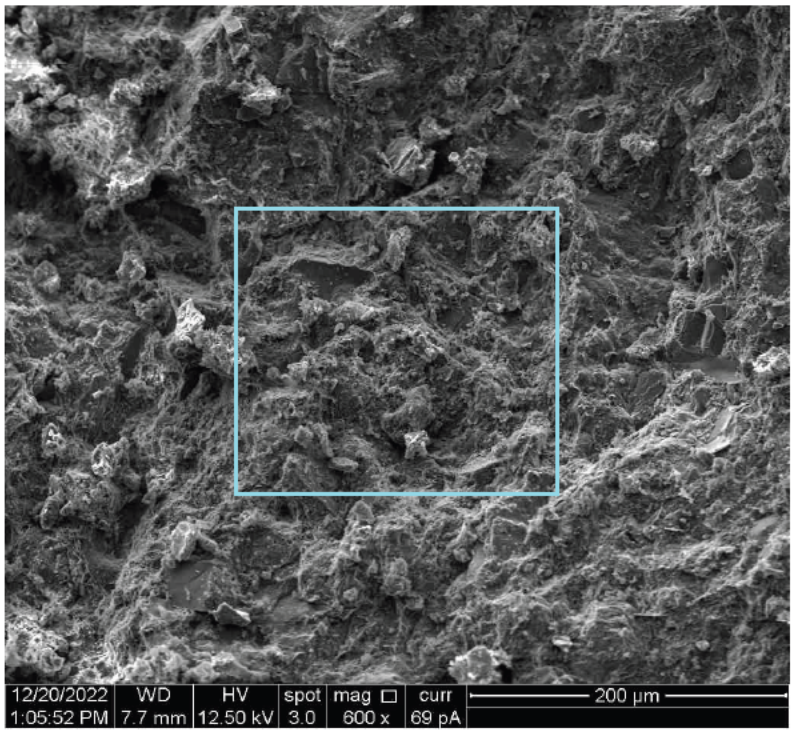
Summary: This core sample is comprised of non-porous, matrix-rich, fossiliferous, sandy siltstone. The siltstone fabric is moderately well sorted, sub-angular and moderately packed. The mean grain diameter is ~ 0.035 mm and a maximum grain diameter of 1.95 mm (calcareous foram test). Bioturbation has homogenized the sedimentary fabric. Calcareous skeletal fragments include foram tests and undifferentiated skeletal debris. Selected forams are in-filled with pore-filling clay &/or calcite spar cement. The detrital grain assemblage is moderately packed and displays common point-to-point intergranular contacts. Grain varieties include: quartz (monocrystalline & polycrystalline), feldspar (plagioclase > k-feldspar), calcareous skeletal fragments, shale / mudstone RFs, chert RFs, organic matter particles, and glauconite. XRD data (see Table I) indicates a mineralogy comprised of plagioclase feldspar (~20%), quartz (~16%), calcite (~11%), pyrite (~2.5%), k-feldspar (~2%), dolomite (~2%), amorphous material (~12%) and clay minerals (~34.5%) [seeTable I]. As within the other siltstone cores evaluated from this well, the clay mineral suite is dominated by mixed-layered illite/smectite (31%) + subordinate amounts of chlorite (2%), illite/mica (1%), and traces of kaolinite (0.5%). The siltstone lacks (effective) inter-connected macroporosity & is likely to perform as a low permeance reservoir seal.

22341-03 Photo Index:

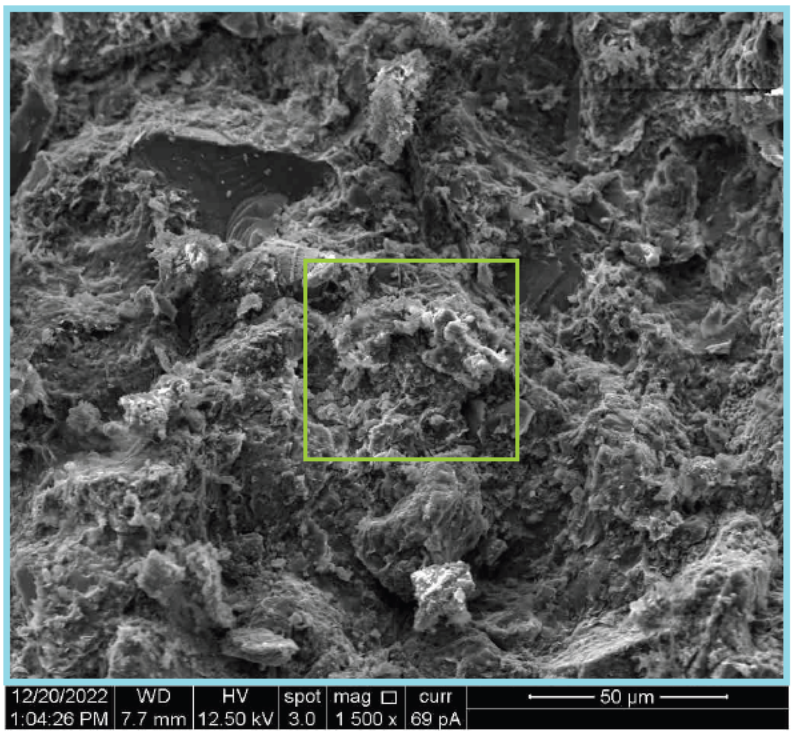
Sample ID	Magnification
22341-03A	600X
22341-03B	1500X
22341-03C	6000X
22341-03D	500X
22341-03E	1300X
22341-03F	5000X

Intergranular macro-porosity	BP
Calcite spar cement	CS
Detrital clay	DM
Grain-replacement clay	AM
Pyrite cement	P

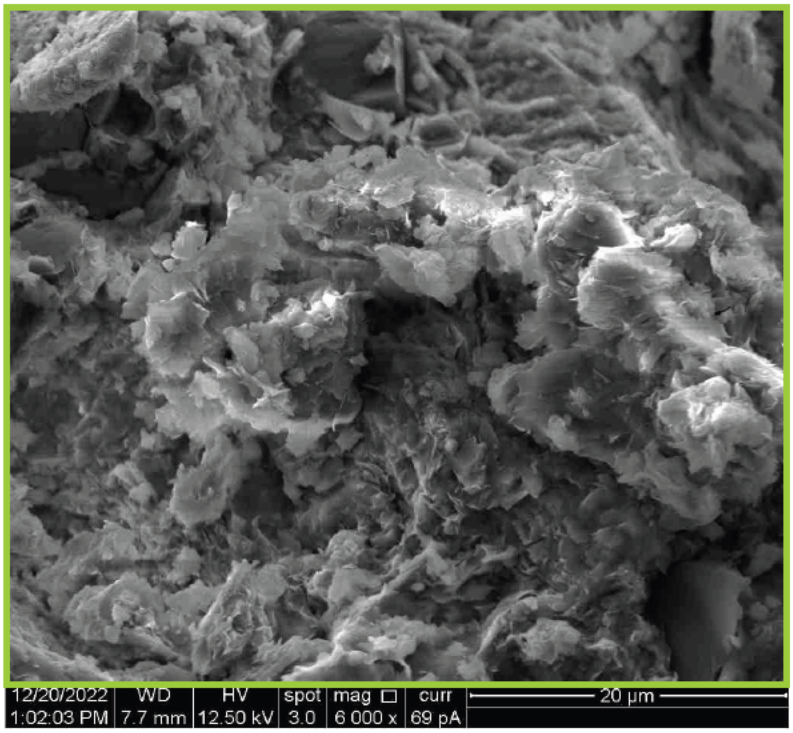
22341-03A 600X



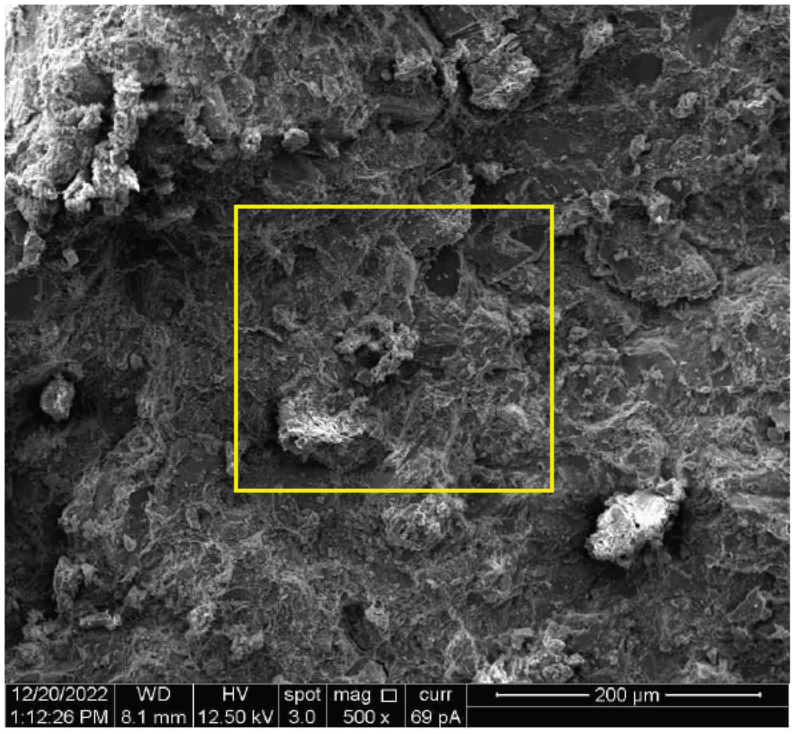
22341-03B 1500X



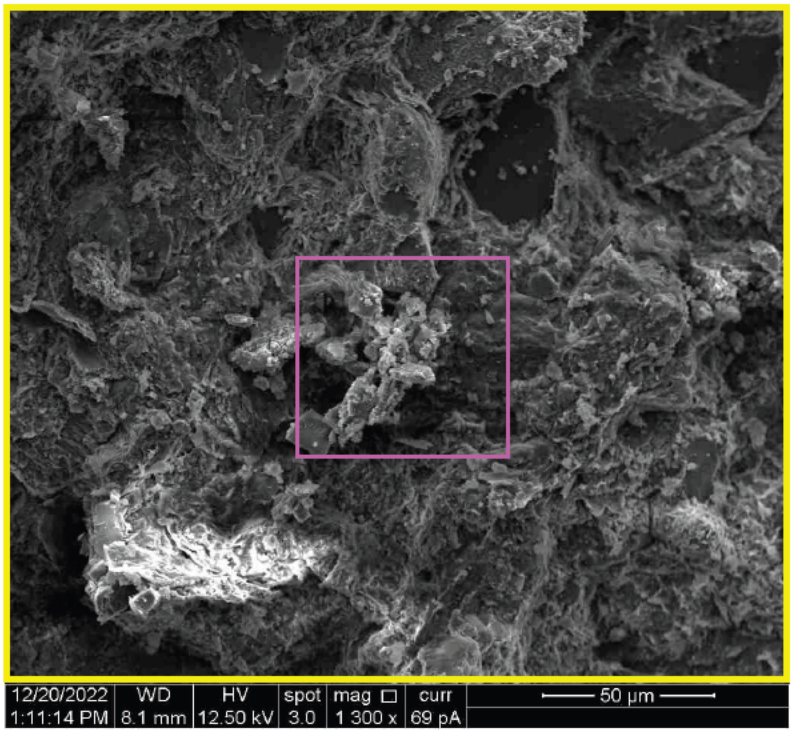
22341-03C 6000X



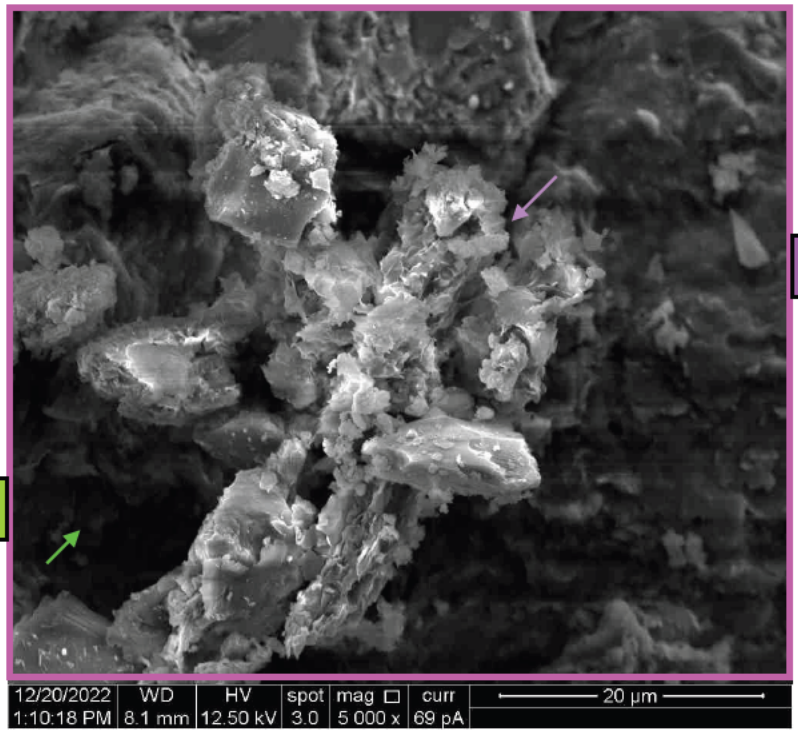
22341-03D 500X



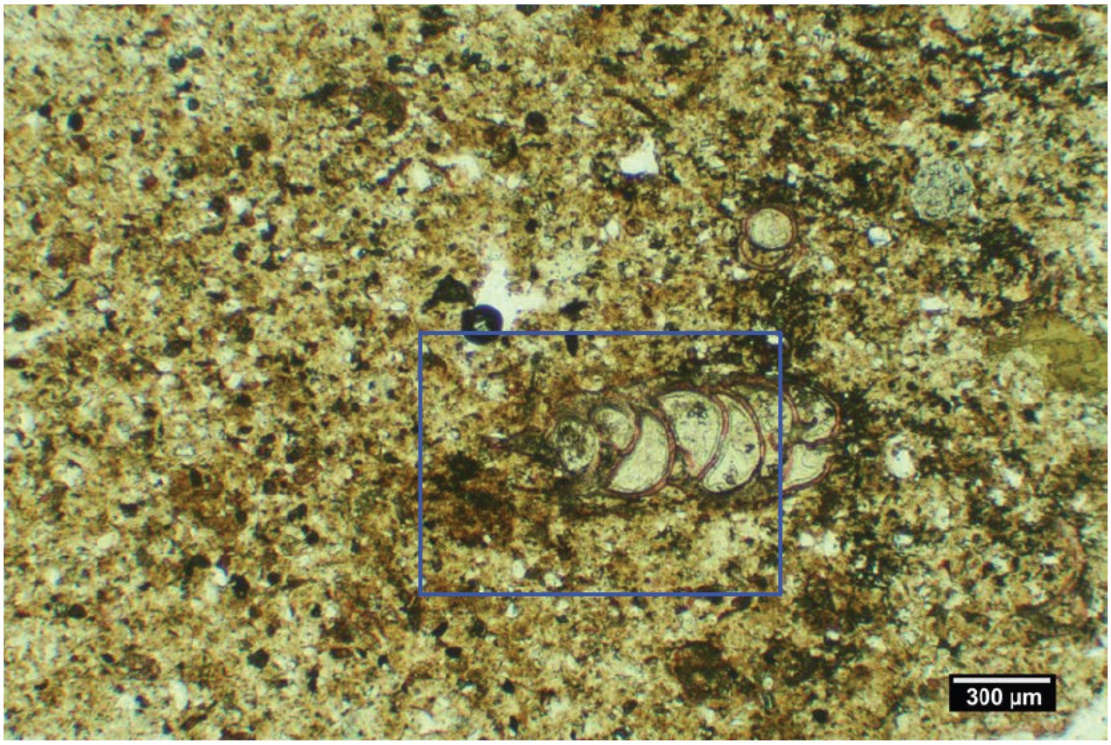
22341-03E 1300X



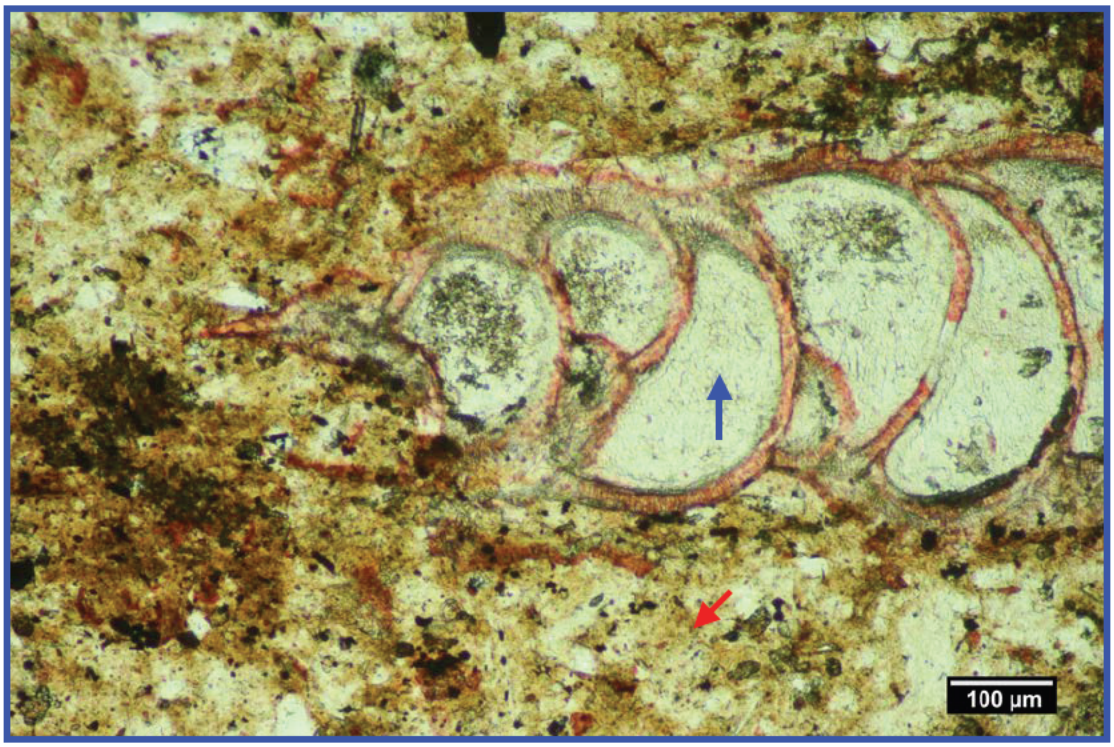
22341-03F 5000X



8708.6 ft.; MI#22341-03

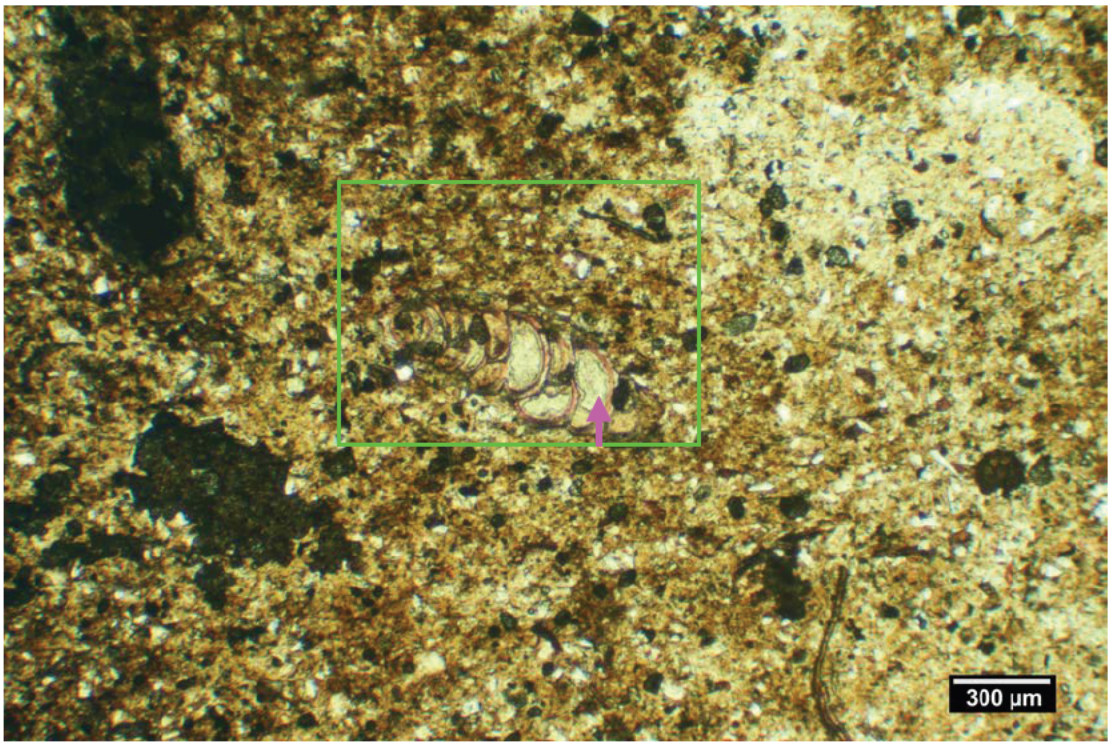


3A. The void system is limited to traces of sheltered inter-particle porosity + intercrystalline microporosity. The highlighted area is detailed in Fig, 3B.

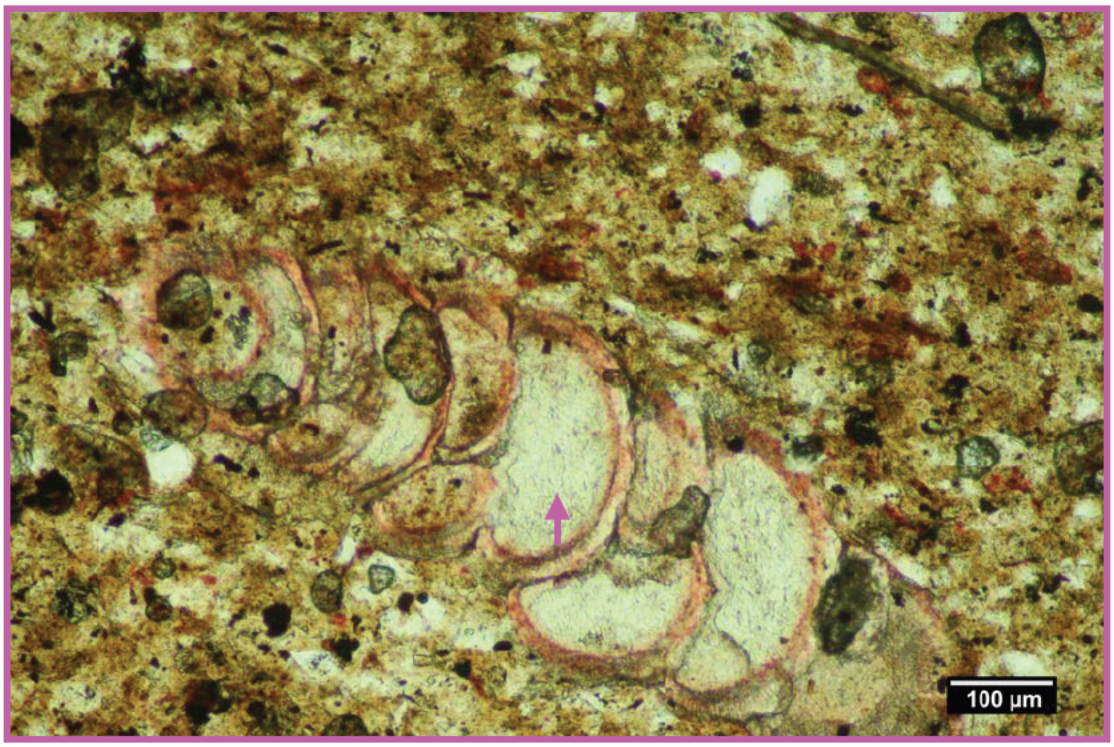


3B This foram test is in-filled with vermicular kaolinite (blue <).The groundmass of the siltstone (red <) consists of densely bundled & compressed detrital clay.

8708.6 ft.; MI#22341-03



3C This siltstone is non-porous, matrix-rich and fossiliferous. Selected foram tests are in-filled with microporous clay matrix materials (magenta <). The highlighted area is detailed in Fig. 3D.



3D. All of the available intra-particle & intergranular spaces have been filled with clay matrix. The clay filling this foram test is ML illite/smectite (magenta <).

AERA

Well: 888N-12 | Field: Coalinga

8715.5 ft.

MI#22341-04 - SEM

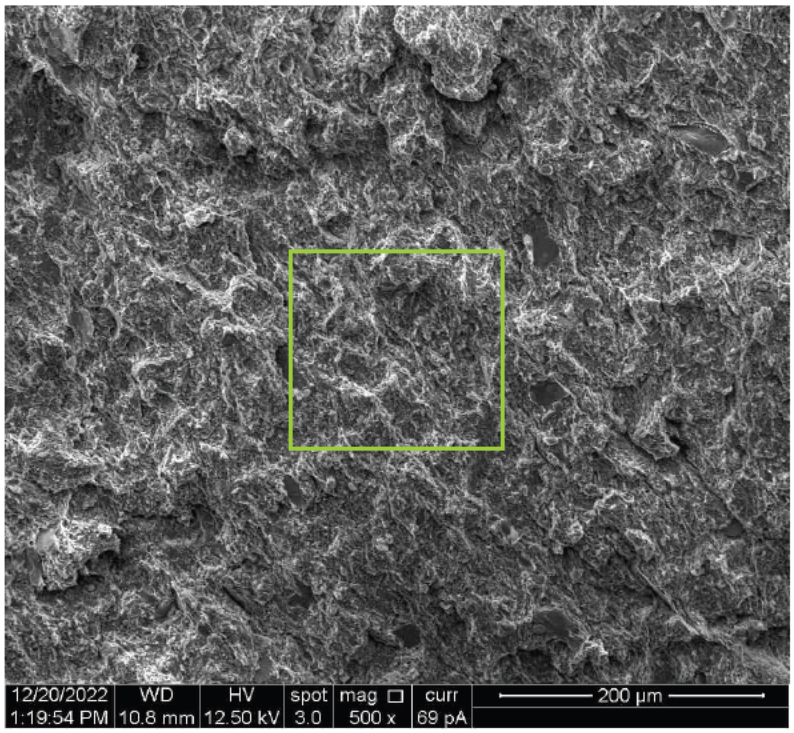
Summary: This core sample is comprised of non-porous, organic matter & clay matrix-rich, burrow-mottled, fossiliferous, sandy siltstone. The siltstone fabric is moderately well sorted, sub-angular and moderately packed. The mean grain diameter is ~ 0.045 mm and a maximum grain diameter of 1.5 mm (re-crystallized igneous RF). The fabric is burrow-mottled & exhibits remnants of ripple-bedding. Calcareous foram tests and undifferentiated skeletal grain fragments are dispersed throughout the fabric. All of the intra-particle growth chambers of the forams in this slide are in-filled with authigenic clay matrix. The detrital grain assemblage is moderately to densely packed and displays common point-to-point & elongated intergranular contacts. Grain varieties include: quartz (monocrystalline & polycrystalline), feldspar (plagioclase > k-feldspar), calcareous skeletal fragments, shale / mudstone RFs, chert RFs, re-crystallized igneous RFs, organic matter particles, and glauconite. XRD data (see Table I) indicates a mineralogy comprised of quartz (~17%), plagioclase feldspar (~11%), calcite (~7%), pyrite (~1.5%), k-feldspar (~1%), dolomite (~1%), amorphous material (~15%) and clay minerals (~46.5%) [seeTable I]. The clay suite within this interval is limited to mixed-layered illite/smectite (46%) & traces of illite/mica (0.5%). The siltstone lacks (effective) inter-connected macroporosity & is likely to perform as a low permeance reservoir seal.

22341-04 Photo Index:

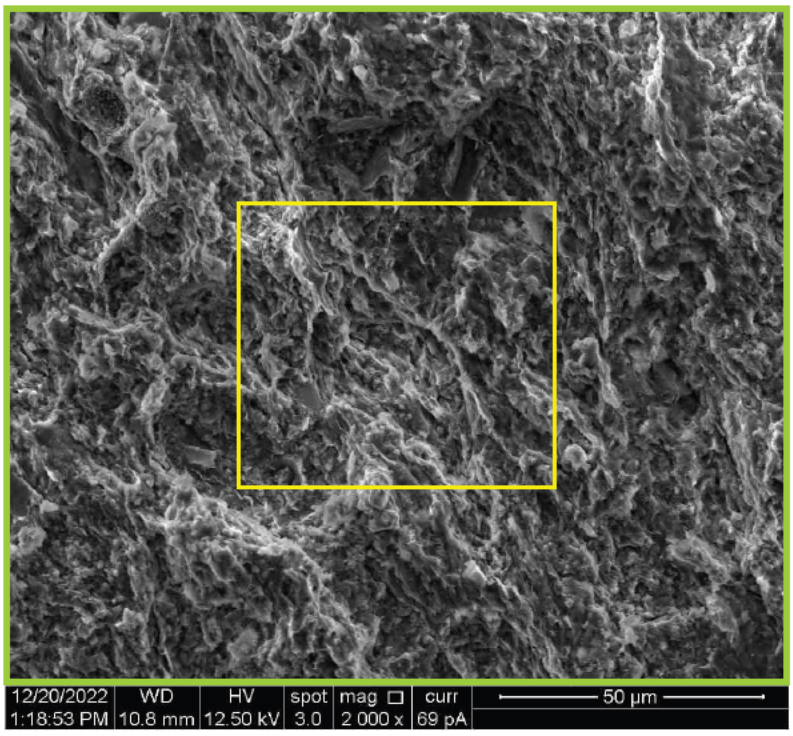
Sample ID	Magnification
22341-04A	500X
22341-04B	2000X
22341-04C	5000X
22341-04D	500X
22341-04E	1300X
22341-04F	5000X

Intergranular macro-porosity	BP
Calcite spar cement	CS
Detrital clay	DM
Grain-replacement clay	AM
Pyrite cement	P

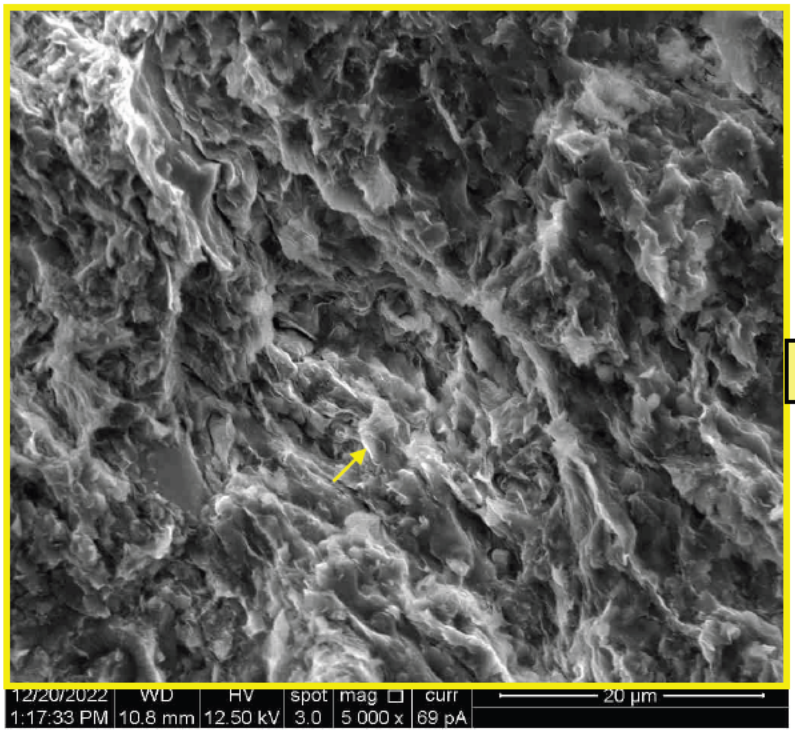
22341-04A 500X



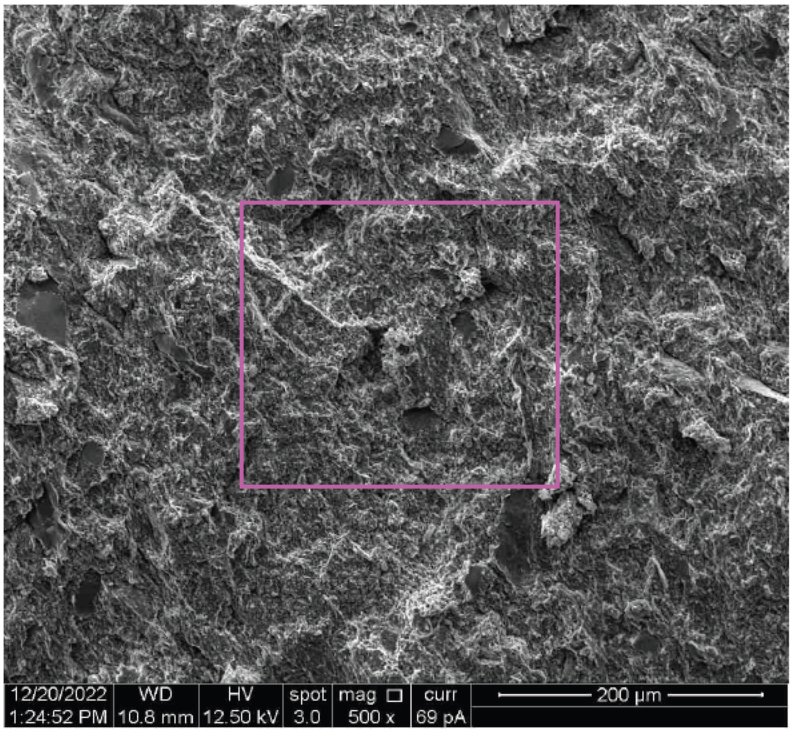
22341-04B 2000X



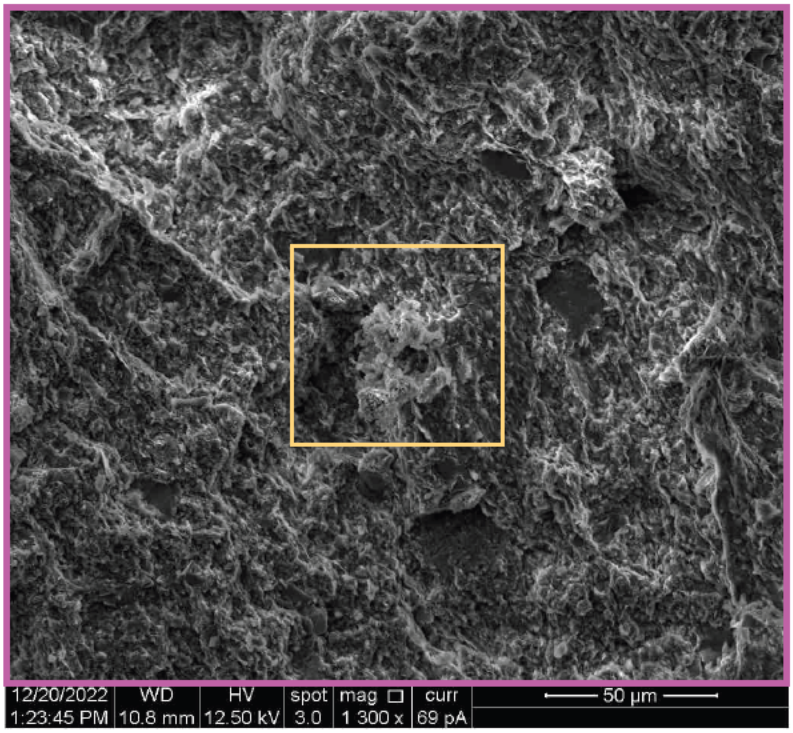
22341-04C 5000X



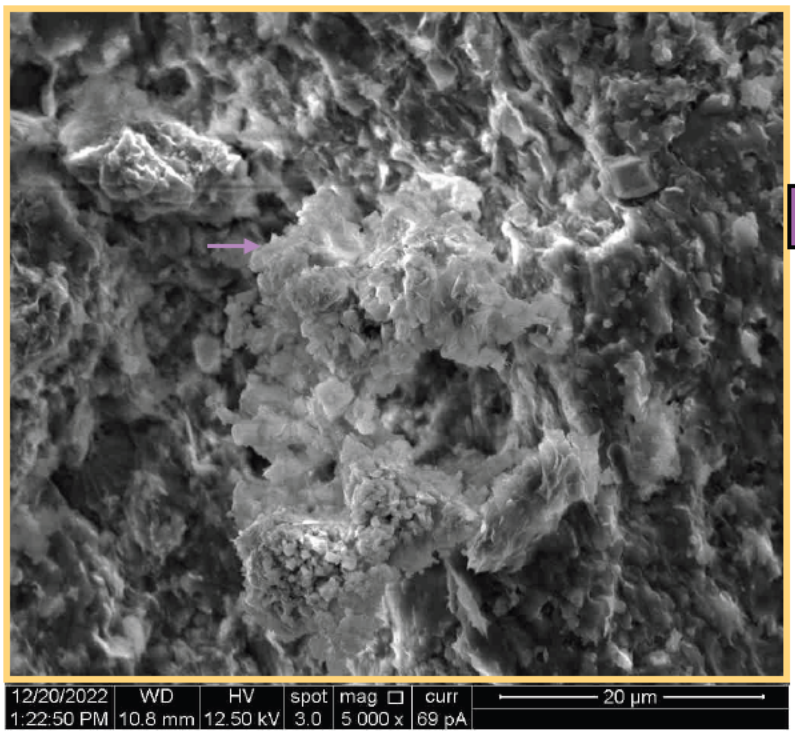
22341-04D 500X



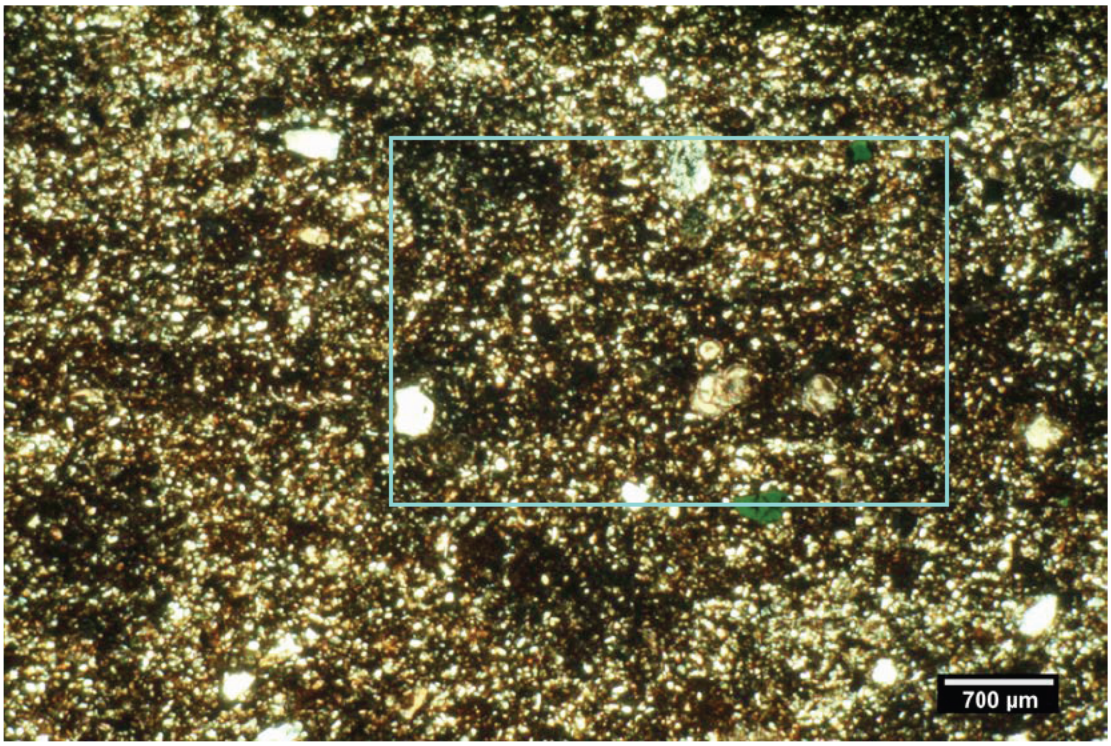
22341-04E 1300X



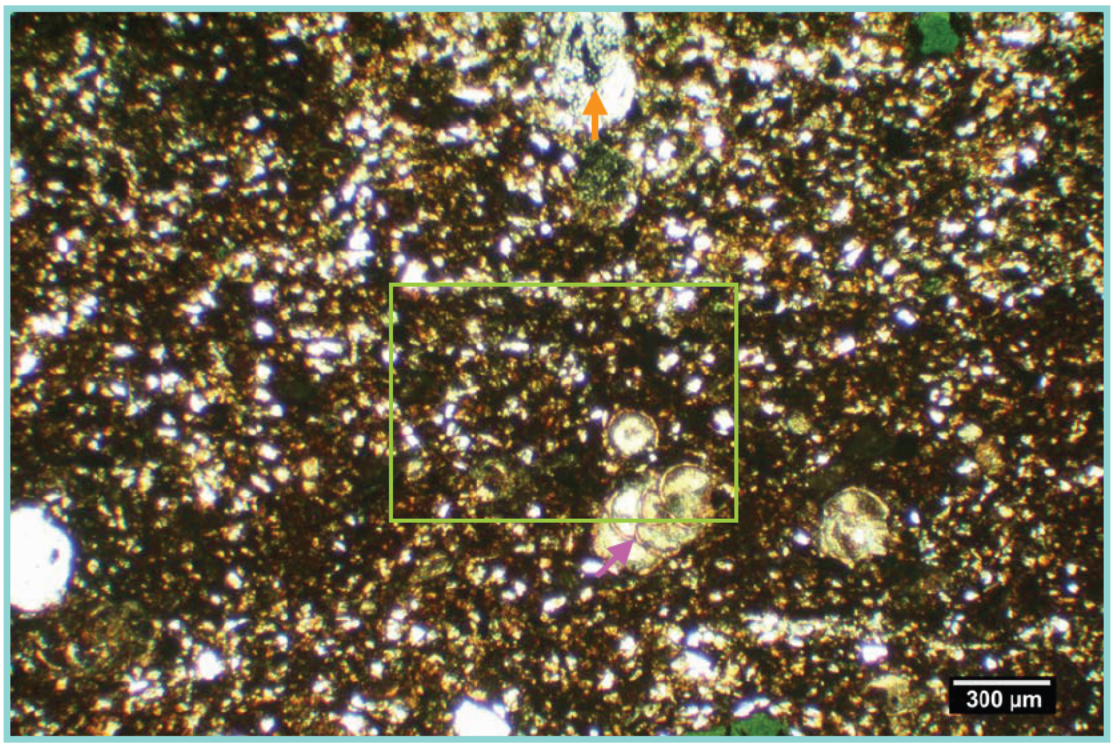
22341-04F 5000X



8715.5 ft.; MI#22341-04

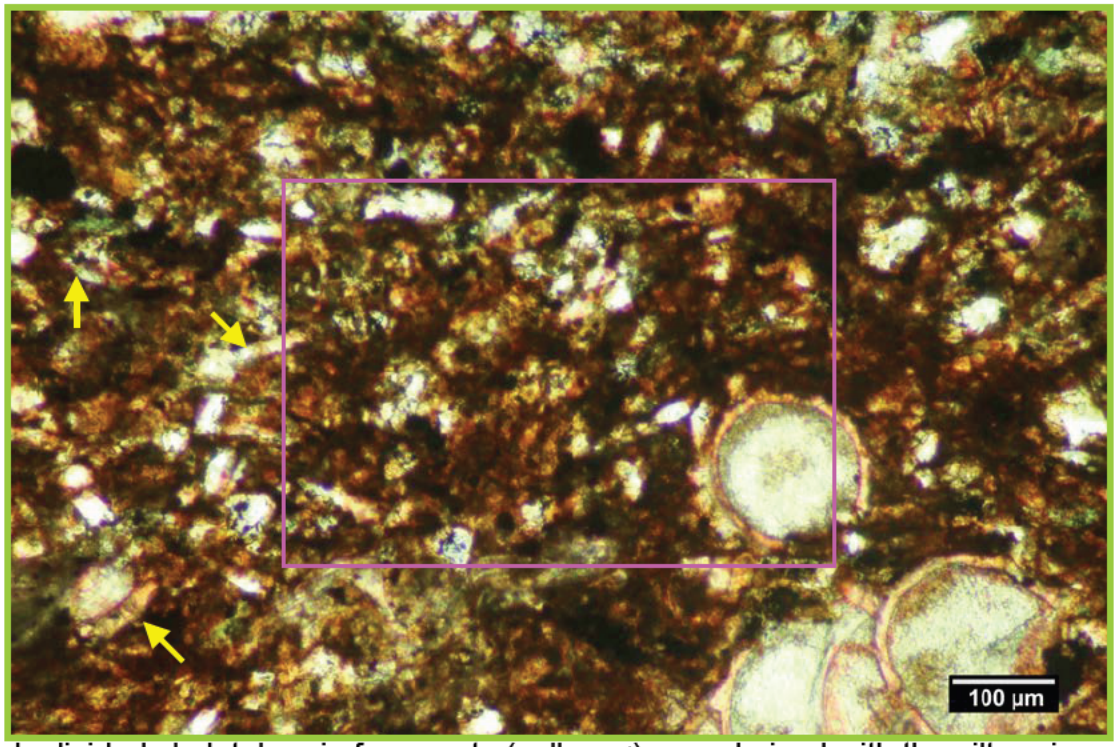


4A. The core is comprised of non-porous, organic matter & clay matrix-rich, burrow-mottled, fossiliferous, sandy siltstone. The highlighted area is detailed in Figure 4B.

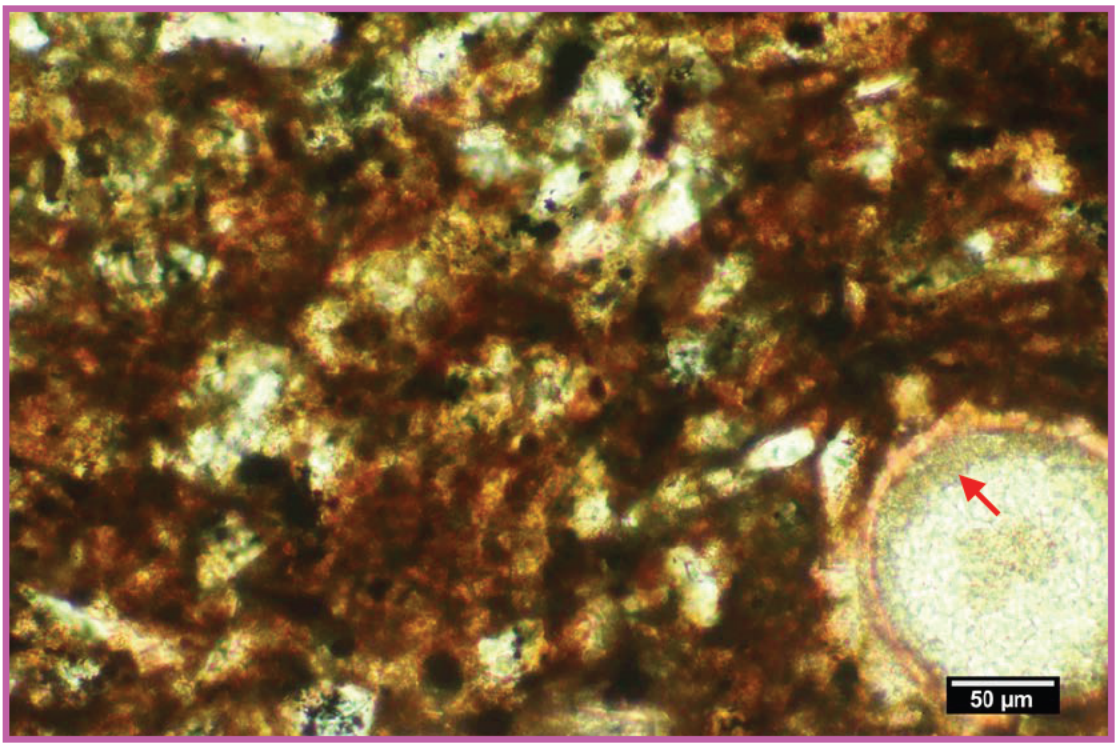


4B. Scattered foram tests (magenta <) & re-crystallized rock fragments (orange <) are present in the siltstone fabric. The highlighted area is detailed in Fig. 4C.

8715.5 ft.; MI#22341-04



4C. Finely divided skeletal grain fragments (yellow <) are admixed with the silt grains and pore-filling clay matrix. Amorphous material has contributed to the opacity of the pore-filling clay.



4D. Detailed view of the highlighted area from Fig. 4C. The ID surface of the foram test are rimmed with very finely crystalline dolomite cement + authigenic clay (red <).

AERA

Well: 888N-12 | Field: Coalinga

8734.5 ft.

MI#22341-05 - SEM

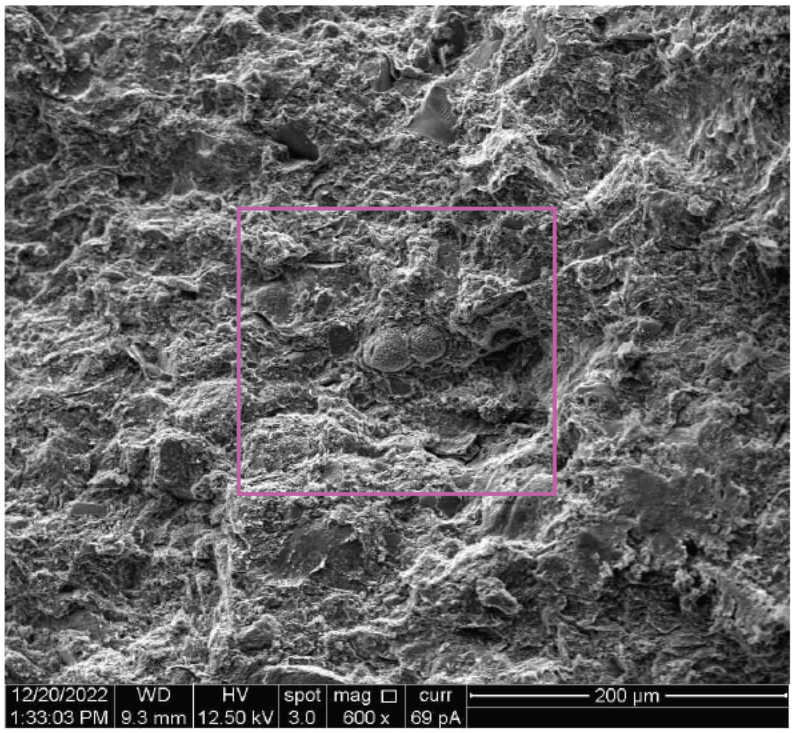
Summary: This core sample is comprised of matrix-rich, calcareous & fossiliferous, sandy siltstone. The siltstone is moderately well sorted, sub-angular, and moderately to densely packed, with a mean grain diameter of ~ 0.045 mm and a maximum grain diameter of 0.75 mm. The siltstone fabric is ripple bedded and burrow mottled, and contains common silt-sized fragments of finely divided (& undifferentiated) skeletal grain material. Calcareous skeletal fragments include: foram grain debris, echinoderm plates, and undifferentiated skeletal fragments. Several of the skeletal grains are crushed due to burial compaction and rims of calcite spar cement are also locally present. The detrital assemblage includes quartz (monocrystalline & polycrystalline), feldspar (plagioclase > k-feldspar), calcareous skeletal fragments, shale / mudstone RFs, chert RFs, organic matter particles, and glauconite. The XRD mineralogy of the siltstone is comprised of quartz (~16.5%), calcite (~16%), plagioclase feldspar (~15%), dolomite (3%), pyrite (~2.5%), k-feldspar (~2%), amorphous material (~10%) and clay minerals (~35%) [seeTable I]. The clay mineral suite is dominated by mixed-layered illite/smectite (32%) + subordinate amounts of chlorite (1.5%), illite/mica (1%), and kaolinite (0.5%). The siltstone lacks inter-connected macroporosity & should function as an effective reservoir seal. SEM Figures 05B & 05C illustrate pore-filling authigenic mixed-layered illite/smectite clay following the dissolution of a (host) foram test.

22341-05 Photo Index:

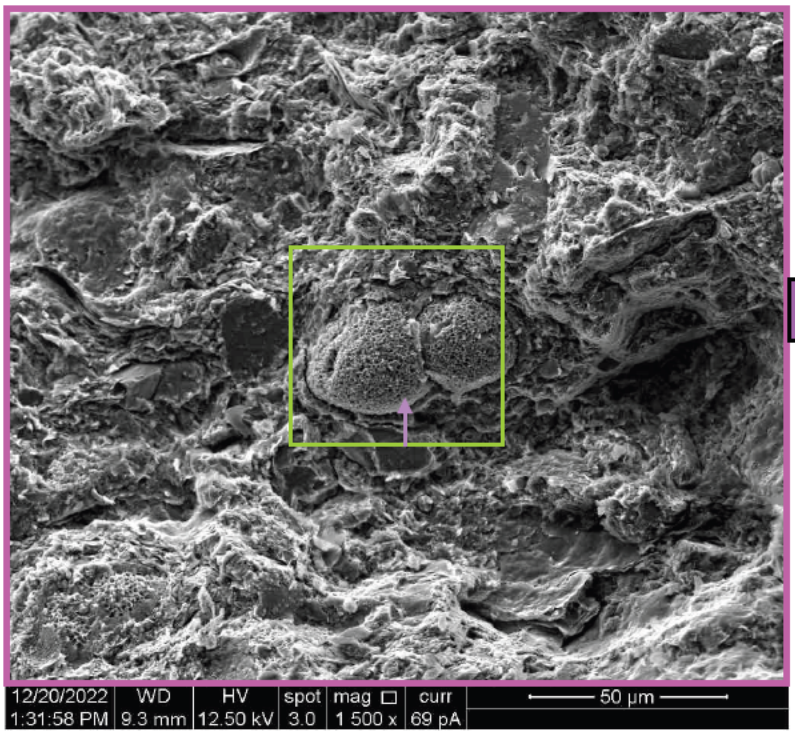
Sample ID	Magnification
22341-05A	600X
22341-05B	1500X
22341-05C	6000X
22341-05D	400X
22341-05E	600X
22341-05F	2500X

Intergranular macro-porosity	BP
Calcite spar cement	CS
Detrital clay	DM
Grain-replacement clay	AM
Pyrite cement	P

22341-05A 600X



22341-05B 1500X



AM

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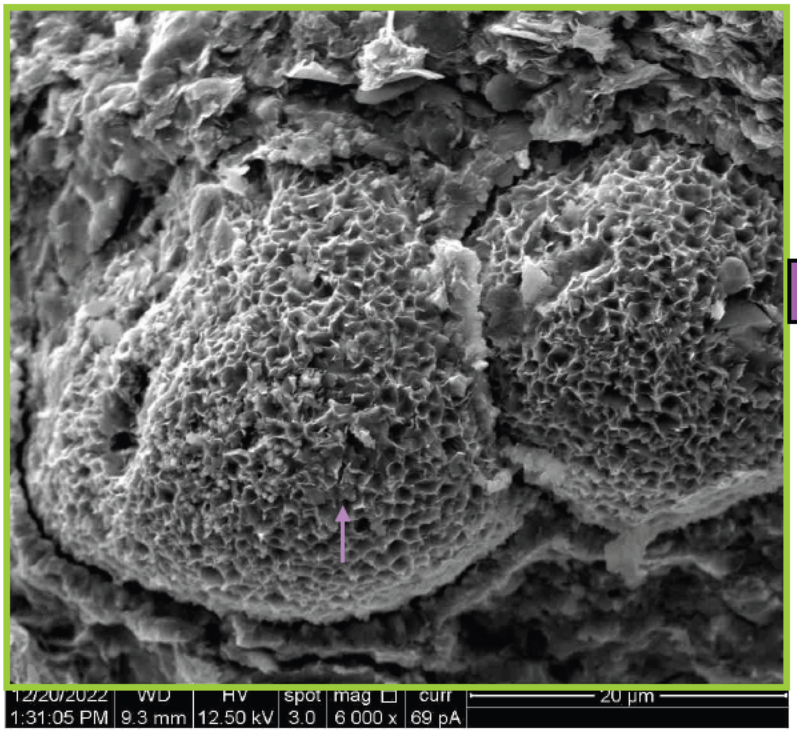

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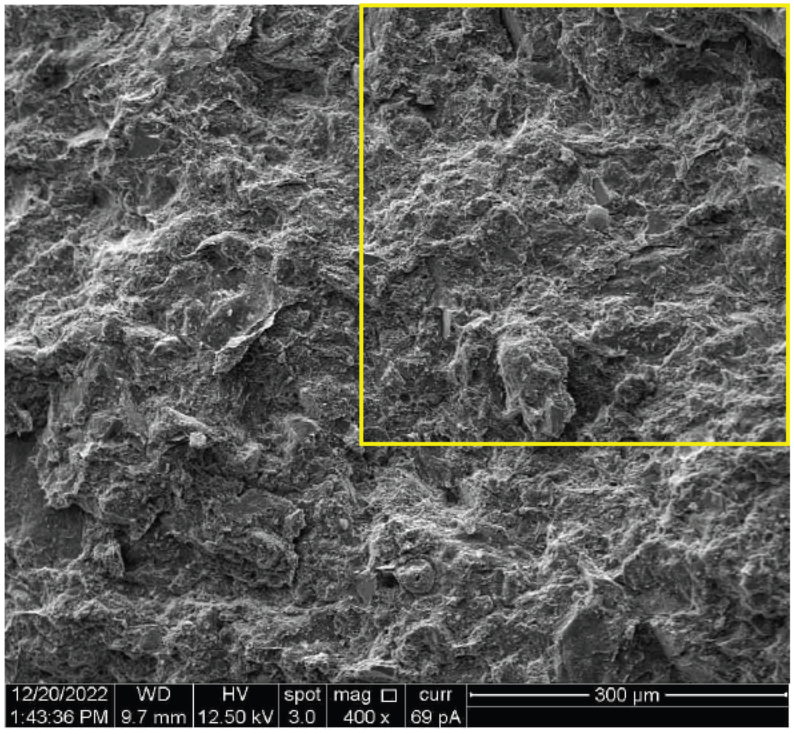

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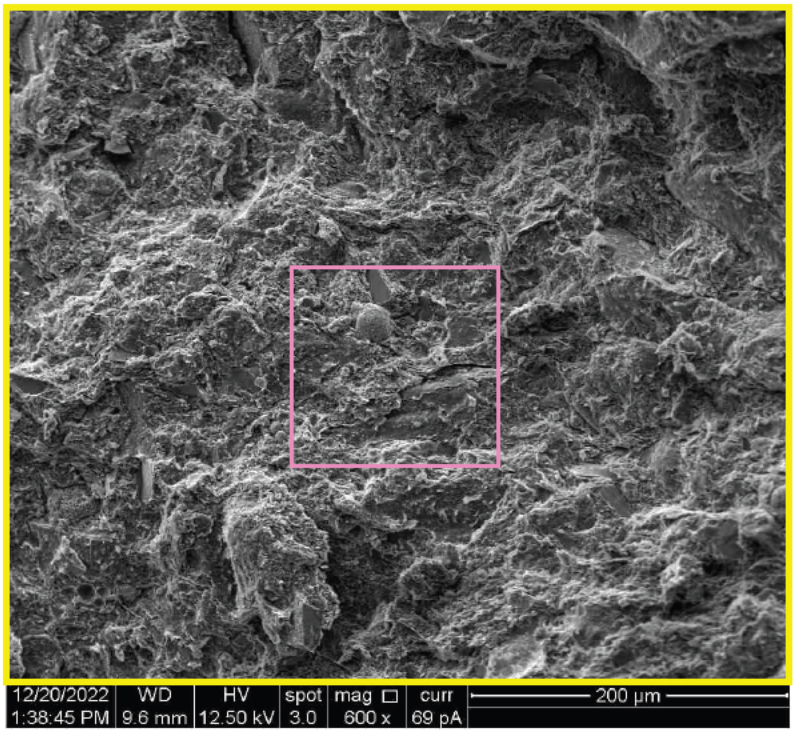

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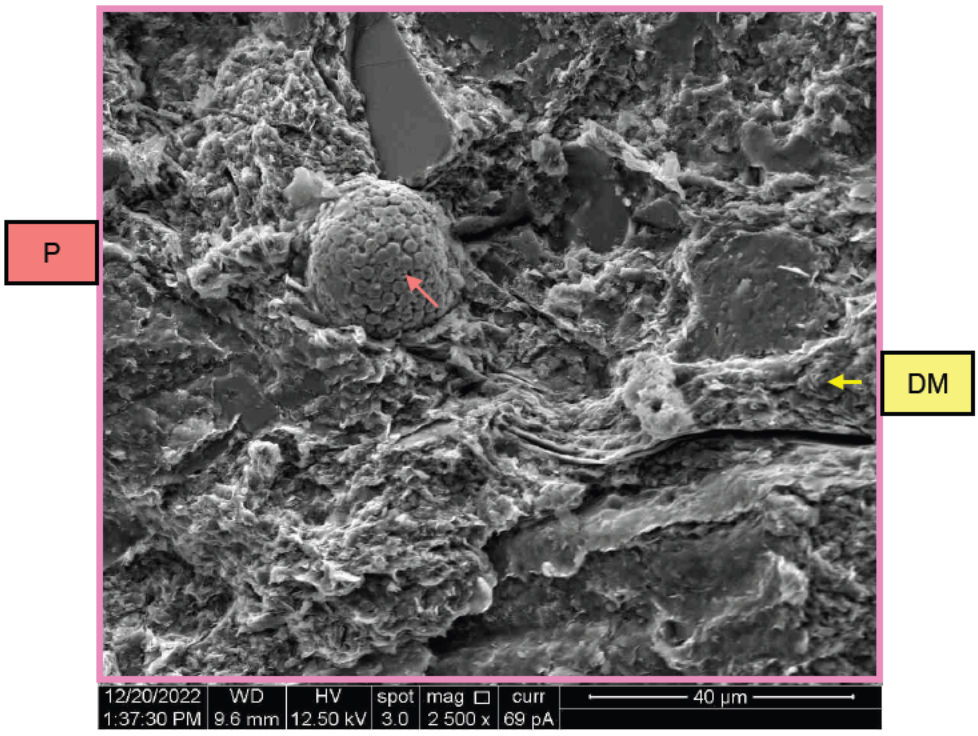
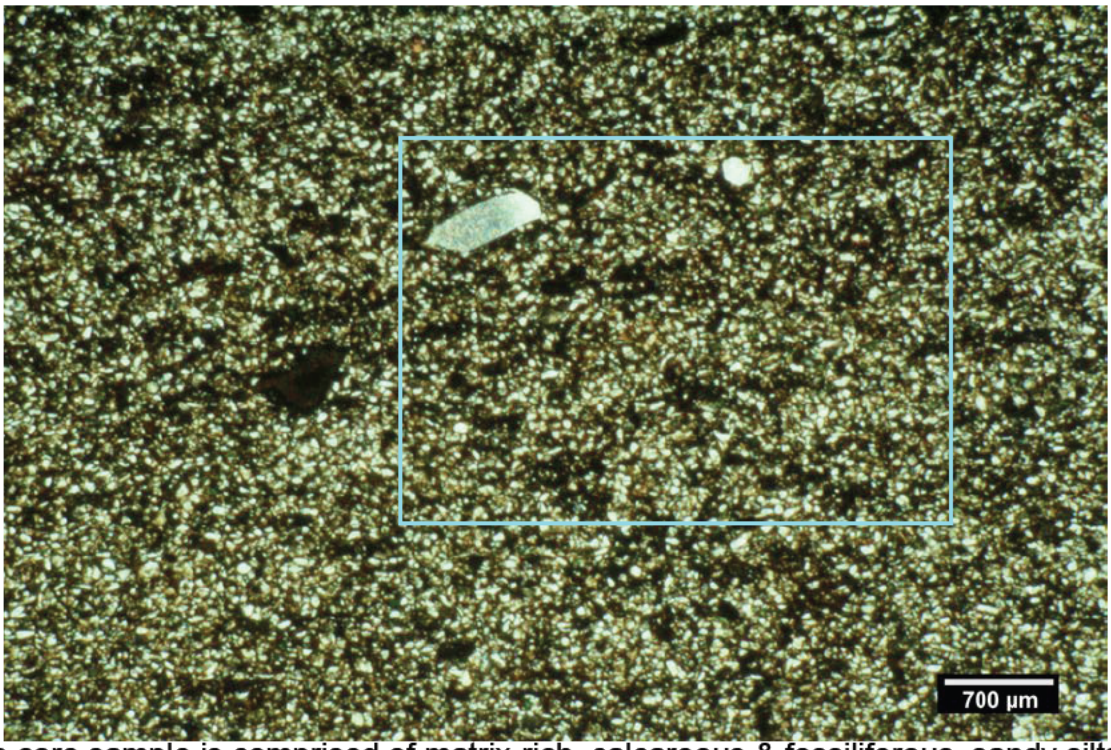
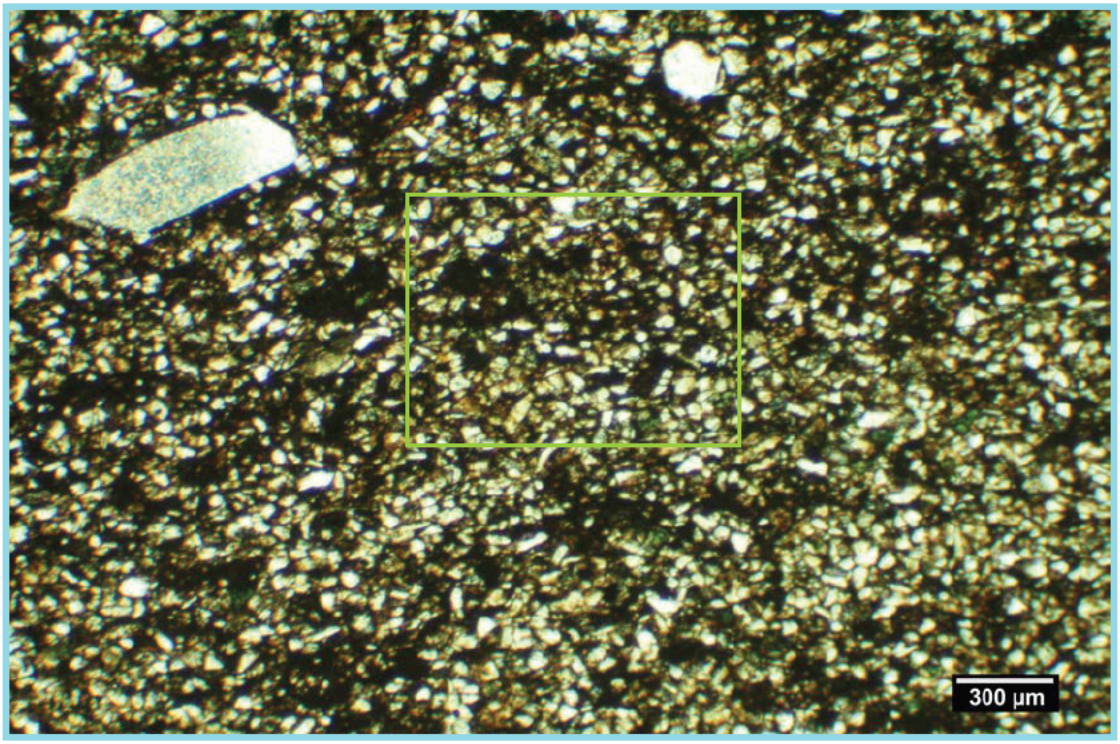


8734.5 ft.; MI#22341-05

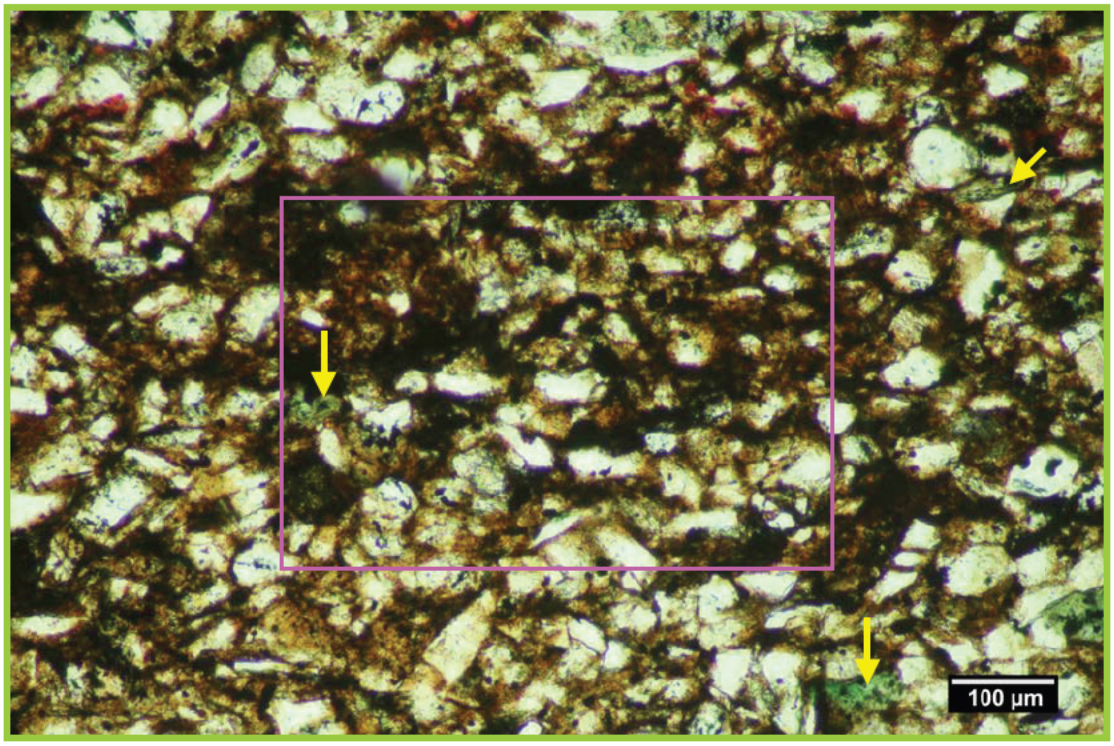


5A. This core sample is comprised of matrix-rich, calcareous & fossiliferous, sandy siltstone. The highlighted area is detailed in Figure 5B.

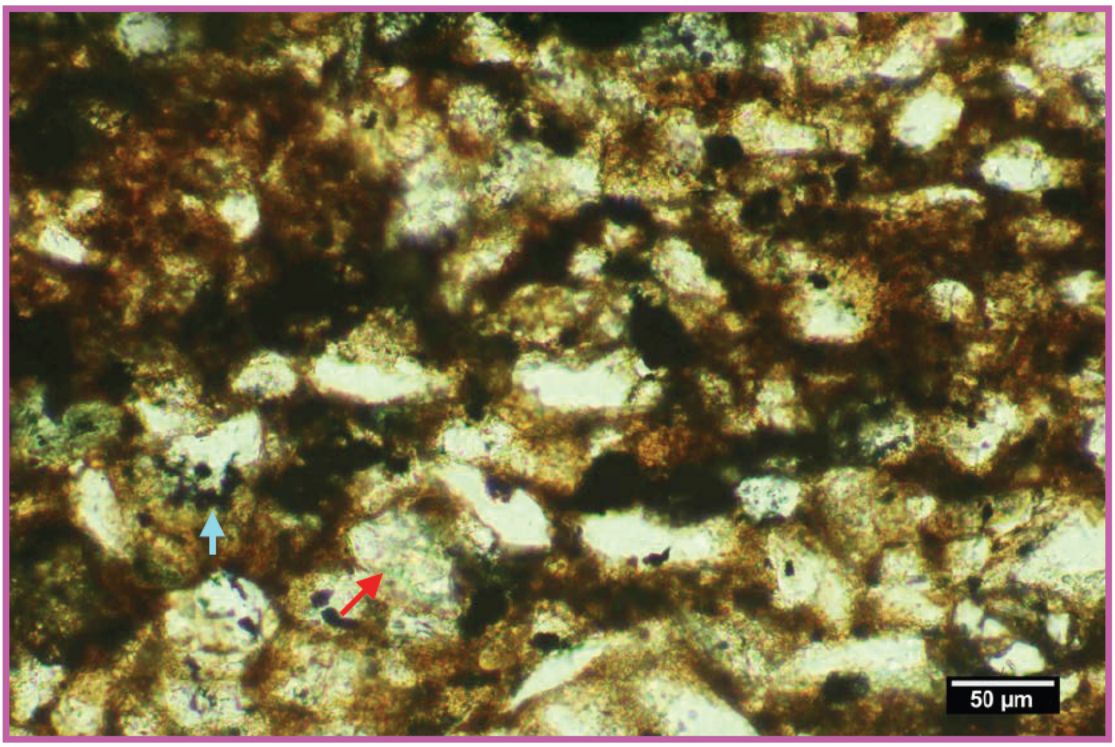


5B. The pore-filling clay matrix is organic matter-rich and fills nearly all of the available intergranular spaces of the siltstone fabric. The highlighted area is detailed in Fig. 5C.

8734.5 ft.; MI#22341-05



5C.Traces of intercrystalline microporosity are dispersed throughout the siltstone fabric, appearing as scattered pockets of light blue-green matrix material (yellow <).



5D. Pore-filling calcite spar cement is widely distributed as a syntaxial cement nucleated on minute skeletal grain fragments (red <). The organic-rich clay matrix includes microcrystalline pyrite as a minor cement phase. (blue <).

Appendix 2D

Injection and Confining Zone Supporting Data

Porosity, Permeability, Capillary Pressure Data

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
17-2N	8,350.50		2.66	2.1	0.084	0.09	0.494	64ZU	
17-2N	8,351.50		2.65	3.6	0.087	0.137	0.429	64ZU	
17-2N	8,352.50		2.66	2.4	0.081	0.108	0.461	64ZU	
17-2N	8,353.50		2.67	3	0.065	0.143	0.415	64ZU	
17-2N	8,354.50		2.66	2.6	0.074	0.117	0.39	64ZU	
17-2N	8,355.50		2.66	1.9	0.078	0.095	0.534	64ZU	
17-2N	8,356.50		2.66	2.3	0.079	0.095	0.473	64ZU	
17-2N	8,357.50		2.66	1.3	0.072	0.167	0.425	64ZU	
17-2N	8,358.50		2.66	1.8	0.077	0.138	0.462	64ZU	
17-2N	8,359.50		2.66	2.8	0.087	0.123	0.442	64ZU	
17-2N	8,360.50		2.66	1	0.082	0.143	0.436	64ZU	
17-2N	8,361.50		2.67	0.9	0.084	0.14	0.438	64ZU	
17-2N	8,362.50		2.65	1.3	0.093	0.139	0.45	64ZU	
17-2N	8,363.50		2.66	1.1	0.084	0.105	0.465	64ZU	
17-2N	8,364.50		2.66	0.8	0.088	0.057	0.543	64ZU	
17-2N	8,365.50		2.66	1.5	0.088	0.059	0.531	64ZU	
17-2N	8,366.50		2.66	1.7	0.08	0.13	0.455	64ZU	
17-2N	8,367.50		2.66	1.3	0.091	0.069	0.524	64ZU	
17-2N	8,368.50		2.66	2.1	0.086	0.103	0.463	64ZU	
17-2N	8,369.50		2.66	1.1	0.085	0.11	0.466	64ZU	
17-2N	8,378.00		2.66	2.9	0.097	0.161	0.4	64ZU	
17-2N	8,379.00		2.66	0.8	0.09	0.137	0.297	64ZU	
17-2N	8,380.50		2.66	0.4	0.085	0.088	0.497	64ZU	
17-2N	8,381.50		2.66	1.1	0.09	0.138	0.412	64ZU	
17-2N	8,382.50		2.66	1.1	0.092	0.18	0.398	64ZU	
17-2N	8,383.50		2.65	0.5	0.088	0.056	0.479	64ZU	
17-2N	8,384.50		2.65	1.2	0.093	0.139	0.449	64ZU	
17-2N	8,385.50		2.66	1.7	0.094	0.094	0.472	64ZU	
17-2N	8,386.50		2.65	0.4	0.096	0.111	0.528	64ZU	
17-2N	8,387.50		2.65	0.7	0.103	0.153	0.458	64ZU	
17-2N	8,388.50		2.66	0.9	0.109	0.108	0.512	64ZU	
17-2N	8,389.50		2.65	1.8	0.121	0.143	0.47	64ZU	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
17-2N	8,390.50		2.65	1.9	0.12	0.125	0.516	64ZU	
17-2N	8,391.50		2.65	1.8	0.118	0.139	0.541	64ZU	
17-2N	8,392.50		2.65	1.6	0.132	0.089	0.58	64ZU	
17-2N	8,393.50		2.65	1.4	0.123	0.146	0.547	64ZU	
17-2N	8,394.50		2.65	1.9	0.136	0.126	0.534	64ZU	
17-2N	8,395.50		2.65	1.6	0.133	0.123	0.55	64ZU	
17-2N	8,396.50		2.65	1	0.126	0.098	0.594	64ZU	
17-2N	8,397.50		2.66	1.1	0.115	0.048	0.632	64ZU	
17-2N	8,398.50		2.65	1.4	0.123	0.06	0.591	64ZU	
17-2N	8,399.50		2.65	1.1	0.133	0.084	0.558	64ZU	
17-2N	8,400.50		2.65	1.1	0.13	0.11	0.545	64ZU	
17-2N	8,401.50		2.64	1	0.132	0.093	0.545	64ZU	
17-2N	8,402.50		2.65	0.6	0.124	0.119	0.58	64ZU	
17-2N	8,403.50		2.67	0.3	0.107	0.085	0.596	64ZU	
17-2N	8,404.50		2.66	0.1	0.089	0.014	0.743	64ZU	
17-2N	8,405.50		2.65	0.2	0.12	0.056	0.601	64ZU	
17-2N	8,406.50		2.65	1	0.125	0.072	0.59	64ZU	
17-2N	8,407.60		2.65	0.8	0.117	0.026	0.681	64ZU	
17-2N	8,408.50		2.65	0.1	0.115	0	0.659	64ZU	
17-2N	8,409.50		2.65	0.1	0.108	0	0.574	64ZU	
17-2N	8,410.30		2.66	0.1	0.113	0	0.696	64ZU	
17-2N	8,485.50		2.63	3.6	0.111	0.201	0.46	64ZW	
17-2N	8,486.50		2.63	75	0.139	0.265	0.34	64ZW	
17-2N	8,532.50		2.63	54.99999	0.132	0.216	0.347	64ZW	
17-2N	8,533.50		2.63	15	0.125	0.259	0.305	64ZW	
17-2N	8,534.50		2.63	20	0.13	0.238	0.328	64ZW	
17-2N	8,535.50		2.63	29	0.132	0.244	0.317	64ZW	
17-2N	8,536.50		2.63	19	0.128	0.225	0.302	64ZW	
17-2N	8,537.50		2.63	23	0.123	0.235	0.319	64ZW	
17-2N	8,538.50		2.63	50	0.124	0.27	0.289	64ZW	
17-2N	8,539.50		2.63	28	0.128	0.285	0.264	64ZW	
17-2N	8,540.50		2.63	25	0.129	0.233	0.322	64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
17-2N	8,541.50		2.63	25	0.131	0.272	0.279	64ZW	
17-2N	8,542.50		2.63	46.99999	0.135	0.279	0.284	64ZW	
17-2N	8,543.50		2.63	26	0.133	0.233	0.329	64ZW	
17-2N	8,544.50		2.63	34	0.13	0.22	0.325	64ZW	
17-2N	8,545.50		2.63	34	0.133	0.237	0.296	64ZW	
17-2N	8,546.50		2.63	35	0.127	0.219	0.293	64ZW	
17-2N	8,547.50		2.63	23	0.129	0.21	0.324	64ZW	
17-2N	8,548.50		2.63	19	0.126	0.273	0.266	64ZW	
17-2N	8,549.50		2.63	27	0.129	0.192	0.322	64ZW	
17-2N	8,550.50		2.63	7	0.127	0.212	0.357	64ZW	
17-2N	8,551.50		2.63	28	0.134	0.233	0.332	64ZW	
17-2N	8,552.50		2.63	30	0.136	0.236	0.355	64ZW	
17-2N	8,553.50		2.63	9.8	0.132	0.187	0.359	64ZW	
17-2N	8,554.50		2.63	7.1	0.127	0.205	0.387	64ZW	
17-2N	8,559.40		2.63	15	0.127	0.221	0.371	64ZW	
17-2N	8,560.40		2.63	8.7	0.128	0.227	0.369	64ZW	
17-2N	8,561.50		2.63	6.199999	0.128	0.163	0.407	64ZW	
17-2N	8,562.35		2.63	10	0.129	0.114	0.445	64ZW	
17-2N	8,563.65		2.62	7.8	0.123	0.171	0.398	64ZW	
17-2N	8,564.40		2.63	5.699999	0.123	0.162	0.418	64ZW	
17-2N	8,565.30		2.63	10	0.138	0.21	0.445	64ZW	
17-2N	8,566.60		2.65	1.9	0.096	0.175	0.36	64ZW	
17-2N	8,617.35		2.65	5.699999	0.099	0.307	0.34	64ZW	
17-2N	8,618.50		2.64	4.8	0.118	0.299	0.313	64ZW	
17-2N	8,619.50		2.64	12	0.118	0.308	0.298	64ZW	
17-2N	8,620.50		2.64	14	0.126	0.391	0.212	64ZW	
17-2N	8,621.50		2.64	10	0.127	0.267	0.322	64ZW	
17-2N	8,622.50		2.64	9.8	0.125	0.369	0.251	64ZW	
17-2N	8,623.50		2.63	16	0.129	0.308	0.323	64ZW	
17-2N	8,624.50		2.63	7.1	0.128	0.274	0.327	64ZW	
17-2N	8,625.50		2.63	13	0.14	0.29	0.319	64ZW	
17-2N	8,626.50		2.63	36	0.147	0.299	0.304	64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
17-2N	8,627.50		2.63	17	0.143	0.286	0.308	64ZW	
17-2N	8,628.50		2.63	21	0.143	0.305	0.292	64ZW	
17-2N	8,629.50		2.63	11	0.137	0.242	0.363	64ZW	
17-2N	8,630.50		2.63	5.3	0.135	0.218	0.375	64ZW	
17-2N	8,631.50		2.63	24	0.147	0.259	0.347	64ZW	
17-2N	8,632.50		2.63	28	0.145	0.261	0.335	64ZW	
17-2N	8,633.50		2.63	15	0.145	0.298	0.336	64ZW	
17-2N	8,634.50		2.63	13	0.14	0.27	0.348	64ZW	
17-2N	8,635.50		2.63	7.3	0.131	0.235	0.373	64ZW	
17-2N	8,636.50		2.63	7.5	0.138	0.257	0.376	64ZW	
17-2N	8,637.50		2.63	8.9	0.129	0.256	0.375	64ZW	
17-2N	8,638.50		2.63	3.4	0.132	0.221	0.392	64ZW	
17-2N	8,639.50		2.63	4.6	0.134	0.218	0.382	64ZW	
17-2N	8,640.50		2.63	4.3	0.129	0.18	0.427	64ZW	
17-2N	8,641.50		2.63	7.1	0.134	0.245	0.349	64ZW	
17-2N	8,642.50		2.63	4.8	0.136	0.228	0.38	64ZW	
17-2N	8,643.40		2.63	7.199999	0.13	0.235	0.36	64ZW	
17-2N	8,644.50		2.63	8.3	0.138	0.231	0.37	64ZW	
17-2N	8,645.40		2.63	3.1	0.128	0.218	0.407	64ZW	
17-2N	8,647.10		2.63	2.7	0.123	0.207	0.442	64ZW	
17-2N	8,648.40		2.63	4.1	0.129	0.216	0.42	64ZW	
17-2N	8,649.60		2.63	5	0.129	0.223	0.391	64ZW	
17-2N	8,650.10		2.63	18	0.126	0.258	0.363	64ZW	
17-2N	8,651.50		2.63	31	0.128	0.236	0.414	64ZW	
17-2N	8,652.50		2.62	2.2	0.137	0.188	0.43	64ZW	
17-2N	8,653.50		2.63	2.2	0.142	0.157	0.465	64ZW	
17-2N	8,654.50		2.63	3.1	0.144	0.193	0.429	64ZW	
17-2N	8,655.50		2.62	3.5	0.141	0.219	0.414	64ZW	
17-2N	8,656.50		2.62	5.1	0.138	0.225	0.404	64ZW	
17-2N	8,657.50		2.63	4.9	0.138	0.224	0.399	64ZW	
17-2N	8,658.50		2.63	5.699999	0.132	0.22	0.39	64ZW	
17-2N	8,659.50		2.64	6.3	0.139	0.155	0.462	64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
17-2N	8,660.50		2.64	10	0.139	0.145	0.457	64ZW	
17-2N	8,661.50		2.64	7.7	0.141	0.175	0.435	64ZW	
17-2N	8,662.40		2.64	14	0.138	0.139	0.456	64ZW	
17-2N	8,664.50		2.64	14	0.138	0.225	0.382	64ZW	
17-2N	8,665.50		2.64	15	0.142	0.174	0.437	64ZW	
17-2N	8,666.50		2.64	9	0.136	0.178	0.43	64ZW	
17-2N	8,667.50		2.64	15	0.137	0.177	0.432	64ZW	
17-2N	8,668.50		2.64	14	0.137	0.104	0.483	64ZW	
17-2N	8,669.50		2.64	14	0.139	0.097	0.472	64ZW	
17-2N	8,670.50		2.64	14	0.135	0.076	0.504	64ZW	
17-2N	8,671.50		2.63	15	0.135	0.092	0.498	64ZW	
17-2N	8,672.50		2.63	15	0.136	0.142	0.453	64ZW	
17-2N	8,673.50		2.62	15	0.132	0.12	0.467	64ZW	
17-2N	8,674.50		2.62	17	0.132	0.121	0.447	64ZW	
17-2N	8,675.50		2.62	11	0.13	0.129	0.439	64ZW	
17-2N	8,676.50		2.63	9.8	0.129	0.116	0.463	64ZW	
17-2N	8,677.50		2.63	5.800001	0.137	0.091	0.496	64ZW	
17-2N	8,678.50		2.63	4	0.134	0.093	0.466	64ZW	
17-2N	8,679.50		2.62	12	0.143	0.137	0.419	64ZW	
17-2N	8,680.50		2.63	3.2	0.131	0.104	0.46	64ZW	
17-2N	8,681.50		2.63	1.9	0.132	0.142	0.452	64ZW	
17-2N	8,682.50		2.63	3.7	0.13	0.106	0.451	64ZW	
17-2N	8,683.50		2.63	2.1	0.124	0.125	0.455	64ZW	
17-2N	8,684.50		2.63	2.1	0.133	0.093	0.486	64ZW	
17-2N	8,685.50		2.63	3	0.124	0.159	0.435	64ZW	
17-2N	8,686.50		2.65	3.2	0.122	0.107	0.446	64ZW	
17-2N	8,687.50		2.64	1.7	0.122	0.156	0.449	64ZW	
17-2N	8,688.40		2.64	11	0.136	0.163	0.404	64ZW	
17-2N	8,689.50		2.63	1.3	0.115	0.026	0.529	64ZW	
17-2N	8,690.50		2.64	1	0.121	0.113	0.487	64ZW	
17-2N	8,691.50		2.65	0.7	0.109	0.095	0.45	64ZW	
17-2N	8,692.80		2.64	0.7	0.104	0.047	0.515	64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
17-2N	8,693.50		2.63	0.9	0.103	0.136	0.471	64ZW	
17-2N	8,694.50		2.64	0.9	0.108	0.046	0.529	64ZW	
17-2N	8,695.40		2.64	0.8	0.114	0.066	0.514	64ZW	
17-2N	8,696.50		2.63	0.9	0.118	0.118	0.487	64ZW	
17-2N	8,697.50		2.66	0.5	0.108	0.079	0.553	64ZW	
17-2N	8,698.50		2.63	1.5	0.13	0.071	0.5	64ZW	
17-2N	8,699.50		2.62	1.5	0.131	0.084	0.486	64ZW	
17-2N	8,700.40		2.62	2.7	0.137	0.162	0.402	64ZW	
17-2N	8,701.40		2.63	2.3	0.142	0.073	0.471	64ZW	
17-2N	8,702.50		2.63	2.7	0.133	0.129	0.353	64ZW	
17-2N	8,703.50		2.63	3.7	0.138	0.098	0.377	64ZW	
17-2N	8,704.50		2.63	4.9	0.135	0.091	0.391	64ZW	
17-2N	8,705.50		2.63	4.1	0.133	0.051	0.424	64ZW	
17-2N	8,706.50		2.63	8.9	0.141	0.061	0.404	64ZW	
17-2N	8,707.50		2.63	9.699999	0.142	0.111	0.406	64ZW	
17-2N	8,708.50		2.63	8.5	0.138	0.071	0.424	64ZW	
17-2N	8,709.50		2.63	10	0.139	0.094	0.379	64ZW	
17-2N	8,710.50		2.63	13	0.143	0.103	0.391	64ZW	
17-2N	8,711.50		2.63	13	0.141	0.096	0.4	64ZW	
17-2N	8,712.40		2.63	8.5	0.135	0.082	0.436	64ZW	
17-2N	8,713.50		2.63	14	0.137	0.118	0.347	64ZW	
17-2N	8,714.50		2.63	10	0.136	0.122	0.346	64ZW	
17-2N	8,715.50		2.63	7.5	0.134	0.142	0.34	64ZW	
17-2N	8,716.50		2.63	13	0.136	0.132	0.344	64ZW	
17-2N	8,717.50		2.63	17	0.141	0.19	0.331	64ZW	
17-2N	8,718.50		2.63	14	0.14	0.193	0.34	64ZW	
17-2N	8,719.50		2.63	15	0.142	0.192	0.337	64ZW	
17-2N	8,720.50		2.63	7.4	0.131	0.194	0.358	64ZW	
17-2N	8,721.50		2.63	9	0.132	0.114	0.403	64ZW	
17-2N	8,722.50		2.63	7.4	0.149	0.137	0.42	64ZW	
17-2N	8,723.50		2.63	7.199999	0.146	0.092	0.478	64ZW	
17-2N	8,724.40		2.63	6.6	0.143	0.04	0.513	64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
17-2N	8,725.50		2.63	7.8	0.143	0.124	0.364	64ZW	
17-2N	8,726.50		2.62	2.8	0.136	0.14	0.41	64ZW	
17-2N	8,727.50		2.62	8.3	0.143	0.182	0.347	64ZW	
17-2N	8,728.50		2.63	7.900001	0.139	0.183	0.315	64ZW	
17-2N	8,729.50		2.63	4.9	0.138	0.172	0.346	64ZW	
17-2N	8,730.50		2.63	6.199999	0.133	0.157	0.332	64ZW	
17-2N	8,731.50		2.63	14	0.142	0.171	0.379	64ZW	
17-2N	8,732.50		2.62	5.4	0.137	0.148	0.416	64ZW	
17-2N	8,733.50		2.63	2.9	0.132	0.133	0.401	64ZW	
17-2N	8,734.50		2.62	4.3	0.13	0.213	0.363	64ZW	
17-2N	8,735.50		2.63	5.1	0.139	0.291	0.413	64ZW	
17-2N	8,737.50		2.64	2.4	0.125	0.15	0.401	64ZW	
17-2N	8,738.50		2.63	5.3	0.138	0.136	0.392	64ZW	
17-2N	8,739.50		2.63	3.9	0.131	0.103	0.448	64ZW	
17-2N	8,740.50		2.65	1.5	0.118	0.107	0.42	64ZW	
17-2N	8,741.50		2.63	2.7	0.137	0.123	0.432	64ZW	
17-2N	8,742.50		2.63	2.4	0.129	0.135	0.424	64ZW	
17-2N	8,743.50		2.63	5	0.14	0.142	0.389	64ZW	
17-2N	8,744.50		2.63	3.4	0.152	0.166	0.415	64ZW	
17-2N	8,745.40		2.62	4.2	0.153	0.115	0.446	64ZW	
17-2N	8,746.50		2.61	4.9	0.147	0.108	0.436	64ZW	
17-2N	8,747.50		2.61	5.3	0.151	0.105	0.42	64ZW	
17-2N	8,748.50		2.62	3.2	0.142	0.138	0.383	64ZW	
17-2N	8,749.50		2.62	2.2	0.129	0.121	0.379	64ZW	
17-2N	8,750.50		2.62	2.3	0.129	0.108	0.367	64ZW	
17-2N	8,751.50		2.62	8.2	0.141	0.115	0.378	64ZW	
17-2N	8,752.40		2.62	5.699999	0.136	0.087	0.381	64ZW	
17-2N	8,753.50		2.63	8.6	0.137	0.157	0.323	64ZW	
17-2N	8,754.50		2.63	5	0.132	0.117	0.393	64ZW	
17-2N	8,755.50		2.63	7.8	0.136	0.143	0.349	64ZW	
17-2N	8,756.40		2.63	8	0.136	0.117	0.321	64ZW	
17-2N	8,757.50		2.63	12	0.136	0.132	0.367	64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
17-2N	8,758.50		2.63	10	0.136	0.16	0.35	64ZW	
17-2N	8,759.50		2.62	11	0.139	0.178	0.337	64ZW	
17-2N	8,760.50		2.62	13	0.141	0.201	0.304	64ZW	
17-2N	8,761.50		2.62	7.900001	0.14	0.178	0.345	64ZW	
17-2N	8,762.50		2.62	6.5	0.141	0.166	0.363	64ZW	
17-2N	8,763.50		2.62	12	0.15	0.169	0.319	64ZW	
17-2N	8,764.50		2.63	15	0.154	0.207	0.339	64ZW	
17-2N	8,765.40		2.63	16	0.144	0.238	0.318	64ZW	
17-2N	8,767.50		2.64	22	0.135	0.203	0.379	64ZW	
17-2N	8,768.50		2.64	4.6	0.132	0.164	0.406	64ZW	
17-2N	8,769.50		2.64	4.5	0.126	0.165	0.397	64ZW	
17-2N	8,770.50		2.64	4.9	0.121	0.187	0.398	64ZW	
17-2N	8,771.50		2.65	1.1	0.104	0.178	0.432	64ZW	
17-2N	8,772.60		2.68		0.086	0.09	0.446	64ZW	
17-2N	8,773.50		2.66	1	0.106	0.129	0.4	64ZW	
17-2N	8,774.50		2.69		0.094	0.097	0.488	64ZW	
17-2N	8,775.40		2.66	1.7	0.098	0.07	0.522	64ZW	
17-2N	8,776.50		2.77	0.3	0.115	0.359	0.39	64ZW	
17-2N	8,777.50		2.65	0.9	0.117	0.167	0.404	64ZW	
17-2N	8,778.45		2.66	0.7	0.107	0.104	0.392	64ZW	
17-2N	8,779.45		2.66	0.4	0.1	0.006	0.471	64ZW	
17-2N	8,780.50		2.66	0.3	0.102	0.11	0.415	64ZW	
17-2N	8,781.50		2.64	0.7	0.122	0.081	0.435	64ZW	
17-2N	8,782.50		2.65	0.7	0.114	0.104	0.377	64ZW	
17-2N	8,783.50		2.66	0.6	0.114	0.084	0.448	64ZW	
17-2N	8,784.50		2.65	0.9	0.129	0.094	0.44	64ZW	
17-2N	8,785.55		2.66	0.7	0.122	0.09	0.385	64ZW	
17-2N	8,786.50		2.65	0.8	0.122	0.113	0.413	64ZW	
17-2N	8,787.50		2.66	0.4	0.118	0.084	0.439	64ZW	
17-2N	8,788.50		2.66	0.5	0.124	0.083	0.467	64ZW	
17-2N	8,789.50		2.65	0.9	0.13	0.109	0.405	64ZW	
17-2N	8,790.40		2.71	0.1	0.087	0.036	0.595	64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
17-2N	8,791.50		2.66	0.6	0.124	0.09	0.47	64ZW	
17-2N	8,792.50		2.67	0.4	0.118	0.103	0.441	64ZW	
17-2N	8,793.50		2.65	0.7	0.125	0.109	0.458	64ZW	
17-2N	8,794.50		2.66	0.6	0.123	0.095	0.468	64ZW	
17-2N	8,795.50		2.66	0.5	0.113	0.142	0.423	64ZW	
17-2N	8,796.50		2.65	1.6	0.133	0.062	0.457	64ZW	
17-2N	8,797.50		2.66	0.8	0.12	0.092	0.483	64ZW	
17-2N	8,798.50		2.67	0.6	0.121	0.059	0.489	64ZW	
17-2N	8,799.50		2.65	0.8	0.127	0.058	0.443	64ZW	
17-2N	8,800.50		2.65	0.6	0.126	0.034	0.496	64ZW	
17-2N	8,801.50		2.65	0.9	0.126	0.039	0.504	64ZW	
17-2N	8,802.40		2.7	0.4	0.088	0.07	0.592	64ZW	
17-2N	8,803.40		2.68	0.5	0.112	0.017	0.558	64ZW	
17-2N	8,804.50		2.67	0.7	0.114	0.081	0.525	64ZW	
17-2N	8,805.50		2.65	0.9	0.13	0.085	0.48	64ZW	
17-2N	8,806.50		2.65	0.8	0.128	0.103	0.485	64ZW	
17-2N	8,808.50		2.64	0.6	0.139	0.054	0.546	64ZW	
17-2N	8,809.40		2.65	0.6	0.137	0.116	0.488	64ZW	
17-2N	8,810.50		2.66	11	0.134	0.113	0.59	64ZW	
17-2N	8,811.50		2.65	0.5	0.127	0.095	0.619	64ZW	
17-2N	8,812.50		2.65	0.6	0.134	0.159	0.538	64ZW	
17-2N	8,813.50		2.67	0.3	0.123	0.126	0.609	64ZW	
17-2N	8,814.50		2.64	0.5	0.132	0.143	0.579	64ZW	
17-2N	8,815.50		2.65	1.1	0.141	0.049	0.57	64ZW	
17-2N	8,816.40		2.66	0.7	0.128	0.1	0.547	64ZW	
17-2N	8,817.50		2.65	0.9	0.14	0.041	0.541	64ZW	
17-2N	8,818.50		2.65	1	0.142	0.15	0.468	64ZW	
17-2N	8,819.50		2.64	0.6	0.146	0.013	0.587	64ZW	
17-2N	8,820.50		2.64	0.6	0.143	0.08	0.526	64ZW	
17-2N	8,821.50		2.64	1.1	0.153	0.261	0.394	64ZW	
17-2N	8,822.50		2.64	0.7	0.15	0.021	0.683	64ZW	
17-2N	8,823.50		2.64	0.7	0.16	0.035	0.63	64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
17-2N	8,824.50		2.63	1.4	0.155	0.044	0.614	64ZW	
17-2N	8,825.50		2.63	2.1	0.167	0.091	0.547	64ZW	
17-2N	8,826.50		2.64	0.7	0.168	0.05	0.635	64ZW	
17-2N	8,827.60		2.63	0.8	0.153	0.004	0.683	64ZW	
17-2N	8,828.50		2.64	1.4	0.156	0.077	0.586	64ZW	
17-2N	8,829.50		2.64	4.4	0.151	0.127	0.536	64ZW	
17-2N	8,830.50		2.64	5.5	0.116	0.086	0.644	64ZW	
17-2N	8,831.50		2.64	7.4	0.145	0.097	0.547	64ZW	
17-2N	8,832.30		2.64	9.4	0.125	0.061	0.487	64ZW	
17-2N	8,833.60		2.64	5.4	0.115	0.17	0.514	64ZW	
17-2N	8,834.50		2.65	1.1	0.136	0.096	0.653	64ZW	
17-2N	8,835.60		2.64	0.4	0.126	0.11	0.542	64ZW	
17-2N	8,836.30		2.64		0.13	0.13	0.5	64ZW	
17-2N	8,837.40		2.65	0.5	0.097	0.071	0.549	64ZW	
17-2N	8,838.45		2.64	0.4	0.096	0.066	0.559	64ZW	
17-2N	8,839.40		2.64		0.121	0.021	0.639	64ZW	
17-2N	8,840.50		2.64	2.1	0.147	0.057	0.584	64ZW	
17-2N	8,841.40		2.64	2.3	0.146	0.075	0.528	64ZW	
17-2N	8,842.55		2.63	5.800001	0.142	0.084	0.526	64ZW	
17-2N	8,843.40		2.63	0.5	0.13	0.021	0.817	64ZW	
17-2N	8,844.50		2.63	0.4	0.096	0	0.665	64ZW	
17-2N	8,845.50		2.63	0.5	0.099	0.019	0.692	64ZW	
17-2N	8,846.50		2.64	0.7	0.097	0	0.704	64ZW	
17-2N	8,847.40		2.64	0.6	0.097	0.063	0.609	64ZW	
17-2N	8,848.50		2.64	0.7	0.097	0	0.656	64ZW	
17-2N	8,849.50		2.64	0.7	0.095	0.04	0.653	64ZW	
17-2N	8,850.40		2.63	0.4	0.099	0	0.688	64ZW	
17-2N	8,851.50		2.63	0.6	0.104	0.018	0.68	64ZW	
17-2N	8,852.40		2.64	1	0.11	0.077	0.628	64ZW	
17-2N	8,853.60		2.65	0.7	0.082	0.031	0.667	64ZW	
17-2N	8,854.50		2.66	0.5	0.063	0	0.864	64ZW	
4-1N	8,482.30		2.64	197	0.187	0.191	0.393	64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
4-1N	8,483.30		2.64	178	0.17	0.217	0.408	64ZW	
4-1N	8,484.40		2.63	214	0.161	0.17	0.447	64ZW	
4-1N	8,485.50		2.63	192	0.174	0.256	0.391	64ZW	
4-1N	8,486.05		2.63	293	0.178	0.153	0.475	64ZW	
4-1N	8,508.70		2.63	264	0.182	0.181	0.556	64ZW	
4-1N	8,509.40		2.63	262	0.181	0.136	0.718	64ZW	
4-1N	8,510.50		2.63	217	0.181	0.188	0.687	64ZW	
4-1N	8,511.70		2.63	164	0.165	0.158	0.536	64ZW	
4-1N	8,512.50		2.63	147	0.191	0.165	0.492	64ZW	
4-1N	8,513.60		2.63	196	0.184	0.127	0.537	64ZW	
4-1N	8,514.65		2.63	24	0.137	0.133	0.444	64ZW	
4-1N	8,515.60		2.63	35	0.138	0.133	0.421	64ZW	
4-1N	8,516.60		2.63	56	0.147	0.147	0.42	64ZW	
4-1N	8,517.60		2.63	17	0.14	0.11	0.352	64ZW	
4-1N	8,538.40		2.63	84	0.161	0.186	0.467	64ZW	
4-1N	8,539.45		2.63	71	0.153	0.185	0.404	64ZW	
4-1N	8,540.30		2.62	158	0.177	0.164	0.441	64ZW	
4-1N	8,541.60		2.63	253	0.179	0.154	0.414	64ZW	
4-1N	8,542.95		2.63	185	0.178	0.168	0.393	64ZW	
4-1N	8,543.50		2.62	112	0.17	0.184	0.352	64ZW	
4-1N	8,544.30		2.65	0.4	0.03	0.264	0.414	64ZW	
4-1N	8,545.70		2.66	0.4	0.035	0.188	0.304	64ZW	
4-1N	8,546.50		2.63	100	0.172	0.187	0.348	64ZW	
4-1N	8,547.10		2.63	117	0.181	0.178	0.292	64ZW	
43-27N	5,700.00	2.22668	2.645	10	0.2543	0.06	0.78	Temblor	
43-27N	5,701.00	2.22995	2.636	15.8	0.2482	0.03	0.87	Temblor	
43-27N	5,702.00	2.2265	2.643	20.2	0.2535	0.03	0.87	Temblor	
43-27N	5,703.00	2.57832	2.683	0.003	0.0622	0.14	0.84	Temblor	
43-27N	5,704.00	2.3078	2.644	1.8	0.2045	0.01	0.84	Temblor	
43-27N	5,705.00	2.5431	2.658	0.034	0.0693	0.13	0.95	Temblor	
43-27N	5,706.00	2.28775	2.644	2.8	0.2167			Temblor	
43-27N	5,707.00	2.28228	2.641	2.43	0.2186	0.02	0.9	Temblor	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
43-27N	5,708.00	2.29281	2.64	1.29	0.2117	0.06	0.86	Temblor	
43-27N	5,709.00	2.28317	2.639	1.83	0.2171	0.06	0.83	Temblor	
43-27N	5,710.00	2.29055	2.639	0.58	0.2126	0.17	0.61	Temblor	
43-27N	5,711.00	2.32774	2.64	1.21	0.1904	0.13	0.65	Temblor	
43-27N	5,712.00	2.2469	2.637	3.04	0.2383	0.12	0.71	Temblor	
43-27N	5,713.00	2.29991	2.649	0.45	0.2117	0.12	0.67	Temblor	
43-27N	5,714.00	2.58254	2.675	0.005	0.0552	0.47	0.14	Temblor	
43-27N	5,715.00	2.24938	2.645	9.88	0.2405	0.09	0.74	Temblor	
43-27N	5,716.00	2.29368	2.648	2.61	0.215	0.05	0.72	Temblor	
43-27N	5,717.00	2.33495	2.661	0.42	0.1963	0.09	0.71	Temblor	
43-27N	5,718.00	2.25886	2.646	9.64	0.2352	0.06	0.69	Temblor	
43-27N	5,719.00	2.28304	2.65	0.89	0.2224	0.08	0.74	Temblor	
43-27N	5,720.00	2.28982	2.636	0.92	0.2116	0.12	0.65	Temblor	
43-27N	5,721.00	2.31232	2.653	0.56	0.2061	0.08	0.61	Temblor	
43-27N	5,722.00	2.35488	2.661	0.33	0.1843	0.16	0.75	Temblor	
43-27N	5,723.00	2.44101	2.655	0.31	0.1293	0.26	0.58	Temblor	
43-27N	5,724.00	2.28645	2.639	0.91	0.2151	0.05	0.83	Temblor	
43-27N	5,725.00	2.32221	2.637	0.49	0.1923	0.04	0.82	Temblor	
43-27N	5,726.00	2.35399	2.651	0.67	0.1799	0.11	0.71	Temblor	
43-27N	5,727.00	2.30273	2.653	1.02	0.2119	0.28	0.58	Temblor	
43-27N	5,765.00	2.40465	2.674	0.15	0.1609	0	1	Temblor	
43-27N	5,766.00	2.36358	2.696	1.06	0.196	0.1	0.88	Temblor	
43-27N	5,768.00	2.43491	2.682	0.45	0.1469	0.1	0.93	Temblor	
43-27N	5,771.00	2.30538	2.661	4.31	0.2141	0.03	0.78	Temblor	
43-27N	5,772.00	2.28565	2.647	8.86	0.2194	0.05	0.82	Temblor	
43-27N	5,773.00	2.15438	2.651	14.1	0.3008	0.07	0.58	Temblor	
43-27N	5,774.00	2.28223	2.67	9.69	0.2322			Temblor	
43-27N	5,775.00	2.20399	2.643	184	0.2672	0.12	0.68	Temblor	
43-27N	5,777.00	2.31301	2.646	63.5	0.2023	0	0.88	Temblor	
43-27N	5,778.00	2.23404	2.636	101	0.2457	0.06	0.8	Temblor	
43-27N	5,779.00	2.19388	2.635	452	0.2698	0.08	0.78	Temblor	
43-27N	5,780.00	2.22688	2.64	122	0.2519	0.07	0.76	Temblor	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
43-27N	5,781.00	2.22106	2.632	143	0.2518	0.04	0.81	Temblor	
43-27N	5,782.00	2.21103	2.633	78.6	0.2584	0.04	0.79	Temblor	
43-27N	5,783.00	2.24989	2.642	33.8	0.2388	0.01	0.81	Temblor	
43-27N	5,784.00	2.28268	2.654	15.9	0.2245	0.12	0.73	Temblor	
43-27N	5,785.00	2.46179	2.667	0.99	0.1231	0.13	0.66	Temblor	
43-27N	5,786.00	2.58281	2.713	0.032	0.076	0.12	0.71	Temblor	
43-27N	5,787.00	2.55736	2.68	0.11	0.073	0.19	0.71	Temblor	
43-27N	5,788.00	2.37873	2.672	0.81	0.1754	0.14	0.74	Temblor	
43-27N	5,789.00	2.33483	2.67	2.09	0.2007	0.1	0.74	Temblor	
43-27N	5,789.10	2.35577	2.667	0.89	0.1867	0.12	0.77	Temblor	
43-27N	5,951.10	2.27228	2.628	0.69	0.2185	0.09	0.83	Temblor	
43-27N	5,952.00	2.26962	2.634	2.05	0.223	0	0.86	Temblor	
43-27N	5,956.00	2.24369	2.636	30.5	0.2398	0	0.87	Temblor	
43-27N	5,957.00	2.24905	2.627	30.5	0.2323	0.08	0.77	Temblor	
43-27N	5,958.00	2.25125	2.625	24.4	0.23	0.05	0.8	Temblor	
43-27N	5,959.00	2.22768	2.628	43.7	0.2459	0.1	0.79	Temblor	
43-27N	5,960.00	2.25901	2.63	28.9	0.2276	0.04	0.8	Temblor	
43-27N	5,961.00	2.2051	2.625	109	0.2584	0.02	0.8	Temblor	
43-27N	5,962.00	2.23337	2.628	51.5	0.2424	0	0.87	Temblor	
43-27N	5,963.00	2.21618	2.627	85.1	0.2525	0.04	0.8	Temblor	
43-27N	5,964.00	2.18487	2.62	170	0.2686	0.06	0.77	Temblor	
43-27N	5,965.00	2.20605	2.632	82.1	0.261	0.03	0.81	Temblor	
43-27N	5,966.00	2.64547	2.683	0.047	0.0223	0.29	0.35	Temblor	
43-27N	5,967.00	2.24335	2.627	20.9	0.2358	0.05	0.81	Temblor	
43-27N	5,968.00	2.21579	2.628	84.3	0.2532	0.03	0.86	Temblor	
43-27N	5,969.00	2.19801	2.622	113	0.2614	0	0.9	Temblor	
43-27N	5,970.00	2.20414	2.627	152	0.2599	0.02	0.87	Temblor	
43-27N	5,971.00	2.19907	2.623	95.9	0.2612	0	0.91	Temblor	
43-27N	5,972.00	2.10858	2.616	85	0.314	0.02	0.65	Temblor	
43-27N	5,973.00	2.19377	2.638	150	0.2712	0.02	0.85	Temblor	
43-27N	5,974.00	2.20661	2.617	154	0.2538	0	0.91	Temblor	
43-27N	5,975.00	2.19036	2.618	174	0.2643	0	0.88	Temblor	

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43-27N	5,976.00	2.18364	2.627	151	0.2725	0.03	0.8	Temblor	
43-27N	5,977.00	2.17592	2.626	222	0.2768	0	0.85	Temblor	
43-27N	5,978.00	2.19137	2.63	156	0.2691	0.03	0.8	Temblor	
43-27N	5,979.00	2.18372	2.628	224	0.2729	0.02	0.8	Temblor	
43-27N	5,980.00	2.20392	2.63	171	0.2614	0.01	0.76	Temblor	
43-27N	6,039.10	2.26081	2.63	3.03	0.2265	0.06	0.86	Temblor	
43-27N	6,040.00	2.27599	2.634	2.06	0.2191	0.01	0.86	Temblor	
43-27N	6,041.00	2.24876	2.633	7.13	0.2353	0.05	0.82	Temblor	
43-27N	6,042.00	2.26259	2.634	7.08	0.2273	0.02	0.83	Temblor	
43-27N	6,043.00	2.30571	2.648	0.74	0.2077	0.04	0.7	Temblor	
43-27N	6,044.00	2.2947	2.637	2.28	0.2091	0.15	0.71	Temblor	
43-27N	6,045.00	2.25163	2.631	7.2	0.2326	0.04	0.83	Temblor	
43-27N	6,046.00	2.23391	2.63	4.02	0.243	0.01	0.81	Temblor	
43-27N	6,047.00	2.50671	2.655	0.075	0.0896	0.15	0.63	Temblor	
43-27N	6,048.00	2.24236	2.624	30.9	0.235	0.08	0.84	Temblor	
43-27N	6,049.00	2.24646	2.623	27.5	0.232	0	0.93	Temblor	
43-27N	6,050.00	2.23445	2.623	28.3	0.2394	0.02	0.83	Temblor	
43-27N	6,051.00	2.28203	2.622	9.78	0.2096	0	0.9	Temblor	
43-27N	6,052.00	2.34528	2.645	1.16	0.1822	0.07	0.77	Temblor	
43-27N	6,053.00	2.31786	2.617	2.52	0.185	0.01	0.83	Temblor	
43-27N	6,054.00	2.42139	2.737	0.98	0.1817	0.02	0.82	Temblor	
43-27N	6,055.00	2.36775	2.639	0.81	0.1655	0.04	0.77	Temblor	
43-27N	6,056.00	2.38051	2.638	0.28	0.1572	0.04	0.79	Temblor	
43-27N	6,057.00	2.41167	2.643	0.12	0.1408	0.04	0.79	Temblor	
43-27N	6,058.00	2.42342	2.638	0.07	0.131		0.81	Temblor	
43-27N	6,059.00	2.47042	2.63	0.033	0.0979	0.09	0.81	Temblor	
43-27N	6,060.00	2.46088	2.625	0.086	0.101	0.08	0.82	Temblor	
43-27N	6,061.00	2.50378	2.628	0.023	0.0763	0.15	0.82	Temblor	
43-27N	6,062.00	2.44677	2.642	0.015	0.1189	0.01	0.81	Temblor	
43-27N	6,063.00	2.4234	2.641	0.015	0.1326	0.15	0.71	Temblor	
43-27N	6,064.00	2.42169	2.633	0.014	0.1294	0.04	0.88	Temblor	
43-27N	6,065.00	2.42163	2.635	0.046	0.1305	0.04	0.91	Temblor	

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43-27N	6,066.00	2.41732	2.637	0.019	0.1342	0.01	0.95	Temblor	
43-27N	6,067.00	2.4369	2.636	0.053	0.1217	0.11	0.84	Temblor	
43-27N	8,353.30	2.43368	2.643	0.128	0.1274	0.08	0.76	Agua	
43-27N	8,354.00	2.4124	2.645	0.298	0.1414	0.07	0.63	Agua	
43-27N	8,355.00	2.42446	2.639	0.161	0.1309	0.08	0.68	Agua	
43-27N	8,356.20	2.42354	2.644	0.792	0.1341	0.03	0.71	Agua	
43-27N	8,357.20	2.43724	2.639	2.48	0.1231	0	0.71	Agua	
43-27N	8,358.00	2.41371	2.645	10.5	0.1406	0	0.74	Agua	
43-27N	8,359.00	2.41931	2.645	0.475	0.1372	0.13	0.59	Agua	
43-27N	8,360.00	2.4129	2.641	0.726	0.139	0.12	0.61	Agua	
43-27N	8,361.00	2.42231	2.646	0.268	0.1359	0.08	0.7	Agua	
43-27N	8,362.00	2.42497	2.643	0.266	0.1327	0.07	0.67	Agua	
43-27N	8,363.00	2.42974	2.643	0.184	0.1298	0.11	0.64	Agua	
43-27N	8,364.00	2.42589	2.645	0.25	0.1332	0.08	0.64	Agua	
43-27N	8,365.00	2.42234	2.651	0.273	0.1385	0.12	0.63	Agua	
43-27N	8,366.00	2.42516	2.64	0.241	0.131	0.11	0.66	Agua	
43-27N	8,367.00	2.41586	2.641	0.23	0.1372	0.14	0.61	Agua	
43-27N	8,368.00	2.43875	2.649	0.641	0.1275	0.15	0.7	Agua	
43-27N	8,369.00	2.42029	2.641	0.357	0.1345	0.11	0.64	Agua	
43-27N	8,370.00	2.41598	2.64	0.481	0.1366	0.05	0.73	Agua	
43-27N	8,371.00	2.42321	2.648	0.252	0.1364	0.14	0.68	Agua	
43-27N	8,372.00	2.42411	2.642	0.358	0.1327	0.08	0.68	Agua	
43-27N	8,373.00	2.42777	2.643	0.266	0.131	0.06	0.72	Agua	
43-27N	8,374.00	2.42904	2.639	0.175	0.1281	0	0.82	Agua	
43-27N	8,375.00	2.42457	2.645	0.305	0.134	0.09	0.74	Agua	
43-27N	8,376.00	2.42763	2.634	0.265	0.1263	0.09	0.74	Agua	
43-27N	8,377.00	2.42637	2.638	0.142	0.1292	0.13	0.73	Agua	
43-27N	8,378.00	2.42626	2.639	0.176	0.1298	0.09	0.75	Agua	
43-27N	8,379.00	2.42168	2.636	0.18	0.131	0.1	0.75	Agua	
43-27N	8,380.00	2.4297	2.636	0.092	0.1261	0.09	0.81	Agua	
43-27N	8,381.00	2.43864	2.635	0.093	0.1201	0.14	0.78	Agua	
43-27N	8,382.00	2.44917	2.636	0.082	0.1142	0.11	0.82	Agua	

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43-27N	8,383.00	2.45381	2.626	0.09	0.1059	0.08	0.87	Agua	
43-27N	8,717.00	2.43281	2.636	1.15	0.1242	0.12	0.58	64ZU	
43-27N	8,718.00	2.39964	2.629	6.88	0.1408	0.11	0.57	64ZU	
43-27N	8,719.00	2.4697	2.635	0.096	0.1011	0.06	0.73	64ZU	
43-27N	8,720.00	2.47886	2.645	0.088	0.101	0.1	0.73	64ZU	
43-27N	8,721.00	2.51149	2.665	0.048	0.0922	0.07	0.71	64ZU	
43-27N	8,722.00	2.50415	2.654	0.048	0.0906	0.07	0.81	64ZU	
43-27N	8,723.00	2.493	2.651	0.038	0.0957	0.05	0.84	64ZU	
43-27N	8,724.00	2.46334	2.652	0.086	0.1142	0.08	0.74	64ZU	
43-27N	8,725.00	2.42664	2.64	0.133	0.1301	0.07	0.73	64ZU	
43-27N	8,726.00	2.42293	2.638	0.348	0.1313	0.12	0.62	64ZU	
43-27N	8,727.00	2.39099	2.633	0.201	0.1482	0.09	0.69	64ZU	
43-27N	8,728.00	2.3903	2.632	0.174	0.1481	0.07	0.74	64ZU	
43-27N	8,729.00	2.3958	2.635	0.185	0.1463	0.08	0.78	64ZU	
43-27N	8,730.00	2.39638	2.633	0.154	0.1449	0.06	0.75	64ZU	
43-27N	8,731.00	2.39014	2.632	0.135	0.1482	0.05	0.8	64ZU	
43-27N	8,732.20	2.39272	2.641	0.158	0.1513	0	0.82	64ZU	
43-27N	8,733.00	2.38853	2.638	0.162	0.1523	0.06	0.8	64ZU	
43-27N	8,734.00	2.38976	2.661	0.311	0.1633	0.06	0.74	64ZU	
43-27N	8,735.00	2.39195	2.643	0.129	0.1528	0.06	0.71	64ZU	
43-27N	8,829.30	2.44534	2.628	4.1	0.1122	0.25	0.5	64ZW	
43-27N	8,829.90	2.44291	2.626	4.09	0.1126	0.23	0.48	64ZW	
43-27N	8,830.90	2.45495	2.626	2.54	0.1052	0.22	0.43	64ZW	
43-27N	8,832.00	2.42977	2.629	11.1	0.1223	0.24	0.45	64ZW	
43-27N	9,115.00	2.42202	2.633	0.132	0.1292	0.13	0.68	64ZW	
43-27N	9,116.00	2.41086	2.632	0.197	0.1355	0.11	0.69	64ZW	
43-27N	9,117.00	2.4099	2.626	0.307	0.1329	0.05	0.71	64ZW	
43-27N	9,118.00	2.42462	2.639	0.52	0.1308	0.13	0.61	64ZW	
43-27N	9,119.00	2.40276	2.623	0.626	0.1357	0.11	0.64	64ZW	
43-27N	9,120.00	2.40308	2.62	0.374	0.1339	0.08	0.64	64ZW	
43-27N	9,121.00	2.42207	2.634	0.257	0.1297	0.06	0.67	64ZW	
43-27N	9,122.00	2.41183	2.62	0.292	0.1285	0.07	0.68	64ZW	

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43-27N	9,123.00	2.40579	2.625	0.374	0.1349	0.06	0.62	64ZW	
43-27N	9,124.00	2.42202	2.633	0.277	0.1292	0.05	0.65	64ZW	
43-27N	9,125.00	2.4197	2.624	0.283	0.1258	0.07	0.68	64ZW	
43-27N	9,126.00	2.41548	2.624	0.296	0.1284	0.06	0.68	64ZW	
43-27N	9,127.00	2.42096	2.626	0.294	0.1261	0.06	0.65	64ZW	
43-27N	9,128.00	2.42347	2.622	0.314	0.1224	0.06	0.66	64ZW	
43-27N	9,129.00	2.42863	2.629	0.301	0.123	0.06	0.66	64ZW	
43-27N	9,130.00	2.43081	2.63	0.328	0.1222	0.1	0.63	64ZW	
43-27N	9,131.00	2.42708	2.625	0.347	0.1218	0.06	0.66	64ZW	
43-27N	9,132.00	2.42555	2.624	0.301	0.1222	0.09	0.64	64ZW	
43-27N	9,133.00	2.42281	2.627	0.269	0.1255	0.08	0.65	64ZW	
43-27N	9,134.00	2.41842	2.633	0.253	0.1314	0.06	0.62	64ZW	
43-27N	9,135.00	2.42081	2.629	0.233	0.1278	0.09	0.63	64ZW	
43-27N	9,136.00	2.43681	2.632	0.214	0.1196	0.09	0.63	64ZW	
43-27N	9,137.00	2.55414	2.65	0.049	0.0581	0.24	0.74	64ZW	
43-27N	9,138.00	2.48707	2.641	0.057	0.0938	0.12	0.8	64ZW	
43-27N	9,139.00	2.48683	2.642	0.065	0.0945	0.24	0.76	64ZW	
43-27N	9,140.00	2.47387	2.636	0.111	0.0991	0.34	0.66	64ZW	
43-27N	9,141.00	2.45412	2.63	0.069	0.1079	0.22	0.78	64ZW	
43-27N	9,674.10	2.64841	2.754	12.7	0.0602	0.09	0.48	Oceanic	
43-27N	9,675.00	2.67782	2.745	0.07	0.0385	0.14	0.5	Oceanic	
43-27N	9,675.90	2.70473	2.783	0.12	0.0439	0.15	0.49	Oceanic	
43-27N	9,677.00	2.66451	2.729	0.097	0.0373	0.06	0.49	Oceanic	
43-27N	9,678.10	2.63923	2.75	0.62	0.0633	0.04	0.39	Oceanic	
43-27N	9,679.00	2.56204	2.666	0.403	0.0624	0.1	0.5	Oceanic	
43-27N	9,680.00	2.58645	2.656	0.135	0.042	0.09	0.61	Oceanic	
43-27N	9,681.00	2.52537	2.66	0.624	0.0811	0.13	0.46	Oceanic	
43-27N	9,682.00	2.49462	2.641	0.449	0.0892	0.22	0.44	Oceanic	
43-27N	9,683.00	2.50624	2.639	0.424	0.081	0.23	0.47	Oceanic	
43-27N	9,684.00	2.51782	2.64	0.382	0.0745	0.14	0.53	Oceanic	
43-27N	9,685.00	2.50027	2.64	0.668	0.0852	0.1	0.53	Oceanic	
43-27N	9,686.00	2.49677	2.643	0.789	0.089	0.07	0.54	Oceanic	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
43-27N	9,687.00	2.46053	2.637	0.603	0.1078	0.08	0.56	Oceanic	
43-27N	9,687.90	2.45644	2.637	1.06	0.1103	0.11	0.55	Oceanic	
43-27N	9,689.00	2.45971	2.637	0.784	0.1083	0.08	0.59	Oceanic	
43-27N	9,690.00	2.45025	2.635	0.611	0.113	0.11	0.56	Oceanic	
43-27N	9,691.00	2.45408	2.636	0.802	0.1112	0.08	0.6	Oceanic	
43-27N	9,692.00	2.46033	2.641	1.2	0.1101	0.12	0.53	Oceanic	
43-27N	9,693.00	2.45842	2.642	0.572	0.1118	0.13	0.54	Oceanic	
43-27N	9,694.00	2.46061	2.638	0.69	0.1083	0.22	0.49	Oceanic	
43-27N	9,695.00	2.43402	2.65	0.755	0.1309	0.19	0.47	Oceanic	
511N-1N_ST1	7,894.00			183.5	0.1598			64ZW	
511N-1N_ST1	7,897.00			319.4	0.1755			64ZW	
511N-1N_ST1	7,903.00			220.7	0.1589			64ZW	
511N-1N_ST1	7,906.00			177.5	0.1535			64ZW	
511N-1N_ST1	7,912.00			94.9	0.1613			64ZW	
511N-1N_ST1	7,916.00			112	0.1629			64ZW	
511N-1N_ST1	7,920.00			122.8	0.1645			64ZW	
511N-1N_ST1	7,924.00			95.8	0.1632			64ZW	
511N-1N_ST1	7,926.00			172.4	0.1679			64ZW	
511N-1N_ST1	7,929.00			154	0.1715			64ZW	
511N-1N_ST1	7,932.00			135.5	0.1583			64ZW	
511N-1N_ST1	7,935.00			138.7	0.1526			64ZW	
511N-1N_ST1	7,936.00			107	0.1721			64ZW	
511N-1N_ST1	7,938.00			86	0.1587			64ZW	
511N-1N_ST1	7,944.00			0.1	0.0597			64ZW	
511N-1N_ST1	7,946.00			131.5	0.1516			64ZW	
511N-1N_ST1	7,948.00			56.6	0.1862			64ZW	
511N-1N_ST1	7,950.00			86.5	0.1382			64ZW	
511N-1N_ST1	7,952.00			59.8	0.1418			64ZW	
511N-1N_ST1	7,954.00			68.9	0.1444			64ZW	
511N-1N_ST1	7,956.00			80.1	0.1513			64ZW	
511N-1N_ST1	7,958.00			59.9	0.1508			64ZW	
511N-1N_ST1	7,960.00			50.8	0.1518			64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
511N-1N_ST1	7,962.00			41.7	0.1575			64ZW	
511N-1N_ST1	7,964.00			110	0.1533			64ZW	
511N-1N_ST1	7,986.00			25.8	0.1441			64ZW	
511N-1N_ST1	7,989.00			26.7	0.1472			64ZW	
511N-1N_ST1	7,990.00			304.4	0.155			64ZW	
511N-1N_ST1	7,991.00			16.4	0.1447			64ZW	
511N-1N_ST1	7,993.00			14.2	0.0556			64ZW	
511N-1N_ST1	7,995.00			15	0.1487			64ZW	
511N-1N_ST1	7,997.00			61.5	0.1517			64ZW	
511N-1N_ST1	7,999.00			15.5	0.1541			64ZW	
511N-1N_ST1	8,001.00			18.9	0.1516			64ZW	
511N-1N_ST1	8,003.00			14.5	0.1474			64ZW	
511N-1N_ST1	8,005.00			17.3	0.1553			64ZW	
511N-1N_ST1	8,007.00			13	0.1498			64ZW	
511N-1N_ST1	8,009.00			10.9	0.1511			64ZW	
511N-1N_ST1	8,011.00			19.5	0.1638			64ZW	
511N-1N_ST1	8,013.00			17.3	0.1551			64ZW	
511N-1N_ST1	8,015.00			12	0.1558			64ZW	
511N-1N_ST1	8,017.00			15.6	0.145			64ZW	
511N-1N_ST1	8,019.00			19.4	0.1629			64ZW	
511N-1N_ST1	8,021.00			9.1	0.1325			64ZW	
511N-1N_ST1	8,023.00			0.1	0.0372			64ZW	
511N-1N_ST1	8,033.00			11.7	0.1226			64ZW	
511N-1N_ST1	8,035.00			17.1	0.1354			64ZW	
511N-1N_ST1	8,037.00			35.9	0.1441			64ZW	
511N-1N_ST1	8,039.00			19.7	0.145			64ZW	
511N-1N_ST1	8,041.00			20.4	0.1454			64ZW	
511N-1N_ST1	8,043.00			12.8	0.1426			64ZW	
511N-1N_ST1	8,045.00			15.7	0.1482			64ZW	
511N-1N_ST1	8,047.00			9.9	0.151			64ZW	
511N-1N_ST1	8,049.00			10	0.1441			64ZW	
511N-1N_ST1	8,051.00			11.7	0.1533			64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
511N-1N_ST1	8,053.00			12.3	0.1454			64ZW	
511N-1N_ST1	8,055.00			15	0.1823			64ZW	
511N-1N_ST1	8,057.00			20	0.1476			64ZW	
511N-1N_ST1	8,059.00			9.3	0.142			64ZW	
511N-1N_ST1	8,064.00			6.6	0.1523			64ZW	
511N-1N_ST1	8,065.00			12	0.1524			64ZW	
511N-1N_ST1	8,066.00			14.7	0.1526			64ZW	
511N-1N_ST1	8,067.00			9.4	0.1406			64ZW	
511N-1N_ST1	8,068.00			9.4	0.1507			64ZW	
511N-1N_ST1	8,069.00			7.2	0.1503			64ZW	
511N-1N_ST1	8,070.00			11	0.1319			64ZW	
511N-1N_ST1	8,071.00			8.2	0.1503			64ZW	
511N-1N_ST1	8,073.00			9.5	0.1513			64ZW	
511N-1N_ST1	8,074.00			7.1	0.131			64ZW	
511N-1N_ST1	8,076.00			9.6	0.1393			64ZW	
511N-1N_ST1	8,077.00			8.4	0.1423			64ZW	
511N-1N_ST1	8,078.00			16.7	0.1367			64ZW	
511N-1N_ST1	8,079.00			7.3	0.1398			64ZW	
511N-1N_ST1	8,081.00			9.5	0.1563			64ZW	
511N-1N_ST1	8,083.00			8.8	0.167			64ZW	
511N-1N_ST1	8,086.00			5.5	0.1405			64ZW	
511N-1N_ST1	8,088.00			4	0.1385			64ZW	
511N-1N_ST1	8,090.00			7.7	0.1509			64ZW	
511N-1N_ST1	8,092.00			8.5	0.1492			64ZW	
511N-1N_ST1	8,094.00			6.7	0.1477			64ZW	
511N-1N_ST1	8,096.00			8.5	0.1474			64ZW	
511N-1N_ST1	8,098.00			7.7	0.1459			64ZW	
511N-1N_ST1	8,101.00			8.1	0.1501			64ZW	
511N-1N_ST1	8,103.00			10.3	0.158			64ZW	
511N-1N_ST1	8,105.00			7.9	0.1591			64ZW	
511N-1N_ST1	8,107.00			6.3	0.1456			64ZW	
511N-1N_ST1	8,109.00			6.4	0.1321			64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
511N-1N_ST1	8,111.00			8.1	0.1467			64ZW	
511N-1N_ST1	8,113.00			7.5	0.1473			64ZW	
511N-1N_ST1	8,115.00			7.3	0.1505			64ZW	
511N-1N_ST1	8,117.00			10.5	0.1535			64ZW	
511N-1N_ST1	8,119.00			6.7	0.1467			64ZW	
511N-1N_ST1	8,120.00			8.4	0.1496			64ZW	
511N-1N_ST1	8,123.00			6.2	0.1497			64ZW	
511N-1N_ST1	8,128.00			7.7	0.1475			64ZW	
511N-1N_ST1	8,130.00			8.3	0.1579			64ZW	
511N-1N_ST1	8,132.00			9.9	0.153			64ZW	
511N-1N_ST1	8,134.00			8.4	0.1507			64ZW	
511N-1N_ST1	8,136.00			7	0.1434			64ZW	
511N-1N_ST1	8,138.00			7.7	0.1478			64ZW	
511N-1N_ST1	8,140.00			7.1	0.1578			64ZW	
511N-1N_ST1	8,142.00			5.9	0.1354			64ZW	
511N-1N_ST1	8,146.00			9.9	0.1496			64ZW	
511N-1N_ST1	8,149.00			7.2	0.1397			64ZW	
511N-1N_ST1	8,151.00			8	0.139			64ZW	
511N-1N_ST1	8,153.00			0.4	0.0686			64ZW	
511N-1N_ST1	8,155.00			10.2	0.1463			64ZW	
511N-1N_ST1	8,157.00			14.9	0.1448			64ZW	
511N-1N_ST1	8,158.00			8.5	0.1532			64ZW	
511N-1N_ST1	8,159.00			5	0.1303			64ZW	
511N-1N_ST1	8,160.00			10	0.1416			64ZW	
511N-1N_ST1	8,161.00			7	0.1476			64ZW	
511N-1N_ST1	8,162.00			6.7	0.1542			64ZW	
511N-1N_ST1	8,175.00			4.1	0.1161			64ZW	
511N-1N_ST1	8,176.00			6.3	0.1332			64ZW	
511N-1N_ST1	8,177.00			8.8	0.1288			64ZW	
511N-1N_ST1	8,178.00			4.1	0.1436			64ZW	
511N-1N_ST1	8,179.00			9.4	0.1379			64ZW	
511N-1N_ST1	8,180.00			14.4	0.1478			64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
511N-1N_ST1	8,181.00			6	0.1312			64ZW	
511N-1N_ST1	8,193.00			10.3	0.1506			64ZW	
511N-1N_ST1	8,194.00			12.6	0.1234			64ZW	
511N-1N_ST1	8,195.00			2.9	0.1164			64ZW	
511N-1N_ST1	8,196.00			2.8	0.1162			64ZW	
511N-1N_ST1	8,198.00			4.1	0.123			64ZW	
511N-1N_ST1	8,199.00			11.1	0.1149			64ZW	
511N-1N_ST1	8,204.00			2.9	0.1218			64ZW	
511N-1N_ST1	8,206.00			2.5	0.1251			64ZW	
511N-1N_ST1	8,208.00			5.6	0.1275			64ZW	
511N-1N_ST1	8,210.00			4.1	0.1351			64ZW	
511N-1N_ST1	8,211.00			4.9	0.1178			64ZW	
511N-1N_ST1	8,212.00				0.0878			64ZW	
7-1N	7,930.50			5	0.165	0.024		64ZW	
7-1N	7,931.50			11	0.146	0.027		64ZW	
7-1N	7,948.50			150	0.136	0.029		64ZW	
7-1N	7,949.50			187	0.108			64ZW	
7-1N	7,950.50			145	0.145	0.028		64ZW	
7-1N	7,952.50			36	0.133	0.008		64ZW	
7-1N	7,953.50			55	0.127	0		64ZW	
7-1N	7,954.50			98	0.119	0		64ZW	
7-1N	7,955.50			298	0.136	0.007		64ZW	
7-1N	7,956.50			122	0.128	0.032		64ZW	
7-1N	7,957.50			99	0.12	0.008		64ZW	
7-1N	7,958.50			131	0.121	0.033		64ZW	
7-1N	7,959.50			86	0.125	0		64ZW	
7-1N	7,960.50			64	0.129	0.008		64ZW	
7-1N	7,961.50			151	0.157	0		64ZW	
7-1N	7,962.50			95	0.128	0		64ZW	
7-1N	7,963.50			70	0.119	0		64ZW	
7-1N	7,964.50			130	0.134	0.03		64ZW	
7-1N	7,965.50			95	0.125	0.024		64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
7-1N	7,966.50			64	0.145	0.028		64ZW	
7-1N	7,967.50			136	0.136	0.022		64ZW	
7-1N	7,968.50			137	0.143	0.021		64ZW	
7-1N	7,969.50			144	0.153	0.013		64ZW	
7-1N	7,970.50			91	0.127	0.031		64ZW	
7-1N	7,971.50			71	0.134	0.015		64ZW	
7-1N	7,972.50			72	0.128	0.016		64ZW	
7-1N	7,973.50			75	0.172	0.023		64ZW	
7-1N	7,974.50			193	0.173	0.023		64ZW	
7-1N	7,975.50			86	0.158	0.025		64ZW	
7-1N	7,976.50			65	0.159	0.025		64ZW	
7-1N	7,977.50			129	0.176	0.017		64ZW	
7-1N	7,978.50			142	0.167	0.024		64ZW	
7-1N	7,979.50			97	0.155	0.026		64ZW	
7-1N	7,980.50			89	0.154	0.026		64ZW	
7-1N	7,981.50			108	0.155	0.026		64ZW	
7-1N	7,982.50			71	0.163	0.025		64ZW	
7-1N	7,983.50			127	0.176	0.023		64ZW	
7-1N	7,984.50			90	0.147	0		64ZW	
7-1N	7,985.50			51	0.149	0.027		64ZW	
7-1N	7,986.50			60	0.16	0.019		64ZW	
7-1N	7,987.50			152	0.237	0.017		64ZW	
7-1N	7,988.50			74	0.165	0		64ZW	
7-1N	7,989.50			63	0.157	0.025		64ZW	
7-1N	7,990.50			68	0.174	0.006		64ZW	
7-1N	7,991.50			59	0.088	0.011		64ZW	
7-1N	7,992.50			50	0.095	0.031		64ZW	
7-1N	7,993.50			78	0.08	0.012		64ZW	
7-1N	8,001.50			51	0.145	0		64ZW	
7-1N	8,002.50			73	0.164	0		64ZW	
7-1N	8,003.50			50	0.151	0.007		64ZW	
7-1N	8,004.50			54	0.153	0.026		64ZW	

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7-1N	8,005.50			46	0.15	0.007		64ZW	
7-1N	8,006.50			73	0.149	0.007		64ZW	
7-1N	8,007.50			71	0.145	0.021		64ZW	
7-1N	8,008.50			45	0.164	0.024		64ZW	
7-1N	8,009.50			52	0.166	0.018		64ZW	
7-1N	8,010.50			82	0.189	0		64ZW	
7-1N	8,011.50			100	0.169	0.006		64ZW	
7-1N	8,012.50			50	0.16	0		64ZW	
7-1N	8,013.50			95	0.159	0		64ZW	
7-1N	8,014.50			108	0.169	0		64ZW	
7-1N	8,015.50			83	0.14	0		64ZW	
7-1N	8,016.50			51	0.139	0		64ZW	
7-1N	8,017.50			76	0.15	0.007		64ZW	
7-1N	8,018.50			83	0.144	0.007		64ZW	
7-1N	8,019.50			134	0.158	0		64ZW	
7-1N	8,020.50			82	0.158	0.019		64ZW	
7-1N	8,021.50			69	0.137	0.01		64ZW	
7-1N	8,022.50			50	0.149	0.027		64ZW	
7-1N	8,023.50			105	0.154	0.01		64ZW	
7-1N	8,024.50			116	0.159	0.01		64ZW	
7-1N	8,025.50			98	0.17	0.023		64ZW	
7-1N	8,026.50			144	0.169	0.01		64ZW	
7-1N	8,027.50			118	0.155	0		64ZW	
7-1N	8,028.50			125	0.203	0.02		64ZW	
7-1N	8,029.50			113	0.196	0.02		64ZW	
7-1N	8,030.50			78	0.173	0.023		64ZW	
7-1N	8,031.50			113	0.163	0.024		64ZW	
7-1N	8,032.50			144	0.169	0.027		64ZW	
7-1N	8,033.50			83	0.175	0.017		64ZW	
7-1N	8,034.50			65	0.17	0.018		64ZW	
7-1N	8,035.50			94	0.17	0.023		64ZW	
7-1N	8,036.50			102	0.161	0.025		64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
7-1N	8,037.50			104	0.172	0.018		64ZW	
7-1N	8,038.50			106	0.162	0.025		64ZW	
7-1N	8,039.50			160	0.197	0.02		64ZW	
7-1N	8,040.50			84	0.177	0.017		64ZW	
7-1N	8,041.50			102	0.164	0.012		64ZW	
7-1N	8,042.50			135	0.159	0.013		64ZW	
7-1N	8,043.50			99	0.172	0.012		64ZW	
7-1N	8,044.50			65	0.171	0.035		64ZW	
7-1N	8,045.50			63	0.171	0.023		64ZW	
7-1N	8,046.50			110	0.192	0.021		64ZW	
7-1N	8,047.50			109	0.183	0.027		64ZW	
7-1N	8,048.50			132	0.178	0.022		64ZW	
7-1N	8,057.50			127	0.143	0.028		64ZW	
7-1N	8,058.50			164	0.136	0.029		64ZW	
7-1N	8,059.50			93	0.145	0.021		64ZW	
7-1N	8,060.50			97	0.168	0.024		64ZW	
7-1N	8,061.50			134	0.168	0.024		64ZW	
7-1N	8,062.50			171	0.166	0.024		64ZW	
7-1N	8,063.50			111	0.169	0.024		64ZW	
7-1N	8,064.50			90	0.15	0		64ZW	
7-1N	8,065.50			121	0.173	0.046		64ZW	
7-1N	8,066.50			151	0.169	0.036		64ZW	
7-1N	8,067.50			123	0.168	0		64ZW	
7-1N	8,068.50			106	0.156	0.026		64ZW	
7-1N	8,069.50			62	0.15	0.027		64ZW	
7-1N	8,070.50			142	0.149	0.007		64ZW	
7-1N	8,071.50			66	0.147	0.007		64ZW	
7-1N	8,072.50			116	0.14	0.007		64ZW	
7-1N	8,073.50			70	0.177	0.023		64ZW	
7-1N	8,074.50			66				64ZW	
7-1N	8,075.50			54	0.157	0		64ZW	
7-1N	8,076.50			63	0.138	0		64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
7-1N	8,077.50			61	0.162	0.025		64ZW	
7-1N	8,078.50			70	0.149	0.027		64ZW	
7-1N	8,079.50			52	0.154	0.026		64ZW	
7-1N	8,080.50			89	0.161	0.025		64ZW	
7-1N	8,081.50			103	0.169	0.024		64ZW	
7-1N	8,082.50			62	0.159	0.01		64ZW	
7-1N	8,083.50			61	0.17	0.023		64ZW	
7-1N	8,084.50			44	0.156	0.026		64ZW	
7-1N	8,085.50			36	0.147	0.027		64ZW	
7-1N	8,086.50			159	0.182	0.01		64ZW	
7-1N	8,087.50			36	0.141	0.043		64ZW	
7-1N	8,088.50			48	0.131	0.031		64ZW	
7-1N	8,089.50			47	0.164	0.024		64ZW	
7-1N	8,090.50			60	0.166	0.042		64ZW	
7-1N	8,091.50			61	0.146	0.034		64ZW	
7-1N	8,092.50			51	0.154	0.026		64ZW	
7-1N	8,093.50			45	0.153	0.026		64ZW	
7-1N	8,094.50			56	0.123	0.033		64ZW	
7-1N	8,095.50			102	0.171	0.023		64ZW	
7-1N	8,096.50			51	0.131	0.031		64ZW	
7-1N	8,097.50			34	0.155	0.045		64ZW	
7-1N	8,098.50			45	0.146	0.103		64ZW	
7-1N	8,099.50			37	0.152	0.118		64ZW	
7-1N	8,100.50			32	0.14	0.143		64ZW	
7-1N	8,102.50			32	0.209	0.139		64ZW	
7-1N	8,103.50			33	0.17	0.106		64ZW	
7-1N	8,104.50			19	0.166	0.126		64ZW	
7-1N	8,105.50			21	0.163	0.025		64ZW	
7-1N	8,106.50			25	0.175	0.023		64ZW	
7-1N	8,107.50				0.106	0.038		64ZW	
7-1N	8,108.50				0.1	0.04		64ZW	
7-1N	8,109.50				0.115	0.052		64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
7-1N	8,110.50			36	0.168	0.036		64ZW	
7-1N	8,111.50			39	0.182	0.055		64ZW	
7-1N	8,112.50			52	0.126	0.032		64ZW	
7-1N	8,113.50			38	0.102			64ZW	
7-1N	8,114.50			46	0.117	0		64ZW	
7-1N	8,115.50			50	0.127	0.032		64ZW	
7-1N	8,116.50			41	0.161	0.019		64ZW	
7-1N	8,117.50			42	0.149	0.027		64ZW	
7-1N	8,118.50			60	0.131	0.031		64ZW	
7-1N	8,119.50			35	0.112	0.027		64ZW	
7-1N	8,120.50			24	0.156	0		64ZW	
7-1N	8,121.50			38	0.165	0		64ZW	
7-1N	8,122.50			38	0.185	0.032		64ZW	
7-1N	8,123.50			49	0.181	0		64ZW	
7-1N	8,132.50			28	0.162	0.025		64ZW	
7-1N	8,133.50			34	0.158	0.019		64ZW	
7-1N	8,134.50			40	0.153	0.026		64ZW	
7-1N	8,135.50			40	0.159	0.019		64ZW	
7-1N	8,136.50			40	0.17	0.029		64ZW	
7-1N	8,137.50			24	0.153	0.007		64ZW	
7-1N	8,138.50			43	0.168	0.024		64ZW	
7-1N	8,139.50			27	0.161	0.006		64ZW	
7-1N	8,140.50			50	0.155	0.026		64ZW	
7-1N	8,141.50			18	0.121	0.041		64ZW	
7-1N	8,142.50			39	0.159	0.019		64ZW	
7-1N	8,143.50			30	0.152	0.026		64ZW	
7-1N	8,144.50			31	0.155	0.026		64ZW	
7-1N	8,145.50			36	0.147	0.027		64ZW	
7-1N	8,146.50			40	0.153	0.007		64ZW	
7-1N	8,147.50			19	0.157	0.025		64ZW	
7-1N	8,148.50			15	0.153	0		64ZW	
7-1N	8,149.50			23	0.138	0.029		64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
7-1N	8,150.50			19	0.137	0.029		64ZW	
7-1N	8,151.50			11	0.14	0.029		64ZW	
7-1N	8,152.50			17	0.121	0.008		64ZW	
7-1N	8,153.50			28	0.136	0.022		64ZW	
7-1N	8,162.50			13	0.143	0.028		64ZW	
7-1N	8,163.50			21	0.151	0.027		64ZW	
7-1N	8,164.50			16	0.146	0.041		64ZW	
7-1N	8,165.50			17	0.152	0.033		64ZW	
7-1N	8,166.50			24	0.156	0.026		64ZW	
7-1N	8,167.50			30	0.154	0.039		64ZW	
7-1N	8,168.50			17	0.141	0.035		64ZW	
7-1N	8,169.50			20	0.147	0.041		64ZW	
7-1N	8,170.50			20	0.146	0.054		64ZW	
7-1N	8,171.50			14	0.134	0.007		64ZW	
7-1N	8,172.50			28	0.147	0.027		64ZW	
7-1N	8,173.50			6	0.123	0.106		64ZW	
7-1N	8,174.50			13	0.133	0.143		64ZW	
7-1N	8,175.50			24	0.136	0.14		64ZW	
7-1N	8,176.50			22	0.151	0.146		64ZW	
7-1N	8,177.50			23	0.15	0.1		64ZW	
7-1N	8,178.50			22	0.143	0.161		64ZW	
7-1N	8,179.50			14	0.146	0.158		64ZW	
7-1N	8,180.50			13	0.14	0.136		64ZW	
7-1N	8,181.50			14	0.141	0.106		64ZW	
7-1N	8,182.50			9	0.138	0.138		64ZW	
7-1N	8,183.50				0.138	0.167		64ZW	
7-1N	8,184.50			9	0.144	0.125		64ZW	
7-1N	8,185.50			17	0.15	0.167		64ZW	
7-1N	8,186.50			6	0.133	0.165		64ZW	
7-1N	8,187.50			9	0.129	0.109		64ZW	
7-1N	8,188.50			10	0.131	0.107		64ZW	
7-1N	8,191.50			29	0.144	0.215		64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
7-1N	8,192.50			28	0.146	0.164		64ZW	
7-1N	8,193.50			39	0.158	0.171		64ZW	
7-1N	8,194.50			34	0.144	0.128		64ZW	
7-1N	8,195.50			23	0.16	0.187		64ZW	
7-1N	8,196.50			25	0.134	0.135		64ZW	
7-1N	8,197.50			29	0.147	0.156		64ZW	
7-1N	8,198.50			37	0.129	0.14		64ZW	
7-1N	8,199.50			23	0.145	0.152		64ZW	
7-1N	8,200.50			18	0.129	0.17		64ZW	
7-1N	8,201.50			14	0.137	0.168		64ZW	
7-1N	8,202.50			26	0.141	0.064		64ZW	
7-1N	8,203.50			27	0.158	0.133		64ZW	
7-1N	8,204.50			39	0.156	0.167		64ZW	
7-1N	8,205.50			15	0.156	0.11		64ZW	
7-1N	8,221.50			66	0.178	0.18		64ZW	
7-1N	8,222.50			36	0.163	0.196		64ZW	
7-1N	8,223.50			42	0.165	0.163		64ZW	
7-1N	8,224.50			1	0.13	0.046		64ZW	
7-1N	8,228.50			401	0.18	0.228		64ZW	
7-1N	8,229.50			259	0.144	0.09		64ZW	
4-36N	7,969.20			26	0.151	0.026		64ZW	
4-36N	7,976.50			176	0.155	0.026		64ZW	
4-36N	7,977.50			310	0.176	0.023		64ZW	
4-36N	7,978.50			203	0.165	0.024		64ZW	
4-36N	7,979.50			81	0.166	0.006		64ZW	
4-36N	7,980.30			159	0.16	0		64ZW	
4-36N	7,981.00			191	0.15	0.027		64ZW	
4-36N	7,981.70			188	0.177	0.006		64ZW	
4-36N	7,982.50			231	0.164	0		64ZW	
4-36N	7,983.50			239	0.157	0		64ZW	
4-36N	7,984.50			69	0.156	0.026		64ZW	
4-36N	7,985.50			102	0.149	0.007		64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
4-36N	7,986.50			92	0.155	0		64ZW	
4-36N	7,987.50			81	0.155	0		64ZW	
4-36N	7,988.50			342	0.171	0		64ZW	
4-36N	7,989.50			101	0.16	0.006		64ZW	
4-36N	7,990.50			223	0.161	0.006		64ZW	
4-36N	7,991.50			245	0.169	0		64ZW	
4-36N	7,992.50			187	0.164	0.024		64ZW	
4-36N	7,993.50			229	0.169	0.154		64ZW	
4-36N	7,994.50			120	0.158	0.006		64ZW	
4-36N	7,995.50			141	0.188	0.005		64ZW	
4-36N	7,996.50			121	0.15	0.007		64ZW	
4-36N	7,997.50			44	0.125	0.008		64ZW	
4-36N	7,998.50			191	0.165	0.025		64ZW	
4-36N	7,999.50			135	0.175	0.023		64ZW	
4-36N	8,000.50			76	0.165	0.006		64ZW	
4-36N	8,001.50			149	0.158	0.006		64ZW	
4-36N	8,002.50			242	0.168	0.006		64ZW	
4-36N	8,003.50			179	0.163	0.006		64ZW	
4-36N	8,004.50			139	0.169	0.024		64ZW	
4-36N	8,005.50			153	0.159	0.006		64ZW	
4-36N	8,006.50			125	0.159	0.006		64ZW	
4-36N	8,007.50			185	0.159	0.006		64ZW	
4-36N	8,008.50			149	0.163	0.006		64ZW	
4-36N	8,010.50			162	0.181	0.006		64ZW	
4-36N	8,011.50			109	0.181	0.006		64ZW	
4-36N	8,012.50			233	0.154	0.006		64ZW	
4-36N	8,013.50			186	0.168	0.006		64ZW	
4-36N	8,014.50			102	0.172	0.006		64ZW	
4-36N	8,015.50			167	0.17	0.006		64ZW	
4-36N	8,016.50			154	0.153	0.007		64ZW	
4-36N	8,017.50			224	0.167	0.006		64ZW	
4-36N	8,018.50			208	0.159	0.006		64ZW	

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4-36N	8,019.50			174	0.161	0.006		64ZW	
4-36N	8,020.50			146	0.168	0.006		64ZW	
4-36N	8,026.50			106	0.158	0.025		64ZW	
4-36N	8,027.50			134	0.172	0.006		64ZW	
4-36N	8,028.50			138	0.146	0.007		64ZW	
4-36N	8,029.50			153	0.174	0.006		64ZW	
4-36N	8,030.50			77	0.175	0.006		64ZW	
4-36N	8,031.50			73	0.155	0.006		64ZW	
4-36N	8,032.50			208	0.163	0.006		64ZW	
4-36N	8,041.30			146	0.156	0.006		64ZW	
4-36N	8,057.50			87	0.175	0.006		64ZW	
4-36N	8,058.50			134	0.16	0.006		64ZW	
4-36N	8,059.50			85	0.163	0.006		64ZW	
4-36N	8,060.50			79	0.16	0.006		64ZW	
4-36N	8,061.50			78	0.15	0.007		64ZW	
4-36N	8,062.50			108	0.163	0.006		64ZW	
4-36N	8,063.50			55	0.155	0.006		64ZW	
4-36N	8,065.50			109	0.171	0.006		64ZW	
4-36N	8,066.50			90	0.17	0.006		64ZW	
4-36N	8,067.50			134	0.168	0.006		64ZW	
4-36N	8,068.50			141	0.176	0.006		64ZW	
4-36N	8,069.50			113	0.167	0.006		64ZW	
4-36N	8,070.50			97	0.168	0.006		64ZW	
4-36N	8,071.50			106	0.16	0.006		64ZW	
4-36N	8,073.50			143	0.179	0.006		64ZW	
4-36N	8,074.50			98	0.188	0.005		64ZW	
4-36N	8,076.50			89	0.15	0.007		64ZW	
4-36N	8,077.50			47	0.17	0.006		64ZW	
4-36N	8,078.50			67	0.162	0.006		64ZW	
4-36N	8,081.50			135	0.161	0.006		64ZW	
4-36N	8,082.50			107	0.168	0.006		64ZW	
4-36N	8,083.50			86	0.179	0.006		64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
4-36N	8,084.50			128	0.168	0.006		64ZW	
4-36N	8,085.50			109	0.183	0.016		64ZW	
4-36N	8,086.50			154	0.174	0.006		64ZW	
4-36N	8,087.50			77	0.193	0.005		64ZW	
4-36N	8,088.50			84	0.161	0.006		64ZW	
4-36N	8,089.50			55	0.178	0.017		64ZW	
4-36N	8,091.50			140	0.166	0.006		64ZW	
4-36N	8,092.50			130	0.173	0.006		64ZW	
4-36N	8,093.50			141	0.168	0.006		64ZW	
4-36N	8,094.50			157	0.168	0.006		64ZW	
4-36N	8,095.50			210	0.171	0.006		64ZW	
4-36N	8,096.50			161	0.175	0.006		64ZW	
4-36N	8,097.50			111	0.174	0.006		64ZW	
4-36N	8,098.50			171	0.177	0.006		64ZW	
4-36N	8,099.50			163	0.17	0.006		64ZW	
4-36N	8,100.50			127	0.187	0.005		64ZW	
4-36N	8,101.50			105	0.184	0.022		64ZW	
4-36N	8,102.50			116	0.202	0.02		64ZW	
4-36N	8,103.50			157	0.16	0.025		64ZW	
4-36N	8,104.50			130	0.186	0.021		64ZW	
4-36N	8,105.50			138	0.169	0.006		64ZW	
4-36N	8,106.50			184	0.165	0.006		64ZW	
4-36N	8,107.50			153	0.166	0.006		64ZW	
4-36N	8,108.50			149	0.17	0.006		64ZW	
4-36N	8,110.50			166	0.179	0.006		64ZW	
4-36N	8,111.50			131	0.169	0.006		64ZW	
4-36N	8,112.50			105	0.164	0.006		64ZW	
4-36N	8,113.50			87	0.187	0.005		64ZW	
4-36N	8,114.50			154	0.185	0.005		64ZW	
4-36N	8,115.50			114	0.186	0.016		64ZW	
4-36N	8,116.50			124	0.174	0.017		64ZW	
4-36N	8,117.50			169	0.186	0.005		64ZW	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
4-36N	8,118.50			113	0.177	0.017		64ZW	
4-36N	8,119.50			145	0.169	0.018		64ZW	
4-36N	8,120.50			102	0.179	0.006		64ZW	
4-36N	8,121.50			107	0.17	0.024		64ZW	
4-36N	8,122.50			121	0.171	0.023		64ZW	
4-36N	8,123.50			121	0.193	0.021		64ZW	
4-36N	8,124.50			74	0.178	0.022		64ZW	
4-36N	8,125.50			106	0.183	0.022		64ZW	
4-36N	8,126.50			121	0.17	0.024		64ZW	
4-36N	8,127.50			148	0.18	0.022		64ZW	
4-36N	8,128.50			151	0.175	0.023		64ZW	
4-36N	8,129.50			92	0.175	0.023		64ZW	
4-36N	8,130.80			153	0.154	0.026		64ZW	
4-36N	8,132.50			108	0.147	0.027		64ZW	
4-36N	8,133.50			142	0.175	0.023		64ZW	
4-36N	8,134.50			120	0.178	0.022		64ZW	
4-36N	8,135.50			102	0.175	0.023		64ZW	
4-36N	8,136.50			161	0.18	0.022		64ZW	
4-36N	8,137.50			126	0.188	0.032		64ZW	
4-36N	8,138.50			80	0.145	0.028		64ZW	
4-36N	8,139.50			90	0.179	0.034		64ZW	
4-36N	8,140.50			155	0.181	0.033		64ZW	
4-36N	8,141.50			66	0.163	0.025		64ZW	
4-36N	8,142.70			47	0.154	0.039		64ZW	
4-36N	8,143.50			55	0.17	0.006		64ZW	
4-36N	8,144.50			86	0.169	0.006		64ZW	
4-36N	8,145.50			86	0.174	0.006		64ZW	
4-36N	8,150.50			110	0.176	0.006		64ZW	
4-36N	8,151.50			64	0.176	0.006		64ZW	
4-36N	8,152.50			68	0.174	0.006		64ZW	
4-36N	8,153.50			66	0.161	0.025		64ZW	
4-36N	8,154.50			146	0.151	0.007		64ZW	

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4-36N	8,155.50			122	0.163	0.006		64ZW	
4-36N	8,156.50			104	0.148	0.007		64ZW	
4-36N	8,157.50			122	0.162	0.006		64ZW	
4-36N	8,158.50			85	0.166	0.006		64ZW	
4-36N	8,159.50			73	0.156	0.09		64ZW	
4-36N	8,160.50			115	0.167	0.114		64ZW	
4-36N	8,161.50			97	0.167	0.126		64ZW	
4-36N	8,162.50			94	0.153	0.124		64ZW	
4-36N	8,163.50			97	0.159	0.132		64ZW	
4-36N	8,164.50			100	0.163	0.171		64ZW	
4-36N	8,165.50			137	0.16	0.131		64ZW	
4-36N	8,166.50			83	0.173	0.139		64ZW	
4-36N	8,167.50			130	0.173	0.133		64ZW	
4-36N	8,168.50			150	0.181	0.143		64ZW	
4-36N	8,169.50			70	0.155	0.148		64ZW	
4-36N	8,170.50			33	0.148	0.155		64ZW	
4-36N	8,172.50			45	0.152	0.151		64ZW	
4-36N	8,173.50			67	0.18	0.122		64ZW	
4-36N	8,174.50			72	0.17	0.129		64ZW	
4-36N	8,175.50			36	0.172	0.128		64ZW	
4-36N	8,176.50			28	0.158	0.12		64ZW	
4-36N	8,177.50			39	0.153	0.143		64ZW	
4-36N	8,178.50			57	0.174	0.184		64ZW	
4-36N	8,179.50			60	0.167	0.143		64ZW	
4-36N	8,204.50			70	0.169	0.178		64ZW	
4-36N	8,205.40			33	0.153	0.15		64ZW	
4-36N	8,206.30			37	0.158	0.171		64ZW	
4-36N	8,207.20			60	0.152	0.151		64ZW	
4-36N	8,208.10			33	0.157	0.153		64ZW	
4-36N	8,209.00			57	0.141	0.149		64ZW	
4-36N	8,209.80			43	0.153	0.157		64ZW	
4-36N	8,210.70			66	0.154	0.2		64ZW	

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4-36N	8,211.60			66	0.161	0.186		64ZW	
4-36N	8,212.50			27	0.147	0.157		64ZW	
4-36N	8,213.40			55	0.149	0.154		64ZW	
4-36N	8,214.20			28	0.149	0.141		64ZW	
4-36N	8,215.00			55	0.164	0.231		64ZW	
4-36N	8,215.60			51	0.181	0.144		64ZW	
4-36N	8,216.50			28	0.157	0.165		64ZW	
4-36N	8,217.50			22	0.14	0.143		64ZW	
4-36N	8,218.30			52	0.142	0.169		64ZW	
4-36N	8,218.90			41	0.142	0.148		64ZW	
4-36N	8,219.40			37	0.167	0.168		64ZW	
4-36N	8,220.10			30	0.15	0.16		64ZW	
4-36N	8,220.80			37	0.154	0.13		64ZW	
4-36N	8,221.60			22	0.171	0.193		64ZW	
4-36N	8,222.50			34	0.18	0.2		64ZW	
4-36N	8,223.40			27	0.166	0.211		64ZW	
4-36N	8,224.20			22	0.182	0.121		64ZW	
4-36N	8,224.90			13	0.147	0.163		64ZW	
4-36N	8,225.60			46	0.16	0.162		64ZW	
4-36N	8,226.50			35	0.171	0.187		64ZW	
4-36N	8,227.40			35	0.172	0.157		64ZW	
4-36N	8,228.00			16	0.161	0.143		64ZW	
4-36N	8,228.80			53	0.175	0.16		64ZW	
4-36N	8,229.70			19	0.154	0.149		64ZW	
4-36N	8,230.50			42	0.153	0.222		64ZW	
4-36N	8,231.30			95	0.176	0.182		64ZW	
4-36N	8,232.20			71	0.17	0.13		64ZW	
4-36N	8,233.10			69	0.176	0.165		64ZW	
4-36N	8,233.90			65	0.171	0.205		64ZW	
4-36N	8,234.80			58	0.175	0.177		64ZW	
4-36N	8,235.60			67	0.177	0.181		64ZW	
4-36N	8,236.50			10	0.149	0.141		64ZW	

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4-36N	8,237.40			37	0.165	0.17		64ZW	
4-36N	8,238.30			94	0.171	0.175		64ZW	
4-36N	8,239.20			94	0.181	0.166		64ZW	
4-36N	8,239.90			90	0.163	0.184		64ZW	
4-36N	8,240.50			33	0.17	0.165		64ZW	
4-36N	8,250.50			51	0.177	0.175		64ZW	
4-36N	8,251.30			30	0.165	0.158		64ZW	
4-36N	8,252.20			14	0.151	0.199		64ZW	
4-36N	8,253.10			14	0.141	0.135		64ZW	
4-36N	8,253.90			7	0.135	0.141		64ZW	
4-36N	8,254.80			9	0.137	0.139		64ZW	
4-36N	8,255.70			12	0.166	0.145		64ZW	
4-36N	8,256.40			26	0.176	0.204		64ZW	
4-36N	8,257.30			36	0.183	0.202		64ZW	
4-36N	8,258.20			47	0.182	0.192		64ZW	
4-36N	8,259.10			126	0.158	0.165		64ZW	
4-36N	8,259.90			41	0.165	0.14		64ZW	
4-36N	8,260.70			124	0.142	0.183		64ZW	
4-36N	8,261.60			122	0.155	0.174		64ZW	
4-36N	8,262.40			154	0.163	0.215		64ZW	
4-36N	8,263.20			101	0.157	0.197		64ZW	
4-36N	8,263.90			45	0.165	0.188		64ZW	
4-36N	8,264.50			59	0.168	0.143		64ZW	
4-36N	8,265.50			40	0.158	0.177		64ZW	
4-36N	8,266.40			177	0.159	0.189		64ZW	
4-36N	8,267.30			154	0.157	0.166		64ZW	
4-36N	8,268.20			49	0.15	0.187		64ZW	
4-36N	8,269.00			163	0.168	0.179		64ZW	
4-36N	8,269.80			107	0.16	0.144		64ZW	
4-36N	8,270.70			274	0.158	0.171		64ZW	
4-36N	8,271.60			158	0.164	0.213		64ZW	
4-36N	8,272.50			215	0.167	0.18		64ZW	

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4-36N	8,274.50			67	0.151	0.146		64ZW	
4-36N	8,275.50			70	0.167	0.167		64ZW	
4-36N	8,276.50			140	0.17	0.235		64ZW	
4-36N	8,277.50			141	0.161	0.143		64ZW	
4-36N	8,278.50			49	0.168	0.155		64ZW	
4-36N	8,279.50			23	0.152	0.177		64ZW	
4-36N	8,280.50			36	0.154	0.136		64ZW	
4-36N	8,281.50			75	0.159	0.176		64ZW	
4-36N	8,282.50			158	0.161	0.174		64ZW	
4-36N	8,283.50			193	0.173	0.168		64ZW	
4-36N	8,284.50			164	0.164	0.158		64ZW	
4-36N	8,285.40			290	0.141	0.163		64ZW	
4-36N	8,286.50			54	0.153	0.15		64ZW	
4-36N	8,288.30			30	0.134	0.172		64ZW	
4-36N	8,289.30			16	0.128	0.117		64ZW	
4-36N	8,290.30			19	0.146	0.158		64ZW	
4-36N	8,291.30			21	0.145	0.159		64ZW	
4-36N	8,292.20			71	0.146	0.13		64ZW	
888N-12	8,680.40		2.71	0.006	0.0311	0.1854	0.775	Santos	
888N-12	8,681.50		2.86	0.374	0.0639	0.1072	0.7453	Santos	Y
888N-12	8,682.60		2.65	0.006	0.043	0.2948	0.6689	Santos	
888N-12	8,683.50		2.64	0.006	0.0427	0.3237	0.6746	Santos	
888N-12	8,684.50		2.72	0.006	0.0652	0.24	0.7348	Santos	
888N-12	8,684.80		2.73	3.926	0.1042	0.1461	0.8534	Santos	Y
888N-12	8,685.50		2.63	0.006	0.0381	0.2292	0.7448	Santos	
888N-12	8,686.50		2.67	0.006	0.0344	0.2231	0.6962	Santos	
888N-12	8,687.50		2.6	0.164	0.0658	0.3284	0.6684	Santos	
888N-12	8,688.50		2.66	0.006	0.06	0.1694	0.775	Santos	
888N-12	8,689.50		2.61	0.006	0.0491	0.3317	0.6219	Santos	
888N-12	8,690.50		2.6	0.006	0.055	0.3435	0.6157	Santos	
888N-12	8,691.50		2.65	0.006	0.0573	0.3022	0.6382	Santos	
888N-12	8,692.30		2.66	0.005	0.0483	0.2393	0.7071	Santos	

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888N-12	8,693.50		2.61	0.006	0.0574	0.3396	0.6403	Santos	
888N-12	8,694.60		2.59	0.284	0.0899	0.2739	0.7232	Santos	
888N-12	8,695.50		2.6	0.006	0.0579	0.2786	0.7133	Santos	
888N-12	8,696.50		2.65	0.006	0.0421	0.1672	0.7209	Santos	
888N-12	8,697.50		2.66	0.006	0.0553	0.1778	0.7377	Santos	
888N-12	8,698.50		2.6	0.035	0.0751	0.2384	0.7425	Santos	
888N-12	8,699.50		2.7	0.005	0.0596	0.226	0.7026	Santos	
888N-12	8,700.50		2.61	0.594	0.0895	0.2295	0.759	Santos	
888N-12	8,701.50		2.67	0.003	0.0523	0.2232	0.7625	Santos	
888N-12	8,702.50		2.66	0.006	0.0604	0.191	0.7812	Santos	
888N-12	8,703.50		2.66	0.006	0.0524	0.1669	0.825	Santos	
888N-12	8,704.50		2.67	0.006	0.0667	0.197	0.7939	Santos	
888N-12	8,705.50		2.64	0.007	0.0388	0.1933	0.8041	Santos	
888N-12	8,706.50		2.65	0.006	0.0502	0.1325	0.7929	Santos	
888N-12	8,707.50		2.68	0.006	0.0585	0.1957	0.7901	Santos	
888N-12	8,708.50		2.66	0.006	0.0776	0.1834	0.8144	Santos	
888N-12	8,709.50		2.64	0.006	0.0672	0.1218	0.8752	Santos	
888N-12	8,710.50		2.66	0.006	0.0907	0.1837	0.8147	Santos	
888N-12	8,711.70		2.65	0.03	0.077	0.1175	0.8669	Santos	
888N-12	8,712.50		2.63	0.006	0.0838	0.1717	0.8204	Santos	
888N-12	8,713.50		2.64	0.006	0.0877	0.214	0.7741	Santos	
888N-12	8,714.50		2.66	0.006	0.1164	0.1597	0.8277	Santos	
888N-12	8,715.50		2.68	0.274	0.172	0.1387	0.8578	Santos	
888N-12	8,716.10		2.74	3.618	0.2178	0.0422	0.9563	Santos	Y
888N-12	8,716.50		2.63	0.557	0.0553	0.1017	0.8954	Santos	
888N-12	8,717.50		2.62	0.007	0.0381	0.1482	0.7681	Santos	
888N-12	8,718.50		2.68	0.006	0.0572	0.156	0.835	Santos	
888N-12	8,719.50		2.67	0.006	0.0912	0.2237	0.7738	Santos	
888N-12	8,720.40		2.69	0.052	0.1231	0.1419	0.8576	Santos	
888N-12	8,721.50		2.65	1.031	0.0385	0.072	0.9189	Santos	Y
888N-12	8,722.50		2.64	0.006	0.0409	0.1145	0.8633	Santos	
888N-12	8,723.50		2.63	0.078	0.0831	0.1793	0.8115	Santos	

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888N-12	8,724.50		2.64	2.328	0.1041	0.1092	0.8705	Santos	Y
888N-12	8,725.80		2.68	6.488	0.1386	0.0937	0.9034	Santos	Y
888N-12	8,726.50		2.62	0.006	0.0471	0.1897	0.793	Santos	
888N-12	8,727.50		2.62	0.006	0.0331	0	0.9944	Santos	
888N-12	8,728.50		2.63	0.006	0.0942	0.1998	0.7976	Santos	
888N-12	8,729.50		2.63	0.005	0.1073	0.1801	0.8131	Santos	
888N-12	8,730.70		2.69	0.277	0.1694	0.1248	0.8714	Santos	
888N-12	8,731.10		2.73	3.739	0.1986	0.0726	0.9264	Santos	Y
888N-12	8,731.50		2.61	0.006	0.0395	0.0695	0.917	Santos	
888N-12	8,732.50		2.61	0.007	0.0465	0.0695	0.9173	Santos	
888N-12	8,733.50		2.61	0.006	0.0554	0.0749	0.9121	Santos	
888N-12	8,734.50		2.65	0.006	0.111	0.1961	0.7981	Santos	
888N-12	8,735.50		2.71	6.25	0.1746	0.0802	0.9139	Santos	Y
888N-12	8,736.50		2.62	0.006	0.0476	0.2013	0.7843	Santos	
888N-12	8,737.50		2.62	0.006	0.0515	0.1616	0.8176	Santos	
888N-12	8,738.50		2.61	0.006	0.0576	0.1711	0.8173	Santos	
888N-12	8,739.50		2.6	0.006	0.0526	0.1642	0.8307	Santos	
888N-12	8,740.00		2.61	0.006	0.0585	0.1641	0.8148	Santos	
888N-12	9,790.50		2.59	<1.0	0.064	0.169	0.812	Santos	
888N-12	9,791.50		2.63	0.3	0.073	0.19	0.809	Santos	
888N-12	9,792.50		2.63	<1.0	0.066	0.211	0.787	Santos	
888N-12	9,795.50		2.61	0.26	0.07	0.155	0.831	Santos	
888N-12	9,796.50		2.62	0.43	0.067	0.106	0.886	Santos	
888N-12	9,797.50		2.6	1.11	0.065	0.107	0.887	Santos	
888N-12	9,798.50		2.61	0.28	0.064	0.131	0.866	Santos	
888N-12	9,799.40		2.64	0.24	0.07	0.192	0.798	Santos	
888N-12	9,800.60		2.6	0.52	0.069	0.122	0.859	Santos	
888N-12	9,801.50		2.62	0.26	0.077	0.128	0.862	Santos	
888N-12	9,802.50		2.61	0.27	0.063	0.102	0.894	Santos	
888N-12	9,803.60		2.65	1.88	0.074	0.056	0.935	Santos	
888N-12	9,804.70		2.63	1.24	0.071	0.089	0.905	Santos	
888N-12	9,805.80		2.59	<1.0	0.062	0.127	0.858	Santos	

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888N-12	9,806.40		2.62	0.51	0.063	0.191	0.793	Santos	
888N-12	9,807.80		2.6	1.54	0.068	0.128	0.867	Santos	
888N-12	9,808.50		2.61	0.28	0.064	0.106	0.889	Santos	
888N-12	9,809.60		2.58	<1.0	0.068	0.142	0.856	Santos	
888N-12	9,810.60		2.61	1.35	0.067	0.149	0.832	Santos	
888N-12	9,811.50		2.63	0.89	0.071	0.072	0.91	Santos	
888N-12	9,812.30		2.62	<1.0	0.068	0.119	0.879	Santos	
888N-12	9,813.70		2.62	0.38	0.069	0.064	0.934	Santos	
888N-12	9,814.50		2.59	0.21	0.071	0.261	0.726	Santos	
888N-12	9,815.50		2.58	<1.0	0.068	0.204	0.794	Santos	
888N-12	9,816.50		2.63	1.63	0.074	0.097	0.893	Santos	
888N-12	9,817.00		2.63	0.3	0.069	0.187	0.81	Santos	
888N-12	9,817.60		2.64	<1.0	0.07	0.158	0.833	Santos	
888N-12	9,818.60		2.64	0.33	0.069	0.152	0.837	Santos	
888N-12	9,819.50		2.64	0.86	0.066	0.075	0.916	Santos	
888N-12	9,820.60		2.65	<1.0	0.075	0.106	0.892	Santos	
888N-12	9,821.40		2.61	<1.0	0.075	0.242	0.754	Santos	
888N-12	9,822.70		2.61	0.83	0.065	0.121	0.862	Santos	
888N-12	9,823.60		2.7	1.22	0.052	0.137	0.843	Santos	
888N-12	9,824.50		2.64	<1.0	0.076	0.175	0.809	Santos	
888N-12	9,825.50		2.64	0.16	0.073	0.111	0.877	Santos	
888N-12	9,826.50		2.63	0.14	0.069	0.12	0.871	Santos	
888N-12	9,827.50		2.63	0.18	0.077	0.141	0.853	Santos	
888N-12	9,828.70		2.61	0.88	0.067	0.11	0.874	Santos	
888N-12	9,829.50		2.63	0.27	0.068	0.116	0.88	Santos	
888N-12	9,831.60		2.64	0.26	0.07	0.097	0.891	Santos	
888N-12	9,831.80		2.64	1.64	0.073	0.117	0.87	Santos	
888N-12	9,832.60		2.63	0.21	0.07	0.113	0.884	Santos	
888N-12	9,833.70		2.64	1.1	0.072	0.099	0.895	Santos	
888N-12	9,834.70		2.64	<1.0	0.071	0.133	0.856	Santos	
888N-12	9,835.70		2.64	0.21	0.068	0.084	0.911	Santos	
888N-12	9,836.50		2.62	0.14	0.074	0.087	0.908	Santos	

Well Name	Measured Depth (ft)	Bulk Density	Apparent Sand Grain Density (g/cm3)	Air Permeability (mD)	Archimedes or Helium Porosity (v/v)	Saturation Pore Space: Oil (v/v)	Saturation Pore Space: Water (v/v)	Reservoir	Fracture Permeability
888N-12	9,837.30		2.62	0.24	0.076	0.175	0.817	Santos	
888N-12	9,838.50		2.63	0.29	0.066	0.17	0.823	Santos	
888N-12	9,839.50		2.62	0.13	0.073	0.1	0.891	Santos	
888N-12	9,840.30		2.64	1.5	0.065	0.077	0.916	Santos	
888N-12	9,841.50		2.63	0.23	0.065	0.088	0.909	Santos	
888N-12	9,842.50		2.63	0.18	0.067	0.127	0.858	Santos	
888N-12	9,843.60		2.63	0.28	0.063	0.201	0.795	Santos	
888N-12	9,844.70		2.63	0.18	0.066	0.109	0.886	Santos	
888N-12	9,845.50		2.65	0.78	0.072	0.204	0.782	Santos	
888N-12	9,846.50		2.62	0.12	0.066	0.055	0.938	Santos	
888N-12	9,847.60		2.62	0.25	0.066	0.101	0.882	Santos	
888N-12	9,848.60		2.63	0.9	0.069	0.157	0.83	Santos	

Notes:
ft: feet
g/cm3: grams per cubic centimeter
mD: millidarcies
v/v: volume/volume

Appendix 2D
Injection and Confining Zone Supporting Data

Mercury Injection Capillary Pressure Data

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,123.00	0.143	100	25	0.9	64ZW	23-1N
8,123.00	0.143	99.8	25	1.2	64ZW	23-1N
8,123.00	0.143	99.5	25	1.6	64ZW	23-1N
8,123.00	0.143	99.3	25	1.9	64ZW	23-1N
8,123.00	0.143	99.2	25	2.4	64ZW	23-1N
8,123.00	0.143	98.9	25	3.1	64ZW	23-1N
8,123.00	0.143	98.7	25	4	64ZW	23-1N
8,123.00	0.143	98.7	25	5.1	64ZW	23-1N
8,123.00	0.143	98.4	25	6.4	64ZW	23-1N
8,123.00	0.143	97.7	25	9.3	64ZW	23-1N
8,123.00	0.143	97.4	25	10.5	64ZW	23-1N
8,123.00	0.143	94.6	25	13.4	64ZW	23-1N
8,123.00	0.143	81.3	25	17.2	64ZW	23-1N
8,123.00	0.143	66.7	25	21.9	64ZW	23-1N
8,123.00	0.143	63.3	25	24.4	64ZW	23-1N
8,123.00	0.143	62.5	25	25.5	64ZW	23-1N
8,123.00	0.143	59.8	25	28.4	64ZW	23-1N
8,123.00	0.143	57.5	25	31.4	64ZW	23-1N
8,123.00	0.143	55.4	25	34.3	64ZW	23-1N
8,123.00	0.143	51.3	25	44.8	64ZW	23-1N
8,123.00	0.143	47	25	57.7	64ZW	23-1N
8,123.00	0.143	43.8	25	72.5	64ZW	23-1N
8,123.00	0.143	40	25	95.8	64ZW	23-1N
8,123.00	0.143	37.2	25	120	64ZW	23-1N
8,123.00	0.143	34.4	25	156.4	64ZW	23-1N
8,123.00	0.143	31.8	25	196.7	64ZW	23-1N
8,123.00	0.143	29.7	25	254.9	64ZW	23-1N
8,123.00	0.143	27.4	25	325.8	64ZW	23-1N
8,123.00	0.143	25.1	25	420.4	64ZW	23-1N
8,123.00	0.143	23.1	25	539.5	64ZW	23-1N
8,123.00	0.143	21.3	25	684	64ZW	23-1N
8,123.00	0.143	19.3	25	873.5	64ZW	23-1N
8,123.00	0.143	17.2	25	1,134.20	64ZW	23-1N
8,123.00	0.143	15.2	25	1,415.40	64ZW	23-1N
8,123.00	0.143	12.8	25	1,825.60	64ZW	23-1N
8,123.00	0.143	10.7	25	2,306.10	64ZW	23-1N
8,123.00	0.143	8.5	25	2,953.00	64ZW	23-1N
8,123.00	0.143	6.7	25	3,770.90	64ZW	23-1N
8,123.00	0.143	5.2	25	4,843.80	64ZW	23-1N
8,123.00	0.143	4.1	25	6,214.80	64ZW	23-1N
8,123.00	0.143	3.3	25	7,898.70	64ZW	23-1N
8,123.00	0.143	2.6	25	10,089.30	64ZW	23-1N
8,123.00	0.143	2.1	25	12,816.30	64ZW	23-1N
8,123.00	0.143	1.5	25	16,646.10	64ZW	23-1N
8,123.00	0.143	1.1	25	21,131.60	64ZW	23-1N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8.12	0.143	1	25	26,883.80	64ZW	23-1N
8,123.00	0.143	0.7	25	34,409.30	64ZW	23-1N
8,123.00	0.143	0.7	25	43,976.50	64ZW	23-1N
8,123.00	0.143	0.7	25	55,972.70	64ZW	23-1N
8,123.00	0.143	0.7	25	44,930.20	64ZW	23-1N
8,151.00	0.145	100	16	0.9	64ZW	23-1N
8,151.00	0.145	99.4	16	1.2	64ZW	23-1N
8,151.00	0.145	98.2	16	1.6	64ZW	23-1N
8,151.00	0.145	97.6	16	1.9	64ZW	23-1N
8,151.00	0.145	98	16	2.4	64ZW	23-1N
8,151.00	0.145	97	16	3.1	64ZW	23-1N
8,151.00	0.145	96.8	16	4	64ZW	23-1N
8,151.00	0.145	96.6	16	5.1	64ZW	23-1N
8,151.00	0.145	96.3	16	6.4	64ZW	23-1N
8,151.00	0.145	95.8	16	9.3	64ZW	23-1N
8,151.00	0.145	95.4	16	10.5	64ZW	23-1N
8,151.00	0.145	93.7	16	13.4	64ZW	23-1N
8,151.00	0.145	89.4	16	17.2	64ZW	23-1N
8,151.00	0.145	76.9	16	21.9	64ZW	23-1N
8,151.00	0.145	69.9	16	24.4	64ZW	23-1N
8,151.00	0.145	68.5	16	25.5	64ZW	23-1N
8,151.00	0.145	65.5	16	28.4	64ZW	23-1N
8,151.00	0.145	63.1	16	31.4	64ZW	23-1N
8,151.00	0.145	60.7	16	34.3	64ZW	23-1N
8,151.00	0.145	55.7	16	44.8	64ZW	23-1N
8,151.00	0.145	51.4	16	57.8	64ZW	23-1N
8,151.00	0.145	47.5	16	72.5	64ZW	23-1N
8,151.00	0.145	43.2	16	95.9	64ZW	23-1N
8,151.00	0.145	39.5	16	120.1	64ZW	23-1N
8,151.00	0.145	36.1	16	156.5	64ZW	23-1N
8,151.00	0.145	33.3	16	196.8	64ZW	23-1N
8,151.00	0.145	30.7	16	255	64ZW	23-1N
8,151.00	0.145	28.4	16	325.9	64ZW	23-1N
8,151.00	0.145	26.4	16	420.6	64ZW	23-1N
8,151.00	0.145	24.6	16	539.7	64ZW	23-1N
8,151.00	0.145	22.7	16	684.2	64ZW	23-1N
8,151.00	0.145	21.1	16	873.7	64ZW	23-1N
8,151.00	0.145	19.2	16	1,134.40	64ZW	23-1N
8,151.00	0.145	17.4	16	1,415.70	64ZW	23-1N
8,151.00	0.145	15.5	16	1,825.90	64ZW	23-1N
8,151.00	0.145	13.2	16	2,306.40	64ZW	23-1N
8,151.00	0.145	11.3	16	2,953.30	64ZW	23-1N
8,151.00	0.145	9.4	16	3,771.30	64ZW	23-1N
8,151.00	0.145	7.1	16	4,844.20	64ZW	23-1N
8,151.00	0.145	5.5	16	6,215.10	64ZW	23-1N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,151.00	0.145	4.6	16	7,899.00	64ZW	23-1N
8,151.00	0.145	3.8	16	10,089.60	64ZW	23-1N
8,151.00	0.145	3.1	16	12,816.60	64ZW	23-1N
8,151.00	0.145	2.6	16	16,646.50	64ZW	23-1N
8,151.00	0.145	2	16	21,132.00	64ZW	23-1N
8,151.00	0.145	1.7	16	26,884.20	64ZW	23-1N
8,151.00	0.145	1.2	16	34,409.70	64ZW	23-1N
8,151.00	0.145	1	16	43,976.80	64ZW	23-1N
8,151.00	0.145	1	16	55,973.00	64ZW	23-1N
8,151.00	0.145	1	16	44,930.50	64ZW	23-1N
8,171.00	0.142	100	23	0.9	64ZW	23-1N
8,171.00	0.142	99.5	23	1.2	64ZW	23-1N
8,171.00	0.142	98.8	23	1.6	64ZW	23-1N
8,171.00	0.142	98.7	23	1.9	64ZW	23-1N
8,171.00	0.142	98.3	23	2.4	64ZW	23-1N
8,171.00	0.142	98.2	23	3.1	64ZW	23-1N
8,171.00	0.142	98.2	23	4	64ZW	23-1N
8,171.00	0.142	98	23	5.1	64ZW	23-1N
8,171.00	0.142	97.8	23	6.4	64ZW	23-1N
8,171.00	0.142	97.2	23	9.3	64ZW	23-1N
8,171.00	0.142	96.8	23	10.5	64ZW	23-1N
8,171.00	0.142	94.8	23	13.4	64ZW	23-1N
8,171.00	0.142	83.7	23	17.2	64ZW	23-1N
8,171.00	0.142	65.8	23	21.9	64ZW	23-1N
8,171.00	0.142	62.2	23	24.4	64ZW	23-1N
8,171.00	0.142	60.9	23	25.6	64ZW	23-1N
8,171.00	0.142	57.9	23	29.1	64ZW	23-1N
8,171.00	0.142	56.4	23	31	64ZW	23-1N
8,171.00	0.142	53.4	23	36.5	64ZW	23-1N
8,171.00	0.142	49.7	23	45.1	64ZW	23-1N
8,171.00	0.142	46.1	23	56.6	64ZW	23-1N
8,171.00	0.142	42.1	23	74.6	64ZW	23-1N
8,171.00	0.142	38.8	23	95.9	64ZW	23-1N
8,171.00	0.142	35.7	23	120.5	64ZW	23-1N
8,171.00	0.142	32.4	23	158.4	64ZW	23-1N
8,171.00	0.142	29.9	23	198.7	64ZW	23-1N
8,171.00	0.142	27.1	23	259.1	64ZW	23-1N
8,171.00	0.142	25.1	23	330	64ZW	23-1N
8,171.00	0.142	22.9	23	415.9	64ZW	23-1N
8,171.00	0.142	20.9	23	536	64ZW	23-1N
8,171.00	0.142	19.1	23	687.3	64ZW	23-1N
8,171.00	0.142	17.2	23	866	64ZW	23-1N
8,171.00	0.142	15.2	23	1,123.90	64ZW	23-1N
8,171.00	0.142	13.4	23	1,437.40	64ZW	23-1N
8,171.00	0.142	11.6	23	1,821.20	64ZW	23-1N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,171.00	0.142	9.4	23	2,314.40	64ZW	23-1N
8,171.00	0.142	7.6	23	2,964.90	64ZW	23-1N
8,171.00	0.142	5.7	23	3,786.40	64ZW	23-1N
8,171.00	0.142	3.9	23	4,859.30	64ZW	23-1N
8,171.00	0.142	2.7	23	6,215.40	64ZW	23-1N
8,171.00	0.142	2.1	23	7,929.10	64ZW	23-1N
8,171.00	0.142	1.6	23	10,089.90	64ZW	23-1N
8,171.00	0.142	1.4	23	12,831.80	64ZW	23-1N
8,171.00	0.142	1.2	23	16,497.80	64ZW	23-1N
8,171.00	0.142	1.2	23	21,221.70	64ZW	23-1N
8,171.00	0.142	1.2	23	26,929.20	64ZW	23-1N
8,171.00	0.142	1.2	23	34,439.90	64ZW	23-1N
8,171.00	0.142	1.2	23	43,753.70	64ZW	23-1N
8,171.00	0.142	1.2	23	55,973.40	64ZW	23-1N
8,171.00	0.142	1.6	23	44,483.90	64ZW	23-1N
8,359.50	0.09	100	2.4	0.9	64ZU	17-2N
8,359.50	0.09	99.2	2.4	1.3	64ZU	17-2N
8,359.50	0.09	98.7	2.4	1.6	64ZU	17-2N
8,359.50	0.09	97.6	2.4	2	64ZU	17-2N
8,359.50	0.09	96.8	2.4	2.4	64ZU	17-2N
8,359.50	0.09	96.3	2.4	3.2	64ZU	17-2N
8,359.50	0.09	95.7	2.4	4	64ZU	17-2N
8,359.50	0.09	95.7	2.4	5	64ZU	17-2N
8,359.50	0.09	95.5	2.4	6.4	64ZU	17-2N
8,359.50	0.09	95.2	2.4	9.2	64ZU	17-2N
8,359.50	0.09	94.9	2.4	10.6	64ZU	17-2N
8,359.50	0.09	94.4	2.4	13.4	64ZU	17-2N
8,359.50	0.09	93.9	2.4	17.2	64ZU	17-2N
8,359.50	0.09	92.5	2.4	21.9	64ZU	17-2N
8,359.50	0.09	91.4	2.4	24.4	64ZU	17-2N
8,359.50	0.09	91.4	2.4	25	64ZU	17-2N
8,359.50	0.09	90.6	2.4	27.7	64ZU	17-2N
8,359.50	0.09	88.8	2.4	30.1	64ZU	17-2N
8,359.50	0.09	85	2.4	33	64ZU	17-2N
8,359.50	0.09	79.4	2.4	36	64ZU	17-2N
8,359.50	0.09	70.1	2.4	46.5	64ZU	17-2N
8,359.50	0.09	63.6	2.4	58.1	64ZU	17-2N
8,359.50	0.09	58.8	2.4	74.9	64ZU	17-2N
8,359.50	0.09	54.8	2.4	95.4	64ZU	17-2N
8,359.50	0.09	50.5	2.4	124	64ZU	17-2N
8,359.50	0.09	46.5	2.4	155.3	64ZU	17-2N
8,359.50	0.09	42.5	2.4	198.4	64ZU	17-2N
8,359.50	0.09	38.8	2.4	253.8	64ZU	17-2N
8,359.50	0.09	35.3	2.4	326.2	64ZU	17-2N
8,359.50	0.09	32.6	2.4	417	64ZU	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,359.50	0.09	30.2	2.4	538.1	64ZU	17-2N
8,359.50	0.09	27.8	2.4	687.5	64ZU	17-2N
8,359.50	0.09	25.9	2.4	873	64ZU	17-2N
8,359.50	0.09	23.8	2.4	1,130.80	64ZU	17-2N
8,359.50	0.09	21.4	2.4	1,435.50	64ZU	17-2N
8,359.50	0.09	19	2.4	1,817.40	64ZU	17-2N
8,359.50	0.09	16.3	2.4	2,326.30	64ZU	17-2N
8,359.50	0.09	13.6	2.4	2,954.00	64ZU	17-2N
8,359.50	0.09	10.2	2.4	3,787.40	64ZU	17-2N
8,359.50	0.09	7.2	2.4	4,860.30	64ZU	17-2N
8,359.50	0.09	5.3	2.4	6,231.20	64ZU	17-2N
8,359.50	0.09	3.7	2.4	7,915.10	64ZU	17-2N
8,359.50	0.09	2.7	2.4	10,090.80	64ZU	17-2N
8,359.50	0.09	1.3	2.4	12,877.50	64ZU	17-2N
8,359.50	0.09	0.5	2.4	16,677.40	64ZU	17-2N
8,359.50	0.09	0.3	2.4	21,163.00	64ZU	17-2N
8,359.50	0.09	0	2.4	26,825.70	64ZU	17-2N
8,359.50	0.09	0	2.4	34,470.50	64ZU	17-2N
8,359.50	0.09	0	2.4	44,022.70	64ZU	17-2N
8,359.50	0.09	0	2.4	55,974.20	64ZU	17-2N
8,400.50	0.133	100	0.054	0.9	64ZU	17-2N
8,400.50	0.133	99.5	0.054	1.3	64ZU	17-2N
8,400.50	0.133	98.5	0.054	1.6	64ZU	17-2N
8,400.50	0.133	96	0.054	2	64ZU	17-2N
8,400.50	0.133	95.5	0.054	2.4	64ZU	17-2N
8,400.50	0.133	95	0.054	3.2	64ZU	17-2N
8,400.50	0.133	94.8	0.054	4	64ZU	17-2N
8,400.50	0.133	94.8	0.054	5	64ZU	17-2N
8,400.50	0.133	94.8	0.054	6.4	64ZU	17-2N
8,400.50	0.133	94.5	0.054	9.2	64ZU	17-2N
8,400.50	0.133	94.5	0.054	10.6	64ZU	17-2N
8,400.50	0.133	94.3	0.054	13.4	64ZU	17-2N
8,400.50	0.133	94.3	0.054	17.2	64ZU	17-2N
8,400.50	0.133	94.1	0.054	21.9	64ZU	17-2N
8,400.50	0.133	93.9	0.054	24.4	64ZU	17-2N
8,400.50	0.133	93.9	0.054	25.1	64ZU	17-2N
8,400.50	0.133	93.9	0.054	27.8	64ZU	17-2N
8,400.50	0.133	93.9	0.054	30.2	64ZU	17-2N
8,400.50	0.133	93.9	0.054	33.2	64ZU	17-2N
8,400.50	0.133	93.8	0.054	36.4	64ZU	17-2N
8,400.50	0.133	92.8	0.054	47.1	64ZU	17-2N
8,400.50	0.133	87.9	0.054	58.8	64ZU	17-2N
8,400.50	0.133	77.3	0.054	75.4	64ZU	17-2N
8,400.50	0.133	72.1	0.054	95.9	64ZU	17-2N
8,400.50	0.133	67.1	0.054	124.5	64ZU	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,400.50	0.133	62.5	0.054	155.8	64ZU	17-2N
8,400.50	0.133	57.8	0.054	198.9	64ZU	17-2N
8,400.50	0.133	53.3	0.054	254.3	64ZU	17-2N
8,400.50	0.133	49.4	0.054	326.7	64ZU	17-2N
8,400.50	0.133	46.2	0.054	417.5	64ZU	17-2N
8,400.50	0.133	43.4	0.054	538.6	64ZU	17-2N
8,400.50	0.133	41	0.054	688	64ZU	17-2N
8,400.50	0.133	38.7	0.054	873.5	64ZU	17-2N
8,400.50	0.133	36	0.054	1,131.50	64ZU	17-2N
8,400.50	0.133	32.8	0.054	1,436.00	64ZU	17-2N
8,400.50	0.133	29.1	0.054	1,817.80	64ZU	17-2N
8,400.50	0.133	23.4	0.054	2,326.60	64ZU	17-2N
8,400.50	0.133	17.5	0.054	2,954.30	64ZU	17-2N
8,400.50	0.133	13.3	0.054	3,787.70	64ZU	17-2N
8,400.50	0.133	10.3	0.054	4,860.60	64ZU	17-2N
8,400.50	0.133	8.1	0.054	6,231.50	64ZU	17-2N
8,400.50	0.133	6.4	0.054	7,915.40	64ZU	17-2N
8,400.50	0.133	5	0.054	10,091.10	64ZU	17-2N
8,400.50	0.133	3.7	0.054	12,877.70	64ZU	17-2N
8,400.50	0.133	2.7	0.054	16,677.70	64ZU	17-2N
8,400.50	0.133	1.8	0.054	21,163.30	64ZU	17-2N
8,400.50	0.133	1.2	0.054	26,826.00	64ZU	17-2N
8,400.50	0.133	0.5	0.054	34,470.80	64ZU	17-2N
8,400.50	0.133	0.3	0.054	44,023.00	64ZU	17-2N
8,400.50	0.133	0	0.054	55,974.40	64ZU	17-2N
8,542.50	0.13	100	34	0.9	64ZW	17-2N
8,542.50	0.13	99.7	34	1.3	64ZW	17-2N
8,542.50	0.13	98.3	34	1.5	64ZW	17-2N
8,542.50	0.13	97.1	34	1.9	64ZW	17-2N
8,542.50	0.13	96.8	34	2.4	64ZW	17-2N
8,542.50	0.13	95.8	34	3.1	64ZW	17-2N
8,542.50	0.13	95.4	34	4	64ZW	17-2N
8,542.50	0.13	95.1	34	5.1	64ZW	17-2N
8,542.50	0.13	94.6	34	6.4	64ZW	17-2N
8,542.50	0.13	92.9	34	9.2	64ZW	17-2N
8,542.50	0.13	91.2	34	10.6	64ZW	17-2N
8,542.50	0.13	83.1	34	13.5	64ZW	17-2N
8,542.50	0.13	65.7	34	17.2	64ZW	17-2N
8,542.50	0.13	57.1	34	22	64ZW	17-2N
8,542.50	0.13	54.4	34	24.5	64ZW	17-2N
8,542.50	0.13	53.7	34	25.4	64ZW	17-2N
8,542.50	0.13	51.7	34	28.4	64ZW	17-2N
8,542.50	0.13	50	34	31.6	64ZW	17-2N
8,542.50	0.13	48.3	34	34.8	64ZW	17-2N
8,542.50	0.13	44.9	34	44.4	64ZW	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,542.50	0.13	41.9	34	57.2	64ZW	17-2N
8,542.50	0.13	38.9	34	74.3	64ZW	17-2N
8,542.50	0.13	36.3	34	94.3	64ZW	17-2N
8,542.50	0.13	33.6	34	121.1	64ZW	17-2N
8,542.50	0.13	31.1	34	156.6	64ZW	17-2N
8,542.50	0.13	28.9	34	197.8	64ZW	17-2N
8,542.50	0.13	26.9	34	253.1	64ZW	17-2N
8,542.50	0.13	24.8	34	327.6	64ZW	17-2N
8,542.50	0.13	23.1	34	415.4	64ZW	17-2N
8,542.50	0.13	21.5	34	539.4	64ZW	17-2N
8,542.50	0.13	20.3	34	680.1	64ZW	17-2N
8,542.50	0.13	18.7	34	877.4	64ZW	17-2N
8,542.50	0.13	17.4	34	1,126.40	64ZW	17-2N
8,542.50	0.13	15.9	34	1,433.00	64ZW	17-2N
8,542.50	0.13	13.7	34	1,826.70	64ZW	17-2N
8,542.50	0.13	11.3	34	2,324.80	64ZW	17-2N
8,542.50	0.13	9.5	34	2,950.10	64ZW	17-2N
8,542.50	0.13	7.6	34	3,787.00	64ZW	17-2N
8,542.50	0.13	5.9	34	4,815.20	64ZW	17-2N
8,542.50	0.13	4.4	34	6,201.10	64ZW	17-2N
8,542.50	0.13	3.5	34	7,914.80	64ZW	17-2N
8,542.50	0.13	2.9	34	10,045.80	64ZW	17-2N
8,542.50	0.13	2	34	12,862.30	64ZW	17-2N
8,542.50	0.13	1.7	34	16,632.50	64ZW	17-2N
8,542.50	0.13	1.4	34	21,132.90	64ZW	17-2N
8,542.50	0.13	1	34	26,825.50	64ZW	17-2N
8,542.50	0.13	0.8	34	34,455.30	64ZW	17-2N
8,542.50	0.13	0.7	34	44,037.40	64ZW	17-2N
8,542.50	0.13	0.7	34	56,048.40	64ZW	17-2N
8,542.50	0.13	0.7	34	44,827.20	64ZW	17-2N
8,564.42	0.124	100	7.9	0.9	64ZW	17-2N
8,564.42	0.124	99.1	7.9	1.3	64ZW	17-2N
8,564.42	0.124	98.3	7.9	1.5	64ZW	17-2N
8,564.42	0.124	97.2	7.9	1.9	64ZW	17-2N
8,564.42	0.124	96.6	7.9	2.4	64ZW	17-2N
8,564.42	0.124	96.1	7.9	3.1	64ZW	17-2N
8,564.42	0.124	95.7	7.9	4	64ZW	17-2N
8,564.42	0.124	95.5	7.9	5.1	64ZW	17-2N
8,564.42	0.124	95.3	7.9	6.4	64ZW	17-2N
8,564.42	0.124	94.7	7.9	9.2	64ZW	17-2N
8,564.42	0.124	94.5	7.9	10.6	64ZW	17-2N
8,564.42	0.124	94	7.9	13.5	64ZW	17-2N
8,564.42	0.124	92.9	7.9	17.2	64ZW	17-2N
8,564.42	0.124	89.5	7.9	22	64ZW	17-2N
8,564.42	0.124	84.6	7.9	24.5	64ZW	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,564.42	0.124	84	7.9	24.8	64ZW	17-2N
8,564.42	0.124	79.9	7.9	26.4	64ZW	17-2N
8,564.42	0.124	74.2	7.9	29.3	64ZW	17-2N
8,564.42	0.124	70.3	7.9	32.4	64ZW	17-2N
8,564.42	0.124	66.7	7.9	35.6	64ZW	17-2N
8,564.42	0.124	60.7	7.9	45.1	64ZW	17-2N
8,564.42	0.124	55.6	7.9	57.7	64ZW	17-2N
8,564.42	0.124	51.3	7.9	74.8	64ZW	17-2N
8,564.42	0.124	47.6	7.9	94.7	64ZW	17-2N
8,564.42	0.124	43.4	7.9	121.5	64ZW	17-2N
8,564.42	0.124	39.8	7.9	156.9	64ZW	17-2N
8,564.42	0.124	36.8	7.9	198.1	64ZW	17-2N
8,564.42	0.124	33.8	7.9	253.3	64ZW	17-2N
8,564.42	0.124	31.2	7.9	327.8	64ZW	17-2N
8,564.42	0.124	28.9	7.9	415.6	64ZW	17-2N
8,564.42	0.124	26.9	7.9	539.6	64ZW	17-2N
8,564.42	0.124	25.2	7.9	680.2	64ZW	17-2N
8,564.42	0.124	23.3	7.9	877.5	64ZW	17-2N
8,564.42	0.124	21.6	7.9	1,126.50	64ZW	17-2N
8,564.42	0.124	19.7	7.9	1,433.20	64ZW	17-2N
8,564.42	0.124	16.9	7.9	1,826.70	64ZW	17-2N
8,564.42	0.124	14.1	7.9	2,324.80	64ZW	17-2N
8,564.42	0.124	11.5	7.9	2,950.10	64ZW	17-2N
8,564.42	0.124	8.8	7.9	3,787.00	64ZW	17-2N
8,564.42	0.124	6.2	7.9	4,815.10	64ZW	17-2N
8,564.42	0.124	4.3	7.9	6,201.00	64ZW	17-2N
8,564.42	0.124	2.8	7.9	7,914.70	64ZW	17-2N
8,564.42	0.124	2.1	7.9	10,045.60	64ZW	17-2N
8,564.42	0.124	1.5	7.9	12,862.10	64ZW	17-2N
8,564.42	0.124	0.9	7.9	16,632.30	64ZW	17-2N
8,564.42	0.124	0.6	7.9	21,132.70	64ZW	17-2N
8,564.42	0.124	0.2	7.9	26,825.30	64ZW	17-2N
8,564.42	0.124	0	7.9	34,455.20	64ZW	17-2N
8,564.42	0.124	0	7.9	44,037.20	64ZW	17-2N
8,564.42	0.124	0	7.9	56,048.20	64ZW	17-2N
8,628.50	0.142	100	23	0.9	64ZW	17-2N
8,628.50	0.142	98.6	23	1.3	64ZW	17-2N
8,628.50	0.142	98.1	23	1.5	64ZW	17-2N
8,628.50	0.142	97.1	23	1.9	64ZW	17-2N
8,628.50	0.142	96.7	23	2.4	64ZW	17-2N
8,628.50	0.142	96.3	23	3.1	64ZW	17-2N
8,628.50	0.142	96.1	23	4	64ZW	17-2N
8,628.50	0.142	96	23	5.1	64ZW	17-2N
8,628.50	0.142	95.7	23	6.4	64ZW	17-2N
8,628.50	0.142	94.9	23	9.2	64ZW	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,628.50	0.142	94.3	23	10.6	64ZW	17-2N
8,628.50	0.142	91.6	23	13.5	64ZW	17-2N
8,628.50	0.142	83.9	23	17.2	64ZW	17-2N
8,628.50	0.142	69.1	23	22	64ZW	17-2N
8,628.50	0.142	64.7	23	24.5	64ZW	17-2N
8,628.50	0.142	63.6	23	25.4	64ZW	17-2N
8,628.50	0.142	60.7	23	28.3	64ZW	17-2N
8,628.50	0.142	58.4	23	31.2	64ZW	17-2N
8,628.50	0.142	56.2	23	35.8	64ZW	17-2N
8,628.50	0.142	52.6	23	45.1	64ZW	17-2N
8,628.50	0.142	49.4	23	56.9	64ZW	17-2N
8,628.50	0.142	46.1	23	74	64ZW	17-2N
8,628.50	0.142	43.2	23	95.1	64ZW	17-2N
8,628.50	0.142	40.4	23	122.3	64ZW	17-2N
8,628.50	0.142	37.6	23	156.8	64ZW	17-2N
8,628.50	0.142	35.1	23	200	64ZW	17-2N
8,628.50	0.142	32.8	23	252.1	64ZW	17-2N
8,628.50	0.142	30.6	23	327.6	64ZW	17-2N
8,628.50	0.142	28.6	23	419.4	64ZW	17-2N
8,628.50	0.142	26.7	23	532.7	64ZW	17-2N
8,628.50	0.142	25	23	678.2	64ZW	17-2N
8,628.50	0.142	23.3	23	874.5	64ZW	17-2N
8,628.50	0.142	21.5	23	1,121.60	64ZW	17-2N
8,628.50	0.142	19.1	23	1,432.20	64ZW	17-2N
8,628.50	0.142	16.4	23	1,814.00	64ZW	17-2N
8,628.50	0.142	13.7	23	2,503.30	64ZW	17-2N
8,628.50	0.142	11.2	23	2,974.30	64ZW	17-2N
8,628.50	0.142	9.1	23	3,787.10	64ZW	17-2N
8,628.50	0.142	6.6	23	4,830.10	64ZW	17-2N
8,628.50	0.142	5	23	6,245.80	64ZW	17-2N
8,628.50	0.142	4.1	23	7,929.70	64ZW	17-2N
8,628.50	0.142	3.5	23	10,090.50	64ZW	17-2N
8,628.50	0.142	2.9	23	12,832.50	64ZW	17-2N
8,628.50	0.142	2.2	23	16,632.50	64ZW	17-2N
8,628.50	0.142	1.9	23	21,162.70	64ZW	17-2N
8,628.50	0.142	1.6	23	26,855.30	64ZW	17-2N
8,628.50	0.142	1.3	23	34,395.80	64ZW	17-2N
8,628.50	0.142	1.2	23	43,962.80	64ZW	17-2N
8,628.50	0.142	1	23	55,944.10	64ZW	17-2N
8,628.50	0.142	1	23	45,169.80	64ZW	17-2N
8,639.50	0.132	100	7.2	0.9	64ZW	17-2N
8,639.50	0.132	99	7.2	1.3	64ZW	17-2N
8,639.50	0.132	98	7.2	1.6	64ZW	17-2N
8,639.50	0.132	97.4	7.2	2	64ZW	17-2N
8,639.50	0.132	96.9	7.2	2.4	64ZW	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,639.50	0.132	96.6	7.2	3.2	64ZW	17-2N
8,639.50	0.132	96.4	7.2	4	64ZW	17-2N
8,639.50	0.132	96.3	7.2	5	64ZW	17-2N
8,639.50	0.132	96.1	7.2	6.4	64ZW	17-2N
8,639.50	0.132	95.7	7.2	9.2	64ZW	17-2N
8,639.50	0.132	95.6	7.2	10.6	64ZW	17-2N
8,639.50	0.132	95.1	7.2	13.4	64ZW	17-2N
8,639.50	0.132	94.4	7.2	17.2	64ZW	17-2N
8,639.50	0.132	92.9	7.2	21.9	64ZW	17-2N
8,639.50	0.132	91.5	7.2	24.4	64ZW	17-2N
8,639.50	0.132	91.5	7.2	24.9	64ZW	17-2N
8,639.50	0.132	88.1	7.2	27	64ZW	17-2N
8,639.50	0.132	81.8	7.2	29.9	64ZW	17-2N
8,639.50	0.132	76.5	7.2	32.7	64ZW	17-2N
8,639.50	0.132	71.6	7.2	36.9	64ZW	17-2N
8,639.50	0.132	64.1	7.2	46.2	64ZW	17-2N
8,639.50	0.132	58.8	7.2	57.6	64ZW	17-2N
8,639.50	0.132	54.6	7.2	73.9	64ZW	17-2N
8,639.50	0.132	50.7	7.2	95.3	64ZW	17-2N
8,639.50	0.132	46.9	7.2	121.8	64ZW	17-2N
8,639.50	0.132	43.4	7.2	155.8	64ZW	17-2N
8,639.50	0.132	40	7.2	199.1	64ZW	17-2N
8,639.50	0.132	37.1	7.2	254.1	64ZW	17-2N
8,639.50	0.132	34.2	7.2	329.3	64ZW	17-2N
8,639.50	0.132	32	7.2	415.3	64ZW	17-2N
8,639.50	0.132	29.8	7.2	536.3	64ZW	17-2N
8,639.50	0.132	27.7	7.2	686.7	64ZW	17-2N
8,639.50	0.132	25.9	7.2	866.4	64ZW	17-2N
8,639.50	0.132	23.8	7.2	1,117.40	64ZW	17-2N
8,639.50	0.132	21.1	7.2	1,432.80	64ZW	17-2N
8,639.50	0.132	18.4	7.2	1,813.70	64ZW	17-2N
8,639.50	0.132	15.5	7.2	2,308.90	64ZW	17-2N
8,639.50	0.132	12.8	7.2	2,954.20	64ZW	17-2N
8,639.50	0.132	9.9	7.2	3,802.60	64ZW	17-2N
8,639.50	0.132	7.1	7.2	4,830.80	64ZW	17-2N
8,639.50	0.132	4.9	7.2	6,216.60	64ZW	17-2N
8,639.50	0.132	3.6	7.2	7,960.10	64ZW	17-2N
8,639.50	0.132	2.7	7.2	10,091.10	64ZW	17-2N
8,639.50	0.132	2	7.2	12,833.10	64ZW	17-2N
8,639.50	0.132	1.5	7.2	16,707.60	64ZW	17-2N
8,639.50	0.132	1	7.2	21,148.40	64ZW	17-2N
8,639.50	0.132	0.7	7.2	26,900.60	64ZW	17-2N
8,639.50	0.132	0.3	7.2	34,396.30	64ZW	17-2N
8,639.50	0.132	0.2	7.2	43,903.80	64ZW	17-2N
8,639.50	0.132	0	7.2	55,944.70	64ZW	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,652.50	0.136	100	2.9	0.9	64ZW	17-2N
8,652.50	0.136	99	2.9	1.3	64ZW	17-2N
8,652.50	0.136	98.2	2.9	1.6	64ZW	17-2N
8,652.50	0.136	97.6	2.9	2	64ZW	17-2N
8,652.50	0.136	97.3	2.9	2.4	64ZW	17-2N
8,652.50	0.136	95.3	2.9	3.2	64ZW	17-2N
8,652.50	0.136	94.9	2.9	4	64ZW	17-2N
8,652.50	0.136	94.7	2.9	5	64ZW	17-2N
8,652.50	0.136	94.5	2.9	6.4	64ZW	17-2N
8,652.50	0.136	94.2	2.9	9.2	64ZW	17-2N
8,652.50	0.136	94.1	2.9	10.6	64ZW	17-2N
8,652.50	0.136	93.9	2.9	13.4	64ZW	17-2N
8,652.50	0.136	93.7	2.9	17.2	64ZW	17-2N
8,652.50	0.136	93.2	2.9	21.9	64ZW	17-2N
8,652.50	0.136	93.1	2.9	24.4	64ZW	17-2N
8,652.50	0.136	93.1	2.9	24.9	64ZW	17-2N
8,652.50	0.136	92.9	2.9	27.1	64ZW	17-2N
8,652.50	0.136	92.4	2.9	30.1	64ZW	17-2N
8,652.50	0.136	91.8	2.9	33	64ZW	17-2N
8,652.50	0.136	90.2	2.9	37.3	64ZW	17-2N
8,652.50	0.136	83.8	2.9	46.7	64ZW	17-2N
8,652.50	0.136	74.1	2.9	57.9	64ZW	17-2N
8,652.50	0.136	65.1	2.9	74.1	64ZW	17-2N
8,652.50	0.136	59.3	2.9	95.5	64ZW	17-2N
8,652.50	0.136	54.8	2.9	121.9	64ZW	17-2N
8,652.50	0.136	50.5	2.9	155.9	64ZW	17-2N
8,652.50	0.136	46.3	2.9	199.2	64ZW	17-2N
8,652.50	0.136	42.4	2.9	254.1	64ZW	17-2N
8,652.50	0.136	38.9	2.9	329.4	64ZW	17-2N
8,652.50	0.136	36.3	2.9	415.3	64ZW	17-2N
8,652.50	0.136	33.8	2.9	536.4	64ZW	17-2N
8,652.50	0.136	31.5	2.9	686.7	64ZW	17-2N
8,652.50	0.136	29.4	2.9	866.4	64ZW	17-2N
8,652.50	0.136	26.8	2.9	1,117.40	64ZW	17-2N
8,652.50	0.136	24	2.9	1,432.80	64ZW	17-2N
8,652.50	0.136	20.9	2.9	1,813.70	64ZW	17-2N
8,652.50	0.136	18	2.9	2,308.90	64ZW	17-2N
8,652.50	0.136	15	2.9	2,954.20	64ZW	17-2N
8,652.50	0.136	12.1	2.9	3,802.60	64ZW	17-2N
8,652.50	0.136	9.2	2.9	4,830.70	64ZW	17-2N
8,652.50	0.136	6.1	2.9	6,216.60	64ZW	17-2N
8,652.50	0.136	4.3	2.9	7,960.10	64ZW	17-2N
8,652.50	0.136	3.2	2.9	10,091.00	64ZW	17-2N
8,652.50	0.136	2.4	2.9	12,833.00	64ZW	17-2N
8,652.50	0.136	1.6	2.9	16,707.50	64ZW	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,652.50	0.136	1.1	2.9	21,148.30	64ZW	17-2N
8,652.50	0.136	0.8	2.9	26,900.50	64ZW	17-2N
8,652.50	0.136	0.3	2.9	34,396.20	64ZW	17-2N
8,652.50	0.136	0.2	2.9	43,903.70	64ZW	17-2N
8,652.50	0.136	0	2.9	55,944.60	64ZW	17-2N
8,679.50	0.139	100	6.5	0.9	64ZW	17-2N
8,679.50	0.139	99.5	6.5	1.3	64ZW	17-2N
8,679.50	0.139	98.3	6.5	1.5	64ZW	17-2N
8,679.50	0.139	96.7	6.5	1.9	64ZW	17-2N
8,679.50	0.139	96.1	6.5	2.4	64ZW	17-2N
8,679.50	0.139	95.6	6.5	3.1	64ZW	17-2N
8,679.50	0.139	95.1	6.5	4	64ZW	17-2N
8,679.50	0.139	95	6.5	5.1	64ZW	17-2N
8,679.50	0.139	94.8	6.5	6.4	64ZW	17-2N
8,679.50	0.139	94.3	6.5	9.2	64ZW	17-2N
8,679.50	0.139	94.3	6.5	10.6	64ZW	17-2N
8,679.50	0.139	93.9	6.5	13.5	64ZW	17-2N
8,679.50	0.139	93.2	6.5	17.2	64ZW	17-2N
8,679.50	0.139	92.3	6.5	22	64ZW	17-2N
8,679.50	0.139	91.4	6.5	24.5	64ZW	17-2N
8,679.50	0.139	91.4	6.5	24.9	64ZW	17-2N
8,679.50	0.139	90.1	6.5	26.8	64ZW	17-2N
8,679.50	0.139	86.7	6.5	29.6	64ZW	17-2N
8,679.50	0.139	80.1	6.5	32.6	64ZW	17-2N
8,679.50	0.139	73.8	6.5	37	64ZW	17-2N
8,679.50	0.139	66.4	6.5	46.1	64ZW	17-2N
8,679.50	0.139	60.9	6.5	57.9	64ZW	17-2N
8,679.50	0.139	56	6.5	75	64ZW	17-2N
8,679.50	0.139	52.1	6.5	96	64ZW	17-2N
8,679.50	0.139	48.5	6.5	123.2	64ZW	17-2N
8,679.50	0.139	44.9	6.5	157.7	64ZW	17-2N
8,679.50	0.139	41.4	6.5	201	64ZW	17-2N
8,679.50	0.139	38.3	6.5	253	64ZW	17-2N
8,679.50	0.139	35.5	6.5	328.5	64ZW	17-2N
8,679.50	0.139	32.8	6.5	420.3	64ZW	17-2N
8,679.50	0.139	30.8	6.5	533.5	64ZW	17-2N
8,679.50	0.139	28.7	6.5	679	64ZW	17-2N
8,679.50	0.139	26.5	6.5	875.3	64ZW	17-2N
8,679.50	0.139	24.5	6.5	1,122.40	64ZW	17-2N
8,679.50	0.139	21.8	6.5	1,433.00	64ZW	17-2N
8,679.50	0.139	19.2	6.5	1,814.90	64ZW	17-2N
8,679.50	0.139	16.3	6.5	2,306.10	64ZW	17-2N
8,679.50	0.139	13.2	6.5	2,975.20	64ZW	17-2N
8,679.50	0.139	10.5	6.5	3,787.80	64ZW	17-2N
8,679.50	0.139	7.2	6.5	4,830.90	64ZW	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,679.50	0.139	5	6.5	6,246.60	64ZW	17-2N
8,679.50	0.139	3.8	6.5	7,930.50	64ZW	17-2N
8,679.50	0.139	2.8	6.5	10,091.30	64ZW	17-2N
8,679.50	0.139	2	6.5	12,833.20	64ZW	17-2N
8,679.50	0.139	1.4	6.5	16,633.20	64ZW	17-2N
8,679.50	0.139	1.1	6.5	21,163.50	64ZW	17-2N
8,679.50	0.139	0.8	6.5	26,856.00	64ZW	17-2N
8,679.50	0.139	0.3	6.5	34,396.50	64ZW	17-2N
8,679.50	0.139	0.2	6.5	43,963.60	64ZW	17-2N
8,679.50	0.139	0	6.5	55,944.90	64ZW	17-2N
8,685.50	0.03376259	100	0.0051725	1.524564	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	1.671771	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	1.824	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	1.98741	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	2.16921	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	2.365432	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	2.578667	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	2.81248	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	3.069868	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	3.347349	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	3.654158	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	3.994426	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	4.364347	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	4.770724	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	5.213154	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	5.701601	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	6.229989	Santos	888N-12
8,685.50	0.03376259	100	0.0051725	6.810227	Santos	888N-12
8,685.50	0.03376259	99.91087	0.0051725	7.446043	Santos	888N-12
8,685.50	0.03376259	99.85995	0.0051725	8.14327	Santos	888N-12
8,685.50	0.03376259	99.80902	0.0051725	8.8951	Santos	888N-12
8,685.50	0.03376259	99.74536	0.0051725	9.720737	Santos	888N-12
8,685.50	0.03376259	99.68169	0.0051725	10.62901	Santos	888N-12
8,685.50	0.03376259	99.6435	0.0051725	11.61781	Santos	888N-12
8,685.50	0.03376259	99.57984	0.0051725	12.68982	Santos	888N-12
8,685.50	0.03376259	99.50345	0.0051725	13.87323	Santos	888N-12
8,685.50	0.03376259	99.45252	0.0051725	15.15968	Santos	888N-12
8,685.50	0.03376259	99.37613	0.0051725	16.5675	Santos	888N-12
8,685.50	0.03376259	99.3252	0.0051725	18.11751	Santos	888N-12
8,685.50	0.03376259	99.26154	0.0051725	19.80119	Santos	888N-12
8,685.50	0.03376259	99.17242	0.0051725	21.69794	Santos	888N-12
8,685.50	0.03376259	99.09602	0.0051725	23.70949	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	25.90965	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	29.00696	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	31.34369	Santos	888N-12

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,685.50	0.03376259	99.03236	0.0051725	34.88433	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	38.20255	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	42.39373	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	46.09781	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	50.55581	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	55.58739	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	60.95699	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	67.03156	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	73.3773	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	80.24205	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	87.9948	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	96.41605	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	105.692	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	115.6042	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	126.3068	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	138.6922	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	151.7612	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	166.1207	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	181.1604	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	198.8991	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	217.5391	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	238.4212	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	260.2645	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	284.6528	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	311.4142	Santos	888N-12
8,685.50	0.03376259	99.03236	0.0051725	340.5934	Santos	888N-12
8,685.50	0.03376259	99.01573	0.0051725	372.286	Santos	888N-12
8,685.50	0.03376259	98.89576	0.0051725	407.3898	Santos	888N-12
8,685.50	0.03376259	98.80723	0.0051725	445.6196	Santos	888N-12
8,685.50	0.03376259	98.66254	0.0051725	487.424	Santos	888N-12
8,685.50	0.03376259	98.5202	0.0051725	532.9161	Santos	888N-12
8,685.50	0.03376259	98.36165	0.0051725	582.8114	Santos	888N-12
8,685.50	0.03376259	98.21469	0.0051725	636.9473	Santos	888N-12
8,685.50	0.03376259	98.04826	0.0051725	697.5298	Santos	888N-12
8,685.50	0.03376259	97.87965	0.0051725	762.1472	Santos	888N-12
8,685.50	0.03376259	97.697	0.0051725	833.5453	Santos	888N-12
8,685.50	0.03376259	97.49936	0.0051725	911.2057	Santos	888N-12
8,685.50	0.03376259	97.32465	0.0051725	996.5132	Santos	888N-12
8,685.50	0.03376259	97.10342	0.0051725	1,088.74	Santos	888N-12
8,685.50	0.03376259	96.87936	0.0051725	1,189.07	Santos	888N-12
8,685.50	0.03376259	96.64132	0.0051725	1,301.62	Santos	888N-12
8,685.50	0.03376259	96.39031	0.0051725	1,422.79	Santos	888N-12
8,685.50	0.03376259	96.10527	0.0051725	1,554.16	Santos	888N-12
8,685.50	0.03376259	95.8064	0.0051725	1,699.43	Santos	888N-12
8,685.50	0.03376259	95.48051	0.0051725	1,858.45	Santos	888N-12

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,685.50	0.03376259	95.11721	0.0051725	2,035.22	Santos	888N-12
8,685.50	0.03376259	94.7337	0.0051725	2,223.71	Santos	888N-12
8,685.50	0.03376259	94.27637	0.0051725	2,428.22	Santos	888N-12
8,685.50	0.03376259	93.79467	0.0051725	2,655.00	Santos	888N-12
8,685.50	0.03376259	93.24559	0.0051725	2,902.12	Santos	888N-12
8,685.50	0.03376259	92.61875	0.0051725	3,173.73	Santos	888N-12
8,685.50	0.03376259	91.92258	0.0051725	3,470.31	Santos	888N-12
8,685.50	0.03376259	91.14093	0.0051725	3,792.49	Santos	888N-12
8,685.50	0.03376259	90.25582	0.0051725	4,146.25	Santos	888N-12
8,685.50	0.03376259	89.22874	0.0051725	4,529.40	Santos	888N-12
8,685.50	0.03376259	88.19046	0.0051725	4,949.33	Santos	888N-12
8,685.50	0.03376259	87.02873	0.0051725	5,413.19	Santos	888N-12
8,685.50	0.03376259	85.75593	0.0051725	5,915.13	Santos	888N-12
8,685.50	0.03376259	84.37125	0.0051725	6,466.59	Santos	888N-12
8,685.50	0.03376259	82.86076	0.0051725	7,072.37	Santos	888N-12
8,685.50	0.03376259	81.26627	0.0051725	7,727.08	Santos	888N-12
8,685.50	0.03376259	79.52027	0.0051725	8,448.18	Santos	888N-12
8,685.50	0.03376259	77.57053	0.0051725	9,235.75	Santos	888N-12
8,685.50	0.03376259	75.49359	0.0051725	10,098.36	Santos	888N-12
8,685.50	0.03376259	73.22274	0.0051725	11,038.97	Santos	888N-12
8,685.50	0.03376259	70.78711	0.0051725	12,069.44	Santos	888N-12
8,685.50	0.03376259	68.12108	0.0051725	13,191.81	Santos	888N-12
8,685.50	0.03376259	65.15675	0.0051725	14,421.72	Santos	888N-12
8,685.50	0.03376259	61.8839	0.0051725	15,764.50	Santos	888N-12
8,685.50	0.03376259	58.22431	0.0051725	17,234.18	Santos	888N-12
8,685.50	0.03376259	54.20111	0.0051725	18,840.42	Santos	888N-12
8,685.50	0.03376259	49.78258	0.0051725	20,597.54	Santos	888N-12
8,685.50	0.03376259	45.24259	0.0051725	22,519.17	Santos	888N-12
8,685.50	0.03376259	40.41963	0.0051725	24,621.53	Santos	888N-12
8,685.50	0.03376259	35.51098	0.0051725	26,915.85	Santos	888N-12
8,685.50	0.03376259	30.55491	0.0051725	29,423.37	Santos	888N-12
8,685.50	0.03376259	25.69323	0.0051725	32,163.83	Santos	888N-12
8,685.50	0.03376259	20.98935	0.0051725	35,160.01	Santos	888N-12
8,685.50	0.03376259	16.56433	0.0051725	38,433.97	Santos	888N-12
8,685.50	0.03376259	12.45951	0.0051725	42,008.54	Santos	888N-12
8,685.50	0.03376259	8.805447	0.0051725	45,905.77	Santos	888N-12
8,685.50	0.03376259	5.491079	0.0051725	50,182.06	Santos	888N-12
8,685.50	0.03376259	2.583418	0.0051725	54,857.81	Santos	888N-12
8,685.50	0.03376259	0	0.0051725	59,966.84	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	1.524564	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	1.671771	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	1.824	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	1.98741	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	2.16921	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	2.365432	Santos	888N-12

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,697.50	0.05394375	100	0.0046609	2.578667	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	2.81248	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	3.069868	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	3.347349	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	3.654158	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	3.994426	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	4.364347	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	4.770724	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	5.213154	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	5.701601	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	6.229989	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	6.810227	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	7.446043	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	8.14327	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	8.8951	Santos	888N-12
8,697.50	0.05394375	100	0.0046609	9.720737	Santos	888N-12
8,697.50	0.05394375	99.97885	0.0046609	10.62901	Santos	888N-12
8,697.50	0.05394375	99.92598	0.0046609	11.61781	Santos	888N-12
8,697.50	0.05394375	99.88368	0.0046609	12.68982	Santos	888N-12
8,697.50	0.05394375	99.82024	0.0046609	13.87323	Santos	888N-12
8,697.50	0.05394375	99.78852	0.0046609	15.15968	Santos	888N-12
8,697.50	0.05394375	99.73565	0.0046609	16.5675	Santos	888N-12
8,697.50	0.05394375	99.68278	0.0046609	18.11751	Santos	888N-12
8,697.50	0.05394375	99.59818	0.0046609	19.80119	Santos	888N-12
8,697.50	0.05394375	99.55589	0.0046609	21.69794	Santos	888N-12
8,697.50	0.05394375	99.4713	0.0046609	23.70949	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	25.90965	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	28.61458	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	33.55608	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	34.47067	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	38.70037	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	42.60297	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	46.68274	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	50.86892	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	55.62246	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	61.11629	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	66.77689	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	73.54158	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	80.71083	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	87.75256	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	96.69798	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	106.345	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	115.6431	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	125.9524	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	139.1331	Santos	888N-12

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,697.50	0.05394375	99.41843	0.0046609	151.8577	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	165.9741	Santos	888N-12
8,697.50	0.05394375	99.41843	0.0046609	181.9386	Santos	888N-12
8,697.50	0.05394375	99.36967	0.0046609	198.7419	Santos	888N-12
8,697.50	0.05394375	99.30682	0.0046609	217.5635	Santos	888N-12
8,697.50	0.05394375	99.24828	0.0046609	238.2423	Santos	888N-12
8,697.50	0.05394375	99.16287	0.0046609	261.2586	Santos	888N-12
8,697.50	0.05394375	99.08363	0.0046609	285.4278	Santos	888N-12
8,697.50	0.05394375	98.97648	0.0046609	312.4131	Santos	888N-12
8,697.50	0.05394375	98.90823	0.0046609	340.5965	Santos	888N-12
8,697.50	0.05394375	98.85967	0.0046609	373.0774	Santos	888N-12
8,697.50	0.05394375	98.79951	0.0046609	408.2406	Santos	888N-12
8,697.50	0.05394375	98.69173	0.0046609	446.1468	Santos	888N-12
8,697.50	0.05394375	98.56342	0.0046609	488.0661	Santos	888N-12
8,697.50	0.05394375	98.45353	0.0046609	533.1541	Santos	888N-12
8,697.50	0.05394375	98.32839	0.0046609	583.1624	Santos	888N-12
8,697.50	0.05394375	98.1805	0.0046609	637.6613	Santos	888N-12
8,697.50	0.05394375	98.06766	0.0046609	697.7299	Santos	888N-12
8,697.50	0.05394375	97.91681	0.0046609	763.2308	Santos	888N-12
8,697.50	0.05394375	97.77375	0.0046609	833.4205	Santos	888N-12
8,697.50	0.05394375	97.66272	0.0046609	911.6483	Santos	888N-12
8,697.50	0.05394375	97.48632	0.0046609	996.3472	Santos	888N-12
8,697.50	0.05394375	97.34155	0.0046609	1,089.57	Santos	888N-12
8,697.50	0.05394375	97.1676	0.0046609	1,191.08	Santos	888N-12
8,697.50	0.05394375	96.99797	0.0046609	1,303.33	Santos	888N-12
8,697.50	0.05394375	96.83362	0.0046609	1,423.82	Santos	888N-12
8,697.50	0.05394375	96.62516	0.0046609	1,556.49	Santos	888N-12
8,697.50	0.05394375	96.4498	0.0046609	1,702.09	Santos	888N-12
8,697.50	0.05394375	96.2123	0.0046609	1,860.09	Santos	888N-12
8,697.50	0.05394375	96.10089	0.0046609	2,033.59	Santos	888N-12
8,697.50	0.05394375	95.76532	0.0046609	2,222.99	Santos	888N-12
8,697.50	0.05394375	95.45847	0.0046609	2,429.85	Santos	888N-12
8,697.50	0.05394375	95.15842	0.0046609	2,656.76	Santos	888N-12
8,697.50	0.05394375	94.83983	0.0046609	2,903.57	Santos	888N-12
8,697.50	0.05394375	94.47347	0.0046609	3,174.32	Santos	888N-12
8,697.50	0.05394375	94.07278	0.0046609	3,470.80	Santos	888N-12
8,697.50	0.05394375	93.60648	0.0046609	3,793.06	Santos	888N-12
8,697.50	0.05394375	93.08757	0.0046609	4,146.40	Santos	888N-12
8,697.50	0.05394375	92.46037	0.0046609	4,528.29	Santos	888N-12
8,697.50	0.05394375	91.74639	0.0046609	4,950.98	Santos	888N-12
8,697.50	0.05394375	90.9219	0.0046609	5,411.88	Santos	888N-12
8,697.50	0.05394375	89.98146	0.0046609	5,915.70	Santos	888N-12
8,697.50	0.05394375	88.86128	0.0046609	6,467.36	Santos	888N-12
8,697.50	0.05394375	87.40926	0.0046609	7,070.87	Santos	888N-12
8,697.50	0.05394375	85.67349	0.0046609	7,727.40	Santos	888N-12

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,697.50	0.05394375	83.59728	0.0046609	8,449.84	Santos	888N-12
8,697.50	0.05394375	81.07233	0.0046609	9,237.11	Santos	888N-12
8,697.50	0.05394375	78.06171	0.0046609	10,098.13	Santos	888N-12
8,697.50	0.05394375	74.51364	0.0046609	11,040.14	Santos	888N-12
8,697.50	0.05394375	70.45071	0.0046609	12,068.42	Santos	888N-12
8,697.50	0.05394375	65.80038	0.0046609	13,193.00	Santos	888N-12
8,697.50	0.05394375	60.66119	0.0046609	14,420.96	Santos	888N-12
8,697.50	0.05394375	55.02397	0.0046609	15,767.35	Santos	888N-12
8,697.50	0.05394375	49.01152	0.0046609	17,235.17	Santos	888N-12
8,697.50	0.05394375	42.7208	0.0046609	18,840.18	Santos	888N-12
8,697.50	0.05394375	36.38023	0.0046609	20,598.86	Santos	888N-12
8,697.50	0.05394375	30.52109	0.0046609	22,521.33	Santos	888N-12
8,697.50	0.05394375	25.09358	0.0046609	24,621.10	Santos	888N-12
8,697.50	0.05394375	20.31014	0.0046609	26,915.96	Santos	888N-12
8,697.50	0.05394375	16.2609	0.0046609	29,424.16	Santos	888N-12
8,697.50	0.05394375	13.07847	0.0046609	32,164.71	Santos	888N-12
8,697.50	0.05394375	10.42705	0.0046609	35,160.54	Santos	888N-12
8,697.50	0.05394375	8.148873	0.0046609	38,435.44	Santos	888N-12
8,697.50	0.05394375	5.844976	0.0046609	42,006.88	Santos	888N-12
8,697.50	0.05394375	4.300205	0.0046609	45,926.26	Santos	888N-12
8,697.50	0.05394375	2.687311	0.0046609	50,190.44	Santos	888N-12
8,697.50	0.05394375	1.519456	0.0046609	54,861.43	Santos	888N-12
8,697.50	0.05394375	0	0.0046609	59,975.18	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	1.524564	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	1.671771	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	1.824	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	1.98741	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	2.16921	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	2.365432	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	2.578667	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	2.81248	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	3.069868	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	3.347349	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	3.654158	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	3.994426	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	4.364347	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	4.770724	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	5.213154	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	5.701601	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	6.229989	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	6.810227	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	7.446043	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	8.14327	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	8.8951	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	9.720737	Santos	888N-12

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,708.50	0.08123886	100	0.0006643	10.62901	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	11.61781	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	12.68982	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	13.87323	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	15.15968	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	16.5675	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	18.11751	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	19.80119	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	21.69794	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	23.70949	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	25.90965	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	28.62253	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	33.56453	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	34.47932	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	38.70895	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	42.61171	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	46.69146	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	50.87684	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	55.62997	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	61.12286	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	66.78507	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	73.55052	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	80.71976	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	87.76162	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	96.7069	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	106.3536	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	115.6517	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	125.9604	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	139.1402	Santos	888N-12
8,708.50	0.08123886	100	0.0006643	151.864	Santos	888N-12
8,708.50	0.08123886	99.9978	0.0006643	165.9797	Santos	888N-12
8,708.50	0.08123886	99.9366	0.0006643	181.9445	Santos	888N-12
8,708.50	0.08123886	99.87369	0.0006643	198.7473	Santos	888N-12
8,708.50	0.08123886	99.79516	0.0006643	217.5682	Santos	888N-12
8,708.50	0.08123886	99.70885	0.0006643	238.2461	Santos	888N-12
8,708.50	0.08123886	99.62721	0.0006643	261.2621	Santos	888N-12
8,708.50	0.08123886	99.55426	0.0006643	285.4312	Santos	888N-12
8,708.50	0.08123886	99.43668	0.0006643	312.4157	Santos	888N-12
8,708.50	0.08123886	99.35496	0.0006643	340.5985	Santos	888N-12
8,708.50	0.08123886	99.30638	0.0006643	373.0792	Santos	888N-12
8,708.50	0.08123886	99.22478	0.0006643	408.2417	Santos	888N-12
8,708.50	0.08123886	99.10442	0.0006643	446.1471	Santos	888N-12
8,708.50	0.08123886	99.00821	0.0006643	488.0667	Santos	888N-12
8,708.50	0.08123886	98.89486	0.0006643	533.1541	Santos	888N-12
8,708.50	0.08123886	98.76228	0.0006643	583.1616	Santos	888N-12

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,708.50	0.08123886	98.64913	0.0006643	637.6608	Santos	888N-12
8,708.50	0.08123886	98.52455	0.0006643	697.7287	Santos	888N-12
8,708.50	0.08123886	98.39735	0.0006643	763.2296	Santos	888N-12
8,708.50	0.08123886	98.28976	0.0006643	833.4194	Santos	888N-12
8,708.50	0.08123886	98.13099	0.0006643	911.6456	Santos	888N-12
8,708.50	0.08123886	97.98902	0.0006643	996.3446	Santos	888N-12
8,708.50	0.08123886	97.81174	0.0006643	1,089.57	Santos	888N-12
8,708.50	0.08123886	97.6423	0.0006643	1,191.08	Santos	888N-12
8,708.50	0.08123886	97.40742	0.0006643	1,303.32	Santos	888N-12
8,708.50	0.08123886	97.16121	0.0006643	1,423.81	Santos	888N-12
8,708.50	0.08123886	96.83954	0.0006643	1,556.48	Santos	888N-12
8,708.50	0.08123886	96.44646	0.0006643	1,702.07	Santos	888N-12
8,708.50	0.08123886	95.89185	0.0006643	1,860.06	Santos	888N-12
8,708.50	0.08123886	95.15277	0.0006643	2,033.54	Santos	888N-12
8,708.50	0.08123886	94.30682	0.0006643	2,222.94	Santos	888N-12
8,708.50	0.08123886	93.20086	0.0006643	2,429.77	Santos	888N-12
8,708.50	0.08123886	91.87881	0.0006643	2,656.65	Santos	888N-12
8,708.50	0.08123886	90.34386	0.0006643	2,903.43	Santos	888N-12
8,708.50	0.08123886	88.66338	0.0006643	3,174.15	Santos	888N-12
8,708.50	0.08123886	86.82487	0.0006643	3,470.59	Santos	888N-12
8,708.50	0.08123886	84.81019	0.0006643	3,792.81	Santos	888N-12
8,708.50	0.08123886	82.69839	0.0006643	4,146.11	Santos	888N-12
8,708.50	0.08123886	80.45533	0.0006643	4,527.95	Santos	888N-12
8,708.50	0.08123886	78.16853	0.0006643	4,950.60	Santos	888N-12
8,708.50	0.08123886	75.80398	0.0006643	5,411.46	Santos	888N-12
8,708.50	0.08123886	73.30631	0.0006643	5,915.23	Santos	888N-12
8,708.50	0.08123886	70.53562	0.0006643	6,466.85	Santos	888N-12
8,708.50	0.08123886	67.53111	0.0006643	7,070.37	Santos	888N-12
8,708.50	0.08123886	64.24152	0.0006643	7,726.80	Santos	888N-12
8,708.50	0.08123886	60.57494	0.0006643	8,449.19	Santos	888N-12
8,708.50	0.08123886	56.66562	0.0006643	9,236.42	Santos	888N-12
8,708.50	0.08123886	52.44788	0.0006643	10,097.39	Santos	888N-12
8,708.50	0.08123886	48.05931	0.0006643	11,039.37	Santos	888N-12
8,708.50	0.08123886	43.55128	0.0006643	12,067.62	Santos	888N-12
8,708.50	0.08123886	39.08283	0.0006643	13,192.18	Santos	888N-12
8,708.50	0.08123886	34.79723	0.0006643	14,420.14	Santos	888N-12
8,708.50	0.08123886	30.68984	0.0006643	15,766.55	Santos	888N-12
8,708.50	0.08123886	26.79414	0.0006643	17,234.40	Santos	888N-12
8,708.50	0.08123886	23.17242	0.0006643	18,839.45	Santos	888N-12
8,708.50	0.08123886	19.86031	0.0006643	20,598.17	Santos	888N-12
8,708.50	0.08123886	16.97045	0.0006643	22,520.69	Santos	888N-12
8,708.50	0.08123886	14.35968	0.0006643	24,620.51	Santos	888N-12
8,708.50	0.08123886	12.06625	0.0006643	26,915.42	Santos	888N-12
8,708.50	0.08123886	10.00736	0.0006643	29,423.65	Santos	888N-12
8,708.50	0.08123886	8.233407	0.0006643	32,164.22	Santos	888N-12

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,708.50	0.08123886	6.635479	0.0006643	35,160.07	Santos	888N-12
8,708.50	0.08123886	5.205426	0.0006643	38,434.97	Santos	888N-12
8,708.50	0.08123886	3.903149	0.0006643	42,006.43	Santos	888N-12
8,708.50	0.08123886	2.770463	0.0006643	45,925.82	Santos	888N-12
8,708.50	0.08123886	1.721339	0.0006643	50,190.00	Santos	888N-12
8,708.50	0.08123886	0.8468547	0.0006643	54,860.99	Santos	888N-12
8,708.50	0.08123886	0	0.0006643	59,974.76	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	1.523131	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	1.667938	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	1.818973	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	1.985414	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	2.164148	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	2.362058	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	2.576933	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	2.814671	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	3.065685	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	3.350791	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	3.655073	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	3.993693	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	4.367469	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	4.771566	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	5.218197	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	5.703343	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	6.233235	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	6.809511	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	7.444299	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	8.135223	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	8.893102	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	9.721867	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	10.62504	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	11.61091	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	12.69151	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	13.86897	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	15.15805	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	16.56539	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	18.11548	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	19.8507	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	21.69573	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	23.70704	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	25.91028	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	29.11336	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	29.37719	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	34.87826	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	38.70054	Santos	888N-12
8,715.50	0.1494646	100	0.0024668	42.27914	Santos	888N-12

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,715.50	0.1494646	100	0.0024668	46.53315	Santos	888N-12
8,715.50	0.1494646	99.96819	0.0024668	50.96892	Santos	888N-12
8,715.50	0.1494646	99.84844	0.0024668	55.76823	Santos	888N-12
8,715.50	0.1494646	99.78339	0.0024668	61.4866	Santos	888N-12
8,715.50	0.1494646	99.7213	0.0024668	67.03297	Santos	888N-12
8,715.50	0.1494646	99.65876	0.0024668	73.46808	Santos	888N-12
8,715.50	0.1494646	99.59239	0.0024668	80.24648	Santos	888N-12
8,715.50	0.1494646	99.53391	0.0024668	88.09744	Santos	888N-12
8,715.50	0.1494646	99.47166	0.0024668	96.92971	Santos	888N-12
8,715.50	0.1494646	99.41286	0.0024668	105.5863	Santos	888N-12
8,715.50	0.1494646	99.36554	0.0024668	115.5376	Santos	888N-12
8,715.50	0.1494646	99.31672	0.0024668	126.455	Santos	888N-12
8,715.50	0.1494646	99.25212	0.0024668	139.0361	Santos	888N-12
8,715.50	0.1494646	99.21161	0.0024668	151.9341	Santos	888N-12
8,715.50	0.1494646	99.16637	0.0024668	166.1105	Santos	888N-12
8,715.50	0.1494646	99.10989	0.0024668	181.5645	Santos	888N-12
8,715.50	0.1494646	99.10989	0.0024668	198.7973	Santos	888N-12
8,715.50	0.1494646	99.08527	0.0024668	217.8357	Santos	888N-12
8,715.50	0.1494646	99.02019	0.0024668	237.9826	Santos	888N-12
8,715.50	0.1494646	98.95929	0.0024668	260.7054	Santos	888N-12
8,715.50	0.1494646	98.89581	0.0024668	284.7942	Santos	888N-12
8,715.50	0.1494646	98.8372	0.0024668	311.6562	Santos	888N-12
8,715.50	0.1494646	98.761	0.0024668	340.7652	Santos	888N-12
8,715.50	0.1494646	98.73055	0.0024668	372.5481	Santos	888N-12
8,715.50	0.1494646	98.65192	0.0024668	407.4504	Santos	888N-12
8,715.50	0.1494646	98.57266	0.0024668	445.478	Santos	888N-12
8,715.50	0.1494646	98.51074	0.0024668	487.3662	Santos	888N-12
8,715.50	0.1494646	98.44207	0.0024668	533.0682	Santos	888N-12
8,715.50	0.1494646	98.36462	0.0024668	582.6447	Santos	888N-12
8,715.50	0.1494646	98.29388	0.0024668	637.1471	Santos	888N-12
8,715.50	0.1494646	98.20455	0.0024668	696.171	Santos	888N-12
8,715.50	0.1494646	98.12529	0.0024668	762.2466	Santos	888N-12
8,715.50	0.1494646	98.03314	0.0024668	832.7239	Santos	888N-12
8,715.50	0.1494646	97.93409	0.0024668	910.5181	Santos	888N-12
8,715.50	0.1494646	97.8315	0.0024668	996.1327	Santos	888N-12
8,715.50	0.1494646	97.73156	0.0024668	1,089.52	Santos	888N-12
8,715.50	0.1494646	97.61433	0.0024668	1,191.51	Santos	888N-12
8,715.50	0.1494646	97.49946	0.0024668	1,302.33	Santos	888N-12
8,715.50	0.1494646	97.36785	0.0024668	1,424.02	Santos	888N-12
8,715.50	0.1494646	97.22418	0.0024668	1,553.23	Santos	888N-12
8,715.50	0.1494646	97.07124	0.0024668	1,700.16	Santos	888N-12
8,715.50	0.1494646	96.90366	0.0024668	1,859.38	Santos	888N-12
8,715.50	0.1494646	96.73832	0.0024668	2,034.06	Santos	888N-12
8,715.50	0.1494646	96.50585	0.0024668	2,221.66	Santos	888N-12
8,715.50	0.1494646	96.27905	0.0024668	2,427.09	Santos	888N-12

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,715.50	0.1494646	96.00318	0.0024668	2,653.70	Santos	888N-12
8,715.50	0.1494646	95.67187	0.0024668	2,902.75	Santos	888N-12
8,715.50	0.1494646	95.27789	0.0024668	3,171.92	Santos	888N-12
8,715.50	0.1494646	94.7868	0.0024668	3,470.51	Santos	888N-12
8,715.50	0.1494646	94.07497	0.0024668	3,791.90	Santos	888N-12
8,715.50	0.1494646	93.0173	0.0024668	4,146.14	Santos	888N-12
8,715.50	0.1494646	91.18608	0.0024668	4,526.44	Santos	888N-12
8,715.50	0.1494646	88.39469	0.0024668	4,949.87	Santos	888N-12
8,715.50	0.1494646	84.62296	0.0024668	5,413.92	Santos	888N-12
8,715.50	0.1494646	80.06805	0.0024668	5,915.55	Santos	888N-12
8,715.50	0.1494646	74.81403	0.0024668	6,467.68	Santos	888N-12
8,715.50	0.1494646	69.48666	0.0024668	7,069.63	Santos	888N-12
8,715.50	0.1494646	64.50404	0.0024668	7,726.80	Santos	888N-12
8,715.50	0.1494646	59.39153	0.0024668	8,447.21	Santos	888N-12
8,715.50	0.1494646	54.43716	0.0024668	9,237.63	Santos	888N-12
8,715.50	0.1494646	49.48003	0.0024668	10,097.69	Santos	888N-12
8,715.50	0.1494646	44.42724	0.0024668	11,039.15	Santos	888N-12
8,715.50	0.1494646	39.15715	0.0024668	12,068.70	Santos	888N-12
8,715.50	0.1494646	34.07886	0.0024668	13,192.00	Santos	888N-12
8,715.50	0.1494646	29.23367	0.0024668	14,422.00	Santos	888N-12
8,715.50	0.1494646	24.89273	0.0024668	15,766.67	Santos	888N-12
8,715.50	0.1494646	20.96441	0.0024668	17,234.26	Santos	888N-12
8,715.50	0.1494646	17.79163	0.0024668	18,842.32	Santos	888N-12
8,715.50	0.1494646	14.98669	0.0024668	20,597.70	Santos	888N-12
8,715.50	0.1494646	12.55156	0.0024668	22,520.98	Santos	888N-12
8,715.50	0.1494646	10.53146	0.0024668	24,621.35	Santos	888N-12
8,715.50	0.1494646	8.690642	0.0024668	26,916.72	Santos	888N-12
8,715.50	0.1494646	7.259562	0.0024668	29,424.03	Santos	888N-12
8,715.50	0.1494646	5.950702	0.0024668	32,165.36	Santos	888N-12
8,715.50	0.1494646	4.769219	0.0024668	35,160.32	Santos	888N-12
8,715.50	0.1494646	3.841602	0.0024668	38,435.21	Santos	888N-12
8,715.50	0.1494646	2.797277	0.0024668	42,007.85	Santos	888N-12
8,715.50	0.1494646	2.004373	0.0024668	45,902.89	Santos	888N-12
8,715.50	0.1494646	1.214202	0.0024668	50,177.71	Santos	888N-12
8,715.50	0.1494646	0.6738628	0.0024668	54,852.46	Santos	888N-12
8,715.50	0.1494646	0	0.0024668	59,956.78	Santos	888N-12
8,716.50	0.136	100	18	0.9	64ZW	17-2N
8,716.50	0.136	99.5	18	1.3	64ZW	17-2N
8,716.50	0.136	99.2	18	1.5	64ZW	17-2N
8,716.50	0.136	97.4	18	2	64ZW	17-2N
8,716.50	0.136	96.5	18	2.4	64ZW	17-2N
8,716.50	0.136	96.2	18	3.1	64ZW	17-2N
8,716.50	0.136	95.9	18	4	64ZW	17-2N
8,716.50	0.136	95.7	18	5.1	64ZW	17-2N
8,716.50	0.136	95.4	18	6.4	64ZW	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,716.50	0.136	94.9	18	9.3	64ZW	17-2N
8,716.50	0.136	94.5	18	10.5	64ZW	17-2N
8,716.50	0.136	93.7	18	13.4	64ZW	17-2N
8,716.50	0.136	91.1	18	17.2	64ZW	17-2N
8,716.50	0.136	75.2	18	21.9	64ZW	17-2N
8,716.50	0.136	67.1	18	24.5	64ZW	17-2N
8,716.50	0.136	66.2	18	25.6	64ZW	17-2N
8,716.50	0.136	63.1	18	28.4	64ZW	17-2N
8,716.50	0.136	60.9	18	31.1	64ZW	17-2N
8,716.50	0.136	58.4	18	34.9	64ZW	17-2N
8,716.50	0.136	54.3	18	44.1	64ZW	17-2N
8,716.50	0.136	50.2	18	57.2	64ZW	17-2N
8,716.50	0.136	47	18	72.6	64ZW	17-2N
8,716.50	0.136	43.5	18	95	64ZW	17-2N
8,716.50	0.136	40.6	18	120.3	64ZW	17-2N
8,716.50	0.136	37.6	18	156.8	64ZW	17-2N
8,716.50	0.136	35.1	18	197.7	64ZW	17-2N
8,716.50	0.136	32.6	18	254.1	64ZW	17-2N
8,716.50	0.136	30.3	18	326.9	64ZW	17-2N
8,716.50	0.136	28.3	18	415.7	64ZW	17-2N
8,716.50	0.136	26.3	18	536.7	64ZW	17-2N
8,716.50	0.136	24.7	18	677.3	64ZW	17-2N
8,716.50	0.136	22.8	18	867.7	64ZW	17-2N
8,716.50	0.136	20.9	18	1107	64ZW	17-2N
8,716.50	0.136	18.2	18	1415.5	64ZW	17-2N
8,716.50	0.136	15.6	18	1812	64ZW	17-2N
8,716.50	0.136	13.2	18	2,309.10	64ZW	17-2N
8,716.50	0.136	10.8	18	2,967.20	64ZW	17-2N
8,716.50	0.136	8.4	18	3,785.90	64ZW	17-2N
8,716.50	0.136	6.1	18	4,843.80	64ZW	17-2N
8,716.50	0.136	4.5	18	6,199.80	64ZW	17-2N
8,716.50	0.136	3.3	18	7,928.40	64ZW	17-2N
8,716.50	0.136	2.5	18	10,074.30	64ZW	17-2N
8,716.50	0.136	2	18	12,801.40	64ZW	17-2N
8,716.50	0.136	1.5	18	16,705.70	64ZW	17-2N
8,716.50	0.136	1.2	18	21,191.20	64ZW	17-2N
8,716.50	0.136	1	18	26,883.80	64ZW	17-2N
8,716.50	0.136	0.8	18	34,379.50	64ZW	17-2N
8,716.50	0.136	0.8	18	43,827.40	64ZW	17-2N
8,716.50	0.136	0.8	18	55,927.90	64ZW	17-2N
8,716.50	0.136	0.8	18	45,198.40	64ZW	17-2N
8,732.50	0.125	100	7.5	0.9	64ZW	17-2N
8,732.50	0.125	98.7	7.5	1.3	64ZW	17-2N
8,732.50	0.125	98	7.5	1.5	64ZW	17-2N
8,732.50	0.125	97.3	7.5	1.9	64ZW	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,732.50	0.125	96.7	7.5	2.4	64ZW	17-2N
8,732.50	0.125	96.4	7.5	3.1	64ZW	17-2N
8,732.50	0.125	95.8	7.5	4	64ZW	17-2N
8,732.50	0.125	95.7	7.5	5.1	64ZW	17-2N
8,732.50	0.125	95.5	7.5	6.5	64ZW	17-2N
8,732.50	0.125	94.9	7.5	9.2	64ZW	17-2N
8,732.50	0.125	94.8	7.5	10.6	64ZW	17-2N
8,732.50	0.125	94	7.5	13.5	64ZW	17-2N
8,732.50	0.125	92.8	7.5	17.2	64ZW	17-2N
8,732.50	0.125	89	7.5	21.9	64ZW	17-2N
8,732.50	0.125	85	7.5	24.5	64ZW	17-2N
8,732.50	0.125	84.3	7.5	25.1	64ZW	17-2N
8,732.50	0.125	80.8	7.5	26.8	64ZW	17-2N
8,732.50	0.125	75.6	7.5	30	64ZW	17-2N
8,732.50	0.125	71.4	7.5	32.9	64ZW	17-2N
8,732.50	0.125	67.5	7.5	36.9	64ZW	17-2N
8,732.50	0.125	61.8	7.5	46	64ZW	17-2N
8,732.50	0.125	57.5	7.5	58	64ZW	17-2N
8,732.50	0.125	53.5	7.5	75	64ZW	17-2N
8,732.50	0.125	49.9	7.5	97.8	64ZW	17-2N
8,732.50	0.125	46.8	7.5	122.2	64ZW	17-2N
8,732.50	0.125	43.6	7.5	157	64ZW	17-2N
8,732.50	0.125	40.7	7.5	199.5	64ZW	17-2N
8,732.50	0.125	37.8	7.5	256.1	64ZW	17-2N
8,732.50	0.125	35.3	7.5	328.7	64ZW	17-2N
8,732.50	0.125	33.1	7.5	416.5	64ZW	17-2N
8,732.50	0.125	30.9	7.5	531.8	64ZW	17-2N
8,732.50	0.125	28.9	7.5	685.1	64ZW	17-2N
8,732.50	0.125	26.9	7.5	868.7	64ZW	17-2N
8,732.50	0.125	24.6	7.5	1,131.40	64ZW	17-2N
8,732.50	0.125	22.1	7.5	1,431.20	64ZW	17-2N
8,732.50	0.125	19	7.5	1,832.70	64ZW	17-2N
8,732.50	0.125	16.5	7.5	2,321.00	64ZW	17-2N
8,732.50	0.125	13.6	7.5	2,954.10	64ZW	17-2N
8,732.50	0.125	10.5	7.5	3,788.10	64ZW	17-2N
8,732.50	0.125	7.4	7.5	4,846.10	64ZW	17-2N
8,732.50	0.125	5.4	7.5	6,202.10	64ZW	17-2N
8,732.50	0.125	4.2	7.5	7,930.70	64ZW	17-2N
8,732.50	0.125	3.1	7.5	10,076.60	64ZW	17-2N
8,732.50	0.125	2.4	7.5	12,803.70	64ZW	17-2N
8,732.50	0.125	1.6	7.5	16,678.20	64ZW	17-2N
8,732.50	0.125	1.3	7.5	21,208.40	64ZW	17-2N
8,732.50	0.125	0.7	7.5	26,856.30	64ZW	17-2N
8,732.50	0.125	0.4	7.5	34,456.40	64ZW	17-2N
8,732.50	0.125	0.2	7.5	44,008.60	64ZW	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,732.50	0.125	0	7.5	55,989.80	64ZW	17-2N
8,773.50	0.1	100	0.79	0.9	64ZW	17-2N
8,773.50	0.1	96.3	0.79	1.3	64ZW	17-2N
8,773.50	0.1	95.6	0.79	1.5	64ZW	17-2N
8,773.50	0.1	94.7	0.79	1.9	64ZW	17-2N
8,773.50	0.1	94	0.79	2.4	64ZW	17-2N
8,773.50	0.1	93.3	0.79	3.1	64ZW	17-2N
8,773.50	0.1	93	0.79	4	64ZW	17-2N
8,773.50	0.1	92.8	0.79	5.1	64ZW	17-2N
8,773.50	0.1	92.8	0.79	6.5	64ZW	17-2N
8,773.50	0.1	92.3	0.79	9.2	64ZW	17-2N
8,773.50	0.1	92.3	0.79	10.6	64ZW	17-2N
8,773.50	0.1	92.1	0.79	13.5	64ZW	17-2N
8,773.50	0.1	91.9	0.79	17.2	64ZW	17-2N
8,773.50	0.1	91.2	0.79	21.9	64ZW	17-2N
8,773.50	0.1	90.9	0.79	24.5	64ZW	17-2N
8,773.50	0.1	90.9	0.79	25	64ZW	17-2N
8,773.50	0.1	90.9	0.79	26.8	64ZW	17-2N
8,773.50	0.1	90.2	0.79	30.1	64ZW	17-2N
8,773.50	0.1	89.8	0.79	33	64ZW	17-2N
8,773.50	0.1	87.9	0.79	37	64ZW	17-2N
8,773.50	0.1	84.4	0.79	46	64ZW	17-2N
8,773.50	0.1	78.6	0.79	57.9	64ZW	17-2N
8,773.50	0.1	73.5	0.79	74.8	64ZW	17-2N
8,773.50	0.1	68.6	0.79	97.4	64ZW	17-2N
8,773.50	0.1	64.7	0.79	121.7	64ZW	17-2N
8,773.50	0.1	60	0.79	156.4	64ZW	17-2N
8,773.50	0.1	54.7	0.79	198.8	64ZW	17-2N
8,773.50	0.1	48.8	0.79	255.2	64ZW	17-2N
8,773.50	0.1	44	0.79	327.6	64ZW	17-2N
8,773.50	0.1	40	0.79	415.4	64ZW	17-2N
8,773.50	0.1	36.7	0.79	530.5	64ZW	17-2N
8,773.50	0.1	33.7	0.79	683.7	64ZW	17-2N
8,773.50	0.1	30.7	0.79	867.2	64ZW	17-2N
8,773.50	0.1	27.7	0.79	1,129.90	64ZW	17-2N
8,773.50	0.1	24.4	0.79	1,429.60	64ZW	17-2N
8,773.50	0.1	20.9	0.79	1,831.00	64ZW	17-2N
8,773.50	0.1	17.7	0.79	2,319.20	64ZW	17-2N
8,773.50	0.1	14.4	0.79	2,952.30	64ZW	17-2N
8,773.50	0.1	10.7	0.79	3,786.10	64ZW	17-2N
8,773.50	0.1	7	0.79	4,844.00	64ZW	17-2N
8,773.50	0.1	4.4	0.79	6,200.00	64ZW	17-2N
8,773.50	0.1	2.6	0.79	7,928.60	64ZW	17-2N
8,773.50	0.1	1.6	0.79	10,074.40	64ZW	17-2N
8,773.50	0.1	0.7	0.79	12,801.50	64ZW	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,773.50	0.1	0.2	0.79	16,676.00	64ZW	17-2N
8,773.50	0.1	0	0.79	21,206.20	64ZW	17-2N
8,773.50	0.1	0	0.79	26,854.10	64ZW	17-2N
8,773.50	0.1	0	0.79	34,454.20	64ZW	17-2N
8,773.50	0.1	0	0.79	44,006.40	64ZW	17-2N
8,773.50	0.1	0	0.79	55,987.70	64ZW	17-2N
8,805.50	0.131	100	0.032	0.9	64ZW	17-2N
8,805.50	0.131	98.9	0.032	1.3	64ZW	17-2N
8,805.50	0.131	98.2	0.032	1.5	64ZW	17-2N
8,805.50	0.131	97.7	0.032	1.9	64ZW	17-2N
8,805.50	0.131	97.3	0.032	2.4	64ZW	17-2N
8,805.50	0.131	97.2	0.032	3.1	64ZW	17-2N
8,805.50	0.131	96.8	0.032	4	64ZW	17-2N
8,805.50	0.131	96.8	0.032	5.1	64ZW	17-2N
8,805.50	0.131	96.4	0.032	6.5	64ZW	17-2N
8,805.50	0.131	96.3	0.032	9.2	64ZW	17-2N
8,805.50	0.131	96.3	0.032	10.6	64ZW	17-2N
8,805.50	0.131	96.1	0.032	13.5	64ZW	17-2N
8,805.50	0.131	95.9	0.032	17.2	64ZW	17-2N
8,805.50	0.131	95.6	0.032	21.9	64ZW	17-2N
8,805.50	0.131	95.4	0.032	24.5	64ZW	17-2N
8,805.50	0.131	95.4	0.032	25.2	64ZW	17-2N
8,805.50	0.131	95.4	0.032	26.8	64ZW	17-2N
8,805.50	0.131	95.4	0.032	30.5	64ZW	17-2N
8,805.50	0.131	95.2	0.032	33.1	64ZW	17-2N
8,805.50	0.131	95	0.032	37.4	64ZW	17-2N
8,805.50	0.131	94.5	0.032	47.8	64ZW	17-2N
8,805.50	0.131	93.3	0.032	60	64ZW	17-2N
8,805.50	0.131	89.5	0.032	75.9	64ZW	17-2N
8,805.50	0.131	82.6	0.032	95	64ZW	17-2N
8,805.50	0.131	72.3	0.032	122.3	64ZW	17-2N
8,805.50	0.131	65.4	0.032	155.5	64ZW	17-2N
8,805.50	0.131	59.1	0.032	197.8	64ZW	17-2N
8,805.50	0.131	54	0.032	254.9	64ZW	17-2N
8,805.50	0.131	48.8	0.032	332.1	64ZW	17-2N
8,805.50	0.131	44.9	0.032	417	64ZW	17-2N
8,805.50	0.131	41.2	0.032	539	64ZW	17-2N
8,805.50	0.131	37.8	0.032	680.5	64ZW	17-2N
8,805.50	0.131	34.6	0.032	867.9	64ZW	17-2N
8,805.50	0.131	30.9	0.032	1,119.80	64ZW	17-2N
8,805.50	0.131	27.4	0.032	1,428.40	64ZW	17-2N
8,805.50	0.131	23.3	0.032	1,817.00	64ZW	17-2N
8,805.50	0.131	18.3	0.032	2,323.80	64ZW	17-2N
8,805.50	0.131	14	0.032	2,957.80	64ZW	17-2N
8,805.50	0.131	10.8	0.032	3,772.00	64ZW	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,805.50	0.131	8.2	0.032	4,874.60	64ZW	17-2N
8,805.50	0.131	6.2	0.032	6,245.60	64ZW	17-2N
8,805.50	0.131	4.8	0.032	7,959.30	64ZW	17-2N
8,805.50	0.131	3.6	0.032	10,120.00	64ZW	17-2N
8,805.50	0.131	2.5	0.032	12,847.00	64ZW	17-2N
8,805.50	0.131	1.4	0.032	16,751.40	64ZW	17-2N
8,805.50	0.131	0.7	0.032	21,251.80	64ZW	17-2N
8,805.50	0.131	0.4	0.032	26,929.40	64ZW	17-2N
8,805.50	0.131	0	0.032	34,678.50	64ZW	17-2N
8,805.50	0.131	0	0.032	44,394.70	64ZW	17-2N
8,805.50	0.131	0	0.032	56,226.90	64ZW	17-2N
8,825.00	0.157	100	0.92	0.9	64ZW	17-2N
8,825.00	0.157	99.6	0.92	1.3	64ZW	17-2N
8,825.00	0.157	98.5	0.92	1.5	64ZW	17-2N
8,825.00	0.157	96.2	0.92	2	64ZW	17-2N
8,825.00	0.157	95.5	0.92	2.4	64ZW	17-2N
8,825.00	0.157	95.3	0.92	3.1	64ZW	17-2N
8,825.00	0.157	95.1	0.92	4	64ZW	17-2N
8,825.00	0.157	95	0.92	5.1	64ZW	17-2N
8,825.00	0.157	94.9	0.92	6.4	64ZW	17-2N
8,825.00	0.157	94.7	0.92	9.3	64ZW	17-2N
8,825.00	0.157	94.6	0.92	10.5	64ZW	17-2N
8,825.00	0.157	94.5	0.92	13.4	64ZW	17-2N
8,825.00	0.157	94.3	0.92	17.2	64ZW	17-2N
8,825.00	0.157	94.2	0.92	21.9	64ZW	17-2N
8,825.00	0.157	94.1	0.92	24.5	64ZW	17-2N
8,825.00	0.157	94.1	0.92	25.6	64ZW	17-2N
8,825.00	0.157	94.1	0.92	28.3	64ZW	17-2N
8,825.00	0.157	94.1	0.92	31.3	64ZW	17-2N
8,825.00	0.157	93.9	0.92	33	64ZW	17-2N
8,825.00	0.157	93.5	0.92	37.4	64ZW	17-2N
8,825.00	0.157	92.2	0.92	46.6	64ZW	17-2N
8,825.00	0.157	89.3	0.92	60.3	64ZW	17-2N
8,825.00	0.157	85.3	0.92	76.1	64ZW	17-2N
8,825.00	0.157	80.3	0.92	95.1	64ZW	17-2N
8,825.00	0.157	74.3	0.92	124.4	64ZW	17-2N
8,825.00	0.157	67.8	0.92	156.8	64ZW	17-2N
8,825.00	0.157	61.8	0.92	200.2	64ZW	17-2N
8,825.00	0.157	56.6	0.92	256.9	64ZW	17-2N
8,825.00	0.157	52.6	0.92	324.6	64ZW	17-2N
8,825.00	0.157	48.8	0.92	419.3	64ZW	17-2N
8,825.00	0.157	45.3	0.92	535.4	64ZW	17-2N
8,825.00	0.157	41.8	0.92	684.8	64ZW	17-2N
8,825.00	0.157	38.4	0.92	868.3	64ZW	17-2N
8,825.00	0.157	34.5	0.92	1,129.00	64ZW	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,825.00	0.157	30.3	0.92	1,426.80	64ZW	17-2N
8,825.00	0.157	24.7	0.92	1,830.10	64ZW	17-2N
8,825.00	0.157	19.2	0.92	2,313.50	64ZW	17-2N
8,825.00	0.157	14.7	0.92	2,949.30	64ZW	17-2N
8,825.00	0.157	11.2	0.92	3,787.30	64ZW	17-2N
8,825.00	0.157	8.6	0.92	4,875.00	64ZW	17-2N
8,825.00	0.157	6.8	0.92	6,186.40	64ZW	17-2N
8,825.00	0.157	5.3	0.92	7,855.40	64ZW	17-2N
8,825.00	0.157	4.1	0.92	10,090.60	64ZW	17-2N
8,825.00	0.157	3	0.92	12,817.70	64ZW	17-2N
8,825.00	0.157	2	0.92	16,528.30	64ZW	17-2N
8,825.00	0.157	1.2	0.92	21,207.50	64ZW	17-2N
8,825.00	0.157	0.7	0.92	26,929.90	64ZW	17-2N
8,825.00	0.157	0.3	0.92	34,425.60	64ZW	17-2N
8,825.00	0.157	0	0.92	43,769.20	64ZW	17-2N
8,825.00	0.157	0	0.92	56,003.80	64ZW	17-2N
8,841.42	0.151	100	0.49	0.9	64ZW	17-2N
8,841.42	0.151	99.6	0.49	1.3	64ZW	17-2N
8,841.42	0.151	98.4	0.49	1.5	64ZW	17-2N
8,841.42	0.151	97.5	0.49	1.9	64ZW	17-2N
8,841.42	0.151	97	0.49	2.4	64ZW	17-2N
8,841.42	0.151	96.5	0.49	3.1	64ZW	17-2N
8,841.42	0.151	96.4	0.49	4	64ZW	17-2N
8,841.42	0.151	96.2	0.49	5.1	64ZW	17-2N
8,841.42	0.151	95.9	0.49	6.5	64ZW	17-2N
8,841.42	0.151	95.5	0.49	9.2	64ZW	17-2N
8,841.42	0.151	95.4	0.49	10.6	64ZW	17-2N
8,841.42	0.151	95.1	0.49	13.5	64ZW	17-2N
8,841.42	0.151	94.9	0.49	17.2	64ZW	17-2N
8,841.42	0.151	94.5	0.49	21.9	64ZW	17-2N
8,841.42	0.151	94.3	0.49	24.5	64ZW	17-2N
8,841.42	0.151	94.3	0.49	25.2	64ZW	17-2N
8,841.42	0.151	94.2	0.49	26.8	64ZW	17-2N
8,841.42	0.151	94	0.49	30.5	64ZW	17-2N
8,841.42	0.151	94	0.49	33.1	64ZW	17-2N
8,841.42	0.151	93.8	0.49	37.4	64ZW	17-2N
8,841.42	0.151	93.3	0.49	47.9	64ZW	17-2N
8,841.42	0.151	92.6	0.49	60.1	64ZW	17-2N
8,841.42	0.151	91.6	0.49	76.1	64ZW	17-2N
8,841.42	0.151	89	0.49	95.3	64ZW	17-2N
8,841.42	0.151	83.6	0.49	122.8	64ZW	17-2N
8,841.42	0.151	77.8	0.49	156.1	64ZW	17-2N
8,841.42	0.151	71.6	0.49	198.5	64ZW	17-2N
8,841.42	0.151	66	0.49	255.6	64ZW	17-2N
8,841.42	0.151	61	0.49	332.9	64ZW	17-2N

Core_depth (ft)	Core_Porosity (v/v)	Core_Sw (%)	Core_Kair (mD)	PC_LAB (psia)	Formation	wellSource
8,841.42	0.151	57.2	0.49	417.8	64ZW	17-2N
8,841.42	0.151	53.3	0.49	539.8	64ZW	17-2N
8,841.42	0.151	49.6	0.49	681.4	64ZW	17-2N
8,841.42	0.151	45.4	0.49	868.9	64ZW	17-2N
8,841.42	0.151	39.6	0.49	1,120.70	64ZW	17-2N
8,841.42	0.151	33.2	0.49	1,429.30	64ZW	17-2N
8,841.42	0.151	27	0.49	1,817.90	64ZW	17-2N
8,841.42	0.151	21.3	0.49	2,324.80	64ZW	17-2N
8,841.42	0.151	16.8	0.49	2,958.80	64ZW	17-2N
8,841.42	0.151	13.5	0.49	3,773.00	64ZW	17-2N
8,841.42	0.151	10.4	0.49	4,875.60	64ZW	17-2N
8,841.42	0.151	8.1	0.49	6,246.60	64ZW	17-2N
8,841.42	0.151	6.4	0.49	7,960.30	64ZW	17-2N
8,841.42	0.151	4.3	0.49	10,121.10	64ZW	17-2N
8,841.42	0.151	3.8	0.49	12,848.10	64ZW	17-2N
8,841.42	0.151	2.6	0.49	16,752.40	64ZW	17-2N
8,841.42	0.151	1.9	0.49	21,252.80	64ZW	17-2N
8,841.42	0.151	1.3	0.49	26,930.50	64ZW	17-2N
8,841.42	0.151	0.7	0.49	34,679.60	64ZW	17-2N
8,841.42	0.151	0.4	0.49	44,395.70	64ZW	17-2N
8,841.42	0.151	0	0.49	56,228.00	64ZW	17-2N

Notes:
ft: feet
Kair: air permeability
mD: millidarcies
PC_LAB: mercury pressure
psia: pounds per square inch absolute
sW: saturation % pore space: water
v/v: volume/volume

Appendix 2E
Seismic History Supporting Data

Contents

USGS Seismicity Data, 1900–2022, within 100 km Radius of Area of Review, Magnitude 2.0+

USGS Seismicity Data, 1950–2022, within 15 km Radius of Area of Review, Magnitude 2.0+

SCEDC Seismicity Data, 1950–2022, within 15 km Radius of Area of Review, Magnitude 2.0+

Appendix 2E
Seismic History Supporting Data

USGS Seismicity Data, 1900–2022, within 100 km Radius of Area of Review, Magnitude 2.0+

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/25/2023	6:42:33	35.0428333	-119.6403333	14.25	3.05	ml	66	42	0.1036	0.32	ci	ci40572024	2023-09-26T06:38:27.040Z	20 km WSW of Taft, CA	earthquake	0.31	0.58	0.118	75	reviewed	ci	ci
9/21/2023	5:21:49	36.0018333	-120.5631667	2.95	2.07	md	49	46	0.02282	0.1	nc	nc73939666	2023-09-27T00:39:14.091Z	16 km NW of Parkfield, CA	earthquake	0.19	0.26	0.204	45	reviewed	nc	nc
9/16/2023	12:14:33	35.8425	-120.3811667	4.46	2.41	md	53	95	0.02509	0.08	nc	nc73937456	2023-09-21T18:20:10.251Z	8 km SE of Parkfield, CA	earthquake	0.18	0.3	0.125	45	reviewed	nc	nc
9/13/2023	19:45:54	35.977	-120.532	10.58	2.05	md	48	31	0.01473	0.07	nc	nc73936446	2023-09-14T18:44:13.344Z	13 km NW of Parkfield, CA	earthquake	0.19	0.19	0.164	45	reviewed	nc	nc
9/12/2023	6:00:42	35.444	-119.4138333	20.55	2.04	ml	37	83	0.1191	0.24	ci	ci39663242	2023-09-12T14:56:38.990Z	7 km NE of Buttonwillow, CA	earthquake	0.34	0.77	0.128	29	reviewed	ci	ci
9/4/2023	17:56:45	35.1181679	-119.0354996	12.02	3.24	ml	108	25	0.07142	0.29	ci	ci39658306	2023-09-12T17:16:30.040Z	19 km SW of Lamont, CA	earthquake	0.21	0.78	0.218	23	automatic	ci	ci
9/2/2023	18:10:00	35.9913333	-120.1221667	12.87	2.9	mh	24	241	0.1415	0.07	nc	nc73932271	2023-09-08T02:36:14.523Z	2 km SSE of Avenal, CA	earthquake	0.58	0.82		0	reviewed	nc	nc
8/23/2023	1:06:14	35.9308333	-120.482	9.55	2.01	md	45	50	0.0179	0.08	nc	nc73927246	2023-08-25T01:55:12.924Z	6 km NW of Parkfield, CA	earthquake	0.17	0.23	0.161	38	reviewed	nc	nc
8/22/2023	3:57:00	36.224	-120.2666667	13.99	2.65	md	43	193	0.06721	0.11	nc	nc73926931	2023-09-21T01:16:23.040Z	12 km NE of Coalinga, CA	earthquake	0.45	0.27	0.11	65	reviewed	nc	nc
8/17/2023	19:58:59	34.8986667	-119.039	8.89	3.39	ml	80	26	0.08536	0.29	ci	ci39643162	2023-09-13T21:22:15.040Z	11 km WSW of Grapevine, CA	earthquake	0.23	0.51	0.163	111	reviewed	ci	ci
8/15/2023	19:49:24	36.0133333	-120.5725	3.79	2.22	md	54	46	0.02936	0.07	nc	nc73924496	2023-08-16T01:04:14.534Z	18 km NW of Parkfield, CA	earthquake	0.16	0.23	0.101	45	reviewed	nc	nc
8/15/2023	19:43:14	36.0121667	-120.5758333	4.29	2.65	md	71	43	0.03192	0.11	nc	nc73924491	2023-09-12T19:36:58.040Z	18 km NW of Parkfield, CA	earthquake	0.18	0.26	0.113	75	reviewed	nc	nc
8/15/2023	8:47:22	36.1348333	-119.8598333	8.27	2.1	md	47	80	0.154	0.14	nc	nc73924321	2023-08-15T23:52:15.138Z	7 km SSW of Stratford, CA	earthquake	0.31	0.67	0.243	39	reviewed	nc	nc
8/13/2023	23:01:21	35.8363333	-119.2591667	22.1	2.18	ml	28	90	0.1418	0.3	ci	ci40536144	2023-08-14T18:14:34.250Z	8 km N of Delano, CA	earthquake	0.6	1.21	0.161	21	reviewed	ci	ci
8/12/2023	13:39:23	35.2521667	-119.3235	21.05	2.47	ml	51	30	0.08607	0.22	ci	ci40535160	2023-09-15T19:50:23.040Z	17 km NE of Taft, CA	earthquake	0.23	0.61	0.171	54	reviewed	ci	ci
8/11/2023	8:55:42	35.9746667	-120.53	4.34	2.64	md	54	29	0.01382	0.07	nc	nc73922881	2023-08-23T12:05:59.040Z	12 km NW of Parkfield, CA	earthquake	0.12	0.15	0.109	61	reviewed	nc	nc
8/10/2023	20:31:35	35.9276667	-120.4803333	9.53	2.83	md	69	47	0.02024	0.11	nc	nc73922641	2023-09-15T21:27:06.040Z	6 km NW of Parkfield, CA	earthquake	0.13	0.17	0.142	83	reviewed	nc	nc
8/10/2023	19:17:18	35.9345	-120.484	9.5	4.28	mw	72	54	0.01574	0.11	nc	nc73922596	2023-09-26T20:45:43.570Z	6 km NW of Parkfield, CA	earthquake	0.14	0.2		4	reviewed	nc	nc
7/29/2023	22:59:35	36.011	-120.0536667	4.12	2.55	md	54	126	0.06342	0.09	nc	nc73918051	2023-08-31T23:53:58.040Z	7 km E of Avenal, CA	earthquake	0.27	0.57	0.151	66	reviewed	nc	nc
7/29/2023	14:02:36	35.5631667	-120.8148333	4.64	2.39	md	52	53	0.07587	0.08	nc	nc73917906	2023-07-29T20:39:15.056Z	10 km W of Templeton, CA	earthquake	0.13	0.39	0.117	47	reviewed	nc	nc
7/27/2023	5:38:51	36.0731667	-119.7365	17.28	2.12	md	28	93	0.3785	0.11	nc	nc73917211	2023-07-27T09:55:14.211Z	15 km SSE of Stratford, CA	earthquake	0.36	1.01	0.31	28	reviewed	nc	nc
7/24/2023	3:15:50	36.1946667	-120.3145	10.93	2.17	md	42	159	0.06916	0.1	nc	nc73916001	2023-07-25T02:39:13.822Z	7 km NNE of Coalinga, CA	earthquake	0.29	0.31	0.184	47	reviewed	nc	nc
7/24/2023	2:47:29	36.1963333	-120.3226667	10.3	2.29	md	46	89	0.06708	0.09	nc	nc73915966	2023-07-25T02:24:15.719Z	7 km NNE of Coalinga, CA	earthquake	0.22	0.24	0.164	58	reviewed	nc	nc
7/12/2023	13:45:06	35.9696667	-119.968	25.35	2.15	md	33	150	0.04299	0.2	nc	nc73911886	2023-07-13T00:37:12.310Z	4 km S of Kettleman City, CA	earthquake	0.52	0.46	0.199	32	reviewed	nc	nc
6/26/2023	0:46:30	35.819	-120.367	7.99	2.44	md	62	56	0.01581	0.07	nc	nc73905356	2023-06-27T13:48:14.883Z	11km SSE of Parkfield, CA	earthquake	0.12	0.19	0.145	74	reviewed	nc	nc
6/21/2023	7:08:13	34.807	-120.3426667	1.8	2.05	ml	35	64	0.07139	0.22	ci	ci40490648	2023-06-21T15:25:34.920Z	9km NW of Los Alamos, CA	earthquake	0.26	0.46	0.087	19	reviewed	ci	ci
6/18/2023	19:18:37	36.0773333	-120.6468333	2.86	2.48	md	52	66	0.04191	0.12	nc	nc73902581	2023-08-26T20:54:15.040Z	24km ENE of San Ardo, CA	earthquake	0.24	0.53	0.165	51	reviewed	nc	nc
6/14/2023	5:14:33	35.1075	-119.0293333	11.06	2.43	ml	46	36	0.06615	0.3	ci	ci40485320	2023-06-14T17:57:52.465Z	20km SSW of Lamont, CA	earthquake	0.29	0.69	0.179	53	reviewed	ci	ci
5/26/2023	10:57:23	35.2531667	-119.437	2	2.25	ml	46	68	0.09982	0.24	ci	ci40233991	2023-05-26T14:32:59.350Z	12km N of Taft, CA	earthquake	0.23	0.6	0.153	26	reviewed	ci	ci
5/24/2023	14:54:55	35.0976667	-119.0273333	6.57	2.11	ml	26	56	0.06053	0.3	ci	ci40232855	2023-05-24T17:57:56.606Z	19km NNW of Grapevine, CA	earthquake	0.4	1.04	0.19	59	reviewed	ci	ci
5/16/2023	5:42:04	35.8248333	-119.9726667	9.45	2.46	md	54	72	0.05509	0.21	nc	nc73888671	2023-07-24T01:16:39.040Z	20km S of Kettleman City, CA	earthquake	0.2	0.37	0.165	89	reviewed	nc	nc
5/8/2023	12:50:19	35.0625	-119.1313333	16.48	2.04	ml	47	71	0.03919	0.25	ci	ci40220815	2023-05-08T22:58:37.580Z	23km NW of Grapevine, CA	earthquake	0.24	1.04	0.203	27	reviewed	ci	ci
5/7/2023	5:28:44	36.2775	-119.7201667	17.73	2.19	md	28	96	0.2764	0.2	nc	nc73884831	2023-05-07T13:08:11.425Z	4km SSW of Armona, CA	earthquake	0.49	0.79	0.421	28	reviewed	nc	nc
5/5/2023	11:12:15	35.056	-118.8973333	13.84	3.38	ml	77	20	0.08969	0.25	ci	ci40219303	2023-07-15T22:09:48.040Z	13km NNE of Grapevine, CA	earthquake	0.19	0.48	0.159	245	reviewed	ci	ci
4/12/2023	19:22:33	36.0151667	-118.8611667	6.84	2.02	ml	18	80	0.1452	0.2	ci	ci40440168	2023-04-12T20:54:48.500Z	15km ESE of Porterville, CA	earthquake	0.4	2.13	0.192	23	reviewed	ci	ci
4/9/2023	23:23:14	36.052	-120.6215	5.35	2.59	md	77	47	0.0265	0.14	nc	nc73870005	2023-06-17T21:36:41.040Z	24km NW of Parkfield, CA	earthquake	0.17	0.26	0.11	91	reviewed	nc	nc
3/24/2023	0:13:53	36.1571667	-120.2146667	16.64	2.08	md	39	113	0.1217	0.07	nc	nc73861295	2023-03-25T07:04:13.602Z	11km WSW of Huron, CA	earthquake	0.31	0.51	0.22	41	reviewed	nc	nc
3/20/2023	2:14:22	36.047	-120.6111667	2.9	2.22	md	47	56	0.02492	0.09	nc	nc73859510	2023-03-23T12:39:15.383Z	23km NW of Parkfield, CA	earthquake	0.19	0.33	0.102	37	reviewed	nc	nc
3/14/2023	19:43:03	36.0088333	-120.256	14.22	2.15	md	28	113	0.1278	0.09	nc	nc73856910	2023-03-18T01:57:16.040Z	11km W of Avenal, CA	earthquake	0.33	1.04	0.106	18	reviewed	nc	nc
3/9/2023	14:58:08	36.2545	-120.3733333	10.69	2.26	md	39	130	0.0795	0.15	nc	nc73854685	2023-03-10T05:02:13.770Z	13km N of Coalinga, CA	earthquake	0.47	0.55	0.121	32	reviewed	nc	nc
3/9/2023	14:45:38	36.252	-120.3643333	10.52	2.17	md	45	154	0.082	0.13	nc	nc73854680	2023-03-10T04:18:13.522Z	12km N of Coalinga, CA	earthquake	0.29	0.34	0.199	48	reviewed	nc	nc
3/6/2023	1:19:01	36.2081667	-119.6201667	22.04	2.48	md	31	110	0.2228	0.18	nc	nc73855896	2023-05-15T02:50:32.040Z	11km S of Home Garden, CA	earthquake	0.64	0.5	0.272	30	reviewed	nc	nc
2/18/2023	20:18:07	35.8325	-119.9488333	13.09	2.25	md	50	103	0.03434	0.24	nc	nc73848236	2023-03-01T21:30:14.815Z	20km S of Kettleman City, CA	earthquake	0.39	0.64	0.13	43	reviewed	nc	nc
2/10/2023	9:43:09	36.1401667	-120.2255	10.71	2.27	md	46	86	0.1114	0.07	nc	nc73844466	2023-02-11T00:13:14.686Z	12km E of Coalinga, CA	earthquake	0.26	0.2	0.202	63	reviewed	nc	nc
2/9/2023	10:46:33	36.1383333	-120.2165	9.09	2.24	md	23	171	0.1186	0.06	nc	nc73843911	2023-02-11T02:45:13.619Z	12km SW of Huron, CA	earthquake	0.33	0.35	0.157	21	reviewed	nc	nc
2/9/2023	10:46:20	36.1361667	-120.2315	8.98	2.22	md	41	186	0.1065	0.08	nc	nc73843906	2023-02-10T23:23:19.352Z	11km E of Coalinga, CA	earthquake	0.28	0.22	0.219	56	reviewed	nc	nc
2/9/2023	10:40:23	36.1218333	-120.2511667	9.63	2.17	md	45	127	0.09196	0.08	nc	nc73843896	2023-02-10T23:06:14.260Z	10km ESE of Coalinga, CA	earthquake	0.25	0.19	0.135	54	reviewed	nc	nc
2/9/2023	10:19:53	36.133	-120.2431667	9.44	2.72	md	48	182	0.09717	0.07	nc	nc73843876	2023-04-15T21:39:50.040Z	10km E of Coalinga, CA	earthquake	0.55	0.3	0.135	105	reviewed	nc	nc
2/9/2023	10:15:27	36.1345	-120.234	8.77	2.01	md	33	184	0.1045	0.08	nc	nc73843861	2023-02-11T02:04:12.372Z	11km E of Coalinga, CA	earthquake	0.31	0.37	0.131	35	reviewed	nc	nc
2/9/2023	10:13:10	36.1451667	-120.2365	10.85	3.34	ml	68	86	0.1027	0.11	nc	nc73843856	2023-04-15T21:39:50.040Z	11km E of Coalinga, CA	earthquake	0.18	0.28	0.174	115	reviewed	nc	nc
2/9/2023	10:08:07	36.1208333	-120.2536667	9.43	2.52	md	41	126	0.09014	0.06	nc	nc73843851	2023-04-15T21:39:30.040Z	10km ESE of Coalinga, CA	earthquake	0.2	0.28	0.172	84	reviewed	nc	nc
2/8/2023	18:58:08	35.262	-119.0673333	19.24	2.03	ml	51	37	0.08768	0.21	ci	ci40412288	2023-02-09T16:10:03.691Z	11km SSW of Bakersfield, CA	earthquake	0.2	0.53	0.123	35	reviewed	ci	ci
2/7/2023	4:47:19	35.6196667	-120.2781667	5.85	2	md	50	45	0.0946	0.11	nc	nc73842856	2023-02-13T19:28:15.340Z	10km ESE of Shandon, CA	earthquake	0.15	0.46	0.145	43	reviewed	nc	nc
2/4/2023	9:11:34	35.5225	-120.838	5.81	2.67	md	60	64	0.08439	0.06	nc	nc73841756	2023-04-13T21:53:06.040Z	10km NNE of Cayucos, CA	earthquake	0.15	0.45	0.108	67	reviewed	nc	nc
1/18/2023	11:53:48	36.0533333	-120.1971667	11.05	2.18	md	43	119	0.08696	0.12	nc	nc73833541	2023-01-19T06:41:13.349Z	8km NW of Avenal, CA	earthquake	0.21	0.29	0.175	63	reviewed	nc	nc
1/18/2023	7:24:20	35.8093333	-120.3591667	8.47	2	md	47	99	0.02176	0.07	nc	nc73833496	2023-01-20T21:18:10.883Z	11km NNW of Cholame, CA	earthquake	0.18	0.32	0.15	37	reviewed	nc	nc
1/14/2023	5:59:06	35.3593333	-119.447	27.23	2.04	ml	42	59	0.07424	0.24	ci	ci40402456	2023-01-17T19:18:03.335Z	5km SSE of Buttonwillow, CA	earthquake	0.25	0.4	0.137	38	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
1/6/2023	21:14:02	35.946	-120.0101667	11.23	2.78	md	48	75	0.07191	0.13	nc	nc73829416	2023-03-11T22:51:43.040Z	8km SSW of Kettleman City, CA	earthquake	0.2	0.42	0.143	83	reviewed	nc	nc
12/30/2022	2:31:06	35.9265	-119.9108333	3.66	2.23	md	34	105	0.08468	0.19	nc	nc73826656	2023-01-07T07:01:12.773Z	10km SSE of Kettleman City, CA	earthquake	0.37	0.72	0.248	41	reviewed	nc	nc
12/29/2022	16:16:45	36.2561667	-119.7006667	23.43	2.47	md	32	99	0.2653	0.13	nc	nc73826451	2023-03-07T18:59:43.040Z	6km S of Armona, CA	earthquake	0.37	0.58	0.298	39	reviewed	nc	nc
12/18/2022	6:52:57	34.9485	-118.9961667	13.11	2.27	ml	68	23	0.05372	0.24	ci	ci40391680	2022-12-19T17:56:07.170Z	6km W of Grapevine, CA	earthquake	0.19	0.47	0.187	72	reviewed	ci	ci
12/8/2022	2:51:34	35.9326667	-120.0281667	7.99	2.36	md	41	104	0.09025	0.12	nc	nc73815961	2022-12-10T00:13:11.539Z	10km SW of Kettleman City, CA	earthquake	0.35	0.67	0.119	32	reviewed	nc	nc
12/6/2022	9:41:25	35.9595	-120.0155	10.31	2.13	md	46	69	0.0619	0.09	nc	nc73815211	2022-12-08T02:40:13.985Z	7km SW of Kettleman City, CA	earthquake	0.3	0.44	0.159	72	reviewed	nc	nc
12/6/2022	3:26:20	35.9491667	-120.0016667	10.71	2.13	md	42	81	0.0665	0.12	nc	nc73815091	2022-12-08T02:25:13.883Z	8km SSW of Kettleman City, CA	earthquake	0.24	0.54	0.167	58	reviewed	nc	nc
12/6/2022	0:10:37	35.9356667	-120.0126667	9.46	3.98	mw	66	75	0.08222	0.16	nc	nc73814971	2023-02-11T23:03:09.040Z	9km SSW of Kettleman City, CA	earthquake	0.26	0.54		5	reviewed	nc	nc
12/5/2022	17:01:13	36.0748333	-120.1875	8.42	2.4	md	43	135	0.1045	0.07	nc	nc73814846	2022-12-09T04:24:11.333Z	10km NW of Avenal, CA	earthquake	0.24	0.32	0.199	63	reviewed	nc	nc
12/5/2022	2:26:51	35.9336667	-120.026	7.93	2.84	md	52	106	0.08854	0.13	nc	nc73814616	2023-02-11T23:03:07.040Z	10km SW of Kettleman City, CA	earthquake	0.25	0.5	0.109	99	reviewed	nc	nc
12/4/2022	9:41:37	35.0431667	-119.0011667	6.4	2.39	ml	54	48	0.06952	0.21	ci	ci40141887	2022-12-08T01:11:24.883Z	13km NNW of Grapevine, CA	earthquake	0.2	1.12	0.124	65	reviewed	ci	ci
12/3/2022	10:49:34	35.9371667	-120.0045	10.56	2.15	md	31	81	0.0786	0.1	nc	nc73814181	2022-12-04T00:33:12.850Z	9km SSW of Kettleman City, CA	earthquake	0.37	0.62	0.092	42	reviewed	nc	nc
12/3/2022	7:40:58	35.94	-120.0176667	9.68	2.1	md	34	113	0.07987	0.06	nc	nc73814156	2022-12-04T00:48:11.951Z	9km SSW of Kettleman City, CA	earthquake	0.39	0.61	0.116	53	reviewed	nc	nc
11/29/2022	13:14:52	36.0716667	-120.1828333	8.16	2.12	md	37	87	0.1059	0.07	nc	nc73812761	2022-11-30T00:44:12.460Z	9km NNW of Avenal, CA	earthquake	0.25	0.34	0.172	48	reviewed	nc	nc
11/29/2022	2:22:36	35.876	-120.4225	6.49	2.4	md	62	61	0.01375	0.07	nc	nc73812591	2022-11-30T01:14:14.667Z	3km SSE of Parkfield, CA	earthquake	0.17	0.15	0.139	56	reviewed	nc	nc
11/24/2022	21:45:36	35.3843333	-118.7875	4.59	2.23	ml	48	67	0.07544	0.19	ci	ci40380512	2022-11-29T16:15:30.550Z	18km NE of Lamont, CA	earthquake	0.2	0.62	0.16	52	reviewed	ci	ci
11/24/2022	15:37:56	36.0043333	-120.5643333	4.14	2.51	md	64	46	0.02304	0.09	nc	nc73811036	2023-01-30T06:01:33.040Z	17km NW of Parkfield, CA	earthquake	0.13	0.18	0.151	58	reviewed	nc	nc
11/24/2022	15:29:56	35.0495	-119.0015	12.58	2.03	ml	46	42	0.06813	0.27	ci	ci40380368	2022-11-28T22:06:11.090Z	14km NNW of Grapevine, CA	earthquake	0.28	0.88	0.145	55	reviewed	ci	ci
11/19/2022	21:49:22	35.5711667	-120.8061667	3.46	2.81	md	61	50	0.07011	0.09	nc	nc73809431	2023-01-30T06:00:15.040Z	9km WNW of Templeton, CA	earthquake	0.16	0.5	0.15	86	reviewed	nc	nc
11/13/2022	15:43:30	34.9008333	-119.0736667	13.57	2.06	ml	50	25	0.1059	0.24	ci	ci40131991	2022-11-14T18:05:14.780Z	9km NE of Pine Mountain Club, CA	earthquake	0.25	0.55	0.158	22	reviewed	ci	ci
11/9/2022	1:44:47	36.2446667	-120.4638333	3.95	2.2	md	36	88	0.1177	0.16	nc	nc73802880	2022-11-09T09:16:13.986Z	15km NW of Coalinga, CA	earthquake	0.35	0.85	0.177	49	reviewed	nc	nc
10/28/2022	14:55:06	36.351	-119.7565	23	2.12	md	36	86	0.2917	0.17	nc	nc73800336	2022-11-01T21:21:12.804Z	6km NNE of Lemoore, CA	earthquake	0.54	0.44	0.236	40	reviewed	nc	nc
10/22/2022	5:29:37	35.997	-120.1571667	15.67	2.15	md	50	126	0.07462	0.11	nc	nc73797766	2022-10-28T01:44:14.863Z	3km WSW of Avenal, CA	earthquake	0.22	0.56	0.132	46	reviewed	nc	nc
10/21/2022	5:43:47	35.0443333	-118.9906667	13.23	2.22	ml	61	46	0.07773	0.26	ci	ci40364104	2022-10-21T21:19:25.990Z	12km NNW of Grapevine, CA	earthquake	0.23	0.62	0.166	28	reviewed	ci	ci
10/18/2022	20:47:35	35.7741667	-120.0028333	14.39	2.1	md	31	172	0.08726	0.09	nc	nc73795396	2022-10-22T00:41:15.886Z	26km S of Kettleman City, CA	earthquake	0.32	0.43	0.115	30	reviewed	nc	nc
10/14/2022	17:24:22	35.0453333	-118.9916667	13.1	2.72	ml	59	46	0.07674	0.26	ci	ci40360984	2022-12-17T22:54:11.040Z	13km NNW of Grapevine, CA	earthquake	0.25	0.7	0.139	25	reviewed	ci	ci
10/12/2022	12:55:03	35.0493333	-119.0051667	0.15	2.03	ml	21	113	0.2157	0.19	ci	ci40359728	2022-10-12T20:38:51.238Z	14km NNW of Grapevine, CA	earthquake	0.46	1.44	0.127	9	reviewed	ci	ci
10/12/2022	12:54:07	35.0486667	-118.9958333	12.27	3.67	mw	81	19	0.07285	0.27	ci	ci40359712	2022-12-17T22:53:57.040Z	13km NNW of Grapevine, CA	earthquake	0.19	0.64		4	reviewed	ci	ci
10/11/2022	6:14:04	35.9425	-120.4916667	10.32	2.19	md	58	45	0.01441	0.08	nc	nc73792061	2022-10-14T21:12:12.888Z	7km NW of Parkfield, CA	earthquake	0.21	0.18	0.154	53	reviewed	nc	nc
9/27/2022	6:46:02	35.9696667	-119.878	29.65	2.78	md	47	83	0.2994	0.14	nc	nc73786291	2022-12-03T22:02:15.040Z	9km ESE of Kettleman City, CA	earthquake	0.43	1.6	0.183	89	reviewed	nc	nc
9/22/2022	22:10:59	35.7961667	-120.3475	9.83	2.1	md	47	104	0.02394	0.07	nc	nc73784801	2022-09-23T01:15:14.280Z	10km NNW of Cholame, CA	earthquake	0.2	0.39	0.144	35	reviewed	nc	nc
9/18/2022	20:08:53	36.1978333	-120.3396667	10.4	2	md	26	160	0.105	0.09	nc	nc73783256	2022-09-19T00:02:13.645Z	7km NNE of Coalinga, CA	earthquake	0.33	0.32	0.316	20	reviewed	nc	nc
9/16/2022	8:49:41	35.9265	-120.4773333	4.94	2.21	md	52	65	0.01734	0.06	nc	nc73782351	2022-09-16T19:57:13.934Z	5km NW of Parkfield, CA	earthquake	0.15	0.13	0.171	48	reviewed	nc	nc
9/14/2022	1:23:36	35.2793333	-119.391	21.58	2.68	ml	53	50	0.05783	0.25	ci	ci40099991	2022-11-19T23:03:04.040Z	15km SSE of Buttonwillow, CA	earthquake	0.23	0.63	0.17	69	reviewed	ci	ci
9/13/2022	10:32:03	36.0363333	-120.5963333	4.26	2.25	md	57	71	0.03241	0.06	nc	nc73781086	2022-09-16T21:04:17.319Z	21km NW of Parkfield, CA	earthquake	0.16	0.22	0.172	53	reviewed	nc	nc
9/6/2022	2:00:46	35.9285	-120.701	11.36	2.63	md	64	36	0.09239	0.07	nc	nc73775910	2022-11-15T19:05:41.040Z	12km NE of Bradley, CA	earthquake	0.15	0.45	0.139	56	reviewed	nc	nc
8/25/2022	22:47:46	36.2096667	-120.0146667	3.44	2.02	md	35	178	0.1504	0.14	nc	nc73771885	2022-09-04T05:51:14.131Z	8km E of Huron, CA	earthquake	0.52	1.19	0.199	34	reviewed	nc	nc
8/11/2022	3:58:49	34.9466667	-119.4296667	9.37	2.24	ml	46	34	0.01509	0.24	ci	ci40079615	2022-08-11T15:36:54.488Z	13km SSW of Maricopa, CA	earthquake	0.26	0.6	0.128	50	reviewed	ci	ci
8/3/2022	9:23:19	36.3563333	-119.776	15.77	2.25	md	36	73	0.2763	0.13	nc	nc73763475	2022-08-03T13:54:11.037Z	6km N of Lemoore, CA	earthquake	0.31	0.57	0.284	63	reviewed	nc	nc
7/29/2022	21:58:38	36.386	-119.8283333	16.57	2.08	md	31	80	0.336	0.14	nc	nc73764166	2022-07-30T02:45:15.201Z	6km SSE of Riverdale, CA	earthquake	0.49	0.71	0.264	22	reviewed	nc	nc
7/26/2022	23:14:39	36.0006667	-120.5546667	10.14	2.19	md	51	83	0.01705	0.06	nc	nc73763176	2022-07-27T21:17:30.597Z	16km NW of Parkfield, CA	earthquake	0.15	0.19	0.18	48	reviewed	nc	nc
7/25/2022	6:26:23	36.0743333	-120.1646667	7.2	2.14	md	47	152	0.12	0.09	nc	nc73762511	2022-07-25T19:10:15.537Z	8km NNW of Avenal, CA	earthquake	0.24	0.49	0.162	56	reviewed	nc	nc
7/23/2022	15:17:02	36.0736667	-120.1548333	6.58	2.17	md	45	155	0.1267	0.1	nc	nc73761991	2022-07-24T00:36:16.087Z	8km NNW of Avenal, CA	earthquake	0.19	0.44	0.153	59	reviewed	nc	nc
7/23/2022	7:43:34	36.0895	-120.1446667	6.62	2.22	md	43	198	0.1416	0.06	nc	nc73761911	2022-07-23T23:56:14.846Z	10km N of Avenal, CA	earthquake	0.35	0.48	0.201	67	reviewed	nc	nc
7/23/2022	2:47:13	36.0743333	-120.163	7.88	3.37	ml	50	104	0.1212	0.09	nc	nc73761801	2022-10-01T22:09:44.040Z	8km NNW of Avenal, CA	earthquake	0.22	0.51	0.214	63	reviewed	nc	nc
7/9/2022	16:30:53	34.8473333	-120.3995	3.1	2.14	ml	30	75	0.04014	0.28	ci	ci40300688	2022-07-11T20:28:47.439Z	4km ESE of Orcutt, CA	earthquake	0.44	0.93	0.159	18	reviewed	ci	ci
7/3/2022	19:56:40	35.0841667	-119.1375	14.68	2.66	ml	55	39	0.0509	0.24	ci	ci40295976	2022-09-13T06:21:39.040Z	24km E of Maricopa, CA	earthquake	0.22	0.49	0.16	25	reviewed	ci	ci
6/26/2022	18:14:17	35.9738333	-120.5265	10.24	2.14	md	58	58	0.01173	0.07	nc	nc73751401	2022-06-28T09:32:10.836Z	12km NW of Parkfield, CA	earthquake	0.16	0.14	0.16	56	reviewed	nc	nc
6/24/2022	9:05:12	35.9723333	-120.5266667	10.72	3.35	mw	65	57	0.0127	0.08	nc	nc73750331	2022-08-28T03:20:59.040Z	12km NW of Parkfield, CA	earthquake	0.18	0.17		5	reviewed	nc	nc
6/23/2022	9:33:44	36.203	-119.6271667	19.93	2	md	37	82	0.2303	0.19	nc	nc73749916	2022-06-24T06:31:11.188Z	11km S of Home Garden, CA	earthquake	0.53	0.67	0.275	36	reviewed	nc	nc
6/20/2022	22:39:00	36.0273333	-120.5958333	4.21	2.12	md	54	69	0.04139	0.14	nc	nc73748551	2022-06-23T20:03:11.462Z	21km NW of Parkfield, CA	earthquake	0.2	0.3	0.194	46	reviewed	nc	nc
6/17/2022	23:47:52	35.1083333	-119.0065	13.05	3.13	ml	71	30	0.08051	0.26	ci	ci40286392	2022-08-21T00:18:27.040Z	19km SSW of Lamont, CA	earthquake	0.2	0.59	0.148	119	reviewed	ci	ci
6/16/2022	17:58:34	35.1836667	-118.988	12.52	3.09	ml	66	28	0.1412	0.19	ci	ci40285368	2022-08-21T00:17:57.040Z	11km SW of Lamont, CA	earthquake	0.2	0.71	0.154	251	reviewed	ci	ci
6/1/2022	15:32:48	36.1508333	-120.2253333	12.75	2.35	md	43	99	0.1123	0.09	nc	nc73739886	2022-06-03T02:02:14.734Z	12km E of Coalinga, CA	earthquake	0.24	0.51	0.157	46	reviewed	nc	nc
5/26/2022	22:46:18	35.2865	-119.3998333	21.57	2.33	ml	43	50	0.05504	0.21	ci	ci40027711	2022-05-26T23:52:41.825Z	14km SSE of Buttonwillow, CA	earthquake	0.22	0.71	0.163	23	reviewed	ci	ci
5/22/2022	8:26:23	34.9223333	-119.0171667	12.78	2.63	ml	79	25	0.06413	0.29	ci	ci40024007	2022-08-02T19:50:40.040Z	8km WSW of Grapevine, CA	earthquake	0.24	0.51	0.149	25	reviewed	ci	ci
5/14/2022	21:28:14	34.9123333	-119.353	5.83	3.26	ml	72	26	0.05664	0.31	ci	ci40018903	2022-07-24T02:38:38.040Z	17km SSE of Maricopa, CA	earthquake	0.24	0.63	0.189	129	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/5/2022	6:01:03	35.3671667	-120.1806667	7.55	2.84	ml	44	41	0.05972	0.25	ci	ci40252632	2022-08-09T06:37:45.616Z	16km W of Simmler, CA	earthquake	0.28	1.02	0.117	60	reviewed	ci	ci
5/2/2022	2:20:31	35.9221667	-119.8145	28.18	2.14	md	36	114	0.1586	0.11	nc	nc73727971	2022-05-04T07:05:10.556Z	16km SE of Kettleman City, CA	earthquake	0.38	0.5	0.22	39	reviewed	nc	nc
4/28/2022	4:32:22	35.7945	-119.9881667	14.78	2.99	ml	64	92	0.108	0.17	nc	nc73725406	2022-07-05T03:41:37.040Z	24km S of Kettleman City, CA	earthquake	0.32	0.44	0.315	42	reviewed	nc	nc
4/28/2022	2:46:06	35.7975	-119.9876667	15.3	2.06	md	43	169	0.111	0.19	nc	nc73725376	2022-04-29T04:55:10.797Z	24km S of Kettleman City, CA	earthquake	0.82	0.91	0.151	32	reviewed	nc	nc
4/19/2022	22:24:52	36.1541667	-119.978	-0.3	2.23	md	46	90	0.1416	0.13	nc	nc73720425	2022-04-22T05:40:15.789Z	12km ESE of Huron, CA	earthquake	0.33	4.54	0.145	42	reviewed	nc	nc
4/17/2022	17:17:00	36.4011667	-119.926	22.58	2.41	md	46	57	0.1677	0.21	nc	nc73718955	2022-04-18T21:04:53.889Z	5km S of Lanare, CA	earthquake	0.75	0.36	0.286	43	reviewed	nc	nc
4/15/2022	10:38:29	36.0181667	-120.062	4.43	2.61	md	49	132	0.0704	0.13	nc	nc73717790	2022-06-20T22:08:29.040Z	6km ENE of Avenal, CA	earthquake	0.35	0.68	0.155	71	reviewed	nc	nc
4/8/2022	18:04:08	35.7981667	-120.3475	10.26	2.82	md	65	104	0.02587	0.07	nc	nc73716036	2022-06-11T20:21:17.040Z	10km NNW of Cholame, CA	earthquake	0.15	0.24	0.117	73	reviewed	nc	nc
4/1/2022	16:11:11	35.089	-118.872	14.35	2.29	ml	51	24	0.05109	0.2	ci	ci39983735	2022-04-01T22:08:20.840Z	14km SSW of Arvin, CA	earthquake	0.2	0.43	0.105	24	reviewed	ci	ci
3/28/2022	12:57:20	36.0485	-119.6396667	21.77	2.26	md	27	86	0.2746	0.11	nc	nc73711496	2022-03-28T22:50:14.536Z	9km SW of Corcoran, CA	earthquake	0.55	0.46	0.242	38	reviewed	nc	nc
3/26/2022	11:32:23	35.9705	-120.2005	18.78	2.61	md	56	67	0.08832	0.14	nc	nc73710541	2022-08-06T07:53:28.454Z	7km WSW of Avenal, CA	earthquake	0.24	0.61	0.156	75	reviewed	nc	nc
3/26/2022	6:26:44	35.9736667	-120.1961667	16.85	2.37	md	63	67	0.08983	0.18	nc	nc73710466	2022-03-26T11:06:13.968Z	7km WSW of Avenal, CA	earthquake	0.27	0.63	0.124	50	reviewed	nc	nc
3/26/2022	6:25:31	35.9738333	-120.2003333	15.1	2.3	md	67	72	0.08678	0.16	nc	nc73710461	2022-03-26T10:20:12.743Z	7km WSW of Avenal, CA	earthquake	0.2	0.49	0.205	72	reviewed	nc	nc
3/18/2022	1:30:14	36.083	-120.1495	8.07	2.16	md	46	144	0.1349	0.07	nc	nc73706951	2022-03-18T12:55:15.971Z	9km NNW of Avenal, CA	earthquake	0.24	0.44	0.175	49	reviewed	nc	nc
3/9/2022	14:46:00	36.1765	-120.2386667	9.97	2.01	md	35	127	0.1344	0.09	nc	nc73703286	2022-03-10T21:51:03.060Z	12km ENE of Coalinga, CA	earthquake	0.32	0.45	0.202	48	reviewed	nc	nc
2/17/2022	13:36:28	35.9758333	-119.6698333	25.8	2.27	md	35	97	0.2579	0.18	nc	nc73694076	2022-02-19T12:37:12.360Z	17km SW of Corcoran, CA	earthquake	0.64	1.71	0.273	44	reviewed	nc	nc
2/15/2022	13:06:20	35.5353333	-120.8411667	6.98	2.34	md	50	65	0.09532	0.07	nc	nc73693196	2022-02-17T12:02:10.797Z	11km NNE of Cayucos, CA	earthquake	0.18	0.53	0.137	49	reviewed	nc	nc
2/14/2022	2:49:29	36.0026667	-120.5645	4.15	2.01	md	51	80	0.0236	0.1	nc	nc73692466	2022-02-17T01:08:15.860Z	17km NW of Parkfield, CA	earthquake	0.19	0.24	0.192	44	reviewed	nc	nc
2/10/2022	13:07:04	36.0418333	-120.1608333	6.69	2.23	md	53	54	0.111	0.07	nc	nc73690886	2022-02-10T21:47:17.322Z	5km NW of Avenal, CA	earthquake	0.23	0.39	0.147	66	reviewed	nc	nc
2/8/2022	23:21:31	36.0575	-120.6335	3.63	2.32	md	44	111	0.03227	0.08	nc	nc73690201	2022-02-09T08:29:27.521Z	25km E of San Ardo, CA	earthquake	0.28	0.46	0.173	35	reviewed	nc	nc
2/5/2022	23:49:04	35.0396667	-119.0881667	2.43	2.07	ml	39	71	0.01923	0.28	ci	ci40177968	2022-02-08T18:08:21.790Z	18km NW of Grapevine, CA	earthquake	0.32	1.44	0.139	34	reviewed	ci	ci
2/2/2022	16:23:55	35.28	-119.3995	22.47	2.51	ml	46	57	0.0604	0.26	ci	ci39931047	2022-04-15T17:57:14.040Z	15km SSE of Buttonwillow, CA	earthquake	0.26	0.63	0.186	26	reviewed	ci	ci
2/2/2022	8:35:36	35.5446667	-120.8535	5.61	2.47	md	47	69	0.09207	0.07	nc	nc73687216	2022-04-15T17:57:13.040Z	12km NNE of Cayucos, CA	earthquake	0.15	0.46	0.138	53	reviewed	nc	nc
1/30/2022	20:59:08	35.7831667	-120.3315	8.36	2.75	ml	60	106	0.01227	0.07	nc	nc73686036	2022-04-15T17:57:06.040Z	8km NNW of Cholame, CA	earthquake	0.14	0.23	0.178	32	reviewed	nc	nc
1/30/2022	20:47:35	35.781	-120.331	8.35	2.96	ml	59	105	0.01081	0.06	nc	nc73686026	2022-04-15T17:57:06.040Z	7km NNW of Cholame, CA	earthquake	0.15	0.23	0.244	34	reviewed	nc	nc
1/28/2022	18:45:06	36.0826667	-120.0695	11.67	2.64	md	37	159	0.1938	0.12	nc	nc73684951	2022-04-09T20:19:15.040Z	10km NNE of Avenal, CA	earthquake	0.5	0.86	0.14	55	reviewed	nc	nc
1/27/2022	12:16:08	35.0446667	-118.9923333	6.01	2.37	ml	60	46	0.07632	0.26	ci	ci39924927	2022-01-28T00:27:46.706Z	13km NNW of Grapevine, CA	earthquake	0.23	1.05	0.151	79	reviewed	ci	ci
1/27/2022	11:12:18	35.0418333	-118.993	7.93	2.58	ml	95	30	0.1273	0.27	ci	ci39924911	2022-04-09T20:19:10.040Z	12km NNW of Grapevine, CA	earthquake	0.15	0.54	0.183	27	reviewed	ci	ci
1/27/2022	10:52:41	35.0398333	-118.9931667	9.91	2.84	ml	84	18	0.07668	0.27	ci	ci39924879	2022-04-09T20:19:10.040Z	12km NNW of Grapevine, CA	earthquake	0.16	0.47	0.152	22	reviewed	ci	ci
1/27/2022	10:51:22	35.0445	-118.9958333	12.03	3.51	ml	83	20	0.07353	0.32	ci	ci39924871	2022-04-09T20:19:10.040Z	13km NNW of Grapevine, CA	earthquake	0.21	0.74	0.142	212	reviewed	ci	ci
1/25/2022	17:16:33	36.1635	-120.253	6.25	2.27	md	34	124	0.1174	0.13	nc	nc73682676	2022-01-25T23:07:10.236Z	10km ENE of Coalinga, CA	earthquake	0.31	0.77	0.244	41	reviewed	nc	nc
1/24/2022	1:44:30	35.9668333	-120.5256667	10.06	2.04	md	53	46	0.01613	0.07	nc	nc73682341	2022-01-25T09:14:11.639Z	11km NW of Parkfield, CA	earthquake	0.21	0.14	0.15	41	reviewed	nc	nc
1/23/2022	15:33:03	35.542	-120.8525	5.78	2.23	md	51	69	0.09482	0.08	nc	nc73682251	2022-01-24T01:08:11.666Z	12km NNE of Cayucos, CA	earthquake	0.16	0.49	0.184	54	reviewed	nc	nc
1/23/2022	4:49:39	35.0601667	-119.1891667	12.55	2.02	ml	44	33	0.08645	0.25	ci	ci39920871	2022-01-24T23:36:04.580Z	19km E of Maricopa, CA	earthquake	0.28	1.1	0.132	23	reviewed	ci	ci
1/22/2022	10:17:07	35.9483333	-119.7623333	20.12	2.1	md	35	82	0.3184	0.19	nc	nc73681921	2022-01-25T13:01:11.445Z	19km ESE of Kettleman City, CA	earthquake	0.46	0.82	0.183	23	reviewed	nc	nc
1/22/2022	6:28:56	35.9635	-119.7623333	16.01	2.14	md	39	79	0.3228	0.17	nc	nc73681851	2022-01-25T12:46:11.380Z	19km ESE of Kettleman City, CA	earthquake	0.4	1.03	0.224	36	reviewed	nc	nc
1/22/2022	5:37:02	35.9401667	-119.7738333	18.09	2.05	md	31	107	0.3129	0.11	nc	nc73681821	2022-01-24T00:24:11.452Z	18km ESE of Kettleman City, CA	earthquake	0.39	0.89	0.246	37	reviewed	nc	nc
1/19/2022	14:48:11	35.8323333	-119.7948333	10.85	2	md	35	132	0.2216	0.23	nc	nc73680631	2022-01-19T19:14:10.950Z	25km SE of Kettleman City, CA	earthquake	0.52	1.12	0.12	33	reviewed	nc	nc
1/18/2022	7:12:32	35.563	-120.7971667	5.13	2.26	md	53	49	0.06152	0.1	nc	nc73680091	2022-01-22T02:01:11.211Z	8km W of Templeton, CA	earthquake	0.16	0.36	0.171	52	reviewed	nc	nc
1/9/2022	7:54:00	36.2871667	-120.3461667	12.58	2.52	md	41	112	0.05029	0.12	nc	nc73676091	2022-03-19T22:07:31.040Z	16km N of Coalinga, CA	earthquake	0.38	0.47	0.167	70	reviewed	nc	nc
1/4/2022	9:05:47	35.5495	-120.7726667	4.62	2.22	md	43	42	0.04166	0.07	nc	nc73673456	2022-01-08T03:26:11.139Z	6km W of Templeton, CA	earthquake	0.18	0.4	0.134	40	reviewed	nc	nc
1/3/2022	3:02:30	35.2811667	-119.3926667	21.55	2.95	ml	53	56	0.05674	0.27	ci	ci39901543	2022-03-12T22:19:03.040Z	15km SSE of Buttonwillow, CA	earthquake	0.28	0.76	0.148	89	reviewed	ci	ci
1/3/2022	2:34:48	35.284	-119.3906667	17.73	3.92	ml	59	56	0.05348	0.31	ci	ci39901519	2022-03-12T22:19:03.040Z	15km SSE of Buttonwillow, CA	earthquake	0.28	0.68	0.13	169	reviewed	ci	ci
1/1/2022	11:19:38	35.5463333	-120.8346667	6.95	2.21	md	40	61		0.09	nc	nc73672116	2022-01-04T11:19:11.844Z	12km W of Templeton, CA	earthquake	0.14	0.4	0.198	46	reviewed	nc	nc
1/1/2022	6:10:48	35.8995	-120.441	5.65	3.29	ml	59	53	0.01418	0.1	nc	nc73671951	2022-03-12T22:18:59.040Z	1km W of Parkfield, CA	earthquake	0.14	0.16	0.164	91	reviewed	nc	nc
12/28/2021	0:09:29	36.2816667	-119.7161667	19.95	2.33	md	20	59	0.3284	0.11	nc	nc73668811	2021-12-29T12:25:10.876Z	4km SSW of Armona, CA	earthquake	0.49	0.61	0.211	28	reviewed	nc	nc
12/23/2021	16:41:31	36.1051667	-120.1483333	8.79	2.48	md	29	157	0.1479	0.13	nc	nc73668081	2022-03-01T16:39:56.040Z	11km N of Avenal, CA	earthquake	0.29	0.58	0.204	50	reviewed	nc	nc
12/21/2021	9:01:05	36.2616667	-120.3856667	8.96	2.11	md	38	88	0.07353	0.1	nc	nc73666961	2021-12-30T03:56:10.864Z	14km N of Coalinga, CA	earthquake	0.27	0.62	0.177	29	reviewed	nc	nc
12/20/2021	14:21:59	35.6128333	-120.72	7.64	2.19	md	55	39	0.05674	0.1	nc	nc73666126	2021-12-29T00:26:11.163Z	4km WSW of Paso Robles, CA	earthquake	0.16	0.38	0.131	46	reviewed	nc	nc
12/17/2021	8:03:53	36.1413333	-119.6875	20.14	2.09	md	31	117	0.305	0.14	nc	nc73664636	2021-12-20T06:03:14.399Z	12km WNW of Corcoran, CA	earthquake	0.44	0.58	0.181	32	reviewed	nc	nc
11/15/2021	9:28:29	35.9445	-120.4905	9.79	3.17	ml	71	62	0.01278	0.11	nc	nc73652930	2022-01-22T20:51:53.040Z	7km NW of Parkfield, CA	earthquake	0.18	0.18	0.164	62	reviewed	nc	nc
10/29/2021	21:23:37	35.7098333	-120.2583333	12.73	2.2	md	57	72	0.02815	0.12	nc	nc73646340	2021-11-09T02:58:11.307Z	4km ESE of Cholame, CA	earthquake	0.2	0.34	0.135	61	reviewed	nc	nc
10/28/2021	8:10:31	36.2325	-119.8301667	21.64	2.13	md	34	60	0.2537	0.14	nc	nc73645840	2021-11-08T22:39:12.676Z	5km N of Stratford, CA	earthquake	0.35	0.57	0.221	38	reviewed	nc	nc
10/19/2021	6:49:24	35.9585	-119.8331667	5.06	2.36	md	35	131	0.3034	0.19	nc	nc73641400	2021-10-23T02:43:13.378Z	13km ESE of Kettleman City, CA	earthquake	0.56	1.89	0.154	54	reviewed	nc	nc
10/18/2021	9:45:06	36.1858333	-120.3091667	10.36	3.44	mw	45	107	0.06493	0.08	nc	nc73641100	2021-12-25T22:58:46.040Z	7km NE of Coalinga, CA	earthquake	0.22	0.28		2	reviewed	nc	nc
10/18/2021	9:42:15	36.196	-120.3048333	10.33	2.76	md	48	107	0.07492	0.12	nc	nc73641095	2021-12-25T22:58:46.040Z	8km NE of Coalinga, CA	earthquake	0.29	0.31	0.141	72	reviewed	nc	nc
10/17/2021	2:27:34	35.9701667	-119.824	12.62	2.28	md	55	54	0.3172	0.2	nc	nc73640425	2021-10-20T09:14:11.452Z	13km ESE of Kettleman City, CA	earthquake	0.39	1.09	0.194	45	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
10/8/2021	0:44:53	35.9543333	-119.886	29.21	2.91	md	44	75		0.16	nc	nc73636830	2021-12-18T19:58:36.040Z	9km SE of Kettleman City, CA	earthquake	0.37	1.06	0.182	68	reviewed	nc	nc
10/1/2021	4:31:02	36.3481667	-119.8345	19.03	2.43	md	41	63	0.2286	0.23	nc	nc73631681	2021-10-01T12:59:16.464Z	7km NW of Lemoore, CA	earthquake	0.77	0.55	0.203	83	reviewed	nc	nc
9/28/2021	19:41:18	35.7593333	-120.31	3.76	3.24	ml	63	74	0.002239	0.08	nc	nc73630596	2021-12-04T14:27:48.040Z	4km NNW of Cholame, CA	earthquake	0.15	0.24	0.146	38	reviewed	nc	nc
9/26/2021	17:52:50	36.0123333	-120.24	15.64	2.76	md	53	183		0.13	nc	nc73629831	2021-12-04T14:29:47.040Z	10km W of Avenal, CA	earthquake	0.35	0.53	0.145	69	reviewed	nc	nc
9/24/2021	15:04:10	35.9691667	-120.5223333	10.38	2.17	md	49	47		0.06	nc	nc73628881	2021-09-28T00:07:37.359Z	11km NW of Parkfield, CA	earthquake	0.17	0.13	0.161	42	reviewed	nc	nc
9/21/2021	19:03:42	35.1796667	-118.9243333	4.84	2.01	ml	30	69	0.09346	0.17	ci	ci39814951	2021-09-21T22:47:21.980Z	9km S of Lamont, CA	earthquake	0.22	0.58	0.137	16	reviewed	ci	ci
9/16/2021	2:45:42	36.0445	-120.6135	4.39	2.79	md	60	107	0.02802	0.08	nc	nc73625371	2022-08-08T14:18:44.632Z	23km NW of Parkfield, CA	earthquake	0.19	0.34	0.147	70	reviewed	nc	nc
9/15/2021	12:51:06	35.8598333	-120.4038333	5.49	2.32	md	54	78	0.02184	0.08	nc	nc73625111	2021-09-21T00:29:15.580Z	5km SSE of Parkfield, CA	earthquake	0.2	0.24	0.1	46	reviewed	nc	nc
9/6/2021	11:49:42	35.049	-119.0061667	16.66	2	ml	58	22	0.06441	0.24	ci	ci40034424	2021-09-07T22:08:11.040Z	14km NNW of Grapevine, CA	earthquake	0.22	0.7	0.107	25	reviewed	ci	ci
9/1/2021	9:21:13	35.0458333	-119.0845	3.96	2.36	ml	64	38	0.01275	0.32	ci	ci40028960	2022-08-08T15:24:32.989Z	18km NW of Grapevine, CA	earthquake	0.23	1.07	0.13	21	reviewed	ci	ci
8/31/2021	1:59:51	35.0301667	-119.0943333	10.13	2.72	ml	55	34	0.02966	0.3	ci	ci40027728	2021-11-06T20:28:42.040Z	18km WNW of Grapevine, CA	earthquake	0.3	0.64	0.189	26	reviewed	ci	ci
8/16/2021	5:03:11	35.884	-120.428	5.93	2.65	md	65	40	0.004607	0.08	nc	nc73610586	2022-08-08T16:56:24.767Z	2km SSE of Parkfield, CA	earthquake	0.15	0.19	0.185	64	reviewed	nc	nc
8/16/2021	0:27:31	35.9791667	-120.5321667	10.48	2.15	md	48	54	0.01458	0.06	nc	nc73610526	2021-08-23T03:24:19.922Z	13km NW of Parkfield, CA	earthquake	0.15	0.2	0.163	36	reviewed	nc	nc
8/14/2021	8:23:17	36.1046667	-119.8706667	2.48	2.09	md	39	113	0.3543	0.16	nc	nc73609966	2021-08-22T22:03:14.547Z	10km SSW of Stratford, CA	earthquake	0.35	0.94	0.17	21	reviewed	nc	nc
8/6/2021	14:37:45	35.0406667	-119.0836667	7.98	3.39	mw	101	19	0.01789	0.3	ci	ci39765679	2021-10-23T15:45:44.040Z	18km NW of Grapevine, CA	earthquake	0.18	0.54		4	reviewed	ci	ci
8/6/2021	10:04:56	35.5845	-120.795	6.01	2.8	mh	13	267	0.07973	0.05	nc	nc73606411	2021-08-12T20:21:20.834Z	9km WNW of Templeton, CA	earthquake	3.82	0.71		0	reviewed	nc	nc
7/31/2021	19:09:38	35.7806667	-120.333	8.5	2.73	md	52	104	0.009524	0.07	nc	nc73603486	2021-10-14T01:04:29.040Z	7km NNW of Cholame, CA	earthquake	0.16	0.3	0.145	61	reviewed	nc	nc
7/29/2021	3:29:14	36.0216667	-120.5833333	4.03	2.31	md	56	78	0.0398	0.06	nc	nc73601461	2021-08-05T23:46:12.417Z	19km NW of Parkfield, CA	earthquake	0.16	0.22	0.142	53	reviewed	nc	nc
7/28/2021	15:07:31	35.78	-120.3323333	8.53	3.4	mw	61	103	0.009347	0.08	nc	nc73600926	2022-04-04T22:40:32.855Z	7km NNW of Cholame, CA	earthquake	0.15	0.27		4	reviewed	nc	nc
7/23/2021	18:34:30	35.9725	-120.5275	7.81	2.64	md	67	56	0.01314	0.07	nc	nc73598301	2021-10-03T05:21:26.040Z	12km NW of Parkfield, CA	earthquake	0.12	0.15	0.118	71	reviewed	nc	nc
7/22/2021	15:28:55	36.3025	-119.7516667	14.92	2.05	md	25	103	0.3879	0.16	nc	nc73597566	2021-07-24T18:07:34.264Z	3km E of Lemoore, CA	earthquake	0.72	1.55	0.324	17	reviewed	nc	nc
7/20/2021	6:16:49	35.7733333	-120.325	8.17	2.38	md	55	103	0.01216	0.06	nc	nc73595921	2021-07-28T23:07:12.414Z	6km NNW of Cholame, CA	earthquake	0.14	0.26	0.124	47	reviewed	nc	nc
7/4/2021	3:38:05	36.2865	-119.7401667	14.8	2.2	md	32	88	0.2912	0.21	nc	nc73582766	2021-07-09T04:15:59.724Z	4km SW of Armona, CA	earthquake	0.63	1.04	0.272	36	reviewed	nc	nc
7/3/2021	10:41:39	35.9495	-120.4993333	10.43	3.15	ml	71	61	0.007491	0.08	nc	nc73582536	2021-09-10T20:07:04.040Z	8km NW of Parkfield, CA	earthquake	0.16	0.18	0.178	52	reviewed	nc	nc
7/3/2021	6:36:18	35.952	-120.5	10.51	3.09	ml	68	59	0.005541	0.08	nc	nc73582466	2021-09-10T20:07:03.040Z	9km NW of Parkfield, CA	earthquake	0.17	0.16	0.157	48	reviewed	nc	nc
6/30/2021	14:33:38	35.9351667	-120.4871667	5.26	2.31	md	51	55	0.01703	0.06	nc	nc73581376	2021-07-01T23:54:10.633Z	6km NW of Parkfield, CA	earthquake	0.14	0.14	0.138	39	reviewed	nc	nc
6/15/2021	16:31:46	36.0781667	-119.6531667	16.35	2.35	md	25	101	0.3267	0.13	nc	nc73577250	2021-06-17T22:46:13.621Z	9km WSW of Corcoran, CA	earthquake	0.61	0.84	0.202	45	reviewed	nc	nc
6/13/2021	1:12:42	35.9723333	-120.536	9.79	2.36	md	49	48	0.01927	0.09	nc	nc73573506	2021-06-15T12:33:10.584Z	12km NW of Parkfield, CA	earthquake	0.2	0.16	0.124	51	reviewed	nc	nc
6/9/2021	21:18:30	36.0823333	-119.6523333	15.64	2.3	md	24	128	0.3232	0.1	nc	nc73572066	2021-06-10T03:46:14.413Z	8km WSW of Corcoran, CA	earthquake	0.47	0.79	0.218	31	reviewed	nc	nc
6/6/2021	21:07:01	35.0176667	-119.1485	10.18	2.17	ml	59	21	0.06698	0.27	ci	ci39926568	2022-04-20T23:05:23.920Z	19km N of Pine Mountain Club, CA	earthquake	0.21	0.63	0.127	67	reviewed	ci	ci
6/6/2021	11:24:07	36.0861667	-119.651	15.85	2.16	md	35	69	0.3114	0.11	nc	nc73570686	2021-06-07T21:22:13.891Z	8km W of Corcoran, CA	earthquake	0.34	0.53	0.29	57	reviewed	nc	nc
5/28/2021	15:55:16	36.0828333	-119.6476667	15.1	2.45	md	33	100	0.3203	0.11	nc	nc73566746	2021-08-07T22:05:44.040Z	8km WSW of Corcoran, CA	earthquake	0.35	0.56	0.177	64	reviewed	nc	nc
5/28/2021	6:41:35	36.1026667	-119.6468333	12.98	2.02	md	27	125	0.3054	0.18	nc	nc73566496	2021-05-28T08:46:14.108Z	8km W of Corcoran, CA	earthquake	0.43	1.07	0.204	31	reviewed	nc	nc
5/27/2021	14:19:00	35.3096667	-119.2053333	24.5	3.11	ml	50	37	0.08949	0.21	ci	ci39906312	2021-07-31T22:10:17.040Z	10km SSW of Rosedale, CA	earthquake	0.19	0.53	0.116	130	reviewed	ci	ci
5/24/2021	7:48:02	35.1373333	-119.1566667	22.23	2.03	ml	51	44	0.211	0.22	ci	ci39901424	2021-05-24T19:11:23.840Z	24km ENE of Maricopa, CA	earthquake	0.23	0.75	0.18	27	reviewed	ci	ci
5/24/2021	3:41:12	36.3841667	-119.8311667	15.31	2.2	md	16	134	0.3389	0.08	nc	nc73566490	2021-05-24T09:53:12.943Z	6km SSE of Riverdale, CA	earthquake	0.7	0.99	0.317	24	reviewed	nc	nc
5/22/2021	6:01:19	35.9748333	-120.5273333	10.71	2	md	37	59	0.02644	0.06	nc	nc73565600	2021-05-25T03:47:14.577Z	12km NW of Parkfield, CA	earthquake	0.17	0.2	0.186	34	reviewed	nc	nc
5/18/2021	14:44:25	36.1631667	-120.2116667	8.98	3.63	mw	46	135	0.1252	0.1	nc	nc73564200	2021-07-24T21:07:58.040Z	11km WSW of Huron, CA	earthquake	0.24	0.49		3	reviewed	nc	nc
5/5/2021	14:58:49	36.197	-120.3106667	10.51	2.65	md	54	90	0.07285	0.09	nc	nc73558495	2022-08-09T04:54:56.684Z	8km NE of Coalinga, CA	earthquake	0.25	0.2	0.132	96	reviewed	nc	nc
5/5/2021	9:23:51	36.045	-119.2393333	25.58	2.14	ml	20	89	0.1999	0.21	ci	ci39641119	2021-05-05T18:19:32.870Z	6km SW of Woodville, CA	earthquake	0.36	0.6	0.174	34	reviewed	ci	ci
5/3/2021	20:24:54	36.3295	-119.7101667	23.64	2.46	md	15	113	0.2649	0.16	nc	nc73557770	2021-07-10T20:15:14.040Z	2km N of Armona, CA	earthquake	0.66	1.19	0.207	23	reviewed	nc	nc
4/27/2021	17:47:22	35.9741667	-120.5278333	10.45	2.81	md	55	63	0.0125	0.07	nc	nc73555290	2022-08-09T04:51:50.902Z	12km NW of Parkfield, CA	earthquake	0.15	0.19	0.1	75	reviewed	nc	nc
4/24/2021	21:16:53	36.0425	-120.1911667	8.66	2.51	md	42	143	0.08751	0.11	nc	nc73554015	2022-08-09T04:49:04.250Z	7km NW of Avenal, CA	earthquake	0.2	0.35	0.166	84	reviewed	nc	nc
4/4/2021	22:41:41	36.0956667	-120.1935	8.49	2.22	md	36	95	0.1139	0.09	nc	nc73545585	2021-04-09T04:26:04.322Z	12km NNW of Avenal, CA	earthquake	0.18	0.36	0.146	38	reviewed	nc	nc
4/2/2021	4:54:30	36.0543333	-120.6173333	6.16	2.27	md	61	62	0.02241	0.09	nc	nc73544980	2021-04-08T22:23:07.766Z	24km NW of Parkfield, CA	earthquake	0.2	0.27	0.141	56	reviewed	nc	nc
3/31/2021	23:56:35	35.983	-119.8908333	23.64	2.14	md	33	93	0.3088	0.17	nc	nc73544590	2021-04-06T05:15:08.508Z	7km ESE of Kettleman City, CA	earthquake	0.46	0.72	0.212	24	reviewed	nc	nc
3/27/2021	15:55:31	35.4371667	-118.9365	17.1	2.02	ml	39	35	0.1655	0.25	ci	ci39592143	2021-03-30T16:31:37.350Z	8km ENE of Oildale, CA	earthquake	0.25	1.03	0.144	49	reviewed	ci	ci
3/22/2021	23:55:15	35.9715	-120.5233333	10.56	2.72	md	52	58	0.01129	0.07	nc	nc73538636	2022-08-09T04:21:26.872Z	12km NW of Parkfield, CA	earthquake	0.14	0.13	0.14	73	reviewed	nc	nc
3/22/2021	8:10:28	36.0053333	-120.5725	4.54	2.25	md	47	93	0.05097	0.12	nc	nc73540510	2021-03-24T02:43:07.857Z	17km NW of Parkfield, CA	earthquake	0.23	0.35	0.255	46	reviewed	nc	nc
3/17/2021	4:31:50	35.3378333	-119.5478333	-0.64	2.03	ml	25	75	0.1517	0.35	ci	ci39582039	2021-03-18T17:05:31.623Z	10km SW of Buttonwillow, CA	earthquake	0.54	1.13	0.208	57	reviewed	ci	ci
3/2/2021	3:32:09	36.0681667	-119.8996667	25.96	2.18	md	32	85	0.3238	0.21	nc	nc73530196	2021-03-02T08:02:11.847Z	9km NE of Kettleman City, CA	earthquake	0.64	1.06	0.148	36	reviewed	nc	nc
2/25/2021	13:36:41	36.0585	-120.1023333	10.14	2.33	md	41	107	0.1611	0.16	nc	nc73527726	2021-02-26T07:19:06.507Z	6km NNE of Avenal, CA	earthquake	0.37	0.77	0.281	44	reviewed	nc	nc
2/17/2021	14:36:32	35.8336667	-120.5561667	8.81	2.74	md	52	56	0.05868	0.08	nc	nc73524311	2021-04-23T21:04:51.040Z	13km WSW of Parkfield, CA	earthquake	0.14	0.49	0.155	64	reviewed	nc	nc
2/15/2021	9:30:50	36.0926667	-119.917	7.45	2.46	md	35	89	0.2914	0.17	nc	nc73523466	2022-08-09T02:50:32.747Z	10km NNE of Kettleman City, CA	earthquake	0.42	3.43	0.187	58	reviewed	nc	nc
2/14/2021	5:05:27	35.0385	-119.1518333	16.57	2.11	ml	47	20	0.05931	0.28	ci	ci39551679	2021-02-17T19:17:50.400Z	21km N of Pine Mountain Club, CA	earthquake	0.25	0.78	0.123	18	reviewed	ci	ci
2/6/2021	23:04:52	36.0066667	-120.5775	4.69	2.62	md	57	62	0.03529	0.08	nc	nc73519516	2021-04-22T21:50:52.040Z	18km NW of Parkfield, CA	earthquake	0.19	0.27	0.202	61	reviewed	nc	nc
2/6/2021	17:00:22	35.4738333	-119.3288333	25.79	2.15	ml	36	62	0.1438	0.28	ci	ci39542879	2021-02-09T18:35:28.410Z	6km WSW of Shafter, CA	earthquake	0.32	0.93	0.2	70	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
2/4/2021	3:10:39	36.0233333	-120.6051667	8.11	2.42	md	54	143	0.04272	0.1	nc	nc73518151	2021-02-06T02:59:05.442Z	21km NW of Parkfield, CA	earthquake	0.19	0.26	0.198	56	reviewed	nc	nc
2/3/2021	5:17:46	36.3303333	-119.7518333	30.33	2.43	md	18	88	0.2951	0.12	nc	nc73517806	2021-02-03T08:14:03.887Z	4km NE of Lemoore, CA	earthquake	0.77	1.84	0.204	41	reviewed	nc	nc
1/25/2021	10:38:45	35.5543333	-120.8105	4.27	2.41	md	36	69	0.07202	0.07	nc	nc73516235	2022-08-09T02:38:25.728Z	10km W of Templeton, CA	earthquake	0.14	0.33	0.214	32	reviewed	nc	nc
1/21/2021	19:05:45	35.9945	-120.5623333	8.28	2.1	mh	7	200	0.02563	0.04	nc	nc73514480	2021-01-22T12:25:57.584Z	16km NW of Parkfield, CA	earthquake	0.8	0.9		0	reviewed	nc	nc
1/21/2021	15:19:34	35.554	-120.8116667	3.87	2.67	md	46	69	0.07298	0.06	nc	nc73514395	2021-03-27T21:04:13.040Z	10km W of Templeton, CA	earthquake	0.15	0.38	0.164	47	reviewed	nc	nc
1/9/2021	0:00:09	36.3548333	-119.7653333	24.67	2.75	ml	38	74	0.2848	0.19	nc	nc73508380	2021-03-20T21:23:00.040Z	6km NNE of Lemoore, CA	earthquake	0.57	0.83	0.189	28	reviewed	nc	nc
12/14/2020	2:47:46	35.9231667	-120.4723333	5.49	2.41	md	42	116	0.01697	0.1	nc	nc73497445	2020-12-22T22:17:05.243Z	5km NW of Parkfield, CA	earthquake	0.24	0.17	0.187	40	reviewed	nc	nc
12/12/2020	16:43:54	34.945	-119.1008333	11.54	2.05	ml	42	28	0.1251	0.23	ci	ci39728376	2020-12-15T17:41:07.480Z	12km NNE of Pine Mountain Club, CA	earthquake	0.24	0.73	0.188	40	reviewed	ci	ci
12/12/2020	8:33:45	36.0436667	-120.6136667	9.55	2.49	md	51	138	0.0712	0.1	nc	nc73496780	2021-02-20T16:11:28.040Z	23km NW of Parkfield, CA	earthquake	0.26	0.37	0.224	50	reviewed	nc	nc
12/8/2020	13:00:06	35.5056667	-120.843	4.1	2.52	md	38	150	0.1106	0.05	nc	nc73495190	2022-08-09T01:43:10.420Z	8km NNE of Cayucos, CA	earthquake	0.26	0.54	0.168	32	reviewed	nc	nc
12/8/2020	3:38:41	35.5058333	-120.8455	4	2.6	md	48	150	0.1123	0.05	nc	nc73495050	2021-02-12T22:40:21.040Z	8km NNE of Cayucos, CA	earthquake	0.24	0.52	0.142	42	reviewed	nc	nc
12/7/2020	23:49:24	35.2698333	-120.3898333	2.55	2.41	md	52	41	0.1875	0.11	nc	nc73495010	2020-12-18T01:42:06.246Z	24km SE of Santa Margarita, CA	earthquake	0.19	1.12	0.199	40	reviewed	nc	nc
12/7/2020	19:44:14	36.0266667	-120.5938333	4.17	2.26	md	43	112	0.04209	0.08	nc	nc73494940	2020-12-18T01:26:06.151Z	20km NW of Parkfield, CA	earthquake	0.18	0.27	0.183	38	reviewed	nc	nc
11/19/2020	1:57:11	35.1363333	-118.885	17.98	2.02	ml	40	29	0.04598	0.2	ci	ci39469959	2020-11-19T15:33:02.769Z	10km SSW of Arvin, CA	earthquake	0.2	0.56	0.134	51	reviewed	ci	ci
11/19/2020	1:43:18	35.1343333	-118.8778333	17.32	2.28	ml	42	28	0.03983	0.22	ci	ci39469951	2020-11-19T15:18:30.050Z	10km SSW of Arvin, CA	earthquake	0.22	0.61	0.144	71	reviewed	ci	ci
11/17/2020	20:00:04	35.5555	-120.7945	4.99	2.48	md	44	118	0.05895	0.06	nc	nc73483496	2021-01-27T17:30:19.040Z	8km W of Templeton, CA	earthquake	0.17	0.4	0.149	37	reviewed	nc	nc
11/16/2020	12:10:27	35.9543333	-119.8898333	27.99	2.14	md	30	74	0.2818	0.15	nc	nc73482926	2021-02-19T21:15:05.096Z	9km SE of Kettleman City, CA	earthquake	0.45	0.89	0.195	20	reviewed	nc	nc
11/9/2020	21:23:02	36.012	-120.5735	3.87	2.13	md	43	111	0.03002	0.06	nc	nc73479886	2020-11-10T22:54:05.777Z	18km NW of Parkfield, CA	earthquake	0.13	0.17	0.253	42	reviewed	nc	nc
11/9/2020	12:45:09	36.0136667	-120.5776667	3.59	2.34	md	40	111	0.03356	0.09	nc	nc73479756	2022-08-09T01:22:58.985Z	18km NW of Parkfield, CA	earthquake	0.22	0.34	0.249	50	reviewed	nc	nc
11/5/2020	0:35:48	34.9791667	-119.0285	11.44	2.7	ml	64	27	0.09133	0.23	ci	ci39457071	2021-01-23T22:25:28.040Z	10km WNW of Grapevine, CA	earthquake	0.2	0.57	0.193	26	reviewed	ci	ci
11/2/2020	2:20:34	36.0271667	-120.5875	4.48	2.83	md	53	122	0.04214	0.06	nc	nc73477136	2021-01-18T23:01:59.040Z	20km NW of Parkfield, CA	earthquake	0.16	0.19	0.169	68	reviewed	nc	nc
10/29/2020	12:20:18	36.0546667	-120.0656667	8.6	2.04	md	32	85	0.1891	0.12	nc	nc73476096	2020-11-07T03:20:04.563Z	8km NE of Avenal, CA	earthquake	0.4	1.01	0.15	22	reviewed	nc	nc
10/24/2020	23:06:50	36.0358333	-120.5983333	4.42	2.51	md	60	113	0.03295	0.07	nc	nc73474766	2021-01-09T20:05:24.040Z	21km NW of Parkfield, CA	earthquake	0.16	0.23	0.154	61	reviewed	nc	nc
10/17/2020	9:58:34	35.6135	-120.3743333	5.7	2.98	md	57	29	0.0726	0.1	nc	nc73471826	2020-12-29T23:07:30.040Z	5km S of Shandon, CA	earthquake	0.15	0.4	0.136	89	reviewed	nc	nc
10/17/2020	6:29:34	36.0308333	-120.5988333	4.85	2.28	md	43	125	0.05478	0.08	nc	nc73471766	2020-10-27T04:48:07.672Z	21km NW of Parkfield, CA	earthquake	0.26	0.31	0.147	35	reviewed	nc	nc
10/13/2020	22:56:01	36.2453333	-120.393	13.47	2.04	md	34	77	0.2403	0.16	nc	nc73470466	2020-10-23T00:30:04.494Z	12km NNW of Coalinga, CA	earthquake	0.61	1.51	0.201	23	reviewed	nc	nc
10/13/2020	15:09:55	35.831	-119.2655	19.42	2.25	ml	41	56	0.1017	0.24	ci	ci39661752	2020-10-14T15:32:53.660Z	7km NNW of Delano, CA	earthquake	0.23	0.38	0.067	14	reviewed	ci	ci
9/21/2020	4:53:54	36.0748333	-120.6498333	3.11	2.69	md	64	85	0.04388	0.16	nc	nc73460811	2020-11-28T21:31:59.040Z	24km ENE of San Ardo, CA	earthquake	0.27	0.42	0.203	61	reviewed	nc	nc
9/13/2020	11:18:19	35.8878333	-119.885	8.75	2.39	md	63	53	0.2216	0.13	nc	nc73457336	2020-09-18T00:41:03.187Z	15km SSE of Kettleman City, CA	earthquake	0.22	0.58	0.219	70	reviewed	nc	nc
9/13/2020	9:16:57	35.8821667	-119.852	13.79	2.96	md	48	121	0.2294	0.15	nc	nc73457261	2020-11-21T20:10:39.040Z	17km SE of Kettleman City, CA	earthquake	0.32	0.73	0.154	109	reviewed	nc	nc
9/13/2020	8:06:03	36.3676667	-119.8858333	18.59	2.31	md	35	92	0.1896	0.18	nc	nc73457201	2020-09-14T20:56:04.460Z	7km SSW of Riverdale, CA	earthquake	0.51	0.52	0.216	55	reviewed	nc	nc
9/7/2020	3:57:43	35.9456667	-120.4921667	9.93	2.58	md	67	63	0.01125	0.08	nc	nc73454601	2020-11-17T19:44:49.040Z	8km NW of Parkfield, CA	earthquake	0.18	0.16	0.153	60	reviewed	nc	nc
8/31/2020	21:37:25	35.8775	-119.9995	9.76	2.45	md	51	210	0.179	0.09	nc	nc73451916	2020-11-07T18:48:41.040Z	15km SSW of Kettleman City, CA	earthquake	0.43	0.52	0.21	50	reviewed	nc	nc
8/24/2020	9:23:23	36.1688333	-120.0336667	2.59	2.74	md	52	61	0.2603	0.11	nc	nc73448896	2022-08-09T00:03:11.292Z	7km ESE of Huron, CA	earthquake	0.22	0.74	0.187	92	reviewed	nc	nc
8/24/2020	8:06:14	35.7816667	-120.3343333	8	2.07	md	52	104	0.009795	0.05	nc	nc73448871	2020-09-02T05:58:31.270Z	8km NNW of Cholame, CA	earthquake	0.15	0.31	0.233	42	reviewed	nc	nc
8/19/2020	11:12:30	35.864	-119.8926667	14.2	2.45	md	44	154	0.1975	0.19	nc	nc73446801	2020-10-31T19:06:30.040Z	17km SSE of Kettleman City, CA	earthquake	0.46	1	0.233	44	reviewed	nc	nc
8/19/2020	6:14:46	35.9641667	-120.5153333	10.56	2.77	md	59	62	0.01589	0.06	nc	nc73446641	2020-10-31T19:06:07.040Z	10km NW of Parkfield, CA	earthquake	0.21	0.15	0.141	51	reviewed	nc	nc
8/14/2020	7:34:07	35.959	-119.7748333	7.67	2.45	md	25	189	0.3278	0.13	nc	nc73444280	2020-10-24T20:08:50.040Z	18km ESE of Kettleman City, CA	earthquake	0.68	3.96	0.164	37	reviewed	nc	nc
8/13/2020	0:50:31	35.5275	-120.8288333	5.33	2.85	md	54	170	0.09149	0.04	nc	nc73443710	2020-10-28T23:21:59.169Z	11km NNE of Cayucos, CA	earthquake	0.22	0.36	0.154	66	reviewed	nc	nc
8/7/2020	12:51:51	36.078	-119.994	28.55	2.06	md	29	261	0.2509	0.14	nc	nc73439486	2020-08-08T08:21:04.817Z	8km NNW of Kettleman City, CA	earthquake	1.02	1.23	0.235	17	reviewed	nc	nc
8/1/2020	6:35:33	35.9825	-119.7488333	12.37	2.25	md	45	100	0.3191	0.15	nc	nc73436801	2020-08-03T01:39:04.039Z	19km E of Kettleman City, CA	earthquake	0.38	1.21	0.263	31	reviewed	nc	nc
7/30/2020	6:56:14	34.9646667	-119.0716667	9.01	2.28	ml	54	26	0.09424	0.3	ci	ci39322167	2020-07-31T03:30:44.360Z	13km W of Grapevine, CA	earthquake	0.3	0.72	0.148	128	reviewed	ci	ci
7/23/2020	7:34:45	34.9595	-119.0036667	13.41	2.27	ml	86	28	0.06479	0.27	ci	ci38604098	2022-03-04T22:50:21.610Z	7km WNW of Grapevine, CA	earthquake	0.19	0.4	0.147	69	reviewed	ci	ci
7/20/2020	22:01:53	34.9318333	-119.0378333	13.57	3.6	ml	92	22	0.08167	0.28	ci	ci38599882	2020-10-22T14:55:02.865Z	10km W of Grapevine, CA	earthquake	0.2	0.41	0.162	149	reviewed	ci	ci
7/19/2020	12:18:29	35.1995	-119.4551667	15.08	2.15	ml	59	46	0.06094	0.27	ci	ci38598082	2020-07-22T21:48:24.242Z	6km N of Taft, CA	earthquake	0.22	0.47	0.178	23	reviewed	ci	ci
6/28/2020	7:27:03	35.8598333	-120.4018333	4.73	2.26	md	42	80	0.02176	0.07	nc	nc73418246	2020-07-02T05:11:03.998Z	5km SSE of Parkfield, CA	earthquake	0.28	0.25	0.172	20	reviewed	nc	nc
6/24/2020	21:01:48	35.2706667	-119.1751667	21.37	2.03	ml	34	65	0.09361	0.22	ci	ci39494640	2020-06-30T21:15:55.504Z	13km SSW of Rosedale, CA	earthquake	0.4	1.19	0.187	27	automatic	ci	ci
6/24/2020	20:58:59	36.0575	-120.6258333	5.19	2.11	md	53	96	0.02654	0.09	nc	nc73415481	2020-07-01T00:55:04.447Z	25km NW of Parkfield, CA	earthquake	0.21	0.28	0.221	32	reviewed	nc	nc
6/24/2020	20:49:41	35.271	-119.1785	21.42	2.91	ml	73	43	0.09506	0.26	ci	ci39494608	2021-08-13T18:13:23.350Z	13km SSW of Rosedale, CA	earthquake	0.17	0.53	0.147	187	reviewed	ci	ci
6/23/2020	2:53:49	36.0546667	-120.6271667	4.5	2.32	md	32	100	0.0288	0.08	nc	nc73414306	2020-06-30T00:39:04.484Z	25km NW of Parkfield, CA	earthquake	0.28	0.45	0.192	15	reviewed	nc	nc
6/22/2020	1:51:50	36.0565	-119.8178333	14.93	2.17	md	38	102	0.3881	0.22	nc	nc73413521	2020-06-24T02:44:02.906Z	14km ENE of Kettleman City, CA	earthquake	0.56	1.61	0.331	23	reviewed	nc	nc
6/21/2020	23:11:38	36.063	-119.8176667	14.99	2.2	md	36	138	0.3889	0.18	nc	nc73413441	2020-06-24T02:29:04.366Z	14km S of Stratford, CA	earthquake	0.55	3.06	0.245	25	reviewed	nc	nc
6/20/2020	19:39:27	36.0015	-120.5671667	4.45	2.73	md	62	91	0.02601	0.1	nc	nc73412661	2020-08-30T00:00:57.040Z	17km NW of Parkfield, CA	earthquake	0.18	0.24	0.12	41	reviewed	nc	nc
6/19/2020	21:15:48	35.0273333	-119.3003333	14.02	2.1	ml	49	35	0.1271	0.22	ci	ci39486416	2020-06-22T19:35:05.290Z	10km ESE of Maricopa, CA	earthquake	0.23	0.47	0.197	26	reviewed	ci	ci
6/16/2020	1:41:22	36.1643333	-120.1986667	6.84	2.02	md	38	204	0.1671	0.12	nc	nc73409741	2020-06-18T00:20:05.114Z	10km WSW of Huron, CA	earthquake	0.33	0.47	0.153	24	reviewed	nc	nc
6/15/2020	16:23:29	36.004	-120.5613333	2.8	2.34	md	52	97	0.02076	0.07	nc	nc73409516	2020-06-17T01:38:03.242Z	17km NW of Parkfield, CA	earthquake	0.15	0.21	0.101	28	reviewed	nc	nc
6/13/2020	8:13:34	36.005	-120.5715	4.13	2.13	md	54	98	0.02863	0.09	nc	nc73408186	2020-06-17T00:53:02.930Z	17km NW of Parkfield, CA	earthquake	0.22	0.24	0.179	30	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/12/2020	6:19:39	35.5298333	-119.7331667	5.26	2.62	ml	32	73	0.2087	0.31	ci	ci39475936	2020-08-22T19:14:46.040Z	28km WNW of Buttonwillow, CA	earthquake	0.45	31.61	0.133	85	reviewed	ci	ci
6/11/2020	22:53:17	35.5261667	-119.7333333	5.26	2.2	ml	22	98	0.207	0.28	ci	ci39475600	2020-06-12T00:13:48.480Z	28km WNW of Buttonwillow, CA	earthquake	0.54	31.61	0.165	46	reviewed	ci	ci
6/11/2020	12:31:27	35.856	-120.399	4.37	2.24	md	48	79	0.02567	0.06	nc	nc73407066	2020-06-15T16:59:02.910Z	6km SSE of Parkfield, CA	earthquake	0.17	0.25	0.204	30	reviewed	nc	nc
6/8/2020	16:51:39	36.2943333	-120.3826667	10.32	2.18	md	63	111	0.2837	0.18	nc	nc73405216	2020-06-09T07:07:02.026Z	17km N of Coalinga, CA	earthquake	0.34	0.83	0.231	38	reviewed	nc	nc
6/2/2020	23:28:55	34.7931667	-120.2656667	1.83	2.67	ml	30	92	0.05871	0.2	ci	ci39227655	2020-08-15T20:20:07.040Z	6km NNE of Los Alamos, CA	earthquake	0.25	0.49	0.102	88	reviewed	ci	ci
6/1/2020	5:20:41	35.5228333	-119.7373333	9.26	2.32	ml	34	71	0.2026	0.31	ci	ci39224959	2020-06-03T14:21:31.920Z	28km WNW of Buttonwillow, CA	earthquake	0.45	31.61	0.227	20	reviewed	ci	ci
5/31/2020	5:38:36	35.5025	-119.7686667	9.25	2.07	ml	14	94	0.1711	0.4	ci	ci37446597	2020-06-01T21:00:00.492Z	27km NE of Simmler, CA	earthquake	0.94	31.61	0.073	2	reviewed	ci	ci
5/31/2020	5:26:33	35.5186667	-119.733	9.26	2.6	ml	35	71	0.2042	0.32	ci	ci39223895	2020-08-15T20:19:56.040Z	27km WNW of Buttonwillow, CA	earthquake	0.46	31.61	0.17	31	reviewed	ci	ci
5/31/2020	2:30:30	35.5216667	-119.7418333	9.26	2.21	ml	23	97	0.1988	0.3	ci	ci39223839	2020-05-31T03:04:51.034Z	28km WNW of Buttonwillow, CA	earthquake	0.51	31.61	0.197	49	reviewed	ci	ci
5/30/2020	14:33:04	35.5066667	-119.7601667	10.46	2.62	ml	30	75	0.1791	0.42	ci	ci39223271	2020-08-15T20:19:53.040Z	28km NE of Simmler, CA	earthquake	0.59	1.7	0.143	105	reviewed	ci	ci
5/30/2020	12:16:53	35.5251667	-119.7423333	9.26	2.15	ml	20	92	0.1999	0.32	ci	ci39223199	2020-05-30T20:43:47.823Z	28km WNW of Buttonwillow, CA	earthquake	0.62	31.61	0.171	54	reviewed	ci	ci
5/30/2020	11:59:14	35.5141667	-119.7745	9.26	2.13	ml	25	89	0.1715	0.36	ci	ci39223191	2020-05-30T20:23:50.730Z	27km NE of Simmler, CA	earthquake	0.72	31.61	0.151	45	reviewed	ci	ci
5/30/2020	11:35:46	35.5285	-119.7415	9.26	2.44	ml	27	94	0.202	0.35	ci	ci39223175	2020-05-30T20:52:10.859Z	28km WNW of Buttonwillow, CA	earthquake	0.57	31.61	0.123	80	reviewed	ci	ci
5/30/2020	11:04:27	35.5278333	-119.7401667	9.26	2.19	ml	26	93	0.2027	0.35	ci	ci39223151	2020-05-30T21:00:44.330Z	28km WNW of Buttonwillow, CA	earthquake	0.61	31.61	0.154	52	reviewed	ci	ci
5/30/2020	10:42:26	35.5115	-119.7576667	9.26	2.27	ml	30	88	0.1829	0.39	ci	ci39223119	2020-05-30T20:18:44.705Z	28km NE of Simmler, CA	earthquake	0.64	31.61	0.146	74	reviewed	ci	ci
5/27/2020	4:52:31	35.385	-118.9645	15.96	3.66	mw	110	35	0.1213	0.27	ci	ci39218863	2020-08-24T14:27:54.579Z	6km SE of Oildale, CA	earthquake	0.15	0.67		4	reviewed	ci	ci
5/19/2020	4:06:11	35.3786667	-120.8423333	2.64	2.08	md	38	174	0.1623	0.04	nc	nc73389776	2020-05-26T23:16:03.272Z	2km NNE of Morro Bay, CA	earthquake	0.34	0.98	0.15	18	reviewed	nc	nc
5/17/2020	17:36:39	35.9941667	-120.561	3.79	3.17	ml	67	115	0.02496	0.08	nc	nc73389810	2020-08-02T00:29:17.040Z	16km NW of Parkfield, CA	earthquake	0.16	0.21	0.157	56	reviewed	nc	nc
5/8/2020	7:48:15	35.996	-120.5651667	4.31	2.31	md	49	78	0.0259	0.08	nc	nc73381760	2020-05-12T20:58:03.563Z	16km NW of Parkfield, CA	earthquake	0.23	0.25	0.133	31	reviewed	nc	nc
5/7/2020	23:49:11	36.0003333	-120.563	4.64	2.81	md	69	81	0.02324	0.09	nc	nc73381585	2020-07-29T22:14:17.040Z	16km NW of Parkfield, CA	earthquake	0.18	0.21	0.129	46	reviewed	nc	nc
5/6/2020	5:54:12	36.0201667	-120.581	4.48	2.82	md	52	120	0.03755	0.08	nc	nc73380790	2020-07-29T22:14:09.040Z	19km NW of Parkfield, CA	earthquake	0.19	0.26	0.155	56	reviewed	nc	nc
5/2/2020	8:58:25	35.6665	-119.2771667	26	2.44	ml	44	62	0.2131	0.29	ci	ci38476602	2020-05-04T23:02:41.810Z	4km WSW of McFarland, CA	earthquake	0.33	0.7	0.237	27	reviewed	ci	ci
4/24/2020	12:22:52	34.8856667	-120.4015	0.79	2.42	ml	28	140	0.09012	0.22	ci	ci39403976	2020-04-25T20:02:43.493Z	4km NE of Orcutt, CA	earthquake	0.37	0.53	0.21	19	reviewed	ci	ci
4/20/2020	5:04:31	35.1593333	-119.1445	21.16	2.17	ml	44	30	0.1876	0.26	ci	ci39397136	2020-04-20T17:16:52.803Z	24km WSW of Lamont, CA	earthquake	0.26	0.85	0.186	94	reviewed	ci	ci
4/20/2020	4:16:19	34.9825	-119.1356667	8.43	2.12	ml	53	29	0.1697	0.26	ci	ci39397080	2020-04-21T15:00:52.640Z	15km N of Pine Mountain Club, CA	earthquake	0.23	0.75	0.118	68	reviewed	ci	ci
4/19/2020	7:59:00	36.1528333	-120.199	10.45	2.43	md	48	74	0.1569	0.12	nc	nc73373030	2020-04-28T23:51:04.895Z	10km WSW of Huron, CA	earthquake	0.31	0.98	0.204	49	reviewed	nc	nc
4/18/2020	11:50:45	35.9611667	-120.5126667	5.08	2.17	md	46	63	0.0143	0.07	nc	nc73372505	2020-04-28T01:58:03.065Z	10km NW of Parkfield, CA	earthquake	0.23	0.17	0.252	28	reviewed	nc	nc
4/11/2020	19:36:19	36.2121667	-120.376	17.65	2.04	md	44	121	0.2069	0.1	nc	nc71112269	2020-04-16T19:55:19.519Z	8km NNW of Coalinga, CA	earthquake	0.32	0.74	0.175	29	reviewed	nc	nc
4/6/2020	2:42:52	36.1038333	-120.0505	5.09	2.18	md	42	144	0.216	0.11	nc	nc73364575	2020-04-06T23:12:02.834Z	12km SSE of Huron, CA	earthquake	0.3	0.86	0.214	20	reviewed	nc	nc
4/3/2020	6:48:02	36.2491667	-119.5853333	13.76	2.38	md	16	146	0.179	0.13	nc	nc73363125	2020-04-03T20:42:05.102Z	8km SE of Home Garden, CA	earthquake	1	1.64	0.118	26	reviewed	nc	nc
3/25/2020	10:48:04	35.9711667	-119.9166667	6.2	2.42	md	48	100	0.2919	0.16	nc	nc73358950	2020-03-26T09:52:02.061Z	6km SE of Kettleman City, CA	earthquake	0.39	1.35	0.195	50	reviewed	nc	nc
3/21/2020	23:47:37	35.8553333	-120.3953333	4.23	2.22	md	38	82	0.02673	0.08	nc	nc73357090	2020-03-30T16:09:04.296Z	6km SE of Parkfield, CA	earthquake	0.22	0.35	0.077	17	reviewed	nc	nc
3/21/2020	23:46:55	35.8558333	-120.3946667	4.59	2.88	md	59	83	0.02635	0.07	nc	nc73357095	2020-06-06T20:54:04.040Z	6km SE of Parkfield, CA	earthquake	0.15	0.25	0.147	32	reviewed	nc	nc
3/16/2020	0:33:20	34.7131667	-119.7401667	0.19	2.27	ml	34	32	0.1851	0.22	ci	ci38394978	2020-03-16T19:34:23.960Z	32km NNE of Goleta, CA	earthquake	0.22	0.64	0.119	83	reviewed	ci	ci
3/13/2020	12:56:02	36.0493333	-120.6183333	5.1	2.03	md	48	149	0.02645	0.06	nc	nc73353480	2020-03-14T02:04:02.927Z	24km NW of Parkfield, CA	earthquake	0.28	0.31	0.221	37	reviewed	nc	nc
3/11/2020	8:58:34	36.1823333	-120.0283333	23.49	2.09	md	36	102	0.1688	0.12	nc	nc73352735	2020-03-12T00:35:02.920Z	7km ESE of Huron, CA	earthquake	0.39	0.66	0.113	26	reviewed	nc	nc
2/16/2020	15:35:14	36.3411667	-119.742	18.52	2.38	md	26	110	0.303	0.14	nc	nc73341835	2020-02-19T03:38:03.390Z	4km NW of Armona, CA	earthquake	0.47	0.52	0.181	23	reviewed	nc	nc
2/15/2020	1:08:00	35.9408333	-120.4866667	9.78	2.93	md	66	74	0.01348	0.08	nc	nc73341190	2020-05-02T22:09:51.040Z	7km NW of Parkfield, CA	earthquake	0.18	0.14	0.136	78	reviewed	nc	nc
2/15/2020	0:28:39	35.9416667	-120.4873333	9.45	2.45	md	60	74	0.01364	0.08	nc	nc73341180	2020-05-02T22:09:51.040Z	7km NW of Parkfield, CA	earthquake	0.23	0.15	0.183	39	reviewed	nc	nc
2/14/2020	16:19:47	35.4725	-119.3286667	26.64	2.23	ml	39	90	0.1425	0.25	ci	ci39071623	2020-02-14T19:37:28.430Z	6km WSW of Shafter, CA	earthquake	0.3	0.6	0.2	43	reviewed	ci	ci
2/6/2020	7:56:16	36.0321667	-120.595	7.91	2.4	md	59	116	0.03658	0.07	nc	nc73336196	2020-02-14T02:08:02.703Z	21km NW of Parkfield, CA	earthquake	0.19	0.23	0.185	43	reviewed	nc	nc
1/29/2020	23:55:02	36.0335	-119.7968333	20.81	2.02	md	36	147	0.3836	0.14	nc	nc73333461	2020-01-31T03:18:02.523Z	15km E of Kettleman City, CA	earthquake	0.58	1.26	0.123	16	reviewed	nc	nc
1/29/2020	12:56:21	35.4358333	-119.0083333	17.99	3.19	ml	44	37	0.1018	0.23	ci	ci39285816	2020-05-27T21:26:17.804Z	2km NNE of Oildale, CA	earthquake	0.21	0.59	0.14	261	reviewed	ci	ci
1/27/2020	3:20:24	35.5588333	-120.814	5.17	2.86	md	56	99	0.0749	0.07	nc	nc73332241	2020-04-11T18:20:54.040Z	10km W of Templeton, CA	earthquake	0.17	0.52	0.152	52	reviewed	nc	nc
1/17/2020	15:55:29	36.1671667	-120.1823333	6.6	2.11	md	34	149	0.176	0.08	nc	nc73328481	2020-01-24T06:45:03.689Z	8km WSW of Huron, CA	earthquake	0.38	0.94	0.256	20	reviewed	nc	nc
1/15/2020	4:14:34	35.4678333	-119.3376667	26.23	2.41	ml	39	62	0.1367	0.24	ci	ci39036591	2020-01-15T16:15:49.630Z	7km WSW of Shafter, CA	earthquake	0.28	0.65	0.141	56	reviewed	ci	ci
1/14/2020	20:40:33	36.1441667	-120.157	5.75	2.14	md	44	150	0.1695	0.06	nc	nc73327511	2020-01-18T06:21:04.316Z	8km SW of Huron, CA	earthquake	0.31	0.54	0.18	26	reviewed	nc	nc
1/13/2020	13:13:58	35.967	-120.5233333	10.19	2.28	md	66	43	0.01498	0.07	nc	nc73326956	2020-01-18T05:51:04.747Z	11km NW of Parkfield, CA	earthquake	0.18	0.13	0.194	44	reviewed	nc	nc
1/13/2020	1:01:01	35.4696667	-119.3333333	25.76	2.66	ml	40	62	0.1391	0.24	ci	ci39033951	2020-04-02T21:28:22.040Z	6km WSW of Shafter, CA	earthquake	0.27	0.64	0.192	73	reviewed	ci	ci
1/12/2020	17:38:41	35.0491667	-119.0395	2.84	2	ml	36	33	0.1511	0.31	ci	ci39033591	2020-01-13T18:09:07.927Z	15km NW of Grapevine, CA	earthquake	0.31	1.57	0.18	74	reviewed	ci	ci
1/12/2020	16:48:47	35.0466667	-119.04	7.32	2.92	ml	62	23	0.1493	0.27	ci	ci39033511	2020-04-02T21:28:20.040Z	15km NW of Grapevine, CA	earthquake	0.22	1.15	0.148	125	reviewed	ci	ci
1/10/2020	11:38:49	36.2743333	-120.3001667	5.74	2.39	md	40	112	0.1599	0.11	nc	nc73326061	2020-01-17T06:55:03.205Z	16km NNE of Coalinga, CA	earthquake	0.34	0.84	0.256	39	reviewed	nc	nc
1/6/2020	22:17:40	35.471	-119.3305	26.74	2.54	ml	41	62	0.1408	0.24	ci	ci39026063	2020-03-21T17:13:20.040Z	6km WSW of Shafter, CA	earthquake	0.28	0.51	0.175	61	reviewed	ci	ci
12/31/2019	8:04:45	34.9428333	-119.0375	12.94	2.02	ml	51	27	0.08341	0.24	ci	ci39018447	2020-01-03T17:55:45.290Z	10km W of Grapevine, CA	earthquake	0.23	0.54	0.133	52	reviewed	ci	ci
12/30/2019	23:31:43	35.9461667	-120.0093333	7.1	2.75	md	60	73	0.23	0.17	nc	nc73321576	2020-01-10T01:22:03.353Z	8km SSW of Kettleman City, CA	earthquake	0.48	0.94	0.136	39	reviewed	nc	nc
12/28/2019	10:13:35	36.0335	-120.6013333	4.82	2.04	md	58	62	0.03548	0.08	nc	nc73320621	2020-01-07T01:42:03.730Z	21km NW of Parkfield, CA	earthquake	0.23	0.26	0.255	34	reviewed	nc	nc
12/24/2019	23:47:02	35.9918333	-119.9496667	22.85	2.93	md	88	24	0.2802	0.22	nc	nc73319181	2020-05-04T07:58:56.137Z	2km SSE of Kettleman City, CA	earthquake	0.31	0.42	0.221	75	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/20/2019	19:22:42	36.002	-120.5641667	4.07	2.23	md	66	92	0.02354	0.09	nc	nc73317266	2019-12-31T01:29:03.022Z	17km NW of Parkfield, CA	earthquake	0.16	0.18	0.188	40	reviewed	nc	nc
12/17/2019	18:29:21	35.8058333	-120.356	6.25	4.29	mw	78	45	0.02666	0.08	nc	nc73315876	2022-05-23T21:53:25.623Z	11km NNW of Cholame, CA	earthquake	0.12	0.22		8	reviewed	nc	nc
12/12/2019	11:45:08	35.6658333	-119.2726667	26.58	2.23	ml	35	60	0.2153	0.29	ci	ci39228096	2019-12-12T21:26:40.160Z	4km WSW of McFarland, CA	earthquake	0.36	0.76	0.212	43	reviewed	ci	ci
12/8/2019	15:14:12	35.9725	-120.5326667	4.46	2.74	md	64	67	0.01675	0.06	nc	nc73312676	2019-12-12T05:35:03.666Z	12km NW of Parkfield, CA	earthquake	0.14	0.14	0.109	53	reviewed	nc	nc
12/7/2019	17:17:41	35.4686667	-119.3278333	25.85	2.63	ml	39	62	0.1389	0.23	ci	ci39221072	2019-12-13T10:28:03.037Z	6km SW of Shafter, CA	earthquake	0.24	0.64	0.198	73	reviewed	ci	ci
12/7/2019	10:43:39	35.8688333	-119.8105	2.15	2.56	md	43	81	0.2386	0.19	nc	nc73312401	2019-12-12T06:21:04.921Z	21km SE of Kettleman City, CA	earthquake	0.35	1.38	0.222	62	reviewed	nc	nc
12/6/2019	22:20:17	36.2726667	-120.2931667	6.17	2.34	md	53	91	0.1553	0.14	nc	nc73312286	2019-12-16T23:37:02.887Z	16km NNE of Coalinga, CA	earthquake	0.3	0.93	0.22	34	reviewed	nc	nc
12/4/2019	5:24:36	35.1456667	-120.6458333	4.98	2.08	md	39	160	0.01408	0.08	nc	nc73311396	2019-12-13T03:38:04.092Z	0km NW of Pismo Beach, CA	earthquake	0.14	0.17	0.144	29	reviewed	nc	nc
12/3/2019	18:22:16	36.3515	-119.7841667	21.21	2.5	md	41	95	0.2694	0.19	nc	nc73311211	2019-12-12T06:51:05.098Z	6km N of Lemoore, CA	earthquake	0.8	0.74	0.237	37	reviewed	nc	nc
12/1/2019	23:21:56	34.9698333	-119.4336667	12.92	2.51	ml	48	34	0.03413	0.24	ci	ci39213512	2019-12-03T16:08:53.230Z	10km SSW of Maricopa, CA	earthquake	0.24	0.49	0.145	69	reviewed	ci	ci
11/30/2019	13:29:04	34.9658333	-119.4298333	12.62	2.09	ml	40	50	0.02912	0.22	ci	ci39211608	2019-12-03T15:55:37.810Z	11km SSW of Maricopa, CA	earthquake	0.27	0.48	0.131	46	reviewed	ci	ci
11/29/2019	14:43:28	36.1108333	-120.0056667	5.83	2.05	md	33	198	0.2416	0.09	nc	nc73309946	2019-12-11T03:19:03.054Z	12km NNW of Kettleman City, CA	earthquake	0.5	0.85	0.157	14	reviewed	nc	nc
11/26/2019	4:13:20	36.1701667	-119.9626667	0.63	2.02	md	21	292	0.3094	0.07	nc	nc73309001	2019-12-05T04:54:03.410Z	12km SSW of Lemoore Station, CA	earthquake	2.45	4.44	0.033	5	reviewed	nc	nc
11/21/2019	8:29:13	35.9626667	-119.9156667	8.69	2.64	md	72	61	0.2839	0.16	nc	nc73306881	2019-12-03T05:42:04.117Z	7km SE of Kettleman City, CA	earthquake	0.28	0.95	0.169	74	reviewed	nc	nc
11/21/2019	7:11:55	35.9546667	-119.9395	7.22	3.17	ml	55	119	0.2691	0.14	nc	nc73306866	2020-02-14T22:02:08.040Z	6km SSE of Kettleman City, CA	earthquake	0.34	1.07	0.214	43	reviewed	nc	nc
11/20/2019	14:20:57	35.988	-120.5503333	4.36	2.25	md	47	70	0.0241	0.07	nc	nc73306611	2022-03-04T17:21:29.680Z	15km NW of Parkfield, CA	earthquake	0.15	0.16	0.156	39	reviewed	nc	nc
11/14/2019	7:49:37	35.151	-120.6468333	2.21	2.43	md	56	113	0.09537	0.15	nc	nc73303441	2019-11-20T05:46:03.176Z	1km NNW of Pismo Beach, CA	earthquake	0.21	0.81	0.156	40	reviewed	nc	nc
11/13/2019	10:54:58	36.2961667	-119.676	25.98	2.34	md	34	113	0.2386	0.13	nc	nc73303041	2019-11-15T05:35:02.449Z	3km ESE of Armona, CA	earthquake	0.3	0.73	0.143	23	reviewed	nc	nc
11/6/2019	14:21:43	36.2265	-120.3323333	9.04	2.6	md	79	58	0.205	0.13	nc	nc73301345	2019-11-09T06:03:04.281Z	10km NNE of Coalinga, CA	earthquake	0.19	0.49	0.205	87	reviewed	nc	nc
11/6/2019	14:01:56	36.2413333	-120.3223333	3.75	2	md	42	195	0.1905	0.08	nc	nc73301335	2019-11-15T06:19:02.744Z	12km NNE of Coalinga, CA	earthquake	0.31	0.73	0.224	31	reviewed	nc	nc
11/6/2019	14:00:47	36.2288333	-120.3375	8.89	2.47	md	76	94	0.2073	0.15	nc	nc73301330	2019-11-09T05:17:03.561Z	10km N of Coalinga, CA	earthquake	0.19	0.52	0.217	71	reviewed	nc	nc
11/3/2019	22:39:49	35.2438333	-119.322	25.77	2.3	ml	46	31	0.09427	0.23	ci	ci38930727	2019-11-04T18:35:01.310Z	17km NE of Taft, CA	earthquake	0.25	0.55	0.156	92	reviewed	ci	ci
10/31/2019	13:34:51	35.0473333	-118.9433333	10.3	2.16	ml	40	42	0.1222	0.19	ci	ci38924711	2019-11-05T19:14:42.140Z	12km N of Grapevine, CA	earthquake	0.2	0.5	0.148	57	reviewed	ci	ci
10/21/2019	2:27:09	36.0423333	-120.6105	5.88	2.07	md	58	93	0.02885	0.09	nc	nc73294585	2019-10-26T01:22:03.933Z	23km NW of Parkfield, CA	earthquake	0.18	0.22	0.183	39	reviewed	nc	nc
10/14/2019	4:31:23	35.0973333	-119.1265	8.85	2.07	ml	48	24	0.2328	0.29	ci	ci39130840	2019-10-14T18:56:24.340Z	25km NW of Grapevine, CA	earthquake	0.27	1.33	0.164	91	reviewed	ci	ci
10/11/2019	16:45:35	35.0968333	-119.1228333	2.68	2.09	ml	36	55	0.2304	0.26	ci	ci39125424	2019-10-15T15:45:32.510Z	24km NW of Grapevine, CA	earthquake	0.27	1.11	0.151	41	reviewed	ci	ci
10/11/2019	15:06:47	35.8076667	-119.394	21.65	2.32	ml	32	75	0.05385	0.31	ci	ci37229076	2019-12-04T21:34:27.610Z	12km SE of Alpaugh, CA	earthquake	0.45	1.01	0.226	15	reviewed	ci	ci
10/6/2019	7:50:09	36.2401667	-120.2403333	4.74	2.23	md	35	129	0.1376	0.13	nc	nc73287200	2019-10-17T06:52:03.345Z	13km WNW of Huron, CA	earthquake	0.53	1.39	0.236	23	reviewed	nc	nc
10/2/2019	6:26:49	35.949	-119.7438333	20.28	3.02	md	51	95	0.3347	0.14	nc	nc73285085	2019-12-27T15:49:49.040Z	21km ESE of Kettleman City, CA	earthquake	0.33	0.44	0.2	104	reviewed	nc	nc
9/29/2019	12:11:41	35.5733333	-120.7883333	4.26	2.01	md	51	57	0.05662	0.05	nc	nc73283400	2019-10-10T01:35:03.804Z	8km WNW of Templeton, CA	earthquake	0.2	0.41	0.203	34	reviewed	nc	nc
9/28/2019	14:08:08	36.08	-120.1955	9.43	3.14	ml	99	52	0.188	0.09	nc	nc73282580	2019-12-20T19:03:29.040Z	10km NW of Avenal, CA	earthquake	0.26	0.5	0.185	136	reviewed	nc	nc
9/25/2019	18:31:47	34.6883333	-119.52	3.22	2.03	ml	37	41	0.1125	0.22	ci	ci39093176	2019-09-25T20:20:59.493Z	30km NNE of Montecito, CA	earthquake	0.24	1.01	0.183	32	reviewed	ci	ci
9/23/2019	13:32:01	36.045	-120.2488333	13.93	2.43	md	45	130	0.1772	0.06	nc	nc73278290	2019-10-02T05:50:03.590Z	12km WNW of Avenal, CA	earthquake	0.31	0.88	0.365	59	reviewed	nc	nc
9/19/2019	23:06:59	36.068	-120.1913333	11.89	2.56	md	55	126	0.181	0.09	nc	nc73276645	2019-09-30T23:35:02.751Z	9km NW of Avenal, CA	earthquake	0.26	0.73	0.204	53	reviewed	nc	nc
9/18/2019	21:45:05	35.9286667	-120.4738333	9.13	3.07	ml	76	92	0.01808	0.08	nc	nc73276115	2020-04-08T18:33:14.941Z	5km NW of Parkfield, CA	earthquake	0.18	0.17	0.136	32	reviewed	nc	nc
9/18/2019	5:08:42	35.5511667	-120.8051667	5.14	2.05	md	57	62	0.06782	0.05	nc	nc73275710	2020-02-29T06:45:23.820Z	9km W of Templeton, CA	earthquake	0.17	0.46	0.214	37	reviewed	nc	nc
9/9/2019	4:26:59	36.2303333	-120.1241667	15.1	2	md	34	281	0.105	0.11	nc	nc73267840	2019-09-10T23:45:06.362Z	4km NNW of Huron, CA	earthquake	1.73	0.86	0.132	27	reviewed	nc	nc
9/8/2019	13:12:41	36.3095	-119.6615	28.58	2.46	md	28	107	0.2258	0.13	nc	nc73267455	2019-09-11T03:05:02.514Z	2km SW of Hanford, CA	earthquake	0.44	1.21	0.193	39	reviewed	nc	nc
9/3/2019	9:58:10	35.9656667	-120.526	10.79	2.29	md	62	45	0.01725	0.07	nc	nc73264345	2019-09-13T01:20:02.873Z	11km NW of Parkfield, CA	earthquake	0.2	0.18	0.179	49	reviewed	nc	nc
8/31/2019	11:23:34	34.693	-120.0425	0.94	2.16	ml	42	26	0.05705	0.22	ci	ci39029216	2019-09-05T15:37:45.533Z	7km ENE of Los Olivos, CA	earthquake	0.2	0.38	0.153	33	reviewed	ci	ci
8/31/2019	8:48:58	34.6995	-120.0436667	0.39	2.24	ml	41	28	0.0541	0.22	ci	ci39028792	2019-09-05T16:08:37.640Z	7km ENE of Los Olivos, CA	earthquake	0.2	0.43	0.142	30	reviewed	ci	ci
8/31/2019	3:56:21	36.104	-119.9846667	5.38	2.6	md	57	101	0.2546	0.12	nc	nc73262475	2019-09-04T04:21:05.167Z	11km N of Kettleman City, CA	earthquake	0.33	1.59	0.197	53	reviewed	nc	nc
8/27/2019	13:07:42	35.5498333	-120.8071667	4.52	2.25	md	59	75	0.06956	0.07	nc	nc73260070	2019-09-06T01:30:03.647Z	9km W of Templeton, CA	earthquake	0.18	0.48	0.245	35	reviewed	nc	nc
8/22/2019	6:45:54	34.877	-119.2421667	10.4	2.11	ml	50	46	0.1024	0.27	ci	ci38994528	2019-08-26T17:45:41.310Z	9km WNW of Pine Mountain Club, CA	earthquake	0.25	0.47	0.145	57	reviewed	ci	ci
8/20/2019	0:33:45	35.5585	-120.7915	4.48	2.52	md	67	70	0.05656	0.07	nc	nc73254240	2019-08-24T07:18:02.861Z	8km W of Templeton, CA	earthquake	0.16	0.45	0.177	46	reviewed	nc	nc
8/15/2019	18:26:11	35.1995	-118.9335	13.33	2.62	ml	51	33	0.1115	0.21	ci	ci38972592	2019-08-16T02:28:52.140Z	7km SSW of Lamont, CA	earthquake	0.19	0.6	0.191	113	reviewed	ci	ci
8/11/2019	21:22:09	36.0696667	-120.2115	11.27	2.02	md	38	139	0.172	0.1	nc	nc73247931	2019-08-17T08:16:03.393Z	10km NW of Avenal, CA	earthquake	0.31	0.81	0.31	26	reviewed	nc	nc
8/10/2019	9:44:25	35.5723333	-120.8513333	5.08	2.46	md	64	60	0.06526	0.07	nc	nc73246411	2019-08-16T18:22:03.164Z	13km W of Templeton, CA	earthquake	0.17	0.49	0.129	54	reviewed	nc	nc
8/9/2019	7:15:43	36.0801667	-120.2008333	9.6	2.35	md	49	196	0.1856	0.07	nc	nc73245511	2019-08-15T04:15:05.377Z	11km NW of Avenal, CA	earthquake	0.53	0.87	0.293	62	reviewed	nc	nc
8/7/2019	1:27:36	35.494	-120.8015	6.93	2.6	md	66	52	0.07425	0.05	nc	nc73243636	2019-08-12T08:48:56.597Z	10km NE of Cayucos, CA	earthquake	0.13	0.34	0.191	59	reviewed	nc	nc
8/3/2019	3:39:03	35.9951667	-120.1933333	18.16	2.74	md	59	89	0.1336	0.12	nc	nc73241186	2019-08-07T05:16:04.029Z	6km W of Avenal, CA	earthquake	0.32	0.44	0.216	73	reviewed	nc	nc
7/30/2019	17:20:16	35.5491667	-120.8048333	5.05	2.11	md	56	78	0.06773	0.08	nc	nc73238681	2019-08-06T05:38:02.609Z	9km W of Templeton, CA	earthquake	0.17	0.48	0.207	37	reviewed	nc	nc
7/29/2019	16:32:28	36.1291667	-120.2366667	8.56	2.63	md	51	131	0.2138	0.07	nc	nc73237816	2019-07-31T05:26:02.983Z	11km E of Coalinga, CA	earthquake	0.27	0.69	0.19	69	reviewed	nc	nc
7/28/2019	23:51:06	35.997	-120.1968333	20.07	3.06	ml	57	142	0.132	0.1	nc	nc73237181	2019-10-11T20:12:47.040Z	6km W of Avenal, CA	earthquake	0.23	0.32	0.259	41	reviewed	nc	nc
7/24/2019	12:18:20	36.0283333	-120.5918333	4.06	2.24	md	65	116	0.04054	0.08	nc	nc73233511	2019-07-31T22:26:03.408Z	20km NW of Parkfield, CA	earthquake	0.18	0.22	0.19	51	reviewed	nc	nc
7/24/2019	5:48:47	35.7933333	-120.3446667	9.48	3.14	ml	70	93	0.02067	0.06	nc	nc73233256	2019-12-17T19:12:39.502Z	9km NNW of Cholame, CA	earthquake	0.14	0.26	0.158	76	reviewed	nc	nc
7/22/2019	23:46:38	35.5313333	-120.821	6.02	2.47	md	62	52	0.08425	0.06	nc	nc73232246	2019-07-24T03:52:02.917Z	11km W of Templeton, CA	earthquake	0.16	0.41	0.242	52	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
7/20/2019	17:45:48	35.5235	-120.255	11.27	2.18	md	60	83	0.109	0.08	nc	nc73229986	2022-08-08T15:12:30.129Z	18km SE of Shandon, CA	earthquake	0.17	0.72	0.198	43	reviewed	nc	nc
7/20/2019	1:28:34	35.524	-120.2523333	11.21	2.24	md	55	45	0.1068	0.08	nc	nc73229336	2019-07-25T03:47:03.779Z	18km SE of Shandon, CA	earthquake	0.17	0.73	0.239	44	reviewed	nc	nc
7/9/2019	22:21:58	34.9425	-119.1711667	1.62	2.13	ml	33	67	0.1917	0.27	ci	ci38507991	2019-07-10T18:30:26.154Z	11km N of Pine Mountain Club, CA	earthquake	0.42	1.82	0.169	26	reviewed	ci	ci
7/9/2019	10:56:37	35.0906667	-119.1313333	12.76	2.41	ml	44	47	0.2306	0.28	ci	ci38500575	2019-07-09T15:40:25.998Z	25km NW of Grapevine, CA	earthquake	0.3	1.26	0.153	81	reviewed	ci	ci
7/8/2019	16:59:34	35.1001667	-119.1305	3.09	2.09	ml	27	48	0.2371	0.24	ci	ci38489239	2019-07-11T18:13:54.433Z	25km E of Maricopa, CA	earthquake	0.36	2.55	0.192	35	reviewed	ci	ci
7/7/2019	21:05:16	35.0511667	-118.9365	8.48	2.77	ml	50	48	0.1154	0.23	ci	ci38479911	2021-11-16T18:59:50.280Z	12km N of Grapevine, CA	earthquake	0.25	0.83	0.152	26	reviewed	ci	ci
7/7/2019	10:58:08	35.047	-118.92	8.81	2.33	ml	52	47	0.1086	0.26	ci	ci38475263	2019-07-11T22:32:27.340Z	12km N of Grapevine, CA	earthquake	0.25	0.86	0.165	108	reviewed	ci	ci
7/6/2019	7:56:03	36.0008333	-120.5566667	3.36	2.47	md	18	86	0.01838	0.05	nc	nc73209271	2019-07-08T18:07:03.384Z	16km NW of Parkfield, CA	earthquake	0.23	0.39	0.23	10	reviewed	nc	nc
7/4/2019	22:30:16	35.048	-118.9358333	8.49	2.85	ml	56	49	0.1171	0.22	ci	ci38445207	2019-11-06T18:51:49.220Z	12km N of Grapevine, CA	earthquake	0.19	0.64	0.203	25	reviewed	ci	ci
7/3/2019	0:31:18	35.0485	-118.9295	8.05	2.42	ml	68	40	0.113	0.24	ci	ci38441399	2019-07-03T19:25:01.510Z	12km N of Grapevine, CA	earthquake	0.19	0.67	0.136	26	reviewed	ci	ci
7/3/2019	0:30:41	35.05	-118.9446667	10.11	2.08	ml	32	102	0.1213	0.18	ci	ci38441383	2019-07-03T19:07:53.880Z	12km N of Grapevine, CA	earthquake	0.27	0.53	0.153	25	reviewed	ci	ci
7/2/2019	22:54:46	35.0546667	-118.94	9.87	2.06	ml	42	65	0.1154	0.25	ci	ci38441279	2019-07-03T20:15:12.660Z	12km N of Grapevine, CA	earthquake	0.27	0.69	0.132	41	reviewed	ci	ci
7/2/2019	22:51:46	35.0583333	-118.945	7.61	2.15	ml	44	57	0.1164	0.23	ci	ci38441255	2019-07-03T19:11:48.767Z	13km N of Grapevine, CA	earthquake	0.24	1.07	0.138	54	reviewed	ci	ci
7/2/2019	22:42:57	35.0515	-118.936	9.67	2.02	ml	28	122	0.1149	0.26	ci	ci38441239	2019-07-03T19:03:55.726Z	12km N of Grapevine, CA	earthquake	0.38	0.89	0.093	27	reviewed	ci	ci
7/2/2019	22:40:56	35.0503333	-118.936	8.74	3.44	ml	89	28	0.1157	0.22	ci	ci38441215	2019-09-26T14:30:03.040Z	12km N of Grapevine, CA	earthquake	0.14	0.42	0.182	172	reviewed	ci	ci
7/2/2019	22:26:31	35.0551667	-118.9436667	7.83	2.17	ml	42	41	0.1175	0.2	ci	ci38441183	2019-07-03T17:33:21.020Z	12km N of Grapevine, CA	earthquake	0.2	0.85	0.13	46	reviewed	ci	ci
7/2/2019	22:22:52	35.0563333	-118.936	5.14	2.83	ml	56	40	0.1118	0.24	ci	ci38441167	2019-07-03T17:02:05.520Z	13km N of Grapevine, CA	earthquake	0.19	1.03	0.196	74	reviewed	ci	ci
7/2/2019	22:21:08	35.0513333	-118.9368333	7.73	3.35	ml	94	28	0.1155	0.24	ci	ci38441151	2020-01-30T01:08:36.204Z	12km N of Grapevine, CA	earthquake	0.14	0.63	0.154	188	reviewed	ci	ci
7/2/2019	22:12:07	35.0518333	-118.9376667	8.45	2.52	ml	57	40	0.1157	0.21	ci	ci38441127	2019-07-03T18:53:34.220Z	12km N of Grapevine, CA	earthquake	0.18	0.59	0.139	26	reviewed	ci	ci
7/2/2019	22:03:21	35.0523333	-118.9358333	8.3	2.75	ml	61	40	0.1143	0.23	ci	ci38441111	2019-07-03T00:18:30.610Z	12km N of Grapevine, CA	earthquake	0.19	0.65	0.122	25	reviewed	ci	ci
7/1/2019	21:17:00	35.4838333	-120.0171667	9.86	2.66	ml	43	51	0.06336	0.24	ci	ci38439583	2019-07-02T21:49:44.757Z	15km N of Simmler, CA	earthquake	0.31	0.57	0.144	24	reviewed	ci	ci
6/26/2019	9:46:22	36.2385	-120.2686667	12.77	2.44	md	56	60	0.156	0.08	nc	nc73202326	2019-06-26T23:17:02.845Z	14km NE of Coalinga, CA	earthquake	0.2	0.29	0.267	60	reviewed	nc	nc
6/23/2019	10:17:35	35.964	-120.5213333	10.43	2.44	md	66	49	0.01703	0.06	nc	nc73201246	2019-06-25T18:46:03.686Z	11km NW of Parkfield, CA	earthquake	0.16	0.13	0.18	64	reviewed	nc	nc
6/22/2019	17:31:36	36.1551667	-120.2038333	-0.48	2.04	md	25	121	0.2484	0.09	nc	nc73201011	2019-06-25T04:29:03.504Z	10km WSW of Huron, CA	earthquake	0.29	0.18	0.238	17	reviewed	nc	nc
6/16/2019	13:43:16	36.3253333	-120.3286667	5.01	2.05	md	49	70	0.03498	0.19	nc	nc73198791	2019-06-20T04:16:02.892Z	20km S of Cantua Creek, CA	earthquake	0.27	0.24	0.21	44	reviewed	nc	nc
6/10/2019	2:41:11	35.4061667	-118.845	13.1	3.46	mw	58	49	0.07757	0.2	ci	ci38633112	2020-05-27T05:12:46.741Z	16km E of Oildale, CA	earthquake	0.16	0.47		4	reviewed	ci	ci
6/2/2019	6:28:33	35.439	-119.134	21.56	2.15	ml	33	58	0.09739	0.23	ci	ci38616744	2019-07-02T21:30:51.778Z	6km N of Rosedale, CA	earthquake	0.28	0.7	0.166	57	reviewed	ci	ci
5/29/2019	1:47:11	34.8473333	-120.3116667	1.24	2.07	ml	25	67	0.0238	0.19	ci	ci38608696	2019-07-02T21:55:17.396Z	12km E of Orcutt, CA	earthquake	0.28	0.42	0.091	32	reviewed	ci	ci
5/28/2019	6:05:20	34.8473333	-120.3135	1.08	2.5	ml	39	67	0.02473	0.18	ci	ci38607408	2020-04-24T13:25:39.443Z	11km E of Orcutt, CA	earthquake	0.23	0.39	0.088	26	reviewed	ci	ci
5/26/2019	7:57:32	35.3878333	-119.9975	5.3	2.41	ml	28	87	0.05769	0.27	ci	ci38605552	2019-07-02T21:37:57.469Z	4km N of Simmler, CA	earthquake	0.37	0.91	0.17	9	reviewed	ci	ci
5/25/2019	20:53:22	35.3873333	-120.0033333	5.67	2.16	ml	34	43	0.06057	0.25	ci	ci38605016	2019-07-02T21:31:06.936Z	4km N of Simmler, CA	earthquake	0.29	0.67	0.116	24	reviewed	ci	ci
5/14/2019	8:56:13	36.2888333	-119.648	23.45	2.42	md	13	97	0.217	0.08	nc	nc73181445	2019-05-15T03:38:03.303Z	2km SW of Home Garden, CA	earthquake	0.48	0.76	0.178	23	reviewed	nc	nc
5/12/2019	17:11:28	35.2016667	-120.7485	7.2	2.2	md	49	80	0.03503	0.09	nc	nc73180790	2019-05-16T04:21:03.794Z	3km NNW of Avila Beach, CA	earthquake	0.17	0.3	0.201	41	reviewed	nc	nc
5/5/2019	12:27:39	35.9373333	-120.4888333	9.85	2.21	md	54	69	0.01675	0.08	nc	nc73177435	2019-05-07T02:55:03.811Z	7km NW of Parkfield, CA	earthquake	0.16	0.18	0.192	52	reviewed	nc	nc
5/3/2019	15:43:38	35.55	-120.8041667	4.91	2.1	md	65	68	0.0671	0.11	nc	nc73176330	2019-05-04T04:00:05.320Z	9km W of Templeton, CA	earthquake	0.15	0.33	0.202	48	reviewed	nc	nc
5/3/2019	11:22:36	36.1393333	-120.0576667	13.8	2.34	md	44	166	0.2015	0.11	nc	nc73176230	2019-05-06T23:56:02.803Z	8km SSE of Huron, CA	earthquake	0.51	0.73	0.275	64	reviewed	nc	nc
5/3/2019	10:05:46	35.5483333	-120.805	4.91	2.96	md	60	78	0.06795	0.08	nc	nc73176190	2019-07-25T18:54:11.040Z	9km W of Templeton, CA	earthquake	0.16	0.48	0.144	82	reviewed	nc	nc
5/3/2019	5:22:38	35.5496667	-120.808	4.55	3.32	mw	66	103	0.07025	0.08	nc	nc73176070	2019-08-07T01:44:28.552Z	9km W of Templeton, CA	earthquake	0.15	0.45		3	reviewed	nc	nc
4/29/2019	2:37:42	36.1055	-120.1046667	8.08	2.44	md	62	162	0.04456	0.11	nc	nc73173710	2019-04-30T04:48:03.101Z	11km S of Huron, CA	earthquake	0.28	0.18	0.236	74	reviewed	nc	nc
4/26/2019	10:58:57	35.0506667	-119.194	12.44	2.11	ml	47	51	0.2079	0.26	ci	ci38333871	2019-04-26T17:18:23.300Z	19km E of Maricopa, CA	earthquake	0.24	0.9	0.146	58	reviewed	ci	ci
4/21/2019	22:17:13	35.9225	-120.4721667	5.28	2.15	md	44	93	0.0166	0.07	nc	nc73170000	2019-04-24T04:38:02.007Z	4km NW of Parkfield, CA	earthquake	0.15	0.21	0.232	28	reviewed	nc	nc
4/20/2019	16:26:12	36.3396667	-120.0431667	22.65	2.2	md	34	155	0.05995	0.1	nc	nc73169390	2019-04-23T05:42:02.736Z	15km NW of Lemoore Station, CA	earthquake	0.48	0.26	0.276	29	reviewed	nc	nc
4/18/2019	3:15:15	35.9286667	-120.476	9.64	2.97	md	56	71	0.01833	0.06	nc	nc73168145	2019-06-26T20:54:48.040Z	5km NW of Parkfield, CA	earthquake	0.17	0.16	0.164	82	reviewed	nc	nc
4/16/2019	13:26:57	35.0466667	-119.0486667	8.95	2.64	ml	64	42	0.1534	0.24	ci	ci38548008	2019-04-24T18:06:14.114Z	16km NW of Grapevine, CA	earthquake	0.2	0.66	0.132	25	reviewed	ci	ci
4/15/2019	20:40:02	34.954	-119.2711667	0.98	2.18	ml	34	57	0.1174	0.22	ci	ci38547512	2019-04-24T18:07:34.487Z	16km NW of Pine Mountain Club, CA	earthquake	0.28	0.46	0.147	41	reviewed	ci	ci
4/5/2019	22:28:29	35.9645	-120.52	10.87	2.07	md	59	50	0.01622	0.05	nc	nc73161595	2019-04-09T00:23:02.861Z	11km NW of Parkfield, CA	earthquake	0.12	0.16	0.185	43	reviewed	nc	nc
4/5/2019	17:52:32	35.861	-120.4126667	8.41	3.5	mw	76	42	0.02248	0.06	nc	nc73161470	2019-06-18T15:50:27.040Z	4km SSE of Parkfield, CA	earthquake	0.1	0.17		3	reviewed	nc	nc
3/31/2019	10:38:26	34.9553333	-119.2688333	0.5	2.23	ml	51	41	0.1195	0.26	ci	ci37599090	2019-04-03T16:33:34.796Z	16km NW of Pine Mountain Club, CA	earthquake	0.26	0.5	0.151	62	reviewed	ci	ci
3/23/2019	20:30:28	35.7325	-120.2791667	12.12	2.21	md	58	49	0.04212	0.09	nc	nc73155385	2019-03-26T01:37:02.066Z	2km NE of Cholame, CA	earthquake	0.19	0.36	0.118	40	reviewed	nc	nc
3/18/2019	22:35:56	35.2001667	-120.7478333	7.46	2.52	md	61	79	0.03378	0.08	nc	nc73153936	2019-03-20T18:37:21.665Z	3km NNW of Avila Beach, CA	earthquake	0.14	0.25	0.167	52	reviewed	nc	nc
3/8/2019	13:46:19	35.0656667	-119.5476667	16.15	2	ml	32	82	0.08468	0.31	ci	ci38260151	2019-03-08T16:21:17.381Z	12km SW of Taft, CA	earthquake	0.42	0.88	0.156	28	reviewed	ci	ci
3/2/2019	20:36:43	35.7985	-120.3483333	10.24	2.87	md	66	62	0.02636	0.06	nc	nc73147341	2019-03-05T00:43:03.760Z	10km NNW of Cholame, CA	earthquake	0.13	0.26	0.157	69	reviewed	nc	nc
3/1/2019	21:44:13	36.0313333	-120.5973333	4.99	2.15	md	53	82	0.03741	0.06	nc	nc73146996	2019-03-02T03:52:04.260Z	21km NW of Parkfield, CA	earthquake	0.17	0.26	0.181	38	reviewed	nc	nc
2/21/2019	17:18:58	34.9053333	-119.5636667	9.63	2.23	ml	34	92	0.09799	0.24	ci	ci38468280	2019-02-21T18:32:18.840Z	23km SW of Maricopa, CA	earthquake	0.34	0.62	0.158	26	reviewed	ci	ci
2/17/2019	0:32:16	35.1026667	-119.0741667	12.45	2.06	ml	28	74	0.2016	0.25	ci	ci37533018	2019-02-19T18:28:48.534Z	22km NW of Grapevine, CA	earthquake	0.34	1.26	0.165	37	reviewed	ci	ci
2/12/2019	17:26:27	35.8413333	-119.8536667	0.14	2.03	md	39	209	0.1969	0.1	nc	nc73141185	2019-02-13T03:21:05.437Z	21km SSE of Kettleman City, CA	earthquake	0.55	0.55	0.11	21	reviewed	nc	nc
2/12/2019	15:08:40	35.8391667	-119.8491667	0.19	2.61	md	45	193	0.1975	0.12	nc	nc73141135	2019-02-13T07:09:04.446Z	21km SSE of Kettleman City, CA	earthquake	0.67	0.62	0.217	50	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
2/11/2019	13:07:02	36.1945	-120.2456667	14.42	2.92	ml	51	104	0.1728	0.11	nc	nc73140750	2019-02-17T19:57:03.403Z	12km ENE of Coalinga, CA	earthquake	0.26	1.07	0.191	27	reviewed	nc	nc
2/10/2019	12:09:55	36.0553333	-120.6325	-0.01	2.38	md	59	50	0.03235	0.13	nc	nc73140545	2019-02-12T03:19:04.391Z	25km E of San Ardo, CA	earthquake	0.18	0.4	0.198	49	reviewed	nc	nc
2/2/2019	20:22:15	36.1841667	-120.2546667	10.85	2.41	md	39	100	0.17	0.08	nc	nc73139146	2019-02-08T06:56:03.613Z	10km ENE of Coalinga, CA	earthquake	0.31	1.11	0.129	36	reviewed	nc	nc
1/19/2019	9:10:36	36.0203333	-120.584	4.23	2.33	md	63	69	0.03993	0.08	nc	nc73134076	2019-03-27T02:05:42.790Z	19km NW of Parkfield, CA	earthquake	0.12	0.2	0.165	54	reviewed	nc	nc
1/17/2019	11:39:11	36.2355	-120.4183333	14.85	2.05	md	18	102	0.22	0.07	nc	nc73133686	2019-03-01T02:43:49.205Z	12km NNW of Coalinga, CA	earthquake	0.3	1.63	0.243	15	reviewed	nc	nc
1/11/2019	17:43:08	35.0808333	-118.9966667	17.39	2.84	ml	52	47	0.1441	0.2	ci	ci38422208	2019-01-15T10:31:30.339Z	16km NNW of Grapevine, CA	earthquake	0.18	0.47	0.137	125	reviewed	ci	ci
1/11/2019	13:04:07	34.8523333	-120.3958333	2.16	2.17	ml	32	91	0.0846	0.22	ci	ci38421896	2019-01-13T15:41:23.226Z	4km ESE of Orcutt, CA	earthquake	0.3	0.43	0.112	21	reviewed	ci	ci
1/11/2019	0:47:27	36.0115	-120.5763333	2.21	2.48	md	21	108	0.03227	0.06	nc	nc73131816	2019-03-27T01:24:38.342Z	18km NW of Parkfield, CA	earthquake	0.24	0.7	0.026	6	reviewed	nc	nc
1/11/2019	0:47:11	36.0113333	-120.5763333	4.09	2.86	md	67	108	0.03226	0.08	nc	nc73131821	2019-03-27T01:21:57.090Z	18km NW of Parkfield, CA	earthquake	0.14	0.19	0.183	55	reviewed	nc	nc
1/2/2019	20:06:28	35.8448333	-120.392	6.5	2.82	md	68	74	0.01017	0.06	nc	nc73129456	2019-03-21T23:56:55.380Z	7km SSE of Parkfield, CA	earthquake	0.13	0.19	0.149	61	reviewed	nc	nc
12/31/2018	19:45:06	35.04	-119.0388333	10.39	2.01	ml	31	65	0.1433	0.22	ci	ci38412096	2019-01-04T00:48:58.330Z	15km NW of Grapevine, CA	earthquake	0.32	0.85	0.12	24	reviewed	ci	ci
12/31/2018	13:48:44	36.106	-120.1796667	9.37	2.32	md	55	116	0.07233	0.11	nc	nc73128741	2019-03-01T02:41:36.190Z	12km NNW of Avenal, CA	earthquake	0.27	0.4	0.234	54	reviewed	nc	nc
12/24/2018	3:16:47	34.8525	-120.3941667	1.32	2.41	ml	31	89	0.08322	0.2	ci	ci38405048	2019-01-08T19:22:26.040Z	4km ESE of Orcutt, CA	earthquake	0.3	0.45	0.103	69	reviewed	ci	ci
12/23/2018	18:04:34	34.851	-120.3963333	1.42	3.23	ml	41	91	0.08524	0.2	ci	ci38404744	2019-02-23T20:22:42.040Z	4km ESE of Orcutt, CA	earthquake	0.23	0.36	0.124	234	reviewed	ci	ci
12/22/2018	1:23:42	35.2918333	-119.5918333	4.28	2.07	ml	26	117	0.1196	0.31	ci	ci38403032	2019-01-03T02:10:36.260Z	16km SW of Buttonwillow, CA	earthquake	0.7	31.61	0.155	48	reviewed	ci	ci
12/21/2018	19:36:43	35.975	-120.5351667	10.33	2.17	md	65	74	0.01333	0.07	nc	nc73125066	2018-12-22T04:47:04.241Z	13km NW of Parkfield, CA	earthquake	0.15	0.15	0.163	47	reviewed	nc	nc
12/3/2018	13:05:34	35.8526667	-120.3956667	5.05	2.46	md	60	79	0.01663	0.07	nc	nc73118631	2018-12-05T01:28:02.406Z	6km SSE of Parkfield, CA	earthquake	0.15	0.23	0.147	50	reviewed	nc	nc
11/29/2018	2:46:19	36.1818333	-120.2843333	9.91	2.81	md	43	117	0.1685	0.07	nc	nc73116906	2018-11-29T23:10:02.434Z	8km NE of Coalinga, CA	earthquake	0.22	0.66	0.157	100	reviewed	nc	nc
11/27/2018	17:29:57	36.0743333	-120.1931667	10.83	2.87	md	63	54	0.06897	0.08	nc	nc73116451	2018-11-28T04:12:11.610Z	10km NW of Avenal, CA	earthquake	0.2	0.38	0.147	90	reviewed	nc	nc
11/27/2018	16:00:51	36.0725	-120.1968333	10.69	2.5	md	60	86	0.07157	0.07	nc	nc73116431	2022-08-08T10:16:56.348Z	10km NW of Avenal, CA	earthquake	0.23	0.37	0.161	65	reviewed	nc	nc
11/27/2018	13:07:12	36.0735	-120.1881667	10.8	4	mw	92	51	0.06483	0.11	nc	nc73116386	2019-02-09T19:02:10.040Z	9km NW of Avenal, CA	earthquake	0.18	0.32		5	reviewed	nc	nc
11/12/2018	16:12:10	36.1631667	-120.1328333	8.4	2.15	md	39	182	0.1036	0.07	nc	nc73109946	2018-11-16T20:29:03.287Z	5km SSW of Huron, CA	earthquake	0.32	0.45	0.16	25	reviewed	nc	nc
11/11/2018	9:33:10	36.0345	-120.592	7.69	2.49	md	61	119	0.0344	0.08	nc	nc73109586	2018-11-17T04:45:03.654Z	21km NW of Parkfield, CA	earthquake	0.15	0.24	0.154	56	reviewed	nc	nc
11/9/2018	4:12:24	35.2266667	-118.8758333	14.06	2.98	ml	45	42	0.1064	0.19	ci	ci38354872	2019-01-21T16:42:59.040Z	5km WNW of Arvin, CA	earthquake	0.18	0.41	0.14	101	reviewed	ci	ci
11/8/2018	0:57:06	35.9875	-120.1201667	17.67	2.33	md	44	156	0.07387	0.13	nc	nc73108211	2018-11-08T04:35:02.492Z	2km SSE of Avenal, CA	earthquake	0.26	0.65	0.356	29	reviewed	nc	nc
11/2/2018	18:41:15	36.002	-120.1221667	16.26	2.26	md	43	152	0.05978	0.11	nc	nc73105441	2018-11-06T10:03:04.304Z	1km ESE of Avenal, CA	earthquake	0.35	0.64	0.147	22	reviewed	nc	nc
10/30/2018	15:39:32	35.94	-119.95	8.44	2.05	md	41	127	0.2524	0.19	nc	nc73103971	2018-10-31T23:36:22.143Z	8km S of Kettleman City, CA	earthquake	0.46	1.58	0.222	22	reviewed	nc	nc
10/29/2018	5:23:14	36.0698333	-120.6445	3.28	2.96	md	67	54	0.03916	0.1	nc	nc73103496	2019-01-21T14:29:37.040Z	24km ENE of San Ardo, CA	earthquake	0.18	0.35	0.133	56	reviewed	nc	nc
10/29/2018	5:22:12	36.0738333	-120.6433333	4.91	3.31	mw	76	53	0.03853	0.11	nc	nc73103501	2019-01-21T14:29:37.040Z	24km ENE of San Ardo, CA	earthquake	0.19	0.33		4	reviewed	nc	nc
10/17/2018	4:26:23	35.9848333	-120.546	6.41	2.1	mh	5	237	0.02799	0.02	nc	nc73098131	2018-10-17T23:39:55.623Z	14km NW of Parkfield, CA	earthquake	2.5	1.03		0	reviewed	nc	nc
10/3/2018	7:02:07	35.4811667	-120.0281667	6.4	2.05	ml	30	118	0.06822	0.25	ci	ci37377842	2018-10-23T16:35:00.959Z	15km N of Simmler, CA	earthquake	0.38	1.04	0.156	28	reviewed	ci	ci
10/2/2018	22:13:53	36.3671667	-120.243	6.38	2.07	md	21	143	0.0699	0.03	nc	nc73092731	2018-10-03T00:30:02.983Z	17km SSE of Cantua Creek, CA	earthquake	0.58	0.48	0.352	15	reviewed	nc	nc
10/1/2018	8:02:07	36.0803333	-120.1496667	14.34	2.02	md	49	128	0.03772	0.09	nc	nc73092121	2018-10-02T04:50:02.937Z	9km NNW of Avenal, CA	earthquake	0.43	0.53	0.364	42	reviewed	nc	nc
10/1/2018	7:26:15	36.079	-120.1496667	14.33	2.09	md	51	126	0.03706	0.1	nc	nc73092101	2018-10-02T01:10:03.313Z	8km NNW of Avenal, CA	earthquake	0.28	0.44	0.332	44	reviewed	nc	nc
9/8/2018	8:00:40	36.1525	-120.0641667	9.46	2.82	md	100	41	0.09843	0.14	nc	nc73082280	2018-09-11T00:40:03.419Z	7km SSE of Huron, CA	earthquake	0.24	0.32	0.132	71	reviewed	nc	nc
9/5/2018	23:53:59	34.987	-119.1326667	16.53	2.37	ml	44	58	0.1716	0.21	ci	ci38048863	2018-10-23T16:01:35.998Z	16km N of Pine Mountain Club, CA	earthquake	0.27	0.7	0.2	23	reviewed	ci	ci
9/5/2018	0:56:54	35.0411667	-119.1723333	-0.27	2.07	ml	34	51	0.2219	0.25	ci	ci38047759	2018-10-23T16:15:46.942Z	21km E of Maricopa, CA	earthquake	0.26	0.6	0.154	51	reviewed	ci	ci
9/3/2018	22:53:31	36.06	-120.2515	15.96	2.48	md	44	85	0.115	0.06	nc	nc73080205	2018-09-05T00:27:52.764Z	13km WNW of Avenal, CA	earthquake	0.26	0.82	0.206	49	reviewed	nc	nc
8/25/2018	17:15:58	35.4146667	-119.5938333	8.46	2.05	ml	29	94	0.2027	0.23	ci	ci38259032	2018-08-27T18:08:40.310Z	11km W of Buttonwillow, CA	earthquake	0.34	1.25	0.101	33	reviewed	ci	ci
8/25/2018	14:21:38	35.4201667	-119.584	1.52	2.28	ml	33	95	0.2116	0.24	ci	ci38258856	2018-08-27T17:26:22.313Z	11km WNW of Buttonwillow, CA	earthquake	0.34	1.3	0.157	57	reviewed	ci	ci
8/24/2018	6:58:45	36.0206667	-120.0111667	8.16	2.06	md	49	211	0.08939	0.11	nc	nc73075050	2018-08-24T19:00:03.311Z	5km WNW of Kettleman City, CA	earthquake	0.44	0.28	0.156	34	reviewed	nc	nc
8/24/2018	0:45:39	36.0296667	-119.984	9.41	2.81	md	55	123	0.1065	0.11	nc	nc73074930	2018-08-24T03:18:02.770Z	3km NW of Kettleman City, CA	earthquake	0.27	0.36	0.125	63	reviewed	nc	nc
8/22/2018	2:03:52	35.4113333	-118.7316667	3.65	2.38	ml	39	63	0.1639	0.18	ci	ci38255520	2018-08-22T14:39:23.660Z	24km NE of Lamont, CA	earthquake	0.22	0.87	0.131	75	reviewed	ci	ci
8/14/2018	21:52:11	35.8981667	-120.4458333	6.58	3.49	mw	74	37	0.01034	0.07	nc	nc73069930	2018-10-27T16:22:27.040Z	1km W of Parkfield, CA	earthquake	0.13	0.19		5	reviewed	nc	nc
8/14/2018	11:04:18	36.3538333	-119.853	16.24	2.25	md	31	283	0.4178	0.09	nc	nc73069765	2018-08-18T04:13:02.208Z	9km S of Riverdale, CA	earthquake	0.77	0.65	0.248	28	reviewed	nc	nc
8/1/2018	20:29:22	35.195	-118.9165	17.17	2.15	ml	43	62	0.09813	0.19	ci	ci38235200	2018-08-02T04:31:48.617Z	7km S of Lamont, CA	earthquake	0.21	0.53	0.127	62	reviewed	ci	ci
7/21/2018	3:25:34	35.1996667	-118.917	17.16	2.84	ml	51	62	0.1017	0.2	ci	ci38226496	2018-07-27T03:36:58.413Z	7km S of Lamont, CA	earthquake	0.19	0.6	0.134	193	reviewed	ci	ci
7/20/2018	12:06:53	35.9606667	-120.1151667	26.11	2.06	md	46	138	0.1698	0.17	nc	nc73050771	2018-07-21T00:29:03.110Z	5km SSE of Avenal, CA	earthquake	0.62	0.63	0.198	30	reviewed	nc	nc
7/12/2018	8:15:23	36.1013333	-120.2225	16.23	2.27	md	56	107	0.1937	0.07	nc	nc73043656	2018-07-12T23:09:04.019Z	13km ESE of Coalinga, CA	earthquake	0.25	0.57	0.209	53	reviewed	nc	nc
7/12/2018	8:06:39	36.1026667	-120.2291667	13.55	2.17	md	43	154	0.1924	0.08	nc	nc73043651	2018-07-12T20:25:03.132Z	12km ESE of Coalinga, CA	earthquake	0.57	0.83	0.212	28	reviewed	nc	nc
7/9/2018	8:12:25	36.0683333	-120.0643333	0.38	2.06	md	56	144	0.2607	0.16	nc	nc73042086	2018-07-11T01:11:03.603Z	9km NE of Avenal, CA	earthquake	0.39	0.5	0.263	47	reviewed	nc	nc
7/5/2018	15:48:52	35.0255	-119.0661667	9.38	2.82	ml	64	44	0.1467	0.26	ci	ci37274834	2018-07-27T03:13:14.697Z	15km NW of Grapevine, CA	earthquake	0.22	0.63	0.157	24	reviewed	ci	ci
7/5/2018	15:35:09	36.0395	-119.7406667	21.31	2.11	md	34	123	0.4037	0.08	nc	nc73040291	2018-07-06T02:12:03.019Z	18km WSW of Corcoran, CA	earthquake	0.42	0.62	0.113	19	reviewed	nc	nc
6/23/2018	10:13:31	34.9086667	-119.2835	5.99	2.18	ml	47	81	0.111	0.27	ci	ci37267642	2018-07-27T03:33:38.256Z	14km WNW of Pine Mountain Club, CA	earthquake	0.29	0.85	0.13	69	reviewed	ci	ci
6/21/2018	3:35:01	34.9055	-119.042	13.4	2.33	ml	57	46	0.08616	0.24	ci	ci37265962	2018-07-27T04:05:37.426Z	11km WSW of Grapevine, CA	earthquake	0.22	0.39	0.143	85	reviewed	ci	ci
6/18/2018	20:03:40	35.037	-119.0458333	9.85	2.63	ml	47	59	0.1442	0.24	ci	ci38200128	2022-08-08T04:57:41.887Z	15km NW of Grapevine, CA	earthquake	0.21	0.6	0.216	67	reviewed	ci	ci
6/17/2018	9:20:39	35.9075	-120.4911667	-0.63	2.56	md	67	36	0.0292	0.17	nc	nc73031566	2018-06-19T08:49:01.606Z	6km W of Parkfield, CA	earthquake	0.17	0.81	0.179	44	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/14/2018	5:41:05	36.171	-120.0506667	9.25	2.07	md	49	246	0.1197	0.11	nc	nc73030246	2018-06-14T18:10:01.688Z	6km SE of Huron, CA	earthquake	0.8	0.29	0.242	33	reviewed	nc	nc
5/29/2018	3:41:17	35.7953333	-120.3461667	9.84	2.04	md	61	56	0.02287	0.07	nc	nc73022030	2018-05-31T21:10:02.138Z	9km NNW of Cholame, CA	earthquake	0.14	0.3	0.204	41	reviewed	nc	nc
5/27/2018	14:21:19	35.7996667	-120.3483333	6.27	2.15	md	65	55	0.02749	0.06	nc	nc73021470	2018-05-31T06:41:01.757Z	10km NNW of Cholame, CA	earthquake	0.14	0.25	0.197	48	reviewed	nc	nc
5/27/2018	3:49:22	36.1763333	-120.2978333	8.48	2.63	md	52	138	0.1695	0.07	nc	nc73021330	2018-05-30T04:51:03.053Z	7km NE of Coalinga, CA	earthquake	0.29	0.72	0.147	77	reviewed	nc	nc
5/24/2018	15:24:17	35.0363333	-119.1396667	1.06	2.51	ml	45	62	0.2002	0.3	ci	ci37948519	2018-07-27T03:26:21.241Z	21km N of Pine Mountain Club, CA	earthquake	0.3	1.11	0.13	93	reviewed	ci	ci
5/23/2018	7:21:11	36.0288333	-120.5993333	4.82	2.41	md	72	73	0.03997	0.07	nc	nc73019655	2018-05-23T16:40:03.090Z	21km NW of Parkfield, CA	earthquake	0.16	0.22	0.189	60	reviewed	nc	nc
5/19/2018	4:45:02	35.0426667	-119.0433333	7.7	2.21	ml	49	60	0.1476	0.29	ci	ci37944151	2018-07-27T03:04:43.362Z	15km NW of Grapevine, CA	earthquake	0.27	1.07	0.118	66	reviewed	ci	ci
5/18/2018	1:20:50	36.1213333	-120.0786667	7.82	2.14	md	49	138	0.2831	0.08	nc	nc73017340	2018-05-18T04:55:02.988Z	9km SSE of Huron, CA	earthquake	0.25	0.73	0.204	33	reviewed	nc	nc
5/17/2018	23:47:25	36.121	-120.0741667	8.2	2.35	md	48	215	0.2856	0.08	nc	nc73017300	2018-05-18T04:13:02.760Z	9km SSE of Huron, CA	earthquake	0.44	0.92	0.204	42	reviewed	nc	nc
5/6/2018	4:07:49	34.789	-120.3301667	2.06	2.44	ml	33	91	0.0675	0.16	ci	ci38166096	2018-07-27T03:56:26.346Z	7km NW of Los Alamos, CA	earthquake	0.23	0.36	0.093	24	reviewed	ci	ci
5/3/2018	6:38:36	35.2545	-119.196	23.98	2.18	ml	42	64	0.1169	0.19	ci	ci38163056	2018-07-27T03:18:24.208Z	15km SSW of Rosedale, CA	earthquake	0.21	0.54	0.143	63	reviewed	ci	ci
4/30/2018	4:10:44	35.0903333	-118.981	17.85	2.17	ml	47	51	0.129	0.21	ci	ci38160784	2018-07-27T03:31:37.080Z	17km NNW of Grapevine, CA	earthquake	0.2	0.58	0.123	26	reviewed	ci	ci
4/28/2018	16:28:11	36.1483333	-120.2311667	8.75	2.53	md	55	128	0.1314	0.07	nc	nc73007816	2018-05-02T04:39:02.974Z	11km E of Coalinga, CA	earthquake	0.36	0.63	0.167	65	reviewed	nc	nc
4/20/2018	12:25:24	36.2578333	-120.418	7.57	2.22	md	55	94	0.08689	0.07	nc	nc73001796	2018-04-27T05:00:02.861Z	14km NNW of Coalinga, CA	earthquake	0.16	0.47	0.29	55	reviewed	nc	nc
4/20/2018	5:12:34	36.1168333	-120.1755	10.16	2.95	md	77	37	0.07712	0.07	nc	nc73001686	2018-07-17T02:05:32.040Z	12km SW of Huron, CA	earthquake	0.18	0.33	0.144	83	reviewed	nc	nc
4/19/2018	23:51:46	36.1406667	-120.1431667	13.37	2.92	md	48	149	0.08398	0.08	nc	nc73001591	2018-04-25T03:01:02.852Z	8km SSW of Huron, CA	earthquake	0.45	0.48	0.151	95	reviewed	nc	nc
4/19/2018	10:25:06	35.899	-119.7343333	20.04	2.15	md	40	136	0.3048	0.08	nc	nc73001271	2018-04-24T04:31:02.353Z	22km W of Alpaugh, CA	earthquake	0.35	0.3	0.134	24	reviewed	nc	nc
4/16/2018	16:36:48	35.0435	-119.0423333	7.73	3.78	mw	69	41	0.1478	0.31	ci	ci38149752	2018-07-27T03:30:44.409Z	15km NW of Grapevine, CA	earthquake	0.22	0.96		4	reviewed	ci	ci
4/8/2018	19:21:40	34.6773333	-119.9988333	1.01	2.04	ml	24	49	0.05164	0.15	ci	ci37911095	2018-07-27T02:06:30.401Z	10km NE of Santa Ynez, CA	earthquake	0.25	0.44	0.135	23	reviewed	ci	ci
4/6/2018	17:51:23	36.0603333	-120.2041667	9.98	2.57	md	66	65	0.0766	0.08	nc	nc72996141	2018-04-17T03:37:03.171Z	9km NW of Avenal, CA	earthquake	0.24	0.38	0.14	67	reviewed	nc	nc
4/6/2018	0:48:56	34.6788333	-119.9998333	2.13	2.53	ml	32	49	0.05032	0.16	ci	ci37908959	2018-07-27T03:39:13.629Z	10km NE of Santa Ynez, CA	earthquake	0.2	0.38	0.146	25	reviewed	ci	ci
4/5/2018	23:52:31	34.6796667	-119.9986667	0.77	2.3	ml	26	51	0.04932	0.18	ci	ci37908943	2018-07-27T03:25:02.407Z	10km NE of Santa Ynez, CA	earthquake	0.26	0.5	0.111	24	reviewed	ci	ci
4/5/2018	20:39:41	35.5186667	-120.0788333	11.99	2.61	md	66	113	0.05054	0.09	nc	nc72995851	2018-04-14T04:52:03.475Z	20km NNW of Simmler, CA	earthquake	0.21	0.4	0.132	52	reviewed	nc	nc
4/5/2018	20:22:41	35.5256667	-120.0695	12.2	2.93	ml	68	71	0.05277	0.08	nc	nc72995846	2018-04-06T19:44:46.062Z	20km NNW of Simmler, CA	earthquake	0.24	0.36	0.133	13	reviewed	nc	nc
4/4/2018	5:41:24	34.6816667	-119.9965	0.55	2.33	ml	34	49	0.04706	0.21	ci	ci37906991	2018-07-27T03:45:42.249Z	11km NE of Santa Ynez, CA	earthquake	0.24	0.53	0.107	79	reviewed	ci	ci
4/2/2018	8:18:25	34.6848333	-120.0013333	0.4	2.27	ml	37	49	0.04475	0.24	ci	ci37905159	2018-07-27T03:29:59.858Z	11km E of Los Olivos, CA	earthquake	0.25	0.59	0.132	25	reviewed	ci	ci
3/26/2018	21:25:00	35.5495	-120.7705	5.76	2.23	md	59	97	0.1183	0.06	nc	nc72990315	2018-03-27T04:37:02.273Z	6km W of Templeton, CA	earthquake	0.16	0.88	0.181	42	reviewed	nc	nc
3/22/2018	19:27:36	36.006	-120.5655	4.34	2.6	md	68	56	0.02367	0.05	nc	nc72988781	2022-08-08T01:25:16.257Z	17km NW of Parkfield, CA	earthquake	0.16	0.15	0.112	49	reviewed	nc	nc
3/21/2018	20:05:05	36.1175	-120.1488333	9.03	2.3	md	43	124	0.06468	0.07	nc	nc72988356	2018-03-23T23:53:03.036Z	10km SSW of Huron, CA	earthquake	0.4	0.38	0.083	28	reviewed	nc	nc
3/12/2018	16:21:16	36.3583333	-119.8003333	13.87	2.26	md	24	101	0.3881	0.23	nc	nc72982946	2018-03-13T07:07:03.289Z	7km NNW of Lemoore, CA	earthquake	1.09	1.5	0.19	15	reviewed	nc	nc
3/9/2018	5:11:49	35.7993333	-120.3495	8.18	2.69	md	77	55	0.02742	0.07	nc	nc72981466	2018-03-10T00:00:49.316Z	10km NNW of Cholame, CA	earthquake	0.12	0.23	0.12	63	reviewed	nc	nc
3/8/2018	8:08:29	35.5585	-120.8688333	7.38	3.22	ml	75	119	0.07731	0.06	nc	nc72980896	2018-06-08T05:12:15.040Z	13km N of Cayucos, CA	earthquake	0.16	0.62	0.107	24	reviewed	nc	nc
3/7/2018	18:05:00	35.4871667	-120.0265	7.99	3.69	mw	52	34	0.1744	0.27	ci	ci37889959	2018-07-27T03:37:38.496Z	15km N of Simmler, CA	earthquake	0.28	1.52		6	reviewed	ci	ci
3/5/2018	17:13:55	36.0003333	-120.5746667	4.12	2	md	59	77	0.02763	0.09	nc	nc72979451	2018-03-13T22:48:02.573Z	17km NW of Parkfield, CA	earthquake	0.17	0.2	0.188	38	reviewed	nc	nc
2/24/2018	18:05:21	36.045	-120.6225	4.21	2.05	md	64	109	0.03192	0.08	nc	nc72975471	2022-08-08T00:35:42.931Z	24km NW of Parkfield, CA	earthquake	0.19	0.36	0.198	45	reviewed	nc	nc
2/19/2018	0:53:24	36.0033333	-120.5645	3.98	2.6	md	70	49	0.02342	0.08	nc	nc72971976	2018-02-22T00:00:04.599Z	17km NW of Parkfield, CA	earthquake	0.14	0.16	0.157	60	reviewed	nc	nc
2/10/2018	23:04:59	36.1786667	-120.1161667	10.72	2.36	md	54	164	0.1175	0.11	nc	nc72967476	2018-02-13T07:23:03.240Z	3km SSW of Huron, CA	earthquake	0.42	0.38	0.177	51	reviewed	nc	nc
2/6/2018	7:41:03	35.7053333	-119.2906667	16.25	2.36	ml	34	82	0.2153	0.24	ci	ci38100752	2018-02-07T23:37:50.800Z	6km WNW of McFarland, CA	earthquake	0.32	1.32	0.209	27	reviewed	ci	ci
2/6/2018	3:22:15	35.71	-119.2938333	17.82	2.76	ml	39	70	0.2144	0.27	ci	ci38100648	2018-02-07T22:53:27.773Z	7km WNW of McFarland, CA	earthquake	0.29	0.98	0.216	26	reviewed	ci	ci
2/6/2018	0:20:48	35.8561667	-120.0143333	11.68	2.72	md	70	132	0.1553	0.13	nc	nc72964966	2018-02-06T21:41:02.217Z	18km SSW of Kettleman City, CA	earthquake	0.4	0.53	0.132	76	reviewed	nc	nc
2/5/2018	6:43:15	36.041	-119.7465	22.46	3.48	mw	57	70	0.295	0.12	nc	nc72964596	2018-05-03T22:14:57.040Z	18km WSW of Corcoran, CA	earthquake	0.3	0.45		3	reviewed	nc	nc
2/2/2018	21:01:53	36.1398333	-120.2271667	10.5	2.54	md	74	35	0.1235	0.07	nc	nc72963306	2018-02-07T01:41:02.869Z	12km E of Coalinga, CA	earthquake	0.16	0.43	0.139	73	reviewed	nc	nc
2/1/2018	2:42:36	35.996	-120.5668333	4.27	2.06	md	59	119	0.02479	0.08	nc	nc72962121	2018-02-09T03:21:03.964Z	16km NW of Parkfield, CA	earthquake	0.18	0.2	0.168	42	reviewed	nc	nc
1/31/2018	3:37:04	36.2333333	-120.3685	13.32	2.08	md	66	95	0.1022	0.11	nc	nc72961616	2018-02-02T04:09:03.779Z	10km N of Coalinga, CA	earthquake	0.23	0.5	0.249	49	reviewed	nc	nc
1/31/2018	3:34:32	36.2355	-120.3733333	13.95	3.14	ml	93	32	0.1001	0.1	nc	nc72961611	2018-04-25T01:39:38.040Z	11km N of Coalinga, CA	earthquake	0.15	0.37	0.191	23	reviewed	nc	nc
1/28/2018	11:08:06	35.8081667	-119.5458333	5.77	2.16	ml	26	94	0.3762	0.3	ci	ci38093912	2018-01-30T04:48:02.039Z	10km SSW of Alpaugh, CA	earthquake	0.53	31.61	0.15	30	reviewed	ci	ci
1/26/2018	8:29:04	36.2506667	-119.768	21.05	2.91	ml	55	73	0.3195	0.12	nc	nc72958756	2018-01-27T17:17:37.057Z	6km SSE of Lemoore, CA	earthquake	0.33	0.42	0.186	18	reviewed	nc	nc
1/25/2018	21:55:31	35.5496667	-120.77	4.7	2.09	md	65	97	0.03949	0.05	nc	nc72958576	2018-01-31T06:16:04.410Z	6km W of Templeton, CA	earthquake	0.18	0.37	0.195	51	reviewed	nc	nc
1/22/2018	21:51:55	35.8658333	-119.8588333	5.85	2.32	md	50	238	0.2143	0.12	nc	nc72957191	2018-01-25T06:58:03.569Z	18km SSE of Kettleman City, CA	earthquake	0.92	0.92	0.242	46	reviewed	nc	nc
1/16/2018	6:43:54	36.059	-120.1558333	10.52	2.61	md	61	75	0.03749	0.09	nc	nc72954755	2018-01-17T04:52:02.632Z	7km NNW of Avenal, CA	earthquake	0.23	0.34	0.178	68	reviewed	nc	nc
1/15/2018	22:30:48	36.0433333	-120.6078333	9.94	2.32	md	68	96	0.02712	0.05	nc	nc72954600	2018-01-17T03:52:02.516Z	23km NW of Parkfield, CA	earthquake	0.17	0.26	0.175	61	reviewed	nc	nc
1/15/2018	16:17:20	36.0561667	-120.1126667	6.85	2.85	md	59	78	0.005441	0.1	nc	nc72954525	2022-08-07T23:06:54.113Z	6km NNE of Avenal, CA	earthquake	0.33	0.27	0.159	93	reviewed	nc	nc
1/15/2018	2:22:44	36.0611667	-120.1533333	10.71	2.78	md	61	97	0.03541	0.08	nc	nc72954230	2022-08-07T23:06:10.976Z	7km NNW of Avenal, CA	earthquake	0.2	0.28	0.188	88	reviewed	nc	nc
1/11/2018	0:15:13	36.1563333	-120.2298333	11.36	3.14	ml	62	132	0.1361	0.08	nc	nc72952250	2018-04-03T01:40:25.040Z	12km E of Coalinga, CA	earthquake	0.19	0.53	0.145	19	reviewed	nc	nc
1/4/2018	18:17:22	36.0785	-119.9868333	22.73	2.68	md	85	51	0.101	0.23	nc	nc72948926	2018-01-10T05:56:03.312Z	8km NNW of Kettleman City, CA	earthquake	0.31	0.5	0.206	64	reviewed	nc	nc
1/2/2018	7:43:01	36.0805	-120.1111667	7.29	2.5	md	60	61	0.01947	0.08	nc	nc72947676	2018-01-09T18:53:02.616Z	9km N of Avenal, CA	earthquake	0.28	0.2	0.154	62	reviewed	nc	nc
12/28/2017	15:00:02	36.3546667	-120.0125	21.61	2.2	md	43	86	0.1791	0.16	nc	nc72945216	2017-12-30T06:25:02.260Z	12km SW of Lanare, CA	earthquake	0.52	0.46	0.272	35	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/14/2017	23:21:56	36.0093333	-119.7338333	22.73	2.57	md	43	91	0.3089	0.1	nc	nc72940091	2017-12-15T06:15:57.026Z	18km WSW of Corcoran, CA	earthquake	0.33	0.38	0.281	48	reviewed	nc	nc
12/14/2017	5:16:01	36.2313333	-120.4231667	9.5	2.08	md	49	107	0.1127	0.07	nc	nc72939666	2017-12-15T05:00:03.199Z	12km NNW of Coalinga, CA	earthquake	0.17	0.32	0.235	38	reviewed	nc	nc
12/13/2017	22:36:48	36.2655	-120.3531667	10.01	2.12	md	44	163	0.07142	0.11	nc	nc72939541	2017-12-15T04:45:05.160Z	14km N of Coalinga, CA	earthquake	0.36	0.56	0.151	31	reviewed	nc	nc
12/13/2017	22:34:28	36.2615	-120.3655	9.18	2.62	md	75	52	0.07419	0.1	nc	nc72939536	2017-12-19T01:05:03.524Z	13km N of Coalinga, CA	earthquake	0.15	0.27	0.18	91	reviewed	nc	nc
12/10/2017	3:04:08	35.1753333	-120.617	-0.27	2.16	md	19	76	0.02491	0.2	nc	nc72937811	2017-12-12T05:01:03.256Z	4km NNE of Pismo Beach, CA	earthquake	0.38	0.79	0.158	12	reviewed	nc	nc
12/5/2017	0:44:22	35.9506667	-119.7528333	21.73	2.96	ml	57	77	0.3096	0.13	nc	nc72935206	2022-08-07T21:55:02.546Z	20km ESE of Kettleman City, CA	earthquake	0.29	0.3	0.182	15	reviewed	nc	nc
11/28/2017	20:12:22	35.9123333	-120.4531667	5.04	2.35	md	31	54	0.01459	0.05	nc	nc72931890	2017-11-29T04:15:02.696Z	2 km NW of Parkfield, California	earthquake	0.26	0.29	0.109	15	reviewed	nc	nc
11/28/2017	20:12:08	35.9106667	-120.4548333	5.79	2.73	md	72	42	0.01663	0.05	nc	nc72931885	2017-11-29T07:09:51.886Z	2 km WNW of Parkfield, California	earthquake	0.12	0.15	0.18	70	reviewed	nc	nc
11/23/2017	4:55:50	35.9531667	-119.6996667	21.6	2.75	md	53	89	0.3494	0.13	nc	nc72929295	2017-11-28T05:05:02.887Z	20 km SW of Corcoran, California	earthquake	0.28	0.43	0.215	72	reviewed	nc	nc
11/17/2017	1:15:38	34.908	-119.4256667	12.36	2.49	ml	52	32	0.03363	0.28	ci	ci37813215	2017-11-23T02:04:30.968Z	17km S of Maricopa, CA	earthquake	0.36	0.66	0.177	25	reviewed	ci	ci
11/16/2017	18:50:16	35.7806664	-119.9690018	0.83	2.53	md	12	133	0.3536	0.28	nc	nc72925695	2022-08-07T21:17:24.739Z		earthquake	0.83	6.12	0.11	4	automatic	nc	nc
11/16/2017	3:44:03	35.7533333	-119.9141667	6.87	2.21	md	52	221	0.09869	0.11	nc	nc72925285	2017-11-18T06:16:03.537Z	25 km NW of Lost Hills, California	earthquake	0.37	0.48	0.271	49	reviewed	nc	nc
11/11/2017	17:01:53	36.0391667	-120.6161667	4.21	2.53	md	74	109	0.03372	0.07	nc	nc72922761	2017-11-13T23:16:02.367Z	22 km NW of Parkfield, California	earthquake	0.15	0.27	0.168	55	reviewed	nc	nc
11/11/2017	1:28:40	35.9685	-119.9038333	4.74	2.17	md	54	100	0.1907	0.17	nc	nc72922451	2017-11-13T21:37:02.600Z	6 km SE of Kettleman City, California	earthquake	0.43	0.94	0.143	31	reviewed	nc	nc
11/11/2017	1:10:24	35.935	-119.9328333	13.05	2.38	md	59	114	0.1907	0.13	nc	nc72922436	2017-11-18T05:30:03.429Z	8 km SSE of Kettleman City, California	earthquake	0.52	0.82	0.305	49	reviewed	nc	nc
11/4/2017	17:49:37	36.0241667	-120.0086667	12.83	2.36	md	63	129	0.08972	0.12	nc	nc72919136	2017-11-09T01:58:05.449Z	4 km WNW of Kettleman City, California	earthquake	0.44	0.25	0.243	49	reviewed	nc	nc
10/25/2017	3:16:44	35.926	-120.476	5.1	2.11	md	63	59	0.02095	0.05	nc	nc72913591	2017-10-25T18:41:02.838Z	4 km NW of Parkfield, California	earthquake	0.1	0.13	0.196	47	reviewed	nc	nc
10/21/2017	0:50:04	36.1546667	-120.2293333	10.39	2.83	md	78	56	0.1346	0.08	nc	nc72912066	2017-10-21T05:41:02.117Z	11 km E of Coalinga, California	earthquake	0.19	0.35	0.154	95	reviewed	nc	nc
10/11/2017	15:16:30	36.051	-120.6175	4.59	2.44	md	69	46	0.02478	0.08	nc	nc72907751	2017-10-13T05:17:02.000Z	Central California	earthquake	0.15	0.21	0.189	63	reviewed	nc	nc
9/26/2017	13:14:02	36.1555	-120.2285	11.25	2.34	md	60	132	0.1347	0.09	nc	nc72899196	2017-09-28T03:47:02.493Z	11 km E of Coalinga, California	earthquake	0.18	0.5	0.243	69	reviewed	nc	nc
9/23/2017	6:20:38	36.0618333	-119.6555	9.09	2.11	md	36	62	0.3402	0.13	nc	nc72897231	2017-09-25T22:34:03.978Z	9 km WSW of Corcoran, California	earthquake	0.39	0.96	0.153	20	reviewed	nc	nc
9/23/2017	0:50:20	36.0486667	-119.6401667	19.79	2.19	md	28	141	0.3426	0.07	nc	nc72897126	2017-09-23T06:29:02.813Z	9 km SW of Corcoran, California	earthquake	0.68	0.42	0.138	17	reviewed	nc	nc
9/22/2017	0:37:40	34.7306667	-120.1718333	1.72	2.86	ml	43	44	0.08918	0.17	ci	ci38007600	2017-10-26T21:28:48.951Z	9km NW of Los Olivos, CA	earthquake	0.17	0.33	0.152	24	reviewed	ci	ci
9/21/2017	1:54:24	35.9843333	-120.541	10.27	2.06	md	72	56	0.01306	0.06	nc	nc72896001	2017-09-22T01:41:03.804Z	13 km NW of Parkfield, California	earthquake	0.12	0.17	0.164	57	reviewed	nc	nc
9/20/2017	13:22:08	36.06	-119.6465	20.18	2.38	md	45	87	0.3369	0.15	nc	nc72895721	2017-09-21T01:31:03.276Z	8 km WSW of Corcoran, California	earthquake	0.66	0.59	0.232	33	reviewed	nc	nc
9/15/2017	11:12:56	35.0328333	-119.3031667	11.48	3.23	ml	69	52	0.1293	0.31	ci	ci37763407	2017-12-13T02:29:45.040Z	9km ESE of Maricopa, CA	earthquake	0.26	0.9	0.172	296	reviewed	ci	ci
9/15/2017	10:03:00	36.2918333	-120.1061667	27.69	2.13	md	31	203	0.1646	0.14	nc	nc72892606	2017-09-22T05:42:02.240Z	9 km N of Huron, California	earthquake	0.89	0.94	0.126	18	reviewed	nc	nc
9/11/2017	21:09:40	35.4278333	-118.9401667	21.14	2.29	ml	38	58	0.06754	0.22	ci	ci37760359	2022-08-07T17:09:15.869Z	7km E of Oildale, CA	earthquake	0.23	0.61	0.135	55	reviewed	ci	ci
9/11/2017	6:52:52	34.906	-119.403	11.64	2.02	ml	42	65	0.03501	0.22	ci	ci37759927	2017-10-26T23:41:39.289Z	17km S of Maricopa, CA	earthquake	0.3	0.54	0.113	24	reviewed	ci	ci
8/29/2017	20:38:42	36.3048333	-120.3428333	0.42	2.12	md	30	205	0.03788	0.09	nc	nc72881135	2017-09-01T00:21:03.732Z	18 km N of Coalinga, California	earthquake	0.41	0.7	0.334	22	reviewed	nc	nc
8/29/2017	6:42:00	34.7303333	-120.173	2.22	2.45	ml	46	47	0.08824	0.18	ci	ci37987288	2022-08-07T15:57:02.927Z	9km NW of Los Olivos, CA	earthquake	0.2	0.39	0.163	23	reviewed	ci	ci
8/24/2017	20:12:28	36.369	-119.734	23.77	2.37	md	30	142	0.5145	0.17	nc	nc72876555	2017-08-26T06:00:03.180Z	3 km NW of Grangeville, California	earthquake	1.02	8.4	0.252	25	reviewed	nc	nc
8/15/2017	18:42:33	36.0218333	-120.5935	4.31	2.13	md	68	75	0.0426	0.09	nc	nc72869045	2017-08-23T02:43:01.977Z	19 km NW of Parkfield, California	earthquake	0.15	0.21	0.173	56	reviewed	nc	nc
8/12/2017	8:40:00	36.2983333	-120.3228333	8.2	3.39	mw	61	110	0.05154	0.09	nc	nc72867256	2017-10-25T00:38:09.040Z	17 km N of Coalinga, California	earthquake	0.21	0.27		9	reviewed	nc	nc
8/7/2017	1:55:39	35.8856667	-120.0371667	41.67	2.07	md	22	276	0.1666	0.2	nc	nc72862901	2017-08-16T04:46:02.783Z	15 km SSW of Kettleman City, California	earthquake	2.61	2.35	0.189	8	reviewed	nc	nc
7/24/2017	5:19:58	35.4968333	-119.017	15.63	2.17	ml	29	57	0.1553	0.2	ci	ci37711063	2017-10-26T22:42:48.515Z	9km N of Oildale, CA	earthquake	0.23	0.47	0.157	51	reviewed	ci	ci
7/18/2017	17:47:31	36.0203333	-120.5805	4.12	2.77	md	83	120	0.03721	0.06	nc	nc72841481	2022-08-07T12:12:03.767Z	18 km NW of Parkfield, California	earthquake	0.11	0.14	0.172	73	reviewed	nc	nc
7/17/2017	8:13:13	36.1585	-120.2736667	14.16	2.73	md	54	116	0.0753	0.07	nc	nc72840226	2017-07-28T00:29:02.707Z	8 km ENE of Coalinga, California	earthquake	0.21	0.35	0.192	92	reviewed	nc	nc
7/11/2017	20:05:22	36.2933333	-119.6806667	23.32	2.21	md	26	120	0.2426	0.13	nc	nc72834431	2017-07-13T05:54:02.350Z	3 km SE of Armona, California	earthquake	0.64	0.45	0.06	9	reviewed	nc	nc
7/11/2017	5:14:44	36.066	-120.2233333	17.02	2.06	md	45	92	0.09226	0.06	nc	nc72833821	2017-07-20T17:17:03.472Z	10 km NW of Avenal, California	earthquake	0.34	0.57	0.173	37	reviewed	nc	nc
7/3/2017	17:22:59	35.8585	-119.9931667	9.81	2.48	md	63	111	0.1694	0.13	nc	nc72826441	2017-07-05T19:43:02.043Z	16 km S of Kettleman City, California	earthquake	0.41	0.54	0.167	60	reviewed	nc	nc
7/3/2017	16:55:15	35.868	-119.9595	13.82	2.14	md	35	133	0.185	0.07	nc	nc72826421	2017-07-12T23:20:03.642Z	15 km S of Kettleman City, California	earthquake	0.64	1.12	0.2	38	reviewed	nc	nc
7/3/2017	14:42:32	35.8493333	-120.011	11.07	2.86	md	75	96	0.1526	0.14	nc	nc72826371	2017-07-03T23:37:42.767Z	18 km SSW of Kettleman City, California	earthquake	0.33	0.49	0.115	90	reviewed	nc	nc
6/30/2017	15:05:13	35.9683333	-120.5241667	10.75	2.46	md	75	40	0.01421	0.07	nc	nc72824251	2017-07-01T04:43:02.039Z	11 km NW of Parkfield, California	earthquake	0.17	0.15	0.17	64	reviewed	nc	nc
6/22/2017	12:02:53	36.3013333	-119.7206667	16.11	2.18	md	25	308	0.6215	0.06	nc	nc72819391	2017-06-24T06:35:02.097Z	1 km SW of Armona, California	earthquake	0.57	0.96	0.124	11	reviewed	nc	nc
6/16/2017	4:43:14	34.8453333	-120.4921667	0.76	2.19	ml	34	116	0.1082	0.23	ci	ci37910576	2017-06-19T23:37:15.830Z	6km WSW of Orcutt, CA	earthquake	0.28	0.46	0.16	25	reviewed	ci	ci
6/13/2017	19:19:10	34.8571667	-119.2443333	9.1	2.34	ml	57	58	0.09282	0.23	ci	ci37670927	2017-06-19T23:34:56.656Z	9km W of Pine Mountain Club, CA	earthquake	0.26	0.48	0.116	20	reviewed	ci	ci
6/7/2017	9:32:27	35.8408333	-119.8468333	-0.45	2.04	md	54	195	0.2	0.1	nc	nc72811966	2017-06-08T00:40:03.789Z	21 km SSE of Kettleman City, California	earthquake	0.73	0.44	0.135	38	reviewed	nc	nc
5/30/2017	14:23:37	35.836	-119.7936667	6.24	2.03	md	48	120	0.2267	0.1	nc	nc72808291	2017-05-31T01:16:03.616Z	24 km SE of Kettleman City, California	earthquake	0.33	0.64	0.096	25	reviewed	nc	nc
5/22/2017	1:22:41	35.5856667	-120.7685	4.92	2.45	md	81	52	0.04797	0.07	nc	nc72804351	2017-05-23T00:28:02.804Z	6 km NW of Templeton, California	earthquake	0.13	0.48	0.174	58	reviewed	nc	nc
4/23/2017	11:14:47	36.1496667	-120.0451667	6.7	2.18	md	49	151	0.2697	0.12	nc	nc72792756	2017-04-25T05:41:03.645Z	7 km SE of Huron, California	earthquake	0.39	1.16	0.169	38	reviewed	nc	nc
4/22/2017	19:57:36	36.122	-120.0845	9.22	2.59	md	66	126	0.06416	0.08	nc	nc72792476	2017-04-26T23:52:03.035Z	9 km S of Huron, California	earthquake	0.29	0.17	0.18	79	reviewed	nc	nc
4/22/2017	19:41:43	36.1233333	-120.07	9.7	3.09	ml	94	45	0.06997	0.1	nc	nc72792471	2017-07-11T01:48:41.040Z	9 km SSE of Huron, California	earthquake	0.17	0.22	0.243	24	reviewed	nc	nc
4/16/2017	14:45:36	35.2283333	-120.698	5.11	2.19	md	58	54	0.04387	0.08	nc	nc72789566	2017-04-20T02:51:03.749Z	6 km NNE of Avila Beach, California	earthquake	0.11	0.24	0.17	43	reviewed	nc	nc
4/12/2017	21:17:29	35.4103333	-118.7323333	6.46	2.09	ml	49	42	0.1631	0.16	ci	ci37855864	2017-05-16T18:29:59.504Z	24km NE of Lamont, CA	earthquake	0.18	0.78	0.185	24	reviewed	ci	ci
4/8/2017	0:44:10	36.3133333	-120.2675	6.04	2	md	33	141	0.08577	0.09	nc	nc72786151	2017-04-08T05:07:02.203Z	19 km NW of Huron, California	earthquake	0.6	0.34	0.148	30	reviewed	nc	nc
4/7/2017	7:49:28	35.9646667	-120.5203333	10.32	2.31	md	65	60	0.01614	0.05	nc	nc72785906	2017-04-07T21:33:03.055Z	10 km NW of Parkfield, California	earthquake	0.12	0.14	0.14	51	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
4/4/2017	20:17:45	36.0756667	-120.2086667	13.02	2.07	md	48	126	0.08155	0.13	nc	nc72784581	2017-04-05T23:10:02.951Z	10 km NW of Avenal, California	earthquake	0.34	0.68	0.21	31	reviewed	nc	nc
3/30/2017	20:15:18	35.7983333	-120.3475	10.2	2.82	md	72	55	0.02603	0.07	nc	nc72782756	2017-03-31T07:16:03.174Z	13 km SE of Parkfield, California	earthquake	0.14	0.24	0.15	71	reviewed	nc	nc
3/24/2017	9:26:44	35.9678333	-120.5236667	10.69	2.22	md	73	60	0.0144	0.06	nc	nc72780066	2017-03-25T05:22:03.256Z	11 km NW of Parkfield, California	earthquake	0.11	0.16	0.119	55	reviewed	nc	nc
3/20/2017	13:56:07	35.959	-120.514	4.97	2.16	md	67	41	0.01286	0.07	nc	nc72778656	2017-03-21T02:39:04.197Z	9 km NW of Parkfield, California	earthquake	0.12	0.12	0.179	48	reviewed	nc	nc
3/19/2017	13:04:39	36.0935	-120.2201667	9.16	2.64	md	55	153	0.1227	0.08	nc	nc72778121	2017-03-20T22:37:01.694Z	12 km NW of Avenal, California	earthquake	0.19	0.55	0.182	72	reviewed	nc	nc
3/17/2017	14:12:04	36.0993333	-120.2106667	8.48	2.64	md	67	157	0.09033	0.07	nc	nc72777126	2017-03-18T05:07:02.207Z	12 km NW of Avenal, California	earthquake	0.26	0.45	0.163	70	reviewed	nc	nc
3/17/2017	14:10:15	36.1016667	-120.2055	8.13	2.35	md	48	187	0.1325	0.09	nc	nc72777121	2017-03-17T18:44:01.473Z	12 km NNW of Avenal, California	earthquake	0.54	0.52	0.129	39	reviewed	nc	nc
3/17/2017	4:26:00	36.0931667	-120.222	8.43	2.31	md	51	157	0.1212	0.06	nc	nc72776896	2017-03-17T18:59:02.506Z	12 km NW of Avenal, California	earthquake	0.18	0.5	0.252	54	reviewed	nc	nc
3/17/2017	0:44:10	36.0928333	-120.216	8.28	2.15	md	48	142	0.1261	0.08	nc	nc72776831	2017-03-18T04:36:02.156Z	12 km NW of Avenal, California	earthquake	0.47	0.59	0.296	45	reviewed	nc	nc
3/16/2017	22:46:10	36.0958333	-120.2066667	9.6	2.55	md	47	141	0.08594	0.1	nc	nc72776771	2017-03-18T02:05:03.359Z	12 km NW of Avenal, California	earthquake	0.32	0.45	0.139	62	reviewed	nc	nc
3/16/2017	22:23:51	36.0826667	-120.234	8.81	2.81	md	33	177	0.103	0.06	nc	nc72776761	2017-03-17T06:04:02.062Z	12 km NW of Avenal, California	earthquake	0.32	0.64	0.152	24	reviewed	nc	nc
3/16/2017	15:52:16	36.0908333	-120.2221667	7.53	2.63	md	62	74	0.1212	0.08	nc	nc72776506	2017-03-17T07:03:03.145Z	12 km NW of Avenal, California	earthquake	0.38	0.26	0.172	64	reviewed	nc	nc
3/16/2017	15:50:28	36.0993333	-120.2145	8.83	3.31	ml	63	103	0.09315	0.07	nc	nc72776501	2022-06-16T17:52:45.017Z	13 km NW of Avenal, California	earthquake	0.26	0.44	0.161	42	reviewed	nc	nc
3/16/2017	1:09:53	34.7278333	-120.1726667	0.4	2.4	ml	36	45	0.0887	0.24	ci	ci37830608	2017-05-16T18:33:03.673Z	8km NW of Los Olivos, CA	earthquake	0.24	0.65	0.13	59	reviewed	ci	ci
3/14/2017	3:36:40	35.8806667	-120.0503333	16.08	2.28	md	52	106	0.1567	0.1	nc	nc72775101	2017-03-16T03:39:03.150Z	15 km SSE of Avenal, California	earthquake	0.42	0.46	0.26	34	reviewed	nc	nc
3/13/2017	14:39:04	35.8795	-120.0611667	15.45	3.52	mw	66	70	0.1514	0.17	nc	nc72774671	2017-06-07T00:33:37.040Z	15 km SSE of Avenal, California	earthquake	0.33	0.42		9	reviewed	nc	nc
3/12/2017	19:33:52	35.3166667	-120.8416667	10.16	2.01	md	53	105	0.01932	0.12	nc	nc72773576	2017-03-15T04:42:02.728Z	1 km NW of Los Osos, California	earthquake	0.22	0.43	0.287	35	reviewed	nc	nc
3/12/2017	17:22:23	35.9976667	-120.5558333	10.3	2.11	md	67	30	0.01951	0.07	nc	nc72773541	2017-03-15T04:27:03.687Z	15 km NW of Parkfield, California	earthquake	0.14	0.19	0.163	53	reviewed	nc	nc
3/12/2017	15:51:30	35.883	-120.0476667	16.45	2.83	md	66	69	0.1598	0.14	nc	nc72773461	2017-03-13T20:37:02.101Z	15 km SSE of Avenal, California	earthquake	0.19	0.38	0.15	68	reviewed	nc	nc
3/12/2017	15:16:55	35.8858333	-120.0411667	16.76	2.22	md	51	108	0.165	0.1	nc	nc72773416	2017-03-15T01:10:03.299Z	15 km SSE of Avenal, California	earthquake	0.41	0.47	0.191	41	reviewed	nc	nc
3/3/2017	3:33:45	35.8423333	-120.3825	3.89	2.36	md	63	59	0.02599	0.06	nc	nc72769931	2017-03-03T23:51:04.623Z	7 km SE of Parkfield, California	earthquake	0.11	0.21	0.209	49	reviewed	nc	nc
2/26/2017	22:58:05	35.5756667	-120.7716667	2.17	2	md	61	39	0.04485	0.07	nc	nc72768341	2017-03-01T03:00:04.975Z	6 km WNW of Templeton, California	earthquake	0.14	0.61	0.228	45	reviewed	nc	nc
2/23/2017	17:04:44	35.5586667	-120.7973333	5.03	2.49	md	66	42	0.09717	0.06	nc	nc72767101	2017-02-23T18:59:15.132Z	8 km W of Templeton, California	earthquake	0.15	0.63	0.155	51	reviewed	nc	nc
2/22/2017	3:08:03	35.9928333	-119.8091667	21.72	2.16	md	31	260	0.3443	0.14	nc	nc72766471	2017-02-23T03:52:04.298Z	13 km E of Kettleman City, California	earthquake	1.94	0.48	0.208	18	reviewed	nc	nc
2/21/2017	8:35:49	36.3068333	-119.6675	3.09	2.46	md	35	126	0.2308	0.12	nc	nc72766216	2017-02-23T00:45:03.743Z	2 km W of Home Garden, California	earthquake	0.45	0.89	0.156	25	reviewed	nc	nc
2/20/2017	14:21:03	35.9218333	-120.474	4.9	2.27	md	43	73	0.03424	0.05	nc	nc72765911	2017-02-23T03:44:02.282Z	4 km WNW of Parkfield, California	earthquake	0.17	0.18	0.124	25	reviewed	nc	nc
2/11/2017	21:49:42	35.5568333	-120.7953333	4.71	2.01	md	60	44	0.05964	0.06	nc	nc72762976	2017-02-14T04:27:04.630Z	8 km W of Templeton, California	earthquake	0.12	0.35	0.222	41	reviewed	nc	nc
2/10/2017	4:55:04	35.57	-120.8318333	4.97	2.71	md	59	39	0.0709	0.08	nc	nc72762396	2017-02-13T19:31:02.924Z	11 km W of Templeton, California	earthquake	0.16	0.5	0.13	52	reviewed	nc	nc
2/5/2017	7:36:44	36.3068333	-119.9993333	14.31	2.06	md	22	234	0.2129	0.15	nc	nc72759925	2017-02-07T04:33:04.359Z	9 km WNW of Lemoore Station, California	earthquake	1.05	2.64	0.275	22	reviewed	nc	nc
2/3/2017	5:21:24	35.546	-120.8748333	6.32	2.06	md	56	42	0.02866	0.08	nc	nc72759300	2017-02-11T02:21:03.955Z	11 km N of Cayucos, California	earthquake	0.16	0.4	0.231	44	reviewed	nc	nc
1/29/2017	20:05:07	36.1328333	-120.2121667	10.73	2.07	md	41	130	0.1097	0.07	nc	nc72757700	2017-02-04T00:19:03.028Z	12 km SW of Huron, California	earthquake	0.25	0.42	0.194	30	reviewed	nc	nc
1/27/2017	14:35:34	35.563	-120.8008333	3.66	2.14	md	55	42	0.09108	0.07	nc	nc72756695	2017-02-02T19:07:03.034Z	8 km W of Templeton, California	earthquake	0.16	0.71	0.218	47	reviewed	nc	nc
1/23/2017	17:51:55	36.063	-120.6278333	5.96	2.5	md	66	41	0.02629	0.1	nc	nc72755440	2017-02-01T02:35:02.871Z	25 km NW of Parkfield, California	earthquake	0.18	0.32	0.207	53	reviewed	nc	nc
1/11/2017	20:09:05	35.8273333	-119.268	18.93	2.3	ml	27	88	0.1496	0.21	ci	ci37784024	2017-02-08T21:18:08.759Z	7km NNW of Delano, CA	earthquake	0.26	0.65	0.149	23	reviewed	ci	ci
1/8/2017	15:49:35	36.2421667	-119.3415	34.31	2.76	md	11	104	0.08527	0.13	nc	nc72750005	2017-01-20T02:49:01.990Z	Central California	earthquake	0.79	0.67	0.145	18	reviewed	nc	nc
1/7/2017	17:24:48	35.9776667	-120.534	10.52	2.18	md	53	58	0.01461	0.06	nc	nc72749625	2017-01-11T21:37:01.925Z	12 km NW of Parkfield, California	earthquake	0.13	0.18	0.192	40	reviewed	nc	nc
1/3/2017	5:21:01	36.1636667	-119.858	19.68	2.4	md	49	84	0.3108	0.17	nc	nc72747395	2017-01-05T19:48:03.252Z	4 km SW of Stratford, California	earthquake	0.31	0.58	0.2	35	reviewed	nc	nc
12/31/2016	21:26:25	36.0343333	-120.5898333	7.94	2.37	md	80	46	0.03514	0.05	nc	nc72746655	2017-02-11T12:36:32.830Z	20 km NW of Parkfield, California	earthquake	0.12	0.18	0.157	71	reviewed	nc	nc
12/29/2016	18:08:46	36.0458333	-120.6103333	8.68	2.43	md	76	49	0.02613	0.05	nc	nc72745710	2017-02-11T12:25:19.760Z	22 km NW of Parkfield, California	earthquake	0.13	0.21	0.174	64	reviewed	nc	nc
12/22/2016	19:21:00	35.5126667	-120.7491667	3.68	2.08	md	67	38	0.1207	0.06	nc	nc72742730	2017-02-11T11:54:12.500Z	5 km SW of Templeton, California	earthquake	0.13	0.51	0.229	49	reviewed	nc	nc
12/19/2016	13:23:56	36.0326667	-120.5958333	4.88	2.2	md	63	45	0.03604	0.08	nc	nc72741460	2017-02-11T11:36:36.990Z	20 km NW of Parkfield, California	earthquake	0.18	0.26	0.157	51	reviewed	nc	nc
12/14/2016	18:13:03	35.5618333	-120.8018333	4.64	2.94	md	87	23	0.06486	0.07	nc	nc72738225	2017-03-09T02:14:31.040Z	8 km W of Templeton, California	earthquake	0.12	0.4	0.126	88	reviewed	nc	nc
12/14/2016	14:36:53	35.5606667	-120.8035	5.2	2.08	md	69	43	0.08829	0.06	nc	nc72737895	2017-02-11T10:33:36.200Z	8 km W of Templeton, California	earthquake	0.15	0.67	0.234	55	reviewed	nc	nc
12/14/2016	12:53:52	35.5583333	-120.808	5.22	2.29	md	75	32	0.08378	0.06	nc	nc72737835	2017-02-11T10:32:21.290Z	9 km W of Templeton, California	earthquake	0.13	0.48	0.211	61	reviewed	nc	nc
12/14/2016	11:58:39	35.5606667	-120.805	4.59	3.95	mw	83	43	0.06757	0.07	nc	nc72737765	2021-12-21T22:08:26.975Z	9 km W of Templeton, California	earthquake	0.13	0.43		4	reviewed	nc	nc
12/13/2016	21:39:34	35.9893333	-120.1246667	16.52	2.76	md	90	69	0.07297	0.15	nc	nc72736865	2017-02-11T10:13:21.620Z	1 km SSE of Avenal, California	earthquake	0.25	0.24	0.15	82	reviewed	nc	nc
12/11/2016	10:04:42	35.9658333	-120.1338333	15.46	2.34	md	60	179	0.1622	0.1	nc	nc72735735	2017-02-11T09:58:18.650Z	4 km S of Avenal, California	earthquake	0.36	0.62	0.208	55	reviewed	nc	nc
12/4/2016	6:48:39	36.0048333	-120.0831667	14.94	2.14	md	57	121	0.2189	0.12	nc	nc72732770	2017-02-11T09:11:50.780Z	4 km E of Avenal, California	earthquake	0.29	0.62	0.188	47	reviewed	nc	nc
12/4/2016	6:47:16	35.9801667	-120.1145	16.19	2.27	md	53	194	0.1829	0.1	nc	nc72732765	2017-02-11T09:11:37.000Z	2 km SSE of Avenal, California	earthquake	0.61	0.75	0.304	57	reviewed	nc	nc
12/4/2016	3:17:09	35.9876667	-120.1156667	17.54	2.76	ml	86	74	0.1874	0.12	nc	nc72732670	2017-02-11T09:10:36.130Z	2 km SSE of Avenal, California	earthquake	0.18	0.27	0.204	15	reviewed	nc	nc
11/28/2016	10:57:27	36.0086667	-120.579	3.51	2.19	md	67	39	0.03423	0.09	nc	nc72730300	2017-02-11T08:32:45.610Z	17 km NW of Parkfield, California	earthquake	0.12	0.19	0.188	49	reviewed	nc	nc
11/28/2016	10:56:48	36.0108333	-120.576	4.23	2.52	md	72	42	0.03153	0.08	nc	nc72730295	2017-02-11T08:32:34.470Z	17 km NW of Parkfield, California	earthquake	0.13	0.19	0.21	67	reviewed	nc	nc
11/25/2016	7:32:27	35.8073333	-119.2616667	18.01	2.02	ml	25	55	0.1477	0.27	ci	ci37749216	2017-02-08T21:34:47.294Z	4km NNW of Delano, CA	earthquake	0.51	1.07	0.213	24	reviewed	ci	ci
11/22/2016	21:27:21	35.0415	-119.1166667	17.53	2.19	ml	43	64	0.1882	0.2	ci	ci37747328	2017-02-08T20:31:07.663Z	20km WNW of Grapevine, CA	earthquake	0.2	0.65	0.16	59	reviewed	ci	ci
11/17/2016	15:20:55	36.0756667	-120.6448333	3.06	2.62	md	76	30	0.03964	0.09	nc	nc72726570	2017-02-11T07:32:35.280Z	24 km ENE of San Ardo, California	earthquake	0.14	0.36	0.233	73	reviewed	nc	nc
11/15/2016	20:15:20	36.2113333	-120.4101667	7.28	2.02	md	43	66	0.06667	0.06	nc	nc72725835	2017-02-11T07:21:46.710Z	9 km NNW of Coalinga, California	earthquake	0.2	0.37	0.232	46	reviewed	nc	nc
11/12/2016	3:47:47	36.0915	-119.8788333	15.39	2.04	md	49	110	0.3991	0.13	nc	nc72723880	2017-02-11T06:54:05.750Z	11 km NE of Kettleman City, California	earthquake	0.33	1.5	0.177	39	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/11/2016	10:24:53	34.9191667	-119.0778333	13.39	2.23	ml	52	66	0.114	0.22	ci	ci37737672	2017-02-08T21:29:48.409Z	10km NE of Pine Mountain Club, CA	earthquake	0.2	0.4	0.148	96	reviewed	ci	ci
10/29/2016	23:57:08	35.1011667	-119.1206667	20.8	2.77	ml	68	52	0.2326	0.24	ci	ci37513935	2017-02-08T21:02:41.842Z	25km NW of Grapevine, CA	earthquake	0.21	0.65	0.157	26	reviewed	ci	ci
10/23/2016	23:05:41	35.438	-119.2993333	25.14	2.07	ml	19	89	0.1846	0.21	ci	ci37510527	2016-10-24T18:02:24.018Z	7km SSW of Shafter, CA	earthquake	0.43	1.26	0.284	14	reviewed	ci	ci
10/16/2016	13:00:46	36.2041667	-120.1225	14.62	2.62	md	56	164	0.2288	0.12	nc	nc72713206	2017-02-11T03:49:32.600Z	1 km W of Huron, California	earthquake	0.45	0.74	0.23	70	reviewed	nc	nc
10/10/2016	4:31:09	36.2378333	-120.2988333	11.81	2.33	md	54	136	0.1135	0.08	nc	nc72710106	2017-02-11T03:07:38.180Z	12 km NNE of Coalinga, California	earthquake	0.23	0.38	0.191	66	reviewed	nc	nc
10/8/2016	14:01:25	36.2356667	-120.3608333	9.23	2.05	md	54	129	0.1009	0.06	nc	nc72709221	2017-02-11T02:53:31.550Z	10 km N of Coalinga, California	earthquake	0.17	0.24	0.154	55	reviewed	nc	nc
10/2/2016	22:37:15	35.9045	-120.4508333	5.71	3.02	ml	97	27	0.02162	0.07	nc	nc72706501	2017-02-11T02:20:35.420Z	1 km WNW of Parkfield, California	earthquake	0.1	0.15	0.276	22	reviewed	nc	nc
10/1/2016	7:53:29	36.2435	-120.36	10.79	3.52	mw	69	85	0.01532	0.08	nc	nc72705776	2017-03-18T00:03:35.692Z	11 km N of Coalinga, California	earthquake	0.23	0.38		3	reviewed	nc	nc
9/26/2016	0:49:26	36.115	-119.3566667	23.83	2.42	md	23	69	0.2072	0.19	nc	nc72702571	2017-02-11T01:40:05.780Z	6 km S of Matheny, California	earthquake	0.48	1.01	0.271	16	reviewed	nc	nc
9/21/2016	11:49:37	36.0333333	-120.5995	4.82	2	md	80	43	0.03604	0.06	nc	nc72700171	2017-02-11T01:12:03.040Z	21 km NW of Parkfield, California	earthquake	0.17	0.21	0.221	62	reviewed	nc	nc
9/17/2016	10:48:20	36.0615	-120.09	16.54	2.63	md	71	183	0.2306	0.09	nc	nc72697721	2017-02-11T00:45:08.180Z	7 km NNE of Avenal, California	earthquake	0.26	0.34	0.154	92	reviewed	nc	nc
9/17/2016	9:48:01	36.0598333	-120.0873333	12.05	2.18	md	85	112	0.2333	0.13	nc	nc72697691	2017-02-11T00:44:45.572Z	7 km NNE of Avenal, California	earthquake	0.27	0.73	0.242	88	reviewed	nc	nc
9/17/2016	9:41:52	36.0536667	-120.0905	17.65	3.19	ml	105	60	0.2315	0.16	nc	nc72697686	2017-02-11T00:44:32.330Z	6 km NNE of Avenal, California	earthquake	0.19	0.29	0.107	25	reviewed	nc	nc
9/7/2016	7:28:31	35.4425	-120.2306667	10.4	2.23	md	76	53	0.1	0.12	nc	nc72691146	2017-02-10T23:26:45.470Z	27 km SSE of Shandon, California	earthquake	0.16	0.39	0.24	57	reviewed	nc	nc
8/31/2016	8:43:46	34.8496667	-120.3986667	2.36	2.68	ml	44	62	0.06456	0.2	ci	ci37677168	2019-01-11T15:43:03.140Z	4km ESE of Orcutt, CA	earthquake	0.23	0.35	0.086	48	reviewed	ci	ci
8/30/2016	1:31:14	36.2956667	-120.0626667	35.15	2.24	md	31	169	0.4423	0.21	nc	nc72687486	2017-02-10T22:44:03.330Z	10 km NNE of Huron, California	earthquake	1.08	5.16	0.224	20	reviewed	nc	nc
8/27/2016	15:00:05	35.5065	-120.7596667	4.48	2.21	md	76	42	0.1108	0.06	nc	nc72686026	2017-02-10T22:28:52.090Z	6 km SW of Templeton, California	earthquake	0.12	0.54	0.184	65	reviewed	nc	nc
8/25/2016	1:52:45	35.7391667	-120.2965	12.74	2.41	md	84	41	0.03874	0.05	nc	nc72684676	2017-02-10T22:11:58.150Z	11 km NE of Shandon, California	earthquake	0.13	0.24	0.162	57	reviewed	nc	nc
7/31/2016	12:15:04	36.1673333	-120.1643333	10.32	2.17	md	82	194	0.1658	0.16	nc	nc72669931	2017-02-10T19:15:58.410Z	6 km SW of Huron, California	earthquake	0.44	0.67	0.213	81	reviewed	nc	nc
7/31/2016	1:50:26	34.9318333	-119.017	7.04	2.67	ml	50	47	0.1262	0.2	ci	ci37644008	2016-08-05T15:59:20.986Z	8km W of Grapevine, CA	earthquake	0.19	0.75	0.148	130	reviewed	ci	ci
7/20/2016	3:26:13	36.1583333	-120.272	12.46	2.11	md	58	146	0.1018	0.08	nc	nc72663686	2017-02-10T17:12:53.850Z	8 km ENE of Coalinga, California	earthquake	0.4	0.52	0.225	59	reviewed	nc	nc
7/17/2016	22:59:16	36.2835	-119.829	18.98	2.17	md	53	147	0.318	0.16	nc	nc72662716	2017-02-10T16:49:34.190Z	4 km WSW of Lemoore, California	earthquake	0.35	0.36	0.201	43	reviewed	nc	nc
7/12/2016	22:32:07	35.1663333	-119.3371667	22.09	3.02	ml	52	51	0.07044	0.21	ci	ci37413567	2022-09-27T17:39:55.138Z	11km ENE of Taft, CA	earthquake	0.24	0.72	0.166	143	reviewed	ci	ci
7/5/2016	6:03:32	35.5363333	-120.8526667	4.51	2.01	md	66	38	0.04414	0.06	nc	nc72658666	2017-02-10T15:48:35.100Z	10 km NNE of Cayucos, California	earthquake	0.18	0.37	0.203	56	reviewed	nc	nc
6/27/2016	12:06:50	35.977	-120.536	10.61	2.35	md	91	28	0.01261	0.06	nc	nc72655911	2017-02-10T15:17:39.510Z	12 km NW of Parkfield, California	earthquake	0.1	0.12	0.155	85	reviewed	nc	nc
6/23/2016	10:17:35	35.973	-120.5275	10.1	2.77	md	91	30	0.01261	0.06	nc	nc72654526	2017-02-10T14:58:16.850Z	Central California	earthquake	0.1	0.12	0.133	93	reviewed	nc	nc
6/20/2016	13:49:22	36.2303333	-120.3251667	8.91	2.02	md	50	116	0.02342	0.07	nc	nc72653451	2017-02-10T14:43:52.460Z	10 km NNE of Coalinga, California	earthquake	0.2	0.14	0.144	48	reviewed	nc	nc
6/18/2016	21:34:28	35.9816667	-119.7541667	7.4	2.17	md	68	110	0.2027	0.17	nc	nc72652861	2017-02-10T14:36:02.020Z	18 km E of Kettleman City, California	earthquake	0.38	0.74	0.183	50	reviewed	nc	nc
6/10/2016	19:52:50	36.0031667	-120.5635	4.07	2.53	md	83	46	0.02252	0.07	nc	nc72649486	2022-08-03T01:23:44.391Z	16 km NW of Parkfield, California	earthquake	0.13	0.14	0.178	70	reviewed	nc	nc
6/10/2016	18:48:00	36.092	-119.4081667	20.38	2.7	md	78	33	0.2306	0.15	nc	nc72649441	2022-08-03T01:25:35.256Z	9 km WNW of Tipton, California	earthquake	0.41	0.76	0.177	77	reviewed	nc	nc
6/5/2016	21:09:10	35.989	-119.8381667	22.73	2.82	md	92	51	0.1586	0.2	nc	nc72646721	2017-02-10T13:26:36.450Z	11 km E of Kettleman City, California	earthquake	0.31	0.49	0.23	89	reviewed	nc	nc
6/3/2016	11:39:33	35.7946667	-119.6785	0.08	2.39	ml	28	93	0.2854	0.3	ci	ci37368423	2016-06-04T06:36:03.632Z	20km WSW of Alpaugh, CA	earthquake	0.41	1.52	0.164	62	reviewed	ci	ci
6/2/2016	5:45:22	36.0466667	-120.6101667	2.94	2.54	md	91	30	0.02523	0.09	nc	nc72644576	2017-02-10T13:05:24.480Z	22 km NW of Parkfield, California	earthquake	0.12	0.21	0.197	76	reviewed	nc	nc
5/26/2016	16:50:07	35.5428333	-119.3651667	25.7	2.41	ml	39	48	0.2907	0.25	ci	ci37575616	2016-06-04T06:20:03.602Z	6km SSW of Wasco, CA	earthquake	0.34	1.08	0.252	26	reviewed	ci	ci
5/20/2016	14:38:45	35.2471667	-119.299	24.33	2.32	ml	36	68	0.1412	0.17	ci	ci37571400	2016-05-20T14:58:57.068Z	18km NE of Taft, CA	earthquake	0.22	0.69	0.166	48	reviewed	ci	ci
5/17/2016	22:58:06	35.9686667	-120.5261667	7.83	3.5	mw	92	30	0.01532	0.06	nc	nc72636855	2017-03-17T23:51:31.406Z	11 km NW of Parkfield, California	earthquake	0.1	0.13		4	reviewed	nc	nc
5/14/2016	11:20:51	35.8668333	-119.6985	18.42	2.61	md	84	65	0.3063	0.15	nc	nc72635560	2017-02-10T11:22:40.390Z	19 km W of Alpaugh, California	earthquake	0.23	0.34	0.189	68	reviewed	nc	nc
5/8/2016	7:55:00	35.998	-120.5626667	4.27	2.68	md	86	39	0.02432	0.1	nc	nc72632390	2017-02-10T10:37:28.520Z	16 km NW of Parkfield, California	earthquake	0.14	0.19	0.18	84	reviewed	nc	nc
5/7/2016	8:19:47	35.5468333	-119.3795	25.74	2.05	ml	34	74	0.302	0.25	ci	ci37560912	2016-05-18T17:08:23.065Z	6km SSW of Wasco, CA	earthquake	0.33	1	0.256	42	reviewed	ci	ci
5/5/2016	13:18:29	35.4243333	-120.7185	3.75	2.34	md	76	37	0.03333	0.06	nc	nc72631070	2017-02-10T10:18:02.600Z	8 km SSW of Atascadero, California	earthquake	0.12	0.31	0.178	58	reviewed	nc	nc
4/24/2016	12:37:26	35.0363333	-119.0553333	9.38	2.01	ml	35	60	0.2056	0.23	ci	ci37336111	2016-04-25T18:14:26.102Z	15km NW of Grapevine, CA	earthquake	0.26	0.8	0.148	72	reviewed	ci	ci
4/21/2016	11:43:00	36.3405	-120.009	23.76	2.11	md	50	152	0.1883	0.21	nc	nc72625395	2017-02-10T08:55:52.840Z	12 km SW of Lanare, California	earthquake	0.85	0.5	0.146	29	reviewed	nc	nc
4/20/2016	4:05:58	35.5513333	-120.877	6.76	2.52	md	76	62	0.02973	0.06	nc	nc72624790	2022-08-02T19:19:08.911Z	12 km N of Cayucos, California	earthquake	0.13	0.31	0.158	66	reviewed	nc	nc
4/17/2016	7:04:18	36.2521667	-120.3753333	9.72	2	md	55	60	0.02613	0.07	nc	nc72623125	2022-08-02T18:46:46.959Z	12 km N of Coalinga, California	earthquake	0.11	0.18	0.203	49	reviewed	nc	nc
4/14/2016	7:03:59	35.042	-119.0566667	8.44	2	ml	38	66	0.1536	0.29	ci	ci37549608	2016-04-14T15:13:11.309Z	16km NW of Grapevine, CA	earthquake	0.31	1.21	0.141	53	reviewed	ci	ci
4/13/2016	4:45:42	36.0171667	-120.5838333	4.23	2.32	md	78	30	0.03874	0.08	nc	nc72621445	2022-08-02T18:03:51.022Z	18 km NW of Parkfield, California	earthquake	0.12	0.18	0.169	65	reviewed	nc	nc
4/8/2016	17:59:54	36.028	-120.5893333	4.38	2.21	md	66	45	0.04144	0.08	nc	nc72619755	2022-08-07T11:01:46.109Z	20 km NW of Parkfield, California	earthquake	0.14	0.2	0.186	65	reviewed	nc	nc
4/5/2016	16:56:08	36.1926667	-120.2396667	12.48	2.29	md	54	125	0.1009	0.09	nc	nc72618025	2017-02-10T07:09:43.710Z	12 km ENE of Coalinga, California	earthquake	0.35	0.58	0.218	56	reviewed	nc	nc
4/1/2016	0:47:29	35.5428333	-119.3705	22.59	2.98	ml	64	37	0.2939	0.28	ci	ci37325487	2022-08-07T10:41:10.086Z	6km SSW of Wasco, CA	earthquake	0.26	0.75	0.139	174	reviewed	ci	ci
3/27/2016	20:09:45	35.8325	-119.859	7.7	2.68	md	73	194	0.08468	0.23	nc	nc72613545	2017-02-10T06:03:43.350Z	21 km SSE of Kettleman City, California	earthquake	0.49	0.67	0.176	77	reviewed	nc	nc
3/27/2016	12:37:38	35.8476667	-119.8076667	3.91	2.1	md	52	107	0.1216	0.12	nc	nc72613445	2017-02-10T06:02:30.160Z	22 km SE of Kettleman City, California	earthquake	0.3	0.87	0.171	55	reviewed	nc	nc
3/26/2016	1:48:31	35.2798333	-119.2166667	19.92	2.55	ml	37	55	0.1122	0.16	ci	ci37322927	2022-08-02T15:51:17.851Z	13km SSW of Rosedale, CA	earthquake	0.2	0.6	0.166	117	reviewed	ci	ci
3/24/2016	16:35:21	34.9116667	-119.0203333	11.44	2	ml	36	84	0.06755	0.21	ci	ci37322335	2016-03-30T22:37:09.918Z	9km WSW of Grapevine, CA	earthquake	0.26	0.58	0.136	42	reviewed	ci	ci
3/19/2016	16:09:53	35.5483333	-119.3741667	25.95	2.12	ml	39	49	0.2998	0.24	ci	ci37537368	2016-03-30T22:45:48.904Z	6km SSW of Wasco, CA	earthquake	0.33	0.95	0.211	70	reviewed	ci	ci
3/15/2016	13:08:06	35.5418333	-120.2598333	14.88	2.6	md	69	47	0.07207	0.08	nc	nc72606855	2017-02-10T04:13:28.420Z	16 km SE of Shandon, California	earthquake	0.16	0.33	0.18	66	reviewed	nc	nc
3/12/2016	12:58:51	35.0558333	-119.1041667	7.18	2.24	ml	43	61	0.1901	0.3	ci	ci37534888	2016-03-30T22:34:12.394Z	20km NW of Grapevine, CA	earthquake	0.31	2.69	0.132	65	reviewed	ci	ci
3/12/2016	12:30:12	35.0493333	-119.1011667	11.97	2	ml	22	105	0.1838	0.24	ci	ci37534880	2016-03-30T22:50:35.673Z	20km NW of Grapevine, CA	earthquake	0.41	2.09	0.116	57	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
3/6/2016	6:08:40	36.2716667	-120.3245	8.83	2.3	md	44	111	0.02703	0.11	nc	nc72602720	2017-02-10T03:01:01.130Z	14 km NNE of Coalinga, California	earthquake	0.41	0.24	0.239	47	reviewed	nc	nc
3/1/2016	19:35:16	35.4941667	-119.3151667	25.02	2.07	ml	37	82	0.2279	0.27	ci	ci37313175	2016-03-30T22:44:52.736Z	4km W of Shafter, CA	earthquake	0.4	1.11	0.199	32	reviewed	ci	ci
2/28/2016	0:24:45	35.5673333	-119.3756667	26.29	2.1	ml	34	57	0.3138	0.29	ci	ci37312375	2016-03-29T22:35:36.944Z	4km SW of Wasco, CA	earthquake	0.41	0.84	0.262	24	reviewed	ci	ci
2/27/2016	1:55:36	35.9723333	-120.5321667	4.3	2.76	md	92	24	0.01622	0.08	nc	nc72598620	2017-02-10T01:43:06.220Z	12 km NW of Parkfield, California	earthquake	0.09	0.12	0.159	93	reviewed	nc	nc
2/25/2016	15:07:52	35.5923333	-120.8733333	3.09	2.04	md	59	76	0.04414	0.08	nc	nc72597855	2017-02-10T01:31:04.410Z	15 km S of Lake Nacimiento, California	earthquake	0.16	0.39	0.235	46	reviewed	nc	nc
2/25/2016	6:20:23	35.5431667	-119.3673333	26.25	2.37	ml	44	49	0.2922	0.3	ci	ci37311383	2016-03-29T22:38:48.479Z	6km SSW of Wasco, CA	earthquake	0.34	0.73	0.196	59	reviewed	ci	ci
2/24/2016	21:08:35	35.5511667	-119.3743333	26.48	2.23	ml	39	49	0.3018	0.29	ci	ci37528416	2022-08-02T11:52:39.895Z	6km SSW of Wasco, CA	earthquake	0.41	0.74	0.241	43	reviewed	ci	ci
2/24/2016	9:25:36	35.5398333	-119.3698333	25.89	2.25	ml	45	48	0.2915	0.29	ci	ci37528208	2016-03-29T22:26:18.268Z	7km SSW of Wasco, CA	earthquake	0.37	1.02	0.197	70	reviewed	ci	ci
2/24/2016	0:34:48	35.5365	-119.365	22.04	2.5	ml	46	36	0.2863	0.27	ci	ci37528104	2022-08-07T09:58:04.491Z	7km SSW of Wasco, CA	earthquake	0.33	1.31	0.238	25	reviewed	ci	ci
2/24/2016	0:11:53	35.5356667	-119.3638333	23	2.62	ml	45	39	0.2851	0.26	ci	ci37528080	2022-04-27T00:51:33.863Z	7km SSW of Wasco, CA	earthquake	0.32	1.04	0.261	27	reviewed	ci	ci
2/24/2016	0:02:23	35.5423333	-119.3728333	22.14	4.87	mw	84	37	0.295	0.29	ci	ci37528064	2022-04-27T00:50:53.226Z	6km SSW of Wasco, CA	earthquake	0.24	0.65		6	reviewed	ci	ci
2/19/2016	4:12:06	35.543	-120.791	3.25	3.28	ml	86	30	0.09459	0.07	nc	nc72593920	2017-02-10T00:19:14.290Z	7 km W of Templeton, California	earthquake	0.11	0.49	0.143	27	reviewed	nc	nc
2/13/2016	3:21:22	35.9318333	-119.563	19.8	2.22	md	48	88	0.327	0.16	nc	nc72590050	2017-02-09T23:09:15.800Z	8 km NW of Alpaugh, California	earthquake	0.32	0.29	0.172	30	reviewed	nc	nc
2/13/2016	2:19:28	35.7323333	-119.6771667	25.97	3.11	ml	47	53	0.2616	0.28	ci	ci37523376	2016-04-26T23:28:18.040Z	24km SW of Alpaugh, CA	earthquake	0.35	0.55	0.204	85	reviewed	ci	ci
2/10/2016	16:32:36	36.093	-120.1933333	9.04	2.81	md	65	145	0.07477	0.09	nc	nc72588945	2022-08-02T09:28:13.748Z	11 km NNW of Avenal, California	earthquake	0.2	0.35	0.17	97	reviewed	nc	nc
2/8/2016	6:20:42	35.4643333	-119.9733333	7.64	3.54	mw	44	68	0.02973	0.3	ci	ci37521568	2016-08-04T02:27:33.160Z	13km N of Simmler, CA	earthquake	0.36	1.15		5	reviewed	ci	ci
2/4/2016	7:20:58	35.4606667	-119.9756667	8.15	3.51	ml	59	34	0.02719	0.27	ci	ci37520200	2022-06-22T08:00:34.229Z	12km N of Simmler, CA	earthquake	0.24	0.63	0.123	115	reviewed	ci	ci
2/1/2016	9:57:50	35.0761667	-118.9815	8.56	2.52	ml	37	51	0.1341	0.23	ci	ci37301679	2022-08-02T08:06:51.579Z	16km NNW of Grapevine, CA	earthquake	0.28	0.94	0.151	73	reviewed	ci	ci
1/17/2016	14:10:38	36.0635	-120.205	9.62	2.1	md	57	91	0.07748	0.08	nc	nc72581101	2022-08-02T05:42:52.969Z	9 km NW of Avenal, California	earthquake	0.21	0.4	0.207	42	reviewed	nc	nc
1/15/2016	23:57:17	35.9445	-119.7941667	24.48	2.08	md	35	247	0.155	0.15	nc	nc72580536	2017-02-09T19:49:21.082Z	17 km ESE of Kettleman City, CA	earthquake	1.05	0.74	0.107	25	reviewed	nc	nc
1/13/2016	14:11:40	34.9343333	-118.9981667	9	2.11	ml	41	82		0.22	ci	ci37295487	2016-03-29T21:26:57.956Z	6km W of Grapevine, CA	earthquake	0.25	0.56	0.191	59	reviewed	ci	ci
1/13/2016	6:49:48	34.8736667	-120.2055	-0.29	2.2	ml	38	37		0.23	ci	ci37295351	2016-03-29T21:30:34.462Z	16km NNE of Los Alamos, CA	earthquake	0.25	0.71	0.131	34	reviewed	ci	ci
1/9/2016	10:39:09	36.0743333	-120.2008333	9.99	2.56	md	65	101	0.07477	0.07	nc	nc72577806	2017-02-09T19:00:05.830Z	10 km NW of Avenal, California	earthquake	0.2	0.34	0.245	96	reviewed	nc	nc
1/4/2016	22:28:37	35.8676667	-119.9935	10.11	2.37	md	68	107	0.03063	0.14	nc	nc72573670	2022-08-02T02:52:59.917Z	15 km S of Kettleman City, California	earthquake	0.39	0.37	0.201	64	reviewed	nc	nc
12/29/2015	23:55:13	35.9805	-120.5476667	3.39	2.03	md	65	55	0.02342	0.07	nc	nc72571420	2022-08-02T01:45:26.241Z	13 km NW of Parkfield, California	earthquake	0.14	0.18	0.247	49	reviewed	nc	nc
12/7/2015	16:56:44	35.9925	-120.561	3.55	2.95	ml	93	39	0.01982	0.09	nc	nc72565431	2022-08-01T22:18:41.826Z	15 km NW of Parkfield, California	earthquake	0.12	0.17	0.166	23	reviewed	nc	nc
12/3/2015	22:15:17	36.3385	-119.7706667	16.2	2.48	md	27	120	0.4703	0.12	nc	nc72563966	2017-02-08T20:01:04.130Z	4 km NNE of Lemoore, California	earthquake	0.77	0.88	0.177	26	reviewed	nc	nc
11/30/2015	22:48:11	35.365	-119.8596667	6.53	2.81	ml	46	72	0.0578	0.32	ci	ci37279543	2022-08-01T21:15:32.718Z	13km E of Simmler, CA	earthquake	0.45	0.89	0.157	87	reviewed	ci	ci
11/25/2015	11:47:00	36.4171667	-119.9646667	17.6	2.17	md	51	88	0.2	0.14	nc	nc72560431	2017-02-08T18:43:27.760Z	3 km WSW of Lanare, California	earthquake	0.39	0.39	0.186	54	reviewed	nc	nc
11/17/2015	22:42:16	36.116	-120.1895	10.14	2.14	md	57	163	0.08468	0.06	nc	nc72556941	2017-02-08T17:54:52.645Z	12 km SW of Huron, California	earthquake	0.21	0.29	0.327	60	reviewed	nc	nc
11/17/2015	19:00:26	35.8248333	-119.5193333	25.82	2.55	ml	29	54	0.3535	0.28	ci	ci37273999	2022-08-01T18:24:27.991Z	8km SSW of Alpaugh, CA	earthquake	0.46	1	0.164	37	reviewed	ci	ci
11/14/2015	8:01:04	36.0603333	-120.638	2.3	2.07	md	65	41	0.03514	0.1	nc	nc72555351	2017-02-08T17:26:58.240Z	24 km E of San Ardo, California	earthquake	0.16	0.5	0.255	53	reviewed	nc	nc
11/11/2015	16:20:44	36.0568333	-120.633	3.93	2.34	md	80	38	0.03243	0.08	nc	nc72554221	2022-08-01T17:26:54.726Z	24 km E of San Ardo, California	earthquake	0.14	0.28	0.219	72	reviewed	nc	nc
11/1/2015	7:25:02	36.0013333	-120.5611667	2.75	2.14	md	88	46	0.02162	0.07	nc	nc72547180	2022-08-01T15:07:16.513Z	Central California	earthquake	0.11	0.15	0.232	66	reviewed	nc	nc
10/31/2015	6:57:32	36.027	-119.8071667	10.3	2.11	md	57	104	0.2045	0.14	nc	nc72546380	2022-08-01T14:52:13.074Z	14 km E of Kettleman City, California	earthquake	0.38	1.06	0.25	57	reviewed	nc	nc
10/30/2015	23:05:00	36.0296667	-119.8203333	9.01	2.04	md	52	126	0.2009	0.18	nc	nc72546105	2022-08-01T14:46:41.648Z	12 km E of Kettleman City, California	earthquake	0.41	1.01	0.179	47	reviewed	nc	nc
10/30/2015	11:40:27	36.0655	-120.207	9.69	2.16	md	63	93	0.07928	0.1	nc	nc72545910	2017-02-08T15:44:49.850Z	9 km NW of Avenal, California	earthquake	0.18	0.36	0.192	70	reviewed	nc	nc
10/29/2015	15:45:32	35.8323333	-120.6058333	10.61	3.2	ml	91	23	0.03514	0.09	nc	nc72545730	2022-06-16T06:23:58.558Z	12 km NE of San Miguel, California	earthquake	0.11	0.37	0.127	24	reviewed	nc	nc
10/27/2015	3:39:54	36.0711667	-120.2018333	9.31	2.35	md	71	125	0.1784	0.09	nc	nc72544535	2017-02-08T15:21:23.830Z	9 km NW of Avenal, California	earthquake	0.41	0.43	0.251	79	reviewed	nc	nc
10/22/2015	1:39:59	35.9163333	-119.9498333	25.21	2.62	md	64	161	0.05405	0.18	nc	nc72541925	2017-02-08T14:44:59.510Z	10 km S of Kettleman City, California	earthquake	0.73	0.36	0.274	73	reviewed	nc	nc
10/4/2015	17:23:24	35.5625	-120.8126667	4.367	2.6	mh	30	90	0.08198	0.06	nc	nc72535486	2022-08-01T09:38:52.917Z	9 km W of Templeton, California	earthquake	0.38	1.02		0	reviewed	nc	nc
10/1/2015	22:02:35	36.0271667	-120.5988333	4.978	2.17	md	69	149	0.04144	0.07	nc	nc72533806	2017-02-08T12:24:24.480Z	20 km NW of Parkfield, California	earthquake	0.19	0.22	0.143	50	reviewed	nc	nc
9/27/2015	22:09:15	35.8408333	-119.5343333	25.79	2.23	ml	25	96	0.3653	0.21	ci	ci37249943	2016-03-11T13:45:12.095Z	7km SW of Alpaugh, CA	earthquake	0.43	0.85	0.153	27	reviewed	ci	ci
9/18/2015	8:16:36	34.6991667	-120.0343333	5.45	2.25	ml	39	26	0.04797	0.32	ci	ci37244631	2022-08-01T06:14:30.173Z	8km ENE of Los Olivos, CA	earthquake	0.34	31.61	0.132	23	reviewed	ci	ci
9/12/2015	17:53:15	35.9423333	-120.492	9.554	2.87	md	88	69	0.01441	0.07	nc	nc72524386	2022-08-01T04:42:33.047Z	7 km NW of Parkfield, California	earthquake	0.16	0.14	0.146	82	reviewed	nc	nc
9/11/2015	18:36:43	35.9856667	-120.5526667	4.333	2.28	md	74	66	0.01081	0.08	nc	nc72523981	2017-02-08T11:11:38.810Z	14 km NW of Parkfield, California	earthquake	0.14	0.12	0.169	58	reviewed	nc	nc
9/7/2015	3:29:34	35.1743333	-119.0481667	13.65	2.62	ml	45	55	0.1759	0.21	ci	ci37238671	2022-08-01T03:48:36.445Z	15km SW of Lamont, CA	earthquake	0.21	0.69	0.138	39	reviewed	ci	ci
8/28/2015	22:29:17	35.4481667	-119.0703333	18.92	2.53	ml	42	58	0.1072	0.26	ci	ci37235207	2022-08-01T02:23:46.924Z	6km NW of Oildale, CA	earthquake	0.29	0.56	0.151	34	reviewed	ci	ci
8/18/2015	10:59:21	35.8641667	-120.0003333	9.924	2.89	ml	78	107	0.03604	0.16	nc	nc72508056	2022-08-01T00:36:32.744Z	16 km SSW of Kettleman City, California	earthquake	0.33	0.44	0.204	17	reviewed	nc	nc
8/13/2015	9:49:41	35.9731667	-120.5313333	10.245	2.27	md	96	25	0.01532	0.06	nc	nc72505316	2022-07-31T23:54:20.486Z	12 km NW of Parkfield, California	earthquake	0.13	0.13	0.161	88	reviewed	nc	nc
8/8/2015	14:52:43	36.3531667	-119.758	21.322	2.34	md	56	97	0.3045	0.15	nc	nc72502966	2017-02-08T07:07:31.490Z	4 km WNW of Grangeville, California	earthquake	0.51	0.42	0.24	70	reviewed	nc	nc
8/2/2015	5:44:55	35.9238333	-119.9581667	8.06	2.36	md	78	108	0.06126	0.15	nc	nc72499261	2022-07-31T22:00:09.332Z	9 km S of Kettleman City, California	earthquake	0.56	0.36	0.211	74	reviewed	nc	nc
7/31/2015	17:15:05	35.7491667	-120.3006667	9.578	2.25	md	88	29	0.03874	0.06	nc	nc72498301	2017-02-08T06:09:42.090Z	12 km NNE of Shandon, California	earthquake	0.1	0.2	0.195	75	reviewed	nc	nc
7/29/2015	10:45:59	35.0461667	-119.0468333	9.02	2.01	ml	45	59	0.1521	0.24	ci	ci37215455	2016-03-11T19:26:29.813Z	16km NW of Grapevine, CA	earthquake	0.24	0.99	0.139	48	reviewed	ci	ci
7/23/2015	19:43:05	36.129	-120.1765	9.332	2.16	md	63	176	0.08739	0.08	nc	nc72492441	2022-07-31T20:12:13.916Z	10 km SW of Huron, California	earthquake	0.23	0.32	0.218	70	reviewed	nc	nc
7/22/2015	14:09:07	36.2161667	-120.3143333	9.47	2.47	md	57	113	0.04054	0.08	nc	nc72491711	2017-02-08T05:09:50.490Z	9 km NNE of Coalinga, California	earthquake	0.17	0.27	0.184	89	reviewed	nc	nc
7/15/2015	1:41:26	36.2178333	-120.3006667	10.436	2.4	md	62	137	0.04595	0.09	nc	nc72485976	2017-02-08T04:07:46.690Z	10 km NNE of Coalinga, California	earthquake	0.23	0.26	0.261	98	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
7/14/2015	13:47:03	36.2666667	-119.6913333	21	2.29	md	48	110	0.2559	0.12	nc	nc72485556	2017-02-08T04:03:36.580Z	5 km SSE of Armona, California	earthquake	0.25	0.36	0.299	49	reviewed	nc	nc
7/9/2015	18:25:55	35.9056667	-119.9188333	6.81	2.04	md	82	106	0.05315	0.18	nc	nc72482431	2022-07-31T17:36:10.280Z	12 km SSE of Kettleman City, California	earthquake	0.4	0.19	0.204	58	reviewed	nc	nc
7/8/2015	22:37:53	36.1265	-120.5148333	7.437	2.05	md	71	53	0.08739	0.12	nc	nc72481536	2017-02-08T03:14:02.900Z	14 km W of Coalinga, California	earthquake	0.14	0.34	0.186	57	reviewed	nc	nc
7/6/2015	10:26:24	35.9273333	-119.9673333	-0.37	2.1	md	44	210	0.06577	0.3	nc	nc72479281	2017-02-08T02:54:49.800Z	8 km S of Kettleman City, California	earthquake	0.66	0.57	0.253	55	reviewed	nc	nc
7/5/2015	4:55:54	36.0981667	-119.8416667	18.047	2.11	md	57	69	0.2198	0.11	nc	nc72478556	2017-02-08T02:42:08.260Z	10 km S of Stratford, California	earthquake	0.39	0.73	0.191	42	reviewed	nc	nc
6/28/2015	19:48:27	35.9755	-120.5338333	10.705	2.11	md	94	27	0.01441	0.06	nc	nc72473596	2022-07-31T15:36:16.119Z	12 km NW of Parkfield, California	earthquake	0.1	0.14	0.181	81	reviewed	nc	nc
6/20/2015	14:15:31	36.0706667	-120.2321667	14.543	2.09	md	51	187	0.1	0.07	nc	nc72469411	2017-02-08T01:05:15.250Z	11 km NW of Avenal, California	earthquake	0.46	0.68	0.224	53	reviewed	nc	nc
6/20/2015	10:41:04	36.0051667	-120.5671667	4.515	2.55	md	100	45	0.02523	0.07	nc	nc72469291	2017-02-08T01:03:46.150Z	16 km NW of Parkfield, California	earthquake	0.11	0.15	0.157	87	reviewed	nc	nc
6/20/2015	8:58:26	35.2435	-119.4705	2.613	2.22	ml	36	59	0.106	0.23	ci	ci37404464	2016-03-11T04:40:53.907Z	11km N of Taft, CA	earthquake	0.35	1	0.157	29	reviewed	ci	ci
6/17/2015	1:38:25	35.0368333	-119.2123333	15.363	2.31	ml	44	63	0.1882	0.21	ci	ci37401776	2016-03-11T06:30:28.674Z	17km E of Maricopa, CA	earthquake	0.25	0.93	0.176	44	reviewed	ci	ci
6/13/2015	9:25:18	35.5335	-120.8746667	2.729	2.19	md	82	46	0.02613	0.08	nc	nc72465461	2017-02-08T00:14:17.170Z	10 km N of Cayucos, California	earthquake	0.13	0.33	0.193	78	reviewed	nc	nc
6/10/2015	20:03:58	35.082	-119.0696667	13.938	2.51	ml	37	70	0.1921	0.2	ci	ci37396968	2022-07-31T12:16:50.907Z	20km NW of Grapevine, CA	earthquake	0.24	0.66	0.193	42	reviewed	ci	ci
6/8/2015	17:31:59	35.7401667	-119.0756667	17.051	2.04	ml	25	89	0.1008	0.27	ci	ci37395672	2016-03-12T02:52:50.660Z	16km ENE of McFarland, CA	earthquake	0.4	0.92	0.241	17	reviewed	ci	ci
5/31/2015	23:04:31	36.217	-120.3036667	8.596	2.07	md	41	116	0.04505	0.12	nc	nc72459081	2017-02-07T22:39:10.030Z	9 km NNE of Coalinga, California	earthquake	0.29	0.29	0.337	35	reviewed	nc	nc
5/24/2015	10:37:14	34.7643333	-120.009	6.25	2.68	ml	48	28	0.03986	0.17	ci	ci37386336	2022-07-31T08:56:51.108Z	14km NE of Los Olivos, CA	earthquake	0.2	0.55	0.153	25	reviewed	ci	ci
5/23/2015	19:01:52	36.4176667	-119.9683333	18.016	2.25	md	47	116	0.1973	0.13	nc	nc72454286	2017-02-07T21:25:59.920Z	3 km WSW of Lanare, California	earthquake	0.44	0.38	0.273	48	reviewed	nc	nc
5/14/2015	5:10:23	35.8468333	-119.7921667	4.83	2.01	md	57	170	0.1342	0.14	nc	nc72448966	2017-02-07T19:47:08.060Z	23 km SE of Kettleman City, California	earthquake	0.48	0.67	0.141	41	reviewed	nc	nc
5/11/2015	11:37:45	35.8375	-119.8096667	5.765	2.36	md	78	89	0.1216	0.15	nc	nc72447146	2017-02-07T19:25:18.860Z	23 km SE of Kettleman City, California	earthquake	0.33	0.53	0.211	80	reviewed	nc	nc
5/10/2015	15:42:58	35.0286667	-119.0738333	1.27	3.82	ml	125	42		0.3	ci	ci37377816	2018-04-16T18:05:33.927Z	16km NW of Grapevine, CA	earthquake	0.18	31.61	0.144	167	reviewed	ci	ci
5/4/2015	11:46:39	35.2663333	-120.5698333	4.201	2.19	md	69	42	0.06216	0.09	nc	nc72439900	2017-02-07T18:08:12.950Z	7 km NNE of Edna, California	earthquake	0.13	0.28	0.215	55	reviewed	nc	nc
4/29/2015	0:39:09	35.2503333	-119.487	16.2	2.34	ml	34	100	0.118	0.17	ci	ci37153463	2016-03-12T02:49:59.621Z	12km NNW of Taft, CA	earthquake	0.34	0.63	0.172	43	reviewed	ci	ci
4/25/2015	16:42:24	35.0915	-119.1371667	19.58	2.28	ml	31	72	0.2345	0.19	ci	ci37151591	2022-07-31T01:31:06.432Z	24km E of Maricopa, CA	earthquake	0.27	0.86	0.149	43	reviewed	ci	ci
4/20/2015	21:15:32	35.2526667	-119.4836667	12.293	2.12	ml	37	72	0.1188	0.29	ci	ci37148927	2022-07-31T00:20:12.684Z	12km NNW of Taft, CA	earthquake	0.44	0.85	0.211	32	reviewed	ci	ci
4/20/2015	15:06:53	35.2546667	-119.4783333	13.703	2.25	ml	29	109	0.1187	0.24	ci	ci37148711	2022-07-31T00:16:31.377Z	13km N of Taft, CA	earthquake	0.58	0.79	0.166	34	reviewed	ci	ci
4/20/2015	0:51:59	35.2578333	-119.4803333	13.75	2.55	ml	56	36	0.1223	0.29	ci	ci37148319	2022-07-31T00:06:33.460Z	13km N of Taft, CA	earthquake	0.33	0.6	0.214	57	reviewed	ci	ci
4/19/2015	21:28:27	35.5746667	-120.8583333	4.764	3.19	ml	101	32	0.05676	0.07	nc	nc72431135	2022-06-16T06:11:09.370Z	14 km WNW of Templeton, California	earthquake	0.1	0.28	0.153	23	reviewed	nc	nc
4/18/2015	18:22:35	36.0498333	-120.6165	6.744	2.41	md	89	70	0.02523	0.07	nc	nc72430500	2022-07-30T23:55:31.944Z	23 km NW of Parkfield, California	earthquake	0.15	0.26	0.208	92	reviewed	nc	nc
4/13/2015	16:59:55	35.8585	-120.4028333	4.907	2.04	md	75	54	0.02252	0.07	nc	nc72431301	2022-07-28T07:48:31.758Z	5 km SSE of Parkfield, California	earthquake	0.14	0.22	0.219	60	reviewed	nc	nc
4/13/2015	1:30:57	35.9333333	-120.4878333	5.181	2.29	md	88	52	0.01892	0.06	nc	nc72430716	2017-02-07T14:28:02.180Z	6 km NW of Parkfield, California	earthquake	0.09	0.12	0.138	77	reviewed	nc	nc
4/11/2015	17:51:51	36.0243333	-120.5878333	4.648	2.76	md	106	37	0.04414	0.08	nc	nc72430166	2017-02-07T14:20:10.670Z	19 km NW of Parkfield, California	earthquake	0.12	0.18	0.147	125	reviewed	nc	nc
4/8/2015	19:01:23	36.0023333	-120.5615	4.043	2.08	md	88	46	0.02162	0.07	nc	nc72428561	2017-02-07T13:54:29.490Z	16 km NW of Parkfield, California	earthquake	0.11	0.12	0.206	76	reviewed	nc	nc
4/6/2015	11:22:06	35.1168333	-119.2405	15.48	2.32	ml	53	56	0.1495	0.25	ci	ci37357416	2016-03-11T04:35:52.190Z	16km ENE of Maricopa, CA	earthquake	0.28	1.03	0.158	47	reviewed	ci	ci
4/5/2015	18:16:41	35.5756667	-120.8616667	5.143	2.38	md	85	41	0.05586	0.08	nc	nc72427036	2017-02-07T13:31:09.670Z	14 km WNW of Templeton, California	earthquake	0.11	0.32	0.161	83	reviewed	nc	nc
4/2/2015	14:26:10	35.8396667	-119.7943333	4.886	2.54	md	89	53	0.1333	0.19	nc	nc72425031	2022-07-28T05:53:30.969Z	24 km SE of Kettleman City, California	earthquake	0.29	0.68	0.206	73	reviewed	nc	nc
3/31/2015	13:52:03	36.1125	-119.2785	19.339	2.28	ml	17	99	0.1944	0.19	ci	ci37353312	2016-03-11T13:32:15.028Z	7km NNE of Tipton, CA	earthquake	0.33	0.66	0.208	18	reviewed	ci	ci
3/30/2015	19:30:33	36.2265	-120.3493333	10.413	2.79	md	82	56	0.02342	0.09	nc	nc72423801	2017-02-07T12:50:58.340Z	9 km N of Coalinga, California	earthquake	0.16	0.27	0.155	150	reviewed	nc	nc
3/27/2015	16:53:48	36.226	-120.3573333	9.503	2.5	md	77	55	0.02613	0.09	nc	nc72418550	2017-02-07T12:24:25.550Z	9 km N of Coalinga, California	earthquake	0.19	0.22	0.149	107	reviewed	nc	nc
3/27/2015	13:42:37	36.233	-120.3561667	9.673	2.65	md	81	52	0.01982	0.06	nc	nc72418415	2022-07-28T04:48:00.313Z	10 km N of Coalinga, California	earthquake	0.11	0.15	0.144	130	reviewed	nc	nc
3/27/2015	13:33:51	36.2296667	-120.3595	9.563	2.24	md	67	51	0.02342	0.08	nc	nc72418395	2017-02-07T12:21:35.380Z	9 km N of Coalinga, California	earthquake	0.11	0.26	0.18	66	reviewed	nc	nc
3/27/2015	13:32:36	36.2291667	-120.3611667	9.273	2.16	md	40	72	0.02523	0.05	nc	nc72418400	2017-02-07T12:21:22.300Z	9 km N of Coalinga, California	earthquake	0.2	0.19	0.172	27	reviewed	nc	nc
3/27/2015	13:30:14	36.2271667	-120.3528333	10.44	4.11	mw	86	50	0.02342	0.1	nc	nc72418390	2020-05-02T03:32:36.803Z	9 km N of Coalinga, California	earthquake	0.15	0.27		10	reviewed	nc	nc
3/27/2015	13:29:25	36.2248333	-120.3553333	10.113	2.74	md	81	54	0.02613	0.07	nc	nc72418385	2017-02-07T12:20:46.270Z	9 km N of Coalinga, California	earthquake	0.11	0.17	0.143	116	reviewed	nc	nc
3/27/2015	9:53:50	36.2231667	-120.3531667	9.703	2.04	md	70	68	0.02703	0.08	nc	nc72418335	2017-02-07T12:20:11.400Z	9 km N of Coalinga, California	earthquake	0.19	0.26	0.223	91	reviewed	nc	nc
3/27/2015	7:55:00	36.2235	-120.3543333	10.173	2.67	md	81	55	0.02703	0.08	nc	nc72418255	2017-02-07T12:19:05.710Z	9 km N of Coalinga, California	earthquake	0.13	0.24	0.161	144	reviewed	nc	nc
3/27/2015	7:33:12	36.2223333	-120.346	8.963	2.5	md	19	79	0.02703	0.05	nc	nc71090399	2017-02-07T12:17:38.671Z	9 km N of Coalinga, California	earthquake	0.17	0.5	0.228	10	reviewed	nc	nc
3/27/2015	7:32:32	36.2273333	-120.3546667	10.373	3.35	ml	81	55	0.02432	0.08	nc	nc72418215	2022-06-16T06:10:14.676Z	9 km N of Coalinga, California	earthquake	0.15	0.28	0.175	33	reviewed	nc	nc
3/27/2015	7:29:17	36.2245	-120.352	9.973	2.21	md	73	55	0.02613	0.09	nc	nc72418205	2017-02-07T12:17:18.860Z	9 km N of Coalinga, California	earthquake	0.18	0.23	0.214	102	reviewed	nc	nc
3/8/2015	10:36:32	35.468	-120.7536667	4.605	2.25	md	81	52	0.08468	0.06	nc	nc72407385	2022-07-28T01:01:17.891Z	7 km WSW of Atascadero, California	earthquake	0.09	0.38	0.169	64	reviewed	nc	nc
3/7/2015	10:35:08	35.4323333	-119.9805	6.118	2.16	ml	22	79	0.0172	0.2	ci	ci37112071	2016-03-12T04:38:39.599Z	9km N of Simmler, CA	earthquake	0.51	1.07	0.178	18	reviewed	ci	ci
3/1/2015	14:22:50	35.9211667	-120.4705	4.695	2.78	md	81	41	0.02523	0.07	nc	nc72403665	2017-02-07T08:26:56.960Z	4 km NW of Parkfield, California	earthquake	0.1	0.16	0.159	88	reviewed	nc	nc
2/28/2015	22:16:50	35.9251667	-120.4775	5.101	2.33	md	80	51	0.01622	0.06	nc	nc72403350	2017-02-07T08:21:11.460Z	4 km NW of Parkfield, California	earthquake	0.09	0.13	0.186	74	reviewed	nc	nc
2/23/2015	10:24:29	35.5433333	-120.8401667	4.579	2.05	md	69	33	0.05495	0.07	nc	nc72400170	2017-02-07T07:31:09.650Z	12 km NNE of Cayucos, California	earthquake	0.12	0.37	0.216	65	reviewed	nc	nc
2/19/2015	5:36:56	35.9213333	-120.4728333	4.951	2.23	md	72	45	0.01532	0.06	nc	nc72397150	2017-02-07T06:42:24.710Z	4 km WNW of Parkfield, California	earthquake	0.1	0.13	0.171	65	reviewed	nc	nc
2/12/2015	12:19:18	36.217	-119.5578333	27.077	2.46	md	8	146	0.3865	0.11	nc	nc72392820	2017-02-07T05:38:49.763Z	9 km NNW of Waukena, California	earthquake	0.94	5.08	0.201	16	reviewed	nc	nc
2/7/2015	20:26:17	35.7463333	-120.2981667	10.713	2.19	md	78	49	0.04144	0.07	nc	nc72393156	2017-02-07T04:44:33.030Z	12 km NE of Shandon, California	earthquake	0.15	0.22	0.224	55	reviewed	nc	nc
1/22/2015	17:31:08	36.164	-120.3018333	8.63	2.55	md	65	69	0.08829	0.07	nc	nc72384636	2017-02-07T02:31:52.640Z	5 km ENE of Coalinga, California	earthquake	0.23	0.24	0.243	85	reviewed	nc	nc
1/14/2015	13:23:13	35.5275	-120.8598333	3.147	2.65	md	78	42	0.03874	0.07	nc	nc72381101	2022-07-27T14:30:11.977Z	9 km NNE of Cayucos, California	earthquake	0.14	0.35	0.152	94	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
1/14/2015	12:03:04	35.4775	-118.7876667	6.624	2.49	ml	39	67	0.08368	0.2	ci	ci37305208	2022-07-27T14:29:17.501Z	22km ENE of Oildale, CA	earthquake	0.27	0.91	0.146	54	reviewed	ci	ci
1/13/2015	17:19:23	35.8561667	-119.8061667	1.761	2.13	md	55	100	0.2333	0.17	nc	nc72380566	2017-02-07T01:25:37.810Z	21 km SE of Kettleman City, California	earthquake	0.3	0.57	0.216	47	reviewed	nc	nc
1/13/2015	12:35:15	35.862	-119.8183333	3.091	2.38	md	50	101	0.2315	0.18	nc	nc72380516	2017-02-07T01:24:50.170Z	20 km SE of Kettleman City, California	earthquake	0.31	1	0.23	81	reviewed	nc	nc
1/7/2015	22:46:12	34.8923333	-119.3696667	11.606	2.64	ml	52	27	0.05955	0.29	ci	ci37303168	2022-07-27T13:09:30.615Z	19km S of Maricopa, CA	earthquake	0.35	0.54	0.164	92	reviewed	ci	ci
1/6/2015	12:23:59	35.9665	-120.5233333	10.398	2.45	md	86	41	0.01532	0.07	nc	nc72376256	2017-02-07T00:22:45.330Z	11 km NW of Parkfield, California	earthquake	0.13	0.16	0.15	79	reviewed	nc	nc
12/31/2014	20:26:24	35.1403333	-118.9543333	11.16	2.15	ml	22	143	0.1027	0.17	ci	ci37300632	2016-03-11T13:25:05.744Z	14km SSW of Lamont, CA	earthquake	0.61	0.99	0.164	41	reviewed	ci	ci
12/31/2014	20:02:47	35.141	-118.9606667	11.581	2.45	ml	24	126	0.1079	0.19	ci	ci37300616	2016-03-11T09:52:08.872Z	14km SSW of Lamont, CA	earthquake	0.56	0.98	0.156	59	reviewed	ci	ci
12/30/2014	8:05:30	35.8556667	-120.3993333	4.379	2.07	md	66	79	0.01982	0.07	nc	nc72372591	2017-02-05T11:49:36.130Z	Central California	earthquake	0.12	0.21	0.234	51	reviewed	nc	nc
12/28/2014	11:02:28	35.0393333	-119.1908333	17.534	2.17	ml	32	66	0.2076	0.19	ci	ci37299728	2016-03-12T00:49:36.376Z	19km E of Maricopa, CA	earthquake	0.33	0.98	0.172	89	reviewed	ci	ci
12/25/2014	15:39:26	36.3761667	-119.7958333	19.653	2.31	md	26	114	0.4045	0.23	nc	nc72369906	2017-02-05T11:07:46.439Z	7 km WSW of Hardwick, California	earthquake	0.53	0.83	0.232	25	reviewed	nc	nc
12/22/2014	6:05:13	35.7706667	-120.3341667	10.079	2.25	md	65	32	0.03604	0.06	nc	nc72368216	2017-02-05T10:44:14.540Z	13 km NNE of Shandon, California	earthquake	0.12	0.25	0.194	65	reviewed	nc	nc
12/18/2014	2:49:11	35.6451667	-119.323	18.612	2.06	ml	15	124	0.2752	0.18	ci	ci37297072	2016-03-11T17:08:56.064Z	6km NNE of Wasco, CA	earthquake	0.65	1.22	0.099	6	reviewed	ci	ci
12/13/2014	23:28:13	36.0738333	-120.2038333	10.549	2.46	md	53	100	0.07748	0.09	nc	nc72364346	2017-02-05T09:31:58.540Z	10 km NW of Avenal, California	earthquake	0.18	0.39	0.218	100	reviewed	nc	nc
12/13/2014	22:43:50	36.0723333	-120.2038333	10.239	2.41	md	55	99	0.07748	0.09	nc	nc72364341	2017-02-05T09:31:45.160Z	10 km NW of Avenal, California	earthquake	0.18	0.41	0.205	94	reviewed	nc	nc
12/12/2014	11:22:38	35.897	-120.4416667	5.456	2.47	md	65	45	0.01532	0.07	nc	nc72363746	2017-02-05T09:22:11.600Z	0 km WSW of Parkfield, California	earthquake	0.11	0.2	0.158	62	reviewed	nc	nc
12/10/2014	2:42:31	36.0745	-120.2061667	10.459	2.42	md	53	99	0.07928	0.08	nc	nc72362946	2017-02-05T09:10:55.560Z	10 km NW of Avenal, California	earthquake	0.15	0.32	0.208	100	reviewed	nc	nc
12/10/2014	2:32:32	36.0733333	-120.2045	10.269	2.4	md	59	131	0.07748	0.08	nc	nc72362936	2017-02-05T09:10:40.090Z	10 km NW of Avenal, California	earthquake	0.16	0.38	0.231	103	reviewed	nc	nc
12/10/2014	1:54:18	36.0723333	-120.2058333	10.439	2.3	md	53	98	0.07838	0.07	nc	nc72362916	2017-02-05T09:10:03.500Z	10 km NW of Avenal, California	earthquake	0.21	0.41	0.261	87	reviewed	nc	nc
12/10/2014	1:38:41	36.074	-120.2078333	10.409	2.17	md	47	99	0.08018	0.08	nc	nc72362906	2017-02-05T09:09:49.770Z	10 km NW of Avenal, California	earthquake	0.16	0.34	0.281	76	reviewed	nc	nc
12/7/2014	4:13:20	35.8205	-119.8816667	5.61	2.56	md	64	204	0.07387	0.11	nc	nc72361441	2017-02-05T08:46:57.240Z	22 km SSE of Kettleman City, California	earthquake	0.31	0.45	0.199	77	reviewed	nc	nc
12/7/2014	2:08:48	35.818	-119.8763333	5.756	2.91	md	79	204	0.07928	0.15	nc	nc72361376	2017-02-05T08:45:29.970Z	22 km SSE of Kettleman City, California	earthquake	0.37	0.55	0.179	104	reviewed	nc	nc
12/7/2014	1:55:36	35.8378333	-119.7925	1.915	2.06	md	56	112	0.1351	0.17	nc	nc72361361	2017-02-05T08:45:06.440Z	24 km SE of Kettleman City, California	earthquake	0.32	1.24	0.177	43	reviewed	nc	nc
12/6/2014	23:59:14	35.8526667	-119.8051667	5.415	2.07	md	68	100	0.1234	0.25	nc	nc72361311	2017-02-05T08:44:00.190Z	22 km SE of Kettleman City, California	earthquake	0.31	0.93	0.182	43	reviewed	nc	nc
12/6/2014	23:54:15	35.8305	-119.865	5.626	2.02	md	70	192	0.08108	0.11	nc	nc72361301	2017-02-05T08:43:41.800Z	21 km SSE of Kettleman City, California	earthquake	0.42	0.37	0.187	45	reviewed	nc	nc
12/6/2014	23:52:53	35.8175	-119.8876667	6.696	2.84	md	79	189	0.07207	0.17	nc	nc72361296	2022-07-27T09:53:04.642Z	22 km SSE of Kettleman City, California	earthquake	0.32	0.37	0.173	115	reviewed	nc	nc
12/3/2014	18:05:52	36.0298333	-120.5878333	3.944	2.19	md	64	78	0.03964	0.05	nc	nc72359541	2017-02-05T08:11:01.850Z	20 km NW of Parkfield, California	earthquake	0.11	0.13	0.205	55	reviewed	nc	nc
11/23/2014	18:06:06	36.0136667	-120.5736667	3.343	2.17	md	67	56	0.03063	0.07	nc	nc72352661	2022-07-27T08:32:02.703Z	17 km NW of Parkfield, California	earthquake	0.14	0.21	0.178	54	reviewed	nc	nc
11/23/2014	17:44:38	36.0118333	-120.5725	3.946	2.58	md	81	56	0.02883	0.05	nc	nc72352656	2017-02-05T06:04:36.850Z	17 km NW of Parkfield, California	earthquake	0.11	0.15	0.168	79	reviewed	nc	nc
11/19/2014	7:02:18	35.9773333	-119.7565	9.87	2.01	md	70	64	0.1991	0.17	nc	nc72349681	2017-02-05T05:12:29.440Z	18 km E of Kettleman City, California	earthquake	0.33	0.75	0.152	43	reviewed	nc	nc
11/16/2014	20:41:52	35.9993333	-120.5616667	3.693	2.03	md	61	56	0.02162	0.08	nc	nc72348081	2017-02-05T04:48:38.720Z	16 km NW of Parkfield, California	earthquake	0.17	0.2	0.275	44	reviewed	nc	nc
11/15/2014	21:40:26	36.0523333	-120.6193333	4.614	2.11	md	71	74	0.02523	0.08	nc	nc72347351	2017-02-05T04:36:19.570Z	23 km NW of Parkfield, California	earthquake	0.19	0.24	0.216	62	reviewed	nc	nc
11/13/2014	5:43:32	35.0621667	-118.9208333	6.701	2.09	ml	30	88	0.09853	0.21	ci	ci37060559	2016-03-11T11:35:59.944Z	13km N of Grapevine, CA	earthquake	0.35	0.96	0.112	43	reviewed	ci	ci
11/1/2014	16:26:09	36.0036667	-119.8255	25.373	2.04	md	25	156	0.1766	0.18	nc	nc72336621	2017-02-05T01:52:13.019Z	12 km E of Kettleman City, California	earthquake	0.98	0.8	0.088	15	reviewed	nc	nc
10/25/2014	6:01:43	35.9673333	-120.5245	9.956	2.4	md	97	40	0.01532	0.06	nc	nc72333041	2017-02-05T00:52:29.420Z	11 km NW of Parkfield, California	earthquake	0.13	0.09	0.145	91	reviewed	nc	nc
10/22/2014	22:24:40	35.8651667	-119.797	1.963	2.08	md	65	95	0.245	0.19	nc	nc72331971	2017-02-05T00:39:29.630Z	21 km SE of Kettleman City, California	earthquake	0.42	1.3	0.149	40	reviewed	nc	nc
10/22/2014	16:08:24	35.8516667	-119.791	2.116	2.55	md	52	114	0.2396	0.15	nc	nc72331746	2022-07-27T05:34:55.906Z	23 km SE of Kettleman City, California	earthquake	0.31	0.73	0.191	86	reviewed	nc	nc
10/20/2014	0:57:01	35.5853333	-120.8391667	5.663	2.13	md	91	40	0.05676	0.06	nc	nc72330466	2017-02-05T00:16:03.330Z	12 km WNW of Templeton, California	earthquake	0.11	0.36	0.174	76	reviewed	nc	nc
10/13/2014	23:51:27	35.8388333	-119.3283333	19.453	2.66	ml	27	97	0.198	0.26	ci	ci37278832	2016-03-12T02:35:55.391Z	11km NW of Delano, CA	earthquake	0.37	1.06	0.11	53	reviewed	ci	ci
10/12/2014	14:48:04	36.0376667	-120.1853333	11.015	2.13	md	56	205	0.1631	0.12	nc	nc72325646	2017-02-04T22:50:11.790Z	6 km NW of Avenal, California	earthquake	0.77	1.03	0.267	49	reviewed	nc	nc
10/9/2014	10:59:19	35.8435	-119.3346667	18.973	2.36	ml	27	95	0.2031	0.22	ci	ci37277304	2016-03-11T06:13:17.181Z	12km NW of Delano, CA	earthquake	0.31	0.67	0.121	29	reviewed	ci	ci
10/8/2014	17:56:25	36.3281667	-119.7495	16.411	2.35	md	43	100	0.3955	0.11	nc	nc72323096	2017-02-04T22:04:09.210Z	3 km WNW of Armona, California	earthquake	0.67	0.39	0.172	50	reviewed	nc	nc
10/6/2014	12:55:16	36.1745	-120.2831667	10.669	2.19	md	55	116	0.08919	0.09	nc	nc72321721	2017-02-04T21:45:09.040Z	7 km ENE of Coalinga, California	earthquake	0.24	0.45	0.152	55	reviewed	nc	nc
10/3/2014	12:20:07	36.018	-119.9233333	13.799	2.2	md	76	49	0.1568	0.15	nc	nc72319796	2017-02-04T21:13:06.540Z	3 km ENE of Kettleman City, California	earthquake	0.31	0.61	0.233	56	reviewed	nc	nc
10/1/2014	0:34:40	35.7851667	-120.3375	7.978	2.85	md	87	52	0.01261	0.05	nc	nc72318146	2022-07-27T03:33:30.546Z	14 km NNE of Shandon, California	earthquake	0.1	0.19	0.137	97	reviewed	nc	nc
9/29/2014	4:51:55	36.1726667	-119.153	16.905	2.51	md	24	66	0.1252	0.15	nc	nc72316356	2017-02-06T23:30:40.089Z	3 km NNW of Plainview, California	earthquake	0.26	0.38	0.171	49	reviewed	nc	nc
9/18/2014	22:59:23	36.0678333	-119.6466667	20.335	2.88	ml	54	90	0.3748	0.12	nc	nc72301731	2017-02-04T15:20:34.640Z	8 km WSW of Corcoran, California	earthquake	0.34	0.51	0.136	21	reviewed	nc	nc
9/10/2014	18:56:48	36.0515	-120.0455	8.652	2.08	md	79	205	0.05315	0.2	nc	nc72296001	2017-02-04T14:17:28.520Z	8 km WNW of Kettleman City, California	earthquake	0.55	0.27	0.161	54	reviewed	nc	nc
9/7/2014	4:45:08	35.612	-120.7206667	2.966	2.06	md	81	39	0.1234	0.06	nc	nc72293161	2022-07-27T01:00:47.628Z	3 km WSW of Paso Robles, California	earthquake	0.12	0.78	0.174	67	reviewed	nc	nc
8/26/2014	5:29:08	36.1918333	-119.6833333	14.27	2.43	md	84	60	0.3694	0.27	nc	nc72284416	2017-02-04T12:10:42.490Z	12 km E of Stratford, California	earthquake	0.49	1	0.22	66	reviewed	nc	nc
8/18/2014	14:03:18	36.0458333	-120.6115	4.094	2.52	md	83	60	0.02613	0.08	nc	nc72279831	2017-02-04T10:46:06.900Z	22 km NW of Parkfield, California	earthquake	0.16	0.29	0.187	74	reviewed	nc	nc
8/15/2014	6:32:40	36.051	-120.0283333	9.562	2.86	md	132	46	0.06667	0.16	nc	nc72277966	2017-02-04T10:19:04.610Z	7 km NW of Kettleman City, California	earthquake	0.2	0.23	0.144	118	reviewed	nc	nc
8/12/2014	14:11:32	35.7471667	-119.2538333	17.699	2.13	ml	18	84	0.1663	0.22	ci	ci15537609	2016-03-11T17:01:08.384Z	2km SSW of Delano, CA	earthquake	0.55	1.1	0.225	10	reviewed	ci	ci
8/10/2014	5:42:09	34.8431667	-120.3871667	1.676	2.03	ml	33	65	0.07433	0.29	ci	ci15536657	2022-07-26T21:56:10.206Z	5km ESE of Orcutt, CA	earthquake	0.48	0.85	0.109	18	reviewed	ci	ci
8/8/2014	16:48:23	35.9405	-120.4921667	10.334	3.44	mw	97	36	0.01622	0.07	nc	nc72270370	2022-06-16T05:52:53.773Z	Central California	earthquake	0.1	0.14		5	reviewed	nc	nc
8/6/2014	7:07:25	35.4886667	-119.3736667	19.313	2.2	ml	38	68	0.2628	0.28	ci	ci15535209	2016-03-12T06:16:04.403Z	9km W of Shafter, CA	earthquake	0.37	0.69	0.2	32	reviewed	ci	ci
8/4/2014	13:00:33	35.844	-119.8218333	3.896	2	md	64	213	0.2162	0.16	nc	nc72271676	2017-02-04T08:54:34.900Z	22 km SE of Kettleman City, California	earthquake	0.44	0.81	0.144	38	reviewed	nc	nc
8/3/2014	21:16:05	35.8355	-119.8095	4.908	2.09	md	25	275	0.2171	0.08	nc	nc71085589	2017-02-04T08:48:55.814Z	23 km SE of Kettleman City, California	earthquake	0.4	0.95	0.135	16	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
8/3/2014	21:15:46	35.8388333	-119.8005	7.826	2.36	md	96	39	0.2252	0.28	nc	nc72271346	2017-02-04T08:48:48.950Z	23 km SE of Kettleman City, California	earthquake	0.33	0.88	0.305	68	reviewed	nc	nc
8/3/2014	21:13:44	35.8376667	-119.8165	10.636	2.97	ml	140	27	0.2144	0.29	nc	nc72271341	2017-02-04T08:48:39.120Z	23 km SE of Kettleman City, California	earthquake	0.25	0.49	0.126	25	reviewed	nc	nc
8/3/2014	12:00:22	35.4706667	-118.8056667	11.994	2.62	ml	49	46	0.09915	0.19	ci	ci15534081	2016-03-11T11:29:30.517Z	20km ENE of Oildale, CA	earthquake	0.27	0.65	0.164	58	reviewed	ci	ci
7/30/2014	13:01:40	36.0303333	-119.2516667	21.809	2.47	ml	20	95	0.2326	0.11	ci	ci15532785	2016-03-11T18:53:20.641Z	6km ESE of Tipton, CA	earthquake	0.33	0.87	0.231	27	reviewed	ci	ci
7/27/2014	10:05:15	36.1346667	-120.2091667	8.522	2.01	md	50	132	0.109	0.11	nc	nc72265396	2017-02-04T07:38:27.470Z	12 km SW of Huron, California	earthquake	0.24	0.56	0.317	56	reviewed	nc	nc
7/25/2014	13:52:33	36.1383333	-120.1938333	10.662	2.7	md	78	57	0.1036	0.08	nc	nc72264361	2017-02-04T07:24:10.570Z	10 km SW of Huron, California	earthquake	0.23	0.32	0.164	122	reviewed	nc	nc
7/22/2014	15:34:35	35.8558333	-119.8061667	6.243	2.47	md	93	60	0.2333	0.18	nc	nc72262511	2017-02-04T06:58:22.600Z	21 km SE of Kettleman City, California	earthquake	0.26	0.56	0.209	85	reviewed	nc	nc
7/22/2014	15:30:23	35.8511667	-119.804	7.106	2.81	md	121	40	0.2315	0.28	nc	nc72262506	2017-02-04T06:58:09.560Z	22 km SE of Kettleman City, California	earthquake	0.26	0.64	0.198	107	reviewed	nc	nc
7/21/2014	19:17:19	36.2683333	-120.3521667	7.993	2.31	md	64	119	0.02072	0.07	nc	nc72261701	2017-02-04T06:44:24.440Z	14 km N of Coalinga, California	earthquake	0.15	0.11	0.165	79	reviewed	nc	nc
7/20/2014	1:47:21	34.913	-119.03	12.93	2.13	ml	14	121	0.1379	0.15	ci	ci37248384	2016-03-11T22:45:39.482Z	10km WSW of Grapevine, CA	earthquake	0.45	1.05	0.129	51	reviewed	ci	ci
7/20/2014	1:18:43	34.9181667	-119.0258333	10.966	2.35	ml	28	81	0.144	0.19	ci	ci37248376	2016-03-12T00:39:22.975Z	9km WSW of Grapevine, CA	earthquake	0.41	1.11	0.167	73	reviewed	ci	ci
7/16/2014	10:27:36	36.128	-120.201	9.802	2.04	md	53	165	0.1	0.07	nc	nc72258256	2017-02-04T05:57:39.650Z	12 km SW of Huron, California	earthquake	0.21	0.34	0.271	68	reviewed	nc	nc
7/15/2014	9:42:56	36.2698333	-120.3556667	7.783	2.74	md	71	101	0.02342	0.06	nc	nc72257716	2017-02-04T05:49:16.560Z	14 km N of Coalinga, California	earthquake	0.14	0.16	0.126	120	reviewed	nc	nc
7/15/2014	4:34:54	35.8473333	-119.802	8.748	2.57	md	109	53	0.2297	0.21	nc	nc72257606	2017-02-04T05:46:55.640Z	22 km SE of Kettleman City, California	earthquake	0.25	0.46	0.198	97	reviewed	nc	nc
7/14/2014	22:15:53	35.8405	-119.783	4.858	2	md	55	149	0.2369	0.17	nc	nc72257411	2017-02-04T05:44:00.340Z	24 km SE of Kettleman City, California	earthquake	0.43	0.89	0.115	34	reviewed	nc	nc
7/14/2014	22:05:50	35.8428333	-119.7838333	4.328	2.46	md	102	54	0.2378	0.32	nc	nc72257396	2017-02-04T05:43:49.670Z	24 km SE of Kettleman City, California	earthquake	0.35	0.73	0.214	76	reviewed	nc	nc
7/14/2014	20:50:06	35.834	-119.8393333	6.018	2.2	md	67	198	0.1991	0.18	nc	nc72257371	2017-02-04T05:43:15.560Z	22 km SSE of Kettleman City, California	earthquake	0.51	0.65	0.241	47	reviewed	nc	nc
7/14/2014	20:43:37	35.8331667	-119.8033333	6.338	2.01	md	45	125	0.2189	0.11	nc	nc72257361	2017-02-04T05:42:55.450Z	24 km SE of Kettleman City, California	earthquake	0.37	0.94	0.13	30	reviewed	nc	nc
7/11/2014	12:14:34	36.0013333	-120.566	4.043	2.47	md	88	44	0.02523	0.08	nc	nc72252010	2022-07-26T19:31:49.697Z	16 km NW of Parkfield, California	earthquake	0.12	0.15	0.178	92	reviewed	nc	nc
7/11/2014	6:37:36	35.7553333	-119.7746667	22.688	2.84	ml	103	36	0.1982	0.14	nc	nc72251875	2017-02-04T05:10:55.810Z	17 km NNW of Lost Hills, California	earthquake	0.18	0.24	0.323	18	reviewed	nc	nc
7/3/2014	0:31:43	35.8291667	-119.7861667	6.118	2.03	md	53	91	0.227	0.14	nc	nc72248086	2017-02-04T03:13:28.230Z	25 km NNW of Lost Hills, California	earthquake	0.4	1.22	0.139	28	reviewed	nc	nc
7/3/2014	0:30:28	35.8463333	-119.7938333	7.176	2.87	md	111	53	0.2342	0.23	nc	nc72248081	2017-02-04T03:13:18.410Z	23 km SE of Kettleman City, California	earthquake	0.24	0.55	0.188	92	reviewed	nc	nc
7/3/2014	0:29:13	35.8433333	-119.8171667	11.906	2.9	md	121	27	0.218	0.28	nc	nc72248076	2017-02-04T03:13:07.300Z	22 km SE of Kettleman City, California	earthquake	0.28	0.59	0.167	88	reviewed	nc	nc
6/30/2014	0:08:38	35.8371667	-119.7981667	6.746	2.24	md	77	65	0.2252	0.22	nc	nc72246431	2017-02-04T02:50:37.780Z	24 km SE of Kettleman City, California	earthquake	0.38	0.75	0.26	53	reviewed	nc	nc
6/27/2014	18:49:49	35.8598333	-119.8038333	5.423	2.28	md	89	75	0.2378	0.24	nc	nc72245171	2017-02-04T02:31:48.700Z	21 km SE of Kettleman City, California	earthquake	0.32	0.71	0.226	68	reviewed	nc	nc
6/27/2014	6:31:05	35.4876667	-119.4568333	25.152	2.43	ml	37	69	0.3214	0.22	ci	ci37236752	2016-03-11T06:05:50.843Z	10km N of Buttonwillow, CA	earthquake	0.29	0.85	0.166	37	reviewed	ci	ci
6/26/2014	7:10:46	35.8503333	-119.816	7.883	2.21	md	97	41	0.2243	0.2	nc	nc72243831	2017-02-04T02:07:05.340Z	21 km SE of Kettleman City, California	earthquake	0.25	0.62	0.214	78	reviewed	nc	nc
6/26/2014	3:14:25	35.8433333	-119.8006667	9.666	2.28	md	98	45	0.2279	0.25	nc	nc72243726	2017-02-04T02:04:50.630Z	23 km SE of Kettleman City, California	earthquake	0.28	0.54	0.268	76	reviewed	nc	nc
6/26/2014	1:38:04	35.8416667	-119.7943333	7.326	2.05	md	80	83	0.2306	0.21	nc	nc72243716	2017-02-04T02:04:35.170Z	23 km SE of Kettleman City, California	earthquake	0.28	0.6	0.163	50	reviewed	nc	nc
6/26/2014	1:15:45	35.825	-119.7821667	8.206	2.01	md	61	96	0.227	0.17	nc	nc72243686	2017-02-04T02:03:53.230Z	24 km NNW of Lost Hills, California	earthquake	0.42	0.63	0.109	41	reviewed	nc	nc
6/25/2014	22:41:14	35.8441667	-119.7973333	3.356	2.37	md	83	77	0.2306	0.17	nc	nc72243576	2017-02-04T02:01:14.460Z	23 km SE of Kettleman City, California	earthquake	0.28	0.85	0.242	76	reviewed	nc	nc
6/25/2014	22:01:36	35.8161667	-119.8805	8.832	3.37	mw	119	110	0.164	0.15	nc	nc72243551	2017-02-04T02:00:35.570Z	22 km SSE of Kettleman City, California	earthquake	0.37	0.3		4	reviewed	nc	nc
6/25/2014	18:17:21	35.8335	-119.7736667	4.138	2	md	66	94	0.2378	0.14	nc	nc72243496	2017-02-04T01:59:36.810Z	25 km NNW of Lost Hills, California	earthquake	0.36	0.71	0.182	46	reviewed	nc	nc
6/25/2014	17:02:52	35.8248333	-119.847	10.038	3.01	ml	136	73	0.1883	0.22	nc	nc72243471	2017-02-04T01:59:10.690Z	22 km SSE of Kettleman City, California	earthquake	0.34	0.4	0.124	23	reviewed	nc	nc
6/25/2014	14:46:21	35.8485	-119.7861667	4.866	2.21	md	57	120	0.2396	0.22	nc	nc72243386	2017-02-04T01:57:42.950Z	23 km SE of Kettleman City, California	earthquake	0.38	1.62	0.222	74	reviewed	nc	nc
6/25/2014	14:36:56	35.8213333	-119.7888333	8.288	2.07	md	45	178	0.2207	0.1	nc	nc72243376	2017-02-04T01:57:12.590Z	24 km NNW of Lost Hills, California	earthquake	0.39	0.9	0.162	46	reviewed	nc	nc
6/25/2014	14:34:56	35.8463333	-119.7941667	7.336	3.32	ml	138	27	0.2333	0.3	nc	nc72243371	2017-02-04T01:57:02.620Z	23 km SE of Kettleman City, California	earthquake	0.24	0.55	0.125	20	reviewed	nc	nc
6/25/2014	10:13:20	35.825	-119.773	7.113	2.29	md	61	112	0.2333	0.18	nc	nc72243261	2017-02-04T01:54:04.360Z	24 km NNW of Lost Hills, California	earthquake	0.44	1.07	0.207	65	reviewed	nc	nc
6/25/2014	10:12:22	35.8436667	-119.7975	9.063	3.06	ml	142	26	0.2297	0.26	nc	nc72243256	2017-02-04T01:53:53.340Z	23 km SE of Kettleman City, California	earthquake	0.24	0.52	0.182	17	reviewed	nc	nc
6/25/2014	8:41:55	35.8645	-119.8026667	7.783	2.61	md	111	28	0.2414	0.26	nc	nc72243201	2017-05-10T23:06:17.045Z	21 km SE of Kettleman City, California	earthquake	0.27	0.62	0.17	100	reviewed	nc	nc
6/25/2014	6:36:26	35.8333333	-119.7885	6.842	2.08	md	79	52	0.2288	0.14	nc	nc72243141	2017-02-04T01:50:46.450Z	24 km SE of Kettleman City, California	earthquake	0.31	0.54	0.2	62	reviewed	nc	nc
6/25/2014	6:26:11	35.83	-119.7883333	3.553	2	md	78	39	0.2261	0.17	nc	nc72243131	2017-02-04T01:50:35.560Z	25 km NNW of Lost Hills, California	earthquake	0.3	0.83	0.19	53	reviewed	nc	nc
6/25/2014	5:46:53	35.8213333	-119.7885	6.703	2.03	md	51	151	0.2207	0.11	nc	nc72243111	2017-02-04T01:50:01.220Z	24 km NNW of Lost Hills, California	earthquake	0.34	0.61	0.208	49	reviewed	nc	nc
6/25/2014	5:32:23	35.8618333	-119.7998333	5.823	2.69	md	134	28	0.2414	0.23	nc	nc72243101	2017-02-04T01:49:50.680Z	21 km SE of Kettleman City, California	earthquake	0.21	0.49	0.17	114	reviewed	nc	nc
6/25/2014	4:30:01	35.8411667	-119.7983333	7.806	2.94	md	70	72	0.2279	0.22	nc	nc72243071	2017-02-04T01:49:15.960Z	23 km SE of Kettleman City, California	earthquake	0.32	0.98	0.167	120	reviewed	nc	nc
6/25/2014	3:56:51	35.854	-119.8053333	8.326	3.13	ml	139	28	0.2324	0.25	nc	nc72243056	2017-02-04T01:48:42.910Z	22 km SE of Kettleman City, California	earthquake	0.22	0.46	0.167	18	reviewed	nc	nc
6/25/2014	1:07:44	35.841	-119.7986667	6.836	2.6	md	112	36	0.227	0.22	nc	nc72243016	2017-02-04T01:47:45.380Z	23 km SE of Kettleman City, California	earthquake	0.28	0.56	0.19	99	reviewed	nc	nc
6/25/2014	0:58:29	35.8426667	-119.8033333	7.896	2.96	md	118	39	0.2261	0.22	nc	nc72243011	2017-02-04T01:47:34.640Z	23 km SE of Kettleman City, California	earthquake	0.25	0.59	0.136	94	reviewed	nc	nc
6/18/2014	0:41:53	36.2766667	-120.3585	9.229	2.32	md	61	116	0.03063	0.1	nc	nc72239596	2017-02-04T00:56:52.560Z	15 km N of Coalinga, California	earthquake	0.33	0.17	0.175	49	reviewed	nc	nc
6/18/2014	0:41:11	36.2778333	-120.3603333	9.66	2.45	md	38	174	0.03153	0.12	nc	nc72239601	2017-02-04T00:56:42.610Z	15 km N of Coalinga, California	earthquake	0.46	0.27	0.115	21	reviewed	nc	nc
6/18/2014	0:40:50	36.281	-120.3583333	9.94	2.66	md	99	100	0.03423	0.15	nc	nc72239591	2017-02-04T00:56:29.850Z	15 km N of Coalinga, California	earthquake	0.15	0.19	0.307	100	reviewed	nc	nc
6/18/2014	0:31:53	36.2821667	-120.37	9.779	3.04	ml	124	29	0.03964	0.11	nc	nc72239586	2017-02-04T00:56:12.200Z	15 km N of Coalinga, California	earthquake	0.12	0.19	0.166	23	reviewed	nc	nc
6/17/2014	23:57:47	35.0173333	-119.3305	-1.317	3.3	ml	50	42	0.1027	0.38	ci	ci37233224	2022-08-07T00:16:29.578Z	8km SE of Maricopa, CA	earthquake	0.41	0.91	0.135	214	reviewed	ci	ci
6/16/2014	20:41:17	36.079	-119.8991667	8.75	2.32	md	76	77	0.1712	0.17	nc	nc72238971	2022-07-26T17:17:26.209Z	9 km NE of Kettleman City, California	earthquake	0.32	0.72	0.238	61	reviewed	nc	nc
6/16/2014	9:12:04	36.0188333	-120.5813333	4.403	2.81	md	95	48	0.03784	0.08	nc	nc72238611	2022-07-26T17:12:09.818Z	18 km NW of Parkfield, California	earthquake	0.12	0.18	0.15	107	reviewed	nc	nc
6/15/2014	17:37:11	35.8148333	-119.789	7.668	2.42	md	69	94	0.2162	0.17	nc	nc72238266	2017-02-04T00:36:11.060Z	23 km NNW of Lost Hills, California	earthquake	0.33	0.53	0.211	84	reviewed	nc	nc
6/14/2014	19:43:59	35.9788333	-119.9475	22.319	2.73	md	101	59	0.155	0.19	nc	nc72237861	2017-02-04T00:28:21.810Z	3 km SSE of Kettleman City, California	earthquake	0.33	0.22	0.229	103	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/13/2014	13:24:33	36.0615	-119.9198333	10.16	2.43	md	104	68	0.1541	0.14	nc	nc72237126	2017-02-04T00:18:12.480Z	7 km NNE of Kettleman City, California	earthquake	0.23	0.47	0.177	81	reviewed	nc	nc
6/10/2014	23:15:26	35.435	-120.72	4.746	2.28	md	85	40	0.04414	0.05	nc	nc72235821	2022-07-26T16:51:39.432Z	7 km SW of Atascadero, California	earthquake	0.1	0.32	0.17	63	reviewed	nc	nc
6/10/2014	4:55:35	35.1163333	-118.9315	8.28	2.06	ml	29	66		0.15	ci	ci15510553	2016-03-11T22:42:04.841Z	14km SW of Arvin, CA	earthquake	0.34	0.74	0.128	48	reviewed	ci	ci
6/7/2014	14:52:23	35.848	-119.7958333	4.886	2.57	md	100	31	0.2342	0.25	nc	nc72234136	2022-07-26T16:40:52.251Z	23 km SE of Kettleman City, California	earthquake	0.34	0.69	0.193	91	reviewed	nc	nc
6/5/2014	17:51:40	35.0033333	-119.2848333	8.969	2.03	ml	5	206	0.1228	0.26	ci	ci37203533	2016-03-12T04:19:22.195Z	12km ESE of Maricopa, CA	earthquake	1.66	4.05	0.23	3	reviewed	ci	ci
6/5/2014	17:51:11	34.9848333	-119.2751667	-1.422	2.89	ml	43	55	0.1218	0.26	ci	ci15509129	2022-07-26T16:31:15.803Z	14km SE of Maricopa, CA	earthquake	0.32	0.71	0.155	170	reviewed	ci	ci
5/30/2014	19:43:53	35.5778333	-120.8758333	3.943	2.27	md	82	44	0.05045	0.07	nc	nc72229426	2017-02-03T22:00:06.840Z	15 km N of Cayucos, California	earthquake	0.12	0.29	0.185	78	reviewed	nc	nc
5/27/2014	6:50:15	35.939	-120.4916667	9.193	2.12	md	80	37	0.01802	0.06	nc	nc72227776	2017-02-03T21:32:53.080Z	6 km NW of Parkfield, California	earthquake	0.1	0.15	0.172	71	reviewed	nc	nc
5/27/2014	5:16:12	35.521	-120.8176667	3.513	2.16	md	81	28	0.07387	0.08	nc	nc72227751	2017-02-03T21:32:26.530Z	10 km WSW of Templeton, California	earthquake	0.11	0.47	0.234	74	reviewed	nc	nc
5/23/2014	8:26:48	35.5813333	-120.874	3.683	2.26	md	80	44	0.05495	0.07	nc	nc72225921	2017-02-03T21:05:52.020Z	15 km N of Cayucos, California	earthquake	0.12	0.31	0.187	84	reviewed	nc	nc
5/22/2014	6:33:42	35.5796667	-120.8741667	3.723	2.88	md	88	43	0.05315	0.07	nc	nc72225491	2022-07-26T15:31:46.884Z	15 km N of Cayucos, California	earthquake	0.12	0.31	0.139	100	reviewed	nc	nc
5/21/2014	19:28:00	36.0316667	-120.591	7.504	2.38	md	93	48	0.03784	0.06	nc	nc72225186	2017-02-03T20:53:31.660Z	20 km NW of Parkfield, California	earthquake	0.12	0.15	0.189	88	reviewed	nc	nc
5/21/2014	18:55:46	36.0493333	-120.6083333	8.304	2.52	md	102	39	0.02162	0.07	nc	nc72225176	2017-02-03T20:53:19.790Z	22 km NW of Parkfield, California	earthquake	0.13	0.18	0.179	94	reviewed	nc	nc
5/17/2014	16:49:56	36.2995	-120.278	6.75	2.38	md	62	138	0.07297	0.1	nc	nc72223161	2017-02-03T20:16:27.960Z	19 km NW of Huron, California	earthquake	0.23	0.17	0.197	74	reviewed	nc	nc
4/27/2014	9:28:19	35.5591667	-120.8046667	4.599	2.04	md	77	32	0.08649	0.06	nc	nc72206415	2017-02-03T16:26:38.610Z	9 km W of Templeton, California	earthquake	0.13	0.54	0.142	57	reviewed	nc	nc
4/27/2014	2:21:19	35.0033333	-119.1533333	18.893	2.1	ml	29	53	0.1654	0.2	ci	ci37217632	2016-03-11T15:01:13.069Z	18km N of Pine Mountain Club, CA	earthquake	0.35	0.93	0.154	43	reviewed	ci	ci
4/24/2014	22:18:53	35.8326667	-120.017	14.152	2.67	md	88	183	0.1378	0.18	nc	nc72204700	2022-07-26T13:42:15.809Z	20 km SSW of Kettleman City, California	earthquake	0.41	0.72	0.233	110	reviewed	nc	nc
4/20/2014	17:09:34	36.1785	-120.3411667	13.109	2.38	md	85	59	0.07117	0.16	nc	nc72202535	2017-02-03T15:15:59.440Z	4 km NNE of Coalinga, California	earthquake	0.2	0.39	0.183	101	reviewed	nc	nc
4/20/2014	16:10:50	36.1798333	-120.353	12.399	2.69	md	74	96	0.07027	0.1	nc	nc72202520	2022-07-26T13:24:05.953Z	4 km N of Coalinga, California	earthquake	0.21	0.36	0.178	125	reviewed	nc	nc
4/14/2014	4:15:42	35.7963333	-120.3483333	8.089	2.41	md	88	55	0.02432	0.05	nc	nc72198885	2017-02-03T14:25:59.990Z	Central California	earthquake	0.1	0.19	0.172	87	reviewed	nc	nc
3/30/2014	14:24:35	36.0558333	-120.6236667	5.854	2.13	md	81	77	0.08468	0.07	nc	nc72191145	2022-07-26T11:24:29.770Z	24 km NW of Parkfield, California	earthquake	0.19	0.28	0.14	21	reviewed	nc	nc
3/25/2014	8:13:00	36.1396667	-120.0208333	8.572	2	md	91	67	0.1063	0.23	nc	nc72188515	2017-02-03T11:48:52.920Z	10 km SE of Huron, California	earthquake	0.29	0.4	0.176	64	reviewed	nc	nc
3/19/2014	23:52:18	36.1631667	-120.0158333	8.252	2.22	md	75	99	0.127	0.18	nc	nc72188206	2017-02-03T10:56:48.160Z	8 km ESE of Huron, California	earthquake	0.28	0.41	0.169	67	reviewed	nc	nc
3/19/2014	6:31:57	36.0336667	-120.5966667	4.494	2.05	md	73	64	0.05405	0.07	nc	nc72187746	2017-02-03T10:49:18.050Z	20 km NW of Parkfield, California	earthquake	0.16	0.25	0.149	65	reviewed	nc	nc
3/16/2014	20:44:36	36.1755	-120.2816667	10.789	2.82	md	75	117	0.08919	0.08	nc	nc72186436	2022-07-26T09:42:07.461Z	8 km ENE of Coalinga, California	earthquake	0.18	0.31	0.165	148	reviewed	nc	nc
3/16/2014	20:37:23	36.1741667	-120.2775	10.519	2.13	md	56	118	0.09189	0.09	nc	nc72186426	2017-02-03T10:28:29.190Z	8 km ENE of Coalinga, California	earthquake	0.24	0.44	0.195	74	reviewed	nc	nc
3/7/2014	19:57:20	35.7108333	-120.261	12.47	2.41	md	74	34	0.02162	0.05	nc	nc72180626	2017-02-03T08:49:56.620Z	12 km ENE of Shandon, California	earthquake	0.12	0.25	0.174	70	reviewed	nc	nc
2/24/2014	4:36:06	36.3233333	-119.8286667	0.556	2.15	md	80	51	0.3279	0.56	nc	nc72173831	2017-02-03T06:59:37.150Z	4 km WNW of Lemoore, California	earthquake	0.96	3.38	0.189	58	reviewed	nc	nc
2/23/2014	19:24:46	36.3586667	-119.7778333	17.365	2.27	md	47	70	0.3586	0.11	nc	nc72173651	2017-02-03T06:55:42.870Z	6 km WNW of Grangeville, California	earthquake	0.3	0.37	0.227	53	reviewed	nc	nc
2/14/2014	15:07:23	35.9385	-120.4886667	9.661	3.2	mw	90	42	0.01622	0.07	nc	nc72167161	2022-08-06T21:46:57.435Z	6 km NW of Parkfield, California	earthquake	0.11	0.16		4	reviewed	nc	nc
2/12/2014	22:54:13	35.939	-120.4896667	9.553	2.63	md	92	37	0.01622	0.07	nc	nc72165381	2017-02-03T04:27:09.290Z	6 km NW of Parkfield, California	earthquake	0.1	0.15	0.148	98	reviewed	nc	nc
2/7/2014	6:51:18	35.0148333	-119.1395	19.136	2.14	ml	38	59		0.18	ci	ci11421778	2016-03-11T02:16:08.449Z	19km N of Pine Mountain Club, CA	earthquake	0.23	0.77	0.12	58	reviewed	ci	ci
2/7/2014	6:48:49	35.0186667	-119.1363333	17.836	2.76	ml	50	63		0.25	ci	ci11421770	2016-03-11T02:16:06.473Z	19km N of Pine Mountain Club, CA	earthquake	0.26	0.61	0.141	150	reviewed	ci	ci
2/7/2014	2:51:21	34.9425	-119.2953333	0.299	2.31	ml	27	86	0.0968	0.29	ci	ci11421706	2016-03-11T18:41:18.096Z	16km SE of Maricopa, CA	earthquake	0.49	1.49	0.198	72	reviewed	ci	ci
2/4/2014	5:31:19	35.0263333	-119.1153333	11.768	3.59	ml	66	34		0.27	ci	ci11420690	2022-08-06T21:37:36.996Z	19km WNW of Grapevine, CA	earthquake	0.26	0.67	0.181	241	reviewed	ci	ci
1/27/2014	20:26:41	35.5996667	-120.8515	7.463	2.27	md	78	43	0.03964	0.08	nc	nc72147540	2022-07-26T06:08:37.713Z	14 km WNW of Templeton, California	earthquake	0.13	0.43	0.193	78	reviewed	nc	nc
1/27/2014	7:46:46	36.0843333	-120.1755	15.102	2.2	md	50	147	0.05856	0.07	nc	nc72147265	2017-02-03T00:15:47.590Z	9 km NNW of Avenal, California	earthquake	0.35	0.46	0.262	64	reviewed	nc	nc
1/26/2014	17:49:34	36.2328333	-120.3665	10.266	2.99	md	76	80	0.02523	0.09	nc	nc72147015	2022-07-26T06:04:29.615Z	10 km N of Coalinga, California	earthquake	0.17	0.29	0.172	171	reviewed	nc	nc
1/25/2014	13:45:55	34.9776667	-118.963	17.125	2.01	ml	35	48	0.05874	0.19	ci	ci11417482	2016-03-11T16:46:03.910Z	5km NW of Grapevine, CA	earthquake	0.38	0.63	0.168	56	reviewed	ci	ci
12/30/2013	2:00:15	36.133	-120.0901667	8.592	2.04	md	77	59	0.07387	0.22	nc	nc72132736	2017-02-02T05:38:43.870Z	7 km S of Huron, California	earthquake	0.38	0.26	0.33	76	reviewed	nc	nc
12/27/2013	0:25:24	36.0388333	-119.8588333	22.654	2.74	md	87	68	0.1937	0.24	nc	nc72131076	2017-02-02T05:12:56.170Z	9 km ENE of Kettleman City, California	earthquake	0.33	0.52	0.241	107	reviewed	nc	nc
12/24/2013	21:06:44	35.777	-120.3281667	8.238	2.5	md	90	37	0.01081	0.05	nc	nc72129776	2017-02-02T04:53:37.100Z	14 km NNE of Shandon, California	earthquake	0.1	0.2	0.126	87	reviewed	nc	nc
12/20/2013	20:04:57	35.8228333	-119.876	6.306	2.56	md	72	197	0.07658	0.1	nc	nc72127656	2017-02-02T04:19:30.280Z	21 km SSE of Kettleman City, California	earthquake	0.49	0.41	0.171	92	reviewed	nc	nc
12/20/2013	8:29:43	35.8276667	-119.848	-0.41	2.5	md	67	164	0.09459	0.19	nc	nc72127276	2017-02-02T04:15:52.060Z	22 km SSE of Kettleman City, California	earthquake	0.36	0.28	0.2	77	reviewed	nc	nc
12/17/2013	11:49:28	35.7958333	-120.3475	9.599	2.06	md	82	39	0.02342	0.06	nc	nc72125766	2017-02-02T03:55:24.520Z	13 km SSE of Parkfield, California	earthquake	0.12	0.22	0.197	80	reviewed	nc	nc
12/17/2013	2:12:35	35.817	-119.89	5.896	2.41	md	76	202	0.07117	0.14	nc	nc72125616	2017-02-02T03:52:20.430Z	22 km SSE of Kettleman City, California	earthquake	0.37	0.49	0.263	92	reviewed	nc	nc
12/15/2013	2:33:05	35.9745	-120.2078333	10.076	2.45	md	79	76	0.1144	0.11	nc	nc72121135	2017-02-02T03:35:22.180Z	7 km WSW of Avenal, California	earthquake	0.13	0.3	0.159	121	reviewed	nc	nc
12/14/2013	21:16:04	35.9765	-120.2056667	10.675	2.14	md	71	77	0.1153	0.1	nc	nc72120980	2017-02-02T03:32:01.800Z	7 km WSW of Avenal, California	earthquake	0.2	0.38	0.284	87	reviewed	nc	nc
12/14/2013	18:59:00	35.9741667	-120.1993333	10.786	2.46	md	69	111	0.1135	0.1	nc	nc72120895	2017-02-02T03:30:10.290Z	7 km WSW of Avenal, California	earthquake	0.19	0.38	0.217	94	reviewed	nc	nc
12/13/2013	7:49:57	35.8113333	-119.8008333	21.746	4.08	mw	74	70	0.136	0.2	nc	nc72119970	2022-08-06T20:21:37.703Z	23 km NNW of Lost Hills, California	earthquake	0.32	0.39		4	reviewed	nc	nc
12/13/2013	0:35:07	36.0928333	-120.2053333	8.539	2.29	md	55	145	0.08378	0.08	nc	nc72119815	2017-02-02T03:11:24.870Z	12 km NW of Avenal, California	earthquake	0.29	0.4	0.256	92	reviewed	nc	nc
12/11/2013	3:01:58	35.1536667	-120.4238333	-0.439	2.02	ml	22	67	0.04276	0.17	ci	ci15442841	2016-03-11T12:59:25.830Z	13km NNE of Nipomo, CA	earthquake	0.46	1.39	0.163	21	reviewed	ci	ci
12/5/2013	18:51:01	36.2305	-120.2491667	11.999	2.24	md	68	130	0.07838	0.1	nc	nc72115520	2017-02-02T02:12:00.750Z	13 km WNW of Huron, California	earthquake	0.27	0.31	0.215	73	reviewed	nc	nc
12/5/2013	3:45:46	36.2273333	-120.2631667	11.959	2.37	md	77	87	0.06757	0.13	nc	nc72114945	2017-02-02T02:06:25.260Z	13 km NE of Coalinga, California	earthquake	0.2	0.35	0.2	91	reviewed	nc	nc
11/26/2013	8:02:01	35.7965	-119.8075	23.13	2.17	md	59	99	0.1378	0.13	nc	nc72110030	2017-02-02T00:48:49.490Z	22 km NNW of Lost Hills, California	earthquake	0.31	0.27	0.2	48	reviewed	nc	nc
11/21/2013	8:23:23	35.4686667	-119.31	20.059	2.71	ml	44	65	0.2087	0.26	ci	ci11393658	2016-03-12T04:05:38.005Z	5km SW of Shafter, CA	earthquake	0.34	1.29	0.142	77	reviewed	ci	ci
11/16/2013	12:08:06	35.8583333	-120.4051667	5.167	2.42	md	87	40	0.02252	0.06	nc	nc72108451	2022-07-26T01:39:54.698Z	5 km SSE of Parkfield, California	earthquake	0.1	0.16	0.161	97	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/10/2013	14:15:59	36.3021667	-119.7488333	17.488	2.25	md	54	103	0.3784	0.16	nc	nc72104836	2017-02-01T22:33:31.490Z	3 km E of Lemoore, California	earthquake	0.5	0.48	0.185	66	reviewed	nc	nc
11/8/2013	23:00:14	35.9666667	-120.5143333	2.818	2.8	mh	21	68	0.01351	0.02	nc	nc72103696	2017-02-01T22:13:26.176Z	10 km NW of Parkfield, California	earthquake	0.21	0.38		0	reviewed	nc	nc
11/8/2013	20:31:18	36.2728333	-120.33	12.5	2.97	md	122	52	0.02613	0.13	nc	nc72103596	2022-07-26T01:16:02.779Z	15 km N of Coalinga, California	earthquake	0.21	0.3	0.168	154	reviewed	nc	nc
10/28/2013	23:43:47	36.0491667	-120.1918333	8.693	2.11	md	55	144	0.06757	0.09	nc	nc72097381	2017-02-01T20:29:34.310Z	7 km NW of Avenal, California	earthquake	0.28	0.56	0.248	40	reviewed	nc	nc
10/24/2013	16:45:31	36.1286667	-120.2183333	10.229	2.69	md	74	127	0.1108	0.08	nc	nc72094651	2022-07-26T00:29:32.034Z	12 km E of Coalinga, California	earthquake	0.26	0.33	0.149	108	reviewed	nc	nc
10/24/2013	16:23:19	35.9436667	-119.9208333	8.778	2.01	md	62	222	0.08649	0.13	nc	nc72094641	2017-02-01T19:51:13.270Z	8 km SSE of Kettleman City, California	earthquake	0.8	0.38	0.192	50	reviewed	nc	nc
10/16/2013	5:04:14	35.1315	-119.1588333	18.996	2.12	ml	36	55	0.2141	0.22	ci	ci11378914	2016-03-12T04:02:36.823Z	24km ENE of Maricopa, CA	earthquake	0.29	0.6	0.185	63	reviewed	ci	ci
10/11/2013	11:59:20	36.0328333	-119.8423333	21.384	2.17	md	56	103	0.1937	0.21	nc	nc72085566	2017-02-01T17:00:47.190Z	11 km ENE of Kettleman City, California	earthquake	0.51	0.74	0.206	47	reviewed	nc	nc
10/7/2013	7:28:12	36.1128333	-120.0275	8.632	2.19	md	83	60	0.08468	0.11	nc	nc72082671	2021-07-13T21:02:35.485Z	12 km SE of Huron, California	earthquake	0.26	0.2	0.199	77	reviewed	nc	nc
10/4/2013	0:59:34	35.141	-119.1406667	17.957	2.22	ml	28	55	0.2051	0.2	ci	ci11372786	2016-03-11T20:32:50.532Z	24km WSW of Lamont, CA	earthquake	0.36	1.07	0.222	17	reviewed	ci	ci
9/23/2013	10:14:17	35.941	-119.9013333	10.5	2	md	60	113	0.09009	0.27	nc	nc72075441	2017-02-01T14:35:04.460Z	9 km SE of Kettleman City, California	earthquake	0.37	0.64	0.209	49	reviewed	nc	nc
9/16/2013	13:36:51	35.5265	-120.835	2.059	2.15	md	81	32	0.05856	0.18	nc	nc72071481	2017-02-01T13:37:14.380Z	10 km NNE of Cayucos, California	earthquake	0.14	0.75	0.162	72	reviewed	nc	nc
9/11/2013	1:45:52	35.8518333	-120.4001667	4.632	2.97	md	99	39	0.01532	0.12	nc	nc72067636	2017-02-01T12:36:02.380Z	6 km SSE of Parkfield, California	earthquake	0.12	0.25	0.183	141	reviewed	nc	nc
9/8/2013	2:05:51	35.5221667	-120.8131667	4.133	2.25	md	88	29	0.07748	0.14	nc	nc72065881	2017-02-01T12:11:07.870Z	10 km WSW of Templeton, California	earthquake	0.15	0.58	0.201	70	reviewed	nc	nc
9/6/2013	15:21:26	35.6486667	-119.9645	4.396	2.41	md	87	146	0.04865	0.3	nc	nc72064771	2017-02-01T11:56:38.830Z	24 km W of Lost Hills, California	earthquake	0.34	0.51	0.298	87	reviewed	nc	nc
9/2/2013	20:46:45	35.8935	-119.9761667	2.345	2.06	md	62	184	0.03514	0.29	nc	nc72062546	2017-02-01T11:27:12.690Z	12 km S of Kettleman City, California	earthquake	0.6	0.66	0.228	40	reviewed	nc	nc
8/30/2013	6:00:00	35.9135	-119.8816667	2.544	2.04	md	61	132	0.07928	0.2	nc	nc72059716	2017-02-01T10:52:25.380Z	12 km SE of Kettleman City, California	earthquake	0.34	0.36	0.17	40	reviewed	nc	nc
8/26/2013	5:49:58	35.988	-120.5606667	4.153	2.03	md	79	61	0.01441	0.13	nc	nc72056586	2017-02-01T10:08:06.000Z	15 km NW of Parkfield, California	earthquake	0.16	0.18	0.109	19	reviewed	nc	nc
8/10/2013	2:03:19	36.0675	-120.1013333	13.857	2.23	md	70	142	0.009009	0.09	nc	nc72046356	2017-02-01T07:58:21.370Z	7 km NNE of Avenal, California	earthquake	0.18	0.21	0.235	84	reviewed	nc	nc
8/9/2013	22:43:11	36.0628333	-120.0883333	16.997	2.92	md	102	108	0.01712	0.17	nc	nc72046281	2022-08-06T17:09:02.086Z	7 km NNE of Avenal, California	earthquake	0.23	0.34	0.149	143	reviewed	nc	nc
8/9/2013	22:01:50	36.0523333	-120.0983333	16.537	2.88	ml	110	60	0.01261	0.22	nc	nc72046216	2022-07-25T19:59:04.194Z	6 km NNE of Avenal, California	earthquake	0.24	0.29	0.156	23	reviewed	nc	nc
8/9/2013	21:25:32	36.059	-120.0916667	14.787	2.11	md	72	142	0.01441	0.13	nc	nc72046186	2017-02-01T07:55:59.230Z	6 km NNE of Avenal, California	earthquake	0.23	0.29	0.286	75	reviewed	nc	nc
8/9/2013	16:28:29	35.9811667	-120.549	2.725	2.07	md	79	42	0.003604	0.15	nc	nc72046001	2017-02-01T07:54:14.820Z	13 km NW of Parkfield, California	earthquake	0.16	0.25	0.224	64	reviewed	nc	nc
8/7/2013	11:16:03	35.8601667	-120.4128333	8.332	2.47	md	89	39	0.02342	0.07	nc	nc72044591	2017-02-01T07:31:59.090Z	4 km SSE of Parkfield, California	earthquake	0.11	0.19	0.135	102	reviewed	nc	nc
8/6/2013	15:03:11	36.07	-120.6431667	3.704	2.98	md	88	115	0.03784	0.14	nc	nc72044151	2022-07-25T19:45:38.685Z	24 km ENE of San Ardo, California	earthquake	0.17	0.36	0.169	79	reviewed	nc	nc
8/6/2013	15:02:33	36.0761667	-120.6391667	5.034	3.35	mw	114	53	0.03514	0.13	nc	nc72044146	2022-08-06T17:05:03.338Z	24 km ENE of San Ardo, California	earthquake	0.16	0.31		4	reviewed	nc	nc
8/3/2013	9:36:42	34.9001667	-119.0308333	11.705	2.79	ml	51	45	0.1284	0.16	ci	ci11343722	2022-07-25T19:35:57.265Z	10km WSW of Grapevine, CA	earthquake	0.27	0.48	0.168	86	reviewed	ci	ci
7/28/2013	0:18:30	35.5518333	-120.7836667	3.596	2.62	md	96	24	0.1018	0.15	nc	nc72035200	2022-07-25T19:13:49.402Z	7 km W of Templeton, California	earthquake	0.17	0.77	0.119	96	reviewed	nc	nc
7/17/2013	9:24:25	36.0723333	-119.654	16.3	2.29	md	65	113	0.3225	0.18	nc	nc72028120	2018-09-25T20:19:37.130Z	9km WSW of Corcoran, CA	earthquake	0.52	0.43	0.16	43	reviewed	nc	nc
7/8/2013	15:24:56	35.9648333	-120.526	10.418	2.08	md	82	38	0.01802	0.12	nc	nc72023010	2017-02-01T03:24:20.350Z	11 km NW of Parkfield, California	earthquake	0.19	0.22	0.175	68	reviewed	nc	nc
7/8/2013	9:15:44	36.0311667	-120.5953333	7.242	2.1	md	86	44	0.03784	0.13	nc	nc72022875	2017-02-01T03:22:04.500Z	20 km NW of Parkfield, California	earthquake	0.18	0.24	0.197	81	reviewed	nc	nc
7/5/2013	7:41:17	34.9046667	-119.2108333	12.358	2.94	ml	60	41	0.05728	0.29	ci	ci11330650	2022-07-25T18:00:53.227Z	9km NW of Pine Mountain Club, CA	earthquake	0.27	0.56	0.142	189	reviewed	ci	ci
7/3/2013	19:46:24	36.2278333	-120.3531667	10.003	2.37	md	57	55	0.02342	0.11	nc	nc72020115	2022-07-25T17:55:40.345Z	9 km N of Coalinga, California	earthquake	0.18	0.21	0.258	78	reviewed	nc	nc
6/26/2013	11:18:39	36.1121667	-120.0715	9.559	2.52	md	56	163	0.05946	0.1	nc	nc72015785	2017-02-01T01:38:53.550Z	10 km SSE of Huron, California	earthquake	0.27	0.22	0.17	130	reviewed	nc	nc
6/26/2013	9:45:29	36.2015	-120.3001667	9.815	2.18	md	64	58	0.05856	0.12	nc	nc72015755	2017-02-01T01:38:09.240Z	8 km NE of Coalinga, California	earthquake	0.17	0.27	0.221	92	reviewed	nc	nc
6/23/2013	21:49:09	36.0173333	-120.5848333	4.072	2.31	md	86	50	0.03964	0.11	nc	nc72014240	2017-02-01T01:15:45.520Z	18 km NW of Parkfield, California	earthquake	0.13	0.19	0.19	86	reviewed	nc	nc
6/20/2013	3:45:39	35.9253333	-120.4783333	9.651	2.98	md	94	32	0.01622	0.1	nc	nc72011795	2022-07-25T16:58:31.835Z	5 km NW of Parkfield, California	earthquake	0.12	0.18	0.135	91	reviewed	nc	nc
6/17/2013	1:30:34	36.0516667	-120.0791667	22.277	2.51	md	86	145	0.02613	0.23	nc	nc72009445	2017-01-31T23:58:20.870Z	6 km NE of Avenal, California	earthquake	0.38	0.3	0.18	71	reviewed	nc	nc
6/1/2013	22:01:00	36.0390015	-120.5926666	4.17	2.08	md	30	77	0.02973	0.07	nc	nc72000765	2017-01-31T21:32:39.920Z	21 km NW of Parkfield, California	earthquake	0.31	0.37	0.13	18	automatic	nc	nc
5/29/2013	16:14:05	35.4648333	-119.3526667	4.978	2.04	ml	15	141	0.2357	0.4	ci	ci15350793	2016-03-12T00:07:15.995Z	8km WSW of Shafter, CA	earthquake	0.82	31.61	0.164	12	reviewed	ci	ci
5/27/2013	6:11:16	35.9101667	-119.9756667	2.674	2.3	md	73	175	0.05045	0.27	nc	nc72000966	2022-07-25T03:24:38.031Z	10 km S of Kettleman City, California	earthquake	0.43	0.63	0.288	88	reviewed	nc	nc
5/27/2013	0:04:28	35.1345	-119.2141667	17.68	2.21	ml	27	90	0.1686	0.42	ci	ci15349465	2021-03-04T02:59:54.512Z	19km ENE of Maricopa, CA	earthquake	0.69	1.61	0.165	21	reviewed	ci	ci
5/26/2013	14:01:08	36.0633333	-120.2041667	9.576	3.27	ml	95	64	0.07658	0.19	nc	nc72000566	2022-08-06T15:55:48.860Z	9 km NW of Avenal, California	earthquake	0.23	0.51	0.166	30	reviewed	nc	nc
5/26/2013	1:58:15	35.1353333	-120.656	5.55	2.38	md	80	118	0.02697	0.08	nc	nc72000216	2019-06-11T00:05:02.960Z	2km WSW of Pismo Beach, CA	earthquake	0.1	0.16	0.169	77	reviewed	nc	nc
5/21/2013	22:46:38	34.8523333	-119.2418333	10.75	2.15	ml	46	58	0.0144	0.19	ci	ci15347169	2017-02-17T20:04:23.210Z	8km W of Pine Mountain Club, CA	earthquake	0.22	0.42	0.146	47	reviewed	ci	ci
5/18/2013	11:28:06	35.6275	-120.7241667	6.093	2.26	md	90	26	0.1189	0.13	nc	nc71993596	2017-01-31T16:46:18.520Z	3 km W of Paso Robles, California	earthquake	0.15	1.08	0.167	90	reviewed	nc	nc
5/16/2013	10:04:58	34.8578333	-119.2386667	11.028	3.18	ml	63	34		0.21	ci	ci15343601	2022-06-17T16:40:44.141Z	8km W of Pine Mountain Club, CA	earthquake	0.25	0.47	0.158	235	reviewed	ci	ci
5/13/2013	2:22:31	36.0403333	-120.1023333	9.407	2.23	md	93	97	0.02162	0.23	nc	nc71990646	2017-01-31T16:01:04.760Z	4 km NNE of Avenal, California	earthquake	0.27	0.29	0.213	83	reviewed	nc	nc
5/8/2013	21:02:44	36.2973333	-119.9055	16.124	2.69	md	142	49	0.282	0.29	nc	nc71988126	2017-01-31T15:23:49.800Z	3 km N of Lemoore Station, California	earthquake	0.38	0.56	0.162	107	reviewed	nc	nc
5/5/2013	2:06:46	35.0703333	-118.8965	3.54	2.42	ml	41	123	0.07842	0.19	ci	ci15337761	2016-03-12T00:05:22.454Z	14km NNE of Grapevine, CA	earthquake	0.33	0.54	0.189	111	reviewed	ci	ci
5/3/2013	10:06:42	35.8801667	-120.43	5.66	2.98	md	90	34	0.01622	0.09	nc	nc71984616	2017-01-31T14:30:05.470Z	2 km S of Parkfield, California	earthquake	0.12	0.19	0.142	144	reviewed	nc	nc
4/26/2013	0:30:25	36.0251667	-120.5945	4.052	2.16	md	88	69	0.04414	0.14	nc	nc71977310	2017-01-31T13:31:18.170Z	20 km NW of Parkfield, California	earthquake	0.18	0.26	0.237	79	reviewed	nc	nc
4/25/2013	22:16:54	36.2348333	-120.2656667	9.434	2.05	md	77	89	0.1631	0.17	nc	nc71977265	2017-01-31T13:30:30.550Z	13 km NE of Coalinga, California	earthquake	0.32	0.48	0.275	77	reviewed	nc	nc
4/20/2013	14:25:27	36.1061667	-119.8563333	35.087	2.2	md	44	138	0.2099	0.19	nc	nc71974280	2017-01-31T12:38:58.410Z	9 km SSW of Stratford, California	earthquake	0.7	1.07	0.132	35	reviewed	nc	nc
4/7/2013	7:43:11	36.158	-120.1726667	8.25	2.36	md	82	136	0.1099	0.2	nc	nc71967575	2017-01-31T10:51:47.790Z	8 km SW of Huron, California	earthquake	0.44	0.37	0.178	68	reviewed	nc	nc
4/6/2013	23:54:01	36.2593333	-120.4518333	12.965	2.4	md	91	85	0.1189	0.19	nc	nc71967430	2017-01-31T10:49:25.490Z	15 km NNW of Coalinga, California	earthquake	0.35	0.5	0.225	90	reviewed	nc	nc
4/5/2013	4:51:26	35.6546667	-119.9651667	5.853	2.37	md	64	122	0.04414	0.13	nc	nc71966485	2017-01-31T10:32:59.720Z	24 km W of Lost Hills, California	earthquake	0.19	0.36	0.309	62	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
3/24/2013	16:43:51	35.5853333	-120.8395	6.013	2.81	md	92	27	0.05676	0.15	nc	nc71959665	2022-07-24T21:28:26.980Z	12 km WNW of Templeton, California	earthquake	0.17	0.55	0.153	90	reviewed	nc	nc
3/21/2013	15:28:28	35.0275	-118.9811667	12.095	2.02	ml	25	50	0.1106	0.26	ci	ci15311465	2016-03-11T20:15:40.586Z	10km NNW of Grapevine, CA	earthquake	0.45	1.16	0.193	43	reviewed	ci	ci
3/1/2013	11:35:18	36.01	-120.5743333	4.032	2.36	md	82	50	0.03063	0.11	nc	nc71946475	2017-01-31T05:08:05.170Z	17 km NW of Parkfield, California	earthquake	0.17	0.22	0.2	69	reviewed	nc	nc
2/21/2013	1:15:44	36.0623333	-120.082	9.847	2.3	md	77	71	0.02252	0.21	nc	nc71941345	2017-01-31T03:37:44.530Z	7 km NNE of Avenal, California	earthquake	0.38	0.23	0.202	57	reviewed	nc	nc
2/17/2013	10:44:05	34.8895	-120.3136667	-0.288	2.34	ml	35	38	0.1401	0.21	ci	ci11245754	2022-07-24T18:21:58.516Z	12km ENE of Orcutt, CA	earthquake	0.32	0.99	0.105	49	reviewed	ci	ci
2/5/2013	8:58:22	35.0721667	-118.966	11.649	2.48	ml	58	44	0.1241	0.18	ci	ci15281481	2022-07-24T17:25:14.231Z	15km NNW of Grapevine, CA	earthquake	0.21	0.62	0.136	113	reviewed	ci	ci
2/5/2013	4:27:33	36.0025	-120.5623333	4.145	2.53	md	92	48	0.02162	0.1	nc	nc71935341	2017-01-31T00:51:09.960Z	16 km NW of Parkfield, California	earthquake	0.13	0.17	0.166	87	reviewed	nc	nc
1/25/2013	18:51:53	36.0028333	-120.5616667	3.472	2.04	md	72	58	0.02162	0.08	nc	nc71928686	2017-01-30T22:32:33.690Z	16 km NW of Parkfield, California	earthquake	0.11	0.12	0.238	68	reviewed	nc	nc
1/25/2013	16:10:58	36.0011667	-120.5598333	4.045	2.75	md	85	47	0.02072	0.07	nc	nc71928616	2022-07-24T16:17:46.920Z	16 km NW of Parkfield, California	earthquake	0.12	0.14	0.159	96	reviewed	nc	nc
1/22/2013	23:36:56	36.071	-120.6456667	3.344	2.68	md	97	30	0.04054	0.13	nc	nc71927101	2022-07-24T16:03:59.660Z	24 km ENE of San Ardo, California	earthquake	0.17	0.36	0.211	100	reviewed	nc	nc
1/21/2013	1:25:57	34.7858333	-119.4806667	11.869	3.28	ml	50	52		0.25	ci	ci15275793	2022-08-06T13:17:07.664Z	31km WSW of Pine Mountain Club, CA	earthquake	0.27	0.8	0.16	235	reviewed	ci	ci
1/19/2013	20:10:43	36.1808333	-120.1268333	9.049	2.07	md	61	183	0.1207	0.13	nc	nc71924881	2017-01-30T21:25:39.090Z	3 km SW of Huron, California	earthquake	0.29	0.42	0.138	44	reviewed	nc	nc
1/18/2013	23:31:20	35.8081667	-119.9196667	24.466	2.88	md	77	156	0.06216	0.21	nc	nc71924341	2017-01-30T21:16:48.300Z	22 km S of Kettleman City, California	earthquake	0.52	0.36	0.228	113	reviewed	nc	nc
1/1/2013	13:48:32	36.0706667	-119.9668333	10.107	2.13	md	77	133	0.1162	0.19	nc	nc71913601	2017-01-30T17:35:36.450Z	6 km N of Kettleman City, California	earthquake	0.47	0.6	0.162	61	reviewed	nc	nc
12/31/2012	21:00:14	34.914	-119.593	7.565	2.43	ml	44	53	0.1501	0.26	ci	ci15269273	2022-07-24T14:45:00.773Z	24km SW of Maricopa, CA	earthquake	0.38	0.86	0.16	67	reviewed	ci	ci
12/27/2012	3:23:20	35.97	-120.5273333	10.25	2.44	md	86	38	0.01441	0.09	nc	nc71910781	2017-01-29T04:57:22.860Z	11 km NW of Parkfield, California	earthquake	0.12	0.16	0.132	82	reviewed	nc	nc
12/26/2012	11:32:32	35.9703333	-120.526	11.154	3.28	mw	87	40	0.01351	0.1	nc	nc71910506	2022-08-06T12:56:45.224Z	11 km NW of Parkfield, California	earthquake	0.14	0.19		3	reviewed	nc	nc
12/25/2012	4:25:28	35.83	-119.4631667	20.725	2.17	ml	25	107	0.3077	0.21	ci	ci15267713	2016-03-11T10:44:35.179Z	7km SSE of Alpaugh, CA	earthquake	0.52	2.04	0.154	33	reviewed	ci	ci
12/22/2012	2:10:29	34.8096667	-120.2026667	1.015	2.06	ml	16	55	0.09758	0.17	ci	ci15266857	2016-03-11T08:58:44.745Z	10km NE of Los Alamos, CA	earthquake	0.4	1.46	0.131	26	reviewed	ci	ci
12/17/2012	10:01:03	36.042	-120.612	4.572	2.8	md	78	87	0.02973	0.08	nc	nc71906356	2022-07-24T13:57:55.283Z	22 km NW of Parkfield, California	earthquake	0.15	0.24	0.17	110	reviewed	nc	nc
12/12/2012	3:22:18	35.628	-120.7286667	5.862	2.44	md	92	26	0.1153	0.11	nc	nc71903126	2022-07-24T13:44:39.679Z	3 km W of Paso Robles, California	earthquake	0.14	0.86	0.142	81	reviewed	nc	nc
12/5/2012	15:50:48	36.3631667	-119.7963333	15.796	2.16	md	46	69	0.3423	0.19	nc	nc71898951	2017-01-29T02:01:15.440Z	7 km N of Lemoore, California	earthquake	0.4	0.57	0.142	34	reviewed	nc	nc
12/5/2012	12:52:25	35.1941667	-119.2588333	23.138	2.79	ml	39	78	0.1401	0.17	ci	ci15257497	2016-03-12T03:34:43.709Z	19km ENE of Taft, CA	earthquake	0.33	0.64	0.162	124	reviewed	ci	ci
12/3/2012	20:09:11	35.8541667	-120.4078333	4.66	2.24	md	83	52	0.01982	0.12	nc	nc71897916	2017-01-29T01:44:50.680Z	5 km SSE of Parkfield, California	earthquake	0.15	0.25	0.2	65	reviewed	nc	nc
11/7/2012	11:30:15	34.8961667	-119.714	12.679	2	ml	14	91	0.08225	0.16	ci	ci15242233	2016-03-12T05:23:59.861Z	34km WSW of Maricopa, CA	earthquake	0.53	1.05	0.335	95	reviewed	ci	ci
11/2/2012	4:08:46	35.0111667	-119.0908333	17.218	2.43	ml	46	34		0.2	ci	ci15240097	2016-03-12T03:31:58.591Z	16km WNW of Grapevine, CA	earthquake	0.24	0.66	0.166	38	reviewed	ci	ci
11/1/2012	14:11:33	35.9693333	-120.5353333	4.308	2.73	md	88	30	0.01441	0.12	nc	nc71873160	2022-07-24T11:30:57.192Z	12 km NW of Parkfield, California	earthquake	0.12	0.16	0.11	91	reviewed	nc	nc
10/23/2012	7:29:42	36.0061667	-120.5673333	4.092	2.5	md	91	48	0.02523	0.09	nc	nc71865625	2017-01-28T19:08:57.720Z	16 km NW of Parkfield, California	earthquake	0.13	0.15	0.14	88	reviewed	nc	nc
10/23/2012	4:37:56	35.5766667	-120.8833333	4.737	2.7	md	92	34	0.04685	0.14	nc	nc71865510	2022-07-24T10:28:54.520Z	14 km N of Cayucos, California	earthquake	0.16	0.49	0.119	84	reviewed	nc	nc
10/19/2012	17:47:51	36.156	-120.015	26.129	2	md	44	278	0.1225	0.25	nc	nc71862525	2017-01-28T18:12:18.083Z	Central California	earthquake	0.75	0.87	0.139	26	reviewed	nc	nc
10/17/2012	22:38:27	36.0255	-119.6371667	23.077	2.21	md	43	107	0.3063	0.2	nc	nc71861345	2017-01-28T17:49:53.820Z	10 km SW of Corcoran, California	earthquake	0.73	0.55	0.134	28	reviewed	nc	nc
10/17/2012	12:28:55	36.0545	-120.628	4.192	2.34	md	68	49	0.02973	0.1	nc	nc71861150	2017-01-28T17:46:42.940Z	24 km NW of Parkfield, California	earthquake	0.19	0.37	0.175	60	reviewed	nc	nc
10/14/2012	16:02:32	35.208	-119.5391667	13.765	2.17	ml	29	68	0.116	0.2	ci	ci15230121	2016-03-11T03:26:14.445Z	10km NW of Taft, CA	earthquake	0.37	0.64	0.188	46	reviewed	ci	ci
10/11/2012	21:21:24	35.5853333	-120.767	5.014	2.17	md	84	26	0.0982	0.15	nc	nc71857740	2017-01-28T16:59:35.830Z	6 km NW of Templeton, California	earthquake	0.18	0.98	0.171	61	reviewed	nc	nc
10/11/2012	4:03:26	35.2138333	-119.53	13.16	2.86	ml	42	69	0.1131	0.2	ci	ci15227969	2022-07-24T09:23:02.015Z	10km NW of Taft, CA	earthquake	0.3	0.62	0.148	108	reviewed	ci	ci
10/11/2012	0:00:40	35.2065	-119.5211667	14.455	2.51	ml	19	68	0.1029	0.24	ci	ci15227929	2022-07-24T09:21:34.884Z	9km NW of Taft, CA	earthquake	0.52	1.14	0.298	157	reviewed	ci	ci
9/28/2012	2:38:38	35.949	-120.0226667	11.588	2.07	md	72	165	0.1018	0.21	nc	nc71849010	2017-01-28T14:51:25.090Z	8 km SW of Kettleman City, California	earthquake	0.3	0.62	0.183	76	reviewed	nc	nc
9/23/2012	9:26:42	36.1998333	-119.9946667	25.344	2.14	md	51	120	0.1676	0.2	nc	nc71846455	2017-01-28T14:10:21.350Z	9 km E of Huron, California	earthquake	0.53	0.54	0.23	56	reviewed	nc	nc
9/22/2012	18:57:11	35.9658333	-120.5411667	9.798	2.37	md	99	28	0.01171	0.13	nc	nc71846160	2017-01-28T14:06:04.830Z	12 km NW of Parkfield, California	earthquake	0.14	0.16	0.147	86	reviewed	nc	nc
9/16/2012	4:04:30	35.9783333	-120.2173333	19.493	2.6	md	77	72	0.109	0.17	nc	nc71842925	2017-01-28T13:12:22.780Z	8 km WSW of Avenal, California	earthquake	0.21	0.39	0.134	90	reviewed	nc	nc
9/10/2012	2:51:45	36.1168333	-120.0328333	8.922	2.37	md	99	120	0.08378	0.2	nc	nc71840245	2017-01-28T12:28:33.140Z	11 km SSE of Huron, California	earthquake	0.32	0.27	0.187	75	reviewed	nc	nc
9/8/2012	8:39:23	36.2965	-120.308	7.416	2.66	md	103	111	0.05495	0.15	nc	nc71839580	2022-07-24T07:29:51.865Z	18 km NNE of Coalinga, California	earthquake	0.17	0.19	0.127	104	reviewed	nc	nc
9/7/2012	19:53:13	36.144	-120	6.902	2.1	md	68	121	0.1216	0.17	nc	nc71839395	2017-01-28T12:12:14.450Z	11 km SE of Huron, California	earthquake	0.37	0.31	0.15	44	reviewed	nc	nc
9/7/2012	19:35:17	36.1426667	-120.0121667	9.432	2.23	md	60	97	0.1135	0.22	nc	nc71839370	2017-01-28T12:11:36.920Z	10 km SE of Huron, California	earthquake	0.43	0.8	0.17	44	reviewed	nc	nc
9/7/2012	19:32:24	36.1145	-120.0366667	8.532	2.51	md	103	120	0.08018	0.19	nc	nc71839365	2017-01-28T12:11:27.760Z	11 km SSE of Huron, California	earthquake	0.29	0.34	0.14	85	reviewed	nc	nc
9/7/2012	13:27:54	36.1216667	-120.0563333	8.752	2.04	md	82	145	0.07477	0.19	nc	nc71839175	2017-01-28T12:08:51.820Z	9 km SSE of Huron, California	earthquake	0.44	0.33	0.123	57	reviewed	nc	nc
9/7/2012	13:23:48	36.1206667	-119.9986667	10.012	4.06	mw	156	32	0.1081	0.25	nc	nc71839170	2022-08-06T11:42:21.792Z	12 km NNW of Kettleman City, California	earthquake	0.23	0.5		6	reviewed	nc	nc
9/7/2012	13:22:10	36.1161667	-120.058	14.352	3.68	mw	180	22	0.06937	0.21	nc	nc71839165	2022-08-06T11:46:34.497Z	10 km SSE of Huron, California	earthquake	0.19	0.3		3	reviewed	nc	nc
9/5/2012	12:31:06	35.3225	-119.4868333	-0.835	2.77	ml	32	67	0.1846	0.43	ci	ci15211169	2016-03-12T03:27:29.781Z	9km S of Buttonwillow, CA	earthquake	0.82	1.49	0.16	103	reviewed	ci	ci
9/3/2012	18:35:38	36.07	-118.9291667	9.408	2.22	ml	28	67	0.1854	0.15	ci	ci15210321	2022-07-24T07:07:46.321Z	8km E of Porterville, CA	earthquake	0.28	0.82	0.155	35	reviewed	ci	ci
9/1/2012	4:14:23	36.0036667	-120.571	3.802	2.02	md	85	75	0.02883	0.12	nc	nc71835825	2022-07-24T07:02:10.447Z	16 km NW of Parkfield, California	earthquake	0.16	0.2	0.233	66	reviewed	nc	nc
8/31/2012	21:44:07	35.9931667	-120.5601667	3.413	3.32	mw	108	46	0.01622	0.13	nc	nc71835625	2022-08-06T11:36:25.195Z	15 km NW of Parkfield, California	earthquake	0.14	0.21		3	reviewed	nc	nc
8/25/2012	12:42:23	35.9861667	-120.5513333	4.173	2.23	md	83	50	0.006306	0.1	nc	nc71837196	2017-01-28T10:27:02.440Z	14 km NW of Parkfield, California	earthquake	0.13	0.17	0.206	71	reviewed	nc	nc
8/24/2012	18:14:02	35.935	-120.4901667	10.364	2.3	md	92	54	0.01892	0.11	nc	nc71836796	2017-01-28T10:20:51.620Z	6 km NW of Parkfield, California	earthquake	0.16	0.21	0.153	80	reviewed	nc	nc
8/20/2012	7:59:45	35.9481667	-120.5015	12.594	2.18	md	86	33	0.008108	0.11	nc	nc71834691	2017-01-28T09:46:45.760Z	8 km NW of Parkfield, California	earthquake	0.15	0.18	0.164	74	reviewed	nc	nc
8/16/2012	5:19:27	36.2903333	-120.0966667	19.515	2.17	md	63	154	0.04324	0.2	nc	nc71832361	2017-01-28T09:13:50.320Z	9 km N of Huron, California	earthquake	0.37	0.61	0.181	49	reviewed	nc	nc
8/11/2012	5:13:45	36.2573333	-119.6963333	10.969	2.06	md	31	118	0.3874	0.21	nc	nc71829571	2017-01-28T08:36:50.120Z	6 km S of Armona, California	earthquake	0.67	1.74	0.199	22	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
8/10/2012	12:00:01	35.2966667	-118.7711667	4.729	2.54	ml	57	37	0.09396	0.18	ci	ci15190441	2016-03-11T05:10:21.501Z	11km NNE of Arvin, CA	earthquake	0.2	2.12	0.145	109	reviewed	ci	ci
8/6/2012	7:35:49	35.9498333	-120.5028333	11.004	4.45	mw	104	39	0.007207	0.11	nc	nc71827401	2022-08-06T11:02:32.537Z	8 km NW of Parkfield, California	earthquake	0.13	0.2		6	reviewed	nc	nc
8/1/2012	7:12:00	36.2378333	-120.2771667	11.635	2.79	md	95	57	0.05405	0.15	nc	nc71825011	2022-07-24T04:17:32.303Z	13 km NE of Coalinga, California	earthquake	0.15	0.28	0.153	128	reviewed	nc	nc
7/30/2012	4:17:23	36.3355	-120.2966667	12.589	2.28	md	59	81	0.09369	0.1	nc	nc71823961	2017-01-28T07:08:00.360Z	18 km S of Cantua Creek, California	earthquake	0.2	0.26	0.185	87	reviewed	nc	nc
7/27/2012	16:58:47	36.1751667	-120.3071667	9.929	2.23	md	74	58	0.07928	0.14	nc	nc71822856	2017-01-28T06:49:56.310Z	6 km NE of Coalinga, California	earthquake	0.2	0.36	0.188	84	reviewed	nc	nc
7/15/2012	19:58:53	35.4795	-120.7618333	2.055	2.65	md	92	51	0.0973	0.12	nc	nc71816996	2022-07-24T03:14:54.172Z	8 km W of Atascadero, California	earthquake	0.14	0.87	0.122	74	reviewed	nc	nc
7/11/2012	17:24:04	35.9586667	-120.5153333	4.994	2.09	md	76	58	0.01351	0.09	nc	nc71815246	2017-01-28T05:01:29.240Z	9 km NW of Parkfield, California	earthquake	0.12	0.13	0.191	72	reviewed	nc	nc
7/10/2012	7:15:30	34.9108333	-119.0783333	16.491	2.12	ml	41	35	0.1124	0.2	ci	ci11134218	2016-03-11T14:04:43.984Z	10km NE of Pine Mountain Club, CA	earthquake	0.3	0.57	0.154	53	reviewed	ci	ci
7/9/2012	3:02:42	35.977	-120.5361667	9.678	2.02	md	78	75	0.009009	0.1	nc	nc71813516	2017-01-28T04:38:30.150Z	12 km NW of Parkfield, California	earthquake	0.21	0.17	0.172	64	reviewed	nc	nc
7/7/2012	7:23:18	34.8593333	-120.2223333	4.878	2.12	ml	27	41	0.1323	0.22	ci	ci11133082	2022-07-24T02:34:32.003Z	14km NNE of Los Alamos, CA	earthquake	0.36	31.61	0.123	20	reviewed	ci	ci
6/30/2012	17:52:38	35.8425	-120.383	3.884	2.4	md	82	35	0.01441	0.09	nc	nc71804525	2017-01-28T03:14:46.530Z	7 km SE of Parkfield, California	earthquake	0.12	0.19	0.177	83	reviewed	nc	nc
6/15/2012	8:24:20	36.103	-120.207	7.622	2.56	md	74	83	0.08919	0.12	nc	nc71801351	2022-07-24T00:57:07.094Z	13 km NNW of Avenal, California	earthquake	0.17	0.44	0.171	97	reviewed	nc	nc
6/6/2012	6:15:36	35.5585	-120.7818333	4.283	2.19	md	84	23	0.1045	0.12	nc	nc71797456	2022-07-24T00:31:59.954Z	6 km W of Templeton, California	earthquake	0.14	0.65	0.207	69	reviewed	nc	nc
6/3/2012	4:27:08	35.7956667	-120.3511667	10.249	2.6	md	88	35	0.02432	0.1	nc	nc71795396	2022-07-24T00:21:22.624Z	13 km SSE of Parkfield, California	earthquake	0.13	0.23	0.093	84	reviewed	nc	nc
5/17/2012	18:52:48	35.4713333	-120.7755	2.765	2.17	md	81	58	0.08739	0.13	nc	nc71787196	2017-01-27T20:18:41.620Z	9 km WSW of Atascadero, California	earthquake	0.14	0.7	0.164	56	reviewed	nc	nc
5/11/2012	12:24:25	36.1828333	-120.3038333	10.859	2.48	md	78	58	0.07387	0.17	nc	nc71783886	2017-01-27T19:01:45.450Z	6 km NE of Coalinga, California	earthquake	0.2	0.39	0.189	98	reviewed	nc	nc
5/8/2012	22:05:39	36.0228333	-120.5898333	4.452	2.85	md	96	42	0.04414	0.12	nc	nc71778210	2022-07-23T23:13:54.418Z	19 km NW of Parkfield, California	earthquake	0.15	0.23	0.164	111	reviewed	nc	nc
5/7/2012	22:17:44	36.1445	-119.8206667	17.395	2.06	md	34	115	0.2369	0.15	nc	nc71777680	2017-01-27T18:12:09.730Z	4 km S of Stratford, California	earthquake	0.5	1.01	0.168	23	reviewed	nc	nc
5/2/2012	19:46:16	36.0348333	-120.591	3.885	2.04	md	69	50	0.03423	0.08	nc	nc71774590	2017-01-27T17:07:27.380Z	20 km NW of Parkfield, California	earthquake	0.15	0.23	0.203	64	reviewed	nc	nc
5/2/2012	18:07:38	36.1806667	-120.2926667	10.589	2.79	md	73	60	0.08018	0.19	nc	nc71774550	2022-07-23T22:50:43.369Z	7 km NE of Coalinga, California	earthquake	0.39	0.6	0.158	81	reviewed	nc	nc
5/2/2012	13:45:38	36.0575	-120.6328333	-0.526	2.11	md	79	42	0.03153	0.12	nc	nc71774380	2017-01-27T17:03:33.480Z	24 km E of San Ardo, California	earthquake	0.11	0.56	0.194	68	reviewed	nc	nc
4/28/2012	17:14:37	36.1816667	-120.3003333	10.339	2.42	md	66	58	0.07568	0.11	nc	nc71772475	2022-07-23T22:41:15.927Z	7 km NE of Coalinga, California	earthquake	0.17	0.25	0.205	99	reviewed	nc	nc
4/27/2012	14:47:12	35.2588333	-119.3055	19.541	2.56	ml	34	69	0.1463	0.28	ci	ci15141129	2016-03-11T08:38:34.009Z	19km NE of Taft, CA	earthquake	0.44	1.23	0.185	69	reviewed	ci	ci
4/23/2012	16:36:36	36.1803333	-120.3046667	9.039	2.66	md	71	58	0.07568	0.14	nc	nc71769655	2022-08-06T09:55:52.645Z	6 km NE of Coalinga, California	earthquake	0.21	0.51	0.131	107	reviewed	nc	nc
4/17/2012	0:12:03	35.4663333	-119.3476667	24.389	3.43	ml	40	66		0.2	ci	ci15136241	2022-08-06T09:51:26.814Z	8km WSW of Shafter, CA	earthquake	0.31	0.91	0.153	185	reviewed	ci	ci
4/15/2012	7:10:52	35.7766667	-120.3351667	8.288	2.83	md	86	39	0.005405	0.1	nc	nc71764880	2017-01-27T14:01:56.970Z	13 km NNE of Shandon, California	earthquake	0.14	0.26	0.106	97	reviewed	nc	nc
3/28/2012	23:04:42	35.5343333	-120.8285	4.542	2.09	md	81	50	0.06396	0.13	nc	nc71755115	2017-01-27T11:08:31.630Z	11 km W of Templeton, California	earthquake	0.16	0.54	0.198	63	reviewed	nc	nc
3/22/2012	19:53:04	36.0868333	-120.2168333	12.712	2.11	md	69	73	0.09099	0.15	nc	nc71752090	2017-01-27T10:06:43.250Z	12 km NW of Avenal, California	earthquake	0.17	0.38	0.231	59	reviewed	nc	nc
3/22/2012	19:42:32	36.0935	-120.216	13.872	2.66	md	59	76	0.09189	0.11	nc	nc71752070	2017-01-27T10:06:28.330Z	12 km NW of Avenal, California	earthquake	0.2	0.5	0.136	98	reviewed	nc	nc
3/20/2012	1:46:51	35.8183333	-119.9188333	10.832	2.28	md	70	153	0.1495	0.21	nc	nc71750445	2017-01-27T09:29:56.560Z	21 km S of Kettleman City, California	earthquake	0.52	0.92	0.212	54	reviewed	nc	nc
3/17/2012	6:26:06	35.491	-120.778	4.213	2.46	md	81	48	0.09009	0.12	nc	nc71749020	2022-07-23T19:20:35.119Z	9 km SW of Templeton, California	earthquake	0.15	0.6	0.169	58	reviewed	nc	nc
3/17/2012	4:00:22	36.0193333	-120.5953333	4.442	2.27	md	77	67	0.03964	0.13	nc	nc71748945	2017-01-27T09:03:23.000Z	19 km NW of Parkfield, California	earthquake	0.2	0.27	0.268	63	reviewed	nc	nc
2/27/2012	1:12:47	36.0303333	-120.5966667	4.642	2	md	72	70	0.03874	0.1	nc	nc71742716	2017-01-27T05:42:59.330Z	20 km NW of Parkfield, California	earthquake	0.21	0.25	0.226	62	reviewed	nc	nc
2/20/2012	20:35:54	35.5535	-120.8051667	3.899	2.97	ml	96	24	0.08468	0.15	nc	nc71739036	2022-07-23T17:04:32.086Z	9 km W of Templeton, California	earthquake	0.15	0.68	0.137	12	reviewed	nc	nc
2/18/2012	20:10:02	35.6093333	-119.8735	14.755	2.06	ml	23	83	0.1303	0.41	ci	ci11068709	2022-07-23T16:53:54.244Z	31km NNE of Simmler, CA	earthquake	0.57	0.81	0.27	21	reviewed	ci	ci
2/14/2012	23:48:09	35.5335	-120.7888333	3.403	2.2	md	88	33	0.0964	0.12	nc	nc71735446	2017-01-27T03:23:52.950Z	7 km WSW of Templeton, California	earthquake	0.15	0.75	0.179	63	reviewed	nc	nc
2/12/2012	17:44:47	35.5558333	-120.7931667	3.349	2.68	md	91	22	0.0955	0.13	nc	nc71728800	2022-07-23T16:34:31.676Z	7 km W of Templeton, California	earthquake	0.15	0.76	0.106	83	reviewed	nc	nc
2/11/2012	13:18:45	35.2223333	-120.4825	6.741	2.05	md	72	44	0.136	0.18	nc	nc71728120	2022-07-23T16:29:02.275Z	12 km E of Edna, California	earthquake	0.17	0.89	0.166	46	reviewed	nc	nc
2/10/2012	20:41:56	35.5211667	-120.8246667	5.589	2.17	md	80	55	0.06847	0.12	nc	nc71727745	2017-01-27T02:29:05.410Z	10 km NE of Cayucos, California	earthquake	0.16	0.53	0.201	62	reviewed	nc	nc
2/7/2012	8:46:55	35.243	-120.527	5.143	2.23	md	65	41	0.1009	0.14	nc	nc71725900	2022-07-23T16:05:35.268Z	8 km ENE of Edna, California	earthquake	0.15	0.49	0.267	43	reviewed	nc	nc
2/6/2012	2:20:06	34.938	-119.0108333	12.399	2.03	ml	32	89	0.061	0.37	ci	ci11063421	2016-03-11T15:45:28.370Z	7km W of Grapevine, CA	earthquake	0.51	0.95	0.142	34	reviewed	ci	ci
2/5/2012	15:26:51	36.0531667	-120.6278333	5.424	2.28	md	74	42	0.02973	0.15	nc	nc71724955	2017-01-27T01:34:52.620Z	24 km NW of Parkfield, California	earthquake	0.17	0.33	0.256	63	reviewed	nc	nc
2/5/2012	6:07:10	36.0555	-120.625	6.694	2.3	md	64	44	0.02703	0.15	nc	nc71724750	2017-01-27T01:29:06.030Z	24 km NW of Parkfield, California	earthquake	0.18	0.44	0.179	47	reviewed	nc	nc
2/4/2012	0:39:39	35.7781667	-119.0973333	18.5	2.53	ml	25	70	0.06343	0.23	ci	ci11062581	2016-03-11T19:39:53.334Z	14km E of Delano, CA	earthquake	0.44	0.87	0.13	63	reviewed	ci	ci
1/28/2012	18:50:17	35.5695	-120.9043333	2.593	2.49	md	89	39	0.03604	0.17	nc	nc71720040	2017-01-27T00:02:30.980Z	14 km N of Cayucos, California	earthquake	0.17	0.46	0.184	79	reviewed	nc	nc
1/21/2012	12:34:01	35.998	-120.5623333	3.295	2.15	md	70	56	0.02162	0.13	nc	nc71716210	2017-01-26T22:45:11.540Z	15 km NW of Parkfield, California	earthquake	0.18	0.2	0.197	56	reviewed	nc	nc
1/13/2012	8:24:16	35.0645	-119.0696667	14.061	2.19	ml	22	43	0.1779	0.33	ci	ci11053397	2016-03-11T15:44:02.674Z	18km NW of Grapevine, CA	earthquake	0.52	0.94	0.14	71	reviewed	ci	ci
12/14/2011	1:27:43	36.2366667	-120.3788333	8.809	2.26	md	70	41	0.03153	0.09	nc	nc71692415	2017-01-25T21:07:15.530Z	10 km N of Coalinga, California	earthquake	0.11	0.19	0.19	75	reviewed	nc	nc
12/1/2011	21:42:21	36.161	-120.223	8.851	2.3	mh	8	265	0.3159	0.17	ci	ci15081628	2016-03-10T21:18:02.502Z	12km WSW of Huron, CA	earthquake	10.06	31.61		0	reviewed	ci	ci
12/1/2011	21:42:19	36.161	-120.2196667	9.94	2.15	md	52	87	0.1329	0.13	nc	nc71690086	2021-02-18T19:34:56.338Z	11 km WSW of Huron, California	earthquake	0.23	0.44	0.247	54	reviewed	nc	nc
12/1/2011	21:40:39	36.161	-120.2243333	8.779	2.16	md	49	85	0.1306	0.16	nc	nc71690076	2017-01-25T17:51:48.070Z	11 km WSW of Huron, California	earthquake	0.34	0.71	0.177	33	reviewed	nc	nc
11/27/2011	2:38:30	35.9075	-118.9001667	9.216	2.24	ml	28	58	0.1639	0.21	ci	ci15079988	2022-07-23T11:04:32.595Z	20km SSE of Porterville, CA	earthquake	0.34	2.2	0.2	49	reviewed	ci	ci
11/21/2011	6:45:00	35.7575	-120.3133333	7.968	2.12	md	80	38	0.02703	0.1	nc	nc71684666	2017-01-25T15:35:08.810Z	12 km NNE of Shandon, California	earthquake	0.14	0.27	0.182	62	reviewed	nc	nc
11/21/2011	6:29:08	35.7566667	-120.314	8.278	2.88	md	81	38	0.02703	0.1	nc	nc71684651	2022-07-23T10:42:44.390Z	12 km NNE of Shandon, California	earthquake	0.14	0.27	0.131	108	reviewed	nc	nc
11/20/2011	22:56:26	35.6225	-119.9023333	16.477	2.03	ml	18	128	0.1036	0.22	ci	ci11034805	2016-03-10T05:45:48.833Z	31km NNE of Simmler, CA	earthquake	0.68	1.19	0.16	15	reviewed	ci	ci
11/18/2011	4:33:20	35.1746667	-119.3911667	-0.914	2.98	ml	34	51	0.03688	0.48	ci	ci15076884	2022-07-23T10:37:12.106Z	7km ENE of Taft, CA	earthquake	0.53	1.49	0.155	147	reviewed	ci	ci
11/17/2011	20:45:45	35.5228333	-120.8263333	6.189	2.07	md	85	29	0.06667	0.14	nc	nc71683081	2017-01-25T15:07:39.020Z	10 km NE of Cayucos, California	earthquake	0.17	0.62	0.178	64	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/12/2011	23:54:42	35.94	-120.0311667	8.468	2.11	md	65	148	0.0982	0.21	nc	nc71680326	2017-01-25T14:11:26.620Z	9 km SW of Kettleman City, California	earthquake	0.35	0.66	0.252	48	reviewed	nc	nc
11/10/2011	12:07:48	35.849	-120.3991667	5.146	2.44	md	84	53	0.01261	0.11	nc	nc71679111	2017-01-25T13:51:29.500Z	6 km SSE of Parkfield, California	earthquake	0.12	0.22	0.139	79	reviewed	nc	nc
11/10/2011	11:05:55	36.2141667	-120.3478333	8.853	2.37	md	72	54	0.03514	0.15	nc	nc71679086	2022-07-23T10:03:21.776Z	8 km N of Coalinga, California	earthquake	0.21	0.3	0.197	90	reviewed	nc	nc
10/30/2011	18:03:20	35.9351667	-120.028	9.478	2.65	md	80	145	0.09279	0.18	nc	nc71673136	2017-01-25T12:20:54.510Z	10 km SW of Kettleman City, California	earthquake	0.21	0.49	0.152	91	reviewed	nc	nc
10/30/2011	13:26:43	35.9403333	-120.0328333	7.908	3.45	mw	80	144	0.0991	0.25	nc	nc71673001	2022-08-06T08:12:50.493Z	9 km SW of Kettleman City, California	earthquake	0.27	0.61		3	reviewed	nc	nc
10/24/2011	13:25:43	35.2005	-120.297	-0.168	2.4	ml	32	41	0.1741	0.33	ci	ci11024637	2022-07-23T08:19:24.213Z	24km NE of Nipomo, CA	earthquake	0.44	1.18	0.15	44	reviewed	ci	ci
10/21/2011	12:49:02	35.7341667	-119.881	26.987	2.63	md	65	74	0.1099	0.21	nc	nc71667846	2022-07-23T07:52:29.593Z	21 km NW of Lost Hills, California	earthquake	0.68	0.54	0.187	60	reviewed	nc	nc
10/4/2011	15:11:52	35.5576667	-119.3136667	28.818	2.19	ml	28	90	0.2295	0.29	ci	ci15059084	2016-03-10T07:10:52.086Z	5km SSE of Wasco, CA	earthquake	0.46	0.65	0.273	32	reviewed	ci	ci
9/20/2011	21:51:03	36.2013333	-119.6886667	0.158	2.33	md	52	78	0.4027	0.38	nc	nc71650481	2017-01-25T06:46:16.680Z	12 km E of Stratford, California	earthquake	0.76	2.76	0.228	46	reviewed	nc	nc
9/20/2011	17:16:54	35.9176667	-119.9228333	8.74	2.23	md	66	147	0.06126	0.21	nc	nc71650341	2017-01-25T06:44:44.910Z	10 km SSE of Kettleman City, California	earthquake	0.54	0.68	0.226	53	reviewed	nc	nc
8/19/2011	13:56:27	35.2671667	-119.1255	3.662	2	ml	6	136	0.3172	0.36	ci	ci10995429	2016-03-10T21:09:26.896Z	13km S of Rosedale, CA	earthquake	1.68	31.61	0.471	2	reviewed	ci	ci
8/19/2011	5:45:30	35.2211667	-120.722	4.062	2.08	md	64	53	0.05045	0.12	nc	nc71622315	2017-01-25T01:24:32.870Z	4 km N of Avila Beach, California	earthquake	0.14	0.31	0.192	44	reviewed	nc	nc
8/11/2011	21:59:44	36.2193333	-120.1438333	9.672	2.05	md	56	144	0.1613	0.15	nc	nc71617605	2017-01-25T00:17:02.080Z	4 km WNW of Huron, California	earthquake	0.39	0.58	0.228	58	reviewed	nc	nc
8/7/2011	19:47:04	35.8858333	-120.001	9.22	2.1	md	60	170	0.1847	0.36	nc	nc71615265	2017-01-24T23:44:04.020Z	14 km SSW of Kettleman City, California	earthquake	0.84	1.55	0.285	42	reviewed	nc	nc
8/7/2011	9:16:22	34.9586667	-119.0823333	2.139	3.02	ml	57	43		0.27	ci	ci10988853	2016-03-10T19:17:13.269Z	14km NNE of Pine Mountain Club, CA	earthquake	0.26	0.58	0.163	182	reviewed	ci	ci
8/7/2011	8:25:38	35.8951667	-119.9763333	3.88	2.84	md	95	105	0.03604	0.23	nc	nc71615060	2017-01-24T23:40:00.270Z	12 km S of Kettleman City, California	earthquake	0.26	0.39	0.208	73	reviewed	nc	nc
8/4/2011	19:48:53	34.8645	-119.2365	11.677	2.23	ml	40	38	0.01861	0.31	ci	ci10987725	2016-03-10T05:37:23.706Z	8km WNW of Pine Mountain Club, CA	earthquake	0.37	0.62	0.148	54	reviewed	ci	ci
8/3/2011	15:59:02	36.1073333	-120.1813333	8.462	2.18	md	59	99	0.07387	0.16	nc	nc71613040	2017-01-24T23:09:07.500Z	12 km NNW of Avenal, California	earthquake	0.29	0.47	0.193	50	reviewed	nc	nc
8/2/2011	9:05:47	35.8793333	-119.9018333	6.325	2.24	md	83	95	0.04775	0.23	nc	nc71612190	2017-01-24T22:58:54.170Z	15 km SSE of Kettleman City, California	earthquake	0.32	0.2	0.209	63	reviewed	nc	nc
7/17/2011	5:21:11	36.16	-120.2313333	10.689	2.66	md	81	82	0.127	0.15	nc	nc71602325	2017-01-24T20:40:34.630Z	11 km E of Coalinga, California	earthquake	0.24	0.48	0.123	125	reviewed	nc	nc
7/15/2011	16:48:11	36.4148333	-119.872	17.634	2.26	md	21	143	0.409	0.16	nc	nc71601385	2017-01-24T20:26:35.917Z	2 km SSW of Riverdale, California	earthquake	0.61	1.19	0.112	8	reviewed	nc	nc
7/13/2011	0:19:40	35.022	-119.1091667	12.216	2.45	ml	18	66	0.1906	0.37	ci	ci15016164	2022-07-23T01:28:45.762Z	18km WNW of Grapevine, CA	earthquake	0.87	1.9	0.138	53	reviewed	ci	ci
7/12/2011	2:45:31	35.8398333	-119.6965	19.476	2	md	40	104	0.2126	0.16	nc	nc71599545	2017-01-24T19:57:21.110Z	19 km WSW of Alpaugh, California	earthquake	0.44	0.87	0.173	18	reviewed	nc	nc
7/9/2011	21:26:10	35.7971667	-120.351	10.299	2.87	md	75	34	0.02613	0.11	nc	nc71598450	2017-01-24T19:40:12.360Z	13 km SSE of Parkfield, California	earthquake	0.15	0.26	0.118	85	reviewed	nc	nc
6/20/2011	14:07:05	35.0583333	-120.3948333	0.737	2.65	ml	17	70	0.04875	0.25	ci	ci10962125	2016-03-10T04:01:42.625Z	8km ENE of Nipomo, CA	earthquake	0.58	1.53	0.132	66	reviewed	ci	ci
6/19/2011	13:19:51	35.9381667	-120.4891667	10.364	2.05	md	79	37	0.01622	0.1	nc	nc71587210	2022-07-23T00:21:04.542Z	6 km NW of Parkfield, California	earthquake	0.17	0.16	0.17	62	reviewed	nc	nc
6/13/2011	22:42:34	35.5625	-120.7931667	3.449	2.01	md	84	32	0.0964	0.16	nc	nc71584680	2017-01-24T15:52:33.600Z	8 km W of Templeton, California	earthquake	0.21	0.85	0.168	61	reviewed	nc	nc
6/13/2011	10:56:57	36.1583333	-120.193	9.979	2.87	md	0	101	0.1189	0.14	nc	nc71584415	2022-07-23T00:04:44.022Z	9 km WSW of Huron, California	earthquake	0.16	0.35	0.151	124	reviewed	nc	nc
6/9/2011	3:27:21	35.858	-120.402	4.787	2.3	md	76	54	0.02162	0.1	nc	nc71582285	2017-01-24T15:12:59.250Z	5 km SSE of Parkfield, California	earthquake	0.13	0.2	0.168	71	reviewed	nc	nc
6/6/2011	13:28:42	34.895	-120.3905	-0.268	2.67	ml	34	38	0.08422	0.29	ci	ci14996884	2022-07-22T23:42:26.504Z	5km NE of Orcutt, CA	earthquake	0.38	1.14	0.097	55	reviewed	ci	ci
6/2/2011	16:54:47	35.5018333	-120.768	4.785	2.03	md	80	44	0.1018	0.13	nc	nc71579155	2017-01-24T14:21:33.030Z	7 km SW of Templeton, California	earthquake	0.15	0.7	0.198	56	reviewed	nc	nc
5/25/2011	18:42:16	35.52	-120.824	4.421	2.3	mh	0	99	0.06883	0.26	ci	ci14991108	2016-03-10T02:27:53.011Z	11km NE of Cayucos, CA	earthquake	0.61	1.55		0	reviewed	ci	ci
5/25/2011	18:41:06	35.5201667	-120.8275	4.784	2.29	md	71	54	0.06577	0.15	nc	nc71575375	2017-01-24T13:23:18.510Z	10 km NE of Cayucos, California	earthquake	0.2	0.71	0.129	54	reviewed	nc	nc
5/25/2011	15:00:16	36.0363333	-120.5933333	4.115	2.15	md	69	49	0.03243	0.1	nc	nc71575240	2017-01-24T13:22:14.320Z	20 km NW of Parkfield, California	earthquake	0.17	0.25	0.211	64	reviewed	nc	nc
5/23/2011	14:57:39	35.0118333	-119.2953333	15.701	2.19	ml	32	48	0.03798	0.26	ci	ci14989828	2022-07-22T23:07:23.052Z	11km ESE of Maricopa, CA	earthquake	0.38	0.87	0.134	45	reviewed	ci	ci
5/18/2011	13:58:23	35.5448333	-120.7623333	3.574	2.03	md	72	35	0.118	0.16	nc	nc71571760	2017-01-24T12:35:00.390Z	5 km W of Templeton, California	earthquake	0.19	0.9	0.153	56	reviewed	nc	nc
5/16/2011	21:21:36	35.5443333	-120.766	3.714	2.53	md	90	36	0.1153	0.13	nc	nc71571020	2022-07-22T22:40:56.309Z	5 km W of Templeton, California	earthquake	0.17	0.84	0.106	81	reviewed	nc	nc
5/7/2011	0:33:41	35.623	-120.7465	5.819	2.94	md	92	30	0.1009	0.13	nc	nc71565965	2022-07-22T22:21:03.744Z	5 km W of Paso Robles, California	earthquake	0.16	1.08	0.14	96	reviewed	nc	nc
5/5/2011	15:24:51	35.0686667	-119.0635	4.653	2.2	ml	18	100	0.2364	0.31	ci	ci14980132	2016-03-10T15:58:39.328Z	18km NW of Grapevine, CA	earthquake	0.51	31.61	0.154	60	reviewed	ci	ci
4/28/2011	10:02:03	35.5525	-120.7811667	3.804	2.27	md	87	25	0.1036	0.13	nc	nc71567091	2017-01-24T10:13:38.130Z	6 km W of Templeton, California	earthquake	0.15	0.81	0.131	74	reviewed	nc	nc
4/25/2011	8:36:53	36.1741667	-120.1641667	9.089	2.32	md	66	111	0.0991	0.09	nc	nc71565266	2022-07-22T21:46:48.256Z	6 km WSW of Huron, California	earthquake	0.1	0.2	0.22	83	reviewed	nc	nc
4/16/2011	16:16:31	35.5483333	-119.4303333	28.655	2.28	ml	22	112	0.223	0.23	ci	ci10926989	2016-03-10T14:18:13.191Z	10km WSW of Wasco, CA	earthquake	0.63	0.8	0.187	55	reviewed	ci	ci
4/14/2011	12:58:26	35.6081667	-119.549	29.086	2.07	ml	19	124	0.3145	0.23	ci	ci10925477	2016-03-10T00:56:46.897Z	19km W of Wasco, CA	earthquake	0.79	0.93	0.185	26	reviewed	ci	ci
4/12/2011	15:24:25	36.0655	-120.1701667	10.596	2.05	md	66	75	0.04955	0.22	nc	nc71556901	2022-07-22T20:59:09.800Z	7 km NNW of Avenal, California	earthquake	0.36	0.69	0.237	52	reviewed	nc	nc
4/11/2011	13:00:31	36.0456667	-120.6176667	4.952	2.04	md	78	43	0.02883	0.12	nc	nc71556366	2017-01-24T08:00:21.590Z	23 km NW of Parkfield, California	earthquake	0.2	0.34	0.219	70	reviewed	nc	nc
4/10/2011	20:06:56	35.5591667	-120.8255	6.28	2.21	md	79	45	0.07117	0.14	nc	nc71555766	2017-01-24T07:54:17.320Z	10 km W of Templeton, California	earthquake	0.18	0.73	0.207	58	reviewed	nc	nc
4/8/2011	8:15:54	35.0461667	-119.0153333	12.705	2.1	ml	24	71	0.1719	0.3	ci	ci10921685	2016-03-10T05:26:38.624Z	14km NW of Grapevine, CA	earthquake	0.55	1.49	0.191	49	reviewed	ci	ci
4/8/2011	2:37:05	35.0511667	-118.8798333	15.333	2.12	ml	30	40	0.08587	0.29	ci	ci10921597	2016-03-10T17:25:50.534Z	13km NNE of Grapevine, CA	earthquake	0.44	1.6	0.229	55	reviewed	ci	ci
4/6/2011	2:49:45	35.3906667	-119.337	18.803	2	ml	25	90	0.06327	0.4	ci	ci14963252	2022-07-22T20:34:30.032Z	12km E of Buttonwillow, CA	earthquake	0.73	2	0.207	36	reviewed	ci	ci
4/6/2011	0:31:46	36.0475	-120.613	8.682	2.44	md	85	44	0.02523	0.1	nc	nc71548175	2017-01-24T07:15:50.730Z	23 km NW of Parkfield, California	earthquake	0.12	0.23	0.135	75	reviewed	nc	nc
3/26/2011	11:25:39	35.5436667	-120.7681667	4.704	2.4	md	86	32	0.1135	0.15	nc	nc71542685	2017-01-24T05:45:53.330Z	5 km W of Templeton, California	earthquake	0.19	0.98	0.123	73	reviewed	nc	nc
3/17/2011	7:35:54	35.5501667	-120.7916667	4.194	2.12	md	75	42	0.0955	0.13	nc	nc71544156	2022-07-22T19:10:59.271Z	7 km W of Templeton, California	earthquake	0.17	0.85	0.187	60	reviewed	nc	nc
3/12/2011	16:07:17	36.1305	-120.2108333	11.292	2.18	md	65	90	0.1072	0.16	nc	nc71542011	2017-01-24T03:59:15.210Z	12 km SW of Huron, California	earthquake	0.27	0.66	0.206	71	reviewed	nc	nc
3/1/2011	12:07:16	36.0098333	-120.1728333	16.333	2.78	md	85	84	0.07207	0.12	nc	nc71531035	2017-01-24T02:25:48.610Z	4 km W of Avenal, California	earthquake	0.16	0.33	0.161	109	reviewed	nc	nc
2/26/2011	11:56:03	36.0121667	-120.574	4.491	2.74	md	89	42	0.03063	0.12	nc	nc71528945	2017-01-24T01:44:38.260Z	17 km NW of Parkfield, California	earthquake	0.16	0.22	0.201	99	reviewed	nc	nc
2/22/2011	5:14:40	35.4503333	-119.3136667	25.698	2.09	ml	25	92	0.1257	0.23	ci	ci14938484	2016-03-10T06:54:35.787Z	7km SW of Shafter, CA	earthquake	0.52	1.47	0.146	29	reviewed	ci	ci
2/21/2011	9:04:18	35.7931667	-120.3441667	9.338	3.19	ml	82	38	0.02072	0.1	nc	nc71526470	2022-08-06T05:52:00.633Z	14 km SE of Parkfield, California	earthquake	0.14	0.25	0.132	16	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
2/19/2011	12:28:41	36.0336667	-120.5906667	7.928	2.4	md	75	37	0.03514	0.09	nc	nc71525770	2017-01-24T00:49:04.800Z	20 km NW of Parkfield, California	earthquake	0.16	0.2	0.16	76	reviewed	nc	nc
2/19/2011	0:17:08	35.7693333	-120.3253333	7.978	2.35	md	70	27	0.01261	0.09	nc	nc71525620	2017-01-24T00:46:05.840Z	13 km NNE of Shandon, California	earthquake	0.14	0.27	0.136	59	reviewed	nc	nc
2/17/2011	6:30:19	36.1128333	-120.198	9.463	2.32	md	73	91	0.08829	0.14	nc	nc71524845	2017-01-24T00:37:20.570Z	13 km SW of Huron, California	earthquake	0.24	0.48	0.208	75	reviewed	nc	nc
2/9/2011	20:35:55	36.0015	-120.5645	3.892	2.59	md	95	38	0.02432	0.12	nc	nc71526986	2017-01-23T23:45:13.480Z	16 km NW of Parkfield, California	earthquake	0.14	0.18	0.16	95	reviewed	nc	nc
2/8/2011	8:24:04	35.6871667	-120.2388333	8.981	2.34	md	86	39	0.03874	0.12	nc	nc71526361	2017-01-23T23:35:04.960Z	12 km ENE of Shandon, California	earthquake	0.15	0.34	0.17	63	reviewed	nc	nc
2/6/2011	3:02:51	36.0161667	-120.5821667	4.262	2.39	md	80	40	0.03784	0.1	nc	nc71525226	2017-01-23T23:14:29.630Z	18 km NW of Parkfield, California	earthquake	0.15	0.21	0.17	75	reviewed	nc	nc
2/4/2011	18:23:59	35.9971667	-120.5675	3.712	2.09	md	83	43	0.02342	0.14	nc	nc71524511	2017-01-23T23:03:54.640Z	16 km NW of Parkfield, California	earthquake	0.17	0.19	0.245	67	reviewed	nc	nc
2/4/2011	15:59:18	36.0748333	-120.0191667	9.187	2.32	md	78	158	0.07477	0.18	nc	nc71524451	2017-01-23T23:03:23.020Z	9 km NW of Kettleman City, California	earthquake	0.33	0.24	0.209	67	reviewed	nc	nc
1/27/2011	15:29:46	35.079	-118.9846667	19.306	3.17	ml	52	45	0.1301	0.32	ci	ci14923668	2022-08-06T05:39:17.101Z	16km NNW of Grapevine, CA	earthquake	0.39	1.3	0.129	170	reviewed	ci	ci
1/24/2011	18:28:28	34.9206667	-119.1266667	2.818	2.34	ml	38	53	0.0673	0.37	ci	ci14921628	2016-03-14T20:12:29.465Z	8km NNE of Pine Mountain Club, CA	earthquake	0.43	0.67	0.19	69	reviewed	ci	ci
1/19/2011	15:36:54	35.856	-119.9968333	8.748	2.64	md	87	46	0.03333	0.24	nc	nc71511970	2017-01-23T21:04:17.830Z	17 km S of Kettleman City, California	earthquake	0.28	0.34	0.145	79	reviewed	nc	nc
1/15/2011	10:57:04	36.0193333	-120.5858333	4.352	2.4	md	75	37	0.04144	0.12	nc	nc71510300	2017-01-23T20:33:00.110Z	19 km NW of Parkfield, California	earthquake	0.17	0.2	0.126	70	reviewed	nc	nc
1/14/2011	14:38:15	36.0175	-120.5855	4.472	2.57	md	86	37	0.04054	0.12	nc	nc71509920	2017-01-23T20:24:46.820Z	19 km NW of Parkfield, California	earthquake	0.17	0.24	0.156	96	reviewed	nc	nc
1/6/2011	9:43:21	34.949	-119.2615	12.938	2.12	ml	25	70		0.31	ci	ci10868453	2016-03-10T03:49:28.107Z	15km NW of Pine Mountain Club, CA	earthquake	0.47	0.78	0.206	64	reviewed	ci	ci
12/31/2010	19:20:20	36.1003333	-120.184	6.953	2.39	md	81	95	0.07207	0.19	nc	nc71503615	2017-01-23T12:22:44.970Z	11 km NNW of Avenal, California	earthquake	0.21	0.51	0.189	75	reviewed	nc	nc
12/21/2010	16:48:45	35.0936667	-119.1118333	12.592	2	ml	23	42	0.1297	0.31	ci	ci10860645	2016-03-10T12:43:47.475Z	24km NW of Grapevine, CA	earthquake	0.65	1.89	0.128	20	reviewed	ci	ci
12/14/2010	13:56:09	35.4543333	-119.9911667	6.928	2.28	ml	26	100	0.03095	0.27	ci	ci14897884	2016-03-10T08:17:29.852Z	11km N of Simmler, CA	earthquake	0.89	1.62	0.157	27	reviewed	ci	ci
12/11/2010	21:30:38	36.2561667	-120.3785	10.089	2.54	md	75	54	0.02973	0.08	nc	nc71495590	2017-01-23T10:07:16.800Z	13 km N of Coalinga, California	earthquake	0.11	0.15	0.146	110	reviewed	nc	nc
12/3/2010	6:04:21	36.3445	-119.8678333	10.376	2.07	md	58	142	0.2919	0.43	nc	nc71491785	2017-01-23T08:59:11.670Z	9 km WNW of Lemoore, California	earthquake	0.9	2.96	0.219	40	reviewed	nc	nc
11/28/2010	16:26:45	35.557	-120.7948333	3.656	2.93	md	94	25	0.09369	0.14	nc	nc71489570	2022-07-22T13:25:09.767Z	8 km W of Templeton, California	earthquake	0.13	0.79	0.121	104	reviewed	nc	nc
11/23/2010	0:20:59	35.9798333	-120.5493333	3.103	2.01	md	77	42	0.005405	0.13	nc	nc71487020	2017-01-23T07:46:11.980Z	13 km NW of Parkfield, California	earthquake	0.17	0.21	0.202	62	reviewed	nc	nc
11/22/2010	18:22:23	35.9946667	-120.5678333	4.041	2.03	md	77	42	0.02342	0.14	nc	nc71486725	2017-01-23T07:43:50.050Z	16 km NW of Parkfield, California	earthquake	0.17	0.21	0.303	59	reviewed	nc	nc
11/20/2010	7:05:01	35.5726667	-120.8116667	4.556	2.64	md	83	33	0.07928	0.14	nc	nc71485555	2017-01-23T07:22:09.480Z	9 km WNW of Templeton, California	earthquake	0.17	0.67	0.132	69	reviewed	nc	nc
11/14/2010	15:44:31	35.5728333	-120.787	3.416	2.45	md	86	28	0.09279	0.13	nc	nc71488416	2022-07-22T12:42:37.945Z	7 km WNW of Templeton, California	earthquake	0.16	0.73	0.183	54	reviewed	nc	nc
11/9/2010	1:10:00	35.9333333	-119.6491667	17.878	2.02	md	40	143	0.3793	0.24	nc	nc71486151	2017-01-23T06:08:18.460Z	15 km WNW of Alpaugh, California	earthquake	0.53	0.82	0.099	20	reviewed	nc	nc
11/7/2010	4:43:41	35.247	-119.4001667	17.539	2.23	ml	32	67	0.08912	0.2	ci	ci10834685	2016-03-10T02:13:52.486Z	13km NNE of Taft, CA	earthquake	0.32	0.63	0.212	53	reviewed	ci	ci
11/7/2010	4:25:57	35.2548333	-119.4043333	16.839	2.05	ml	26	71	0.08305	0.25	ci	ci10834677	2016-03-10T15:43:37.171Z	13km NNE of Taft, CA	earthquake	0.5	0.99	0.201	20	reviewed	ci	ci
11/1/2010	15:56:01	35.2471667	-119.409	16.554	2.11	ml	22	70	0.1014	0.24	ci	ci14872324	2016-03-10T11:11:35.662Z	12km NNE of Taft, CA	earthquake	0.57	1.1	0.188	39	reviewed	ci	ci
11/1/2010	6:30:01	35.5251667	-120.8245	3.016	2.12	md	78	34	0.06757	0.14	nc	nc71482006	2017-01-23T05:12:07.900Z	11 km NE of Cayucos, California	earthquake	0.2	0.81	0.209	59	reviewed	nc	nc
10/31/2010	19:24:51	36.2783333	-119.6703333	0.124	2.54	md	9	162	0.5622	0.28	nc	nc71481871	2017-01-23T05:10:11.957Z	4 km SW of Home Garden, California	earthquake	1.6	2.95	0.127	24	reviewed	nc	nc
10/30/2010	18:32:18	35.5535	-120.7903333	3.024	2.34	md	80	27	0.0973	0.15	nc	nc71481456	2017-01-23T05:02:38.780Z	7 km W of Templeton, California	earthquake	0.17	0.78	0.177	69	reviewed	nc	nc
10/25/2010	13:45:36	35.068	-118.9788333	16.47	3.73	ml	64	30		0.41	ci	ci10826277	2022-08-06T04:46:27.053Z	15km NNW of Grapevine, CA	earthquake	0.43	1.67	0.14	171	reviewed	ci	ci
10/19/2010	8:55:39	35.3123333	-120.3105	8.105	2.97	md	77	36	0.08919	0.17	nc	nc71476036	2017-01-23T03:51:48.290Z	28 km ESE of Santa Margarita, California	earthquake	0.19	0.89	0.098	78	reviewed	nc	nc
10/13/2010	18:44:15	36.0865	-120.2653333	11.555	2.02	md	68	59	0.08649	0.19	nc	nc71468250	2017-01-23T03:17:41.220Z	10 km SE of Coalinga, California	earthquake	0.29	0.54	0.198	50	reviewed	nc	nc
10/10/2010	14:52:22	35.9931667	-120.57	3.581	2.08	md	83	40	0.02162	0.12	nc	nc71466860	2017-01-23T02:56:22.450Z	16 km NW of Parkfield, California	earthquake	0.18	0.21	0.25	69	reviewed	nc	nc
10/9/2010	4:26:51	35.5316667	-120.837	2.796	2.02	md	79	54	0.05676	0.14	nc	nc71466205	2017-01-23T02:43:58.620Z	11 km NNE of Cayucos, California	earthquake	0.19	0.75	0.218	58	reviewed	nc	nc
9/28/2010	12:23:16	35.078	-119.0733333	4.286	2.25	ml	29	63	0.2053	0.3	ci	ci14849108	2016-03-10T18:50:04.054Z	20km NW of Grapevine, CA	earthquake	0.5	31.61	0.179	141	reviewed	ci	ci
9/13/2010	14:06:30	35.5591667	-120.828	5.826	2.38	md	76	32	0.06937	0.15	nc	nc71454840	2017-01-22T23:52:48.590Z	11 km W of Templeton, California	earthquake	0.2	0.72	0.154	54	reviewed	nc	nc
9/9/2010	23:53:48	35.0315	-119.107	17.206	2.23	ml	15	124	0.1936	0.19	ci	ci10795221	2016-03-10T11:06:40.166Z	19km WNW of Grapevine, CA	earthquake	0.52	2.02	0.176	63	reviewed	ci	ci
9/3/2010	19:47:09	35.932	-120.4891667	5.381	2.22	md	79	37	0.02072	0.1	nc	nc71450425	2017-01-22T22:48:28.760Z	6 km NW of Parkfield, California	earthquake	0.13	0.17	0.177	68	reviewed	nc	nc
9/1/2010	8:56:06	35.997	-120.5568333	9.835	2.09	md	64	47	0.01802	0.1	nc	nc71449325	2017-01-22T22:31:11.690Z	15 km NW of Parkfield, California	earthquake	0.18	0.22	0.225	53	reviewed	nc	nc
9/1/2010	4:46:16	35.5385	-120.7615	1.194	2.15	md	74	33	0.118	0.15	nc	nc71449265	2017-01-22T22:29:51.650Z	5 km WSW of Templeton, California	earthquake	0.18	1.9	0.191	54	reviewed	nc	nc
8/27/2010	6:43:39	35.7533333	-120.3023333	8.482	2.23	md	62	50	0.03604	0.11	nc	nc71447175	2017-01-22T21:58:23.460Z	12 km NNE of Shandon, California	earthquake	0.21	0.37	0.142	40	reviewed	nc	nc
8/26/2010	15:48:19	35.7515	-120.303	8.594	2.4	md	73	32	0.03694	0.12	nc	nc71446925	2017-01-22T21:55:35.680Z	12 km NNE of Shandon, California	earthquake	0.2	0.38	0.159	51	reviewed	nc	nc
8/24/2010	5:00:19	34.9613333	-119.6966667	3.307	2.06	ml	23	82	0.1205	0.3	ci	ci10785181	2016-03-10T22:18:14.803Z	29km WSW of Maricopa, CA	earthquake	0.63	1.64	0.197	73	reviewed	ci	ci
8/20/2010	10:45:59	35.5635	-120.8076667	4.166	2.4	md	84	24	0.08559	0.14	nc	nc71444125	2017-01-22T21:14:15.170Z	9 km W of Templeton, California	earthquake	0.17	0.76	0.143	66	reviewed	nc	nc
8/19/2010	1:09:23	35.9541667	-120.5156667	8.339	2	md	65	26	0.01441	0.1	nc	nc71443430	2017-01-22T21:04:23.350Z	9 km NW of Parkfield, California	earthquake	0.17	0.21	0.251	54	reviewed	nc	nc
8/15/2010	13:00:39	35.9998333	-119.9796667	7.252	2.59	md	65	182	0.1216	0.25	nc	nc71441490	2017-01-22T20:38:18.610Z	1 km WSW of Kettleman City, California	earthquake	0.58	1.08	0.174	84	reviewed	nc	nc
8/10/2010	9:50:59	36.0331667	-120.5985	5.338	2.25	md	81	65	0.03604	0.12	nc	nc71444401	2017-01-22T20:04:57.050Z	21 km NW of Parkfield, California	earthquake	0.2	0.29	0.076	25	reviewed	nc	nc
8/8/2010	19:09:10	35.5641667	-120.8036667	4.426	2.43	md	86	23	0.08919	0.14	nc	nc71443531	2017-01-22T19:51:16.600Z	8 km W of Templeton, California	earthquake	0.17	0.76	0.153	77	reviewed	nc	nc
7/24/2010	6:00:03	34.8041667	-120.2403333	11.519	2.15	ml	12	105	0.07587	0.26	ci	ci10760301	2016-03-10T02:01:55.054Z	8km NNE of Los Alamos, CA	earthquake	0.73	1.89	0.136	23	reviewed	ci	ci
7/21/2010	20:47:31	36.0275	-120.5916667	4.588	2.27	md	82	42	0.04144	0.12	nc	nc71434576	2017-01-22T17:43:00.830Z	20 km NW of Parkfield, California	earthquake	0.15	0.22	0.201	75	reviewed	nc	nc
7/20/2010	13:59:38	36.3353333	-120.0155	22.244	2.16	md	47	118	0.1027	0.16	nc	nc71428630	2017-01-22T17:31:26.610Z	12 km NW of Lemoore Station, California	earthquake	0.69	0.29	0.265	49	reviewed	nc	nc
7/20/2010	9:18:06	34.6908333	-119.5435	5.505	2.11	ml	24	101		0.28	ci	ci10757173	2016-03-10T05:01:45.022Z	29km NNE of Montecito, CA	earthquake	0.64	10.77	0.132	78	reviewed	ci	ci
7/19/2010	14:13:10	36.0201667	-119.9116667	27.432	2.04	md	25	224	0.1622	0.28	nc	nc71428010	2017-01-22T17:19:44.320Z	4 km ENE of Kettleman City, California	earthquake	1.58	1.12	0.115	12	reviewed	nc	nc
7/11/2010	17:40:17	35.4946667	-120.7818333	3.176	2	md	73	46	0.08919	0.13	nc	nc71423340	2017-01-22T16:16:32.040Z	9 km SW of Templeton, California	earthquake	0.18	0.9	0.174	52	reviewed	nc	nc
6/23/2010	8:33:42	35.4901667	-120.029	4.605	2.44	ml	31	147	0.07761	0.26	ci	ci10721229	2016-03-10T07:57:28.739Z	16km N of Simmler, CA	earthquake	0.6	0.94	0.133	83	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/6/2010	22:58:20	35.0661667	-119.0836667	18.827	2.07	ml	23	40	0.09811	0.36	ci	ci14737084	2016-03-10T23:34:32.706Z	20km NW of Grapevine, CA	earthquake	0.8	1.86	0.117	33	reviewed	ci	ci
6/4/2010	0:37:29	35.0126667	-118.993	14.556	2.3	ml	35	66	0.07634	0.3	ci	ci14734020	2016-03-10T04:49:45.343Z	10km NW of Grapevine, CA	earthquake	0.46	0.59	0.16	120	reviewed	ci	ci
5/29/2010	9:20:18	36.1663333	-120.1593333	10.16	2.53	md	69	115	0.1027	0.17	nc	nc71406181	2017-01-22T11:15:31.710Z	6 km SW of Huron, California	earthquake	0.31	0.54	0.177	107	reviewed	nc	nc
5/15/2010	10:27:37	35.5981667	-120.6983333	7.227	2.62	md	103	27	0.145	0.12	nc	nc71398466	2022-07-22T03:13:56.192Z	3 km SSW of Paso Robles, California	earthquake	0.15	0.97	0.135	88	reviewed	nc	nc
5/8/2010	19:23:06	35.0081667	-119.2678333	16.276	4.27	ml	56	29	0.05968	0.19	ci	ci10657701	2022-08-06T02:29:07.216Z	13km ESE of Maricopa, CA	earthquake	0.26	0.57	0.161	215	reviewed	ci	ci
5/8/2010	9:17:59	35.5378333	-120.8145	4.764	2.07	md	69	50	0.07568	0.12	nc	nc71389150	2017-01-22T08:40:48.700Z	9 km W of Templeton, California	earthquake	0.19	0.79	0.177	55	reviewed	nc	nc
5/7/2010	16:59:38	35.7568333	-119.338	24.443	2.47	ml	32	100	0.2224	0.26	ci	ci10655853	2016-03-10T00:14:54.035Z	8km W of Delano, CA	earthquake	0.38	1.38	0.175	45	reviewed	ci	ci
5/4/2010	17:15:12	36.1016667	-119.9653333	31.699	2.03	md	43	126	0.1234	0.3	nc	nc71392441	2017-01-22T08:16:45.780Z	10 km N of Kettleman City, California	earthquake	2.02	2.41	0.182	33	reviewed	nc	nc
4/29/2010	3:59:04	36.0573333	-120.1676667	12.486	2.02	md	58	66	0.04685	0.2	nc	nc71389856	2017-01-22T07:39:49.390Z	6 km NNW of Avenal, California	earthquake	0.3	0.75	0.162	46	reviewed	nc	nc
4/25/2010	12:17:44	36.0753333	-119.4163333	22.414	2.33	md	54	45	0.2694	0.16	nc	nc71388006	2017-01-22T07:11:20.180Z	9 km W of Tipton, California	earthquake	0.36	0.85	0.19	33	reviewed	nc	nc
4/20/2010	9:09:01	35.9081667	-120.4545	5.968	2.14	md	68	42	0.01892	0.1	nc	nc71385886	2017-01-22T06:40:00.100Z	2 km WNW of Parkfield, California	earthquake	0.19	0.21	0.214	52	reviewed	nc	nc
4/11/2010	14:16:43	35.5888333	-120.8795	3.962	2.3	md	64	63	0.04775	0.15	nc	nc71380681	2017-01-22T05:28:24.390Z	15 km S of Lake Nacimiento, California	earthquake	0.24	0.58	0.152	49	reviewed	nc	nc
4/10/2010	12:38:56	36.0946667	-120.1933333	6.338	2.09	md	66	87	0.07568	0.17	nc	nc71380276	2017-01-22T05:21:10.190Z	Central California	earthquake	0.26	0.6	0.217	58	reviewed	nc	nc
4/7/2010	22:40:29	35.9415	-120.4941667	9.931	3.99	mw	96	27	0.01532	0.1	nc	nc71379106	2022-08-06T01:19:13.482Z	7 km NW of Parkfield, California	earthquake	0.13	0.19		7	reviewed	nc	nc
4/6/2010	1:19:58	36.0571667	-120.6313333	4.512	2.42	md	72	42	0.03063	0.13	nc	nc71378211	2017-01-22T04:47:03.580Z	25 km E of San Ardo, California	earthquake	0.2	0.47	0.183	66	reviewed	nc	nc
4/5/2010	3:00:28	35.9113333	-120.4595	8.72	2.37	md	69	41	0.01802	0.08	nc	nc71377786	2017-01-22T04:40:09.790Z	2 km WNW of Parkfield, California	earthquake	0.15	0.21	0.192	61	reviewed	nc	nc
3/29/2010	0:28:11	36.2553333	-120.3625	8.774	2.4	md	80	61	0.08108	0.11	nc	nc71369855	2017-01-22T03:52:38.710Z	12 km N of Coalinga, California	earthquake	0.15	0.2	0.168	85	reviewed	nc	nc
3/25/2010	22:44:49	35.9513333	-120.5081667	9.198	3.4	mw	90	27	0.009009	0.1	nc	nc71368395	2022-08-06T00:34:09.270Z	8 km NW of Parkfield, California	earthquake	0.14	0.19		3	reviewed	nc	nc
3/24/2010	17:52:00	35.484	-120.8261667	1.878	2.23	md	0	68	0.05225	0.1	nc	nc71367885	2017-01-22T03:18:37.450Z	7 km NE of Cayucos, California	earthquake	0.13	0.64	0.215	57	reviewed	nc	nc
3/21/2010	7:16:01	36.0028333	-120.5703333	4.125	2.01	md	63	53	0.02793	0.12	nc	nc71366490	2017-01-22T02:57:39.600Z	16 km NW of Parkfield, California	earthquake	0.23	0.3	0.221	55	reviewed	nc	nc
3/21/2010	7:01:54	36.004	-120.5681667	4.085	2.21	md	73	53	0.02613	0.13	nc	nc71366470	2017-01-22T02:57:13.620Z	16 km NW of Parkfield, California	earthquake	0.18	0.27	0.195	64	reviewed	nc	nc
3/18/2010	17:34:29	35.069	-119.023	14.452	2.63	ml	35	43	0.1071	0.36	ci	ci14601972	2016-03-09T23:49:23.089Z	16km NNW of Grapevine, CA	earthquake	0.46	0.83	0.16	188	reviewed	ci	ci
3/18/2010	7:01:15	35.5496667	-120.8006667	3.286	2.12	md	70	46	0.08829	0.1	nc	nc71364955	2017-01-22T02:29:29.990Z	8 km W of Templeton, California	earthquake	0.14	0.73	0.148	56	reviewed	nc	nc
3/11/2010	21:15:25	35.3255	-119.3631667	26.872	2.52	ml	41	49	0.006004	0.22	ci	ci14599404	2016-03-09T23:48:58.902Z	13km SE of Buttonwillow, CA	earthquake	0.36	0.75	0.203	121	reviewed	ci	ci
3/6/2010	23:56:35	36.2143333	-120.2295	7.169	2.41	md	52	74	0.0982	0.16	nc	nc71359640	2017-01-22T00:57:32.500Z	11 km W of Huron, California	earthquake	0.22	0.4	0.177	70	reviewed	nc	nc
3/6/2010	13:41:49	36.0443333	-120.6088333	5.005	2.03	md	50	87	0.06396	0.09	nc	nc71359490	2017-01-22T00:55:07.330Z	22 km NW of Parkfield, California	earthquake	0.23	0.4	0.231	46	reviewed	nc	nc
2/24/2010	11:04:21	36.36	-119.768	19.075	2.26	md	28	110	0.2784	0.22	nc	nc71353875	2017-01-21T23:23:35.923Z	5 km WNW of Grangeville, California	earthquake	1.16	0.52	0.199	18	reviewed	nc	nc
2/22/2010	21:55:30	35.7528333	-118.9995	20.803	2.5	ml	44	53	0.1119	0.32	ci	ci10546189	2016-03-10T08:46:44.601Z	22km ENE of McFarland, CA	earthquake	0.31	0.91	0.288	107	reviewed	ci	ci
2/11/2010	8:33:42	35.9148333	-120.4658333	6.686	3.43	mw	76	41	0.01712	0.09	nc	nc71352011	2022-08-05T23:55:11.238Z	3 km WNW of Parkfield, California	earthquake	0.12	0.16		6	reviewed	nc	nc
2/7/2010	2:01:23	35.7826667	-120.3351667	8.854	3.39	mw	70	48	0.01081	0.1	nc	nc71349976	2022-08-05T23:53:15.698Z	14 km NNE of Shandon, California	earthquake	0.16	0.3		3	reviewed	nc	nc
2/6/2010	15:47:07	35.039	-119.0423333	11.009	2.37	ml	28	65	0.0736	0.28	ci	ci14586116	2016-03-10T08:45:12.935Z	15km NW of Grapevine, CA	earthquake	0.45	1.41	0.187	109	reviewed	ci	ci
2/6/2010	6:58:46	35.5563333	-120.7923333	3.524	2.79	md	66	62	0.0955	0.11	nc	nc71349576	2022-07-21T19:44:28.142Z	7 km W of Templeton, California	earthquake	0.16	0.78	0.103	61	reviewed	nc	nc
2/2/2010	17:30:19	35.3973333	-119.106	23.179	2.1	ml	24	93	0.05279	0.23	ci	ci14584476	2016-03-10T10:15:01.141Z	4km ENE of Rosedale, CA	earthquake	0.65	1.04	0.198	47	reviewed	ci	ci
1/31/2010	15:44:05	35.9886667	-119.8663333	30.648	2.04	md	36	179	0.2099	0.17	nc	nc71346761	2017-01-21T20:20:28.400Z	8 km ESE of Kettleman City, California	earthquake	0.8	1.56	0.145	26	reviewed	nc	nc
1/16/2010	20:16:58	36.0681667	-120.1841667	15.166	2.15	md	43	72	0.06036	0.14	nc	nc71341526	2017-01-21T18:56:06.190Z	8 km NW of Avenal, California	earthquake	0.3	0.63	0.135	36	reviewed	nc	nc
1/10/2010	4:39:31	36.2255	-120.3356667	9.253	2.04	md	47	61	0.02432	0.1	nc	nc71338251	2017-01-21T17:57:53.420Z	9 km NNE of Coalinga, California	earthquake	0.27	0.31	0.188	38	reviewed	nc	nc
1/5/2010	10:20:33	35.5548333	-120.7911667	4.264	2.02	md	69	40	0.0964	0.12	nc	nc71335641	2017-01-21T17:10:44.920Z	Central California	earthquake	0.19	0.86	0.164	62	reviewed	nc	nc
12/13/2009	10:26:09	35.7553333	-119.0071667	18.282	2.97	ml	38	55	0.1061	0.3	ci	ci14558292	2022-07-21T16:37:34.327Z	22km E of Delano, CA	earthquake	0.41	1.27	0.17	166	reviewed	ci	ci
12/11/2009	14:59:31	35.9335	-120.4905	9.779	2.24	md	60	37	0.01982	0.09	nc	nc71321050	2017-01-21T07:47:57.700Z	6 km NW of Parkfield, California	earthquake	0.15	0.22	0.16	60	reviewed	nc	nc
12/11/2009	3:50:43	35.936	-120.4885	9.679	3.3	mw	80	34	0.02162	0.1	nc	nc71320865	2022-06-16T03:21:33.525Z	6 km NW of Parkfield, California	earthquake	0.14	0.2		2	reviewed	nc	nc
12/10/2009	2:48:37	36.31	-119.7381667	17.54	2.08	md	42	135	0.2865	0.2	nc	nc71320365	2017-01-21T07:36:09.310Z	2 km WSW of Armona, California	earthquake	1.17	0.73	0.171	33	reviewed	nc	nc
12/9/2009	14:06:59	35.4656667	-120.7595	4.735	2.15	md	65	54	0.08468	0.1	nc	nc71320050	2017-01-21T07:33:08.670Z	8 km WSW of Atascadero, California	earthquake	0.18	0.67	0.192	53	reviewed	nc	nc
12/9/2009	4:36:47	35.5538333	-120.7933333	3.626	3.04	ml	77	45	0.09459	0.11	nc	nc71319915	2022-06-17T11:29:18.550Z	7 km W of Templeton, California	earthquake	0.15	0.82	0.103	11	reviewed	nc	nc
12/5/2009	13:58:48	35.8456667	-120.3973333	6.455	2.75	md	74	36	0.00991	0.09	nc	nc71318310	2017-01-21T07:06:49.740Z	6 km SSE of Parkfield, California	earthquake	0.13	0.21	0.131	96	reviewed	nc	nc
12/5/2009	2:20:46	35.5216667	-120.8036667	4.674	2.19	md	68	53	0.08468	0.09	nc	nc71318095	2017-01-21T07:03:41.080Z	9 km WSW of Templeton, California	earthquake	0.16	0.68	0.177	59	reviewed	nc	nc
12/5/2009	0:19:36	36.0303333	-120.5996667	4.732	2.08	md	59	63	0.03874	0.1	nc	nc71318070	2017-01-21T07:03:18.610Z	20 km NW of Parkfield, California	earthquake	0.24	0.3	0.213	56	reviewed	nc	nc
11/29/2009	19:01:00	34.9528333	-119.693	4.468	2.25	ml	22	81	0.1181	0.34	ci	ci14552180	2016-03-09T17:31:21.654Z	29km WSW of Maricopa, CA	earthquake	0.76	31.61	0.112	27	reviewed	ci	ci
11/29/2009	5:22:53	36.1111667	-119.953	29.076	2.04	md	35	131	0.136	0.19	nc	nc71320551	2017-01-21T06:24:36.530Z	11 km N of Kettleman City, California	earthquake	1.08	0.65	0.148	28	reviewed	nc	nc
11/28/2009	22:15:13	36.0771667	-120.1761667	13.192	2.37	md	66	60	0.05586	0.12	nc	nc71320411	2017-01-21T06:20:36.990Z	9 km NNW of Avenal, California	earthquake	0.22	0.49	0.175	68	reviewed	nc	nc
11/28/2009	12:19:25	35.9688333	-120.532	4.455	2.69	md	77	33	0.01712	0.12	nc	nc71320246	2017-01-21T06:17:30.510Z	11 km NW of Parkfield, California	earthquake	0.14	0.18	0.137	93	reviewed	nc	nc
11/22/2009	22:25:23	35.5363333	-120.8365	6.253	2.07	md	59	59	0.05766	0.11	nc	nc71317906	2017-01-21T05:42:51.580Z	11 km NNE of Cayucos, California	earthquake	0.18	0.6	0.162	53	reviewed	nc	nc
11/10/2009	19:18:50	35.924	-120.4786667	5.259	2.25	md	69	59	0.01441	0.09	nc	nc71312951	2022-07-21T15:41:20.681Z	4 km WNW of Parkfield, California	earthquake	0.14	0.19	0.185	83	reviewed	nc	nc
11/10/2009	13:57:14	35.562	-120.7926667	4.93	2.31	md	76	21	0.0973	0.12	nc	nc71312841	2017-01-21T04:22:27.640Z	7 km W of Templeton, California	earthquake	0.16	0.87	0.205	85	reviewed	nc	nc
11/8/2009	12:48:20	35.9941667	-120.5486667	4.285	2.27	md	59	59	0.01261	0.1	nc	nc71306825	2017-01-21T04:07:59.030Z	14 km NW of Parkfield, California	earthquake	0.21	0.17	0.236	67	reviewed	nc	nc
10/23/2009	15:47:52	35.39	-119.9326667	7.231	2.05	ml	23	81		0.21	ci	ci10484645	2016-03-09T15:32:06.047Z	7km NE of Simmler, CA	earthquake	0.51	1	0.176	35	reviewed	ci	ci
10/23/2009	10:41:28	35.3888333	-119.9358333	6.021	2.21	ml	25	78		0.24	ci	ci10484509	2016-03-09T07:44:20.331Z	7km NE of Simmler, CA	earthquake	0.49	1.24	0.165	59	reviewed	ci	ci
10/20/2009	23:56:23	35.5555	-120.793	3.526	2.31	md	68	44	0.0955	0.11	nc	nc71297225	2022-07-21T15:08:26.787Z	7 km W of Templeton, California	earthquake	0.16	0.86	0.231	75	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
10/20/2009	14:55:24	35.3903333	-119.9396667	5.611	2.56	ml	31	76		0.35	ci	ci10483453	2016-03-09T15:31:41.170Z	7km NE of Simmler, CA	earthquake	0.66	1.73	0.168	74	reviewed	ci	ci
10/20/2009	12:35:19	35.3933333	-119.9335	5.676	2.59	ml	32	82	0.04831	0.32	ci	ci10483437	2016-03-09T17:26:51.925Z	8km NE of Simmler, CA	earthquake	0.56	1.49	0.179	103	reviewed	ci	ci
10/6/2009	22:37:54	35.0585	-118.9198333	13.56	2.88	ml	57	26	0.1004	0.34	ci	ci14523836	2016-03-09T17:25:23.120Z	13km N of Grapevine, CA	earthquake	0.35	0.65	0.16	274	reviewed	ci	ci
10/3/2009	3:17:29	36.0923333	-120.2223333	6.859	2.44	md	54	73	0.0964	0.11	nc	nc71292131	2017-01-21T00:00:05.590Z	12 km NW of Avenal, California	earthquake	0.25	0.39	0.236	65	reviewed	nc	nc
9/30/2009	13:05:28	36.0488333	-120.6153333	9.372	2.95	md	72	70	0.02523	0.11	nc	nc71289516	2022-07-21T14:23:40.792Z	23 km NW of Parkfield, California	earthquake	0.19	0.29	0.22	128	reviewed	nc	nc
9/29/2009	13:26:41	36.1205	-119.7386667	18.077	2.25	md	55	139	0.3063	0.24	nc	nc71288436	2017-01-20T22:45:13.840Z	10 km SE of Stratford, California	earthquake	0.61	0.65	0.281	64	reviewed	nc	nc
9/28/2009	2:16:05	35.0581667	-118.9185	13.88	2.57	ml	49	28		0.33	ci	ci14516228	2016-03-09T13:38:19.880Z	13km N of Grapevine, CA	earthquake	0.35	0.68	0.153	195	reviewed	ci	ci
9/23/2009	14:32:25	35.9996667	-119.4988333	24.67	2.17	md	32	89	0.3955	0.19	nc	nc71285341	2017-01-20T20:18:56.720Z	12 km SSE of Corcoran, California	earthquake	0.82	4.16	0.169	27	reviewed	nc	nc
9/14/2009	1:14:21	35.5596667	-120.7991667	4.816	2.69	md	76	23	0.09099	0.13	nc	nc71280726	2022-07-21T13:54:59.423Z	8 km W of Templeton, California	earthquake	0.16	0.78	0.122	95	reviewed	nc	nc
9/6/2009	14:04:58	35.56	-120.7968333	4.019	2.84	md	75	22	0.09369	0.12	nc	nc71272050	2022-07-21T13:41:48.893Z	8 km W of Templeton, California	earthquake	0.14	0.62	0.127	96	reviewed	nc	nc
9/6/2009	3:24:05	35.5596667	-120.7875	4.014	2.13	md	71	33	0.1009	0.15	nc	nc71271845	2022-07-21T13:40:32.809Z	7 km W of Templeton, California	earthquake	0.21	0.81	0.248	68	reviewed	nc	nc
9/6/2009	3:22:10	35.5573333	-120.793	5.344	2.75	md	22	46	0.0955	0.15	nc	nc71024809	2017-01-20T18:17:46.286Z	7 km W of Templeton, California	earthquake	0.36	0.99	0.343	20	reviewed	nc	nc
9/6/2009	3:20:55	35.5568333	-120.7983333	4.986	3.81	mw	79	32	0.09099	0.11	nc	nc71271840	2022-08-05T21:50:43.069Z	8 km W of Templeton, California	earthquake	0.16	0.75		3	reviewed	nc	nc
8/26/2009	17:35:24	35.9386667	-120.4948333	9.315	2.02	md	66	36	0.01802	0.09	nc	nc71271696	2017-01-20T17:14:16.090Z	7 km NW of Parkfield, California	earthquake	0.18	0.22	0.253	73	reviewed	nc	nc
8/25/2009	7:41:48	35.803	-120.3556667	9.642	2.1	md	64	30	0.02793	0.1	nc	nc71270866	2017-01-20T17:00:41.530Z	12 km SSE of Parkfield, California	earthquake	0.17	0.3	0.241	73	reviewed	nc	nc
8/21/2009	18:31:21	35.8555	-120.3991667	4.476	2.28	md	68	55	0.01892	0.09	nc	nc71269186	2017-01-20T16:41:26.100Z	Central California	earthquake	0.12	0.2	0.218	76	reviewed	nc	nc
8/10/2009	22:16:28	35.1095	-118.9543333	11.92	2.11	ml	23	108	0.1033	0.3	ci	ci14498656	2016-03-08T18:15:33.200Z	16km SW of Arvin, CA	earthquake	0.72	2.17	0.188	36	reviewed	ci	ci
8/4/2009	23:23:04	35.7946667	-120.3485	9.874	2	md	69	56	0.02252	0.1	nc	nc71260271	2017-01-20T15:14:15.260Z	13 km SSE of Parkfield, California	earthquake	0.17	0.32	0.242	67	reviewed	nc	nc
7/31/2009	20:55:11	35.1203333	-118.9246667	12.291	2.07	ml	24	69	0.0778	0.2	ci	ci14493592	2016-03-09T06:09:16.401Z	13km SW of Arvin, CA	earthquake	0.47	1.19	0.14	48	reviewed	ci	ci
7/31/2009	19:59:08	35.3745	-118.7675	3.457	2.06	ml	43	75	0.1276	0.21	ci	ci14493568	2016-03-08T21:37:09.307Z	18km NE of Lamont, CA	earthquake	0.27	0.48	0.178	84	reviewed	ci	ci
7/21/2009	12:21:52	35.9273333	-120.4775	9.69	3.12	ml	78	31	0.01802	0.1	nc	nc71251761	2022-08-05T21:18:18.947Z	5 km NW of Parkfield, California	earthquake	0.16	0.21	0.183	21	reviewed	nc	nc
7/17/2009	22:08:27	35.5301667	-120.828	3.414	2.17	md	65	55	0.06396	0.13	nc	nc71249911	2017-01-20T13:38:13.990Z	11 km W of Templeton, California	earthquake	0.19	0.78	0.231	72	reviewed	nc	nc
7/15/2009	5:57:11	35.5288333	-120.8428333	4.596	2.94	md	73	52	0.05225	0.08	nc	nc71248561	2022-07-21T11:52:50.122Z	10 km NNE of Cayucos, California	earthquake	0.16	0.52	0.143	80	reviewed	nc	nc
7/10/2009	7:20:45	36.0466667	-120.614	9.038	2.16	md	75	42	0.02613	0.11	nc	nc71246361	2017-01-20T12:56:09.570Z	23 km NW of Parkfield, California	earthquake	0.18	0.32	0.229	84	reviewed	nc	nc
6/28/2009	11:06:39	36.0965	-120.1946667	8.002	2.55	md	71	87	0.07748	0.12	nc	nc71240236	2017-01-20T11:50:26.810Z	11 km NNW of Avenal, California	earthquake	0.18	0.39	0.189	114	reviewed	nc	nc
6/27/2009	23:31:29	36.0116667	-120.5715	4.133	2.13	md	63	45	0.02793	0.13	nc	nc71240021	2017-01-20T11:47:01.460Z	17 km NW of Parkfield, California	earthquake	0.21	0.28	0.225	65	reviewed	nc	nc
6/27/2009	23:24:36	36.0103333	-120.577	4.401	2.66	md	87	41	0.03243	0.11	nc	nc71240016	2017-01-20T11:46:53.230Z	17 km NW of Parkfield, California	earthquake	0.15	0.21	0.186	103	reviewed	nc	nc
6/25/2009	2:48:36	36.1276667	-120.1818333	9.322	2.36	md	62	105	0.08829	0.1	nc	nc71238446	2017-01-20T11:30:48.100Z	10 km SW of Huron, California	earthquake	0.17	0.36	0.214	99	reviewed	nc	nc
6/24/2009	13:03:28	35.4998333	-120.7965	4.394	2.13	md	65	42	0.08108	0.13	nc	nc71238146	2017-01-20T11:27:26.100Z	9 km SW of Templeton, California	earthquake	0.19	0.78	0.23	63	reviewed	nc	nc
6/22/2009	11:27:09	35.043	-119.0358333	10.499	3.22	ml	69	33		0.4	ci	ci14478120	2016-03-09T06:07:01.213Z	15km NW of Grapevine, CA	earthquake	0.39	1.24	0.144	331	reviewed	ci	ci
6/21/2009	7:08:18	35.546	-120.7765	3.454	2.19	md	66	39	0.1072	0.13	nc	nc40238522	2022-07-21T11:13:33.735Z	6 km W of Templeton, California	earthquake	0.17	0.74	0.178	54	reviewed	nc	nc
6/19/2009	14:13:00	35.9246667	-120.4763333	9.389	2.89	md	73	37	0.01622	0.08	nc	nc40238384	2017-01-20T10:51:58.800Z	4 km NW of Parkfield, California	earthquake	0.15	0.21	0.133	98	reviewed	nc	nc
5/25/2009	15:18:13	35.527	-120.8118333	5.226	2.32	md	71	33	0.07748	0.12	nc	nc51222149	2017-01-20T08:22:45.000Z	9 km WSW of Templeton, California	earthquake	0.17	0.71	0.152	61	reviewed	nc	nc
5/21/2009	12:30:03	36.0571667	-120.6311667	3.864	2.04	md	63	42	0.03063	0.11	nc	nc51221942	2017-01-20T07:59:14.950Z	25 km NW of Parkfield, California	earthquake	0.21	0.42	0.245	56	reviewed	nc	nc
5/6/2009	13:00:11	36.1271667	-119.9971667	8.538	2.6	md	52	126	0.1126	0.18	nc	nc51221112	2017-01-20T06:29:23.390Z	12 km SE of Huron, California	earthquake	0.36	0.32	0.185	61	reviewed	nc	nc
5/2/2009	0:48:52	36.0448333	-120.609	4.872	2.73	md	84	46	0.02613	0.1	nc	nc51220833	2017-01-20T06:01:36.650Z	22 km NW of Parkfield, California	earthquake	0.15	0.3	0.177	98	reviewed	nc	nc
5/1/2009	23:31:25	35.3186667	-119.6046667	2.921	2.58	ml	37	85	0.1245	0.47	ci	ci10403753	2016-03-09T13:25:56.912Z	15km SW of Buttonwillow, CA	earthquake	0.67	1.1	0.136	76	reviewed	ci	ci
5/1/2009	15:39:25	35.0246667	-119.3101667	16.888	3.53	ml	55	31	0.03306	0.44	ci	ci10403545	2016-03-09T01:49:12.403Z	9km ESE of Maricopa, CA	earthquake	0.56	1.26	0.132	363	reviewed	ci	ci
5/1/2009	13:41:18	36.0408333	-119.698	23.451	2.1	md	29	137	0.3342	0.17	nc	nc71216351	2017-01-20T06:00:19.480Z	13 km WSW of Corcoran, California	earthquake	0.87	2.02	0.101	20	reviewed	nc	nc
4/29/2009	3:49:05	35.9598333	-120.5148333	5.204	2.14	md	73	61	0.01351	0.09	nc	nc51220678	2017-01-20T05:44:34.670Z	9 km NW of Parkfield, California	earthquake	0.15	0.12	0.169	72	reviewed	nc	nc
4/28/2009	4:25:17	35.4068333	-119.545	26.971	2.23	ml	35	68	0.1656	0.25	ci	ci10401585	2016-03-09T01:48:56.520Z	7km W of Buttonwillow, CA	earthquake	0.44	0.86	0.145	26	reviewed	ci	ci
4/25/2009	23:42:42	36.0021667	-120.5636667	4.183	2.58	md	81	40	0.02342	0.09	nc	nc51220498	2017-01-20T05:26:38.230Z	16 km NW of Parkfield, California	earthquake	0.14	0.19	0.142	90	reviewed	nc	nc
4/22/2009	12:45:59	35.9995	-120.5606667	4.152	2.65	md	77	47	0.02162	0.09	nc	nc71212956	2017-01-20T05:08:41.160Z	16 km NW of Parkfield, California	earthquake	0.15	0.2	0.163	96	reviewed	nc	nc
4/17/2009	15:45:02	35.6018333	-120.746	5.133	2.15	md	74	31	0.1063	0.11	nc	nc51220075	2017-01-20T04:41:39.180Z	5 km WSW of Paso Robles, California	earthquake	0.16	0.96	0.199	69	reviewed	nc	nc
4/15/2009	15:56:06	36.2925	-120.3138333	12.176	2.64	md	65	110	0.04955	0.15	nc	nc51219922	2022-07-21T08:24:41.855Z	17 km NNE of Coalinga, California	earthquake	0.25	0.35	0.125	44	reviewed	nc	nc
4/15/2009	12:59:41	36.1746667	-120.3001667	8.732	2.04	md	50	111	0.08198	0.1	nc	nc51219912	2017-01-20T04:25:30.710Z	6 km NE of Coalinga, California	earthquake	0.23	0.38	0.256	50	reviewed	nc	nc
4/10/2009	0:23:44	36.0325	-120.5951667	4.84	2.14	md	53	70	0.03604	0.09	nc	nc40234565	2017-01-20T03:58:32.870Z	20 km NW of Parkfield, California	earthquake	0.28	0.33	0.13	21	reviewed	nc	nc
4/6/2009	12:35:55	36.1601667	-119.9096667	18.498	2.27	md	53	75	0.1901	0.26	nc	nc71204495	2017-01-20T03:41:09.730Z	8 km WSW of Stratford, California	earthquake	0.46	31.61	0.287	46	reviewed	nc	nc
3/25/2009	3:18:41	35.4401667	-118.9648333	19.517	2.42	ml	38	62	0.08553	0.31	ci	ci14434408	2016-03-08T19:47:56.656Z	6km ENE of Oildale, CA	earthquake	0.46	1.63	0.147	62	reviewed	ci	ci
3/23/2009	0:55:26	35.537	-120.7725	-0.104	2.06	md	59	30	0.109	0.13	nc	nc40233634	2017-01-20T02:24:57.460Z	6 km WSW of Templeton, California	earthquake	0.18	2.31	0.202	47	reviewed	nc	nc
3/21/2009	20:39:12	35.9353333	-120.4851667	8.93	2.21	md	64	42	0.02252	0.09	nc	nc40233544	2017-01-20T02:19:31.280Z	6 km NW of Parkfield, California	earthquake	0.16	0.21	0.146	32	reviewed	nc	nc
3/19/2009	7:54:33	35.5355	-118.7418333	8.282	2.04	ml	52	42	0.02309	0.42	ci	ci14431336	2016-03-09T01:45:44.415Z	23km WSW of Bodfish, CA	earthquake	0.37	1.34	0.166	69	reviewed	ci	ci
3/18/2009	18:41:06	36.0871667	-120.1358333	7.552	2.14	md	25	185	0.03333	0.1	nc	nc40233381	2017-01-20T02:02:26.930Z	9 km N of Avenal, California	earthquake	0.63	0.5	0.043	4	reviewed	nc	nc
3/18/2009	18:22:44	35.5308333	-120.8321667	3.906	2.64	md	70	31	0.06036	0.12	nc	nc40233379	2017-01-20T02:02:08.380Z	11 km NNE of Cayucos, California	earthquake	0.17	0.74	0.151	71	reviewed	nc	nc
3/18/2009	13:55:39	36.1033333	-120.1255	8.162	2.2	md	38	162	0.04414	0.09	nc	nc40233371	2017-01-20T02:01:04.270Z	11 km N of Avenal, California	earthquake	0.45	0.29	0.158	34	reviewed	nc	nc
3/12/2009	13:59:43	36.119	-120.1823333	8.905	3.28	ml	74	111	0.08288	0.11	nc	nc51218152	2017-01-20T01:20:49.120Z	11 km SW of Huron, California	earthquake	0.18	0.33	0.144	11	reviewed	nc	nc
3/12/2009	5:01:45	36.0203333	-120.5816667	4.438	2.33	md	57	53	0.03784	0.1	nc	nc51218138	2017-01-20T01:18:52.460Z	18 km NW of Parkfield, California	earthquake	0.21	0.25	0.089	30	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
3/10/2009	23:46:22	36.2965	-119.861	7.345	2.03	md	14	157	0.3099	0.19	nc	nc71196711	2017-01-20T01:11:57.665Z	5 km NE of Lemoore Station, California	earthquake	3.08	10.92	0.111	8	reviewed	nc	nc
3/8/2009	21:00:49	35.7595	-120.3318333	7.749	2.42	md	59	25	0.01532	0.09	nc	nc40232897	2017-01-20T00:55:39.170Z	12 km NNE of Shandon, California	earthquake	0.17	0.35	0.124	40	reviewed	nc	nc
3/6/2009	21:51:20	36.008	-119.8065	10.668	2.08	md	61	95	0.1901	0.27	nc	nc40232791	2017-01-20T00:44:05.070Z	14 km E of Kettleman City, California	earthquake	0.53	2.21	0.134	46	reviewed	nc	nc
3/1/2009	7:49:45	35.5316667	-120.8361667	4.329	2.63	md	76	34	0.05766	0.12	nc	nc40232503	2017-01-20T00:14:40.410Z	11 km NNE of Cayucos, California	earthquake	0.17	0.61	0.125	79	reviewed	nc	nc
2/28/2009	20:21:44	36.0523333	-120.6138333	5.308	2.47	md	72	68	0.02162	0.1	nc	nc40232466	2017-01-20T00:11:06.730Z	23 km NW of Parkfield, California	earthquake	0.16	0.26	0.095	40	reviewed	nc	nc
2/24/2009	21:34:14	34.9415	-119.0865	13.254	2.02	ml	40	49	0.0306	0.31	ci	ci10378545	2016-03-09T10:14:59.787Z	12km NNE of Pine Mountain Club, CA	earthquake	0.34	0.57	0.126	62	reviewed	ci	ci
2/16/2009	1:03:38	35.3041667	-119.4318333	14.045	3.89	ml	43	80	0.06137	0.43	ci	ci14421592	2022-08-05T19:30:35.202Z	11km SSE of Buttonwillow, CA	earthquake	0.53	1.02	0.163	251	reviewed	ci	ci
2/15/2009	11:28:17	35.5911667	-120.8876667	4.336	2.41	md	63	32	0.04685	0.14	nc	nc40231855	2017-01-19T22:58:10.970Z	15 km S of Lake Nacimiento, California	earthquake	0.18	0.51	0.173	55	reviewed	nc	nc
2/13/2009	8:25:38	35.4985	-120.7713333	2.863	2.63	md	65	57	0.0982	0.1	nc	nc40231773	2017-01-19T22:48:28.350Z	8 km SW of Templeton, California	earthquake	0.17	0.94	0.121	72	reviewed	nc	nc
2/12/2009	8:45:17	36.1666667	-120.2401667	10.208	2.13	md	29	130	0.1171	0.1	nc	nc40231724	2017-01-19T22:42:21.660Z	11 km ENE of Coalinga, California	earthquake	0.23	0.49	0.183	24	reviewed	nc	nc
2/12/2009	0:01:44	36.2941667	-120.288	6.626	2.45	md	49	133	0.06306	0.11	nc	nc40231705	2017-01-19T22:40:04.070Z	18 km NNE of Coalinga, California	earthquake	0.31	0.18	0.075	17	reviewed	nc	nc
2/5/2009	19:51:13	36.0556667	-120.6128333	6.248	2.44	md	75	72	0.01892	0.12	nc	nc40231382	2017-01-19T22:04:41.860Z	23 km NW of Parkfield, California	earthquake	0.2	0.3	0.163	74	reviewed	nc	nc
2/3/2009	9:08:12	35.9058333	-120.4496667	5.556	2.14	md	64	38	0.01982	0.09	nc	nc40231266	2017-01-19T21:50:26.630Z	1 km WNW of Parkfield, California	earthquake	0.13	0.17	0.229	62	reviewed	nc	nc
1/29/2009	0:20:16	36.0725	-120.6463333	2.352	2.64	md	84	39	0.04054	0.14	nc	nc40230984	2017-01-19T21:16:45.880Z	24 km ENE of San Ardo, California	earthquake	0.18	0.5	0.194	96	reviewed	nc	nc
1/28/2009	4:39:14	35.9223333	-120.4703333	4.899	2.9	md	75	40	0.01802	0.08	nc	nc40230935	2017-01-19T21:10:43.260Z	4 km NW of Parkfield, California	earthquake	0.13	0.17	0.129	69	reviewed	nc	nc
1/24/2009	17:11:48	36.145	-119.3241667	36.844	2.6	md	24	106	0.5856	0.18	nc	nc71187400	2017-01-19T20:47:24.001Z	3 km SE of Matheny, California	earthquake	0.93	1.99	0.071	17	reviewed	nc	nc
1/24/2009	2:41:39	36.0456667	-120.5293333	3.789	2.19	md	4	315	0.08378	0.01	nc	nc40230732	2017-01-19T20:42:48.311Z	18 km NNW of Parkfield, California	earthquake	5.28	4.79		1	reviewed	nc	nc
1/18/2009	15:22:46	35.2603333	-120.3966667	6.991	2.03	md	42	100	0.1387	0.12	nc	nc51215459	2017-01-19T19:56:37.170Z	20 km ENE of Edna, California	earthquake	0.27	1.17	0.187	32	reviewed	nc	nc
1/17/2009	7:38:40	36.0488333	-120.6083333	8.668	2.52	md	80	30	0.02252	0.12	nc	nc40230299	2017-01-19T19:46:48.870Z	22 km NW of Parkfield, California	earthquake	0.19	0.35	0.145	73	reviewed	nc	nc
1/12/2009	16:29:37	36.0286667	-120.5866667	4.658	2.27	md	71	47	0.04054	0.09	nc	nc51215110	2022-07-21T04:25:26.646Z	19 km NW of Parkfield, California	earthquake	0.16	0.22	0.153	74	reviewed	nc	nc
1/9/2009	1:45:18	35.9928333	-119.8696667	16.485	2.89	md	90	97	0.1486	0.21	nc	nc51214907	2017-01-19T18:41:21.840Z	8 km ESE of Kettleman City, California	earthquake	0.61	0.5	0.172	104	reviewed	nc	nc
12/28/2008	0:25:39	36.276	-119.6575	14.225	2.17	md	8	209	0.4243	0.03	nc	nc71180061	2017-01-19T05:21:56.133Z	3 km SSW of Home Garden, California	earthquake	0.9	1.13	0.093	13	reviewed	nc	nc
12/20/2008	6:22:19	35.9801667	-120.549	3.566	2.09	md	66	54	0.006306	0.11	nc	nc51213454	2017-01-19T04:22:02.910Z	13 km NW of Parkfield, California	earthquake	0.18	0.22	0.229	62	reviewed	nc	nc
12/15/2008	11:48:15	36.034	-120.591	7.808	2.4	md	79	46	0.03514	0.1	nc	nc51213131	2017-01-19T03:54:18.860Z	20 km NW of Parkfield, California	earthquake	0.17	0.24	0.179	82	reviewed	nc	nc
12/8/2008	17:03:55	35.6025	-118.8395	0.121	2.78	ml	47	60	0.1226	0.42	ci	ci14408968	2016-03-09T05:53:53.567Z	26km NE of Oildale, CA	earthquake	0.4	0.84	0.134	132	reviewed	ci	ci
12/7/2008	18:47:31	36.1835	-120.2611667	9.536	2.46	md	67	106	0.09279	0.14	nc	nc51212538	2017-01-19T02:58:36.730Z	10 km ENE of Coalinga, California	earthquake	0.26	0.44	0.174	86	reviewed	nc	nc
11/26/2008	10:58:02	36.0338333	-120.0873333	9.871	2.43	md	56	162	0.03243	0.14	nc	nc40226858	2017-01-19T02:00:52.570Z	5 km NE of Avenal, California	earthquake	0.4	0.25	0.158	44	reviewed	nc	nc
11/24/2008	5:54:26	35.5591667	-120.786	2.458	2.31	md	70	43	0.1018	0.1	nc	nc40226690	2017-01-19T01:45:43.930Z	7 km W of Templeton, California	earthquake	0.2	1.06	0.191	55	reviewed	nc	nc
11/23/2008	14:44:05	35.8278333	-120.3808333	6.675	3.48	ml	78	27	0.01712	0.09	nc	nc40226649	2017-01-19T01:41:07.420Z	9 km SSE of Parkfield, California	earthquake	0.14	0.22	0.341	28	reviewed	nc	nc
11/18/2008	16:51:14	34.7155	-120.0326667	7.439	2.24	ml	27	48	0.03893	0.35	ci	ci14404004	2016-03-09T05:52:17.166Z	9km NE of Los Olivos, CA	earthquake	0.68	1.45	0.175	40	reviewed	ci	ci
11/17/2008	1:32:41	35.5261667	-120.812	4.588	2.69	md	74	28	0.07748	0.11	nc	nc51211362	2017-01-19T00:54:30.370Z	9 km WSW of Templeton, California	earthquake	0.16	0.75	0.151	79	reviewed	nc	nc
11/15/2008	19:24:52	35.526	-120.8043333	4.058	2.11	md	70	29	0.08378	0.14	nc	nc51211286	2017-01-19T00:45:54.130Z	9 km WSW of Templeton, California	earthquake	0.18	0.74	0.177	54	reviewed	nc	nc
11/15/2008	17:50:41	35.525	-120.8103333	4.828	3.96	ml	84	28	0.07928	0.13	nc	nc51211277	2022-06-17T09:45:19.672Z	9 km WSW of Templeton, California	earthquake	0.15	0.61	0.224	139	reviewed	nc	nc
11/15/2008	17:12:55	35.5255	-120.8066667	4.866	2.23	md	55	46	0.08198	0.13	nc	nc51211273	2017-01-19T00:44:39.250Z	9 km WSW of Templeton, California	earthquake	0.22	0.82	0.128	25	reviewed	nc	nc
11/15/2008	3:20:46	35.5341667	-120.8425	5.636	2.3	md	65	34	0.05225	0.15	nc	nc51211237	2017-01-19T00:40:27.170Z	11 km NNE of Cayucos, California	earthquake	0.22	0.83	0.234	56	reviewed	nc	nc
11/12/2008	19:30:06	35.4811667	-120.7918333	5.065	2.14	md	66	54	0.07658	0.11	nc	nc51211080	2017-01-19T00:25:54.590Z	10 km ENE of Cayucos, California	earthquake	0.17	0.65	0.215	53	reviewed	nc	nc
11/11/2008	13:47:00	35.5598333	-120.7928333	3.408	2.01	md	58	50	0.0964	0.1	nc	nc51211016	2017-01-19T00:17:50.920Z	7 km W of Templeton, California	earthquake	0.25	1.04	0.224	48	reviewed	nc	nc
11/11/2008	9:48:05	36.003	-120.5695	4.333	2.56	md	68	43	0.02703	0.13	nc	nc51211004	2017-01-19T00:16:31.350Z	16 km NW of Parkfield, California	earthquake	0.2	0.27	0.108	58	reviewed	nc	nc
11/7/2008	10:31:07	36.0016667	-120.5721667	4.184	2.08	md	50	45	0.02973	0.13	nc	nc51210781	2017-01-18T23:51:00.540Z	16 km NW of Parkfield, California	earthquake	0.2	0.31	0.24	42	reviewed	nc	nc
11/6/2008	22:50:14	35.3411667	-118.8373333	19.047	2.65	ml	51	52	0.07281	0.31	ci	ci10358013	2016-03-08T19:37:43.063Z	11km NE of Lamont, CA	earthquake	0.33	0.75	0.144	116	reviewed	ci	ci
11/6/2008	21:54:50	36.0873333	-120.1473333	16.037	2.2	md	44	91	0.04054	0.18	nc	nc51210750	2017-01-18T23:47:32.840Z	9 km N of Avenal, California	earthquake	0.56	0.42	0.221	34	reviewed	nc	nc
11/5/2008	16:28:47	36.0841667	-120.1713333	12.952	2.61	md	68	67	0.05495	0.13	nc	nc51210676	2017-01-18T23:38:55.690Z	9 km NNW of Avenal, California	earthquake	0.25	0.47	0.157	84	reviewed	nc	nc
11/5/2008	16:11:32	36.0795	-120.1675	14.012	2.35	md	45	116	0.05045	0.14	nc	nc51210673	2017-01-18T23:38:25.580Z	9 km NNW of Avenal, California	earthquake	0.43	0.83	0.158	38	reviewed	nc	nc
11/5/2008	16:05:48	36.079	-120.1563333	16.921	3.4	mw	63	89	0.04144	0.12	nc	nc51210672	2017-01-18T23:38:17.210Z	8 km NNW of Avenal, California	earthquake	0.41	0.33		2	reviewed	nc	nc
11/5/2008	3:21:39	36.2381667	-120.3588333	9.479	2.77	md	54	82	0.01712	0.08	nc	nc51210632	2017-01-18T23:34:39.760Z	10 km N of Coalinga, California	earthquake	0.18	0.18	0.093	43	reviewed	nc	nc
11/4/2008	9:44:25	36.0795	-120.1778333	13.911	2.93	md	71	61	0.05856	0.13	nc	nc51210580	2017-01-18T23:29:45.920Z	9 km NNW of Avenal, California	earthquake	0.24	0.5	0.138	106	reviewed	nc	nc
10/28/2008	17:55:17	35.8975	-120.4416667	5.636	2.31	md	66	53	0.01532	0.09	nc	nc51210263	2017-01-18T22:56:30.700Z	0 km WSW of Parkfield, California	earthquake	0.17	0.2	0.134	63	reviewed	nc	nc
10/28/2008	17:09:05	36.2335	-120.274	5.799	2.52	md	93	100	0.2856	0.14	nc	nc51210262	2017-01-18T22:56:22.060Z	12 km NE of Coalinga, California	earthquake	0.3	1.05	0.156	88	reviewed	nc	nc
10/21/2008	2:08:58	36.0166667	-118.8566667	4.748	2.39	ml	22	86	0.1976	0.19	ci	ci10355089	2022-06-16T20:39:09.297Z	15km ESE of Porterville, CA	earthquake	0.44	16.43	0.168	79	reviewed	ci	ci
10/6/2008	17:11:24	36.0718333	-119.8658333	16.852	2.01	md	48	180	0.1973	0.22	nc	nc51209079	2017-01-18T20:18:30.740Z	11 km NE of Kettleman City, California	earthquake	1.14	0.99	0.192	36	reviewed	nc	nc
10/6/2008	17:04:52	36.0901667	-119.8315	6.262	2.87	md	64	88	0.227	0.24	nc	nc51209078	2017-01-18T20:18:16.250Z	11 km S of Stratford, California	earthquake	0.48	1.76	0.136	48	reviewed	nc	nc
10/6/2008	14:48:10	36.1041667	-119.8341667	14.869	3	ml	57	116	0.227	0.18	nc	nc51209072	2017-01-18T20:17:13.800Z	9 km S of Stratford, California	earthquake	0.47	0.78	0.226	15	reviewed	nc	nc
10/5/2008	22:45:57	35.5758333	-120.838	5.116	2.22	md	70	29	0.06577	0.13	nc	nc51209038	2017-01-18T20:11:37.840Z	12 km WNW of Templeton, California	earthquake	0.17	0.54	0.19	57	reviewed	nc	nc
10/3/2008	0:01:22	35.0561667	-119.1218333	16.487	3.14	ml	62	37		0.45	ci	ci14396432	2016-03-09T00:10:30.135Z	22km NW of Grapevine, CA	earthquake	0.43	1.62	0.143	258	reviewed	ci	ci
9/26/2008	7:57:38	36.0195	-120.5783333	4.371	2.38	md	59	44	0.03514	0.1	nc	nc51208666	2017-01-18T19:21:36.510Z	18 km NW of Parkfield, California	earthquake	0.18	0.26	0.147	59	reviewed	nc	nc
9/23/2008	15:57:09	35.4153333	-118.921	17.517	2.72	ml	38	71	0.05358	0.26	ci	ci14394476	2016-03-08T21:16:34.339Z	9km E of Oildale, CA	earthquake	0.41	0.82	0.16	48	reviewed	ci	ci
9/22/2008	18:09:10	36.2305	-120.287	13.327	2.5	md	53	221	0.2766	0.12	nc	nc51208495	2022-07-21T02:22:55.646Z	12 km NNE of Coalinga, California	earthquake	0.53	0.58	0.147	51	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/18/2008	19:13:26	35.1773333	-119.4418333	19.195	2	ml	13	95	0.03631	0.2	ci	ci10349613	2016-03-08T17:52:53.382Z	4km NNE of Taft, CA	earthquake	0.58	0.76	0.677	9	reviewed	ci	ci
9/18/2008	17:32:09	35.1883333	-119.4303333	18.712	3.33	ml	49	80	0.04324	0.39	ci	ci10349589	2022-06-17T09:24:14.012Z	6km NNE of Taft, CA	earthquake	0.43	0.83	0.156	202	reviewed	ci	ci
9/9/2008	9:05:49	36.0745	-120.2036667	10.042	2.43	md	60	70	0.07748	0.13	nc	nc51207868	2017-01-18T16:29:14.550Z	10 km NW of Avenal, California	earthquake	0.21	0.49	0.149	54	reviewed	nc	nc
9/6/2008	23:22:09	36.0916667	-120.6638333	7.158	2.13	md	55	46	0.05225	0.13	nc	nc51207777	2017-01-18T16:08:46.770Z	23 km ENE of San Ardo, California	earthquake	0.26	0.52	0.233	20	reviewed	nc	nc
8/21/2008	11:38:52	35.6238333	-120.8116667	6.782	2.04	md	60	39	0.04775	0.13	nc	nc51207218	2017-01-18T14:53:54.890Z	10 km W of Paso Robles, California	earthquake	0.23	0.69	0.171	46	reviewed	nc	nc
8/21/2008	6:57:25	35.9773333	-120.5335	10.523	2.22	md	53	30	0.01532	0.1	nc	nc51207210	2017-01-18T14:52:53.260Z	12 km NW of Parkfield, California	earthquake	0.2	0.29	0.166	45	reviewed	nc	nc
8/20/2008	12:30:30	35.5576667	-120.8106667	4.499	2.12	md	59	44	0.08198	0.11	nc	nc51207187	2017-01-18T14:49:49.410Z	9 km W of Templeton, California	earthquake	0.17	0.64	0.228	47	reviewed	nc	nc
8/18/2008	21:53:47	35.7298333	-119.1488333	20.68	2.48	ml	29	106	0.1225	0.29	ci	ci14388144	2016-03-09T14:55:37.785Z	9km NE of McFarland, CA	earthquake	0.45	1.42	0.174	71	reviewed	ci	ci
8/18/2008	20:12:49	35.9333333	-119.8986667	8.881	2.1	md	48	142	0.08468	0.25	nc	nc51207129	2017-01-18T14:41:02.220Z	10 km SE of Kettleman City, California	earthquake	0.4	1.01	0.208	37	reviewed	nc	nc
8/8/2008	13:38:18	35.8911667	-120.4388333	10.71	2.2	md	57	43	0.01351	0.09	nc	nc40221700	2017-01-18T13:56:59.200Z	1 km SSW of Parkfield, California	earthquake	0.18	0.27	0.232	45	reviewed	nc	nc
8/8/2008	13:13:46	34.9843333	-119.691	14.109	3.14	ml	45	35	0.1636	0.44	ci	ci14386464	2016-03-08T19:31:20.523Z	28km SW of Taft, CA	earthquake	0.36	0.73	0.146	215	reviewed	ci	ci
8/8/2008	2:05:54	36.3271667	-119.5961667	4.803	2.57	ml	5	302	1.316	0.23	ci	ci14386428	2016-03-09T05:46:38.163Z	4km E of Hanford, CA	earthquake	2.84	31.61	0.064	9	reviewed	ci	ci
8/8/2008	2:05:39	35.9293333	-120.0678333	19.248	2.62	md	40	79	0.1126	0.22	nc	nc40221680	2017-01-18T13:54:10.070Z	9 km SSE of Avenal, California	earthquake	0.62	1.14	0.124	40	reviewed	nc	nc
7/28/2008	18:40:22	36.2981667	-120.045	23.899	2.11	md	42	117	0.05856	0.19	nc	nc40221283	2017-01-18T13:08:20.070Z	11 km NNE of Huron, California	earthquake	0.55	0.78	0.259	35	reviewed	nc	nc
7/27/2008	10:58:08	36.3013333	-120.0286667	20.96	2.28	md	44	152	0.06937	0.21	nc	nc40221220	2017-01-18T12:58:23.920Z	11 km WNW of Lemoore Station, California	earthquake	0.55	0.42	0.123	41	reviewed	nc	nc
7/27/2008	2:09:30	34.8271667	-120.1813333	4.173	2.04	ml	15	79	0.1223	0.33	ci	ci14383532	2016-03-08T17:48:41.217Z	13km NE of Los Alamos, CA	earthquake	0.64	1.66	0.124	18	reviewed	ci	ci
7/26/2008	22:46:54	36.2771667	-119.7726667	-0.521	2.12	md	12	135	0.3477	0.22	nc	nc71135510	2017-01-18T12:56:05.643Z	2 km SSE of Lemoore, California	earthquake	1.12	9.62	0.106	13	reviewed	nc	nc
7/24/2008	6:14:09	35.0396667	-119.088	19.592	2.11	ml	30	39	0.07263	0.32	ci	ci14382956	2016-03-09T04:21:22.161Z	18km NW of Grapevine, CA	earthquake	0.49	1.87	0.115	40	reviewed	ci	ci
7/19/2008	23:09:00	35.7423333	-119.3903333	5.383	2	ml	21	169	0.2672	0.39	ci	ci14382152	2016-03-09T05:45:27.805Z	13km WSW of Delano, CA	earthquake	0.82	31.61	0.145	13	reviewed	ci	ci
7/17/2008	5:59:58	35.5058333	-120.8075	4.853	2.29	md	68	41	0.07658	0.12	nc	nc40220787	2017-01-18T12:12:44.110Z	10 km NE of Cayucos, California	earthquake	0.15	0.62	0.154	58	reviewed	nc	nc
7/16/2008	21:31:39	35.5098333	-120.8095	3.606	2.09	md	67	43	0.07838	0.14	nc	nc40220771	2017-01-18T12:11:05.550Z	10 km WSW of Templeton, California	earthquake	0.19	0.74	0.177	55	reviewed	nc	nc
7/16/2008	0:44:17	36.3075	-119.7261667	5.755	2.05	md	12	76	0.3964	0.1	nc	nc71132760	2017-01-18T12:06:26.118Z	1 km WSW of Armona, California	earthquake	0.51	1.34	0.079	13	reviewed	nc	nc
7/15/2008	19:43:14	36.0358333	-120.5956667	4.501	2.15	md	73	45	0.03333	0.11	nc	nc40220730	2017-01-18T12:05:52.580Z	21 km NW of Parkfield, California	earthquake	0.19	0.32	0.193	66	reviewed	nc	nc
7/15/2008	19:09:20	35.9876667	-120.55	4.373	2.14	md	70	46	0.01351	0.12	nc	nc40220724	2017-01-18T12:05:05.160Z	14 km NW of Parkfield, California	earthquake	0.16	0.22	0.198	58	reviewed	nc	nc
7/15/2008	10:35:44	35.488	-119.1051667	23.776	3.15	ml	44	86	0.1432	0.33	ci	ci14381108	2016-03-09T07:13:27.086Z	11km NW of Oildale, CA	earthquake	0.42	1.43	0.14	262	reviewed	ci	ci
7/13/2008	7:50:59	35.4573333	-118.7736667	6.714	2.45	ml	32	90	0.09211	0.25	ci	ci14380732	2016-03-08T22:39:31.164Z	23km E of Oildale, CA	earthquake	0.36	2.77	0.174	36	reviewed	ci	ci
7/11/2008	11:02:03	35.6385	-120.755	5.365	2.34	md	67	25	0.09369	0.14	nc	nc40220535	2017-01-18T11:41:17.560Z	5 km WNW of Paso Robles, California	earthquake	0.19	0.96	0.208	50	reviewed	nc	nc
7/9/2008	0:12:00	35.6948333	-119.6065	27.883	2.28	ml	18	163	0.3867	0.22	ci	ci14379704	2016-03-09T10:01:44.862Z	24km SSW of Alpaugh, CA	earthquake	0.73	1.03	0.285	21	reviewed	ci	ci
7/6/2008	20:47:17	35.6376667	-120.7563333	6.471	2.56	md	75	40	0.09009	0.12	nc	nc40220314	2017-01-18T11:17:57.510Z	6 km WNW of Paso Robles, California	earthquake	0.17	0.75	0.163	63	reviewed	nc	nc
7/6/2008	20:25:54	35.639	-120.7585	5.881	3.7	mw	82	24	0.08829	0.09	nc	nc40220309	2017-03-17T20:15:03.184Z	6 km WNW of Paso Robles, California	earthquake	0.13	0.62		4	reviewed	nc	nc
6/28/2008	5:54:54	35.9976667	-120.566	3.123	2.13	md	56	81	0.02613	0.13	nc	nc40219855	2017-01-18T10:29:18.720Z	16 km NW of Parkfield, California	earthquake	0.21	0.34	0.204	45	reviewed	nc	nc
6/22/2008	0:23:36	36.076	-120.6395	5.824	3.19	ml	103	26	0.03604	0.11	nc	nc40219568	2017-01-18T09:59:04.930Z	24 km ENE of San Ardo, California	earthquake	0.15	0.36	0.176	15	reviewed	nc	nc
6/20/2008	0:14:18	34.9691667	-119.3348333	2.033	2.28	ml	30	73	0.03365	0.36	ci	ci10332285	2016-03-08T21:10:17.265Z	12km SSE of Maricopa, CA	earthquake	0.47	0.67	0.132	66	reviewed	ci	ci
6/18/2008	19:11:07	35.5253333	-120.829	3.268	2.03	md	67	31	0.06396	0.14	nc	nc40219413	2017-01-18T09:42:18.500Z	10 km NNE of Cayucos, California	earthquake	0.18	0.71	0.168	63	reviewed	nc	nc
6/18/2008	17:13:10	35.5243333	-120.83	3.098	2.17	md	70	31	0.06306	0.13	nc	nc40219408	2017-01-18T09:41:50.590Z	10 km NNE of Cayucos, California	earthquake	0.16	0.73	0.179	61	reviewed	nc	nc
6/15/2008	5:26:54	35.9961667	-120.5605	3.393	3.23	ml	92	39	0.02252	0.12	nc	nc40219237	2017-01-18T09:23:28.050Z	15 km NW of Parkfield, California	earthquake	0.13	0.22	0.234	8	reviewed	nc	nc
6/7/2008	4:30:34	35.5363333	-120.8193333	6.142	2.09	md	21	141	0.07117	0.14	nc	nc51203931	2017-01-18T08:47:40.722Z	10 km W of Templeton, California	earthquake	0.49	1.13		1	reviewed	nc	nc
6/4/2008	0:40:20	35.8406667	-120.3861667	4.265	2.41	md	72	56	0.01081	0.1	nc	nc51203766	2017-01-18T08:25:55.150Z	7 km SSE of Parkfield, California	earthquake	0.14	0.23	0.153	76	reviewed	nc	nc
5/19/2008	9:39:48	34.929	-119.0121667	10.562	2.07	ml	46	48	0.06113	0.28	ci	ci14369580	2016-03-09T14:47:50.234Z	8km WSW of Grapevine, CA	earthquake	0.36	0.78	0.175	61	reviewed	ci	ci
5/15/2008	7:55:18	35.838	-120.3895	8.775	3.22	ml	84	33	0.007207	0.09	nc	nc51202717	2017-01-18T06:43:38.330Z	7 km SSE of Parkfield, California	earthquake	0.13	0.23	0.156	12	reviewed	nc	nc
5/14/2008	22:11:33	35.0848333	-119.1225	14.181	2.24	ml	33	42	0.124	0.32	ci	ci14368744	2016-03-09T05:41:42.493Z	24km NW of Grapevine, CA	earthquake	0.47	0.82	0.201	70	reviewed	ci	ci
5/14/2008	22:07:06	35.0923333	-119.115	1.311	2.2	ml	33	41	0.1291	0.37	ci	ci14368740	2016-03-09T05:41:41.121Z	24km NW of Grapevine, CA	earthquake	0.43	1.08	0.209	60	reviewed	ci	ci
5/11/2008	17:13:16	35.4973333	-120.7866667	4.025	2.46	md	80	44	0.08649	0.12	nc	nc51202533	2017-01-18T06:26:02.000Z	9 km SW of Templeton, California	earthquake	0.15	0.65	0.16	74	reviewed	nc	nc
5/10/2008	0:01:19	36.0108333	-120.5761667	3.901	2.38	md	78	42	0.03243	0.1	nc	nc51202435	2017-01-18T06:17:52.280Z	17 km NW of Parkfield, California	earthquake	0.16	0.22	0.177	79	reviewed	nc	nc
5/5/2008	15:23:36	35.6928333	-120.2426667	9.345	2.5	md	71	75	0.03874	0.09	nc	nc40217075	2017-01-18T05:57:12.090Z	12 km ENE of Shandon, California	earthquake	0.15	0.32	0.19	73	reviewed	nc	nc
5/2/2008	15:31:36	36.0258333	-120.5881667	4.698	2.84	md	87	43	0.04324	0.1	nc	nc40216855	2017-01-18T05:40:25.630Z	19 km NW of Parkfield, California	earthquake	0.15	0.24	0.138	106	reviewed	nc	nc
4/30/2008	9:12:07	36.1928333	-120.292	10.499	2.2	md	51	60	0.07027	0.1	nc	nc40216686	2017-01-18T05:28:28.600Z	8 km NE of Coalinga, California	earthquake	0.22	0.38	0.222	66	reviewed	nc	nc
4/29/2008	22:25:48	35.4951667	-120.7796667	3.475	2.84	md	77	46	0.09099	0.12	nc	nc40216653	2017-01-18T05:25:26.370Z	9 km SW of Templeton, California	earthquake	0.16	0.77	0.11	76	reviewed	nc	nc
4/29/2008	19:02:38	35.4985	-120.782	3.295	2.26	md	76	45	0.09009	0.12	nc	nc40216639	2017-01-18T05:24:11.220Z	8 km SW of Templeton, California	earthquake	0.16	0.81	0.165	63	reviewed	nc	nc
4/29/2008	17:45:16	35.4986667	-120.7826667	3.665	3.6	mw	80	44	0.09009	0.12	nc	nc40216634	2022-06-16T02:35:35.612Z	8 km SW of Templeton, California	earthquake	0.16	0.73		2	reviewed	nc	nc
4/29/2008	3:13:11	35.8166667	-120.3673333	8.302	2.29	md	68	65	0.01802	0.06	nc	nc40216584	2017-01-18T05:19:57.190Z	10 km SSE of Parkfield, California	earthquake	0.13	0.19	0.17	71	reviewed	nc	nc
4/27/2008	18:58:46	34.7806667	-120.1556667	5.344	2.44	ml	11	65	0.1118	0.42	ci	ci10320917	2016-03-08T21:06:46.903Z	12km ENE of Los Alamos, CA	earthquake	1.21	31.61	0.04	3	reviewed	ci	ci
4/20/2008	18:12:20	35.4746667	-119.33	26.346	2.17	ml	27	121	0.1457	0.28	ci	ci10319461	2016-03-09T02:51:26.506Z	6km WSW of Shafter, CA	earthquake	0.49	1.46	0.18	18	reviewed	ci	ci
4/19/2008	17:13:57	36.0248333	-119.938	14.9	2.34	md	45	79	0.1432	0.2	nc	nc40215577	2017-01-18T04:17:40.190Z	2 km NE of Kettleman City, California	earthquake	0.47	0.73	0.163	31	reviewed	nc	nc
4/18/2008	5:54:00	35.0976667	-119.1283333	4.417	2.16	ml	35	41	0.1377	0.47	ci	ci10318997	2016-03-09T01:25:48.367Z	25km NW of Grapevine, CA	earthquake	0.69	34.46	0.219	49	reviewed	ci	ci
4/14/2008	15:23:29	35.6796667	-119.2306667	22.242	2	ml	25	146	0.1999	0.32	ci	ci10318225	2016-03-08T19:21:46.457Z	0km NNW of McFarland, CA	earthquake	0.64	2.03	0.232	21	reviewed	ci	ci
4/13/2008	9:40:24	34.7365	-120.1615	14.127	2.16	ml	7	97	0.09757	0.26	ci	ci10318013	2016-03-09T12:54:52.612Z	9km NNW of Los Olivos, CA	earthquake	0.97	2.16	0.111	8	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
4/7/2008	0:37:55	36.1768333	-120.3071667	10.109	2.01	md	43	85	0.07838	0.08	nc	nc40214706	2017-01-18T02:50:42.160Z	6 km NE of Coalinga, California	earthquake	0.2	0.32	0.166	36	reviewed	nc	nc
4/4/2008	16:16:58	35.3385	-119.1403333	16.748	2.57	ml	41	86	0.02993	0.27	ci	ci14360088	2016-03-08T19:21:18.220Z	5km S of Rosedale, CA	earthquake	0.32	0.8	0.305	39	reviewed	ci	ci
4/1/2008	21:27:56	35.4726667	-119.3456667	23.051	2.95	ml	42	122	0.1418	0.24	ci	ci14359424	2016-03-09T08:32:27.247Z	7km WSW of Shafter, CA	earthquake	0.37	1.02	0.157	53	reviewed	ci	ci
3/14/2008	1:43:37	35.5681667	-120.8435	3.258	2.32	md	54	40	0.06216	0.11	nc	nc51198250	2017-01-18T00:25:54.430Z	12 km W of Templeton, California	earthquake	0.17	0.55	0.097	42	reviewed	nc	nc
3/11/2008	21:43:26	35.5701667	-120.8423333	2.909	2.68	md	78	30	0.06396	0.13	nc	nc51198119	2017-01-18T00:13:03.110Z	12 km W of Templeton, California	earthquake	0.16	0.65	0.095	74	reviewed	nc	nc
3/5/2008	21:28:51	36.052	-120.1671667	8.842	2.45	md	74	60	0.04775	0.12	nc	nc51197666	2017-01-17T23:25:14.500Z	6 km NNW of Avenal, California	earthquake	0.18	0.33	0.124	57	reviewed	nc	nc
3/4/2008	12:27:49	36.139	-120.239	9.482	2.2	md	54	78	0.1153	0.11	nc	nc51197556	2017-01-17T23:13:21.140Z	10 km E of Coalinga, California	earthquake	0.22	0.52	0.172	49	reviewed	nc	nc
3/2/2008	8:07:45	35.065	-118.9856667	16.486	3.47	ml	67	32	0.118	0.41	ci	ci14353880	2016-03-08T17:37:37.245Z	14km NNW of Grapevine, CA	earthquake	0.41	1.37	0.175	325	reviewed	ci	ci
3/1/2008	8:15:41	36.0543333	-120.1633333	9.702	2.83	md	90	60	0.04414	0.14	nc	nc51197352	2017-01-17T22:49:53.940Z	6 km NNW of Avenal, California	earthquake	0.18	0.36	0.134	117	reviewed	nc	nc
2/24/2008	9:26:58	35.9383333	-120.4913333	10.471	2.02	md	49	37	0.01892	0.09	nc	nc51197040	2017-01-17T22:15:57.920Z	6 km NW of Parkfield, California	earthquake	0.19	0.25	0.128	30	reviewed	nc	nc
2/16/2008	5:58:13	35.551	-120.7983333	4.502	2.52	md	79	23	0.09009	0.13	nc	nc51196485	2017-01-17T21:11:59.960Z	8 km W of Templeton, California	earthquake	0.15	0.61	0.139	72	reviewed	nc	nc
2/14/2008	19:10:00	35.0741667	-119.1461667	17.012	2.39	ml	30	44	0.1229	0.31	ci	ci14349904	2016-03-09T08:30:00.491Z	23km E of Maricopa, CA	earthquake	0.54	1.73	0.176	66	reviewed	ci	ci
2/12/2008	19:35:25	34.8343333	-120.4726667	3.941	2.16	ml	14	173	0.01606	0.26	ci	ci14349168	2016-03-09T02:47:22.584Z	5km SW of Orcutt, CA	earthquake	1.55	0.71	0.169	17	reviewed	ci	ci
2/3/2008	10:49:18	35.5011667	-120.783	3.625	3.07	ml	71	43	0.09099	0.14	nc	nc40210595	2017-01-17T19:40:40.840Z	8 km SW of Templeton, California	earthquake	0.17	0.78	0.154	8	reviewed	nc	nc
2/2/2008	18:25:46	35.5955	-120.8735	3.532	2.26	md	73	31	0.04054	0.13	nc	nc40210555	2017-01-17T19:36:26.360Z	14 km S of Lake Nacimiento, California	earthquake	0.17	0.41	0.129	50	reviewed	nc	nc
2/2/2008	4:30:06	36.0695	-120.1966667	14.192	2.22	md	59	70	0.07117	0.11	nc	nc40210530	2017-01-17T19:33:36.810Z	9 km NW of Avenal, California	earthquake	0.22	0.58	0.156	49	reviewed	nc	nc
2/1/2008	18:16:36	36.0831667	-120.1878333	12.252	2.04	md	46	83	0.06667	0.08	nc	nc40210505	2017-01-17T19:29:46.530Z	10 km NNW of Avenal, California	earthquake	0.21	0.46	0.133	32	reviewed	nc	nc
2/1/2008	8:28:29	36.0706667	-120.19	14.932	2.5	md	67	51	0.06577	0.09	nc	nc40210485	2017-01-17T19:25:32.250Z	9 km NW of Avenal, California	earthquake	0.19	0.48	0.129	67	reviewed	nc	nc
2/1/2008	4:56:28	36.0661667	-120.1848333	17.542	3.56	ml	83	48	0.06126	0.12	nc	nc40210467	2017-03-17T20:09:02.387Z	8 km NW of Avenal, California	earthquake	0.2	0.34	0.213	19	reviewed	nc	nc
1/29/2008	3:34:15	36.0856667	-120.1818333	12.822	2.29	md	62	65	0.06306	0.12	nc	nc40210285	2017-01-17T19:03:02.160Z	10 km NNW of Avenal, California	earthquake	0.18	0.41	0.138	36	reviewed	nc	nc
1/26/2008	21:24:22	35.502	-120.7828333	3.418	2.95	md	79	42	0.09189	0.14	nc	nc40210202	2017-01-17T18:52:07.920Z	8 km SW of Templeton, California	earthquake	0.16	0.88	0.128	67	reviewed	nc	nc
1/22/2008	13:24:48	36.031	-120.5316667	7.118	2.12	md	66	72	0.02162	0.11	nc	nc51195104	2017-01-17T18:28:23.770Z	17 km NNW of Parkfield, California	earthquake	0.2	0.25	0.147	33	reviewed	nc	nc
1/20/2008	11:16:39	35.929	-119.7386667	20.768	2.79	md	54	45	0.1892	0.19	nc	nc51194980	2017-01-17T18:13:00.340Z	21 km ESE of Kettleman City, California	earthquake	0.43	0.44	0.127	36	reviewed	nc	nc
1/18/2008	16:24:19	35.7968333	-120.3513333	10.239	2.89	md	76	42	0.03423	0.1	nc	nc51194860	2017-01-17T17:53:20.610Z	13 km SSE of Parkfield, California	earthquake	0.15	0.28	0.102	86	reviewed	nc	nc
1/18/2008	12:38:20	35.7975	-120.3481667	10.059	2.92	md	73	53	0.03333	0.07	nc	nc51194846	2017-01-17T17:51:52.310Z	13 km SE of Parkfield, California	earthquake	0.13	0.23	0.08	72	reviewed	nc	nc
1/18/2008	7:31:01	35.6015	-120.7193333	-0.411	2.28	md	71	28	0.1261	0.13	nc	nc51194833	2017-01-17T17:50:22.950Z	3 km SW of Paso Robles, California	earthquake	0.16	1.46	0.192	53	reviewed	nc	nc
1/16/2008	0:48:30	36.2331667	-120.3688333	9.553	2.54	md	69	43	0.02613	0.09	nc	nc51194702	2017-01-17T17:37:15.060Z	10 km N of Coalinga, California	earthquake	0.14	0.23	0.136	81	reviewed	nc	nc
1/15/2008	3:18:41	36.2136667	-120.3295	9.743	2.17	md	67	56	0.03694	0.12	nc	nc51194625	2017-01-17T17:27:39.420Z	8 km NNE of Coalinga, California	earthquake	0.18	0.31	0.184	45	reviewed	nc	nc
1/14/2008	11:36:35	35.7776667	-120.3313333	8.284	2.76	md	75	39	0.03153	0.08	nc	nc51194564	2017-01-17T17:22:20.500Z	14 km NNE of Shandon, California	earthquake	0.15	0.27	0.09	66	reviewed	nc	nc
1/14/2008	6:02:15	36.0483333	-119.6141667	15.568	2.51	md	38	63	0.3342	0.27	nc	nc71093931	2017-01-17T17:19:04.940Z	7 km SW of Corcoran, California	earthquake	0.65	31.61	0.16	35	reviewed	nc	nc
1/13/2008	2:29:51	35.5336667	-120.8381667	4.223	2.32	md	66	50	0.05586	0.11	nc	nc51194492	2017-01-17T17:11:58.490Z	11 km NNE of Cayucos, California	earthquake	0.21	0.58	0.131	53	reviewed	nc	nc
1/13/2008	1:17:35	35.4921667	-120.8028333	4.585	2.97	ml	78	46	0.07207	0.13	nc	nc51194487	2017-01-17T17:11:26.700Z	9 km NE of Cayucos, California	earthquake	0.16	0.61	0.131	5	reviewed	nc	nc
1/8/2008	7:57:21	35.1348333	-118.9071667	9.088	2.3	ml	37	38	0.06367	0.28	ci	ci10298529	2016-03-09T01:18:56.220Z	11km SW of Arvin, CA	earthquake	0.4	1.53	0.185	67	reviewed	ci	ci
1/4/2008	17:19:14	36.0313333	-120.0288333	8.507	2.81	md	68	100	0.07207	0.22	nc	nc51193986	2017-01-17T16:13:05.150Z	6 km WNW of Kettleman City, California	earthquake	0.31	0.46	0.19	58	reviewed	nc	nc
1/2/2008	3:48:12	35.5246667	-120.8281667	5.463	2.51	md	70	53	0.06486	0.1	nc	nc51193760	2017-01-17T15:54:54.660Z	10 km NNE of Cayucos, California	earthquake	0.14	0.48	0.113	59	reviewed	nc	nc
12/30/2007	10:07:52	36.1036667	-119.8831667	20.037	2.02	md	34	224	0.1883	0.15	nc	nc51193565	2017-01-17T10:10:58.940Z	10 km SSW of Stratford, California	earthquake	0.83	0.94	0.15	4	reviewed	nc	nc
12/28/2007	6:40:13	35.5775	-120.866	3.958	2.16	md	63	73	0.05495	0.14	nc	nc51193353	2017-01-17T09:56:50.400Z	14 km WNW of Templeton, California	earthquake	0.21	0.45	0.147	41	reviewed	nc	nc
12/27/2007	12:40:25	35.9213333	-120.476	3.72	2.02	md	13	90	0.01351	0.09	nc	nc71002509	2017-01-17T09:51:55.755Z	4 km WNW of Parkfield, California	earthquake	0.41	0.74	0.341	7	reviewed	nc	nc
12/27/2007	12:39:57	35.9231667	-120.4731667	5.54	2.89	md	67	48	0.01622	0.09	nc	nc51193303	2017-01-17T09:51:45.230Z	4 km NW of Parkfield, California	earthquake	0.15	0.2	0.114	63	reviewed	nc	nc
12/21/2007	11:25:03	35.076	-119.0251667	12.403	2.05	ml	38	34	0.1131	0.42	ci	ci10296221	2016-03-09T01:18:15.858Z	17km NNW of Grapevine, CA	earthquake	0.49	1.36	0.145	44	reviewed	ci	ci
12/20/2007	9:30:30	35.6965	-120.24	10.255	2.56	md	56	75	0.03514	0.1	nc	nc51192864	2017-01-17T09:09:05.480Z	13 km ENE of Shandon, California	earthquake	0.2	0.4	0.147	47	reviewed	nc	nc
12/14/2007	8:53:55	35.547	-120.8646667	3.848	2.49	md	77	39	0.03694	0.16	nc	nc40207423	2017-01-17T08:36:11.370Z	11 km NNE of Cayucos, California	earthquake	0.17	0.46	0.159	65	reviewed	nc	nc
12/8/2007	4:37:12	35.4436667	-120.7213333	4.705	2.04	md	54	49	0.05225	0.11	nc	nc40207049	2017-01-17T07:56:12.320Z	6 km SW of Atascadero, California	earthquake	0.18	0.64	0.188	35	reviewed	nc	nc
12/7/2007	2:12:36	35.9726667	-120.5313333	4.445	2.7	md	85	29	0.01532	0.11	nc	nc40206995	2017-01-17T07:51:05.160Z	12 km NW of Parkfield, California	earthquake	0.13	0.16	0.088	82	reviewed	nc	nc
12/6/2007	3:54:57	35.5658333	-120.8361667	4.519	3.3	ml	79	37	0.07568	0.1	nc	nc40206955	2022-06-17T08:25:36.787Z	11 km W of Templeton, California	earthquake	0.14	0.55	0.215	7	reviewed	nc	nc
12/6/2007	3:52:20	35.5655	-120.8323333	4.119	2.63	md	70	36	0.07658	0.12	nc	nc40206954	2017-01-17T07:45:25.680Z	11 km W of Templeton, California	earthquake	0.16	0.53	0.104	66	reviewed	nc	nc
12/4/2007	9:11:11	35.2921667	-119.6118333	3.561	2.18	ml	19	101	0.1051	0.43	ci	ci14336096	2016-03-09T12:44:29.893Z	18km SW of Buttonwillow, CA	earthquake	1.06	1.22	0.176	42	reviewed	ci	ci
11/29/2007	15:28:13	36.1281667	-120.233	11.152	2.54	md	53	79	0.1171	0.11	nc	nc40206455	2017-01-17T06:58:57.920Z	11 km E of Coalinga, California	earthquake	0.23	0.45	0.149	78	reviewed	nc	nc
11/29/2007	14:20:23	36.1271667	-120.2325	10.532	2.67	md	53	79	0.1171	0.1	nc	nc40206450	2017-01-17T06:57:59.660Z	11 km E of Coalinga, California	earthquake	0.22	0.42	0.127	87	reviewed	nc	nc
11/25/2007	3:42:09	35.0656667	-119.0561667	1.232	2.08	ml	19	104	0.09744	0.22	ci	ci14334724	2016-03-08T22:26:19.779Z	18km NW of Grapevine, CA	earthquake	0.5	0.98	0.156	59	reviewed	ci	ci
11/22/2007	23:46:37	35.6291667	-120.7356667	4.872	2.79	md	77	26	0.1072	0.1	nc	nc40206037	2017-01-17T06:13:38.460Z	4 km W of Paso Robles, California	earthquake	0.14	0.92	0.123	67	reviewed	nc	nc
11/19/2007	2:35:21	36.177	-120.1358333	7.796	2.48	md	63	118	0.08288	0.12	nc	nc40205811	2017-01-17T05:49:05.500Z	4 km SW of Huron, California	earthquake	0.2	0.4	0.108	61	reviewed	nc	nc
11/17/2007	10:26:46	36.3166667	-120.0163333	22.948	2.28	md	50	115	0.08649	0.13	nc	nc40205719	2017-01-17T05:39:23.180Z	11 km WNW of Lemoore Station, California	earthquake	0.83	0.32	0.168	34	reviewed	nc	nc
11/14/2007	3:52:13	35.3865	-119.0953333	23.329	2.3	ml	41	46	0.04262	0.3	ci	ci14333036	2016-03-08T19:09:54.472Z	5km E of Rosedale, CA	earthquake	0.36	0.86	0.167	71	reviewed	ci	ci
11/3/2007	11:15:18	35.7155	-118.9721667	4.685	2.21	ml	36	72	0.155	0.26	ci	ci10288297	2016-03-09T11:10:51.794Z	24km E of McFarland, CA	earthquake	0.28	31.61	0.196	59	reviewed	ci	ci
11/2/2007	21:06:16	35.5688333	-120.8321667	6.349	2.9	md	83	28	0.07387	0.11	nc	nc51189955	2017-01-17T04:01:31.090Z	11 km W of Templeton, California	earthquake	0.14	0.56	0.112	86	reviewed	nc	nc
10/29/2007	7:15:18	34.9665	-119.068	13.6	2.11	ml	52	26	0.002219	0.37	ci	ci10287605	2016-03-08T23:50:13.038Z	13km WNW of Grapevine, CA	earthquake	0.39	0.58	0.122	77	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
10/24/2007	9:45:47	36.1521667	-120.268	9.629	2.2	md	59	69	0.1009	0.1	nc	nc40204235	2017-01-17T02:50:48.320Z	8 km E of Coalinga, California	earthquake	0.21	0.44	0.195	48	reviewed	nc	nc
10/23/2007	15:13:50	35.5335	-120.866	6.328	2.22	md	74	43	0.03333	0.12	nc	nc40204191	2017-01-17T02:46:06.870Z	Central California	earthquake	0.16	0.41	0.174	47	reviewed	nc	nc
10/19/2007	15:14:11	35.5676667	-118.7965	4.648	2.09	ml	46	42	0.07491	0.29	ci	ci14329300	2016-03-09T01:15:56.734Z	26km NE of Oildale, CA	earthquake	0.3	2.77	0.132	62	reviewed	ci	ci
10/17/2007	21:35:43	35.5546667	-120.8198333	5.668	2.08	md	27	72	0.07387	0.09	nc	nc40203892	2017-01-17T02:14:44.660Z	10 km W of Templeton, California	earthquake	0.3	0.74		1	reviewed	nc	nc
10/16/2007	12:43:00	35.5585	-120.816	4.882	2.42	md	74	27	0.07748	0.12	nc	nc40203804	2017-01-17T02:06:24.580Z	10 km W of Templeton, California	earthquake	0.16	0.62	0.153	62	reviewed	nc	nc
10/9/2007	2:34:18	36.0763333	-120.2628333	6.875	2.09	md	45	114	0.09009	0.09	nc	nc40203380	2017-01-17T01:22:20.970Z	11 km SE of Coalinga, California	earthquake	0.21	0.45	0.204	22	reviewed	nc	nc
10/7/2007	15:16:25	35.5063333	-120.8105	5.744	2.09	md	75	43	0.07477	0.12	nc	nc40203310	2017-01-17T01:14:48.040Z	10 km NE of Cayucos, California	earthquake	0.16	0.65	0.192	44	reviewed	nc	nc
9/27/2007	8:58:57	36.0021667	-120.5641667	4.613	2.62	md	85	46	0.02973	0.12	nc	nc40202724	2017-01-17T00:23:18.260Z	16 km NW of Parkfield, California	earthquake	0.19	0.24	0.148	72	reviewed	nc	nc
9/26/2007	21:24:03	36.0548333	-120.6258333	5.684	2.21	md	74	39	0.02793	0.13	nc	nc40202702	2017-01-17T00:20:34.690Z	24 km NW of Parkfield, California	earthquake	0.19	0.32	0.157	43	reviewed	nc	nc
9/26/2007	9:40:34	35.5666667	-118.7935	3.965	2.16	ml	42	57	0.07228	0.35	ci	ci14325652	2016-03-09T05:28:16.171Z	26km NE of Oildale, CA	earthquake	0.4	0.95	0.114	74	reviewed	ci	ci
9/26/2007	1:12:34	35.5471667	-120.802	5.31	2.62	md	75	31	0.08649	0.1	nc	nc40202655	2017-01-17T00:15:43.100Z	8 km W of Templeton, California	earthquake	0.16	0.69	0.124	63	reviewed	nc	nc
9/22/2007	1:28:23	36.0266667	-120.594	4.048	2.23	md	65	44	0.04234	0.13	nc	nc40202450	2017-01-16T23:53:26.300Z	20 km NW of Parkfield, California	earthquake	0.22	0.35	0.147	43	reviewed	nc	nc
9/21/2007	17:13:46	36.0283333	-120.5995	5.128	2.13	md	67	38	0.04054	0.12	nc	nc40202406	2017-01-16T23:49:23.430Z	20 km NW of Parkfield, California	earthquake	0.25	0.31	0.142	30	reviewed	nc	nc
9/20/2007	5:41:07	36.0648333	-120.1935	13.872	2.32	md	61	68	0.06847	0.1	nc	nc40202213	2017-01-16T23:28:20.300Z	8 km NW of Avenal, California	earthquake	0.2	0.5	0.118	53	reviewed	nc	nc
9/20/2007	4:13:03	36.0515	-120.194	12.407	2.05	md	33	83	0.06937	0.1	nc	nc40202204	2017-01-16T23:27:34.170Z	7 km NW of Avenal, California	earthquake	0.32	0.56	0.145	23	reviewed	nc	nc
9/20/2007	4:10:52	36.0618333	-120.1843333	15.322	2.14	md	75	67	0.06036	0.18	nc	nc40202203	2017-01-16T23:27:23.480Z	8 km NW of Avenal, California	earthquake	0.28	0.6	0.125	49	reviewed	nc	nc
9/19/2007	21:43:13	36.0196667	-120.5838333	4.408	2.31	md	75	39	0.03964	0.1	nc	nc40202189	2017-01-16T23:26:12.730Z	19 km NW of Parkfield, California	earthquake	0.16	0.23	0.145	61	reviewed	nc	nc
9/19/2007	20:55:13	36.0203333	-120.5766667	3.978	2	md	45	45	0.03423	0.07	nc	nc40202188	2017-01-16T23:26:03.860Z	18 km NW of Parkfield, California	earthquake	0.19	0.27	0.127	27	reviewed	nc	nc
9/19/2007	20:49:31	36.0186667	-120.5818333	4.428	2.71	md	82	41	0.03784	0.1	nc	nc40202185	2017-01-16T23:25:39.300Z	18 km NW of Parkfield, California	earthquake	0.15	0.24	0.132	88	reviewed	nc	nc
9/16/2007	21:25:13	35.3885	-120.6651667	4.414	2.85	md	75	28	0.03514	0.11	nc	nc40201949	2017-01-16T23:05:14.980Z	Central California	earthquake	0.14	0.35	0.131	75	reviewed	nc	nc
9/13/2007	0:51:42	36.2433333	-120.3088333	11.639	3.94	ml	70	50	0.02793	0.09	nc	nc40201735	2022-06-17T07:49:47.367Z	12 km NNE of Coalinga, California	earthquake	0.16	0.31	0.238	44	reviewed	nc	nc
9/10/2007	13:56:53	36.0095	-120.5718333	4.803	2.01	md	63	51	0.03694	0.1	nc	nc40201615	2017-01-16T22:33:33.800Z	17 km NW of Parkfield, California	earthquake	0.17	0.25	0.141	29	reviewed	nc	nc
9/10/2007	6:17:49	36.2426667	-120.3076667	11.609	2.11	md	68	50	0.02883	0.09	nc	nc40201607	2017-01-16T22:31:59.750Z	12 km NNE of Coalinga, California	earthquake	0.17	0.28	0.204	55	reviewed	nc	nc
9/4/2007	2:05:34	35.8175	-119.9066667	10.615	2.02	md	50	134	0.04955	0.2	nc	nc40201242	2017-01-16T21:53:10.460Z	21 km SSE of Kettleman City, California	earthquake	0.46	0.53	0.078	18	reviewed	nc	nc
8/31/2007	2:44:52	35.5508333	-120.7901667	4.344	2.12	md	71	30	0.0964	0.15	nc	nc40201027	2017-01-16T21:31:07.480Z	7 km W of Templeton, California	earthquake	0.21	0.86	0.152	38	reviewed	nc	nc
8/29/2007	18:13:48	35.9486667	-120.5036667	10.464	2.02	md	64	59	0.009009	0.09	nc	nc40200952	2017-01-16T21:24:26.390Z	8 km NW of Parkfield, California	earthquake	0.17	0.24	0.192	44	reviewed	nc	nc
8/28/2007	14:02:25	35.9488333	-120.4986667	10.704	3.2	ml	83	35	0.007207	0.11	nc	nc51185996	2017-01-16T21:18:20.200Z	8 km NW of Parkfield, California	earthquake	0.18	0.21	0.211	22	reviewed	nc	nc
8/13/2007	3:50:36	35.5016667	-120.7696667	2.924	2.12	md	71	44	0.1009	0.12	nc	nc40200246	2017-01-16T20:02:27.320Z	7 km SW of Templeton, California	earthquake	0.17	0.9	0.127	50	reviewed	nc	nc
8/10/2007	0:23:10	36.0233333	-120.6015	5.089	2.07	md	66	38	0.04324	0.13	nc	nc40200120	2017-01-16T19:48:45.310Z	20 km NW of Parkfield, California	earthquake	0.25	0.33	0.133	32	reviewed	nc	nc
8/3/2007	10:39:49	35.0548333	-118.956	11.438	2.11	ml	18	121	0.1258	0.24	ci	ci14311164	2016-03-09T11:06:15.134Z	13km N of Grapevine, CA	earthquake	0.61	2.31	0.175	79	reviewed	ci	ci
8/3/2007	9:52:09	35.0523333	-118.9403333	6.902	2.2	ml	59	43	0.1171	0.36	ci	ci14311156	2016-03-09T14:25:50.728Z	12km N of Grapevine, CA	earthquake	0.26	1.7	0.168	91	reviewed	ci	ci
8/3/2007	9:25:50	35.0616667	-118.9483333	7.022	2.29	ml	54	30	0.1168	0.35	ci	ci14311148	2016-03-09T06:53:18.910Z	13km N of Grapevine, CA	earthquake	0.3	2.83	0.207	93	reviewed	ci	ci
8/2/2007	20:29:44	36.2018333	-119.7323333	13.834	2.27	md	16	114	0.3856	0.12	nc	nc71053075	2017-01-16T19:13:00.215Z	8 km E of Stratford, California	earthquake	0.63	0.94	0.124	2	reviewed	nc	nc
8/2/2007	11:46:03	36.086	-120.4303333	6.989	3.07	ml	70	51	0.04865	0.1	nc	nc40199737	2017-01-16T19:10:15.080Z	8 km SW of Coalinga, California	earthquake	0.17	0.26	0.259	20	reviewed	nc	nc
7/27/2007	19:39:25	35.1903333	-120.643	8.67	2.11	md	61	82	0.03153	0.05	nc	nc51184569	2017-01-16T18:43:40.200Z	3 km WSW of Edna, California	earthquake	0.11	0.21	0.186	43	reviewed	nc	nc
7/26/2007	21:39:35	35.9873333	-119.966	24.704	2.84	md	58	162	0.1252	0.21	nc	nc51184534	2017-01-16T18:39:52.780Z	2 km S of Kettleman City, California	earthquake	0.39	0.55	0.179	69	reviewed	nc	nc
7/26/2007	10:41:22	36.0261667	-120.6025	4.95	2.06	md	63	41	0.04324	0.13	nc	nc51184512	2017-01-16T18:37:49.120Z	20 km NW of Parkfield, California	earthquake	0.2	0.35	0.145	33	reviewed	nc	nc
7/18/2007	22:18:22	36.12	-120.1585	8.119	2.45	md	56	129	0.07117	0.16	nc	nc51184252	2017-01-16T18:02:22.370Z	10 km SSW of Huron, California	earthquake	0.33	0.42	0.091	40	reviewed	nc	nc
7/15/2007	6:25:59	35.0801667	-119.12	16.583	2.66	ml	23	46	0.1189	0.41	ci	ci10262685	2016-03-08T20:48:30.022Z	23km NW of Grapevine, CA	earthquake	0.67	2.77	0.139	151	reviewed	ci	ci
7/15/2007	5:07:33	36.0573333	-120.638	-0.666	2.06	md	66	40	0.03604	0.16	nc	nc51184140	2017-01-16T17:43:38.620Z	24 km E of San Ardo, California	earthquake	0.2	1.44	0.25	37	reviewed	nc	nc
7/11/2007	15:28:07	35.9653333	-120.1165	29.189	2.05	md	44	65	0.0964	0.16	nc	nc51184041	2017-01-16T17:28:08.830Z	4 km SSE of Avenal, California	earthquake	0.53	0.75	0.087	15	reviewed	nc	nc
7/9/2007	4:44:40	36.1371667	-120.2053333	8.846	2.35	md	49	93	0.109	0.1	nc	nc51183950	2017-01-16T17:15:10.890Z	12 km SW of Huron, CA	earthquake	0.18	0.37	0.091	45	reviewed	nc	nc
7/8/2007	7:27:41	34.8651667	-119.6808333	-1.324	3.74	ml	36	57	0.1116	0.42	ci	ci10260293	2016-03-09T11:04:28.518Z	33km SW of Maricopa, CA	earthquake	0.45	1.17	0.133	387	reviewed	ci	ci
7/7/2007	13:46:09	35.933	-120.49	5.28	2.28	md	66	37	0.01982	0.1	nc	nc51183879	2017-01-16T17:06:15.830Z	6 km NW of Parkfield, California	earthquake	0.13	0.17	0.137	46	reviewed	nc	nc
7/7/2007	1:08:04	35.3781667	-119.9241667	6.966	2.48	ml	14	106	0.06525	0.24	ci	ci10260129	2016-03-09T12:34:20.856Z	8km ENE of Simmler, CA	earthquake	0.83	1.23	0.186	60	reviewed	ci	ci
7/6/2007	22:33:42	35.3848333	-119.9116667	4.426	2.67	ml	20	117	0.06504	0.4	ci	ci10260105	2016-03-09T08:17:48.801Z	9km ENE of Simmler, CA	earthquake	0.94	0.67	0.163	90	reviewed	ci	ci
6/29/2007	16:20:38	35.945	-120.4981667	10.938	2.39	md	81	35	0.01171	0.1	nc	nc51183616	2017-01-16T16:26:58.590Z	7 km NW of Parkfield, California	earthquake	0.13	0.19	0.125	75	reviewed	nc	nc
6/25/2007	18:23:49	35.7751667	-119.1921667	18.893	2.23	ml	24	114	0.1092	0.23	ci	ci10257645	2016-03-08T19:00:41.760Z	5km E of Delano, CA	earthquake	0.44	1.14	0.166	50	reviewed	ci	ci
6/23/2007	9:53:18	35.3778333	-119.934	6.606	2.33	ml	20	76	0.05808	0.33	ci	ci10257257	2016-03-08T20:47:07.455Z	7km ENE of Simmler, CA	earthquake	0.68	1.47	0.19	48	reviewed	ci	ci
6/18/2007	21:18:44	36.0091667	-119.9251667	26.804	2.04	md	49	105	0.1441	0.26	nc	nc51183252	2017-01-16T15:34:36.700Z	3 km E of Kettleman City, California	earthquake	0.69	0.78	0.302	11	reviewed	nc	nc
6/18/2007	15:45:54	35.471	-118.8405	16.668	2.24	ml	28	72	0.1219	0.31	ci	ci10255645	2016-03-09T03:57:12.809Z	17km ENE of Oildale, CA	earthquake	0.54	1.75	0.194	78	reviewed	ci	ci
6/11/2007	10:07:00	34.9813333	-119.0653333	9.61	2.15	ml	44	37	0.01308	0.37	ci	ci14297376	2016-03-09T16:13:32.247Z	13km WNW of Grapevine, CA	earthquake	0.49	1.35	0.161	91	reviewed	ci	ci
6/9/2007	10:54:39	36.0476667	-120.1233333	8.16	2.21	md	80	127	0.2036	0.17	nc	nc51182718	2017-01-16T14:18:46.040Z	4 km N of Avenal, California	earthquake	0.29	0.65	0.134	50	reviewed	nc	nc
6/5/2007	21:13:07	34.8793333	-119.2253333	12.167	3.56	ml	70	20		0.45	ci	ci14296288	2016-03-08T20:45:50.953Z	8km WNW of Pine Mountain Club, CA	earthquake	0.39	0.69	0.116	341	reviewed	ci	ci
6/5/2007	7:02:21	35.8575	-120.4041667	4.906	2.34	md	70	40	0.02162	0.07	nc	nc51182596	2017-01-16T14:01:45.670Z	5 km SSE of Parkfield, California	earthquake	0.13	0.2	0.106	51	reviewed	nc	nc
6/4/2007	8:26:42	34.8745	-119.2325	11.837	2.62	ml	53	37		0.44	ci	ci14295988	2016-03-09T12:31:34.762Z	8km WNW of Pine Mountain Club, CA	earthquake	0.53	0.89	0.129	146	reviewed	ci	ci
6/4/2007	8:15:09	34.8793333	-119.2288333	11.537	3.74	ml	72	26		0.45	ci	ci14295984	2016-03-09T11:02:14.831Z	8km WNW of Pine Mountain Club, CA	earthquake	0.45	0.73	0.125	398	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/1/2007	22:46:18	36.0388333	-120.6153333	4.258	2.41	md	75	40	0.03423	0.12	nc	nc51182498	2017-01-16T13:48:07.890Z	22 km NW of Parkfield, California	earthquake	0.2	0.36	0.23	72	reviewed	nc	nc
5/29/2007	16:28:08	36.0113333	-120.5786667	3.971	2.08	md	59	40	0.03423	0.1	nc	nc51182366	2017-01-16T13:33:36.640Z	18 km NW of Parkfield, California	earthquake	0.18	0.25	0.127	28	reviewed	nc	nc
5/28/2007	15:31:46	36.148	-120.065	8.721	2.35	md	55	162	0.09459	0.09	nc	nc51182337	2017-01-16T13:29:18.650Z	6 km SSE of Huron, California	earthquake	0.19	0.28	0.145	57	reviewed	nc	nc
5/22/2007	11:34:12	35.862	-120.4125	8.65	4.01	mw	81	43	0.02152	0.05	nc	nc51182151	2020-08-15T07:25:56.349Z	4km SSE of Parkfield, CA	earthquake	0.12	0.2		6	reviewed	nc	nc
5/14/2007	21:59:05	36.209	-120.3605	11.05	2.18	md	62	82	0.1135	0.08	nc	nc51181920	2017-01-16T12:35:23.960Z	7 km N of Coalinga, California	earthquake	0.17	0.32	0.167	36	reviewed	nc	nc
5/14/2007	10:07:06	35.907	-120.4575	5.431	2.43	md	75	41	0.02072	0.11	nc	nc51181904	2017-01-16T12:33:25.430Z	2 km WNW of Parkfield, California	earthquake	0.13	0.19	0.117	59	reviewed	nc	nc
5/13/2007	20:03:18	36.038	-120.3826667	6.99	2.05	md	69	40	0.05856	0.18	nc	nc51181885	2017-01-16T12:31:14.480Z	11 km S of Coalinga, California	earthquake	0.27	0.5	0.216	41	reviewed	nc	nc
5/13/2007	3:17:48	36.2056667	-120.364	11.2	2.08	md	57	45	0.1099	0.13	nc	nc51181854	2017-01-16T12:27:31.140Z	7 km N of Coalinga, California	earthquake	0.23	0.52	0.204	32	reviewed	nc	nc
5/12/2007	6:32:07	36.039	-120.6085	6.439	2.04	md	70	43	0.03153	0.12	nc	nc51181822	2017-01-16T12:23:09.400Z	22 km NW of Parkfield, California	earthquake	0.21	0.32	0.151	39	reviewed	nc	nc
5/10/2007	15:32:21	36.0816667	-120.2116667	13.066	2.07	md	50	72	0.08559	0.12	nc	nc51181749	2017-01-16T12:12:29.860Z	11 km NW of Avenal, California	earthquake	0.29	0.74	0.166	20	reviewed	nc	nc
5/10/2007	15:02:41	36.0853333	-120.2025	14.976	2.32	md	53	77	0.07928	0.08	nc	nc51181748	2017-01-16T12:12:18.600Z	11 km NW of Avenal, California	earthquake	0.3	0.63	0.107	40	reviewed	nc	nc
5/7/2007	15:50:49	35.9728333	-120.5356667	5.565	2.58	md	82	28	0.01261	0.1	nc	nc51181658	2017-01-16T11:58:55.640Z	12 km NW of Parkfield, California	earthquake	0.15	0.12	0.122	82	reviewed	nc	nc
5/5/2007	20:34:00	35.9561667	-120.512	8.074	2.09	md	47	49	0.01081	0.08	nc	nc51181580	2017-01-16T11:51:38.640Z	9 km NW of Parkfield, California	earthquake	0.19	0.17	0.16	50	reviewed	nc	nc
4/29/2007	21:29:52	35.5496667	-118.7591667	3.573	2.4	ml	40	54	0.03984	0.35	ci	ci14288148	2016-03-09T11:00:06.996Z	24km W of Bodfish, CA	earthquake	0.42	0.84	0.172	75	reviewed	ci	ci
4/29/2007	10:18:21	36.0103333	-120.5773333	3.823	2.18	md	70	41	0.03333	0.11	nc	nc51181330	2017-01-16T11:25:07.070Z	17 km NW of Parkfield, California	earthquake	0.15	0.25	0.1	50	reviewed	nc	nc
4/29/2007	10:08:22	36.0111667	-120.5756667	4.261	2.43	md	83	32	0.03153	0.1	nc	nc51181329	2017-01-16T11:24:57.600Z	Central California	earthquake	0.13	0.19	0.163	83	reviewed	nc	nc
4/28/2007	21:29:54	35.9255	-120.4773333	5.023	2.27	md	73	39	0.01622	0.07	nc	nc51181317	2017-01-16T11:23:23.610Z	4 km NW of Parkfield, California	earthquake	0.11	0.15	0.166	70	reviewed	nc	nc
4/27/2007	20:53:08	35.547	-120.8058333	0.549	2.34	md	36	84	0.1036	0.13	nc	nc51181275	2017-01-16T11:18:12.750Z	9 km W of Templeton, California	earthquake	0.32	31.61		17	reviewed	nc	nc
4/19/2007	7:46:51	35.8583333	-120.4053333	5.22	2.46	md	67	53	0.02252	0.07	nc	nc40195864	2017-01-16T10:37:09.950Z	5 km SSE of Parkfield, California	earthquake	0.13	0.23	0.1	53	reviewed	nc	nc
4/16/2007	19:18:53	35.636	-120.7541667	6.342	2.12	md	68	44	0.09189	0.13	nc	nc40195712	2017-01-16T10:19:43.060Z	5 km W of Paso Robles, California	earthquake	0.18	0.84	0.136	50	reviewed	nc	nc
4/8/2007	23:36:07	35.8535	-120.3943333	3.976	2.69	md	19	68	0.01802	0.08	nc	nc40195438	2017-01-16T09:41:43.806Z	6 km SE of Parkfield, California	earthquake	0.38	0.58		7	reviewed	nc	nc
4/4/2007	20:37:19	35.5955	-120.8408333	6.929	3.29	ml	65	42	0.04685	0.08	nc	nc40195331	2022-06-17T05:11:54.317Z	13 km WNW of Templeton, California	earthquake	0.14	0.45	0.208	15	reviewed	nc	nc
4/4/2007	0:54:14	35.6445	-120.7861667	6.462	2.06	md	73	22	0.06577	0.13	nc	nc40195312	2017-01-16T09:22:13.060Z	8 km WNW of Paso Robles, California	earthquake	0.17	0.67	0.201	58	reviewed	nc	nc
3/28/2007	10:42:30	36.0008333	-120.5611667	4.143	2.77	md	93	39	0.02162	0.09	nc	nc40195069	2017-01-16T08:47:54.920Z	16 km NW of Parkfield, California	earthquake	0.13	0.16	0.143	106	reviewed	nc	nc
3/27/2007	0:40:51	35.6938333	-120.1533333	16.658	2.12	md	13	335	0.2099	0.12	nc	nc40195018	2017-01-16T08:42:54.544Z	20 km ENE of Shandon, California	earthquake	11.69	4.17		7	reviewed	nc	nc
3/20/2007	5:32:02	35.7793333	-120.3335	8.558	2.72	md	74	45	0.008108	0.08	nc	nc40194774	2017-01-16T08:11:31.880Z	14 km NNE of Shandon, California	earthquake	0.15	0.27	0.087	68	reviewed	nc	nc
3/19/2007	22:55:55	35.779	-120.3323333	8.524	3.11	ml	83	41	0.009009	0.08	nc	nc40194754	2017-01-16T08:08:32.340Z	14 km NNE of Shandon, California	earthquake	0.13	0.24	0.165	19	reviewed	nc	nc
3/17/2007	1:03:55	35.279	-119.8995	0.216	2.1	ml	30	56	0.05269	0.57	ci	ci10236157	2016-03-09T08:11:35.616Z	12km SE of Simmler, CA	earthquake	0.57	1.49	0.198	40	reviewed	ci	ci
3/16/2007	7:30:03	35.521	-120.806	6.797	3.06	ml	79	30	0.08739	0.09	nc	nc40194644	2017-01-16T07:51:45.580Z	9 km WSW of Templeton, California	earthquake	0.17	0.7	0.142	14	reviewed	nc	nc
3/13/2007	13:47:23	35.634	-120.7536667	6.642	2.03	md	70	26	0.09189	0.1	nc	nc40194508	2017-01-16T07:34:35.970Z	5 km W of Paso Robles, California	earthquake	0.17	0.75	0.222	64	reviewed	nc	nc
3/13/2007	0:45:41	35.8695	-120.6751667	29.624	2.69	md	6	337	0.1243	0.05	nc	nc40194485	2017-01-16T07:30:37.639Z	11 km E of Bradley, California	earthquake	5.4	31.61		10	reviewed	nc	nc
3/12/2007	12:13:54	35.9383333	-120.691	8.301	2.06	md	47	28	0.08018	0.1	nc	nc40194471	2017-01-16T07:28:19.480Z	12 km NE of Bradley, California	earthquake	0.19	0.66	0.28	16	reviewed	nc	nc
3/8/2007	19:25:04	35.5438333	-118.7558333	4.285	2.7	ml	53	95	0.03551	0.35	ci	ci10234813	2016-03-09T03:52:12.380Z	24km WSW of Bodfish, CA	earthquake	0.39	0.67	0.179	88	reviewed	ci	ci
3/4/2007	21:27:31	35.8303333	-120.3696667	4.412	2.29	md	16	94	0.01261	0.07	nc	nc40194155	2017-01-16T06:41:04.811Z	9 km SE of Parkfield, California	earthquake	0.47	0.79		1	reviewed	nc	nc
3/1/2007	19:56:21	34.9083333	-119.4096667	10.734	2.96	ml	47	29	0.11	0.52	ci	ci14277416	2016-03-09T16:07:30.791Z	17km S of Maricopa, CA	earthquake	0.63	1.87	0.18	139	reviewed	ci	ci
2/28/2007	2:29:13	35.0198333	-119.1251667	11.442	2.01	md	14	126	0.06887	0.22	ci	ci14277172	2016-03-08T20:39:26.684Z	19km N of Pine Mountain Club, CA	earthquake	0.81	1.49	0.165	33	reviewed	ci	ci
2/26/2007	4:10:10	36.0575	-120.6353333	-0.726	2.41	md	77	38	0.03333	0.15	nc	nc40193919	2017-01-16T06:09:38.960Z	24 km E of San Ardo, California	earthquake	0.17	1.04	0.108	30	reviewed	nc	nc
2/25/2007	23:14:44	34.866	-119.2405	12.667	2.58	ml	24	92	0.02167	0.37	ci	ci10233269	2016-03-09T02:27:44.669Z	9km WNW of Pine Mountain Club, CA	earthquake	0.64	0.91	0.179	106	reviewed	ci	ci
2/24/2007	2:12:54	36.082	-120.1981667	12.976	2.75	md	30	78	0.07477	0.07	nc	nc40193846	2017-01-16T05:59:14.860Z	10 km NW of Avenal, California	earthquake	0.27	0.53		1	reviewed	nc	nc
2/23/2007	7:25:28	35.5298333	-120.7963333	8.297	2.55	md	33	57	0.0991	0.1	nc	nc40193825	2017-01-16T05:56:48.440Z	8 km WSW of Templeton, California	earthquake	0.31	1.11		1	reviewed	nc	nc
2/22/2007	2:38:02	35.9888333	-120.5485	4.453	2.34	md	69	47	0.01441	0.1	nc	nc40193793	2017-01-16T05:53:23.350Z	14 km NW of Parkfield, California	earthquake	0.16	0.2	0.083	24	reviewed	nc	nc
2/11/2007	18:32:25	35.9998333	-120.5655	3.905	2.05	md	71	44	0.02523	0.14	nc	nc51178585	2017-01-16T05:12:52.440Z	16 km NW of Parkfield, California	earthquake	0.19	0.26	0.096	37	reviewed	nc	nc
2/9/2007	23:55:31	36.0013333	-120.5603333	2.685	2.26	md	55	47	0.02072	0.07	nc	nc51178515	2017-01-16T05:06:55.420Z	16 km NW of Parkfield, California	earthquake	0.15	0.22	0.133	20	reviewed	nc	nc
2/9/2007	23:43:52	35.5438333	-120.8476667	7.673	2.51	md	39	49	0.08919	0.14	nc	nc51178514	2017-01-16T05:06:47.200Z	11 km NNE of Cayucos, California	earthquake	0.46	1.09		1	reviewed	nc	nc
2/4/2007	14:47:40	35.8471667	-119.7295	21.866	2.6	md	77	40	0.1423	0.19	nc	nc40193265	2017-01-16T04:44:22.410Z	22 km WSW of Alpaugh, California	earthquake	0.41	0.29	0.25	96	reviewed	nc	nc
2/3/2007	19:31:50	36.1726667	-120.298	9.949	2.2	md	57	60	0.08468	0.1	nc	nc40193239	2017-01-16T04:40:19.970Z	6 km ENE of Coalinga, California	earthquake	0.17	0.27	0.179	54	reviewed	nc	nc
2/2/2007	15:58:41	35.0523333	-118.919	14.923	2.08	ml	40	39	0.1042	0.26	ci	ci10229645	2016-03-08T22:11:07.474Z	12km N of Grapevine, CA	earthquake	0.3	0.51	0.183	61	reviewed	ci	ci
1/26/2007	19:41:06	36.0263333	-120.1333333	12.537	2.06	md	31	109	0.03964	0.07	nc	nc51178090	2017-01-16T04:03:42.880Z	2 km N of Avenal, California	earthquake	0.63	0.75	0.328	2	reviewed	nc	nc
1/19/2007	2:47:34	35.597	-120.737	4.487	2.03	md	63	31	0.1144	0.11	nc	nc51177843	2017-01-16T03:30:16.320Z	5 km SW of Paso Robles, California	earthquake	0.16	0.88	0.249	28	reviewed	nc	nc
1/18/2007	13:45:29	36.1385	-120.0578333	8.306	2.38	md	41	166	0.08829	0.07	nc	nc51177825	2017-01-16T03:27:53.260Z	8 km SSE of Huron, California	earthquake	0.23	0.31	0.228	31	reviewed	nc	nc
1/17/2007	10:11:35	36.037	-120.5951667	4.181	2.25	md	58	72	0.03153	0.08	nc	nc51177776	2017-01-16T03:19:42.520Z	21 km NW of Parkfield, California	earthquake	0.19	0.24	0.11	23	reviewed	nc	nc
1/14/2007	13:45:37	35.9601667	-120.2056667	19.62	2.3	md	58	73	0.1117	0.19	nc	nc51177705	2017-01-16T03:08:58.150Z	Central California	earthquake	0.33	0.69	0.185	15	reviewed	nc	nc
1/14/2007	13:41:51	35.9625	-120.2048333	21.41	2.14	md	37	78	0.1126	0.19	nc	nc51177704	2017-01-16T03:08:46.210Z	8 km SW of Avenal, California	earthquake	0.48	0.95	0.084	7	reviewed	nc	nc
1/14/2007	13:39:59	35.9538333	-120.191	20.852	2.31	md	46	79	0.1216	0.22	nc	nc51177703	2017-01-16T03:08:37.920Z	7 km SW of Avenal, California	earthquake	0.45	0.94	0.235	37	reviewed	nc	nc
1/14/2007	13:09:39	35.9838333	-120.1875	24.361	2.04	md	23	92	0.1	0.13	nc	nc51177701	2017-01-16T03:08:22.500Z	5 km WSW of Avenal, California	earthquake	0.6	1.69	0.104	6	reviewed	nc	nc
1/13/2007	15:55:53	35.9596667	-120.5158333	4.774	2.19	md	53	32	0.01441	0.07	nc	nc51177674	2017-01-16T03:04:26.310Z	10 km NW of Parkfield, California	earthquake	0.18	0.15	0.196	24	reviewed	nc	nc
1/13/2007	9:57:46	35.9208333	-119.943	7.8	2.57	md	61	167	0.05946	0.27	nc	nc51177667	2017-01-16T03:03:41.440Z	9 km S of Kettleman City, California	earthquake	0.41	0.44	0.132	32	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
1/9/2007	22:33:45	35.9408333	-120.4923333	9.683	2.93	md	73	24	0.01622	0.08	nc	nc51177559	2017-01-16T02:51:42.010Z	7 km NW of Parkfield, California	earthquake	0.14	0.21	0.182	53	reviewed	nc	nc
1/7/2007	20:39:37	35.9283333	-120.4793333	4.34	2	md	46	55	0.02883	0.07	nc	nc40192422	2017-01-16T02:44:45.020Z	5 km NW of Parkfield, California	earthquake	0.18	0.25	0.262	16	reviewed	nc	nc
1/6/2007	14:16:45	34.8508333	-119.2343333	9.468	2.21	ml	40	67	0.00806	0.3	ci	ci10225429	2016-03-09T08:08:06.945Z	8km W of Pine Mountain Club, CA	earthquake	0.35	0.82	0.134	62	reviewed	ci	ci
1/2/2007	22:46:29	36.077	-119.8186667	20.618	2.57	md	67	65	0.2216	0.21	nc	nc51177376	2017-01-16T02:29:20.770Z	12 km S of Stratford, California	earthquake	0.57	0.39	0.261	13	reviewed	nc	nc
1/2/2007	1:48:16	35.9383333	-120.4896667	9.793	3.09	ml	66	28	0.01892	0.09	nc	nc51177358	2017-01-16T02:25:54.840Z	6 km NW of Parkfield, California	earthquake	0.16	0.24	0.21	11	reviewed	nc	nc
12/21/2006	21:46:51	36.0703333	-120.1905	4.072	2.01	md	34	73	0.06577	0.15	nc	nc51177072	2017-01-15T17:52:35.870Z	9 km NW of Avenal, California	earthquake	0.43	0.83	0.298	2	reviewed	nc	nc
12/21/2006	9:00:57	34.9831667	-119.0955	5.518	2.3	ml	40	61	0.1714	0.38	ci	ci10223453	2016-03-09T10:53:59.713Z	16km WNW of Grapevine, CA	earthquake	0.55	9.5	0.154	89	reviewed	ci	ci
12/19/2006	0:03:07	35.5965	-120.747	4.89	2.31	md	70	36	0.1072	0.09	nc	nc51176955	2017-01-15T17:36:56.570Z	6 km WSW of Paso Robles, California	earthquake	0.15	0.87	0.279	46	reviewed	nc	nc
12/16/2006	6:20:36	36.1763333	-120.2921667	10.239	2.33	md	55	97	0.08378	0.08	nc	nc51176850	2017-01-15T17:24:50.580Z	7 km ENE of Coalinga, California	earthquake	0.19	0.27	0.201	28	reviewed	nc	nc
12/16/2006	6:14:05	36.173	-120.2916667	10.21	4.2	mw	79	69	0.08662	0.06	nc	nc51176849	2020-08-15T07:22:22.411Z	7km ENE of Coalinga, CA	earthquake	0.15	0.31		2	reviewed	nc	nc
12/16/2006	3:59:56	36.1691667	-120.3088333	8.549	2.45	md	64	66	0.08468	0.16	nc	nc51176843	2017-01-15T17:23:53.110Z	5 km NE of Coalinga, California	earthquake	0.22	0.35	0.191	31	reviewed	nc	nc
12/16/2006	2:26:05	36.1658333	-120.3018333	9.439	2	md	41	122	0.09009	0.1	nc	nc51176841	2017-01-15T17:23:36.840Z	5 km ENE of Coalinga, California	earthquake	0.3	0.45	0.313	7	reviewed	nc	nc
12/15/2006	19:50:25	36.1703333	-120.2978333	9.639	2.41	md	73	60	0.08739	0.18	nc	nc51176831	2017-01-15T17:22:25.970Z	6 km ENE of Coalinga, California	earthquake	0.22	0.42	0.103	33	reviewed	nc	nc
12/15/2006	19:21:55	36.172	-120.2915	9.659	3.88	ml	74	61	0.08739	0.11	nc	nc51176830	2022-06-16T02:48:58.153Z	7 km ENE of Coalinga, California	earthquake	0.18	0.36	0.239	20	reviewed	nc	nc
12/14/2006	16:12:44	36.1878333	-120.3096667	10.169	2.16	md	50	88	0.06757	0.11	nc	nc51176811	2017-01-15T17:19:37.560Z	7 km NE of Coalinga, California	earthquake	0.25	0.36	0.31	16	reviewed	nc	nc
12/13/2006	14:27:18	36.1691667	-120.3461667	13.458	2.25	md	38	90	0.07658	0.1	nc	nc51176781	2017-01-15T17:14:08.870Z	3 km NNE of Coalinga, California	earthquake	0.37	0.52	0.175	27	reviewed	nc	nc
12/12/2006	4:00:45	36.1875	-120.3165	10.219	2.72	md	80	55	0.06577	0.14	nc	nc51176751	2017-01-15T17:10:43.060Z	Central California	earthquake	0.19	0.36	0.165	72	reviewed	nc	nc
12/8/2006	22:04:44	36.0703333	-120.199	13.902	2.11	md	46	70	0.07297	0.1	nc	nc51176664	2017-01-15T17:01:26.630Z	9 km NW of Avenal, California	earthquake	0.24	0.59	0.249	17	reviewed	nc	nc
12/7/2006	0:44:30	36.0416667	-120.6183333	-0.689	2.18	md	7	84	0.03243	0.17	nc	nc51176600	2017-01-15T16:54:28.319Z	22 km NW of Parkfield, California	earthquake	1.06	4.26		1	reviewed	nc	nc
12/3/2006	18:35:09	35.6366667	-120.7563333	6.342	2.33	md	72	25	0.09009	0.08	nc	nc51176496	2017-01-15T16:39:36.130Z	6 km W of Paso Robles, California	earthquake	0.13	0.61	0.155	50	reviewed	nc	nc
12/2/2006	6:47:43	36.006	-120.5678333	4.433	2.66	md	84	40	0.02523	0.09	nc	nc51176458	2017-01-15T16:33:49.690Z	16 km NW of Parkfield, California	earthquake	0.14	0.17	0.081	51	reviewed	nc	nc
11/28/2006	13:38:43	35.5045	-120.8	3.457	2.23	md	41	39	0.08108	0.09	nc	nc30231075	2017-01-15T16:09:41.690Z	9 km WSW of Templeton, California	earthquake	0.17	0.79	0.16	44	reviewed	nc	nc
11/28/2006	4:09:14	35.6343333	-120.7551667	6.332	2.13	md	38	42	0.09099	0.14	nc	nc51176304	2017-01-15T16:06:58.570Z	5 km W of Paso Robles, California	earthquake	0.22	0.86	0.14	37	reviewed	nc	nc
11/28/2006	4:06:40	35.6318333	-120.7543333	6.442	3.8	mw	75	31	0.09189	0.08	nc	nc21549695	2022-06-18T12:38:02.531Z	5 km W of Paso Robles, California	earthquake	0.13	0.69		3	reviewed	nc	nc
11/27/2006	10:19:41	36.0695	-120.1785	16.642	2.8	md	69	75	0.05676	0.11	nc	nc21549559	2017-01-15T16:02:43.320Z	8 km NNW of Avenal, California	earthquake	0.2	0.41	0.1	93	reviewed	nc	nc
11/27/2006	4:53:45	36.07	-120.195	14.292	2.38	md	53	71	0.07027	0.11	nc	nc21549527	2017-01-15T15:59:26.100Z	9 km NW of Avenal, California	earthquake	0.23	0.68	0.09	49	reviewed	nc	nc
11/27/2006	3:30:36	36.0693333	-120.1885	15.522	2.53	md	56	72	0.06486	0.1	nc	nc21549521	2017-01-15T15:59:05.070Z	9 km NW of Avenal, California	earthquake	0.22	0.54	0.14	78	reviewed	nc	nc
11/22/2006	1:56:55	35.8523333	-119.2511667	18.216	2.25	ml	21	125	0.1357	0.28	ci	ci14262344	2016-03-08T22:07:31.836Z	9km N of Delano, CA	earthquake	0.63	1.28	0.192	60	reviewed	ci	ci
11/19/2006	14:14:59	36.0513333	-120.6125	9.018	2.22	md	59	50	0.02162	0.08	nc	nc21548584	2017-01-15T15:17:28.030Z	23 km NW of Parkfield, California	earthquake	0.16	0.25	0.17	52	reviewed	nc	nc
11/19/2006	6:21:38	36.3413333	-119.8308333	19.035	2.22	md	21	119	0.2252	0.12	nc	nc21548538	2017-01-15T15:15:10.754Z	6 km NW of Lemoore, California	earthquake	0.48	0.47	0.21	7	reviewed	nc	nc
11/19/2006	2:54:26	35.5765	-120.7966667	3.756	2.59	md	69	39	0.08468	0.1	nc	nc21548510	2017-01-15T15:14:04.500Z	8 km WNW of Templeton, California	earthquake	0.14	0.81	0.11	76	reviewed	nc	nc
11/17/2006	13:11:49	35.7228333	-119.8125	24.258	2.07	md	22	210	0.182	0.11	nc	nc21548261	2017-01-15T15:00:31.455Z	15 km NW of Lost Hills, California	earthquake	0.63	0.56	0.09	4	reviewed	nc	nc
11/17/2006	6:41:07	35.2688333	-120.7748333	6.209	2.76	md	62	51	0.06306	0.07	nc	nc21548244	2017-01-15T14:59:15.640Z	7 km SE of Los Osos, California	earthquake	0.14	0.34	0.11	68	reviewed	nc	nc
11/7/2006	19:08:49	36.0281667	-120.0695	6.847	2.52	md	51	153	0.04595	0.09	nc	nc21547124	2017-01-15T13:58:39.500Z	5 km ENE of Avenal, California	earthquake	0.34	0.27	0.11	59	reviewed	nc	nc
11/6/2006	7:07:30	36.0968333	-120.6615	6.964	2	md	54	103	0.05225	0.07	nc	nc21546888	2017-01-15T13:49:05.840Z	23 km ENE of San Ardo, California	earthquake	0.22	0.25	0.16	32	reviewed	nc	nc
11/2/2006	14:37:27	35.9838333	-120.1891667	16.635	2.13	md	7	152	0.1009	0.07	nc	nc21546318	2017-01-15T13:22:36.282Z	5 km WSW of Avenal, California	earthquake	0.7	1.76		1	reviewed	nc	nc
11/2/2006	1:40:26	35.986	-120.5431667	2.833	2.03	md	55	57	0.01351	0.07	nc	nc21546250	2017-01-15T13:17:05.530Z	13 km NW of Parkfield, California	earthquake	0.16	0.22	0.18	32	reviewed	nc	nc
11/1/2006	0:29:48	35.8536667	-120.4056667	8.565	2.09	md	61	53	0.01802	0.06	nc	nc21545981	2017-01-15T13:10:43.080Z	5 km SSE of Parkfield, California	earthquake	0.15	0.21	0.09	48	reviewed	nc	nc
10/31/2006	20:26:06	35.8555	-120.4073333	8.765	3.63	ml	78	39	0.02072	0.05	nc	nc21545945	2017-03-17T19:09:07.171Z	5 km SSE of Parkfield, California	earthquake	0.13	0.2		14	reviewed	nc	nc
10/31/2006	13:15:39	35.7496667	-119.42	5.513	2.35	ml	22	91	0.2874	0.44	ci	ci10215145	2016-03-09T03:46:24.138Z	16km W of Delano, CA	earthquake	0.76	31.61	0.162	56	reviewed	ci	ci
10/28/2006	21:56:41	35.8576667	-120.4025	5.195	2.35	md	56	54	0.02162	0.07	nc	nc21545471	2017-01-15T12:43:20.800Z	5 km SSE of Parkfield, California	earthquake	0.15	0.24	0.15	51	reviewed	nc	nc
10/27/2006	19:20:26	35.5581667	-120.8065	5.199	2.07	md	40	60	0.09369	0.11	nc	nc21545361	2017-01-15T12:37:48.380Z	9 km W of Templeton, California	earthquake	0.23	0.93	0.41	10	reviewed	nc	nc
10/21/2006	10:08:57	35.5591667	-120.8255	6.119	2.22	md	63	34	0.08468	0.09	nc	nc21544203	2017-01-15T11:45:52.440Z	10 km W of Templeton, California	earthquake	0.16	0.6	0.18	63	reviewed	nc	nc
10/19/2006	22:40:10	36.0546667	-120.0716667	24.183	2.22	md	13	303	0.2495	0.14	nc	nc21543693	2017-01-15T11:16:51.517Z	7 km NE of Avenal, California	earthquake	2.47	3.67		1	reviewed	nc	nc
10/17/2006	2:26:52	36.1698333	-120.2695	9.969	2.05	md	36	88	0.0991	0.11	nc	nc21543067	2017-01-15T10:57:44.430Z	8 km ENE of Coalinga, California	earthquake	0.24	0.56	0.12	32	reviewed	nc	nc
10/16/2006	12:18:46	35.5105	-120.828	7.487	2.01	md	47	109	0.06757	0.07	nc	nc21542927	2017-01-15T10:54:42.480Z	9 km NE of Cayucos, California	earthquake	0.27	0.84	0.15	33	reviewed	nc	nc
10/14/2006	2:24:29	36.2725	-119.8173333	17.781	2.53	md	51	154	0.318	0.22	nc	nc30230936	2017-01-15T10:34:18.410Z	4 km SW of Lemoore, California	earthquake	0.55	0.8	0.15	33	reviewed	nc	nc
10/13/2006	15:25:02	35.5688333	-120.885	10.077	2.1	md	7	129	0.07387	0.04	nc	nc21542453	2017-01-15T10:31:11.374Z	14 km N of Cayucos, California	earthquake	0.53	0.87		1	reviewed	nc	nc
10/7/2006	23:52:27	35.4296667	-119.2111667	23.56	2.49	ml	36	88	0.1218	0.28	ci	ci14255356	2016-03-09T12:17:52.422Z	8km NW of Rosedale, CA	earthquake	0.42	0.96	0.176	86	reviewed	ci	ci
10/5/2006	20:19:20	35.4491667	-120.8681667	2.123	2	md	43	109	0.1432	0.07	nc	nc30230928	2017-01-15T09:35:09.450Z	2 km ENE of Cayucos, California	earthquake	0.21	1.34	0.28	10	reviewed	nc	nc
10/3/2006	11:18:24	35.5793333	-120.875	6.719	2.18	md	60	75	0.05676	0.07	nc	nc21540421	2017-01-15T09:16:24.360Z	15 km N of Cayucos, California	earthquake	0.14	0.4	0.21	57	reviewed	nc	nc
9/30/2006	5:54:05	36.1096667	-120.2315	9.332	2.13	md	37	76	0.1099	0.08	nc	nc21539796	2017-01-15T08:49:08.020Z	12 km ESE of Coalinga, California	earthquake	0.19	0.48	0.16	36	reviewed	nc	nc
9/30/2006	5:40:45	36.1113333	-120.232	10.352	2.03	md	31	75	0.1117	0.09	nc	nc21539792	2017-01-15T08:48:53.890Z	11 km ESE of Coalinga, California	earthquake	0.29	0.52	0.2	25	reviewed	nc	nc
9/29/2006	22:49:45	36.0486667	-120.0861667	8.012	2.91	md	10	227	0.02252	0.32	nc	nc21539703	2017-01-15T08:45:44.576Z	6 km NE of Avenal, California	earthquake	2.96	1.56		1	reviewed	nc	nc
9/29/2006	7:22:53	36.043	-120.0266667	9.867	2.38	md	57	154	0.06937	0.18	nc	nc21539554	2017-01-15T08:38:42.950Z	7 km WNW of Kettleman City, California	earthquake	0.34	0.54	0.11	43	reviewed	nc	nc
9/27/2006	20:11:39	36.1216667	-119.9723333	24.075	2.33	md	27	164	0.127	0.16	nc	nc21539204	2017-01-15T08:28:15.987Z	12 km N of Kettleman City, California	earthquake	0.51	0.55	0.07	9	reviewed	nc	nc
9/12/2006	2:24:38	35.5313333	-120.7925	5.467	2.04	md	59	38	0.1027	0.1	nc	nc21536655	2017-01-15T06:42:18.970Z	8 km WSW of Templeton, California	earthquake	0.17	0.69	0.2	41	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/11/2006	12:30:23	35.5216667	-120.8208333	5.455	2.87	md	46	78	0.1207	0.08	nc	nc21536549	2017-01-15T06:37:38.390Z	10 km WSW of Templeton, California	earthquake	0.2	0.78	0.07	71	reviewed	nc	nc
9/11/2006	11:21:41	35.2895	-120.6061667	10.911	2.88	md	42	62	0.05586	0.07	nc	nc21536539	2017-01-15T06:36:54.210Z	4 km E of San Luis Obispo, California	earthquake	0.2	0.47	0.1	65	reviewed	nc	nc
9/11/2006	1:54:48	36.0356667	-120.5941667	4.413	2.12	md	53	64	0.05315	0.08	nc	nc21536445	2017-01-15T06:33:32.140Z	20 km NW of Parkfield, California	earthquake	0.2	0.35	0.1	36	reviewed	nc	nc
9/8/2006	16:41:41	36.2048333	-120.27	9.719	2.56	md	52	64	0.07387	0.12	nc	nc21535997	2017-01-15T06:09:18.940Z	10 km NE of Coalinga, California	earthquake	0.17	0.23	0.13	65	reviewed	nc	nc
9/4/2006	1:26:43	35.531	-120.7988333	5.472	2.21	md	43	114	0.1198	0.06	nc	nc21535345	2017-01-15T05:37:45.290Z	8 km WSW of Templeton, California	earthquake	0.22	0.91	0.15	41	reviewed	nc	nc
9/3/2006	10:19:40	35.0231667	-119.15	8.267	2.79	ml	64	32	0.08597	0.35	ci	ci10206157	2016-03-09T06:35:28.852Z	20km N of Pine Mountain Club, CA	earthquake	0.36	1.13	0.189	187	reviewed	ci	ci
9/3/2006	6:34:40	35.5293333	-120.796	5.35	2.19	md	43	72	0.1225	0.08	nc	nc21535215	2017-01-15T05:31:42.410Z	8 km WSW of Templeton, California	earthquake	0.2	0.7	0.15	36	reviewed	nc	nc
9/3/2006	3:01:36	35.9218333	-119.9498333	-0.412	2.39	md	32	223	0.05946	0.2	nc	nc21535187	2017-01-15T05:30:35.620Z	9 km S of Kettleman City, California	earthquake	0.84	1.57	0.13	8	reviewed	nc	nc
9/3/2006	2:54:17	35.5318333	-120.797	6.035	2.27	md	45	71	0.1198	0.08	nc	nc21535183	2017-01-15T05:30:22.370Z	8 km WSW of Templeton, California	earthquake	0.21	0.95	0.11	39	reviewed	nc	nc
8/29/2006	9:59:19	35.703	-120.4075	3.83	2.15	md	8	292	0.4126	0.06	nc	nc68018050	2017-01-15T04:54:52.064Z	6 km NNW of Shandon, California	earthquake	3.31	6.76	0.07	13	reviewed	nc	nc
8/28/2006	6:31:01	35.9395	-120.4875	10.41	2.37	md	56	35	0.01802	0.08	nc	nc21534240	2017-01-15T04:47:56.250Z	6 km NW of Parkfield, California	earthquake	0.16	0.23	0.1	64	reviewed	nc	nc
8/26/2006	8:45:39	35.4655	-120.7751667	3.237	3.09	ml	67	79	0.09189	0.08	nc	nc21534022	2022-06-18T12:15:03.614Z	9 km WSW of Atascadero, California	earthquake	0.15	0.95		6	reviewed	nc	nc
8/25/2006	21:42:50	35.5436667	-120.7685	2.99	2.19	md	44	66	0.1243	0.13	nc	nc21533946	2017-01-15T04:30:59.530Z	5 km W of Templeton, California	earthquake	0.24	1.14	0.08	42	reviewed	nc	nc
8/24/2006	21:04:07	36.0113333	-120.5771667	3.881	2.14	md	48	42	0.03333	0.07	nc	nc21533832	2017-01-15T04:24:25.470Z	17 km NW of Parkfield, California	earthquake	0.18	0.26	0.1	31	reviewed	nc	nc
8/23/2006	17:54:07	35.1215	-118.8466667	16.171	2.52	ml	45	29	0.01462	0.34	ci	ci14247832	2016-03-09T06:34:54.947Z	10km S of Arvin, CA	earthquake	0.4	1.06	0.153	102	reviewed	ci	ci
8/22/2006	5:39:21	36.285	-119.7156667	26.685	2.16	md	25	195	0.3901	0.11	nc	nc21533416	2017-01-15T04:04:36.080Z	3 km S of Armona, California	earthquake	1.19	11.92	0.15	7	reviewed	nc	nc
8/21/2006	5:27:46	35.4011667	-120.8168333	5.407	2.05	md	46	93	0.02162	0.06	nc	nc21533288	2017-01-15T03:59:32.340Z	4 km NE of Morro Bay, California	earthquake	0.16	0.35	0.17	40	reviewed	nc	nc
8/18/2006	22:46:57	35.9496667	-120.4976667	13.654	2.49	md	54	36	0.006306	0.08	nc	nc21533008	2017-01-15T03:46:21.270Z	8 km NW of Parkfield, California	earthquake	0.21	0.27	0.12	62	reviewed	nc	nc
8/14/2006	4:01:29	35.4685	-120.766	4.868	2.01	md	48	56	0.08919	0.07	nc	nc21532248	2017-01-15T03:20:34.270Z	8 km WSW of Atascadero, California	earthquake	0.2	0.7	0.2	26	reviewed	nc	nc
8/11/2006	1:46:03	36.1698333	-120.166	7.669	2.05	md	41	110	0.1027	0.14	nc	nc21531831	2017-01-15T03:07:39.150Z	6 km WSW of Huron, California	earthquake	0.24	0.56	0.13	20	reviewed	nc	nc
8/11/2006	0:57:49	36.202	-120.3223333	9.293	2.49	md	53	55	0.05045	0.11	nc	nc21531828	2017-01-15T03:07:18.210Z	7 km NNE of Coalinga, California	earthquake	0.25	0.31	0.14	69	reviewed	nc	nc
8/7/2006	10:04:54	36.2056667	-120.3313333	9.739	2.03	md	40	147	0.04505	0.1	nc	nc21531062	2017-01-15T02:47:46.320Z	7 km NNE of Coalinga, California	earthquake	0.28	0.35	0.2	33	reviewed	nc	nc
8/7/2006	9:08:45	36.2043333	-120.3293333	10.153	2.91	md	53	55	0.04595	0.08	nc	nc21531052	2017-01-15T02:46:59.400Z	7 km NNE of Coalinga, California	earthquake	0.19	0.25	0.1	111	reviewed	nc	nc
7/30/2006	11:22:10	35.8828333	-120.4268333	5.556	2.35	md	45	44	0.02072	0.06	nc	nc21529813	2017-01-15T01:59:00.150Z	1 km SSE of Parkfield, California	earthquake	0.19	0.27	0.06	34	reviewed	nc	nc
7/30/2006	7:29:16	35.4675	-120.7638333	4.689	2.19	md	55	55	0.0964	0.09	nc	nc21529791	2017-01-15T01:58:28.560Z	8 km WSW of Atascadero, California	earthquake	0.21	0.98	0.14	49	reviewed	nc	nc
7/28/2006	2:44:06	35.5196667	-120.8338333	5.379	2.03	md	39	36	0.07207	0.11	nc	nc21529417	2017-01-15T01:44:15.240Z	10 km NNE of Cayucos, California	earthquake	0.21	0.62	0.18	29	reviewed	nc	nc
7/25/2006	7:13:25	35.57	-120.8285	6.799	2.05	md	55	63	0.07387	0.1	nc	nc21529013	2017-01-15T01:25:50.180Z	11 km WNW of Templeton, California	earthquake	0.17	0.62	0.08	42	reviewed	nc	nc
7/19/2006	23:56:40	35.511	-120.7773333	3.437	2.06	md	53	58	0.1	0.12	nc	nc21528152	2017-01-15T00:51:03.710Z	7 km WSW of Templeton, California	earthquake	0.19	0.95	0.13	40	reviewed	nc	nc
7/19/2006	15:04:37	36.0915	-119.8785	27.772	2.03	md	21	171	0.1901	0.16	nc	nc21528013	2017-01-15T00:48:06.350Z	11 km NE of Kettleman City, California	earthquake	1.27	0.65	0.27	2	reviewed	nc	nc
7/16/2006	12:32:56	35.7803333	-120.3445	9.578	2	md	16	94	0.008108	0.05	nc	nc21527570	2017-01-15T00:28:52.811Z	14 km NNE of Shandon, California	earthquake	0.73	0.83		1	reviewed	nc	nc
7/14/2006	6:53:57	35.9285	-120.4745	9.864	2.23	md	57	42	0.02072	0.06	nc	nc21527188	2017-01-15T00:14:22.500Z	4 km NW of Parkfield, California	earthquake	0.15	0.21	0.12	59	reviewed	nc	nc
7/14/2006	1:05:36	35.9275	-120.4783333	9.554	3.16	ml	70	38	0.01802	0.08	nc	nc21527162	2017-01-15T00:12:28.480Z	5 km NW of Parkfield, California	earthquake	0.14	0.21		8	reviewed	nc	nc
7/10/2006	0:01:50	35.9593333	-120.5108333	12.924	2.47	md	58	29	0.01081	0.1	nc	nc21526602	2017-01-14T23:44:27.690Z	9 km NW of Parkfield, California	earthquake	0.22	0.28	0.1	72	reviewed	nc	nc
7/7/2006	19:31:55	36.0026667	-120.554	12.683	2.8	md	56	70	0.01532	0.08	nc	nc21526211	2017-01-14T23:29:27.890Z	15 km NW of Parkfield, California	earthquake	0.2	0.22	0.09	68	reviewed	nc	nc
7/6/2006	6:06:28	35.898	-120.441	5.964	3.27	ml	63	39	0.03604	0.07	nc	nc21525987	2017-01-14T23:18:09.520Z	0 km WSW of Parkfield, California	earthquake	0.15	0.22		11	reviewed	nc	nc
7/6/2006	4:17:27	35.7951667	-120.3473333	9.713	2.17	md	51	38	0.02252	0.07	nc	nc21525981	2017-01-14T23:17:34.240Z	13 km SSE of Parkfield, California	earthquake	0.17	0.3	0.1	48	reviewed	nc	nc
7/5/2006	8:15:11	35.5438333	-120.8681667	7.589	2.06	md	55	59	0.08559	0.11	nc	nc21525894	2017-01-14T23:12:29.080Z	11 km N of Cayucos, California	earthquake	0.19	0.6	0.15	51	reviewed	nc	nc
7/3/2006	3:49:32	36.0278333	-120.59	3.978	2.21	md	48	44	0.04144	0.07	nc	nc21525570	2017-01-14T22:53:19.280Z	20 km NW of Parkfield, California	earthquake	0.18	0.28	0.13	38	reviewed	nc	nc
7/2/2006	23:36:47	36.013	-120.5983333	-0.719	2.36	md	44	64	0.03333	0.17	nc	nc21525552	2017-01-14T22:52:07.060Z	19 km NW of Parkfield, California	earthquake	0.2	0.96	0.1	39	reviewed	nc	nc
6/29/2006	23:42:45	36.0696667	-120.1931667	14.676	2.34	md	54	50	0.06847	0.11	nc	nc21525134	2017-01-14T22:27:08.180Z	9 km NW of Avenal, California	earthquake	0.31	0.48	0.1	54	reviewed	nc	nc
6/29/2006	6:38:05	36.0678333	-120.1968333	13.532	2.02	md	50	69	0.07117	0.06	nc	nc21525015	2017-01-14T22:22:05.510Z	9 km NW of Avenal, California	earthquake	0.17	0.4	0.21	35	reviewed	nc	nc
6/28/2006	22:59:30	35.5056667	-120.808	6.547	2.25	md	59	38	0.07658	0.1	nc	nc21524921	2017-01-14T22:19:23.310Z	10 km NE of Cayucos, California	earthquake	0.16	0.61	0.08	56	reviewed	nc	nc
6/27/2006	21:38:11	36.0658333	-120.1921667	16.482	3.19	ml	68	69	0.06667	0.1	nc	nc21524551	2017-01-14T22:08:46.590Z	8 km NW of Avenal, California	earthquake	0.17	0.42		11	reviewed	nc	nc
6/24/2006	10:11:26	35.5643333	-120.8286667	7.209	2.2	md	61	61	0.07928	0.08	nc	nc21523886	2017-01-14T21:41:03.820Z	11 km W of Templeton, California	earthquake	0.15	0.55	0.11	55	reviewed	nc	nc
6/23/2006	11:25:21	35.8541667	-120.402	3.832	2.21	md	34	55	0.04595	0.09	nc	nc21523715	2017-01-14T21:32:48.570Z	5 km SSE of Parkfield, California	earthquake	0.25	0.49	0.11	33	reviewed	nc	nc
6/22/2006	0:44:33	34.7368333	-120.1203333	-0.823	2.13	ml	14	93	0.1093	0.33	ci	ci14234636	2016-03-08T18:38:58.190Z	8km N of Los Olivos, CA	earthquake	0.81	2.09	0.149	31	reviewed	ci	ci
6/18/2006	12:36:12	35.0408333	-119.0396667	11.609	2.13	ml	30	70	0.07601	0.36	ci	ci14233904	2016-03-09T09:21:39.017Z	15km NW of Grapevine, CA	earthquake	0.52	1.66	0.167	79	reviewed	ci	ci
6/18/2006	2:57:35	36.2953333	-120.34	5.879	2.89	md	55	171	0.04595	0.12	nc	nc21522940	2017-01-14T20:50:28.400Z	17 km N of Coalinga, California	earthquake	0.35	0.15	0.08	80	reviewed	nc	nc
6/18/2006	2:20:51	36.3043333	-120.3281667	6.199	2.48	md	45	72	0.04685	0.13	nc	nc21522938	2017-01-14T20:50:10.230Z	18 km N of Coalinga, California	earthquake	0.39	0.15	0.1	42	reviewed	nc	nc
6/14/2006	12:52:15	35.9415	-120.4891667	10.69	3.27	ml	62	33	0.01622	0.08	nc	nc21522266	2017-01-14T20:14:26.980Z	6 km NW of Parkfield, California	earthquake	0.17	0.22		8	reviewed	nc	nc
6/14/2006	11:06:33	35.94	-120.49	10.317	2.48	md	62	33	0.01712	0.08	nc	nc21522260	2017-01-14T20:13:47.260Z	6 km NW of Parkfield, California	earthquake	0.17	0.23	0.11	71	reviewed	nc	nc
6/14/2006	10:06:43	35.1413333	-119.1391667	25.506	2.2	ml	29	51	0.1817	0.26	ci	ci14233220	2016-03-09T00:49:56.734Z	24km WSW of Lamont, CA	earthquake	0.44	1.14	0.224	50	reviewed	ci	ci
6/13/2006	4:57:37	35.4563333	-120.0781667	10.038	2	ml	13	135	0.0984	0.24	ci	ci14232976	2016-03-09T12:11:01.356Z	14km NNW of Simmler, CA	earthquake	0.93	2.03	0.15	29	reviewed	ci	ci
6/10/2006	5:22:36	35.8035	-120.3533333	9.543	2.29	md	56	43	0.02703	0.05	nc	nc21521529	2017-01-14T19:38:11.050Z	12 km SE of Parkfield, California	earthquake	0.17	0.26	0.08	63	reviewed	nc	nc
6/9/2006	1:36:15	36.072	-120.0951667	14.241	2.01	md	29	236	0.01622	0.09	nc	nc21521399	2017-01-14T19:30:22.273Z	8 km NNE of Avenal, California	earthquake	0.97	0.74	0.11	17	reviewed	nc	nc
6/8/2006	19:56:02	36.0593333	-120.1096667	14.247	2.9	md	70	103	0.001802	0.14	nc	nc21521351	2017-01-14T19:28:34.500Z	6 km NNE of Avenal, California	earthquake	0.22	0.34	0.11	97	reviewed	nc	nc
6/8/2006	11:00:38	36.0191667	-120.5815	4.018	2.13	md	55	41	0.03784	0.07	nc	nc21521297	2017-01-14T19:26:16.000Z	18 km NW of Parkfield, California	earthquake	0.17	0.24	0.11	40	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/8/2006	7:01:49	36.0583333	-120.1081667	13.653	2.05	md	15	142	0.002703	0.07	nc	nc30507210	2017-01-14T19:25:05.485Z	6 km NNE of Avenal, California	earthquake	0.28	0.38	0.22	15	automatic	nc	nc
6/8/2006	7:00:44	36.0641667	-120.0961667	15.737	2.67	md	63	97	0.01171	0.12	nc	nc21521277	2017-01-14T19:24:58.800Z	Central California	earthquake	0.23	0.34	0.11	68	reviewed	nc	nc
6/8/2006	6:54:17	36.0653333	-120.1031667	14.767	2.57	md	63	145	0.007207	0.11	nc	nc21521275	2017-01-14T19:24:46.780Z	7 km NNE of Avenal, California	earthquake	0.22	0.44	0.11	76	reviewed	nc	nc
6/1/2006	23:58:10	35.9586667	-120.5031667	4.598	3.02	md	6	159	0.006306	0.06	nc	nc70032341	2017-01-14T18:34:53.982Z	9 km NW of Parkfield, California	earthquake	1.13	0.82		1	reviewed	nc	nc
5/28/2006	15:24:51	35.5575	-120.811	4.943	2.01	md	54	53	0.09189	0.09	nc	nc21519469	2017-01-14T17:59:49.490Z	Central California	earthquake	0.16	0.65	0.16	43	reviewed	nc	nc
5/26/2006	0:30:33	35.9735	-120.53	4.175	2.68	md	62	28	0.01441	0.09	nc	nc21519099	2017-01-14T17:43:02.840Z	12 km NW of Parkfield, California	earthquake	0.13	0.17	0.09	70	reviewed	nc	nc
5/24/2006	16:16:56	35.56	-120.8175	6.649	2.94	md	72	34	0.08739	0.08	nc	nc21518898	2017-01-14T17:32:31.630Z	10 km W of Templeton, California	earthquake	0.14	0.54	0.09	93	reviewed	nc	nc
5/24/2006	8:20:14	35.9985	-120.561	3.933	2.1	md	57	50	0.02252	0.07	nc	nc21518874	2017-01-14T17:30:32.090Z	15 km NW of Parkfield, California	earthquake	0.14	0.18	0.08	37	reviewed	nc	nc
5/23/2006	20:22:02	35.5335	-120.7923333	5.557	2.37	md	66	29	0.1045	0.1	nc	nc21518786	2017-01-14T17:27:06.590Z	8 km WSW of Templeton, California	earthquake	0.17	0.64	0.11	71	reviewed	nc	nc
5/23/2006	20:18:23	35.5326667	-120.7931667	4.787	2	md	54	50	0.1036	0.07	nc	nc21518784	2017-01-14T17:26:48.200Z	8 km WSW of Templeton, California	earthquake	0.19	0.7	0.17	36	reviewed	nc	nc
5/19/2006	18:16:17	35.596	-120.7165	5.659	2.03	md	64	36	0.1306	0.08	nc	nc21518206	2017-01-14T17:03:26.520Z	4 km SW of Paso Robles, California	earthquake	0.14	0.84	0.11	52	reviewed	nc	nc
5/18/2006	0:35:06	36.2443333	-120.2776667	-0.598	2.1	md	20	120	0.3117	0.43	nc	nc21517961	2017-01-14T16:50:49.950Z	13 km NNE of Coalinga, California	earthquake	1.63	22.35		1	reviewed	nc	nc
5/17/2006	21:34:23	35.5603333	-120.7958333	4.893	2.14	md	56	36	0.0964	0.1	nc	nc21517943	2017-01-14T16:49:36.860Z	8 km W of Templeton, California	earthquake	0.17	0.71	0.11	47	reviewed	nc	nc
5/13/2006	14:43:42	36.0025	-120.5631667	3.506	2.62	md	65	47	0.02252	0.09	nc	nc21517276	2017-01-14T16:09:50.400Z	16 km NW of Parkfield, California	earthquake	0.16	0.21	0.11	67	reviewed	nc	nc
5/7/2006	8:55:16	36.0471667	-120.6093333	8.418	2.51	md	66	38	0.02432	0.09	nc	nc21516016	2017-01-14T14:36:28.280Z	22 km NW of Parkfield, California	earthquake	0.18	0.31	0.12	75	reviewed	nc	nc
5/7/2006	2:45:32	36.0321667	-120.592	7.248	2.35	md	52	120	0.03694	0.07	nc	nc21515978	2017-01-14T14:34:47.390Z	20 km NW of Parkfield, California	earthquake	0.19	0.27	0.08	57	reviewed	nc	nc
5/2/2006	7:28:42	36.229	-120.2948333	0.971	2	md	17	169	0.2144	0.09	nc	nc21515211	2017-01-14T13:51:49.530Z	11 km NNE of Coalinga, California	earthquake	0.58	2.11		1	reviewed	nc	nc
5/2/2006	2:25:21	36.1666667	-120.2843333	9.682	2.21	md	39	63	0.0955	0.08	nc	nc21515193	2017-01-14T13:49:56.510Z	7 km ENE of Coalinga, California	earthquake	0.23	0.38	0.1	46	reviewed	nc	nc
4/29/2006	16:46:01	35.5401667	-120.8003333	6.137	2.01	md	6	237	0.08739	0.06	nc	nc68017455	2017-01-14T13:26:24.550Z	8 km W of Templeton, California	earthquake	1.42	1.99	0.15	6	reviewed	nc	nc
4/29/2006	3:13:22	36.3261667	-119.9225	17.128	2.3	md	20	167	0.2577	0.41	nc	nc21514781	2017-01-14T13:21:19.227Z	7 km NNW of Lemoore Station, California	earthquake	2.18	3.88		3	reviewed	nc	nc
4/27/2006	11:23:37	35.514	-120.7981667	3.888	2.01	md	43	62	0.1351	0.1	nc	nc21514549	2017-01-14T13:03:48.280Z	9 km WSW of Templeton, California	earthquake	0.17	0.68	0.18	20	reviewed	nc	nc
4/27/2006	9:35:54	35.5113333	-120.8095	5.248	2.65	md	50	56	0.1342	0.08	nc	nc21514539	2017-01-14T13:03:07.940Z	10 km WSW of Templeton, California	earthquake	0.17	0.75	0.1	67	reviewed	nc	nc
4/26/2006	14:32:22	35.5148333	-120.8096667	6.633	2.11	md	44	57	0.08108	0.06	nc	nc21514435	2017-01-14T12:56:58.200Z	10 km WSW of Templeton, California	earthquake	0.16	0.57	0.18	21	reviewed	nc	nc
4/26/2006	9:57:00	35.9991667	-120.1256667	19.466	2.1	md	38	159	0.06306	0.18	nc	nc21514421	2017-01-14T12:55:59.910Z	0 km SSE of Avenal, California	earthquake	0.53	0.8	0.23	25	reviewed	nc	nc
4/26/2006	6:03:19	35.5405	-120.8358333	8.109	2.15	md	44	32	0.09009	0.07	nc	nc21514407	2017-01-14T12:54:50.030Z	11 km W of Templeton, California	earthquake	0.2	0.77	0.15	33	reviewed	nc	nc
4/25/2006	5:58:19	36.0298333	-120.0753333	24.051	2.5	md	13	233	0.04144	0.15	nc	nc21514245	2017-01-14T12:46:57.174Z	5 km ENE of Avenal, California	earthquake	2.52	3.25		1	reviewed	nc	nc
4/25/2006	5:17:34	35.9818333	-120.1591667	17.575	2.22	md	17	220	0.1541	0.17	nc	nc21514234	2017-01-14T12:46:15.360Z	3 km SW of Avenal, California	earthquake	3.4	1.86		1	reviewed	nc	nc
4/23/2006	14:18:01	36.322	-119.9423333	20.137	2.16	md	28	189	0.245	0.17	nc	nc21514007	2017-01-14T12:29:37.790Z	7 km NNW of Lemoore Station, California	earthquake	1.83	0.62	0.06	2	reviewed	nc	nc
4/21/2006	6:34:39	36.2833333	-119.7353333	26.152	2.38	md	28	144	0.3766	0.19	nc	nc30230434	2017-01-14T12:05:11.420Z	4 km SW of Armona, California	earthquake	1.21	17.35		1	reviewed	nc	nc
4/14/2006	1:04:48	35.7966667	-120.352	9.963	2.02	md	46	40	0.02523	0.06	nc	nc21512830	2017-01-14T11:01:47.080Z	13 km SSE of Parkfield, California	earthquake	0.19	0.34	0.12	40	reviewed	nc	nc
4/13/2006	21:39:35	35.9933333	-120.552	4.163	2.3	md	53	58	0.01892	0.08	nc	nc21512816	2017-01-14T11:00:13.940Z	14 km NW of Parkfield, California	earthquake	0.19	0.19	0.1	51	reviewed	nc	nc
4/13/2006	14:48:53	35.5496667	-120.8646667	7.672	2.95	md	62	39	0.03784	0.06	nc	nc21512781	2017-01-14T10:57:02.490Z	12 km NNE of Cayucos, California	earthquake	0.15	0.48	0.09	79	reviewed	nc	nc
4/9/2006	4:20:09	35.4408333	-119.3541667	15.062	2.29	ml	16	131	0.1095	0.32	ci	ci14220884	2016-03-09T09:18:22.241Z	10km SW of Shafter, CA	earthquake	0.94	0.99	0.122	53	reviewed	ci	ci
4/9/2006	1:19:12	35.5483333	-120.8451667	7.232	2.17	md	55	52	0.05225	0.08	nc	nc21512244	2017-01-14T10:21:26.070Z	12 km NNE of Cayucos, California	earthquake	0.16	0.55	0.14	44	reviewed	nc	nc
4/6/2006	23:11:35	35.5678333	-120.8321667	5.822	2.1	md	53	30	0.06937	0.1	nc	nc21511945	2017-01-14T09:58:33.350Z	11 km W of Templeton, California	earthquake	0.21	0.51	0.15	33	reviewed	nc	nc
4/6/2006	2:08:36	35.5083333	-120.771	5.15	2	md	52	41	0.1027	0.09	nc	nc21511823	2017-01-14T09:49:37.840Z	7 km SW of Templeton, California	earthquake	0.18	0.82	0.13	29	reviewed	nc	nc
4/5/2006	18:38:31	35.5871667	-120.8656667	5.786	2.05	md	40	44	0.04865	0.09	nc	nc21511773	2017-01-14T09:46:49.590Z	15 km WNW of Templeton, California	earthquake	0.2	0.47	0.11	34	reviewed	nc	nc
4/3/2006	19:38:40	35.5313333	-120.7731667	3.879	2.33	md	56	35	0.109	0.11	nc	nc21511563	2017-01-14T09:29:11.970Z	6 km WSW of Templeton, California	earthquake	0.18	0.78	0.09	47	reviewed	nc	nc
4/2/2006	8:16:56	35.9626667	-119.8753333	21.662	3.08	ml	65	61	0.1198	0.23	nc	nc21511405	2017-01-14T09:19:54.800Z	9 km ESE of Kettleman City, California	earthquake	0.32	0.38		9	reviewed	nc	nc
3/29/2006	14:14:09	35.8818333	-120.4281667	9.842	2.05	md	38	57	0.02162	0.04	nc	nc21510976	2017-01-14T08:47:59.880Z	2 km SSE of Parkfield, California	earthquake	0.17	0.38	0.09	35	reviewed	nc	nc
3/29/2006	0:46:33	35.8623333	-119.977	7.108	2.01	md	23	162	0.01712	0.18	nc	nc21510938	2017-01-14T08:43:24.448Z	16 km S of Kettleman City, California	earthquake	0.93	0.53	0.15	6	reviewed	nc	nc
3/27/2006	0:03:42	35.552	-120.8001667	3.912	2.21	md	50	65	0.08919	0.08	nc	nc21510690	2017-01-14T08:32:09.750Z	8 km W of Templeton, California	earthquake	0.17	0.61	0.18	45	reviewed	nc	nc
3/25/2006	12:44:37	36.2486667	-120.4031667	6.808	2.1	md	44	76	0.155	0.11	nc	nc21510532	2017-01-14T08:21:24.750Z	12 km NNW of Coalinga, California	earthquake	0.29	0.55	0.24	19	reviewed	nc	nc
3/23/2006	17:29:22	35.7718333	-120.3226667	8.548	2.8	md	54	37	0.01441	0.06	nc	nc21510349	2017-01-14T08:08:12.170Z	13 km NNE of Shandon, California	earthquake	0.16	0.27	0.09	66	reviewed	nc	nc
3/20/2006	17:21:26	35.058	-119.022	13.719	2.08	ml	17	72	0.0972	0.23	ci	ci14217888	2016-03-08T20:19:37.303Z	15km NNW of Grapevine, CA	earthquake	0.63	1.06	0.128	40	reviewed	ci	ci
3/18/2006	18:38:23	35.525	-120.8266667	6.282	2.27	md	56	30	0.06577	0.1	nc	nc21509781	2017-01-14T07:31:03.170Z	10 km NNE of Cayucos, California	earthquake	0.17	0.57	0.16	49	reviewed	nc	nc
3/18/2006	9:20:25	35.7671667	-120.3281667	7.136	2.14	md	42	44	0.01081	0.06	nc	nc21509753	2017-01-14T07:28:08.790Z	13 km NNE of Shandon, California	earthquake	0.18	0.28	0.11	42	reviewed	nc	nc
3/14/2006	5:04:35	35.8521667	-120.3961667	4.987	2.51	md	47	39	0.01622	0.06	nc	nc21509311	2017-01-14T07:04:39.320Z	6 km SSE of Parkfield, California	earthquake	0.16	0.25	0.08	49	reviewed	nc	nc
3/11/2006	8:25:42	36.0361667	-120.596	4.058	2.41	md	56	37	0.03243	0.08	nc	nc21508986	2017-01-14T06:37:49.770Z	21 km NW of Parkfield, California	earthquake	0.18	0.31	0.1	54	reviewed	nc	nc
3/9/2006	16:37:02	34.7956667	-120.3478333	24.239	2.09	ml	11	42	0.082	0.33	ci	ci14216320	2016-03-09T02:09:42.831Z	8km NW of Los Alamos, CA	earthquake	1.23	2.06	0.145	13	reviewed	ci	ci
3/8/2006	9:18:50	35.9275	-120.4795	4.454	2.09	md	43	51	0.01802	0.06	nc	nc21508588	2017-01-14T06:14:40.070Z	5 km NW of Parkfield, California	earthquake	0.16	0.23	0.13	35	reviewed	nc	nc
3/8/2006	7:24:57	36.0038333	-119.8941667	6.708	2.35	md	33	177	0.1495	0.09	nc	nc21508574	2017-01-14T06:13:36.660Z	6 km E of Kettleman City, California	earthquake	0.53	0.71	0.1	29	reviewed	nc	nc
3/7/2006	15:21:38	35.5811667	-120.7885	1.772	2.01	md	34	61	0.08739	0.1	nc	nc21508480	2017-01-14T06:08:21.590Z	8 km WNW of Templeton, California	earthquake	0.21	1.24	0.17	13	reviewed	nc	nc
3/5/2006	2:46:16	35.4633333	-120.7665	3.623	2.14	md	50	73	0.08559	0.1	nc	nc21508286	2017-01-14T05:58:00.200Z	9 km WSW of Atascadero, California	earthquake	0.17	0.63	0.19	19	reviewed	nc	nc
3/4/2006	22:00:50	35.0348333	-119.0008333	8.016	2.65	ml	44	70	0.08661	0.35	ci	ci14215540	2016-03-08T20:18:25.363Z	12km NNW of Grapevine, CA	earthquake	0.42	2.36	0.14	132	reviewed	ci	ci
2/25/2006	23:21:55	36.2373333	-120.2893333	11.295	2.39	md	57	55	0.04505	0.09	nc	nc21507614	2017-01-14T05:18:55.180Z	12 km NNE of Coalinga, California	earthquake	0.24	0.35	0.12	59	reviewed	nc	nc
2/25/2006	7:53:10	36.0451667	-120.6093333	4.791	2.56	md	63	59	0.02613	0.08	nc	nc21507532	2017-01-14T05:13:39.870Z	22 km NW of Parkfield, California	earthquake	0.19	0.38	0.13	63	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
2/21/2006	8:40:20	35.1158333	-118.9021667	17.262	2.43	ml	55	25	0.06011	0.41	ci	ci14213704	2016-03-09T09:16:26.240Z	12km SSW of Arvin, CA	earthquake	0.38	1.38	0.14	89	reviewed	ci	ci
2/17/2006	12:08:23	35.5155	-120.8401667	3.385	2.06	md	9	172	0.136	0.04	nc	nc68016963	2017-01-14T04:26:12.860Z	9 km NNE of Cayucos, California	earthquake	0.84	1.26	0.05	5	reviewed	nc	nc
2/15/2006	22:59:21	35.4103333	-119.3438333	26.121	2.48	ml	31	122	0.08055	0.27	ci	ci14212720	2016-03-09T03:33:38.532Z	12km E of Buttonwillow, CA	earthquake	0.52	1.07	0.146	60	reviewed	ci	ci
2/11/2006	13:52:07	35.5255	-120.7941667	5.808	2.15	md	48	41	0.0982	0.07	nc	nc21505817	2017-01-14T03:43:03.480Z	8 km WSW of Templeton, California	earthquake	0.18	1.01	0.14	16	reviewed	nc	nc
2/7/2006	21:51:46	35.5243333	-120.8375	6.388	2.07	md	42	60	0.05766	0.07	nc	nc21505418	2017-01-14T03:18:33.790Z	10 km NNE of Cayucos, California	earthquake	0.21	0.76	0.2	28	reviewed	nc	nc
2/7/2006	3:55:43	35.5538333	-120.8243333	6.683	2.23	md	57	53	0.09009	0.11	nc	nc21505332	2017-01-14T03:15:32.700Z	10 km W of Templeton, California	earthquake	0.17	0.67	0.16	49	reviewed	nc	nc
2/6/2006	4:55:39	35.8191667	-119.9126667	11.909	3.25	md	68	154	0.05586	0.23	nc	nc21505216	2017-01-14T03:12:31.330Z	21 km SSE of Kettleman City, California	earthquake	0.4	0.53	0.07	71	reviewed	nc	nc
2/5/2006	19:05:17	35.7075	-120.2551667	12.435	2.54	md	50	81	0.02342	0.08	nc	nc21505166	2017-01-14T03:11:12.640Z	12 km ENE of Shandon, California	earthquake	0.21	0.42	0.1	63	reviewed	nc	nc
2/5/2006	7:14:46	36.0565	-119.8931667	21.515	2.29	md	30	91	0.1757	0.19	nc	nc21505116	2017-01-14T03:09:45.567Z	8 km NE of Kettleman City, California	earthquake	0.77	1.81	0.16	2	reviewed	nc	nc
2/4/2006	4:58:19	35.7418333	-120.297	12.518	2	md	28	54	0.03964	0.06	nc	nc30507129	2017-01-14T03:05:11.370Z	11 km NE of Shandon, California	earthquake	0.27	0.4	0.12	27	automatic	nc	nc
2/4/2006	4:58:10	35.7433333	-120.2965	12.788	2.4	md	25	54	0.03964	0.05	nc	nc21505036	2017-01-14T03:05:01.510Z	12 km NE of Shandon, California	earthquake	0.31	0.57	0.06	15	reviewed	nc	nc
1/31/2006	13:25:34	35.9	-119.9858333	12.088	2.19	md	40	159	0.04414	0.22	nc	nc21504648	2017-01-14T02:49:48.240Z	12 km S of Kettleman City, California	earthquake	0.64	0.59	0.18	30	reviewed	nc	nc
1/29/2006	10:36:58	35.5756667	-120.7903333	4.462	2.18	md	30	47	0.09009	0.11	nc	nc21504468	2017-01-14T02:42:45.393Z	8 km WNW of Templeton, California	earthquake	0.27	1.05	0.12	11	reviewed	nc	nc
1/29/2006	10:13:38	35.574	-120.7908333	4.379	2.49	md	61	34	0.08919	0.1	nc	nc21504466	2017-01-14T02:42:39.660Z	8 km WNW of Templeton, California	earthquake	0.15	0.64	0.11	71	reviewed	nc	nc
1/28/2006	18:07:53	34.9145	-119.015	12.772	2	ml	32	55	0.06984	0.31	ci	ci10166749	2016-03-09T04:58:04.806Z	8km WSW of Grapevine, CA	earthquake	0.52	1.1	0.179	47	reviewed	ci	ci
1/27/2006	11:22:15	35.557	-120.7996667	5.539	2.68	md	64	32	0.0973	0.09	nc	nc21504283	2017-01-14T02:34:33.640Z	8 km W of Templeton, California	earthquake	0.15	0.6	0.09	71	reviewed	nc	nc
1/24/2006	19:18:58	35.566	-120.8878333	5.397	2	md	32	85	0.07748	0.14	nc	nc21503959	2017-01-14T02:21:07.043Z	13 km N of Cayucos, California	earthquake	0.25	0.68	0.17	11	reviewed	nc	nc
1/22/2006	16:37:25	35.291	-120.602	5.085	2.34	md	55	49	0.1045	0.08	nc	nc21503657	2017-01-14T02:11:02.650Z	5 km E of San Luis Obispo, California	earthquake	0.2	0.51	0.22	43	reviewed	nc	nc
1/22/2006	10:28:07	35.6576667	-119.194	24.17	3.02	ml	29	106	0.2033	0.36	ci	ci14209888	2016-03-09T12:03:22.018Z	4km SE of McFarland, CA	earthquake	0.69	2.61	0.143	153	reviewed	ci	ci
1/21/2006	7:19:09	35.5331667	-120.796	6.32	2.04	md	42	75	0.09009	0.09	nc	nc21503501	2017-01-14T02:02:55.740Z	8 km WSW of Templeton, California	earthquake	0.22	1.01	0.11	12	reviewed	nc	nc
1/20/2006	7:15:28	36.0575	-120.6358333	-0.706	2.16	md	49	38	0.03423	0.16	nc	nc21503373	2017-01-14T01:56:14.400Z	24 km E of San Ardo, California	earthquake	0.21	1.54	0.14	39	reviewed	nc	nc
1/18/2006	20:00:33	35.6011667	-120.8528333	7.395	2	md	49	41	0.03784	0.11	nc	nc21503237	2017-01-14T01:49:51.450Z	14 km S of Lake Nacimiento, California	earthquake	0.18	0.39	0.16	31	reviewed	nc	nc
1/14/2006	12:17:10	36.0633333	-120.0225	26.432	2.53	md	20	316	0.2883	0.08	nc	nc21502886	2017-01-14T01:31:30.500Z	8 km NW of Kettleman City, California	earthquake	6.22	1.31		1	reviewed	nc	nc
1/14/2006	11:11:34	36.0121667	-120.18	16.715	2.43	md	51	80	0.07477	0.19	nc	nc21502881	2017-01-14T01:31:03.770Z	4 km W of Avenal, California	earthquake	0.44	0.68	0.09	49	reviewed	nc	nc
1/14/2006	11:08:37	36.0211667	-120.171	16.345	2.42	md	51	81	0.06396	0.15	nc	nc21502880	2017-01-14T01:30:44.320Z	4 km WNW of Avenal, California	earthquake	0.3	0.65	0.18	43	reviewed	nc	nc
1/9/2006	23:13:45	35.5471667	-120.8038333	4.402	2.06	md	46	35	0.08468	0.11	nc	nc30229850	2017-01-14T01:04:00.210Z	8 km W of Templeton, California	earthquake	0.2	0.57	0.19	25	reviewed	nc	nc
1/7/2006	12:36:35	35.0208333	-119.0213333	11.742	2.19	ml	30	51		0.36	ci	ci14207580	2016-03-09T12:02:36.930Z	12km NW of Grapevine, CA	earthquake	0.55	1.34	0.145	68	reviewed	ci	ci
1/6/2006	19:03:52	35.5321667	-120.836	6.952	2.17	md	58	32	0.05766	0.08	nc	nc21502111	2017-01-14T00:45:45.040Z	11 km NNE of Cayucos, California	earthquake	0.16	0.53	0.15	45	reviewed	nc	nc
1/6/2006	16:03:45	36.1121667	-120.6356667	3.615	2.31	md	45	48	0.1198	0.11	nc	nc21502097	2017-01-14T00:44:47.830Z	24 km W of Coalinga, California	earthquake	0.25	0.71	0.13	33	reviewed	nc	nc
1/4/2006	10:00:03	35.0178333	-119.0105	12.166	2.08	ml	31	51		0.29	ci	ci14207164	2016-03-08T23:16:54.254Z	11km NW of Grapevine, CA	earthquake	0.51	1.16	0.167	51	reviewed	ci	ci
1/3/2006	10:08:37	36.0171667	-120.6075	-0.181	2.61	md	45	55	0.04955	0.37	nc	nc21501821	2017-01-14T00:31:10.810Z	20 km NW of Parkfield, California	earthquake	0.59	3.97	0.08	42	reviewed	nc	nc
1/3/2006	6:48:45	36.0383333	-120.5966667	-0.298	2	md	30	159	0.05676	0.46	nc	nc21501812	2017-01-14T00:30:46.970Z	21 km NW of Parkfield, California	earthquake	1.28	12.26	0.19	20	reviewed	nc	nc
1/2/2006	14:38:13	36.0405	-120.5898333	-0.017	2.04	md	26	161	0.05315	0.52	nc	nc21501754	2017-01-14T00:28:49.150Z	21 km NW of Parkfield, California	earthquake	1.6	10.11	0.23	12	reviewed	nc	nc
12/31/2005	21:31:28	35.975	-119.8295	25.082	3.92	ml	80	63	0.1523	0.32	nc	nc21501572	2022-06-18T11:12:57.364Z	12 km ESE of Kettleman City, California	earthquake	0.47	0.72		25	reviewed	nc	nc
12/30/2005	2:39:11	36.1613333	-120.0543333	6.942	2.03	md	31	236	0.1099	0.09	nc	nc21501381	2017-01-13T21:46:26.116Z	6 km SE of Huron, California	earthquake	1.3	0.25	0.03	4	reviewed	nc	nc
12/27/2005	5:23:25	36.234	-120.4291667	9.208	2.33	md	59	68	0.07117	0.14	nc	nc21501071	2017-01-13T21:35:05.280Z	12 km NNW of Coalinga, California	earthquake	0.2	0.31	0.14	52	reviewed	nc	nc
12/26/2005	23:05:52	36.2366667	-120.423	9.199	2.43	md	58	68	0.06577	0.1	nc	nc21501047	2017-01-13T21:34:00.600Z	Central California	earthquake	0.19	0.34	0.11	66	reviewed	nc	nc
12/26/2005	7:57:31	35.5306667	-120.8396667	9.302	2.46	md	61	34	0.05495	0.07	nc	nc21500898	2017-01-13T21:28:53.180Z	11 km NNE of Cayucos, CA	earthquake	0.15	0.56	0.12	64	reviewed	nc	nc
12/25/2005	19:27:08	35.4806667	-120.7653333	4.215	2.03	md	36	52	0.0973	0.11	nc	nc21500838	2017-01-13T21:26:02.924Z	8 km W of Atascadero, California	earthquake	0.23	0.91	0.16	12	reviewed	nc	nc
12/25/2005	4:14:24	36.002	-120.5611667	3.973	2.21	md	59	62	0.02162	0.08	nc	nc21500776	2017-01-13T21:23:08.540Z	16 km NW of Parkfield, California	earthquake	0.16	0.17	0.12	42	reviewed	nc	nc
12/24/2005	10:10:57	35.997	-120.5565	3.233	3	ml	63	47	0.02072	0.09	nc	nc21500702	2017-01-13T21:19:36.060Z	15 km NW of Parkfield, California	earthquake	0.16	0.23		9	reviewed	nc	nc
12/23/2005	17:58:26	35.8433333	-120.3828333	4.29	2.53	md	51	36	0.02703	0.07	nc	nc21500612	2017-01-13T21:14:56.240Z	7 km SE of Parkfield, California	earthquake	0.16	0.29	0.09	52	reviewed	nc	nc
12/19/2005	9:14:57	35.406	-119.4926667	28.745	2.47	ml	23	97	0.1285	0.23	ci	ci14205016	2016-03-07T20:47:21.512Z	2km WNW of Buttonwillow, CA	earthquake	0.69	0.55	0.147	66	reviewed	ci	ci
12/17/2005	21:04:46	36.1546667	-120.0591667	8.289	2.55	md	46	176	0.0955	0.11	nc	nc21500051	2017-01-13T20:49:26.620Z	6 km SE of Huron, California	earthquake	0.41	0.43	0.18	54	reviewed	nc	nc
12/17/2005	11:43:08	35.8048333	-120.3521667	6.343	2.77	md	58	54	0.02613	0.05	nc	nc21500019	2017-01-13T20:48:16.080Z	12 km SE of Parkfield, California	earthquake	0.13	0.22	0.1	72	reviewed	nc	nc
12/16/2005	22:55:07	36.2258333	-120.2663333	12.739	2.14	md	45	70	0.06667	0.09	nc	nc21499947	2017-01-13T20:44:47.560Z	12 km NE of Coalinga, California	earthquake	0.28	0.51	0.14	40	reviewed	nc	nc
12/14/2005	22:27:58	35.6251667	-120.7473333	6.625	2.03	md	43	29	0.0982	0.09	nc	nc21499616	2017-01-13T20:31:07.000Z	5 km W of Paso Robles, California	earthquake	0.15	0.75	0.24	37	reviewed	nc	nc
12/12/2005	11:27:16	35.9286667	-120.4751667	5.34	2.05	md	48	104	0.03243	0.05	nc	nc21499283	2017-01-13T20:21:42.450Z	5 km NW of Parkfield, California	earthquake	0.15	0.2	0.11	30	reviewed	nc	nc
12/12/2005	11:16:30	35.9286667	-120.4748333	5.36	2.37	md	49	104	0.03243	0.05	nc	nc21499282	2017-01-13T20:21:27.680Z	4 km NW of Parkfield, California	earthquake	0.16	0.19	0.09	46	reviewed	nc	nc
12/9/2005	4:18:58	35.5038333	-120.7763333	3.544	2.33	md	69	42	0.0973	0.12	nc	nc21498744	2017-01-13T20:03:57.020Z	8 km SW of Templeton, California	earthquake	0.15	0.78	0.17	53	reviewed	nc	nc
12/8/2005	14:36:55	35.5955	-120.8941667	6.106	2.21	md	56	50	0.04505	0.07	nc	nc21498649	2017-01-13T20:00:10.240Z	14 km S of Lake Nacimiento, California	earthquake	0.16	0.32	0.21	44	reviewed	nc	nc
12/8/2005	11:42:34	36.0606667	-120.0155	21.484	3.42	ml	142	36	0.2036	0.21	nc	nc21498623	2017-01-13T19:57:47.440Z	7 km NW of Kettleman City, California	earthquake	0.21	0.33		17	reviewed	nc	nc
12/6/2005	8:28:29	35.7923333	-120.3451667	9.523	3.13	ml	56	38	0.01982	0.05	nc	nc21498127	2017-01-13T19:30:26.050Z	14 km SSE of Parkfield, California	earthquake	0.15	0.27		9	reviewed	nc	nc
12/5/2005	11:18:38	35.8831667	-120.4275	5.995	2	md	50	44	0.02162	0.04	nc	nc21497983	2017-01-13T19:19:42.810Z	1 km SSE of Parkfield, California	earthquake	0.14	0.26	0.09	35	reviewed	nc	nc
12/4/2005	23:02:50	35.3651667	-119.392	20.602	2.29	ml	26	112	0.04047	0.29	ci	ci14202124	2016-03-07T20:03:22.345Z	8km ESE of Buttonwillow, CA	earthquake	0.78	1.62	0.189	73	reviewed	ci	ci
12/2/2005	20:06:52	35.8471667	-119.9668333	10.178	2.24	md	33	218	0.1802	0.2	nc	nc21497664	2017-01-13T18:46:30.220Z	17 km S of Kettleman City, California	earthquake	1.65	2.21	0.21	17	reviewed	nc	nc
12/1/2005	16:42:48	35.9228333	-120.4725	5.13	2.36	md	49	46	0.03514	0.05	nc	nc21497519	2017-01-13T18:37:17.620Z	4 km NW of Parkfield, California	earthquake	0.14	0.21	0.1	49	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/1/2005	14:14:45	35.9245	-120.4718333	5.21	2.4	md	55	48	0.03514	0.06	nc	nc21497499	2017-01-13T18:36:19.880Z	4 km NW of Parkfield, California	earthquake	0.14	0.21	0.08	58	reviewed	nc	nc
12/1/2005	5:28:42	35.4786667	-120.784	5.895	2.23	md	57	55	0.08198	0.08	nc	nc21497418	2017-01-13T18:30:57.600Z	10 km W of Atascadero, California	earthquake	0.13	0.55	0.14	36	reviewed	nc	nc
11/28/2005	22:44:00	35.5588333	-120.804	5.442	2.15	md	57	44	0.08739	0.09	nc	nc21497134	2017-01-13T18:12:50.510Z	8 km W of Templeton, California	earthquake	0.16	0.65	0.23	35	reviewed	nc	nc
11/24/2005	8:06:26	36.1088333	-120.103	8.322	2.17	md	52	148	0.04775	0.16	nc	nc21496491	2017-01-13T17:43:50.630Z	10 km S of Huron, California	earthquake	0.48	0.32	0.09	39	reviewed	nc	nc
11/23/2005	15:32:31	35.5216667	-120.8281667	2.992	2.36	md	61	54	0.06486	0.12	nc	nc21496342	2017-01-13T17:38:05.420Z	10 km NNE of Cayucos, California	earthquake	0.15	0.67	0.2	48	reviewed	nc	nc
11/22/2005	3:38:02	36.01	-120.5691667	4.423	2.63	md	65	67	0.02613	0.09	nc	nc21496029	2017-01-13T17:24:15.060Z	17 km NW of Parkfield, California	earthquake	0.15	0.22	0.11	66	reviewed	nc	nc
11/17/2005	18:51:01	36.004	-120.5556667	11.123	2.02	md	51	67	0.01622	0.06	nc	nc21495429	2017-01-13T05:12:35.130Z	16 km NW of Parkfield, California	earthquake	0.2	0.26	0.12	40	reviewed	nc	nc
11/17/2005	13:08:40	35.533	-120.7861667	5.208	2.28	md	53	57	0.0982	0.12	nc	nc21495397	2017-01-13T05:11:22.600Z	7 km WSW of Templeton, California	earthquake	0.2	0.79	0.12	16	reviewed	nc	nc
11/16/2005	4:33:56	35.3471667	-119.8903333	6.884	2.33	ml	23	84	0.08686	0.47	ci	ci14198288	2016-03-07T20:23:34.315Z	10km E of Simmler, CA	earthquake	1.03	3.38	0.141	41	reviewed	ci	ci
11/15/2005	5:18:02	35.5378333	-120.8511667	6.882	2.7	md	74	37	0.04595	0.09	nc	nc21495008	2017-01-13T04:58:21.660Z	11 km NNE of Cayucos, California	earthquake	0.14	0.47	0.1	92	reviewed	nc	nc
11/14/2005	19:31:04	35.0465	-119.0663333	18.399	3.02	ml	52	40	0.07778	0.41	ci	ci14197988	2016-03-07T22:51:46.778Z	17km NW of Grapevine, CA	earthquake	0.45	1.56	0.156	185	reviewed	ci	ci
11/14/2005	2:54:15	35.3898333	-120.8461667	5.917	2.09	md	51	110	0.01982	0.07	nc	nc21494873	2017-01-13T04:52:13.170Z	2 km N of Morro Bay, California	earthquake	0.15	0.22	0.19	26	reviewed	nc	nc
11/11/2005	20:58:05	35.4436667	-120.6941667	0.765	2.06	md	51	41	0.05225	0.08	nc	nc21494683	2017-01-13T04:42:50.990Z	5 km SSW of Atascadero, California	earthquake	0.15	0.9	0.19	23	reviewed	nc	nc
11/8/2005	11:48:07	35.8	-120.339	4.646	2.08	md	50	60	0.02703	0.07	nc	nc21494226	2017-01-13T01:02:11.800Z	13 km SE of Parkfield, California	earthquake	0.14	0.26	0.14	35	reviewed	nc	nc
11/7/2005	20:52:37	35.5103333	-120.769	4.288	2.21	md	56	55	0.1054	0.08	nc	nc21494108	2017-01-13T00:57:31.270Z	7 km SW of Templeton, California	earthquake	0.14	0.7	0.12	19	reviewed	nc	nc
11/6/2005	18:28:36	35.8371667	-119.9516667	10.321	2.91	md	58	114	0.02613	0.18	nc	nc21493898	2017-01-13T00:48:35.700Z	19 km S of Kettleman City, California	earthquake	0.56	0.38	0.08	69	reviewed	nc	nc
11/6/2005	8:34:01	35.5126667	-120.8111667	4.776	2.01	md	53	64	0.07928	0.1	nc	nc21493848	2017-01-13T00:28:36.760Z	10 km WSW of Templeton, California	earthquake	0.17	0.78	0.13	15	reviewed	nc	nc
11/6/2005	3:44:02	35.5948333	-120.8406667	5.656	2.33	md	62	41	0.04775	0.09	nc	nc21493822	2017-01-13T00:26:40.570Z	13 km WNW of Templeton, California	earthquake	0.16	0.38	0.14	60	reviewed	nc	nc
11/3/2005	8:48:59	35.5703333	-120.8365	5.832	2.75	md	65	40	0.06757	0.09	nc	nc21493242	2017-01-13T00:03:13.450Z	12 km W of Templeton, California	earthquake	0.14	0.47	0.11	81	reviewed	nc	nc
10/30/2005	21:52:55	35.078	-119.0626667	10.982	2.63	ml	52	37	0.1093	0.37	ci	ci10150893	2016-03-07T23:33:11.764Z	19km NW of Grapevine, CA	earthquake	0.39	1.31	0.118	90	reviewed	ci	ci
10/30/2005	21:51:45	35.0838333	-119.0733333	11.758	2.74	ml	46	38	0.1151	0.39	ci	ci10150889	2016-03-07T22:50:56.965Z	20km NW of Grapevine, CA	earthquake	0.5	1.08	0.131	167	reviewed	ci	ci
10/30/2005	8:37:13	35.5395	-120.8051667	4.806	2.12	md	56	48	0.08288	0.07	nc	nc21492469	2017-01-12T23:37:11.030Z	9 km W of Templeton, California	earthquake	0.15	0.7	0.19	38	reviewed	nc	nc
10/30/2005	3:46:36	35.5305	-120.8311667	4.35	2.08	md	54	51	0.06216	0.07	nc	nc21492435	2017-01-12T23:35:20.260Z	11 km NNE of Cayucos, California	earthquake	0.15	0.49	0.13	30	reviewed	nc	nc
10/27/2005	15:21:00	35.1126667	-119.052	18.403	2.68	ml	39	39		0.29	ci	ci10150213	2016-03-08T00:56:37.688Z	21km SW of Lamont, CA	earthquake	0.41	1.27	0.135	103	reviewed	ci	ci
10/20/2005	11:14:19	35.5376667	-120.806	5.39	2.04	md	55	49	0.08198	0.06	nc	nc21490519	2017-01-12T22:23:08.000Z	9 km W of Templeton, California	earthquake	0.19	0.75	0.18	27	reviewed	nc	nc
10/20/2005	5:02:15	35.4503333	-120.739	5.275	2.03	md	48	63	0.06306	0.06	nc	nc21490469	2017-01-12T22:19:04.060Z	7 km SW of Atascadero, California	earthquake	0.16	0.59	0.16	13	reviewed	nc	nc
10/19/2005	14:15:47	35.0206667	-119.0218333	11.159	2.19	ml	28	54		0.33	ci	ci10148857	2016-03-08T00:56:30.830Z	12km NW of Grapevine, CA	earthquake	0.56	1.42	0.141	62	reviewed	ci	ci
10/19/2005	9:55:08	35.5741667	-120.8485	6.982	2.33	md	64	39	0.06216	0.07	nc	nc21490312	2017-01-12T22:11:46.060Z	13 km WNW of Templeton, California	earthquake	0.15	0.41	0.16	63	reviewed	nc	nc
10/18/2005	11:10:30	35.5311667	-120.7726667	3.35	2.15	md	42	68	0.1099	0.15	nc	nc21490097	2017-01-12T22:01:54.339Z	6 km WSW of Templeton, California	earthquake	0.23	0.99	0.18	8	reviewed	nc	nc
10/17/2005	6:09:52	35.9236667	-120.4753333	4.904	3.11	md	66	45	0.01622	0.07	nc	nc21489887	2017-01-12T21:50:38.230Z	Central California	earthquake	0.12	0.18	0.09	109	reviewed	nc	nc
10/10/2005	7:31:08	35.362	-120.535	6.975	2.25	md	58	51	0.04685	0.07	nc	nc21488731	2017-01-12T20:37:32.840Z	7 km ESE of Santa Margarita, California	earthquake	0.2	0.44	0.2	47	reviewed	nc	nc
10/7/2005	17:59:18	35.0116667	-119.0066667	9.742	2.16	ml	26	94	0.06684	0.26	ci	ci14190876	2016-03-07T20:21:52.578Z	10km NW of Grapevine, CA	earthquake	0.57	1.5	0.158	68	reviewed	ci	ci
10/6/2005	13:00:05	35.5663333	-120.8826667	4.232	2.06	md	55	50	0.03784	0.13	nc	nc21488097	2017-01-12T19:57:55.420Z	13 km N of Cayucos, California	earthquake	0.18	0.42	0.28	24	reviewed	nc	nc
10/5/2005	10:56:40	36.0598333	-120.0535	8.357	2.1	md	54	165	0.04595	0.12	nc	nc21487838	2017-01-12T18:58:34.490Z	Central California	earthquake	0.3	0.27	0.14	28	reviewed	nc	nc
10/5/2005	10:50:39	36.0553333	-120.0526667	8.887	2.73	md	76	141	0.04685	0.12	nc	nc21487837	2017-01-12T18:58:20.070Z	Central California	earthquake	0.25	0.18	0.08	81	reviewed	nc	nc
10/5/2005	3:14:11	36.0985	-120.2115	8.832	2.84	md	52	80	0.09099	0.07	nc	nc21487799	2017-01-12T18:54:58.980Z	12 km NW of Avenal, California	earthquake	0.16	0.31	0.1	97	reviewed	nc	nc
10/4/2005	11:05:15	35.8721667	-120.4185	5.377	2.34	md	55	38	0.01712	0.05	nc	nc21487591	2017-01-12T18:45:07.940Z	3 km SSE of Parkfield, California	earthquake	0.15	0.24	0.08	54	reviewed	nc	nc
10/4/2005	1:22:02	36.0978333	-120.1238333	25.642	2.27	md	42	137	0.03874	0.12	nc	nc21487521	2017-01-12T18:38:40.520Z	10 km N of Avenal, California	earthquake	0.26	0.37	0.17	33	reviewed	nc	nc
10/1/2005	13:08:37	36.0271667	-120.5886667	4.943	2.26	md	62	97	0.04595	0.06	nc	nc21486877	2017-01-12T17:39:55.930Z	19 km NW of Parkfield, California	earthquake	0.17	0.23	0.12	48	reviewed	nc	nc
10/1/2005	9:49:36	35.5691667	-120.8333333	5.622	3.17	ml	70	40	0.06937	0.07	nc	nc21486845	2017-01-12T17:37:06.470Z	11 km W of Templeton, California	earthquake	0.13	0.45		6	reviewed	nc	nc
9/30/2005	16:09:54	35.8953333	-120.4396667	10.514	2.26	md	58	51	0.03423	0.07	nc	nc21486679	2017-01-12T17:29:25.570Z	0 km SW of Parkfield, California	earthquake	0.15	0.26	0.12	59	reviewed	nc	nc
9/30/2005	9:52:42	35.5575	-120.8011667	4.262	2.12	md	55	43	0.08919	0.07	nc	nc21486661	2017-01-12T17:27:58.550Z	8 km W of Templeton, California	earthquake	0.15	0.56	0.29	37	reviewed	nc	nc
9/30/2005	6:36:22	35.5558333	-120.8035	4.872	2.07	md	58	45	0.08739	0.08	nc	nc21486653	2017-01-12T17:26:48.370Z	8 km W of Templeton, California	earthquake	0.14	0.54	0.32	39	reviewed	nc	nc
9/29/2005	23:13:45	35.0413333	-119.0305	9.859	2.83	ml	42	39	0.07917	0.37	ci	ci14188876	2016-03-07T23:53:26.225Z	14km NW of Grapevine, CA	earthquake	0.43	1.56	0.18	130	reviewed	ci	ci
9/29/2005	16:47:04	35.0276667	-119.0175	9.685	2.03	ml	27	95	0.07255	0.29	ci	ci14188792	2016-03-08T00:34:47.732Z	12km NW of Grapevine, CA	earthquake	0.52	1.84	0.162	58	reviewed	ci	ci
9/28/2005	18:27:43	35.573	-120.8408333	5.146	2.1	md	45	55	0.06667	0.1	nc	nc21486124	2017-01-12T17:12:58.370Z	12 km WNW of Templeton, California	earthquake	0.17	0.41	0.15	13	reviewed	nc	nc
9/27/2005	11:59:54	35.0368333	-119.0166667	10.343	2.06	ml	34	97	0.08052	0.29	ci	ci14188400	2016-03-07T20:20:59.313Z	13km NW of Grapevine, CA	earthquake	0.44	1.47	0.173	66	reviewed	ci	ci
9/27/2005	0:20:00	35.0503333	-118.9798333	7.625	2.62	ml	38	88	0.1096	0.3	ci	ci14187964	2016-03-08T00:34:42.420Z	13km NNW of Grapevine, CA	earthquake	0.46	2.74	0.142	93	reviewed	ci	ci
9/25/2005	8:06:19	35.2591667	-120.8141667	7.1	2.43	md	66	66	0.04505	0.09	nc	nc21485485	2017-01-12T05:04:14.760Z	5 km SSE of Los Osos, California	earthquake	0.15	0.28	0.1	57	reviewed	nc	nc
9/24/2005	23:53:43	35.0368333	-119.0098333	12.225	2.51	ml	30	56		0.36	ci	ci14187360	2016-03-07T21:04:33.560Z	13km NW of Grapevine, CA	earthquake	0.67	1.4	0.172	101	reviewed	ci	ci
9/24/2005	14:11:54	35.0348333	-119.0291667	11.295	2.49	ml	33	63		0.34	ci	ci14187236	2016-03-07T19:59:19.887Z	14km NW of Grapevine, CA	earthquake	0.56	1.23	0.178	96	reviewed	ci	ci
9/24/2005	6:58:32	35.0281667	-119.0305	12.372	2	ml	23	88	0.06733	0.23	ci	ci14187168	2016-03-08T00:55:08.670Z	13km NW of Grapevine, CA	earthquake	0.5	1.22	0.151	53	reviewed	ci	ci
9/24/2005	3:52:20	35.0473333	-119.0176667	9.625	2.03	ml	23	97	0.08916	0.3	ci	ci14187124	2016-03-07T22:49:07.366Z	14km NW of Grapevine, CA	earthquake	0.59	2.32	0.136	56	reviewed	ci	ci
9/23/2005	14:04:30	34.9848333	-119.0283333	19.925	2.12	ml	25	63	0.03712	0.23	ci	ci14186984	2016-03-07T23:52:55.070Z	10km WNW of Grapevine, CA	earthquake	0.4	1.19	0.136	65	reviewed	ci	ci
9/23/2005	11:08:50	35.0368333	-119.0146667	13.075	2.27	ml	32	46		0.26	ci	ci14186944	2016-03-07T22:09:15.548Z	13km NW of Grapevine, CA	earthquake	0.42	0.77	0.182	77	reviewed	ci	ci
9/23/2005	10:47:15	35.033	-119.0246667	11.425	2.02	ml	32	31		0.33	ci	ci14186940	2016-03-08T00:14:07.728Z	13km NW of Grapevine, CA	earthquake	0.62	1.18	0.142	49	reviewed	ci	ci
9/23/2005	10:21:27	35.04	-119.035	10.172	3.69	ml	65	32		0.44	ci	ci14186928	2016-03-07T21:04:28.926Z	14km NW of Grapevine, CA	earthquake	0.43	1.35	0.163	379	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/23/2005	4:13:48	35.0428333	-119.0148333	9.735	2.03	ml	35	88	0.08641	0.34	ci	ci14186860	2016-03-07T21:26:37.024Z	14km NW of Grapevine, CA	earthquake	0.49	1.8	0.16	53	reviewed	ci	ci
9/23/2005	4:06:36	35.0428333	-119.0205	10.408	2.45	ml	40	44		0.35	ci	ci14186852	2016-03-07T23:09:45.448Z	14km NW of Grapevine, CA	earthquake	0.48	1.34	0.154	98	reviewed	ci	ci
9/23/2005	0:09:32	35.0443333	-119.0206667	11.322	3.78	ml	81	25		0.38	ci	ci14186800	2016-03-07T22:09:09.586Z	14km NW of Grapevine, CA	earthquake	0.38	0.73	0.171	383	reviewed	ci	ci
9/22/2005	23:52:56	35.0443333	-119.0193333	10.142	3.23	ml	53	70	0.08588	0.43	ci	ci14186796	2016-03-07T22:49:03.123Z	14km NW of Grapevine, CA	earthquake	0.54	1.69	0.147	338	reviewed	ci	ci
9/22/2005	23:22:26	35.0411667	-119.0136667	9.185	2.02	ml	38	88	0.08549	0.4	ci	ci14186784	2016-03-07T22:28:45.055Z	13km NW of Grapevine, CA	earthquake	0.58	2.07	0.141	55	reviewed	ci	ci
9/22/2005	23:05:19	35.0328333	-118.9915	10.845	2.56	ml	42	69		0.35	ci	ci14186768	2016-03-07T21:04:26.613Z	11km NNW of Grapevine, CA	earthquake	0.49	1.4	0.241	106	reviewed	ci	ci
9/22/2005	20:58:13	35.0358333	-119.0068333	11.185	2.92	ml	52	29		0.37	ci	ci14186672	2016-03-07T22:28:43.727Z	12km NW of Grapevine, CA	earthquake	0.42	1.17	0.143	174	reviewed	ci	ci
9/22/2005	20:45:47	35.0273333	-119.002	12.755	2.34	ml	34	68	0.08039	0.3	ci	ci14186660	2016-03-07T23:09:37.562Z	11km NW of Grapevine, CA	earthquake	0.55	0.96	0.154	81	reviewed	ci	ci
9/22/2005	20:38:21	35.033	-119.0085	12.355	3	ml	25	54		0.32	ci	ci14186644	2016-03-08T00:55:00.738Z	12km NW of Grapevine, CA	earthquake	0.69	1.46	0.105	168	reviewed	ci	ci
9/22/2005	20:37:49	35.0353333	-119.0008333	10.055	3.28	ml	46	31		0.36	ci	ci14186640	2016-03-07T21:04:22.380Z	12km NNW of Grapevine, CA	earthquake	0.42	1.71	0.15	325	reviewed	ci	ci
9/22/2005	20:34:15	35.029	-119.0133333	11.556	2.14	ml	12	120	0.07565	0.24	ci	ci12217967	2016-03-08T00:54:59.067Z	12km NW of Grapevine, CA	earthquake	0.91	1.71	0.104	14	reviewed	ci	ci
9/22/2005	20:31:29	35.0281667	-119.0061667	9.095	2.89	ml	23	63	0.07871	0.35	ci	ci12217995	2016-03-07T21:04:20.422Z	12km NW of Grapevine, CA	earthquake	0.64	2.62	0.082	18	reviewed	ci	ci
9/22/2005	20:30:52	35.0448333	-119.007	10.185	4.18	ml	60	31		0.4	ci	ci14186628	2020-06-27T05:13:44.840Z	13km NNW of Grapevine, CA	earthquake	0.42	1.04	0.131	10	reviewed	ci	ci
9/22/2005	20:29:47	35.0385	-119.019	10.352	3.36	ml	31	51	0.08094	0.36	ci	ci14186624	2016-03-07T20:20:20.745Z	13km NW of Grapevine, CA	earthquake	0.67	1.51	0.171	64	reviewed	ci	ci
9/22/2005	20:26:20	35.0108333	-119.014	11.275	2	mh	12	91	0.06178	0.33	ci	ci12217971	2016-03-07T23:52:50.313Z	11km NW of Grapevine, CA	earthquake	1.2	2.71		0	reviewed	ci	ci
9/22/2005	20:25:52	34.9458333	-119.0016667	-0.811	2.5	mh	8	135	0.05977	0.21	ci	ci12217963	2016-03-07T23:52:49.073Z	6km W of Grapevine, CA	earthquake	0.99	2.82		0	reviewed	ci	ci
9/22/2005	20:24:48	35.0433333	-119.0143333	10.005	4.69	mw	107	18		0.41	ci	ci14186612	2020-05-02T01:31:54.868Z	14km NW of Grapevine, CA	earthquake	0.31	0.71	0.232	0	reviewed	ci	ci
9/22/2005	20:24:04	35.0338333	-119.0096667	10.145	4.47	ml	62	39		0.42	ci	ci14186608	2020-06-27T05:12:50.088Z	12km NW of Grapevine, CA	earthquake	0.42	1.14	0.433	310	reviewed	ci	ci
9/22/2005	13:42:53	35.5225	-120.8275	5.952	2.27	md	61	54	0.06577	0.07	nc	nc21484880	2017-01-12T04:52:38.800Z	10 km NNE of Cayucos, California	earthquake	0.15	0.55	0.21	55	reviewed	nc	nc
9/20/2005	15:40:13	35.4701667	-120.7803333	2.475	2.53	md	71	60	0.08378	0.11	nc	nc21484426	2017-01-12T04:29:13.140Z	10 km WSW of Atascadero, California	earthquake	0.13	0.65	0.14	65	reviewed	nc	nc
9/17/2005	2:46:41	35.522	-120.8131667	5.146	2.07	md	53	54	0.07748	0.06	nc	nc21483834	2017-01-12T01:07:17.690Z	10 km WSW of Templeton, California	earthquake	0.17	0.81	0.2	33	reviewed	nc	nc
9/12/2005	18:53:05	35.2105	-120.4801667	5.419	2.12	md	39	105	0.04955	0.12	nc	nc21483003	2017-01-12T00:29:56.850Z	12 km E of Edna, California	earthquake	0.21	0.49	0.32	16	reviewed	nc	nc
9/11/2005	3:25:47	35.5248333	-120.8378333	8.202	2.09	md	52	55	0.05676	0.07	nc	nc21482685	2017-01-12T00:11:32.530Z	10 km NNE of Cayucos, California	earthquake	0.18	0.68	0.12	20	reviewed	nc	nc
9/9/2005	21:51:51	35.576	-120.784	3.806	2.13	md	57	31	0.09189	0.12	nc	nc21482459	2017-01-11T23:59:27.420Z	7 km WNW of Templeton, California	earthquake	0.15	0.56	0.22	26	reviewed	nc	nc
9/7/2005	14:45:57	35.8573333	-119.9288333	4.008	2.39	md	53	106	0.02342	0.31	nc	nc21482024	2017-01-11T23:40:54.450Z	17 km S of Kettleman City, California	earthquake	0.83	0.24	0.14	36	reviewed	nc	nc
9/7/2005	12:20:25	35.855	-119.9533333	4.388	2.94	md	76	155	0.008108	0.24	nc	nc21482008	2017-01-11T23:39:56.880Z	17 km S of Kettleman City, California	earthquake	0.43	0.31	0.09	68	reviewed	nc	nc
9/6/2005	7:36:44	35.9363333	-120.4856667	5.307	2.35	md	65	37	0.02162	0.05	nc	nc21481789	2017-01-11T23:33:10.870Z	6 km NW of Parkfield, California	earthquake	0.12	0.14	0.05	61	reviewed	nc	nc
9/6/2005	6:37:45	35.5233333	-120.8316667	3.94	2.14	md	57	54	0.06216	0.1	nc	nc21481784	2017-01-11T23:32:56.540Z	10 km NNE of Cayucos, California	earthquake	0.15	0.66	0.23	32	reviewed	nc	nc
9/5/2005	23:52:58	35.9755	-119.863	0.296	2.05	md	8	306	0.136	0.03	nc	nc30229413	2017-01-11T23:31:12.808Z	9 km ESE of Kettleman City, California	earthquake	3.47	5.61	0.2	2	reviewed	nc	nc
9/4/2005	19:49:34	35.8871667	-119.897	3.101	2.02	md	13	270	0.05405	0.04	nc	nc21481559	2017-01-11T23:26:14.214Z	14 km SSE of Kettleman City, California	earthquake	0.95	0.31	0.06	3	reviewed	nc	nc
9/4/2005	7:51:52	35.5848333	-120.8306667	5.661	2.48	md	69	39	0.06396	0.09	nc	nc21481481	2017-01-11T23:23:26.880Z	11 km WNW of Templeton, California	earthquake	0.14	0.56	0.1	74	reviewed	nc	nc
9/3/2005	19:59:55	35.8516667	-119.935	5.138	2.68	md	55	199	0.02072	0.26	nc	nc21481407	2017-01-11T23:21:20.170Z	17 km S of Kettleman City, California	earthquake	0.53	0.55	0.13	47	reviewed	nc	nc
9/1/2005	20:41:45	35.5333333	-120.8356667	5.2	2.07	md	44	58	0.05766	0.09	nc	nc21481067	2017-01-11T23:09:24.980Z	11 km NNE of Cayucos, California	earthquake	0.19	0.63	0.2	16	reviewed	nc	nc
8/31/2005	19:19:33	35.4785	-119.3478333	5.469	2.05	ml	22	127	0.2396	0.59	ci	ci14178084	2016-03-07T23:49:52.128Z	7km WSW of Shafter, CA	earthquake	1.21	31.61	0.211	23	reviewed	ci	ci
8/31/2005	4:22:31	35.8936667	-120.4363333	10.976	2.28	md	61	43	0.03063	0.06	nc	nc21480723	2017-01-11T22:55:54.250Z	0 km SSW of Parkfield, California	earthquake	0.14	0.26	0.11	53	reviewed	nc	nc
8/31/2005	3:53:05	35.5783333	-120.8276667	5.476	2.1	md	63	37	0.06667	0.11	nc	nc21480715	2017-01-11T22:55:36.110Z	11 km WNW of Templeton, California	earthquake	0.14	0.37	0.19	47	reviewed	nc	nc
8/30/2005	10:42:32	35.8536667	-120.3966667	4.625	3	md	61	40	0.01802	0.05	nc	nc21480557	2017-01-11T21:50:57.990Z	6 km SSE of Parkfield, California	earthquake	0.13	0.21	0.1	96	reviewed	nc	nc
8/30/2005	4:42:44	35.5198333	-120.8018333	2.128	2.07	md	52	60	0.08649	0.13	nc	nc21480515	2017-01-11T21:47:47.210Z	9 km WSW of Templeton, California	earthquake	0.15	0.89	0.12	13	reviewed	nc	nc
8/30/2005	3:42:42	35.9578333	-120.5106667	8.534	2.15	md	58	57	0.00991	0.06	nc	nc21480509	2017-01-11T21:47:28.080Z	9 km NW of Parkfield, California	earthquake	0.15	0.17	0.08	46	reviewed	nc	nc
8/29/2005	18:54:11	35.4515	-120.862	-0.332	2.25	md	57	92	0.01802	0.18	nc	nc21480397	2017-01-11T21:41:52.360Z	2 km ENE of Cayucos, California	earthquake	0.19	0.54	0.18	18	reviewed	nc	nc
8/29/2005	16:02:50	35.5371667	-120.8548333	8.602	2.31	md	67	38	0.04234	0.08	nc	nc21480370	2017-01-11T21:40:28.170Z	11 km NNE of Cayucos, California	earthquake	0.14	0.51	0.21	58	reviewed	nc	nc
8/28/2005	18:43:53	35.5558333	-120.7911667	2.298	2.08	md	49	63	0.0973	0.09	nc	nc21480211	2017-01-11T21:28:56.180Z	7 km W of Templeton, California	earthquake	0.18	1.05	0.09	12	reviewed	nc	nc
8/28/2005	7:58:06	35.9095	-120.4593333	4.967	2.04	md	9	165	0.03784	0.08	nc	nc70026748	2017-01-11T21:23:41.693Z	2 km WNW of Parkfield, California	earthquake	0.58	1.73		1	reviewed	nc	nc
8/27/2005	13:20:29	35.573	-120.7691667	4.711	2.08	md	27	78	0.1045	0.13	nc	nc21480010	2017-01-11T21:16:13.862Z	6 km WNW of Templeton, California	earthquake	0.28	1.24	0.12	6	reviewed	nc	nc
8/25/2005	1:06:49	35.9056667	-120.4496667	5.904	3.02	ml	70	40	0.03153	0.06	nc	nc21479473	2017-01-11T20:45:47.660Z	1 km WNW of Parkfield, California	earthquake	0.12	0.18		8	reviewed	nc	nc
8/24/2005	6:21:28	35.5328333	-120.8211667	3.2	2.09	md	56	50	0.07027	0.1	nc	nc21479321	2017-01-11T20:29:29.330Z	10 km W of Templeton, California	earthquake	0.15	0.74	0.21	17	reviewed	nc	nc
8/23/2005	16:57:27	35.6355	-120.753	6.828	2.03	md	61	30	0.09279	0.08	nc	nc21479196	2017-01-11T20:17:31.800Z	5 km W of Paso Robles, California	earthquake	0.13	0.62	0.28	26	reviewed	nc	nc
8/21/2005	17:34:28	36.0516667	-120.6183333	3.656	2.31	md	60	148	0.07207	0.08	nc	nc21478758	2017-01-11T19:47:01.090Z	23 km NW of Parkfield, California	earthquake	0.23	0.35	0.14	34	reviewed	nc	nc
8/20/2005	14:34:43	35.5571667	-120.7901667	3.409	2.35	md	33	98	0.0982	0.15	nc	nc30507021	2017-01-11T19:33:51.689Z	7 km W of Templeton, California	earthquake	0.27	1.12	0.19	20	reviewed	nc	nc
8/20/2005	14:33:49	35.5565	-120.8023333	4.912	2.07	md	58	44	0.08829	0.07	nc	nc21478532	2017-01-11T19:33:44.910Z	Central California	earthquake	0.15	0.55	0.25	37	reviewed	nc	nc
8/20/2005	7:13:09	35.586	-120.8673333	6.386	2.31	md	70	30	0.05045	0.11	nc	nc21478452	2017-01-11T19:29:44.090Z	15 km WNW of Templeton, California	earthquake	0.14	0.32	0.11	66	reviewed	nc	nc
8/20/2005	3:17:33	36.0935	-120.142	10.198	2.02	md	24	267	0.227	0.08	nc	nc21478405	2017-01-11T19:27:40.580Z	9 km N of Avenal, California	earthquake	1.34	1.23		1	reviewed	nc	nc
8/20/2005	2:21:24	34.9606667	-119.1636667	9.563	2.57	ml	39	57	0.1228	0.33	ci	ci14174964	2016-03-07T20:16:48.585Z	13km N of Pine Mountain Club, CA	earthquake	0.47	1.42	0.169	76	reviewed	ci	ci
8/19/2005	13:20:22	35.5756667	-120.8391667	5.451	2.12	md	58	39	0.06937	0.07	nc	nc21478228	2017-01-11T19:20:02.930Z	12 km WNW of Templeton, California	earthquake	0.17	0.49	0.21	36	reviewed	nc	nc
8/17/2005	15:29:28	35.7765	-120.3273333	8.218	2.43	md	60	35	0.01081	0.06	nc	nc21477776	2017-01-11T18:57:13.000Z	14 km NNE of Shandon, California	earthquake	0.13	0.24	0.07	61	reviewed	nc	nc
8/16/2005	0:05:56	35.5591667	-120.8501667	4.801	2.03	md	43	54	0.05315	0.1	nc	nc21477393	2017-01-11T18:36:27.594Z	13 km W of Templeton, California	earthquake	0.18	0.46	0.15	13	reviewed	nc	nc
8/15/2005	23:08:45	35.5605	-120.8565	5.942	3.13	ml	74	41	0.04865	0.09	nc	nc21477382	2017-01-11T17:49:11.510Z	13 km NNE of Cayucos, CA	earthquake	0.14	0.44		7	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
8/14/2005	9:32:09	35.5016667	-120.8096667	4.768	2.14	md	51	39	0.07297	0.1	nc	nc21476950	2017-01-11T17:19:17.120Z	9 km NE of Cayucos, California	earthquake	0.17	0.68	0.17	21	reviewed	nc	nc
8/14/2005	8:55:53	35.5681667	-120.8395	6.962	2.07	md	58	47	0.06486	0.09	nc	nc21476946	2017-01-11T17:18:42.050Z	12 km W of Templeton, California	earthquake	0.15	0.52	0.23	42	reviewed	nc	nc
8/13/2005	9:19:43	35.9401667	-120.4861667	10.587	2	md	54	61	0.01802	0.06	nc	nc21476767	2017-01-11T17:04:58.090Z	6 km NW of Parkfield, California	earthquake	0.21	0.18	0.12	42	reviewed	nc	nc
8/13/2005	8:47:01	35.4731667	-120.7796667	4.415	2.07	md	52	58	0.08468	0.07	nc	nc21476759	2017-01-11T17:04:39.840Z	10 km W of Atascadero, California	earthquake	0.14	0.59	0.17	18	reviewed	nc	nc
8/13/2005	3:24:59	35.8656667	-120.4128333	5.505	2	md	54	48	0.01802	0.05	nc	nc21476722	2017-01-11T17:00:34.240Z	4 km SSE of Parkfield, California	earthquake	0.15	0.23	0.11	35	reviewed	nc	nc
8/10/2005	21:02:51	35.5768333	-120.7965	3.866	3.09	md	74	39	0.08378	0.09	nc	nc21476149	2017-01-11T16:30:47.960Z	8 km WNW of Templeton, California	earthquake	0.13	0.51	0.08	105	reviewed	nc	nc
8/10/2005	14:35:22	35.5571667	-120.8016667	4.242	2.17	md	52	43	0.08919	0.09	nc	nc21476060	2017-01-11T16:28:09.140Z	8 km W of Templeton, California	earthquake	0.15	0.61	0.2	25	reviewed	nc	nc
8/10/2005	0:27:50	35.575	-120.8608333	5.236	2.48	md	68	41	0.05586	0.09	nc	nc21475828	2017-01-11T16:19:22.940Z	14 km WNW of Templeton, California	earthquake	0.13	0.36	0.11	69	reviewed	nc	nc
8/8/2005	12:35:10	35.4953333	-120.8145	7.058	2.01	md	52	42	0.06577	0.06	nc	nc21475370	2017-01-11T16:02:16.250Z	9 km NE of Cayucos, California	earthquake	0.15	0.53	0.19	26	reviewed	nc	nc
8/6/2005	13:57:27	35.6128333	-120.746	6.566	2.07	md	60	42	0.1027	0.08	nc	nc21474880	2017-01-11T15:40:26.020Z	Central California	earthquake	0.14	0.73	0.1	49	reviewed	nc	nc
8/6/2005	0:55:32	35.941	-120.4926667	6.869	2.12	md	8	149	0.01622	0.02	nc	nc21474759	2017-01-11T15:35:38.116Z	7 km NW of Parkfield, California	earthquake	0.6	1.86		1	reviewed	nc	nc
8/2/2005	8:34:42	35.8595	-119.916	4.218	2.06	md	44	211	0.03333	0.22	nc	nc21473895	2017-01-11T15:05:20.710Z	17 km SSE of Kettleman City, California	earthquake	1.17	0.3	0.15	10	reviewed	nc	nc
7/31/2005	11:34:12	35.8805	-120.4291667	9.766	2.08	md	55	43	0.02252	0.04	nc	nc21473477	2017-01-11T14:52:18.940Z	2 km S of Parkfield, California	earthquake	0.16	0.24	0.11	46	reviewed	nc	nc
7/31/2005	11:03:56	36.0673333	-120.6266667	2.536	2.01	md	36	129	0.02523	0.06	nc	nc21473473	2017-01-11T14:52:08.340Z	25 km WSW of Coalinga, California	earthquake	0.25	0.46	0.17	20	reviewed	nc	nc
7/30/2005	23:10:46	35.5601667	-120.8573333	5.226	2.08	md	40	49	0.04775	0.11	nc	nc21473385	2017-01-11T14:48:47.220Z	13 km NNE of Cayucos, California	earthquake	0.18	0.64	0.21	17	reviewed	nc	nc
7/30/2005	2:51:57	35.5116667	-120.7768333	4.258	2.55	md	64	54	0.1009	0.07	nc	nc21473130	2017-01-11T14:42:51.160Z	7 km WSW of Templeton, California	earthquake	0.15	0.7	0.11	69	reviewed	nc	nc
7/30/2005	1:58:20	35.571	-120.79	4.241	2.05	md	47	33	0.09369	0.1	nc	nc21473120	2017-01-11T14:42:18.380Z	7 km WNW of Templeton, California	earthquake	0.18	0.78	0.25	28	reviewed	nc	nc
7/29/2005	18:31:12	36.107	-120.2118333	8.745	3.02	md	17	229	0.09459	0.04	nc	nc21473035	2017-01-11T14:39:52.267Z	13 km NNW of Avenal, California	earthquake	0.63	1.11		1	reviewed	nc	nc
7/29/2005	14:47:33	36.0998333	-120.2096667	8.812	3.1	md	54	81	0.09009	0.06	nc	nc21473003	2017-01-11T14:38:30.990Z	12 km NW of Avenal, California	earthquake	0.16	0.36	0.09	118	reviewed	nc	nc
7/27/2005	4:44:08	36.0076667	-120.5655	4.343	2.64	md	72	55	0.02342	0.06	nc	nc21472422	2017-01-11T14:18:44.270Z	16 km NW of Parkfield, California	earthquake	0.14	0.19	0.1	78	reviewed	nc	nc
7/26/2005	0:40:24	35.856	-120.3991667	4.615	2.18	md	49	56	0.01982	0.06	nc	nc21472087	2017-01-11T14:10:55.250Z	5 km SSE of Parkfield, California	earthquake	0.16	0.28	0.12	35	reviewed	nc	nc
7/23/2005	16:01:02	35.5305	-120.786	4.948	2.05	md	51	58	0.0982	0.13	nc	nc21471416	2017-01-11T13:53:25.450Z	7 km WSW of Templeton, California	earthquake	0.2	0.91	0.19	12	reviewed	nc	nc
7/22/2005	17:12:51	35.4496667	-120.8646667	-0.312	2.14	md	55	93	0.01622	0.11	nc	nc21471221	2017-01-11T13:47:35.830Z	2 km ENE of Cayucos, California	earthquake	0.15	0.5	0.26	16	reviewed	nc	nc
7/22/2005	3:44:58	36.0973333	-120.168	5.952	2.02	md	36	162	0.05946	0.08	nc	nc21471044	2017-01-11T13:43:32.950Z	10 km NNW of Avenal, California	earthquake	0.51	0.47	0.1	23	reviewed	nc	nc
7/18/2005	23:48:55	36.0713333	-120.6498333	1.424	2.76	md	78	38	0.04324	0.14	nc	nc21470023	2017-01-11T13:21:09.160Z	23 km ENE of San Ardo, California	earthquake	0.18	1	0.11	82	reviewed	nc	nc
7/17/2005	7:10:57	35.898	-120.4413333	5.844	2.62	md	61	45	0.03604	0.07	nc	nc21469667	2017-01-11T13:10:21.750Z	0 km WSW of Parkfield, California	earthquake	0.14	0.21	0.1	63	reviewed	nc	nc
7/16/2005	3:33:13	35.9845	-120.5426667	1.663	2.09	md	50	40	0.01261	0.08	nc	nc21469419	2017-01-11T13:02:44.300Z	13 km NW of Parkfield, California	earthquake	0.16	0.33	0.13	24	reviewed	nc	nc
7/15/2005	15:35:31	35.5345	-119.4428333	27.778	2.84	ml	35	70	0.2125	0.31	ci	ci14163096	2016-03-08T00:29:26.734Z	11km SW of Wasco, CA	earthquake	0.55	0.74	0.206	76	reviewed	ci	ci
7/15/2005	0:59:14	36.0366667	-120.597	4.298	2.07	md	48	44	0.03243	0.07	nc	nc21469136	2017-01-11T12:56:03.920Z	21 km NW of Parkfield, California	earthquake	0.2	0.3	0.16	31	reviewed	nc	nc
7/14/2005	14:02:22	35.581	-120.811	2.966	2.06	md	54	35	0.07297	0.08	nc	nc21469013	2017-01-11T12:52:27.230Z	10 km WNW of Templeton, California	earthquake	0.15	0.66	0.19	33	reviewed	nc	nc
7/13/2005	23:56:15	35.8818333	-120.4283333	5.806	2.9	md	64	43	0.02162	0.06	nc	nc21468908	2017-01-11T12:48:21.420Z	2 km S of Parkfield, California	earthquake	0.13	0.2	0.09	75	reviewed	nc	nc
7/11/2005	12:13:07	35.9081667	-119.7228333	21.33	2.45	md	52	44	0.1955	0.19	nc	nc21468442	2017-01-11T12:30:53.420Z	21 km W of Alpaugh, California	earthquake	0.4	0.45	0.23	31	reviewed	nc	nc
7/10/2005	19:04:38	35.5783333	-120.7981667	3.041	2.02	md	47	55	0.08378	0.08	nc	nc21468320	2017-01-11T12:25:44.420Z	8 km WNW of Templeton, California	earthquake	0.19	0.86	0.16	11	reviewed	nc	nc
7/10/2005	17:59:13	35.5866667	-120.839	4.891	2.01	md	53	50	0.05856	0.09	nc	nc21468308	2017-01-11T12:25:07.430Z	12 km WNW of Templeton, California	earthquake	0.17	0.63	0.23	21	reviewed	nc	nc
7/9/2005	17:09:34	36.382	-119.9803333	20.308	2.3	md	35	167	0.1577	0.15	nc	nc21468122	2017-01-11T12:17:52.650Z	6 km SW of Lanare, California	earthquake	0.89	0.35	0.18	9	reviewed	nc	nc
7/9/2005	4:50:07	35.559	-120.7905	3.434	2.03	md	43	32	0.0982	0.11	nc	nc21468046	2017-01-11T12:13:07.070Z	7 km W of Templeton, California	earthquake	0.18	0.87	0.21	22	reviewed	nc	nc
7/8/2005	12:35:34	34.9538333	-119.1798333	15.272	2.28	ml	26	59	0.09222	0.32	ci	ci14161284	2016-03-08T00:07:58.589Z	12km NNW of Pine Mountain Club, CA	earthquake	0.59	1.34	0.293	38	reviewed	ci	ci
7/6/2005	17:14:59	35.9738333	-120.5285	4.332	2.78	md	65	44	0.01351	0.07	nc	nc21467542	2017-01-11T11:51:36.640Z	11 km NW of Parkfield, California	earthquake	0.13	0.16	0.09	65	reviewed	nc	nc
7/6/2005	4:33:44	35.5106667	-120.8155	5.05	2.25	md	60	57	0.07477	0.07	nc	nc21467479	2017-01-11T11:48:14.860Z	10 km NE of Cayucos, California	earthquake	0.15	0.67	0.16	50	reviewed	nc	nc
7/3/2005	6:18:19	36.086	-120.1501667	14.322	3.09	md	64	81	0.04144	0.11	nc	nc21467000	2017-01-11T11:24:57.540Z	9 km NNW of Avenal, California	earthquake	0.19	0.36	0.07	101	reviewed	nc	nc
7/1/2005	12:28:03	34.8575	-119.2251667	11.947	2.68	ml	39	44	0.00903	0.37	ci	ci14159576	2016-03-07T23:03:13.075Z	7km W of Pine Mountain Club, CA	earthquake	0.55	1.01	0.267	92	reviewed	ci	ci
6/29/2005	17:20:31	35.9858333	-120.4551667	23.157	3.93	md	11	127	0.04414	0.22	nc	nc21466200	2017-01-11T10:55:27.985Z	9 km NNW of Parkfield, California	earthquake	2.9	10.34		1	reviewed	nc	nc
6/29/2005	6:01:05	36.0865	-120.1505	18.112	2.55	md	48	126	0.04144	0.07	nc	nc21466122	2017-01-11T10:53:31.720Z	9 km NNW of Avenal, California	earthquake	0.27	0.4	0.13	70	reviewed	nc	nc
6/29/2005	5:36:51	36.0816667	-120.1531667	13.486	2	md	56	102	0.04054	0.1	nc	nc21466115	2017-01-11T10:53:12.320Z	8 km NNW of Avenal, California	earthquake	0.24	0.36	0.16	19	reviewed	nc	nc
6/28/2005	15:34:11	36.0291667	-120.5841667	4.608	2.82	md	66	42	0.04054	0.05	nc	nc21465994	2017-01-11T10:50:05.150Z	19 km NW of Parkfield, California	earthquake	0.13	0.19	0.11	89	reviewed	nc	nc
6/28/2005	9:46:45	36.0755	-120.2235	10.352	2.03	md	46	65	0.09369	0.05	nc	nc21465942	2017-01-11T10:49:00.880Z	11 km NW of Avenal, California	earthquake	0.16	0.33	0.13	34	reviewed	nc	nc
6/27/2005	15:42:35	35.5353333	-120.8331667	5.12	2.06	md	56	49	0.06036	0.07	nc	nc21465800	2017-01-11T10:45:25.380Z	11 km NNE of Cayucos, California	earthquake	0.15	0.54	0.2	25	reviewed	nc	nc
6/27/2005	2:44:02	35.5541667	-120.8033333	4.57	2.09	md	60	44	0.08649	0.09	nc	nc21465708	2017-01-11T10:42:31.690Z	Central California	earthquake	0.14	0.63	0.21	40	reviewed	nc	nc
6/21/2005	1:46:32	36.2536667	-119.4741667	1.651	2.16	md	9	190	0.3153	0.1	nc	nc21464313	2017-01-11T10:04:27.817Z	Central California	earthquake	1.03	6.95	0.21	2	reviewed	nc	nc
6/20/2005	15:30:28	35.548	-120.798	4.12	2.32	md	57	46	0.09009	0.08	nc	nc21464154	2017-01-11T10:02:13.680Z	Central California	earthquake	0.15	0.58	0.12	56	reviewed	nc	nc
6/19/2005	20:40:12	36.3356667	-120.227	7.89	2.04	md	46	108	0.0973	0.19	nc	nc21463993	2017-01-11T09:56:17.230Z	18 km NW of Huron, California	earthquake	0.37	0.62	0.15	15	reviewed	nc	nc
6/19/2005	6:28:30	36.0856667	-120.1585	13.616	2.04	md	53	75	0.04685	0.07	nc	nc21463906	2017-01-11T09:51:49.610Z	9 km NNW of Avenal, California	earthquake	0.2	0.33	0.08	32	reviewed	nc	nc
6/19/2005	1:31:09	35.545	-120.7858333	3.258	2.66	md	69	46	0.0991	0.09	nc	nc21463857	2017-01-11T09:49:53.780Z	7 km W of Templeton, California	earthquake	0.14	0.77	0.09	88	reviewed	nc	nc
6/17/2005	12:43:34	35.2901667	-119.5915	24.42	2.29	ml	27	100	0.1192	0.31	ci	ci14155964	2016-03-07T20:34:32.477Z	16km SW of Buttonwillow, CA	earthquake	0.57	1.6	0.305	28	reviewed	ci	ci
6/16/2005	11:37:51	36.0828333	-120.1478333	15.517	3.54	ml	72	133	0.03784	0.13	nc	nc21462938	2017-03-17T18:42:15.779Z	8 km N of Avenal, California	earthquake	0.27	0.31		16	reviewed	nc	nc
6/14/2005	14:34:32	36.2346667	-120.3493333	7.918	2.01	md	31	110	0.1027	0.13	nc	nc21462291	2017-01-11T09:16:46.600Z	10 km N of Coalinga, California	earthquake	0.51	0.61	0.12	10	reviewed	nc	nc
6/14/2005	5:22:06	34.9875	-119.1805	15.688	2.51	ml	43	46	0.0935	0.44	ci	ci14153956	2016-03-07T19:50:20.750Z	16km N of Pine Mountain Club, CA	earthquake	0.57	1.76	0.232	45	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/13/2005	12:03:35	35.9991667	-120.4873333	11.802	2.03	md	6	112	0.1324	0.02	nc	nc70016970	2017-01-11T09:07:25.479Z	12 km NNW of Parkfield, California	earthquake	0.55	0.83		1	reviewed	nc	nc
6/9/2005	13:33:05	35.5503333	-120.7991667	3.57	3.5	ml	69	46	0.08919	0.1	nc	nc21461462	2022-06-18T10:16:18.723Z	8 km W of Templeton, California	earthquake	0.15	0.67		10	reviewed	nc	nc
6/8/2005	12:14:28	36.0731667	-120.1545	14.666	2.34	md	49	90	0.03874	0.13	nc	nc21461231	2017-01-11T08:26:39.000Z	7 km NNW of Avenal, California	earthquake	0.27	0.65	0.12	42	reviewed	nc	nc
6/8/2005	4:52:46	35.096	-118.977	19.23	2.06	ml	37	34	0.1243	0.27	ci	ci14150512	2016-03-07T21:59:48.650Z	18km NNW of Grapevine, CA	earthquake	0.45	1.51	0.215	28	reviewed	ci	ci
6/8/2005	3:32:16	36.0691667	-120.1651667	16.491	2.32	md	41	199	0.04595	0.08	nc	nc21461183	2017-01-11T08:24:56.710Z	7 km NNW of Avenal, California	earthquake	0.79	0.48	0.11	34	reviewed	nc	nc
6/7/2005	8:12:58	36.152	-119.8871667	15.145	2.19	md	42	96	0.2018	0.14	nc	nc21461045	2017-01-11T08:19:09.730Z	7 km SW of Stratford, California	earthquake	0.49	0.97	0.07	4	reviewed	nc	nc
6/7/2005	3:11:02	36.06	-120.1555	17.888	2.5	md	57	127	0.1964	0.13	nc	nc21461007	2017-01-11T08:17:08.430Z	6 km NNW of Avenal, California	earthquake	0.64	0.48	0.08	59	reviewed	nc	nc
6/6/2005	20:40:26	36.091	-120.15	13.684	2.35	md	14	169	0.1667	0.04	nc	nc30506933	2017-01-11T08:13:41.134Z	9 km N of Avenal, California	earthquake	0.48	0.49	0.12	14	automatic	nc	nc
6/6/2005	20:39:51	36.0518333	-120.1691667	8.396	2.4	md	22	153	0.04955	0.14	nc	nc30506932	2017-01-11T08:13:37.720Z	6 km NW of Avenal, California	earthquake	0.82	1.12	0.16	17	automatic	nc	nc
6/6/2005	20:39:23	36.0698333	-120.1568333	12.62	2.03	md	46	84	0.03964	0.18	nc	nc21460901	2017-01-11T08:13:33.260Z	7 km NNW of Avenal, California	earthquake	0.37	0.51	0.12	28	reviewed	nc	nc
6/6/2005	4:38:51	36.068	-120.1731667	15.893	2.06	md	34	133	0.191	0.07	nc	nc21460779	2017-01-11T08:08:17.490Z	8 km NNW of Avenal, California	earthquake	0.51	0.72	0.17	19	reviewed	nc	nc
6/6/2005	2:38:03	35.7676667	-120.0911667	27.731	2.22	md	14	286	0.2595	0.33	nc	nc21460769	2017-01-11T08:07:42.581Z	26 km S of Avenal, California	earthquake	15.46	4.74	0.54	2	reviewed	nc	nc
6/5/2005	20:00:37	35.0171667	-119.2175	21.108	2.17	ml	31	59	0.1018	0.37	ci	ci14150036	2016-03-07T23:22:21.527Z	17km ESE of Maricopa, CA	earthquake	0.66	1.51	0.245	38	reviewed	ci	ci
6/4/2005	23:52:36	36.2385	-120.276	12.6	3.57	ml	73	56	0.1243	0.09	nc	nc21460608	2017-03-17T18:36:10.331Z	13 km NE of Coalinga, California	earthquake	0.17	0.44		15	reviewed	nc	nc
6/4/2005	17:55:58	35.5345	-120.8333333	3.09	2.07	md	54	50	0.06036	0.11	nc	nc21460547	2017-01-11T07:57:57.230Z	11 km NNE of Cayucos, California	earthquake	0.17	0.68	0.14	30	reviewed	nc	nc
6/3/2005	16:25:32	36.1121667	-120.0893333	21.037	2	md	26	292	0.05405	0.1	nc	nc21460338	2017-01-11T07:49:44.369Z	10 km S of Huron, California	earthquake	2.85	2.52	0.08	13	reviewed	nc	nc
6/3/2005	8:03:18	36.0815	-120.1538333	13.576	2.55	md	49	101	0.04144	0.13	nc	nc21460289	2017-01-11T07:46:56.230Z	8 km NNW of Avenal, California	earthquake	0.25	0.38	0.19	55	reviewed	nc	nc
6/3/2005	8:03:08	36.0846667	-120.1325	15.235	3.03	md	16	151	0.02973	0.08	nc	nc30506929	2017-01-11T07:46:50.303Z	8 km N of Avenal, California	earthquake	0.74	0.81	0.03	5	automatic	nc	nc
6/3/2005	7:57:36	36.0813333	-120.1535	13.996	2.46	md	60	101	0.04054	0.09	nc	nc21460288	2017-01-11T07:46:42.560Z	8 km NNW of Avenal, California	earthquake	0.2	0.34	0.09	62	reviewed	nc	nc
6/3/2005	7:50:47	36.0103333	-120.5711667	4.603	2.09	md	55	101	0.02793	0.07	nc	nc21460286	2017-01-11T07:46:35.620Z	17 km NW of Parkfield, California	earthquake	0.18	0.19	0.11	32	reviewed	nc	nc
6/2/2005	9:33:03	36.077	-120.1543333	15.356	2.9	md	69	67	0.03964	0.15	nc	nc21460057	2017-01-11T07:38:03.090Z	8 km NNW of Avenal, California	earthquake	0.21	0.4	0.09	92	reviewed	nc	nc
6/2/2005	7:47:05	36.027	-120.574	4.558	2.36	md	58	91	0.03514	0.06	nc	nc21460047	2017-01-11T07:37:43.090Z	19 km NW of Parkfield, California	earthquake	0.16	0.19	0.12	50	reviewed	nc	nc
6/2/2005	6:15:59	36.0805	-120.1583333	14.858	2.28	md	21	146	0.1739	0.08	nc	nc30506926	2017-01-11T07:36:32.747Z	8 km NNW of Avenal, California	earthquake	0.58	0.83	0.18	15	automatic	nc	nc
6/2/2005	6:14:12	36.2396667	-120.011	19.233	2.38	md	32	146	0.1955	0.26	nc	nc30506924	2017-01-11T07:36:25.831Z	9 km ENE of Huron, California	earthquake	1.05	0.83	0.13	20	automatic	nc	nc
6/2/2005	6:11:02	36.0811667	-120.1491667	15.426	3.34	ml	64	130	0.03784	0.1	nc	nc21460028	2017-01-11T07:36:21.170Z	8 km NNW of Avenal, California	earthquake	0.25	0.33		13	reviewed	nc	nc
6/2/2005	5:59:54	36.0798333	-120.1578333	15.036	3.02	md	70	69	0.04324	0.1	nc	nc21460024	2017-01-11T07:35:56.470Z	8 km NNW of Avenal, California	earthquake	0.21	0.4	0.1	99	reviewed	nc	nc
6/2/2005	5:55:57	36.0773333	-120.1491667	15.066	2	md	20	99	0.03604	0.08	nc	nc30506922	2017-01-11T07:35:46.626Z	8 km NNW of Avenal, California	earthquake	0.47	0.78	0.12	10	automatic	nc	nc
6/2/2005	5:53:24	36.0828333	-120.1578333	15.116	2.8	md	69	73	0.04505	0.1	nc	nc21460022	2017-01-11T07:35:42.060Z	9 km NNW of Avenal, California	earthquake	0.19	0.45	0.08	95	reviewed	nc	nc
6/2/2005	5:06:22	36.0846667	-120.1383333	15.211	2.01	md	30	224	0.03333	0.14	nc	nc21460017	2017-01-11T07:35:15.090Z	8 km N of Avenal, California	earthquake	0.95	0.87	0.1	16	reviewed	nc	nc
6/2/2005	5:03:35	36.0676667	-120.1738333	10.085	2.29	md	40	172	0.05225	0.09	nc	nc21460016	2017-01-11T07:35:08.530Z	8 km NNW of Avenal, California	earthquake	0.41	0.57	0.09	36	reviewed	nc	nc
6/2/2005	5:00:22	36.1281667	-120.194	24.987	2.08	md	13	158	0.0955	0.44	nc	nc30506920	2017-01-11T07:34:59.611Z	11 km SW of Huron, California	earthquake	1.8	6.19	0.14	4	automatic	nc	nc
5/31/2005	17:37:11	35.839	-120.3875	8.799	2.23	md	51	55	0.00991	0.03	nc	nc21459721	2017-01-11T07:24:47.100Z	7 km SSE of Parkfield, California	earthquake	0.16	0.24	0.09	47	reviewed	nc	nc
5/30/2005	19:14:23	35.8581667	-120.4033333	5.065	2.45	md	53	54	0.02252	0.05	nc	nc21459577	2017-01-11T07:18:46.090Z	5 km SSE of Parkfield, California	earthquake	0.16	0.24	0.08	52	reviewed	nc	nc
5/30/2005	18:56:15	35.857	-120.4038333	4.985	2.29	md	56	39	0.02162	0.06	nc	nc21459573	2017-01-11T07:18:34.410Z	5 km SSE of Parkfield, California	earthquake	0.16	0.24	0.14	49	reviewed	nc	nc
5/28/2005	8:04:45	35.61	-120.8898333	6.471	2.09	md	56	51	0.03694	0.07	nc	nc21459121	2017-01-11T07:02:01.860Z	13 km S of Lake Nacimiento, California	earthquake	0.12	0.29	0.15	46	reviewed	nc	nc
5/26/2005	10:46:57	36.0363333	-120.5915	4.651	2.13	md	55	45	0.03243	0.07	nc	nc21458676	2017-01-11T06:47:34.420Z	20 km NW of Parkfield, California	earthquake	0.18	0.25	0.14	35	reviewed	nc	nc
5/26/2005	4:59:45	36.0205	-120.5783333	4.288	2.67	md	64	72	0.03514	0.06	nc	nc21458648	2017-01-11T06:45:36.980Z	18 km NW of Parkfield, California	earthquake	0.17	0.2	0.1	64	reviewed	nc	nc
5/24/2005	11:28:22	36.0371667	-120.5955	4.261	2.29	md	61	34	0.03153	0.06	nc	nc21458368	2017-01-11T06:32:46.720Z	21 km NW of Parkfield, California	earthquake	0.14	0.24	0.09	40	reviewed	nc	nc
5/22/2005	13:21:02	35.5388333	-120.8588333	4.58	2.26	md	57	39	0.03964	0.1	nc	nc21458131	2017-01-11T06:16:25.460Z	11 km NNE of Cayucos, California	earthquake	0.17	0.67	0.1	58	reviewed	nc	nc
5/22/2005	2:50:25	36.3036667	-119.2883333	-0.978	2.27	md	14	331	1.174	0.17	nc	nc21458062	2017-01-11T06:12:08.466Z	2 km S of Visalia, California	earthquake	3.64	2.21	0.13	2	reviewed	nc	nc
5/20/2005	14:35:13	36.2016667	-120.3033333	9.281	2.04	md	6	310	0.2721	0.18	nc	nc21457756	2017-01-11T05:58:32.765Z	8 km NE of Coalinga, California	earthquake	4.88	10.54		1	reviewed	nc	nc
5/18/2005	23:00:36	35.0351667	-118.958	3.983	2.28	ml	37	84	0.1128	0.33	ci	ci14146496	2016-03-07T20:10:39.382Z	10km NNW of Grapevine, CA	earthquake	0.58	1.41	0.278	25	reviewed	ci	ci
5/18/2005	20:01:52	35.9256667	-120.4806667	9.486	2.12	md	37	67	0.03333	0.05	nc	nc21457441	2017-01-11T05:44:43.060Z	5 km WNW of Parkfield, California	earthquake	0.2	0.24	0.09	25	reviewed	nc	nc
5/18/2005	10:55:01	35.5608333	-120.8095	5.89	2.49	md	54	43	0.08378	0.09	nc	nc21457372	2017-01-11T05:42:11.540Z	9 km W of Templeton, California	earthquake	0.15	0.69	0.11	53	reviewed	nc	nc
5/18/2005	10:22:16	35.5598333	-120.8061667	4.66	3.02	md	51	43	0.08649	0.1	nc	nc21457369	2017-01-11T05:41:54.930Z	9 km W of Templeton, California	earthquake	0.17	0.71	0.09	75	reviewed	nc	nc
5/17/2005	7:10:08	35.5786667	-120.8331667	5.481	2.17	md	54	38	0.06847	0.09	nc	nc21457044	2017-01-11T05:31:43.890Z	11 km WNW of Templeton, California	earthquake	0.18	0.6	0.16	41	reviewed	nc	nc
5/16/2005	23:29:33	35.2703333	-120.2835	4.967	2.28	ml	8	119	0.1831	0.25	ci	ci10100277	2016-03-07T21:37:17.025Z	27km WSW of Simmler, CA	earthquake	1.06	24.13	0.735	6	reviewed	ci	ci
5/16/2005	19:50:52	35.939	-120.4865	9.75	3.16	ml	68	36	0.01892	0.06	nc	nc21456975	2017-01-11T05:28:24.040Z	6 km NW of Parkfield, California	earthquake	0.15	0.2		9	reviewed	nc	nc
5/16/2005	19:38:43	35.94	-120.4873333	9.527	3.02	ml	65	36	0.01802	0.07	nc	nc21456972	2017-01-11T05:28:06.990Z	6 km NW of Parkfield, California	earthquake	0.14	0.21		8	reviewed	nc	nc
5/16/2005	19:16:25	35.9388333	-120.4938333	9.433	2.41	md	42	68	0.01802	0.05	nc	nc21456966	2017-01-11T05:27:49.710Z	7 km NW of Parkfield, California	earthquake	0.18	0.25	0.1	49	reviewed	nc	nc
5/16/2005	8:10:23	35.932	-120.4823333	9.636	2.63	md	46	56	0.02703	0.06	nc	nc21456848	2017-01-11T05:24:07.320Z	5 km NW of Parkfield, California	earthquake	0.16	0.25	0.08	60	reviewed	nc	nc
5/16/2005	7:30:20	35.9318333	-120.4861667	9.436	2.06	md	41	56	0.02613	0.04	nc	nc21456839	2017-01-11T05:23:35.050Z	6 km NW of Parkfield, California	earthquake	0.16	0.24	0.15	30	reviewed	nc	nc
5/16/2005	7:24:37	35.9288333	-120.477	9.476	4.48	mw	52	62	0.03153	0.05	nc	nc21456837	2020-05-06T07:18:37.344Z	5 km NW of Parkfield, California	earthquake	0.15	0.23		7	reviewed	nc	nc
5/13/2005	3:58:49	35.5223333	-120.778	5.128	2.01	md	52	52	0.1054	0.08	nc	nc21456266	2017-01-11T04:59:40.440Z	7 km WSW of Templeton, California	earthquake	0.17	0.83	0.14	31	reviewed	nc	nc
5/12/2005	7:32:37	35.515	-120.7741667	4.808	2.17	md	60	53	0.1045	0.08	nc	nc21456115	2017-01-11T04:53:09.700Z	7 km WSW of Templeton, California	earthquake	0.15	0.78	0.18	41	reviewed	nc	nc
5/11/2005	23:25:59	36.0706667	-120.6416667	5.394	2.77	md	69	29	0.03694	0.08	nc	nc21456027	2017-01-11T04:50:09.450Z	24 km ENE of San Ardo, California	earthquake	0.17	0.3	0.11	82	reviewed	nc	nc
5/11/2005	14:58:36	35.2288333	-120.7213333	6.157	2.27	md	56	52	0.05676	0.12	nc	nc21455917	2017-01-11T04:47:03.020Z	5 km N of Avila Beach, California	earthquake	0.15	0.34	0.14	37	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/11/2005	3:57:52	36.05	-120.6211667	3.69	2.14	md	28	103	0.07928	0.07	nc	nc30506888	2017-01-11T04:44:36.750Z	23 km NW of Parkfield, California	earthquake	0.31	0.8	0.12	17	automatic	nc	nc
5/9/2005	13:08:36	35.9296667	-120.4763333	9.57	3.08	ml	61	52	0.02072	0.06	nc	nc21455482	2017-01-11T04:33:28.940Z	5 km NW of Parkfield, California	earthquake	0.16	0.22		9	reviewed	nc	nc
5/8/2005	17:52:54	35.0025	-119.1918333	16.118	2.29	ml	30	87	0.1064	0.33	ci	ci10097573	2016-03-07T22:38:12.579Z	18km NNW of Pine Mountain Club, CA	earthquake	0.73	1.45	0.204	15	reviewed	ci	ci
5/6/2005	23:43:34	35.5836667	-120.8646667	5.361	2.25	md	58	43	0.05766	0.09	nc	nc21454911	2017-01-11T04:17:29.540Z	14 km WNW of Templeton, California	earthquake	0.16	0.51	0.13	46	reviewed	nc	nc
5/6/2005	2:29:09	35.0306667	-119.1813333	10.678	4.06	ml	100	26		0.42	ci	ci10097009	2020-06-27T04:44:26.461Z	20km E of Maricopa, CA	earthquake	0.34	0.81	0.25	132	reviewed	ci	ci
5/6/2005	2:07:13	35.0305	-119.1786667	17.188	3.17	ml	34	17.1		0.5	ci	ci10097001	2016-03-08T00:43:48.219Z	20km E of Maricopa, CA	earthquake	0.55	1.58	0.227	102	reviewed	ci	ci
5/5/2005	5:52:26	36.024	-119.7721667	23.005	2.1	md	18	277	0.2198	0.05	nc	nc21454304	2017-01-11T04:05:15.032Z	17 km E of Kettleman City, California	earthquake	1.6	0.32		1	reviewed	nc	nc
5/4/2005	23:34:47	36.0001667	-120.5595	4.233	2.27	md	58	47	0.02072	0.07	nc	nc21454250	2017-01-11T04:03:42.930Z	15 km NW of Parkfield, California	earthquake	0.15	0.18	0.1	42	reviewed	nc	nc
5/4/2005	21:31:16	36.002	-120.5573333	4.265	2.77	md	55	49	0.01802	0.07	nc	nc21454205	2017-01-11T04:02:30.960Z	15 km NW of Parkfield, California	earthquake	0.13	0.18	0.1	60	reviewed	nc	nc
5/4/2005	20:24:03	35.5596667	-120.8153333	4.54	2.13	md	58	43	0.07928	0.1	nc	nc21454179	2017-01-11T04:01:57.600Z	9 km W of Templeton, California	earthquake	0.15	0.59	0.24	37	reviewed	nc	nc
5/4/2005	13:39:47	34.9156667	-119.0591667	15.685	2.54	ml	62	44	0.05339	0.39	ci	ci10096537	2016-03-07T21:57:54.494Z	11km NE of Pine Mountain Club, CA	earthquake	0.41	1.34	0.286	43	reviewed	ci	ci
5/3/2005	21:02:50	35.952	-120.495	13.624	3.18	md	63	29	0.004505	0.08	nc	nc21453859	2017-01-11T03:54:49.290Z	8 km NW of Parkfield, California	earthquake	0.18	0.22	0.09	86	reviewed	nc	nc
4/30/2005	7:43:20	35.0943333	-118.9485	10.653	2.15	ml	38	73	0.1024	0.28	ci	ci10095565	2016-03-07T21:36:05.547Z	17km SW of Arvin, CA	earthquake	0.41	1.26	0.327	23	reviewed	ci	ci
4/29/2005	9:51:00	35.5318333	-120.8385	2.74	2	md	39	59	0.05586	0.11	nc	nc21453010	2017-01-11T03:20:59.620Z	11 km NNE of Cayucos, California	earthquake	0.23	1.02	0.18	26	reviewed	nc	nc
4/27/2005	9:00:25	35.5298333	-120.7963333	4.908	2.04	md	43	56	0.09009	0.07	nc	nc21452513	2017-01-11T03:04:27.440Z	8 km WSW of Templeton, California	earthquake	0.19	0.77	0.21	26	reviewed	nc	nc
4/26/2005	2:49:51	34.8886667	-119.0871667	7.145	2.09	ml	39	56	0.0811	0.33	ci	ci10094509	2016-03-07T22:18:50.808Z	7km NE of Pine Mountain Club, CA	earthquake	0.4	2.08	0.171	22	reviewed	ci	ci
4/25/2005	12:29:47	35.5631667	-120.792	2.874	2	md	42	48	0.0982	0.07	nc	nc21452107	2017-01-11T02:47:46.300Z	7 km W of Templeton, California	earthquake	0.17	0.85	0.19	11	reviewed	nc	nc
4/20/2005	22:40:48	34.8936667	-119.0881667	10.265	3.61	ml	82	27		0.41	ci	ci14139032	2022-06-17T01:58:47.360Z	8km NE of Pine Mountain Club, CA	earthquake	0.41	0.85	0.226	122	reviewed	ci	ci
4/20/2005	15:17:34	34.9753333	-119.1796667	13.638	2.01	ml	22	63	0.09114	0.42	ci	ci14138952	2016-03-07T20:09:19.810Z	15km N of Pine Mountain Club, CA	earthquake	0.94	1.32	0.287	11	reviewed	ci	ci
4/20/2005	12:40:08	35.0041667	-119.1765	11.058	2.14	ml	32	68	0.09515	0.32	ci	ci14138920	2016-03-07T22:37:29.339Z	18km N of Pine Mountain Club, CA	earthquake	0.59	1.44	0.245	23	reviewed	ci	ci
4/19/2005	2:58:11	35.0065	-119.1761667	10.488	2.58	ml	36	90	0.09579	0.36	ci	ci14138648	2016-03-07T20:09:15.516Z	18km N of Pine Mountain Club, CA	earthquake	0.59	1.59	0.257	28	reviewed	ci	ci
4/18/2005	21:41:32	35.0125	-119.1833333	11.118	2.64	ml	34	70	0.1036	0.3	ci	ci14138572	2016-03-08T00:02:15.861Z	19km N of Pine Mountain Club, CA	earthquake	0.55	1.36	0.286	37	reviewed	ci	ci
4/18/2005	0:04:22	35.0078333	-119.1658333	10.818	2.06	ml	21	90	0.08864	0.32	ci	ci14138396	2016-03-07T20:52:51.135Z	18km N of Pine Mountain Club, CA	earthquake	0.75	2.16	0.245	7	reviewed	ci	ci
4/17/2005	19:00:25	35.0236667	-119.1581667	11.628	2.16	ml	32	91	0.09155	0.37	ci	ci14138316	2016-03-07T19:46:13.419Z	20km N of Pine Mountain Club, CA	earthquake	0.71	1.62	0.257	27	reviewed	ci	ci
4/17/2005	1:43:38	34.9995	-119.1846667	13.268	2.2	ml	27	86		0.27	ci	ci14138180	2016-03-07T23:19:28.430Z	17km N of Pine Mountain Club, CA	earthquake	0.55	0.96	0.264	20	reviewed	ci	ci
4/16/2005	21:30:58	35.0053333	-119.173	10.998	2.37	ml	35	89	0.09294	0.31	ci	ci14138148	2016-03-07T21:14:06.422Z	18km N of Pine Mountain Club, CA	earthquake	0.56	1.18	0.242	26	reviewed	ci	ci
4/16/2005	19:57:43	35.0085	-119.184	10.528	2.38	ml	31	88	0.1025	0.29	ci	ci14138116	2016-03-07T20:52:48.148Z	18km N of Pine Mountain Club, CA	earthquake	0.62	1.64	0.24	21	reviewed	ci	ci
4/16/2005	19:56:06	35.0116667	-119.1808333	11.248	2.27	ml	25	91	0.1014	0.25	ci	ci14138112	2016-03-07T20:52:46.573Z	19km N of Pine Mountain Club, CA	earthquake	0.65	1.07	0.242	25	reviewed	ci	ci
4/16/2005	19:43:12	35.0126667	-119.1615	10.598	2.36	ml	27	90	0.08778	0.31	ci	ci14138104	2016-03-07T22:18:07.979Z	18km N of Pine Mountain Club, CA	earthquake	0.56	1.48	0.361	31	reviewed	ci	ci
4/16/2005	19:27:38	35.0155	-119.1638333	10.388	2.44	ml	35	90	0.09086	0.32	ci	ci14138088	2016-03-07T22:18:06.497Z	19km N of Pine Mountain Club, CA	earthquake	0.55	1.38	0.279	33	reviewed	ci	ci
4/16/2005	19:21:31	35.031	-119.1655	12.026	2	mh	20	93	0.1008	0.29	ci	ci14138084	2016-03-08T00:02:09.619Z	21km N of Pine Mountain Club, CA	earthquake	0.7	1.35	0.31	0	reviewed	ci	ci
4/16/2005	19:18:13	35.0223333	-119.191	9.288	4.59	mw	73	62		0.35	ci	ci14138080	2022-05-02T17:55:21.942Z	20km ESE of Maricopa, CA	earthquake	0.31	1.64		6	reviewed	ci	ci
4/16/2005	10:13:15	35.8908333	-120.4345	8.014	3.45	mw	62	35	0.02883	0.06	nc	nc21450190	2017-01-11T01:39:33.930Z	0 km S of Parkfield, California	earthquake	0.15	0.24		4	reviewed	nc	nc
4/16/2005	9:04:35	34.875	-119.2251667	12.163	3.05	ml	81	36		0.41	ci	ci14137996	2016-03-08T00:42:52.272Z	8km WNW of Pine Mountain Club, CA	earthquake	0.38	0.72	0.249	102	reviewed	ci	ci
4/13/2005	23:51:15	35.1563333	-120.6691667	5.632	2.09	md	43	108	0.02432	0.07	nc	nc21449818	2017-01-11T01:23:02.384Z	2 km WNW of Pismo Beach, California	earthquake	0.14	0.2	0.13	21	reviewed	nc	nc
4/13/2005	5:24:29	35.561	-120.7953333	3.89	2.06	md	52	48	0.09459	0.09	nc	nc21449671	2017-01-11T01:17:40.160Z	8 km W of Templeton, California	earthquake	0.17	0.74	0.16	31	reviewed	nc	nc
4/12/2005	13:53:15	35.5828333	-120.8683333	6.141	3.21	ml	70	44	0.05766	0.08	nc	nc21449562	2017-01-11T01:12:53.520Z	15 km WNW of Templeton, California	earthquake	0.13	0.43		9	reviewed	nc	nc
4/10/2005	17:13:09	36.2345	-120.4248333	11.874	2.22	md	36	76	0.1108	0.13	nc	nc21449327	2017-01-11T00:58:54.650Z	12 km NNW of Coalinga, California	earthquake	0.35	0.77	0.17	22	reviewed	nc	nc
4/6/2005	23:53:04	35.5848333	-120.7813333	1.638	2.38	md	59	31	0.08919	0.12	nc	nc21448750	2017-01-11T00:27:54.900Z	7 km WNW of Templeton, California	earthquake	0.16	1.25	0.11	47	reviewed	nc	nc
4/6/2005	20:08:53	35.8003333	-120.3365	4.873	2.01	md	37	71	0.02793	0.05	nc	nc21448727	2017-01-11T00:26:23.900Z	Central California	earthquake	0.17	0.26	0.17	27	reviewed	nc	nc
4/5/2005	8:04:52	35.5303333	-120.8071667	5.66	2.01	md	53	57	0.08108	0.08	nc	nc21448503	2017-01-11T00:15:56.880Z	9 km WSW of Templeton, California	earthquake	0.18	0.7	0.14	33	reviewed	nc	nc
4/1/2005	19:11:30	35.9581667	-120.506	13.662	2.82	md	59	34	0.006306	0.08	nc	nc21448062	2017-01-10T23:57:52.720Z	9 km NW of Parkfield, California	earthquake	0.18	0.24	0.08	65	reviewed	nc	nc
4/1/2005	10:25:53	35.845	-120.3931667	6.415	3.07	md	58	37	0.00991	0.04	nc	nc21448001	2017-01-10T23:56:01.770Z	7 km SSE of Parkfield, California	earthquake	0.16	0.23	0.07	79	reviewed	nc	nc
3/31/2005	21:41:30	35.8588333	-120.4041667	5.215	2.39	md	49	53	0.02252	0.06	nc	nc21447933	2017-01-10T23:53:45.270Z	5 km SSE of Parkfield, California	earthquake	0.16	0.25	0.09	41	reviewed	nc	nc
3/29/2005	2:19:31	35.941	-120.4903333	10.3	2.26	md	53	47	0.01622	0.06	nc	nc21447586	2017-01-10T23:34:09.080Z	6 km NW of Parkfield, California	earthquake	0.17	0.23	0.11	45	reviewed	nc	nc
3/28/2005	6:50:59	35.9101667	-120.4546667	5.794	2.66	md	53	53	0.02613	0.06	nc	nc21447502	2017-01-10T23:29:23.210Z	2 km WNW of Parkfield, California	earthquake	0.15	0.21	0.07	59	reviewed	nc	nc
3/26/2005	23:28:29	35.9328333	-119.7663333	23.784	2.25	md	24	242	0.1703	0.14	nc	nc21447294	2017-01-10T23:18:07.487Z	19 km ESE of Kettleman City, California	earthquake	1.82	0.56	0.09	6	reviewed	nc	nc
3/26/2005	4:36:48	35.8388333	-120.387	6.459	3.68	mw	62	33	0.00991	0.04	nc	nc21447168	2017-03-17T18:31:51.415Z	7 km SSE of Parkfield, California	earthquake	0.14	0.21		4	reviewed	nc	nc
3/25/2005	16:39:10	35.5583333	-120.8013333	5.63	2.06	md	55	43	0.08919	0.08	nc	nc21447100	2017-01-10T23:09:00.550Z	8 km W of Templeton, California	earthquake	0.15	0.64	0.16	38	reviewed	nc	nc
3/24/2005	5:54:56	35.5391667	-120.7806667	4.588	2.33	md	65	34	0.1027	0.09	nc	nc21446890	2017-01-10T22:57:32.070Z	6 km W of Templeton, California	earthquake	0.14	0.82	0.09	57	reviewed	nc	nc
3/22/2005	17:59:20	35.9371667	-120.494	5.14	2.62	md	12	130	0.01802	0.04	nc	nc21446707	2017-01-10T22:45:58.720Z	6 km NW of Parkfield, California	earthquake	0.41	0.67		1	reviewed	nc	nc
3/22/2005	12:11:37	36.004	-120.5635	4.163	2.65	md	60	81	0.02252	0.07	nc	nc21446653	2017-01-10T22:43:20.320Z	16 km NW of Parkfield, California	earthquake	0.16	0.19	0.09	57	reviewed	nc	nc
3/20/2005	18:05:11	35.8525	-120.3968333	4.845	2.53	md	41	56	0.01622	0.05	nc	nc30506802	2017-01-10T22:32:37.550Z	6 km SSE of Parkfield, California	earthquake	0.17	0.24	0.08	33	automatic	nc	nc
3/20/2005	7:47:06	35.4725	-120.723	1.525	2.26	md	56	42	0.08108	0.08	nc	nc21446436	2017-01-10T22:28:58.610Z	5 km WSW of Atascadero, California	earthquake	0.15	1.26	0.08	44	reviewed	nc	nc
3/18/2005	22:35:49	35.2615	-120.5595	5.158	2.25	md	35	67	0.07027	0.11	nc	nc21446277	2017-01-10T22:19:21.702Z	8 km NE of Edna, California	earthquake	0.24	0.51	0.21	30	reviewed	nc	nc
3/18/2005	18:24:27	35.5086667	-120.7765	7.498	2.05	md	52	40	0.0991	0.07	nc	nc21446245	2017-01-10T22:18:02.420Z	7 km SW of Templeton, California	earthquake	0.18	0.86	0.22	34	reviewed	nc	nc
3/18/2005	14:47:14	35.5095	-120.7761667	4.668	2.54	md	60	55	0.1	0.07	nc	nc21446195	2017-01-10T22:16:59.740Z	7 km SW of Templeton, California	earthquake	0.15	0.72	0.09	75	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
3/18/2005	6:09:51	35.5303333	-120.8015	5.588	2.01	md	48	57	0.08559	0.07	nc	nc21446121	2017-01-10T22:12:40.260Z	8 km WSW of Templeton, California	earthquake	0.18	0.68	0.17	18	reviewed	nc	nc
3/16/2005	23:47:13	35.9305	-119.97	28.025	3.18	md	57	179	0.06847	0.28	nc	nc21445777	2017-01-10T21:58:13.980Z	8 km S of Kettleman City, California	earthquake	0.87	0.63	0.1	67	reviewed	nc	nc
3/13/2005	3:01:29	36.0138333	-120.5751667	3.883	2.43	md	51	60	0.03153	0.06	nc	nc30506788	2017-01-10T21:18:11.060Z	18 km NW of Parkfield, California	earthquake	0.14	0.24	0.08	37	automatic	nc	nc
3/13/2005	3:00:04	36.014	-120.5716667	4.063	2.68	md	68	45	0.02883	0.06	nc	nc21445004	2017-01-10T21:17:58.810Z	17 km NW of Parkfield, California	earthquake	0.14	0.16	0.13	64	reviewed	nc	nc
3/12/2005	12:31:06	35.5388333	-120.771	2.448	2.53	md	67	48	0.1108	0.11	nc	nc21444908	2017-01-10T21:10:36.000Z	6 km WSW of Templeton, California	earthquake	0.14	0.84	0.08	76	reviewed	nc	nc
3/10/2005	14:43:39	36.034	-120.5893333	7.588	2.4	md	62	79	0.03514	0.06	nc	nc21444439	2017-01-10T20:49:03.110Z	20 km NW of Parkfield, California	earthquake	0.17	0.21	0.09	56	reviewed	nc	nc
3/9/2005	16:53:35	35.9275	-120.476	4.834	2.02	md	47	101	0.01892	0.06	nc	nc21444255	2017-01-10T20:42:20.950Z	4 km NW of Parkfield, California	earthquake	0.17	0.22	0.11	31	reviewed	nc	nc
3/9/2005	6:01:28	35.6	-120.9008333	4.241	2.18	md	59	51	0.04955	0.08	nc	nc21444179	2017-01-10T20:38:36.530Z	14 km S of Lake Nacimiento, California	earthquake	0.14	0.38	0.1	47	reviewed	nc	nc
3/8/2005	18:09:21	35.511	-120.7728333	4.148	2.63	md	68	54	0.1027	0.08	nc	nc21444085	2017-01-10T20:33:54.160Z	7 km SW of Templeton, California	earthquake	0.14	0.6	0.08	73	reviewed	nc	nc
3/8/2005	13:41:43	35.792	-120.344	9.38	2.52	md	49	39	0.01892	0.05	nc	nc21444045	2017-01-10T20:31:43.300Z	14 km SE of Parkfield, California	earthquake	0.17	0.29	0.06	45	reviewed	nc	nc
3/8/2005	8:38:02	36.3613333	-119.6508333	22.533	2	md	4	195	0.3685	0	nc	nc51157523	2017-01-10T20:30:40.598Z	2 km SSE of Lucerne, California	earthquake	1.52	0.94		1	reviewed	nc	nc
3/6/2005	13:35:31	35.5781667	-120.8301667	5.501	2.18	md	55	38	0.06937	0.09	nc	nc21443586	2017-01-10T20:12:08.500Z	11 km WNW of Templeton, California	earthquake	0.18	0.56	0.09	46	reviewed	nc	nc
3/5/2005	13:58:19	36.0518333	-120.2135	6.915	2.17	md	44	71	0.08468	0.12	nc	nc21443287	2017-01-10T19:48:45.770Z	9 km NW of Avenal, California	earthquake	0.18	0.45	0.23	34	reviewed	nc	nc
3/5/2005	6:26:58	35.8818333	-120.4288333	9.589	2.16	md	52	38	0.02252	0.05	nc	nc21443239	2017-01-10T19:47:07.300Z	2 km S of Parkfield, California	earthquake	0.17	0.28	0.1	37	reviewed	nc	nc
3/4/2005	17:56:02	35.4981667	-120.7851667	2.628	2.06	md	53	58	0.08829	0.09	nc	nc21443117	2017-01-10T19:40:21.770Z	9 km SW of Templeton, California	earthquake	0.17	0.88	0.14	39	reviewed	nc	nc
3/4/2005	13:56:24	35.542	-120.8516667	5.61	2.07	md	56	47	0.04595	0.08	nc	nc21443099	2017-01-10T19:38:53.770Z	11 km NNE of Cayucos, California	earthquake	0.17	0.51	0.16	39	reviewed	nc	nc
3/4/2005	4:00:28	35.925	-120.4716667	5.1	2.28	md	55	57	0.03604	0.06	nc	nc21443025	2017-01-10T19:34:49.210Z	4 km NW of Parkfield, California	earthquake	0.14	0.21	0.09	42	reviewed	nc	nc
3/3/2005	22:26:29	35.9236667	-120.4723333	5.204	2.21	md	53	55	0.01802	0.06	nc	nc21442980	2017-01-10T19:31:54.070Z	4 km NW of Parkfield, California	earthquake	0.15	0.2	0.1	42	reviewed	nc	nc
3/1/2005	21:02:12	35.9398333	-120.4858333	10.34	2.2	md	60	39	0.01892	0.07	nc	nc21442674	2017-01-10T19:10:37.310Z	Central California	earthquake	0.16	0.23	0.11	54	reviewed	nc	nc
2/27/2005	8:35:00	35.4453333	-120.7398333	5.825	2.05	md	61	49	0.05856	0.07	nc	nc21442203	2017-01-10T18:54:17.000Z	7 km SW of Atascadero, California	earthquake	0.14	0.47	0.19	37	reviewed	nc	nc
2/26/2005	20:28:59	35.9331667	-120.4795	10.314	2.12	md	57	52	0.02342	0.06	nc	nc21442113	2017-01-10T18:49:57.440Z	5 km NW of Parkfield, California	earthquake	0.2	0.17	0.1	49	reviewed	nc	nc
2/25/2005	15:57:58	35.5465	-120.7933333	6.498	2.04	md	58	43	0.09369	0.07	nc	nc21441832	2017-01-10T18:41:27.470Z	7 km W of Templeton, California	earthquake	0.15	0.78	0.13	35	reviewed	nc	nc
2/25/2005	5:48:35	35.5823333	-120.8728333	4.301	2.07	md	61	44	0.05586	0.09	nc	nc21441682	2017-01-10T18:38:35.130Z	15 km WNW of Templeton, California	earthquake	0.14	0.43	0.14	48	reviewed	nc	nc
2/23/2005	6:31:12	35.882	-120.4303333	5.786	2.02	md	47	44	0.02342	0.05	nc	nc21441184	2017-01-10T18:27:31.710Z	1 km S of Parkfield, California	earthquake	0.19	0.23	0.08	30	reviewed	nc	nc
2/20/2005	11:33:02	35.5586667	-120.788	2.041	2.09	md	52	43	0.1045	0.1	nc	nc21440791	2017-01-10T18:16:13.120Z	7 km W of Templeton, California	earthquake	0.14	0.94	0.12	43	reviewed	nc	nc
2/20/2005	0:26:05	36.2488333	-120.3728333	8.568	2.4	md	54	62	0.1532	0.16	nc	nc21440701	2017-01-10T18:12:18.450Z	12 km N of Coalinga, California	earthquake	0.21	0.52	0.12	47	reviewed	nc	nc
2/19/2005	11:39:35	35.5265	-120.8133333	4.931	2.26	md	53	52	0.08739	0.06	nc	nc21440558	2017-01-10T18:08:53.210Z	10 km WSW of Templeton, California	earthquake	0.16	0.81	0.08	52	reviewed	nc	nc
2/18/2005	0:14:12	35.5773333	-120.8801667	6.641	2.17	md	56	44	0.04865	0.08	nc	nc21440228	2017-01-10T17:37:14.090Z	14 km N of Cayucos, California	earthquake	0.15	0.46	0.14	48	reviewed	nc	nc
2/11/2005	13:14:09	35.599	-120.82	4.535	2.32	md	47	59	0.0964	0.08	nc	nc30506716	2017-01-10T16:46:31.440Z	11 km WNW of Templeton, California	earthquake	0.16	0.9	0.14	40	automatic	nc	nc
2/11/2005	9:04:21	35.8426667	-120.3835	4.339	2.52	md	54	58	0.01351	0.05	nc	nc21438867	2017-01-10T16:44:43.200Z	7 km SE of Parkfield, California	earthquake	0.14	0.22	0.1	50	reviewed	nc	nc
2/11/2005	2:17:48	35.2248333	-119.23	25.663	2.3	ml	34	80	0.1575	0.2	ci	ci10080153	2016-03-07T22:35:06.037Z	19km SSW of Rosedale, CA	earthquake	0.41	1.09	0.252	20	reviewed	ci	ci
2/9/2005	15:07:44	35.5641667	-120.7886667	1.128	2.03	md	52	47	0.1009	0.06	nc	nc21438451	2017-01-10T16:28:14.720Z	7 km WNW of Templeton, California	earthquake	0.2	2.66	0.18	25	reviewed	nc	nc
2/8/2005	22:00:48	35.9538333	-120.5053333	9.042	3.54	mw	71	39	0.006306	0.06	nc	nc21438324	2017-03-17T18:28:22.770Z	8 km NW of Parkfield, California	earthquake	0.15	0.18		2	reviewed	nc	nc
2/6/2005	20:50:25	35.5603333	-120.8838333	6.231	2.85	md	71	42	0.03243	0.06	nc	nc21437910	2017-01-10T16:08:51.930Z	13 km N of Cayucos, CA	earthquake	0.13	0.36	0.07	102	reviewed	nc	nc
2/6/2005	10:52:00	35.7855	-120.3355	8.328	2.13	md	52	42	0.01261	0.05	nc	nc21437844	2017-01-10T16:06:12.380Z	14 km NNE of Shandon, California	earthquake	0.17	0.27	0.09	47	reviewed	nc	nc
2/4/2005	17:50:34	35.5248333	-120.8345	5.72	2.04	md	51	53	0.05946	0.06	nc	nc21437533	2017-01-10T15:52:40.270Z	10 km NNE of Cayucos, California	earthquake	0.15	0.53	0.16	38	reviewed	nc	nc
2/4/2005	17:31:06	35.8975	-120.4388333	5.218	2.13	md	46	51	0.03423	0.07	nc	nc21437531	2017-01-10T15:52:32.660Z	0 km WSW of Parkfield, California	earthquake	0.17	0.27	0.13	33	reviewed	nc	nc
2/4/2005	5:54:41	35.5666667	-120.7803333	0.218	2.19	md	66	42	0.1027	0.1	nc	nc21437453	2017-01-10T15:48:59.480Z	6 km WNW of Templeton, California	earthquake	0.17	2.95	0.15	49	reviewed	nc	nc
2/3/2005	16:13:19	35.9223333	-120.4696667	4.7	2.76	md	62	43	0.03514	0.07	nc	nc21437263	2017-01-10T15:43:41.350Z	4 km NW of Parkfield, California	earthquake	0.14	0.22	0.09	70	reviewed	nc	nc
2/3/2005	15:37:13	35.565	-120.7813333	1.438	2.22	md	54	48	0.1027	0.08	nc	nc21437251	2017-01-10T15:43:23.730Z	Central California	earthquake	0.16	1.49	0.1	44	reviewed	nc	nc
2/2/2005	15:22:35	35.0398333	-118.9568333	12.715	2.48	ml	35	87	0.1355	0.27	ci	ci14123100	2016-03-07T20:27:29.946Z	11km NNW of Grapevine, CA	earthquake	0.42	0.92	0.232	33	reviewed	ci	ci
2/2/2005	15:11:39	35.5261667	-120.7935	5.427	2.25	md	36	86	0.09279	0.07	nc	nc21437050	2017-01-10T06:54:31.120Z	8 km WSW of Templeton, California	earthquake	0.25	1.09	0.13	28	reviewed	nc	nc
2/1/2005	19:38:49	35.9708333	-120.522	2.572	2.24	md	10	115	0.01081	0.04	nc	nc21436893	2017-01-10T06:51:39.664Z	11 km NW of Parkfield, California	earthquake	0.4	0.91		1	reviewed	nc	nc
1/30/2005	20:13:26	35.9275	-120.4751667	4.77	2.48	md	16	102	0.03243	0.05	nc	nc21436533	2017-01-10T06:43:04.952Z	4 km NW of Parkfield, California	earthquake	0.3	0.83		1	reviewed	nc	nc
1/30/2005	13:23:15	36.0486667	-120.025	9.201	3.08	ml	52	176	0.06937	0.12	nc	nc21436496	2017-01-10T06:41:55.210Z	7 km NW of Kettleman City, California	earthquake	0.31	0.46		9	reviewed	nc	nc
1/30/2005	6:53:42	35.2296667	-120.4856667	10.998	2.23	md	24	105	0.1333	0.05	nc	nc21436460	2017-01-10T06:39:40.850Z	11 km ENE of Edna, California	earthquake	0.25	0.65	0.1	12	reviewed	nc	nc
1/28/2005	18:47:08	36.0433333	-120.0193333	8.766	2.56	md	54	192	0.07568	0.16	nc	nc21436284	2017-01-10T06:32:06.490Z	6 km NW of Kettleman City, California	earthquake	0.59	0.33	0.1	46	reviewed	nc	nc
1/28/2005	13:26:14	36.045	-120.0443333	8.436	2.96	md	65	122	0.05495	0.19	nc	nc21436236	2017-01-10T06:30:13.410Z	8 km WNW of Kettleman City, California	earthquake	0.39	0.35	0.08	62	reviewed	nc	nc
1/28/2005	13:08:30	36.0465	-120.0448333	8.196	2.52	md	50	169	0.05495	0.19	nc	nc21436235	2017-01-10T06:30:06.170Z	8 km WNW of Kettleman City, California	earthquake	0.35	0.32	0.09	38	reviewed	nc	nc
1/28/2005	13:03:26	36.0461667	-120.042	9.566	3.85	mw	72	99	0.05676	0.22	nc	nc21436234	2017-03-17T18:25:37.008Z	8 km WNW of Kettleman City, California	earthquake	0.34	0.41		3	reviewed	nc	nc
1/27/2005	14:16:06	35.5665	-120.7855	0.555	3.31	ml	56	47	0.1045	0.08	nc	nc21436014	2017-01-10T06:24:31.120Z	7 km WNW of Templeton, California	earthquake	0.18	2.73		6	reviewed	nc	nc
1/27/2005	12:28:53	36.003	-120.5623333	4.023	2.04	md	37	80	0.02162	0.07	nc	nc21436012	2017-01-10T06:24:08.430Z	16 km NW of Parkfield, California	earthquake	0.24	0.25	0.07	22	reviewed	nc	nc
1/24/2005	17:24:18	35.556	-120.7528333	0.628	2.09	md	59	45	0.1261	0.12	nc	nc21435541	2017-01-10T06:08:43.560Z	4 km W of Templeton, California	earthquake	0.17	1.97	0.2	39	reviewed	nc	nc
1/24/2005	5:19:39	35.929	-120.4791667	5.02	2.07	md	52	48	0.02883	0.06	nc	nc21435454	2017-01-10T06:06:16.080Z	5 km NW of Parkfield, California	earthquake	0.15	0.21	0.1	39	reviewed	nc	nc
1/23/2005	17:02:51	35.7956667	-120.346	9.723	2.17	md	54	56	0.02342	0.04	nc	nc21435333	2017-01-10T06:02:39.570Z	13 km SE of Parkfield, California	earthquake	0.15	0.26	0.12	47	reviewed	nc	nc
1/23/2005	10:42:07	35.5173333	-120.8021667	4.488	2.02	md	57	54	0.08739	0.07	nc	nc21435295	2017-01-10T06:00:44.370Z	9 km WSW of Templeton, California	earthquake	0.16	0.66	0.2	32	reviewed	nc	nc
1/22/2005	13:04:05	35.887	-120.431	10.631	2.6	md	27	59	0.02432	0.05	nc	nc21435095	2017-01-10T05:54:08.059Z	1 km S of Parkfield, California	earthquake	0.32	0.59		1	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
1/22/2005	5:56:43	35.8558333	-120.3981667	4.495	2.28	md	47	57	0.01982	0.05	nc	nc21435043	2017-01-10T05:52:08.190Z	5 km SSE of Parkfield, California	earthquake	0.17	0.26	0.13	34	reviewed	nc	nc
1/21/2005	11:57:40	36.0011667	-120.56	3.143	2.21	md	54	81	0.02072	0.07	nc	nc21434827	2017-01-10T05:45:47.660Z	16 km NW of Parkfield, California	earthquake	0.17	0.23	0.11	38	reviewed	nc	nc
1/20/2005	15:54:36	36.03	-120.5873333	4.268	2.21	md	53	79	0.03964	0.07	nc	nc21434604	2017-01-10T05:40:05.030Z	20 km NW of Parkfield, California	earthquake	0.2	0.26	0.08	38	reviewed	nc	nc
1/19/2005	13:47:56	36.0506667	-120.2081667	8.125	2.09	md	45	84	0.08018	0.1	nc	nc21434371	2017-01-10T05:32:35.800Z	8 km NW of Avenal, California	earthquake	0.22	0.5	0.13	33	reviewed	nc	nc
1/18/2005	11:13:59	35.5361667	-120.8245	4.145	2.07	md	27	68	0.06757	0.07	nc	nc21434148	2017-01-10T05:26:07.739Z	10 km W of Templeton, California	earthquake	0.24	0.82	0.14	19	reviewed	nc	nc
1/17/2005	7:09:05	35.9261667	-120.4763333	9.744	2.13	md	64	45	0.01802	0.07	nc	nc21433903	2017-01-10T05:18:37.300Z	4 km NW of Parkfield, California	earthquake	0.18	0.21	0.12	57	reviewed	nc	nc
1/16/2005	9:56:32	35.9313333	-120.481	9.85	2.48	md	23	104	0.02793	0.05	nc	nc21433731	2017-01-10T05:14:49.880Z	5 km NW of Parkfield, California	earthquake	0.38	0.63		1	reviewed	nc	nc
1/15/2005	3:31:58	35.958	-120.5111667	8.262	2.14	md	52	57	0.01081	0.05	nc	nc21433504	2017-01-10T05:09:12.830Z	9 km NW of Parkfield, California	earthquake	0.13	0.17	0.1	42	reviewed	nc	nc
1/14/2005	12:07:09	35.6001667	-120.8991667	5.552	2.02	md	37	84	0.06667	0.06	nc	nc21433385	2017-01-10T05:06:16.410Z	14 km S of Lake Nacimiento, California	earthquake	0.23	0.65	0.24	13	reviewed	nc	nc
1/13/2005	2:20:54	36.001	-120.7068333	17.749	2.11	md	11	327	0.08378	0.28	nc	nc21433203	2017-01-10T04:58:53.419Z	17 km NNE of Bradley, California	earthquake	16	14.13		1	reviewed	nc	nc
1/12/2005	14:19:23	35.5323333	-120.8518333	4.59	2.73	md	50	59	0.04505	0.06	nc	nc21433115	2017-01-10T04:56:01.030Z	10 km NNE of Cayucos, California	earthquake	0.15	0.48	0.08	64	reviewed	nc	nc
1/9/2005	6:09:43	35.113	-118.9395	21.686	2.08	ml	23	64	0.09076	0.26	ci	ci14117564	2016-03-07T21:52:51.787Z	15km SW of Arvin, CA	earthquake	0.56	1.58	0.214	13	reviewed	ci	ci
1/8/2005	4:46:05	35.934	-120.487	5.127	2.35	md	45	48	0.02252	0.05	nc	nc21432539	2017-01-10T04:35:57.200Z	6 km NW of Parkfield, California	earthquake	0.13	0.18	0.1	41	reviewed	nc	nc
1/7/2005	19:04:14	35.927	-120.4758333	4.684	2.29	md	25	55	0.01892	0.05	nc	nc21432461	2017-01-10T04:34:40.800Z	4 km NW of Parkfield, California	earthquake	0.24	0.29	0.17	20	reviewed	nc	nc
1/6/2005	4:32:34	35.5208333	-120.8311667	3.79	2.37	md	64	55	0.06306	0.06	nc	nc21432175	2017-01-10T04:28:03.500Z	10 km NNE of Cayucos, California	earthquake	0.15	0.66	0.11	58	reviewed	nc	nc
1/3/2005	13:29:11	36.0485	-120.6075	3.513	2.66	md	52	56	0.02252	0.07	nc	nc21431738	2017-01-10T04:16:53.430Z	22 km NW of Parkfield, California	earthquake	0.14	0.28	0.11	60	reviewed	nc	nc
1/3/2005	3:04:16	35.5726667	-120.8778333	6.131	2.88	md	54	43	0.04505	0.08	nc	nc21431688	2017-01-10T04:15:28.610Z	14 km N of Cayucos, California	earthquake	0.13	0.39	0.09	73	reviewed	nc	nc
12/31/2004	23:06:20	35.7373333	-120.297	13.208	2.19	md	57	32	0.03874	0.1	nc	nc21431267	2017-01-10T01:10:53.550Z	11 km NE of Shandon, California	earthquake	0.21	0.36	0.13	49	reviewed	nc	nc
12/29/2004	14:12:59	35.4965	-120.8046667	4.648	2.08	md	55	44	0.07297	0.1	nc	nc21430799	2017-01-10T00:56:07.370Z	9 km NE of Cayucos, California	earthquake	0.15	0.6	0.14	42	reviewed	nc	nc
12/29/2004	3:45:59	36.249	-120.4031667	7.587	2.1	md	31	86	0.04865	0.07	nc	nc21430745	2017-01-10T00:54:04.100Z	12 km NNW of Coalinga, California	earthquake	0.19	0.34	0.15	22	reviewed	nc	nc
12/28/2004	17:57:22	35.891	-120.1691667	18.482	2.12	md	14	158	0.0973	0.22	nc	nc21430657	2017-01-10T00:51:22.988Z	13 km SSW of Avenal, California	earthquake	1.02	2.71	0.16	6	reviewed	nc	nc
12/28/2004	3:01:36	35.042	-119.0345	10.585	2.12	ml	14	98	0.07854	0.27	ci	ci10070133	2016-02-17T06:33:23.047Z	14km NW of Grapevine, California	earthquake	0.7	2.48	0.353	4	reviewed	ci	ci
12/28/2004	2:52:39	35.0523333	-119.0421667	10.265	2.44	ml	35	71	0.08642	0.27	ci	ci10070129	2016-04-02T04:00:01.980Z	16km NW of Grapevine, CA	earthquake	0.46	1.44	0.288	23	reviewed	ci	ci
12/28/2004	2:49:13	35.051	-119.0333333	9.415	2.58	ml	42	59	0.08729	0.35	ci	ci10070125	2016-04-02T19:51:01.366Z	15km NW of Grapevine, CA	earthquake	0.44	2.08	0.272	33	reviewed	ci	ci
12/27/2004	23:10:15	36.193	-120.3225	7.544	2.14	md	32	54	0.1054	0.07	nc	nc30506668	2017-01-10T00:47:40.900Z	6 km NNE of Coalinga, California	earthquake	0.24	0.67	0.14	16	automatic	nc	nc
12/27/2004	23:08:47	36.1831667	-120.3058333	9.617	2.74	md	33	101	0.1027	0.08	nc	nc30506667	2017-01-10T00:47:32.018Z	Central California	earthquake	0.37	0.23	0.1	39	automatic	nc	nc
12/27/2004	23:08:14	36.1976667	-120.3205	9.899	2.44	md	47	55	0.05495	0.08	nc	nc21430555	2017-01-10T00:47:27.260Z	7 km NNE of Coalinga, California	earthquake	0.21	0.32	0.08	48	reviewed	nc	nc
12/24/2004	13:11:24	35.8925	-120.4365	10.486	2.07	md	50	43	0.03063	0.05	nc	nc21429707	2017-01-10T00:20:03.280Z	0 km SSW of Parkfield, California	earthquake	0.18	0.3	0.09	35	reviewed	nc	nc
12/23/2004	15:49:50	35.5315	-120.8066667	5.4	3.34	ml	71	51	0.08198	0.07	nc	nc21429501	2017-01-10T00:12:33.060Z	9 km WSW of Templeton, California	earthquake	0.14	0.57		4	reviewed	nc	nc
12/23/2004	0:05:05	35.5566667	-120.8101667	5.43	2.25	md	62	33	0.08198	0.1	nc	nc21429318	2017-01-10T00:07:46.920Z	9 km W of Templeton, California	earthquake	0.15	0.58	0.11	52	reviewed	nc	nc
12/22/2004	6:12:24	35.4028333	-119.3016667	25.206	2.72	ml	38	88	0.1714	0.27	ci	ci10068921	2016-04-02T00:48:03.700Z	11km SSW of Shafter, CA	earthquake	0.44	0.92	0.297	30	reviewed	ci	ci
12/21/2004	20:55:21	35.9651667	-120.518	2.928	2.03	md	9	99	0.01532	0.04	nc	nc21429064	2017-01-09T23:59:27.391Z	10 km NW of Parkfield, California	earthquake	0.33	0.82		1	reviewed	nc	nc
12/21/2004	4:10:33	35.9735	-120.529	4.392	2.78	md	65	30	0.01351	0.07	nc	nc21428897	2017-01-09T23:54:51.270Z	11 km NW of Parkfield, California	earthquake	0.14	0.16	0.06	63	reviewed	nc	nc
12/21/2004	1:26:27	35.5251667	-120.8325	5.62	2.27	md	57	53	0.06126	0.08	nc	nc21428866	2017-01-09T23:53:00.980Z	10 km NNE of Cayucos, California	earthquake	0.14	0.5	0.08	47	reviewed	nc	nc
12/20/2004	1:20:59	36.135	-120.198	8.912	2.43	md	54	96	0.1027	0.08	nc	nc21428332	2017-01-09T23:44:13.060Z	11 km SW of Huron, California	earthquake	0.16	0.39	0.1	53	reviewed	nc	nc
12/19/2004	19:37:05	35.6128333	-120.8976667	6.913	2.27	md	63	53	0.03784	0.08	nc	nc21428230	2017-01-09T23:40:30.730Z	12 km S of Lake Nacimiento, California	earthquake	0.15	0.41	0.09	52	reviewed	nc	nc
12/19/2004	19:24:48	35.5956667	-120.881	3.641	2.16	md	60	47	0.04685	0.09	nc	nc21428226	2017-01-09T23:40:14.940Z	14 km S of Lake Nacimiento, California	earthquake	0.14	0.41	0.19	43	reviewed	nc	nc
12/19/2004	8:39:17	36.1151667	-120.2031667	9.552	2.12	md	55	90	0.09279	0.05	nc	nc21428173	2017-01-09T23:34:51.300Z	13 km SW of Huron, California	earthquake	0.16	0.34	0.14	48	reviewed	nc	nc
12/18/2004	23:31:48	35.9426667	-120.497	13.347	2.66	md	62	36	0.01351	0.07	nc	nc21428128	2017-01-09T23:30:04.730Z	7 km NW of Parkfield, California	earthquake	0.17	0.22	0.1	85	reviewed	nc	nc
12/17/2004	23:59:02	35.5896667	-120.871	2.931	2.14	md	61	45	0.05135	0.08	nc	nc21428020	2017-01-09T23:18:36.340Z	15 km S of Lake Nacimiento, California	earthquake	0.15	0.45	0.15	50	reviewed	nc	nc
12/17/2004	21:07:44	36.036	-120.1016667	4.347	2.05	md	34	183	0.02613	0.11	nc	nc21427996	2017-01-09T23:16:39.300Z	4 km NE of Avenal, California	earthquake	0.41	0.41	0.16	17	reviewed	nc	nc
12/16/2004	15:57:46	35.9241667	-120.4725	5.037	2.04	md	46	55	0.03514	0.06	nc	nc21427808	2017-01-09T23:06:12.020Z	4 km NW of Parkfield, California	earthquake	0.17	0.25	0.14	32	reviewed	nc	nc
12/16/2004	13:46:25	36.0298333	-120.0745	4.626	2.56	md	57	196	0.04234	0.08	nc	nc21427780	2017-01-09T23:05:07.960Z	5 km ENE of Avenal, California	earthquake	0.36	0.3	0.12	66	reviewed	nc	nc
12/16/2004	9:38:17	35.9531667	-120.5053333	13.55	2.18	md	53	37	0.006306	0.07	nc	nc21427734	2017-01-09T23:04:11.100Z	8 km NW of Parkfield, California	earthquake	0.2	0.21	0.12	42	reviewed	nc	nc
12/15/2004	2:02:00	35.8953333	-120.4398333	10.236	2.22	md	54	48	0.03423	0.05	nc	nc21427381	2017-01-09T22:48:50.780Z	0 km SW of Parkfield, California	earthquake	0.17	0.27	0.07	44	reviewed	nc	nc
12/14/2004	23:27:28	36.0085	-120.614	5.88	2.93	md	6	158	0.2459	0.08	nc	nc30506638	2017-01-09T22:47:06.010Z	20 km NW of Parkfield, California	earthquake	1.43	7.97	0.16	7	automatic	nc	nc
12/14/2004	19:10:46	35.8828333	-120.4276667	5.606	2.58	md	52	44	0.02162	0.04	nc	nc21427313	2017-01-09T22:44:01.290Z	1 km SSE of Parkfield, California	earthquake	0.14	0.22	0.08	53	reviewed	nc	nc
12/13/2004	0:12:38	35.5766667	-120.769	1.518	2.03	md	47	64	0.1027	0.1	nc	nc21426923	2017-01-09T22:27:14.120Z	6 km WNW of Templeton, California	earthquake	0.18	1.41	0.16	25	reviewed	nc	nc
12/11/2004	19:27:58	35.9488333	-120.5055	8.156	2.37	md	7	122	0.01081	0.07	nc	nc70000367	2017-01-09T22:17:55.542Z	8 km NW of Parkfield, California	earthquake	1.76	1.9		1	reviewed	nc	nc
12/10/2004	12:11:29	35.599	-119.883	13.168	2.45	ml	15	86	0.1738	0.35	ci	ci10066029	2016-02-16T08:42:19.701Z	30km NNE of Simmler, California	earthquake	0.97	1.49	0.137	12	reviewed	ci	ci
12/10/2004	3:37:19	35.8573333	-120.402	5.025	2.29	md	52	55	0.02162	0.04	nc	nc21426346	2017-01-09T22:05:16.490Z	5 km SSE of Parkfield, California	earthquake	0.15	0.21	0.14	49	reviewed	nc	nc
12/10/2004	3:36:48	35.859	-120.4031667	4.945	2.44	md	41	53	0.02252	0.04	nc	nc30506633	2017-01-09T22:05:09.440Z	5 km SSE of Parkfield, California	earthquake	0.16	0.27	0.1	34	automatic	nc	nc
12/8/2004	7:16:49	35.9846667	-120.5438333	3.003	2.12	md	45	56	0.01171	0.07	nc	nc21425829	2017-01-09T21:52:10.060Z	13 km NW of Parkfield, California	earthquake	0.19	0.23	0.17	32	reviewed	nc	nc
12/8/2004	3:06:12	35.5101667	-120.8928333	1.712	2.25	md	49	59	0.02613	0.08	nc	nc21425791	2017-01-09T21:51:27.850Z	7 km N of Cayucos, California	earthquake	0.15	0.35	0.12	42	reviewed	nc	nc
12/8/2004	2:20:21	35.8816667	-120.4271667	9.746	2.2	md	60	38	0.02072	0.05	nc	nc21425783	2017-01-09T21:51:17.780Z	2 km SSE of Parkfield, California	earthquake	0.17	0.24	0.11	58	reviewed	nc	nc
12/8/2004	0:09:16	35.4746667	-119.3721667	20.848	2.17	ml	20	125	0.2544	0.19	ci	ci10065305	2016-04-02T14:10:47.137Z	10km WSW of Shafter, CA	earthquake	0.55	1.66	0.057	7	reviewed	ci	ci
12/7/2004	21:20:52	35.9881667	-120.549	4.363	2.33	md	47	55	0.01351	0.05	nc	nc21425747	2017-01-09T21:50:23.680Z	14 km NW of Parkfield, California	earthquake	0.16	0.2	0.08	35	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/5/2004	22:12:02	35.899	-120.4416667	5.714	2.35	md	57	45	0.03694	0.07	nc	nc21425265	2017-01-09T21:28:09.640Z	0 km W of Parkfield, California	earthquake	0.15	0.23	0.12	50	reviewed	nc	nc
12/5/2004	4:44:42	35.2831667	-120.6338333	9.791	2.08	md	39	51	0.03333	0.1	nc	nc21425141	2017-01-09T21:20:00.351Z	2 km E of San Luis Obispo, California	earthquake	0.2	0.44	0.21	26	reviewed	nc	nc
12/4/2004	21:36:29	35.5618333	-120.8081667	5.21	2.05	md	42	40	0.08559	0.12	nc	nc21425085	2017-01-09T21:16:49.786Z	9 km W of Templeton, California	earthquake	0.2	0.75	0.16	25	reviewed	nc	nc
12/4/2004	11:41:56	35.8558333	-120.4063333	8.505	2.51	md	62	39	0.02072	0.04	nc	nc21425003	2017-01-09T21:13:22.730Z	5 km SSE of Parkfield, California	earthquake	0.15	0.22	0.08	74	reviewed	nc	nc
12/4/2004	5:47:17	35.9441667	-120.4896667	10.424	2.63	md	64	37	0.01351	0.06	nc	nc21424966	2017-01-09T21:11:38.860Z	7 km NW of Parkfield, California	earthquake	0.16	0.21	0.08	75	reviewed	nc	nc
12/4/2004	5:39:35	35.9425	-120.4898333	10.47	3.35	ml	69	32	0.01441	0.06	nc	nc21424965	2017-01-09T21:11:31.930Z	7 km NW of Parkfield, California	earthquake	0.14	0.19		8	reviewed	nc	nc
12/2/2004	13:57:56	35.9733333	-120.5223333	4.41	2.01	md	8	131	0.009009	0.03	nc	nc30229563	2017-01-09T20:58:30.874Z	11 km NW of Parkfield, California	earthquake	0.86	1.54		1	reviewed	nc	nc
11/29/2004	16:14:12	35.9416667	-120.4888333	10.34	2.14	md	55	37	0.01622	0.06	nc	nc21423661	2017-01-09T20:23:59.830Z	6 km NW of Parkfield, California	earthquake	0.19	0.25	0.12	47	reviewed	nc	nc
11/29/2004	16:09:17	35.5533333	-120.8136667	5.18	2.84	md	71	45	0.07838	0.07	nc	nc21423660	2017-01-09T20:23:50.080Z	9 km W of Templeton, California	earthquake	0.13	0.59	0.1	89	reviewed	nc	nc
11/29/2004	1:54:14	35.9448333	-120.4923333	9.664	4.17	mw	68	37	0.01171	0.06	nc	nc21423530	2020-05-06T07:01:12.967Z	7 km NW of Parkfield, California	earthquake	0.14	0.18		2	reviewed	nc	nc
11/27/2004	5:19:40	35.9388333	-120.4855	9.837	3.24	ml	62	38	0.01982	0.06	nc	nc21423126	2017-01-09T20:03:13.390Z	6 km NW of Parkfield, California	earthquake	0.15	0.21		7	reviewed	nc	nc
11/26/2004	22:02:12	35.9301667	-120.479	5.114	2.39	md	56	50	0.02072	0.05	nc	nc21423019	2017-01-09T19:57:35.680Z	5 km NW of Parkfield, California	earthquake	0.13	0.17	0.11	54	reviewed	nc	nc
11/26/2004	9:15:24	36.2288333	-119.9746667	19.791	2.16	md	38	150	0.2	0.22	nc	nc21422868	2017-01-09T19:49:47.698Z	7 km WSW of Lemoore Station, California	earthquake	0.68	0.55	0.35	9	reviewed	nc	nc
11/25/2004	23:56:39	35.956	-120.5051667	13.432	2.18	md	58	34	0.005405	0.07	nc	nc21422774	2017-01-09T19:44:34.410Z	9 km NW of Parkfield, California	earthquake	0.2	0.19	0.1	51	reviewed	nc	nc
11/25/2004	19:04:02	35.8665	-120.4115	5.475	2.01	md	47	53	0.01712	0.05	nc	nc21422696	2017-01-09T19:42:24.730Z	4 km SSE of Parkfield, California	earthquake	0.16	0.22	0.1	35	reviewed	nc	nc
11/25/2004	15:52:50	35.5096667	-120.8173333	3.29	2.15	md	56	58	0.07297	0.07	nc	nc21422664	2017-01-09T19:41:18.520Z	10 km NE of Cayucos, California	earthquake	0.13	0.62	0.16	29	reviewed	nc	nc
11/24/2004	5:12:16	35.7793333	-120.3263333	8.368	2.98	md	61	40	0.01261	0.04	nc	nc21422213	2017-01-09T19:29:15.460Z	14 km NNE of Shandon, California	earthquake	0.15	0.24	0.07	75	reviewed	nc	nc
11/22/2004	14:10:41	35.9448333	-120.4908333	9.424	3.44	ml	68	37	0.01261	0.06	nc	nc21421800	2017-01-09T19:07:42.380Z	7 km NW of Parkfield, California	earthquake	0.15	0.2		10	reviewed	nc	nc
11/22/2004	2:17:04	36.014	-120.5743333	3.938	2.14	md	41	44	0.03063	0.06	nc	nc21421686	2017-01-09T19:02:54.200Z	18 km NW of Parkfield, California	earthquake	0.2	0.28	0.13	30	reviewed	nc	nc
11/21/2004	21:32:04	35.5468333	-120.8013333	3.32	2.07	md	43	47	0.08739	0.11	nc	nc21421635	2017-01-09T19:01:35.646Z	8 km W of Templeton, California	earthquake	0.17	0.83	0.14	28	reviewed	nc	nc
11/20/2004	13:14:40	35.804	-120.3536667	9.553	2.3	md	58	60	0.02703	0.05	nc	nc21421319	2017-01-09T18:47:53.740Z	12 km SE of Parkfield, California	earthquake	0.16	0.25	0.09	48	reviewed	nc	nc
11/20/2004	12:00:17	35.803	-120.3543333	9.343	2.05	md	52	59	0.02793	0.05	nc	nc21421303	2017-01-09T18:46:15.460Z	12 km SSE of Parkfield, California	earthquake	0.16	0.26	0.08	36	reviewed	nc	nc
11/19/2004	21:27:34	35.5873333	-120.8736667	6.431	2.09	md	56	45	0.05405	0.09	nc	nc21421124	2017-01-09T18:37:35.300Z	15 km S of Lake Nacimiento, California	earthquake	0.16	0.38	0.13	46	reviewed	nc	nc
11/19/2004	2:56:00	35.86	-120.4083333	8.625	3.72	mw	65	39	0.02252	0.04	nc	nc21420919	2022-08-09T07:12:21.052Z	4 km SSE of Parkfield, California	earthquake	0.15	0.22		3	reviewed	nc	nc
11/18/2004	0:54:53	35.5646667	-120.833	6.465	2.07	md	40	71	0.06757	0.13	nc	nc21420613	2017-01-09T18:07:51.468Z	11 km W of Templeton, California	earthquake	0.2	0.83	0.19	23	reviewed	nc	nc
11/17/2004	15:38:25	35.6195	-120.8841667	7.164	2.42	md	56	51	0.02613	0.08	nc	nc21420480	2017-01-09T17:35:45.750Z	12 km S of Lake Nacimiento, California	earthquake	0.16	0.45	0.14	48	reviewed	nc	nc
11/17/2004	15:18:25	35.6068333	-120.712	7.704	2.1	md	36	51	0.1748	0.11	nc	nc21420470	2017-01-09T17:35:09.506Z	Central California	earthquake	0.32	2.51	0.06	11	reviewed	nc	nc
11/17/2004	11:15:19	35.9581667	-120.5123333	13.442	2.65	md	53	33	0.01171	0.07	nc	nc21420440	2017-01-09T17:32:45.360Z	9 km NW of Parkfield, California	earthquake	0.19	0.27	0.08	63	reviewed	nc	nc
11/17/2004	5:58:59	35.9575	-120.5108333	13.202	2.25	md	49	33	0.00991	0.07	nc	nc21420365	2017-01-09T17:28:40.260Z	9 km NW of Parkfield, California	earthquake	0.23	0.27	0.11	51	reviewed	nc	nc
11/16/2004	10:21:16	35.8525	-120.396	5.105	2.68	md	52	57	0.01622	0.04	nc	nc21420121	2017-01-09T17:19:34.600Z	6 km SSE of Parkfield, California	earthquake	0.14	0.23	0.08	48	reviewed	nc	nc
11/16/2004	9:34:05	35.7818333	-120.329	8.403	3.15	ml	56	42	0.01261	0.05	nc	nc21420114	2017-01-09T17:19:01.290Z	14 km NNE of Shandon, California	earthquake	0.15	0.25		6	reviewed	nc	nc
11/16/2004	7:45:42	35.532	-120.8348333	5.96	2.06	md	49	51	0.05856	0.06	nc	nc21420095	2017-01-09T17:18:34.070Z	11 km NNE of Cayucos, California	earthquake	0.16	0.54	0.18	26	reviewed	nc	nc
11/16/2004	7:32:00	35.8536667	-120.3963333	4.645	2.98	md	55	40	0.01802	0.05	nc	nc21420094	2017-01-09T17:18:25.170Z	6 km SSE of Parkfield, California	earthquake	0.13	0.21	0.08	70	reviewed	nc	nc
11/15/2004	21:09:54	35.6211667	-120.7633333	1.396	2.2	md	45	116	0.08649	0.05	nc	nc21419979	2017-01-09T17:14:29.300Z	6 km W of Paso Robles, California	earthquake	0.37	1.9	0.12	24	reviewed	nc	nc
11/15/2004	17:20:31	35.5766667	-120.8281667	3.131	2.04	md	44	56	0.07207	0.15	nc	nc21419935	2017-01-09T17:13:00.770Z	11 km WNW of Templeton, California	earthquake	0.22	0.88	0.11	13	reviewed	nc	nc
11/15/2004	9:43:37	35.9258333	-120.4768333	4.93	2.41	md	46	48	0.03153	0.06	nc	nc21419838	2017-01-09T17:09:26.210Z	4 km NW of Parkfield, California	earthquake	0.16	0.23	0.08	35	reviewed	nc	nc
11/14/2004	21:41:15	35.8478333	-120.3956667	6.235	2.45	md	52	37	0.01171	0.04	nc	nc21419738	2017-01-09T17:05:18.400Z	6 km SSE of Parkfield, California	earthquake	0.15	0.22	0.08	47	reviewed	nc	nc
11/14/2004	6:29:55	35.8561667	-120.3975	4.765	2.22	md	44	56	0.01982	0.05	nc	nc21419582	2017-01-09T16:58:53.070Z	5 km SSE of Parkfield, California	earthquake	0.18	0.28	0.15	27	reviewed	nc	nc
11/13/2004	23:14:05	35.9288333	-120.4766667	9.874	3.14	ml	59	40	0.01982	0.06	nc	nc21419513	2017-01-09T16:56:57.280Z	5 km NW of Parkfield, California	earthquake	0.17	0.21		7	reviewed	nc	nc
11/12/2004	22:23:13	35.7841667	-120.3216667	4.073	2.04	md	40	55	0.01892	0.06	nc	nc21419251	2017-01-09T16:49:15.210Z	15 km NNE of Shandon, California	earthquake	0.21	0.31	0.12	25	reviewed	nc	nc
11/12/2004	20:20:25	35.536	-120.829	6.16	2.19	md	55	30	0.06396	0.11	nc	nc21419219	2017-01-09T16:48:17.480Z	11 km W of Templeton, California	earthquake	0.19	0.68	0.17	45	reviewed	nc	nc
11/12/2004	7:35:25	35.9498333	-120.4988333	13.69	2.66	md	56	37	0.007207	0.08	nc	nc21419100	2017-01-09T07:32:31.340Z	8 km NW of Parkfield, California	earthquake	0.22	0.26	0.08	74	reviewed	nc	nc
11/11/2004	9:42:30	35.5476667	-120.7793333	5.928	2.01	md	35	86	0.1045	0.11	nc	nc21418897	2017-01-09T07:25:23.169Z	6 km W of Templeton, California	earthquake	0.21	0.95	0.14	11	reviewed	nc	nc
11/11/2004	9:41:02	35.5486667	-120.7738333	3.898	2.15	md	47	49	0.1099	0.13	nc	nc21418896	2017-01-09T07:25:14.580Z	6 km W of Templeton, California	earthquake	0.22	0.88	0.17	12	reviewed	nc	nc
11/11/2004	8:06:02	35.6071667	-120.7083333	7.287	2.14	md	58	37	0.1333	0.07	nc	nc21418882	2017-01-09T07:24:47.620Z	2 km SW of Paso Robles, California	earthquake	0.16	1.82	0.17	43	reviewed	nc	nc
11/11/2004	4:33:12	35.5796667	-120.8643333	6.171	2.19	md	49	42	0.05766	0.09	nc	nc21418858	2017-01-09T07:23:57.310Z	14 km WNW of Templeton, California	earthquake	0.16	0.45	0.18	42	reviewed	nc	nc
11/10/2004	22:11:06	35.5245	-120.8343333	8.788	2.2	md	41	55	0.05946	0.05	nc	nc21418795	2017-01-09T07:21:59.430Z	10 km NNE of Cayucos, California	earthquake	0.22	0.76	0.13	13	reviewed	nc	nc
11/10/2004	20:17:16	35.5575	-120.7985	4.36	2.03	md	40	61	0.09189	0.09	nc	nc21418764	2017-01-09T07:21:09.040Z	8 km W of Templeton, California	earthquake	0.21	0.73	0.14	24	reviewed	nc	nc
11/10/2004	14:11:51	35.4981667	-120.7855	3.328	2.03	md	46	58	0.08829	0.09	nc	nc21418717	2017-01-09T07:19:32.500Z	9 km SW of Templeton, California	earthquake	0.17	0.78	0.25	12	reviewed	nc	nc
11/10/2004	10:07:22	36.2471667	-119.8271667	20.048	2	md	26	145	0.2955	0.13	nc	nc21418685	2017-01-09T07:18:16.609Z	6 km N of Stratford, California	earthquake	1.02	0.43		1	reviewed	nc	nc
11/10/2004	6:54:59	35.8953333	-120.4388333	6.131	2.6	md	23	58	0.03333	0.06	nc	nc21418632	2017-01-09T07:17:02.929Z	0 km SW of Parkfield, California	earthquake	0.32	0.63		1	reviewed	nc	nc
11/8/2004	17:25:45	35.9395	-120.4851667	10.52	2.49	md	57	60	0.01892	0.07	nc	nc21418222	2017-01-09T07:03:38.580Z	6 km NW of Parkfield, California	earthquake	0.18	0.23	0.08	60	reviewed	nc	nc
11/7/2004	4:06:16	35.8586667	-120.4045	5.259	2.43	md	39	53	0.02252	0.04	nc	nc30506556	2017-01-09T06:51:11.880Z	5 km SSE of Parkfield, California	earthquake	0.19	0.29	0.08	33	automatic	nc	nc
11/6/2004	16:58:11	35.5246667	-120.8328333	6.22	2.14	md	60	53	0.06126	0.06	nc	nc21417633	2017-01-09T06:45:43.470Z	10 km NNE of Cayucos, California	earthquake	0.16	0.56	0.2	43	reviewed	nc	nc
11/5/2004	10:53:22	35.528	-120.8148333	9.25	2.03	md	55	42	0.07568	0.07	nc	nc30228522	2017-01-09T06:36:20.360Z	10 km WSW of Templeton, California	earthquake	0.18	0.82	0.14	36	reviewed	nc	nc
11/4/2004	11:02:26	35.7266667	-120.269	9.859	2.3	md	48	55	0.01622	0.05	nc	nc21417124	2017-01-09T06:30:11.010Z	12 km NE of Shandon, California	earthquake	0.13	0.26	0.09	52	reviewed	nc	nc
11/4/2004	9:52:57	35.9058333	-120.4501667	5.671	2.61	md	45	54	0.03063	0.05	nc	nc21417120	2017-01-09T06:30:00.410Z	1 km WNW of Parkfield, California	earthquake	0.14	0.17	0.11	49	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/4/2004	3:34:24	35.459	-120.752	5.225	2.26	md	60	52	0.07568	0.07	nc	nc21417076	2017-01-09T06:28:47.470Z	8 km WSW of Atascadero, California	earthquake	0.13	0.47	0.12	50	reviewed	nc	nc
11/4/2004	0:55:22	35.93	-120.4843333	3.99	2.33	md	9	114	0.02432	0.04	nc	nc21417040	2017-01-09T06:27:45.976Z	5 km NW of Parkfield, California	earthquake	0.48	0.82		1	reviewed	nc	nc
11/3/2004	23:19:05	35.5405	-120.812	7.74	2.03	md	48	33	0.07748	0.06	nc	nc21417024	2017-01-09T06:27:34.910Z	9 km W of Templeton, California	earthquake	0.18	0.7	0.14	32	reviewed	nc	nc
11/3/2004	12:30:10	35.8725	-120.4176667	5.682	2.08	md	53	38	0.01622	0.05	nc	nc21416888	2017-01-09T06:25:17.640Z	3 km SSE of Parkfield, California	earthquake	0.14	0.22	0.09	41	reviewed	nc	nc
11/3/2004	5:29:04	35.5771667	-120.8748333	3.681	2.32	md	60	44	0.05045	0.09	nc	nc21416802	2017-01-09T06:22:48.700Z	14 km N of Cayucos, California	earthquake	0.13	0.43	0.15	54	reviewed	nc	nc
11/2/2004	12:41:56	35.478	-120.7823333	5.565	2.04	md	61	55	0.08378	0.08	nc	nc21416588	2017-01-09T06:18:32.610Z	10 km W of Atascadero, California	earthquake	0.16	0.57	0.2	31	reviewed	nc	nc
11/2/2004	10:26:11	35.9346667	-120.4865	4.763	3.28	ml	17	103	0.02342	0.04	nc	nc21416567	2017-01-09T06:17:41.369Z	6 km NW of Parkfield, California	earthquake	0.28	0.6		17	reviewed	nc	nc
11/1/2004	18:52:31	35.8426667	-120.3838333	4.129	2.51	md	39	58	0.01351	0.06	nc	nc21416364	2017-01-09T06:12:12.820Z	7 km SE of Parkfield, California	earthquake	0.18	0.27	0.09	39	reviewed	nc	nc
10/31/2004	0:46:32	35.527	-120.7945	3.418	2.56	md	71	52	0.09189	0.09	nc	nc21415967	2017-01-09T06:02:37.430Z	8 km WSW of Templeton, California	earthquake	0.14	0.8	0.1	83	reviewed	nc	nc
10/30/2004	21:21:54	35.9581667	-120.5103333	8.522	2.28	md	58	33	0.00991	0.05	nc	nc21415925	2017-01-09T06:01:56.000Z	9 km NW of Parkfield, California	earthquake	0.12	0.16	0.12	57	reviewed	nc	nc
10/29/2004	14:28:50	35.7723333	-120.3218333	8.326	2.4	md	46	33	0.01441	0.05	nc	nc21415486	2017-01-09T05:53:10.950Z	Central California	earthquake	0.18	0.35	0.08	38	reviewed	nc	nc
10/29/2004	3:32:43	35.7845	-120.3331667	8.678	3.35	ml	62	42	0.01261	0.05	nc	nc21415362	2017-01-09T05:50:28.850Z	15 km NNE of Shandon, CA	earthquake	0.14	0.24		7	reviewed	nc	nc
10/28/2004	11:32:03	35.9285	-120.4721667	9.35	2.16	md	36	54	0.03423	0.06	nc	nc21415152	2017-01-09T05:46:53.770Z	4 km NW of Parkfield, California	earthquake	0.21	0.31	0.06	26	automatic	nc	nc
10/28/2004	7:47:55	35.9235	-120.4726667	4.833	2.03	md	32	60	0.03514	0.06	nc	nc21415115	2017-01-09T05:45:57.090Z	4 km NW of Parkfield, California	earthquake	0.22	0.32	0.13	24	automatic	nc	nc
10/26/2004	23:59:24	35.9956667	-120.4335	15.593	2.76	md	5	328	0.06396	0.04	nc	nc21414753	2017-01-09T05:39:37.641Z	10 km N of Parkfield, California	earthquake	5.17	6.87		1	automatic	nc	nc
10/26/2004	13:06:36	35.7726667	-120.3106667	3.965	2.23	md	31	61	0.01982	0.06	nc	nc21414635	2017-01-09T05:37:24.450Z	14 km NNE of Shandon, California	earthquake	0.25	0.32	0.11	25	automatic	nc	nc
10/24/2004	18:05:39	35.961	-120.5145	4.768	2.25	md	37	61	0.01351	0.05	nc	nc21414050	2017-01-09T05:29:50.300Z	10 km NW of Parkfield, California	earthquake	0.18	0.16	0.15	28	automatic	nc	nc
10/24/2004	4:19:45	35.5083333	-120.8266667	7.177	2.31	md	13	174	0.06667	0.11	nc	nc68012045	2017-01-09T05:27:18.667Z	9 km NE of Cayucos, California	earthquake	0.61	0.88	0.06	13	reviewed	nc	nc
10/24/2004	3:41:16	35.9266667	-120.4726667	9.264	2.84	md	64	43	0.01982	0.06	nc	nc21413873	2017-01-09T05:27:14.490Z	4 km NW of Parkfield, California	earthquake	0.15	0.21	0.09	78	reviewed	nc	nc
10/24/2004	0:19:28	35.6036667	-120.8775	7.301	2.03	md	38	78	0.03874	0.09	nc	nc21413840	2017-01-09T05:26:31.294Z	13 km S of Lake Nacimiento, California	earthquake	0.19	0.6	0.18	20	reviewed	nc	nc
10/23/2004	16:11:07	35.895	-120.4401667	4.84	2.29	md	37	48	0.03423	0.08	nc	nc21413661	2017-01-09T05:24:46.040Z	0 km SW of Parkfield, California	earthquake	0.22	0.37	0.1	27	automatic	nc	nc
10/23/2004	13:02:21	35.5773333	-120.8788333	4.401	2.53	md	72	44	0.04955	0.09	nc	nc21413607	2017-01-09T05:23:55.460Z	14 km N of Cayucos, California	earthquake	0.13	0.42	0.11	85	reviewed	nc	nc
10/23/2004	7:55:17	35.8831667	-120.4266667	5.806	2.98	md	61	44	0.02072	0.05	nc	nc21413548	2017-01-09T05:22:43.910Z	1 km SSE of Parkfield, California	earthquake	0.14	0.2	0.07	72	reviewed	nc	nc
10/23/2004	4:49:45	35.8803333	-120.43	9.539	2.12	md	35	55	0.02342	0.04	nc	nc21413438	2017-01-09T05:21:40.760Z	2 km S of Parkfield, California	earthquake	0.26	0.3	0.12	24	automatic	nc	nc
10/23/2004	4:18:08	35.9451667	-120.4955	12.76	2.01	md	35	63	0.01171	0.09	nc	nc21413427	2017-01-09T05:21:24.510Z	7 km NW of Parkfield, California	earthquake	0.27	0.34	0.17	26	automatic	nc	nc
10/23/2004	3:44:41	35.91	-120.4525	5.94	2.73	md	46	42	0.03423	0.06	nc	nc21413404	2017-01-09T05:21:10.480Z	2 km WNW of Parkfield, California	earthquake	0.16	0.24	0.07	55	automatic	nc	nc
10/22/2004	14:14:20	35.5605	-120.798	4.028	2.07	md	25	84	0.09279	0.13	nc	nc21412418	2017-01-09T05:19:04.034Z	8 km W of Templeton, California	earthquake	0.32	1.27	0.1	10	reviewed	nc	nc
10/22/2004	7:52:07	35.9345	-120.4861667	4.963	2.4	md	44	55	0.02342	0.06	nc	nc21412298	2017-01-09T05:18:09.350Z	6 km NW of Parkfield, California	earthquake	0.15	0.2	0.1	37	automatic	nc	nc
10/21/2004	1:52:36	35.8573333	-120.404	4.755	2.36	md	43	54	0.02162	0.05	nc	nc30500991	2017-01-09T05:10:44.120Z	5 km SSE of Parkfield, California	earthquake	0.17	0.27	0.11	37	automatic	nc	nc
10/21/2004	1:51:01	35.8576667	-120.4036667	4.865	2.5	md	45	54	0.02162	0.04	nc	nc21411945	2017-01-09T05:10:37.620Z	5 km SSE of Parkfield, California	earthquake	0.14	0.23	0.08	38	automatic	nc	nc
10/20/2004	19:37:23	35.8868333	-120.4265	5.735	2	md	27	49	0.02072	0.04	nc	nc21411915	2017-01-09T05:09:36.037Z	1 km SSE of Parkfield, California	earthquake	0.25	0.36	0.11	24	automatic	nc	nc
10/20/2004	17:12:22	35.9228333	-120.4696667	4.436	2.91	md	51	43	0.03514	0.07	nc	nc21411884	2017-01-09T05:09:10.750Z	4 km NW of Parkfield, California	earthquake	0.16	0.26	0.1	62	automatic	nc	nc
10/20/2004	9:09:47	35.7993333	-120.34	4.413	2.32	md	38	67	0.02613	0.06	nc	nc21411770	2017-01-09T05:07:51.120Z	13 km SE of Parkfield, California	earthquake	0.17	0.29	0.06	27	automatic	nc	nc
10/20/2004	3:12:38	35.8501667	-120.3945	4.805	2.45	md	39	57	0.01441	0.05	nc	nc21411689	2017-01-09T05:06:37.490Z	6 km SSE of Parkfield, California	earthquake	0.17	0.26	0.09	35	automatic	nc	nc
10/19/2004	22:06:07	35.8848333	-120.4313333	10.379	2.08	md	31	46	0.02432	0.06	nc	nc21411595	2017-01-09T05:05:41.990Z	1 km S of Parkfield, California	earthquake	0.32	0.45	0.07	25	automatic	nc	nc
10/19/2004	15:52:17	35.774	-120.3208333	8.416	2.03	md	34	35	0.01532	0.06	nc	nc21411555	2017-01-09T05:04:22.240Z	14 km NNE of Shandon, California	earthquake	0.2	0.36	0.08	20	automatic	nc	nc
10/19/2004	13:59:40	35.9223333	-120.4731667	4.6	2.35	md	37	39	0.03514	0.06	nc	nc21411536	2017-01-09T05:03:57.770Z	4 km NW of Parkfield, California	earthquake	0.19	0.28	0.11	33	automatic	nc	nc
10/18/2004	22:30:51	35.9283333	-120.479	4.377	2.18	md	31	63	0.02883	0.06	nc	nc21411398	2017-01-09T05:00:01.820Z	5 km NW of Parkfield, California	earthquake	0.24	0.33	0.14	24	automatic	nc	nc
10/18/2004	18:06:11	35.543	-120.7626667	-0.282	2.15	md	21	127	0.118	0.17	nc	nc21411266	2017-01-09T04:58:52.224Z	5 km W of Templeton, California	earthquake	0.44	6.54	0.15	14	reviewed	nc	nc
10/18/2004	12:38:23	35.8986667	-120.4396667	5.19	2.13	md	26	53	0.03514	0.07	nc	nc21411240	2017-01-09T04:58:00.806Z	0 km W of Parkfield, California	earthquake	0.24	0.46	0.09	19	automatic	nc	nc
10/17/2004	22:01:09	35.5066667	-120.8045	4.008	2.12	md	23	101	0.07928	0.14	nc	nc21411135	2017-01-09T04:54:19.898Z	Central California	earthquake	0.42	1.24	0.1	12	reviewed	nc	nc
10/17/2004	18:38:24	36.0526667	-120.6086667	10.535	2.52	md	57	64	0.01892	0.06	nc	nc21411089	2017-01-09T04:53:51.100Z	23 km NW of Parkfield, California	earthquake	0.16	0.24	0.11	70	reviewed	nc	nc
10/17/2004	12:49:36	35.5445	-120.7725	3.688	2.23	md	42	46	0.1099	0.07	nc	nc21410959	2017-01-09T04:52:35.430Z	6 km W of Templeton, California	earthquake	0.19	1.06	0.24	30	reviewed	nc	nc
10/17/2004	12:22:42	35.5501667	-120.7891667	2.288	2.05	md	23	64	0.0973	0.07	nc	nc21410954	2017-01-09T04:52:26.705Z	7 km W of Templeton, California	earthquake	0.27	1.31	0.16	14	reviewed	nc	nc
10/17/2004	11:35:11	35.5765	-120.884	4.321	3.24	ml	74	44	0.04685	0.09	nc	nc21410947	2017-01-09T04:52:04.860Z	14 km N of Cayucos, California	earthquake	0.13	0.38		4	reviewed	nc	nc
10/17/2004	6:27:36	35.8993333	-120.4418333	5.65	2.27	md	35	49	0.03694	0.07	nc	nc21410829	2017-01-09T04:50:56.460Z	0 km W of Parkfield, California	earthquake	0.21	0.31	0.13	23	automatic	nc	nc
10/17/2004	5:57:02	35.8986667	-120.4411667	5.904	3.06	ml	63	39	0.03604	0.07	nc	nc21410825	2017-01-09T04:50:36.030Z	0 km W of Parkfield, California	earthquake	0.14	0.2		7	reviewed	nc	nc
10/16/2004	16:32:01	35.1363333	-118.8675	7.391	2.37	ml	24	136	0.03207	0.23	ci	ci10054121	2016-04-02T00:50:47.040Z	9km SSW of Arvin, CA	earthquake	0.63	1.25	0.233	35	reviewed	ci	ci
10/16/2004	14:14:15	35.8555	-120.3986667	4.585	2.11	ml	49	56	0.01892	0.05	nc	nc21410676	2017-01-09T04:42:57.470Z	5 km SSE of Parkfield, California	earthquake	0.16	0.25	0.097	3	reviewed	nc	nc
10/16/2004	7:19:38	35.5803333	-120.8425	6.383	2	md	38	64	0.06396	0.05	nc	nc21410536	2017-01-09T04:38:40.810Z	12 km WNW of Templeton, California	earthquake	0.21	0.68	0.18	32	reviewed	nc	nc
10/15/2004	17:19:18	35.2433333	-120.5118333	7.419	2.22	md	45	84	0.08739	0.08	nc	nc30229969	2017-01-09T04:33:23.860Z	10 km ENE of Edna, California	earthquake	0.16	0.51	0.21	19	reviewed	nc	nc
10/15/2004	15:51:03	35.612	-120.7771667	6.344	2.15	md	70	34	0.07838	0.07	nc	nc21410447	2017-01-09T04:32:36.420Z	7 km WSW of Paso Robles, California	earthquake	0.13	0.66	0.15	49	reviewed	nc	nc
10/15/2004	3:08:19	35.924	-120.472	5.136	2.1	md	55	42	0.03514	0.06	nc	nc21410325	2017-01-09T04:26:07.240Z	4 km NW of Parkfield, California	earthquake	0.14	0.21	0.174	60	reviewed	nc	nc
10/13/2004	21:46:39	35.7963333	-120.3471667	10.153	3.38	ml	60	36	0.02432	0.05	nc	nc21409363	2017-01-09T04:14:45.810Z	13 km SE of Parkfield, California	earthquake	0.16	0.25		11	reviewed	nc	nc
10/13/2004	13:14:57	35.9715	-120.5293333	6.698	2.02	md	40	49	0.01532	0.05	nc	nc21408437	2017-01-09T04:12:36.460Z	11 km NW of Parkfield, California	earthquake	0.21	0.18	0.13	28	reviewed	nc	nc
10/13/2004	9:16:28	35.5448333	-120.842	4.62	2.18	md	62	46	0.05405	0.08	nc	nc21408157	2017-01-09T04:11:42.390Z	12 km NNE of Cayucos, California	earthquake	0.15	0.52	0.16	41	reviewed	nc	nc
10/13/2004	8:12:24	35.2563333	-120.5205	8.078	2.42	md	51	126	0.09459	0.07	nc	nc21408137	2017-01-09T04:11:25.740Z	10 km NE of Edna, California	earthquake	0.17	0.53	0.15	56	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
10/12/2004	23:10:47	35.579	-120.7763333	4.004	2	md	44	58	0.0964	0.12	nc	nc21407863	2017-01-09T04:07:31.620Z	7 km WNW of Templeton, California	earthquake	0.21	0.89	0.09	14	reviewed	nc	nc
10/12/2004	19:54:30	35.5515	-120.8066667	3.62	2.06	md	23	51	0.08378	0.07	nc	nc30506535	2017-01-09T04:04:56.923Z	9 km W of Templeton, California	earthquake	0.18	0.83	0.18	15	reviewed	nc	nc
10/12/2004	7:00:46	36.0588333	-120.6331667	-0.616	2.05	md	48	62	0.03153	0.11	nc	nc21407174	2017-01-09T03:57:27.720Z	24 km E of San Ardo, California	earthquake	0.17	0.97	0.2	17	reviewed	nc	nc
10/12/2004	5:48:14	36.0646667	-120.6246667	2.304	2.28	md	60	64	0.02342	0.08	nc	nc21407138	2017-01-09T03:56:33.450Z	25 km NW of Parkfield, California	earthquake	0.14	0.33	0.18	51	reviewed	nc	nc
10/12/2004	2:52:37	36.0605	-120.6295	3.334	2.2	md	45	63	0.02793	0.05	nc	nc21407054	2017-01-09T03:49:15.790Z	25 km NW of Parkfield, California	earthquake	0.21	0.42	0.21	32	reviewed	nc	nc
10/11/2004	15:58:27	35.5528333	-120.8415	4.551	2.17	md	61	44	0.05676	0.1	nc	nc21406869	2017-01-09T03:44:52.670Z	12 km W of Templeton, California	earthquake	0.14	0.53	0.12	43	reviewed	nc	nc
10/11/2004	14:46:18	35.9285	-120.4765	5.267	2.53	md	14	103	0.03153	0.04	nc	nc21406847	2017-01-09T03:44:09.810Z	Central California	earthquake	0.47	0.76		1	reviewed	nc	nc
10/11/2004	10:51:25	35.9293333	-120.4788333	5.164	2.34	md	57	46	0.01982	0.06	nc	nc21406753	2017-01-09T03:42:10.070Z	Central California	earthquake	0.14	0.18	0.11	55	reviewed	nc	nc
10/11/2004	8:25:38	35.6291667	-120.75	6.474	2.44	md	71	35	0.0955	0.09	nc	nc21406715	2017-01-09T03:41:17.340Z	5 km W of Paso Robles, California	earthquake	0.13	0.84	0.1	63	reviewed	nc	nc
10/10/2004	23:39:46	35.5886667	-120.7246667	5.438	2.99	md	87	36	0.127	0.09	nc	nc21406559	2017-01-09T03:37:08.010Z	4 km NNW of Templeton, California	earthquake	0.12	0.84	0.07	97	reviewed	nc	nc
10/10/2004	22:38:38	36.0005	-120.5533333	9.85	2.09	md	44	49	0.01622	0.04	nc	nc21406530	2017-01-09T03:36:16.060Z	15 km NW of Parkfield, California	earthquake	0.2	0.26	0.14	33	reviewed	nc	nc
10/10/2004	20:01:36	36.0353333	-120.5895	7.545	2.38	md	59	39	0.03423	0.05	nc	nc21406461	2017-01-09T03:35:01.120Z	20 km NW of Parkfield, California	earthquake	0.17	0.19	0.11	51	reviewed	nc	nc
10/10/2004	13:11:24	35.872	-120.4175	5.345	2.39	md	48	38	0.01622	0.04	nc	nc21406387	2017-01-09T03:32:01.900Z	Central California	earthquake	0.14	0.21	0.1	42	reviewed	nc	nc
10/10/2004	10:13:18	35.5225	-120.8286667	6.13	2.16	md	62	54	0.06486	0.06	nc	nc21406360	2017-01-09T03:30:50.210Z	10 km NNE of Cayucos, California	earthquake	0.13	0.51	0.21	45	reviewed	nc	nc
10/10/2004	9:37:24	36.0516667	-120.606	8.265	2.38	md	61	38	0.01892	0.05	nc	nc30229859	2017-01-09T03:30:32.340Z	22 km NW of Parkfield, California	earthquake	0.18	0.25	0.16	52	reviewed	nc	nc
10/9/2004	20:37:16	35.5741667	-120.86	5.201	2	md	58	40	0.05586	0.1	nc	nc21406219	2017-01-09T03:22:26.040Z	14 km W of Templeton, California	earthquake	0.16	0.45	0.16	35	reviewed	nc	nc
10/9/2004	20:19:21	36.013	-120.5745	3.737	2.01	md	41	44	0.03063	0.06	nc	nc21406214	2017-01-09T03:22:08.960Z	17 km NW of Parkfield, California	earthquake	0.18	0.25	0.13	29	reviewed	nc	nc
10/9/2004	20:05:56	36.0145	-120.5723333	3.945	2.17	md	47	82	0.02973	0.06	nc	nc21406213	2017-01-09T03:22:02.110Z	17 km NW of Parkfield, California	earthquake	0.16	0.2	0.12	33	reviewed	nc	nc
10/9/2004	17:45:21	35.8986667	-120.4411667	5.804	2.3	md	56	45	0.03604	0.07	nc	nc21406183	2017-01-09T03:20:13.210Z	0 km W of Parkfield, California	earthquake	0.15	0.21	0.1	46	reviewed	nc	nc
10/9/2004	9:20:20	35.8963333	-120.4391667	10.276	2.49	md	56	43	0.03423	0.05	nc	nc21406072	2017-01-09T03:14:53.750Z	0 km WSW of Parkfield, California	earthquake	0.15	0.25	0.09	55	reviewed	nc	nc
10/9/2004	7:45:21	35.5476667	-120.807	4.83	2.01	md	54	52	0.08288	0.09	nc	nc21406028	2017-01-09T03:13:32.070Z	9 km W of Templeton, California	earthquake	0.16	0.65	0.16	27	reviewed	nc	nc
10/9/2004	6:02:48	35.8663333	-120.413	5.337	2.07	md	31	53	0.01802	0.04	nc	nc30500971	2017-01-09T02:13:53.830Z	4 km SSE of Parkfield, California	earthquake	0.2	0.33	0.09	19	automatic	nc	nc
10/9/2004	1:11:48	36.0206667	-120.5828333	4.14	2.54	md	48	56	0.03874	0.07	nc	nc21405695	2017-01-09T02:09:40.660Z	19 km NW of Parkfield, California	earthquake	0.18	0.29	0.08	41	automatic	nc	nc
10/8/2004	23:22:19	36.0205	-120.5793333	4.265	2.77	md	67	43	0.03604	0.08	nc	nc21406038	2017-01-09T02:08:59.340Z	18 km NW of Parkfield, California	earthquake	0.16	0.26	0.09	71	reviewed	nc	nc
10/8/2004	19:03:40	35.5763333	-120.7936667	2.501	2.01	md	59	32	0.08829	0.14	nc	nc21406003	2017-01-09T02:07:02.440Z	8 km WNW of Templeton, California	earthquake	0.19	0.83	0.13	31	reviewed	nc	nc
10/8/2004	10:44:41	35.8533333	-120.3966667	4.625	3.01	md	58	40	0.01712	0.04	nc	nc21405611	2017-01-09T02:04:03.330Z	6 km SSE of Parkfield, California	earthquake	0.25	0.34	0.11	14	automatic	nc	nc
10/7/2004	19:17:32	35.521	-120.8275	5.69	2.24	md	55	54	0.06577	0.08	nc	nc21405874	2017-01-09T01:55:35.540Z	10 km NE of Cayucos, California	earthquake	0.13	0.72	0.21	27	reviewed	nc	nc
10/7/2004	17:00:24	35.9265	-120.476	4.615	2.16	md	29	54	0.03423	0.06	nc	nc21405842	2017-01-09T01:55:00.760Z	4 km NW of Parkfield, California	earthquake	0.19	0.35	0.13	20	automatic	nc	nc
10/7/2004	15:47:30	35.9266667	-120.4756667	4.647	2.44	md	40	45	0.03243	0.05	nc	nc21405817	2017-01-09T01:54:10.730Z	4 km NW of Parkfield, California	earthquake	0.17	0.26	0.1	33	automatic	nc	nc
10/7/2004	15:13:08	35.8591667	-120.4046667	4.949	2.29	md	40	53	0.02252	0.04	nc	nc21404572	2017-01-09T01:53:43.790Z	5 km SSE of Parkfield, California	earthquake	0.16	0.3	0.12	31	automatic	nc	nc
10/7/2004	14:32:03	35.7848333	-120.3345	8.358	2.32	md	41	44	0.01261	0.05	nc	nc21404744	2017-01-09T01:53:04.130Z	14 km NNE of Shandon, California	earthquake	0.19	0.34	0.08	33	automatic	nc	nc
10/7/2004	2:57:26	35.9416667	-120.4928333	10.31	2.03	md	51	36	0.01532	0.05	nc	nc21404638	2017-01-09T01:45:27.900Z	7 km NW of Parkfield, California	earthquake	0.17	0.2	0.12	36	reviewed	nc	nc
10/6/2004	12:48:02	35.8601667	-120.4075	4.699	2.11	md	24	98	0.02162	0.05	nc	nc21405642	2017-01-09T01:38:34.231Z	4 km SSE of Parkfield, California	earthquake	0.25	0.34	0.11	14	automatic	nc	nc
10/6/2004	11:12:07	35.5191667	-120.7703333	2.698	2.07	md	57	51	0.109	0.08	nc	nc21404662	2017-01-09T01:37:46.870Z	6 km WSW of Templeton, California	earthquake	0.13	0.72	0.21	27	reviewed	nc	nc
10/6/2004	6:53:37	35.8815	-120.4296667	5.69	2.09	md	31	77	0.02252	0.06	nc	nc21404948	2017-01-09T01:34:58.710Z	2 km S of Parkfield, California	earthquake	0.22	0.34	0.13	21	automatic	nc	nc
10/5/2004	21:12:03	35.5231667	-120.8253333	4.77	2.57	md	58	54	0.06757	0.07	nc	nc21405528	2017-01-09T01:29:13.230Z	10 km NE of Cayucos, California	earthquake	0.16	0.6	0.13	50	reviewed	nc	nc
10/5/2004	10:55:08	35.6295	-120.7215	0.605	2.04	md	14	234	0.1793	0.21	nc	nc68011720	2017-01-09T01:25:17.496Z	2 km W of Paso Robles, California	earthquake	1.42	6.03	0.1	6	reviewed	nc	nc
10/5/2004	5:06:18	35.8011667	-120.3523333	9.508	2.11	md	46	42	0.02973	0.04	nc	nc30230075	2017-01-09T01:19:04.670Z	13 km SSE of Parkfield, California	earthquake	0.18	0.28	0.13	35	reviewed	nc	nc
10/5/2004	3:53:26	35.8031667	-120.3556667	9.315	2.27	md	37	43	0.02793	0.04	nc	nc21404701	2017-01-09T01:17:44.530Z	12 km SSE of Parkfield, California	earthquake	0.19	0.35	0.07	33	automatic	nc	nc
10/5/2004	1:57:09	35.9208333	-120.4683333	5.35	2.57	md	18	91	0.03514	0.05	nc	nc21404687	2017-01-09T01:16:13.488Z	3 km NW of Parkfield, California	earthquake	0.28	0.55		1	reviewed	nc	nc
10/4/2004	23:49:44	35.8553333	-120.3995	4.239	2.44	md	36	56	0.01892	0.05	nc	nc21405288	2017-01-09T01:15:06.420Z	5 km SSE of Parkfield, California	earthquake	0.16	0.28	0.14	25	automatic	nc	nc
10/4/2004	21:07:43	35.8988333	-120.4401667	4.544	2.18	md	27	46	0.03604	0.07	nc	nc30230176	2017-01-09T01:12:44.650Z	0 km W of Parkfield, California	earthquake	0.3	0.41	0.23	15	reviewed	nc	nc
10/4/2004	21:07:33	35.8985	-120.4395	4.604	2.71	md	40	53	0.03514	0.07	nc	nc21405224	2017-01-09T01:12:37.770Z	0 km WSW of Parkfield, California	earthquake	0.19	0.28	0.09	28	reviewed	nc	nc
10/4/2004	15:40:09	35.9233333	-120.4718333	4.95	2.11	md	32	55	0.03604	0.06	nc	nc21403481	2017-01-09T01:06:58.130Z	4 km NW of Parkfield, California	earthquake	0.22	0.3	0.12	21	automatic	nc	nc
10/4/2004	10:20:51	35.9705	-120.5313333	6.514	2.04	md	30	51	0.01712	0.05	nc	nc21403331	2017-01-09T01:01:29.320Z	11 km NW of Parkfield, California	earthquake	0.28	0.19	0.14	18	automatic	nc	nc
10/4/2004	10:05:20	35.5446667	-120.8155	3.778	2.33	md	37	28	0.07568	0.1	nc	nc21403323	2017-01-09T01:01:03.348Z	9 km W of Templeton, California	earthquake	0.18	0.76	0.29	33	reviewed	nc	nc
10/4/2004	9:44:14	35.5425	-120.8776667	3.015	2.12	md	13	170	0.02523	0.25	nc	nc68011694	2017-01-09T01:00:39.214Z	11 km N of Cayucos, California	earthquake	0.88	0.72	0.27	9	reviewed	nc	nc
10/4/2004	7:09:54	35.7956667	-120.3471667	9.688	2.03	md	53	38	0.03604	0.04	nc	nc21403243	2017-01-09T00:59:24.600Z	13 km SE of Parkfield, California	earthquake	0.15	0.3	0.17	37	reviewed	nc	nc
10/4/2004	5:45:23	35.852	-120.396	4.982	2.69	md	58	39	0.01622	0.04	nc	nc21403193	2017-01-09T00:58:23.030Z	6 km SSE of Parkfield, California	earthquake	0.12	0.2	0.09	78	reviewed	nc	nc
10/4/2004	4:40:54	35.8425	-120.3841667	3.989	2.63	md	41	58	0.01351	0.05	nc	nc21403153	2017-01-09T00:57:56.040Z	7 km SE of Parkfield, California	earthquake	0.16	0.28	0.1	39	automatic	nc	nc
10/3/2004	23:26:41	35.9581667	-120.5105	8.412	2.27	md	61	33	0.00991	0.05	nc	nc21402925	2017-01-09T00:55:22.800Z	9 km NW of Parkfield, California	earthquake	0.12	0.15	0.11	60	reviewed	nc	nc
10/3/2004	21:41:30	35.8575	-120.4028333	5.042	2.56	md	55	40	0.02162	0.04	nc	nc21403307	2017-01-09T00:54:17.750Z	5 km SSE of Parkfield, California	earthquake	0.13	0.2	0.08	64	reviewed	nc	nc
10/3/2004	21:14:47	35.9236667	-120.4716667	5.244	2.68	md	63	42	0.01802	0.06	nc	nc21403472	2017-01-09T00:53:27.240Z	4 km NW of Parkfield, California	earthquake	0.13	0.17	0.1	75	reviewed	nc	nc
10/3/2004	15:40:20	35.922	-120.4738333	5.444	2.35	md	58	38	0.01532	0.05	nc	nc21403024	2017-01-09T00:51:00.640Z	Central California	earthquake	0.12	0.15	0.09	56	reviewed	nc	nc
10/3/2004	14:32:25	35.8251667	-120.3733333	6.433	2.13	md	53	53	0.01712	0.03	nc	nc21403009	2017-01-09T00:49:55.560Z	9 km SSE of Parkfield, California	earthquake	0.12	0.21	0.1	39	reviewed	nc	nc
10/3/2004	11:37:07	35.5506667	-120.8096667	4.45	2.26	md	61	31	0.08108	0.09	nc	nc30229937	2017-01-09T00:48:04.910Z	9 km W of Templeton, California	earthquake	0.14	0.56	0.15	44	reviewed	nc	nc
10/3/2004	9:29:58	35.8601667	-120.4085	8.662	2.94	md	59	39	0.02252	0.03	nc	nc21403416	2017-01-09T00:46:23.280Z	4 km SSE of Parkfield, California	earthquake	0.14	0.22	0.08	71	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
10/3/2004	6:48:28	35.9233333	-120.4725	4.847	2.14	md	29	93	0.03514	0.05	nc	nc30500954	2017-01-09T00:44:35.590Z	4 km NW of Parkfield, California	earthquake	0.23	0.28	0.1	19	automatic	nc	nc
10/3/2004	4:11:34	35.9273333	-120.4781667	4.32	2.22	md	29	53	0.02973	0.06	nc	nc21402853	2017-01-09T00:43:36.910Z	5 km NW of Parkfield, California	earthquake	0.21	0.31	0.12	19	automatic	nc	nc
10/2/2004	23:25:08	35.9356667	-120.4853333	5.463	2.46	md	56	40	0.02342	0.05	nc	nc21402793	2017-01-09T00:41:43.150Z	6 km NW of Parkfield, California	earthquake	0.14	0.17	0.09	67	reviewed	nc	nc
10/2/2004	22:12:40	35.9391667	-120.4865	9.833	3.13	ml	56	42	0.01982	0.06	nc	nc21402778	2017-01-09T00:41:14.420Z	6 km NW of Parkfield, California	earthquake	0.15	0.23		7	reviewed	nc	nc
10/2/2004	19:10:11	35.567	-120.772	0.357	2.04	md	12	214	0.1153	0.18	nc	nc68011665	2017-01-09T00:40:08.629Z	6 km WNW of Templeton, California	earthquake	1.09	4.45	0.24	5	reviewed	nc	nc
10/2/2004	12:27:56	35.5443333	-120.8101667	3.965	2.11	md	13	191	0.07928	0.17	nc	nc68011661	2017-01-09T00:37:48.171Z	9 km W of Templeton, California	earthquake	0.73	1.54	0.11	8	reviewed	nc	nc
10/2/2004	12:22:09	35.5431667	-120.8156667	4.97	4.06	mw	69	47	0.07477	0.07	nc	nc21402583	2020-05-06T07:00:01.182Z	9 km W of Templeton, California	earthquake	0.14	0.58		5	reviewed	nc	nc
10/2/2004	11:41:20	35.883	-120.4263333	5.566	2.78	md	54	38	0.01982	0.05	nc	nc21402566	2017-01-09T00:37:02.420Z	1 km SSE of Parkfield, California	earthquake	0.14	0.2	0.09	70	reviewed	nc	nc
10/2/2004	7:45:40	35.8496667	-120.3951667	4.689	2.63	md	34	56	0.01351	0.05	nc	nc21402425	2017-01-09T00:34:22.440Z	6 km SSE of Parkfield, California	earthquake	0.17	0.28	0.08	32	automatic	nc	nc
10/2/2004	7:04:26	35.7931667	-120.3428333	9.712	3.19	ml	58	39	0.03874	0.04	nc	nc21402406	2017-01-09T00:33:43.690Z	14 km SE of Parkfield, California	earthquake	0.15	0.3		7	reviewed	nc	nc
10/2/2004	3:06:47	35.922	-120.4725	5.273	2.25	md	50	42	0.01622	0.06	nc	nc21402132	2017-01-09T00:31:01.680Z	4 km NW of Parkfield, California	earthquake	0.13	0.18	0.12	50	reviewed	nc	nc
10/2/2004	2:04:43	35.8661667	-120.4128333	5.009	2.09	md	31	53	0.01802	0.03	nc	nc21402079	2017-01-09T00:30:16.401Z	4 km SSE of Parkfield, California	earthquake	0.19	0.31	0.11	19	automatic	nc	nc
10/1/2004	22:58:47	35.929	-120.4801667	4.94	2.43	md	39	48	0.02793	0.06	nc	nc21402456	2017-01-09T00:27:35.770Z	5 km NW of Parkfield, California	earthquake	0.17	0.22	0.15	35	automatic	nc	nc
10/1/2004	20:59:13	35.905	-120.4495	5.179	2.34	md	24	53	0.04595	0.06	nc	nc30506497	2017-01-09T00:26:24.188Z	1 km WNW of Parkfield, California	earthquake	0.21	0.41	0.08	21	automatic	nc	nc
10/1/2004	20:58:19	35.9051667	-120.4483333	5.794	3.05	md	61	40	0.03243	0.05	nc	nc21402433	2017-01-09T00:26:18.960Z	1 km WNW of Parkfield, California	earthquake	0.13	0.19	0.08	77	reviewed	nc	nc
10/1/2004	20:43:19	35.8651667	-120.4141667	8.562	3.44	ml	60	39	0.01982	0.04	nc	nc21401909	2017-01-09T00:26:08.170Z	4 km SSE of Parkfield, California	earthquake	0.13	0.23		11	reviewed	nc	nc
10/1/2004	19:35:46	35.7825	-120.332	7.938	2.07	md	29	76	0.05135	0.03	nc	nc21401858	2017-01-09T00:25:41.325Z	14 km NNE of Shandon, California	earthquake	0.2	0.36	0.09	23	automatic	nc	nc
10/1/2004	18:28:46	35.9603333	-120.5138333	5.282	2.25	md	56	32	0.01351	0.07	nc	nc21402394	2017-01-09T00:24:52.290Z	9 km NW of Parkfield, California	earthquake	0.15	0.16	0.14	41	reviewed	nc	nc
10/1/2004	18:17:36	35.6228333	-120.745	4.972	2.25	md	40	45	0.1595	0.13	nc	nc21401799	2017-01-09T00:24:41.814Z	4 km W of Paso Robles, California	earthquake	0.2	1.3	0.18	36	reviewed	nc	nc
10/1/2004	18:01:06	35.9243333	-120.4736667	4.8	2.18	md	29	54	0.03423	0.06	nc	nc21401785	2017-01-09T00:24:19.520Z	4 km NW of Parkfield, California	earthquake	0.19	0.29	0.15	21	automatic	nc	nc
10/1/2004	14:06:12	35.5085	-120.7695	6.118	2.1	md	35	60	0.1045	0.12	nc	nc21402294	2017-01-09T00:20:53.507Z	7 km SW of Templeton, California	earthquake	0.24	0.96	0.2	11	reviewed	nc	nc
10/1/2004	13:26:39	35.9236667	-120.4763333	5.23	2.95	md	51	39	0.03243	0.06	nc	nc21401629	2017-01-09T00:19:57.720Z	4 km NW of Parkfield, California	earthquake	0.15	0.21	0.07	59	reviewed	nc	nc
10/1/2004	12:15:21	35.9715	-120.5323333	7.004	2.05	md	36	44	0.01712	0.06	nc	nc21401604	2017-01-09T00:18:19.680Z	12 km NW of Parkfield, California	earthquake	0.18	0.16	0.1	20	reviewed	nc	nc
10/1/2004	10:58:26	35.5083333	-120.7623333	4.185	2.33	md	55	41	0.109	0.11	nc	nc21401563	2017-01-09T00:16:33.240Z	6 km SW of Templeton, California	earthquake	0.17	0.75	0.21	42	reviewed	nc	nc
10/1/2004	5:41:34	35.5566667	-120.8153333	3.6	2.29	md	52	43	0.07838	0.07	nc	nc21401487	2017-01-09T00:09:21.310Z	9 km W of Templeton, California	earthquake	0.14	0.57	0.15	50	reviewed	nc	nc
10/1/2004	3:21:00	35.8658333	-120.4168333	5.242	2.1	md	42	46	0.01982	0.04	nc	nc21401395	2017-01-09T00:07:05.790Z	4 km SSE of Parkfield, California	earthquake	0.15	0.25	0.11	33	reviewed	nc	nc
10/1/2004	2:56:25	36.0013333	-120.5523333	10.222	2.42	md	56	39	0.02703	0.04	nc	nc21401370	2017-01-09T00:06:54.530Z	15 km NW of Parkfield, California	earthquake	0.14	0.24	0.13	65	reviewed	nc	nc
10/1/2004	2:08:44	36.0025	-120.5581667	11.065	2.13	md	56	48	0.01892	0.05	nc	nc21402242	2017-01-09T00:06:01.520Z	16 km NW of Parkfield, California	earthquake	0.15	0.22	0.11	45	reviewed	nc	nc
10/1/2004	1:37:56	35.9495	-120.501	13.097	2.49	md	57	35	0.007207	0.07	nc	nc21401348	2017-01-09T00:05:27.020Z	Central California	earthquake	0.16	0.22	0.11	58	reviewed	nc	nc
10/1/2004	0:42:50	35.8573333	-120.4026667	5.012	2.34	md	50	54	0.02162	0.04	nc	nc21402236	2017-01-09T00:04:36.080Z	5 km SSE of Parkfield, California	earthquake	0.14	0.23	0.11	46	reviewed	nc	nc
9/30/2004	23:49:02	35.2336667	-120.7791667	2.989	2.29	md	14	100	0.001802	0.04	nc	nc68011630	2017-01-09T00:03:50.885Z	7 km NW of Avila Beach, California	earthquake	0.23	0.38	0.14	11	reviewed	nc	nc
9/30/2004	20:49:34	35.8818333	-120.4291667	5.354	2.1	md	24	53	0.02252	0.05	nc	nc30500880	2017-01-09T00:01:42.848Z	2 km S of Parkfield, California	earthquake	0.19	0.31	0.11	21	automatic	nc	nc
9/30/2004	20:47:15	35.9561667	-120.495	13.21	2.68	md	35	57	0.03063	0.07	nc	nc21401157	2017-01-09T00:01:38.150Z	8 km NW of Parkfield, California	earthquake	0.27	0.35	0.09	58	automatic	nc	nc
9/30/2004	20:19:13	35.9728333	-120.527	6.791	2.24	md	29	61	0.02883	0.05	nc	nc21401138	2017-01-09T00:01:09.080Z	11 km NW of Parkfield, California	earthquake	0.27	0.32	0.09	25	automatic	nc	nc
9/30/2004	19:31:42	35.873	-120.4251667	5.136	2.03	md	46	39	0.02072	0.05	nc	nc21401100	2017-01-09T00:00:43.980Z	3 km SSE of Parkfield, California	earthquake	0.16	0.25	0.11	31	reviewed	nc	nc
9/30/2004	18:57:40	35.8591667	-120.4045	4.496	2.64	md	20	69	0.02252	0.02	nc	nc30506460	2017-01-08T23:59:58.367Z	5 km SSE of Parkfield, California	earthquake	0.21	0.34	0.16	15	automatic	nc	nc
9/30/2004	18:54:28	35.988	-120.5378333	9.889	4.88	mw	68	27	0.01802	0.05	nc	nc21401170	2022-08-08T22:17:31.287Z	13 km NW of Parkfield, California	earthquake	0.12	0.2		4	reviewed	nc	nc
9/30/2004	18:49:46	35.5601667	-120.853	6.341	2.07	md	22	50	0.05135	0.13	nc	nc21402137	2017-01-08T23:59:35.260Z	13 km W of Templeton, California	earthquake	0.26	0.6	0.17	12	reviewed	nc	nc
9/30/2004	18:22:54	35.5666667	-120.8203333	2.895	2.24	md	15	196	0.07748	0.21	nc	nc68011628	2017-01-08T23:59:27.643Z	10 km W of Templeton, California	earthquake	1.08	2.07	0.13	12	reviewed	nc	nc
9/30/2004	17:17:12	35.8031667	-120.3546667	9.168	2.18	md	38	43	0.02793	0.04	nc	nc21402086	2017-01-08T23:58:51.350Z	12 km SSE of Parkfield, California	earthquake	0.17	0.35	0.06	28	automatic	nc	nc
9/30/2004	9:34:52	35.991	-120.542	9.344	2.12	md	31	57	0.01892	0.05	nc	nc21401120	2017-01-08T23:53:24.791Z	14 km NW of Parkfield, California	earthquake	0.19	0.26	0.11	21	automatic	nc	nc
9/30/2004	9:11:03	35.9578333	-120.5101667	8.232	2.24	md	36	57	0.00991	0.04	nc	nc30500876	2017-01-08T23:52:59.360Z	9 km NW of Parkfield, California	earthquake	0.15	0.2	0.11	32	automatic	nc	nc
9/30/2004	8:20:35	35.8796667	-120.4306667	4.96	2.69	md	40	43	0.02342	0.05	nc	nc21401131	2017-01-08T23:52:02.680Z	2 km S of Parkfield, California	earthquake	0.15	0.28	0.07	42	automatic	nc	nc
9/30/2004	5:02:27	35.9555	-120.5048333	9.272	3.48	ml	64	34	0.005405	0.05	nc	nc21401221	2017-01-08T23:48:20.010Z	8 km NW of Parkfield, California	earthquake	0.14	0.21		12	reviewed	nc	nc
9/30/2004	4:36:45	35.9841667	-120.5436667	3.089	2.11	md	48	56	0.01171	0.07	nc	nc21402158	2017-01-08T23:48:01.280Z	13 km NW of Parkfield, California	earthquake	0.17	0.25	0.11	29	reviewed	nc	nc
9/30/2004	4:14:31	35.7873333	-120.3433333	10.022	2.15	md	36	40	0.04414	0.04	nc	nc21402308	2017-01-08T23:47:36.730Z	14 km SSE of Parkfield, California	earthquake	0.19	0.36	0.09	29	automatic	nc	nc
9/30/2004	4:03:26	35.788	-120.3418333	10.032	2.04	md	36	40	0.04414	0.05	nc	nc30500936	2017-01-08T23:47:26.520Z	14 km SSE of Parkfield, California	earthquake	0.2	0.39	0.1	25	automatic	nc	nc
9/30/2004	0:53:47	35.9093333	-120.454	5.854	2.79	md	59	41	0.02703	0.06	nc	nc21400895	2017-01-08T23:43:28.670Z	2 km WNW of Parkfield, California	earthquake	0.13	0.18	0.06	63	reviewed	nc	nc
9/29/2004	19:15:49	35.9258333	-120.4753333	4.924	2.16	md	53	39	0.01802	0.06	nc	nc30228321	2017-01-08T23:38:18.520Z	4 km NW of Parkfield, California	earthquake	0.13	0.17	0.13	43	reviewed	nc	nc
9/29/2004	19:05:12	35.9423333	-120.4911667	9.509	2.32	md	37	38	0.01441	0.06	nc	nc21400687	2017-01-08T23:38:01.620Z	7 km NW of Parkfield, California	earthquake	0.19	0.24	0.11	33	automatic	nc	nc
9/29/2004	18:59:59	35.7865	-120.3358333	8.217	2.03	md	35	47	0.04685	0.04	nc	nc21400682	2017-01-08T23:37:51.120Z	14 km NNE of Shandon, California	earthquake	0.18	0.41	0.15	20	automatic	nc	nc
9/29/2004	18:33:05	35.9033333	-120.4465	5.664	2.22	md	35	52	0.03423	0.06	nc	nc21400674	2017-01-08T23:36:59.010Z	1 km WNW of Parkfield, California	earthquake	0.18	0.27	0.1	24	reviewed	nc	nc
9/29/2004	17:42:36	35.9873333	-120.5388333	9.937	2.11	md	35	53	0.01712	0.05	nc	nc21401207	2017-01-08T23:36:01.630Z	13 km NW of Parkfield, California	earthquake	0.21	0.28	0.13	29	automatic	nc	nc
9/29/2004	17:10:04	35.9536667	-120.5021667	10.772	5	mw	66	33	0.003604	0.07	nc	nc21401069	2022-08-08T22:16:20.365Z	8 km NW of Parkfield, California	earthquake	0.15	0.21		6	reviewed	nc	nc
9/29/2004	16:31:55	35.9226667	-120.4688333	4.694	2.9	md	55	37	0.01892	0.07	nc	nc21400963	2017-01-08T23:34:33.440Z	4 km NW of Parkfield, California	earthquake	0.15	0.21	0.1	65	reviewed	nc	nc
9/29/2004	16:16:58	35.8001667	-120.3521667	9.342	2.16	md	37	51	0.03063	0.04	nc	nc21400955	2017-01-08T23:34:26.300Z	13 km SSE of Parkfield, California	earthquake	0.2	0.36	0.14	27	automatic	nc	nc
9/29/2004	16:11:51	36.1385	-120.2045	9.092	3.07	ml	48	169	0.109	0.07	nc	nc21400934	2017-01-08T23:34:19.270Z	11 km SW of Huron, California	earthquake	0.25	0.33		5	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/29/2004	12:57:08	35.9261667	-120.4768333	5.024	2.08	md	51	53	0.01802	0.06	nc	nc21400795	2017-01-08T23:28:45.420Z	4 km NW of Parkfield, California	earthquake	0.14	0.17	0.12	31	reviewed	nc	nc
9/29/2004	11:59:19	35.8258333	-120.3723333	6.413	2.07	md	48	53	0.01622	0.04	nc	nc21401985	2017-01-08T23:27:04.150Z	9 km SSE of Parkfield, California	earthquake	0.15	0.23	0.11	38	reviewed	nc	nc
9/29/2004	10:59:31	35.8536667	-120.405	8.262	2.09	md	36	54	0.01802	0.03	nc	nc21401403	2017-01-08T23:25:35.824Z	5 km SSE of Parkfield, California	earthquake	0.18	0.27	0.07	22	automatic	nc	nc
9/29/2004	10:42:25	35.8748333	-120.4255	5.372	2.39	md	30	56	0.02072	0.03	nc	nc21401306	2017-01-08T23:24:59.300Z	2 km SSE of Parkfield, California	earthquake	0.24	0.32	0.32	20	automatic	nc	nc
9/29/2004	10:34:47	35.8748333	-120.4243333	5.716	2.16	md	42	40	0.01982	0.04	nc	nc30228607	2017-01-08T23:24:44.140Z	2 km SSE of Parkfield, California	earthquake	0.16	0.21	0.12	33	reviewed	nc	nc
9/29/2004	10:23:31	35.8551667	-120.3991667	4.392	2.33	md	35	57	0.01892	0.05	nc	nc21401200	2017-01-08T23:24:19.030Z	5 km SSE of Parkfield, California	earthquake	0.17	0.29	0.15	24	automatic	nc	nc
9/29/2004	9:04:20	35.9585	-120.5551667	3.047	2.38	ml	9	146	0.01727	0.23	ci	ci14095396	2016-02-17T06:29:13.971Z	13km WNW of Parkfield, California	earthquake	1.63	0.46	0.308	9	reviewed	ci	ci
9/29/2004	9:02:11	35.9201667	-120.4735	5.143	2.64	md	43	51	0.03514	0.06	nc	nc30500891	2017-01-08T23:22:45.360Z	4 km WNW of Parkfield, California	earthquake	0.17	0.22	0.08	43	automatic	nc	nc
9/29/2004	7:34:58	35.9725	-120.5298333	6.694	2.22	md	38	34	0.01441	0.05	nc	nc21401820	2017-01-08T23:20:30.880Z	11 km NW of Parkfield, California	earthquake	0.22	0.17	0.13	23	automatic	nc	nc
9/29/2004	6:54:48	35.8753333	-120.4163333	5.6	2.43	md	21	74	0.01351	0.07	nc	nc30506486	2017-01-08T23:19:47.242Z	3 km SSE of Parkfield, California	earthquake	0.38	0.68	0.08	17	automatic	nc	nc
9/29/2004	6:51:23	35.8833333	-120.4265	5.736	2.9	md	57	44	0.02072	0.05	nc	nc21401978	2017-01-08T23:19:37.490Z	1 km SSE of Parkfield, California	earthquake	0.12	0.21	0.08	77	reviewed	nc	nc
9/29/2004	6:27:05	35.8858333	-120.4575	-0.38	2.05	md	22	56	0.04595	0.51	nc	nc30506480	2017-01-08T23:18:29.801Z	2 km SW of Parkfield, California	earthquake	0.94	10.24	0.16	14	automatic	nc	nc
9/29/2004	6:23:27	35.8656667	-120.417	5.102	2.16	md	44	50	0.02072	0.05	nc	nc30229579	2017-01-08T23:18:21.240Z	4 km SSE of Parkfield, California	earthquake	0.16	0.27	0.16	31	reviewed	nc	nc
9/29/2004	6:07:33	35.8873333	-120.4323333	5.8	2.08	md	30	46	0.02613	0.07	nc	nc30500940	2017-01-08T23:17:43.537Z	1 km S of Parkfield, California	earthquake	0.2	0.37	0.06	21	automatic	nc	nc
9/29/2004	5:56:52	35.9276667	-120.4776667	4.29	2.31	md	33	54	0.03063	0.06	nc	nc21402416	2017-01-08T23:17:28.050Z	5 km NW of Parkfield, California	earthquake	0.19	0.29	0.13	23	automatic	nc	nc
9/29/2004	5:41:12	35.8853333	-120.4293333	5.806	2.3	md	50	41	0.02342	0.07	nc	nc21401400	2017-01-08T23:16:52.210Z	1 km S of Parkfield, California	earthquake	0.14	0.24	0.12	39	reviewed	nc	nc
9/29/2004	5:35:07	35.8661667	-120.4131667	5.302	2.08	md	28	53	0.01802	0.05	nc	nc21401840	2017-01-08T23:16:35.984Z	4 km SSE of Parkfield, California	earthquake	0.19	0.33	0.17	20	automatic	nc	nc
9/29/2004	5:27:13	35.9271667	-120.4798333	4.948	2.48	md	34	39	0.02883	0.05	nc	nc30500929	2017-01-08T23:16:20.510Z	5 km NW of Parkfield, California	earthquake	0.16	0.28	0.11	34	automatic	nc	nc
9/29/2004	5:08:57	35.8728333	-120.4235	5.152	2.07	md	27	54	0.01982	0.04	nc	nc30500806	2017-01-08T23:15:47.404Z	3 km SSE of Parkfield, California	earthquake	0.2	0.33	0.08	16	automatic	nc	nc
9/29/2004	5:08:05	35.9205	-120.4695	5	2.05	md	27	54	0.03604	0.07	nc	nc30500805	2017-01-08T23:15:43.772Z	4 km NW of Parkfield, California	earthquake	0.25	0.43	0.13	20	automatic	nc	nc
9/29/2004	5:00:21	35.8726667	-120.4236667	5.142	2.07	md	26	45	0.01982	0.04	nc	nc21400649	2017-01-08T23:15:29.497Z	3 km SSE of Parkfield, California	earthquake	0.21	0.36	0.16	15	automatic	nc	nc
9/29/2004	4:50:01	35.929	-120.4763333	4.037	2	md	25	56	0.03153	0.09	nc	nc21400661	2017-01-08T23:15:14.987Z	5 km NW of Parkfield, California	earthquake	0.28	0.39	0.18	14	automatic	nc	nc
9/29/2004	4:33:58	35.9228333	-120.4718333	5.04	2.62	md	43	41	0.03604	0.06	nc	nc30500786	2017-01-08T23:14:59.500Z	4 km NW of Parkfield, California	earthquake	0.17	0.24	0.09	43	automatic	nc	nc
9/29/2004	4:31:54	35.9233333	-120.472	4.833	2.18	md	30	60	0.03604	0.05	nc	nc30500784	2017-01-08T23:14:48.160Z	4 km NW of Parkfield, California	earthquake	0.21	0.29	0.11	21	automatic	nc	nc
9/29/2004	4:28:43	35.9266667	-120.4758333	4.78	2.29	md	34	54	0.03153	0.06	nc	nc21400675	2017-01-08T23:14:33.450Z	4 km NW of Parkfield, California	earthquake	0.19	0.27	0.13	25	automatic	nc	nc
9/29/2004	3:58:27	35.885	-120.4271667	5.514	2.22	md	26	81	0.02072	0.05	nc	nc30500796	2017-01-08T23:13:38.376Z	1 km SSE of Parkfield, California	earthquake	0.23	0.31	0.04	26	automatic	nc	nc
9/29/2004	3:58:21	35.9135	-120.4556667	5.655	2.59	md	15	72	0.03243	0.06	nc	nc30500795	2017-01-08T23:13:34.338Z	2 km NW of Parkfield, California	earthquake	0.35	0.71	0.04	8	automatic	nc	nc
9/29/2004	3:12:25	35.898	-120.44	4.87	2.28	md	34	45	0.03514	0.08	nc	nc21400646	2017-01-08T23:12:10.200Z	0 km WSW of Parkfield, California	earthquake	0.2	0.35	0.1	25	automatic	nc	nc
9/29/2004	2:42:49	35.8785	-120.4278333	5.626	2.94	md	55	42	0.02162	0.04	nc	nc21400733	2017-01-08T23:11:17.220Z	2 km S of Parkfield, California	earthquake	0.12	0.2	0.09	57	reviewed	nc	nc
9/29/2004	2:40:15	35.7946667	-120.3481667	9.488	2.06	md	36	52	0.03694	0.04	nc	nc30506429	2017-01-08T23:11:06.190Z	13 km SSE of Parkfield, California	earthquake	0.23	0.36	0.12	23	automatic	nc	nc
9/29/2004	2:33:45	35.8535	-120.3955	4.762	3.06	md	59	40	0.01712	0.04	nc	nc21400579	2017-01-08T23:10:56.180Z	6 km SSE of Parkfield, California	earthquake	0.13	0.21	0.09	77	reviewed	nc	nc
9/29/2004	2:06:25	35.8716667	-120.419	5.182	2.37	md	38	38	0.01712	0.04	nc	nc30500773	2017-01-08T23:10:02.710Z	3 km SSE of Parkfield, California	earthquake	0.15	0.26	0.12	32	automatic	nc	nc
9/29/2004	2:05:18	35.9308333	-120.48	4.84	2.42	md	26	54	0.02793	0.05	nc	nc21400569	2017-01-08T23:09:53.324Z	5 km NW of Parkfield, California	earthquake	0.22	0.3	0.27	15	automatic	nc	nc
9/29/2004	2:01:35	35.9058333	-120.449	5.604	2.29	md	40	42	0.03153	0.05	nc	nc21400563	2017-01-08T23:09:39.740Z	1 km WNW of Parkfield, California	earthquake	0.18	0.26	0.1	31	reviewed	nc	nc
9/29/2004	1:59:45	35.8968333	-120.4415	5.124	2.13	md	42	52	0.03604	0.07	nc	nc21400568	2017-01-08T23:09:33.350Z	0 km WSW of Parkfield, California	earthquake	0.19	0.31	0.11	36	reviewed	nc	nc
9/29/2004	1:55:37	35.8015	-120.3535	9.178	2.23	md	37	42	0.02973	0.04	nc	nc30506421	2017-01-08T23:09:16.040Z	13 km SSE of Parkfield, California	earthquake	0.16	0.3	0.12	37	automatic	nc	nc
9/29/2004	1:53:35	35.8975	-120.4408333	5.874	3.41	ml	62	39	0.03604	0.07	nc	nc21400562	2017-01-08T23:09:09.130Z	0 km WSW of Parkfield, California	earthquake	0.14	0.2		13	reviewed	nc	nc
9/29/2004	1:28:07	35.9406667	-120.4906667	9.55	2.29	md	55	60	0.01622	0.06	nc	nc21400559	2017-01-08T23:08:13.990Z	6 km NW of Parkfield, California	earthquake	0.15	0.19	0.1	59	reviewed	nc	nc
9/29/2004	0:52:08	35.9221667	-120.4771667	4.694	2.03	md	33	49	0.01441	0.1	nc	nc21400552	2017-01-08T23:06:38.920Z	4 km WNW of Parkfield, California	earthquake	0.3	0.42	0.1	19	reviewed	nc	nc
9/29/2004	0:23:52	35.9231667	-120.4715	4.84	2.2	md	32	55	0.03604	0.06	nc	nc30500843	2017-01-08T23:05:20.460Z	4 km NW of Parkfield, California	earthquake	0.2	0.3	0.14	22	automatic	nc	nc
9/28/2004	23:47:05	35.8016667	-120.354	9.328	2.28	md	54	32	0.02883	0.03	nc	nc21400520	2017-01-08T23:03:55.750Z	12 km SSE of Parkfield, California	earthquake	0.15	0.27	0.14	60	reviewed	nc	nc
9/28/2004	23:33:49	35.9353333	-120.4866667	5.23	2.46	md	54	55	0.02252	0.05	nc	nc21400519	2017-01-08T23:03:13.490Z	6 km NW of Parkfield, California	earthquake	0.12	0.15	0.11	58	reviewed	nc	nc
9/28/2004	23:03:10	35.8026667	-120.3551667	9.378	2.29	md	53	42	0.02793	0.04	nc	nc21400510	2017-01-08T23:01:50.250Z	12 km SSE of Parkfield, California	earthquake	0.15	0.29	0.13	58	reviewed	nc	nc
9/28/2004	22:34:36	35.8725	-120.4225	5.322	2.26	md	47	39	0.01982	0.04	nc	nc21400503	2017-01-08T23:00:56.400Z	3 km SSE of Parkfield, California	earthquake	0.14	0.22	0.11	35	reviewed	nc	nc
9/28/2004	22:22:52	35.9191667	-120.4701667	5.074	2.65	md	56	39	0.01622	0.06	nc	nc21400500	2017-01-08T23:00:11.760Z	4 km WNW of Parkfield, California	earthquake	0.15	0.2	0.11	57	reviewed	nc	nc
9/28/2004	22:04:11	35.9621667	-120.5143333	9.902	2.22	md	35	62	0.01441	0.05	nc	nc30500752	2017-01-08T22:59:11.610Z	10 km NW of Parkfield, California	earthquake	0.18	0.23	0.13	30	automatic	nc	nc
9/28/2004	21:57:37	35.7996667	-120.34	4.44	2.03	md	32	60	0.03333	0.05	nc	nc30506355	2017-01-08T22:58:48.774Z	13 km SE of Parkfield, California	earthquake	0.17	0.4	0.15	21	automatic	nc	nc
9/28/2004	21:51:46	35.8593333	-120.4095	5.782	2.21	md	50	51	0.02342	0.03	nc	nc21400489	2017-01-08T22:58:20.370Z	4 km SSE of Parkfield, California	earthquake	0.15	0.22	0.13	43	reviewed	nc	nc
9/28/2004	21:49:23	35.78	-120.3313333	8.408	2.94	md	56	42	0.05405	0.04	nc	nc21400488	2017-01-08T22:58:13.730Z	14 km NNE of Shandon, California	earthquake	0.15	0.3	0.07	63	reviewed	nc	nc
9/28/2004	21:32:09	35.9673333	-120.5276667	4.868	2.03	md	31	59	0.01712	0.06	nc	nc21400531	2017-01-08T22:57:28.300Z	Central California	earthquake	0.22	0.26	0.08	22	reviewed	nc	nc
9/28/2004	21:28:21	35.9276667	-120.478	5.484	2.18	md	50	53	0.01892	0.05	nc	nc21400529	2017-01-08T22:57:14.880Z	5 km NW of Parkfield, California	earthquake	0.13	0.16	0.08	40	reviewed	nc	nc
9/28/2004	21:20:38	35.8756667	-120.426	5.126	2.08	md	48	40	0.02072	0.04	nc	nc21400502	2017-01-08T22:56:54.870Z	2 km SSE of Parkfield, California	earthquake	0.14	0.25	0.12	33	reviewed	nc	nc
9/28/2004	21:14:57	36.002	-120.5625	1.72	2.02	md	18	115	0.02252	0.04	nc	nc30500762	2017-01-08T22:56:30.795Z	16 km NW of Parkfield, California	earthquake	0.22	0.43	0.22	10	automatic	nc	nc
9/28/2004	21:01:37	35.9185	-120.4701667	5.104	2.59	md	54	38	0.01622	0.06	nc	nc21400487	2017-01-08T22:55:39.480Z	3 km WNW of Parkfield, California	earthquake	0.15	0.2	0.09	52	reviewed	nc	nc
9/28/2004	20:56:29	36.0011667	-120.561	2.709	2.45	md	52	46	0.02162	0.06	nc	nc21400484	2017-01-08T22:55:14.220Z	16 km NW of Parkfield, California	earthquake	0.13	0.22	0.1	42	reviewed	nc	nc
9/28/2004	20:55:07	35.7828333	-120.324	3.883	2.12	md	28	63	0.06937	0.06	nc	nc30506346	2017-01-08T22:55:04.011Z	14 km NNE of Shandon, California	earthquake	0.19	0.61	0.11	17	automatic	nc	nc
9/28/2004	20:54:05	35.797	-120.345	3.66	2.06	md	28	57	0.03423	0.07	nc	nc30506345	2017-01-08T22:54:55.870Z	13 km SE of Parkfield, California	earthquake	0.23	0.58	0.23	17	automatic	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/28/2004	20:38:33	35.8705	-120.4195	5.662	2.11	md	37	45	0.01802	0.04	nc	nc21400481	2017-01-08T22:54:14.010Z	3 km SSE of Parkfield, California	earthquake	0.2	0.29	0.13	25	reviewed	nc	nc
9/28/2004	20:35:12	35.8541667	-120.4018333	5.352	2.02	md	47	55	0.01802	0.04	nc	nc21400480	2017-01-08T22:54:07.880Z	5 km SSE of Parkfield, California	earthquake	0.16	0.23	0.12	29	reviewed	nc	nc
9/28/2004	20:24:45	35.8248333	-120.3735	6.273	2.18	md	45	52	0.01712	0.04	nc	nc21400483	2017-01-08T22:53:21.090Z	9 km SSE of Parkfield, California	earthquake	0.15	0.26	0.07	31	reviewed	nc	nc
9/28/2004	20:20:49	35.8895	-120.4295	5.597	2.02	md	24	49	0.02432	0.05	nc	nc30506329	2017-01-08T22:53:08.574Z	1 km SSE of Parkfield, California	earthquake	0.24	0.37	0.12	20	automatic	nc	nc
9/28/2004	20:19:38	35.893	-120.4115	2.342	2.07	md	14	169	0.01351	0.32	nc	nc30506327	2017-01-08T22:53:04.627Z	2 km ESE of Parkfield, California	earthquake	1.46	1.2	0.16	12	automatic	nc	nc
9/28/2004	20:18:12	35.9358333	-120.4821667	8.914	2.59	md	57	40	0.02342	0.06	nc	nc21400479	2017-01-08T22:53:00.000Z	6 km NW of Parkfield, California	earthquake	0.14	0.18	0.09	71	reviewed	nc	nc
9/28/2004	20:07:13	35.8741667	-120.426	4.935	2.07	md	28	46	0.02162	0.05	nc	nc30506323	2017-01-08T22:52:32.546Z	2 km SSE of Parkfield, California	earthquake	0.18	0.32	0.1	25	automatic	nc	nc
9/28/2004	20:05:51	35.8741667	-120.4241667	5.436	2.63	md	50	40	0.01982	0.05	nc	nc21400476	2017-01-08T22:52:23.650Z	2 km SSE of Parkfield, California	earthquake	0.14	0.24	0.08	54	reviewed	nc	nc
9/28/2004	20:00:20	35.905	-120.4481667	4.578	2.5	md	18	66	0.04414	0.04	nc	nc30506316	2017-01-08T22:52:00.401Z	1 km WNW of Parkfield, California	earthquake	0.25	0.49	0.13	15	automatic	nc	nc
9/28/2004	19:59:27	35.9043333	-120.4483333	5.814	3.19	md	65	40	0.03243	0.06	nc	nc21400475	2017-01-08T22:51:55.600Z	1 km WNW of Parkfield, California	earthquake	0.14	0.19	0.13	85	reviewed	nc	nc
9/28/2004	19:51:44	35.8688333	-120.4175	5.332	2.24	md	25	53	0.01802	0.03	nc	nc21400528	2017-01-08T22:51:32.770Z	3 km SSE of Parkfield, California	earthquake	0.22	0.38	0.16	21	reviewed	nc	nc
9/28/2004	19:48:22	35.8618333	-120.412	5.622	2.35	md	51	49	0.02162	0.04	nc	nc21400524	2017-01-08T22:51:19.070Z	4 km SSE of Parkfield, California	earthquake	0.13	0.2	0.09	35	reviewed	nc	nc
9/28/2004	19:40:23	35.7811667	-120.3313333	8.428	2.85	md	59	42	0.05315	0.04	nc	nc21400518	2017-01-08T22:50:55.920Z	14 km NNE of Shandon, California	earthquake	0.14	0.28	0.08	70	reviewed	nc	nc
9/28/2004	19:33:57	35.8665	-120.4168333	4.356	2.07	md	24	51	0.01982	0.04	nc	nc30506312	2017-01-08T22:50:35.984Z	3 km SSE of Parkfield, California	earthquake	0.23	0.32	0.18	20	automatic	nc	nc
9/28/2004	19:31:27	35.8385	-120.388	8.683	4.03	mw	63	33	0.009009	0.03	nc	nc21400474	2017-03-17T18:10:13.305Z	7 km SSE of Parkfield, California	earthquake	0.14	0.23		4	reviewed	nc	nc
9/28/2004	19:26:05	35.9255	-120.4758333	4.874	2.26	md	20	96	0.01712	0.04	nc	nc21400471	2017-01-08T22:50:07.302Z	4 km NW of Parkfield, California	earthquake	0.33	0.51	0.1	10	reviewed	nc	nc
9/28/2004	19:23:51	35.8406667	-120.3898333	8.576	2.35	md	24	92	0.03063	0.03	nc	nc21400473	2017-01-08T22:49:59.582Z	7 km SSE of Parkfield, California	earthquake	0.28	0.41	0.19	6	reviewed	nc	nc
9/28/2004	19:23:39	35.8285	-120.3801667	5.993	3.06	ml	47	28	0.01712	0.05	nc	nc30506310	2017-01-08T22:49:54.410Z	9 km SSE of Parkfield, California	earthquake	0.15	0.22		11	automatic	nc	nc
9/28/2004	19:13:34	35.8678333	-120.4146667	4.816	2.36	md	13	88	0.01712	0.03	nc	nc30500814	2017-01-08T22:49:23.454Z	3 km SSE of Parkfield, California	earthquake	0.38	0.33	0.13	16	automatic	nc	nc
9/28/2004	19:05:10	35.9298333	-120.4785	4.869	2.1	md	21	62	0.02973	0.05	nc	nc30506301	2017-01-08T22:48:43.387Z	5 km NW of Parkfield, California	earthquake	0.25	0.33	0.15	17	automatic	nc	nc
9/28/2004	19:02:27	35.9221667	-120.4723333	5.394	2.68	md	55	54	0.01712	0.06	nc	nc21400470	2017-01-08T22:48:27.720Z	4 km NW of Parkfield, California	earthquake	0.13	0.18	0.09	68	reviewed	nc	nc
9/28/2004	18:47:28	35.9246667	-120.4735	4.739	2.08	md	23	61	0.03423	0.05	nc	nc30506292	2017-01-08T22:47:49.763Z	4 km NW of Parkfield, California	earthquake	0.2	0.32	0.15	20	automatic	nc	nc
9/28/2004	18:45:00	35.8516667	-120.3961667	4.836	2.77	md	54	40	0.01532	0.04	nc	nc21400467	2017-01-08T22:47:34.550Z	6 km SSE of Parkfield, California	earthquake	0.13	0.2	0.05	72	reviewed	nc	nc
9/28/2004	18:34:50	35.9261667	-120.4763333	4.917	2.24	md	47	39	0.01802	0.06	nc	nc21400466	2017-01-08T22:46:41.000Z	4 km NW of Parkfield, California	earthquake	0.16	0.22	0.13	40	reviewed	nc	nc
9/28/2004	18:09:36	35.8166667	-120.3981667	1.385	2.84	md	28	72	0.01982	0.34	nc	nc30500837	2017-01-08T22:45:29.900Z	9 km SSE of Parkfield, California	earthquake	0.49	1.1	0.11	40	automatic	nc	nc
9/28/2004	18:09:01	35.957	-120.5123333	6.775	2.13	md	31	54	0.01171	0.06	nc	nc30500836	2017-01-08T22:45:23.220Z	9 km NW of Parkfield, California	earthquake	0.19	0.28	0.13	31	automatic	nc	nc
9/28/2004	18:04:34	35.9235	-120.4733333	5.019	2.46	md	29	59	0.03423	0.07	nc	nc30506267	2017-01-08T22:44:59.627Z	4 km NW of Parkfield, California	earthquake	0.22	0.3	0.11	31	automatic	nc	nc
9/28/2004	18:04:00	35.9235	-120.4716667	4.835	2.35	md	31	58	0.03964	0.06	nc	nc30506266	2017-01-08T22:44:55.853Z	4 km NW of Parkfield, California	earthquake	0.17	0.35	0.14	30	automatic	nc	nc
9/28/2004	18:02:22	35.8991667	-120.4413333	5.963	2.53	md	20	52	0.03694	0.04	nc	nc30506263	2017-01-08T22:44:43.015Z	0 km W of Parkfield, California	earthquake	0.23	0.38	0.06	23	automatic	nc	nc
9/28/2004	17:57:43	35.781	-120.3308333	8.338	2.66	md	54	46	0.05315	0.05	nc	nc21400463	2017-01-08T22:44:12.200Z	14 km NNE of Shandon, California	earthquake	0.16	0.3	0.09	65	reviewed	nc	nc
9/28/2004	17:54:32	35.9871667	-120.5495	4.339	2.47	md	28	54	0.01351	0.1	nc	nc30500827	2017-01-08T22:43:51.319Z	14 km NW of Parkfield, California	earthquake	0.24	0.4	0.12	30	automatic	nc	nc
9/28/2004	17:50:22	36.0501667	-120.5526667	8.225	2.19	md	27	179	0.04234	0.22	nc	nc30500821	2017-01-08T22:43:29.957Z	19 km NNW of Parkfield, California	earthquake	1.11	0.66	0.08	24	automatic	nc	nc
9/28/2004	17:49:44	35.8815	-120.4288333	4.893	2.05	md	17	108	0.02252	0.06	nc	nc30500820	2017-01-08T22:43:26.239Z	2 km S of Parkfield, California	earthquake	0.36	0.45	0.06	13	automatic	nc	nc
9/28/2004	17:49:03	35.8553333	-120.4036667	4.357	2.68	md	31	39	0.02613	0.07	nc	nc30500819	2017-01-08T22:43:21.510Z	5 km SSE of Parkfield, California	earthquake	0.17	0.32	0.09	32	automatic	nc	nc
9/28/2004	17:48:56	35.8745	-120.4236667	4.347	3.09	md	18	102	0.01892	0.04	nc	nc30500818	2017-01-08T22:43:15.962Z	2 km SSE of Parkfield, California	earthquake	0.33	0.5	0.13	9	automatic	nc	nc
9/28/2004	17:44:06	35.8593333	-120.4036667	4.56	2.35	md	30	55	0.02252	0.03	nc	nc30506442	2017-01-08T22:42:46.643Z	5 km SSE of Parkfield, California	earthquake	0.17	0.3	0.15	25	automatic	nc	nc
9/28/2004	17:43:40	35.8666667	-120.4155	8.464	2.36	md	37	46	0.01892	0.04	nc	nc30506441	2017-01-08T22:42:41.480Z	3 km SSE of Parkfield, California	earthquake	0.17	0.3	0.12	31	automatic	nc	nc
9/28/2004	17:43:06	35.8573333	-120.4028333	4.601	2.47	md	34	54	0.02162	0.06	nc	nc30506440	2017-01-08T22:42:32.600Z	5 km SSE of Parkfield, California	earthquake	0.16	0.27	0.12	32	automatic	nc	nc
9/28/2004	17:42:24	35.866	-120.4128333	4.876	2.26	md	8	112	0.01802	0.01	nc	nc30506438	2017-01-08T22:42:23.779Z	4 km SSE of Parkfield, California	earthquake	0.54	0.6	0.12	7	automatic	nc	nc
9/28/2004	17:41:09	35.9135	-120.4576667	5.922	2.89	md	61	41	0.03333	0.06	nc	nc21400760	2017-01-08T22:42:12.240Z	2 km NW of Parkfield, California	earthquake	0.14	0.2	0.12	76	reviewed	nc	nc
9/28/2004	17:39:13	35.9381667	-120.4863333	9.439	2.55	md	27	49	0.02072	0.06	nc	nc30506255	2017-01-08T22:41:58.909Z	6 km NW of Parkfield, California	earthquake	0.2	0.32	0.1	28	automatic	nc	nc
9/28/2004	17:38:38	35.8441667	-120.3808333	-0.541	2.73	md	31	44	0.01622	0.31	nc	nc30506254	2017-01-08T22:41:54.090Z	7 km SE of Parkfield, California	earthquake	0.58	1.39	0.14	39	automatic	nc	nc
9/28/2004	17:35:17	35.947	-120.4895	9.525	3.55	ml	21	156	0.01171	0.03	nc	nc30506251	2017-03-17T19:51:16.892Z	7 km NW of Parkfield, California	earthquake	0.28	0.28		17	automatic	nc	nc
9/28/2004	17:33:55	35.8153333	-120.363	6.418	3.7	ml	59	25	0.01712	0.03	nc	nc21400462	2017-03-17T18:09:41.384Z	11 km SE of Parkfield, California	earthquake	0.13	0.24		26	reviewed	nc	nc
9/28/2004	17:32:23	35.8518333	-120.393	4.455	2.63	md	24	84	0.03063	0.07	nc	nc30506248	2017-01-08T22:41:16.160Z	6 km SE of Parkfield, California	earthquake	0.21	0.31	0.11	29	automatic	nc	nc
9/28/2004	17:29:41	35.8266667	-120.3718333	8.555	3.24	ml	14	73	0.01532	0.02	nc	nc30506246	2017-01-08T22:41:04.350Z	9 km SE of Parkfield, California	earthquake	0.29	0.23		6	automatic	nc	nc
9/28/2004	17:29:22	35.8346667	-120.3838333	8.27	3.29	ml	29	73	0.02432	0.04	nc	nc30506245	2017-01-08T22:40:56.593Z	8 km SSE of Parkfield, California	earthquake	0.17	0.35		13	automatic	nc	nc
9/28/2004	17:28:22	35.9023333	-120.4466667	5.013	2.51	md	13	145	0.04234	0.04	nc	nc30506243	2017-01-08T22:40:48.576Z	1 km WNW of Parkfield, California	earthquake	0.35	0.74	0.12	10	automatic	nc	nc
9/28/2004	17:27:30	35.8625	-120.412	3.946	2.06	md	13	81	0.02072	0.02	nc	nc30506242	2017-01-08T22:40:44.838Z	4 km SSE of Parkfield, California	earthquake	0.36	0.47	0.08	11	automatic	nc	nc
9/28/2004	17:26:20	35.9145	-120.4723333	4.891	2.2	md	6	145	0.03784	0.01	nc	nc30506241	2017-01-08T22:40:41.286Z	3 km WNW of Parkfield, California	earthquake	0.93	2.56	0.19	6	automatic	nc	nc
9/28/2004	17:24:15	35.8045	-120.3498333	5.998	4.71	mw	56	37	0.02613	0.04	nc	nc21400461	2022-08-08T22:14:52.628Z	12 km SE of Parkfield, California	earthquake	0.13	0.24		3	reviewed	nc	nc
9/28/2004	17:23:49	35.8546667	-120.3996667	4.199	2.52	md	41	40	0.01892	0.07	nc	nc30506240	2017-01-08T22:40:22.060Z	5 km SSE of Parkfield, California	earthquake	0.16	0.3	0.173	10	reviewed	nc	nc
9/28/2004	17:22:55	36.0031667	-120.569	2.94	2.64	md	19	125	0.02703	0.05	nc	nc30228826	2017-01-08T22:40:14.546Z	16 km NW of Parkfield, California	earthquake	0.29	0.5	0.14	7	reviewed	nc	nc
9/28/2004	17:22:22	35.9091667	-120.4561667	5.811	2.78	md	34	53	0.03604	0.06	nc	nc21400460	2017-01-08T22:40:09.260Z	2 km WNW of Parkfield, California	earthquake	0.27	0.21	0.39	25	reviewed	nc	nc
9/28/2004	17:21:29	35.8338333	-120.456	31.797	2.53	md	10	177	0.03784	0.19	nc	nc71006934	2017-01-08T22:39:56.403Z	7 km SSW of Parkfield, California	earthquake	3.33	6.16	0.203	9	reviewed	nc	nc
9/28/2004	17:19:23	35.8443333	-120.4015	8.243	4.12	md	21	83	0.008108	0.07	nc	nc21400459	2017-01-08T22:39:52.461Z	6 km SSE of Parkfield, California	earthquake	0.34	0.49	0.1	4	reviewed	nc	nc
9/28/2004	17:19:06	35.8571667	-120.4063333	8.503	4.15	ml	58	40	0.02162	0.04	nc	nc30228271	2022-08-08T22:13:44.900Z	5 km SSE of Parkfield, California	earthquake	0.15	0.23		28	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/28/2004	17:15:24	35.8181667	-120.366	8.136	5.97	mw	61	26	0.01622	0.04	nc	nc30228270	2022-05-02T17:28:01.771Z	10 km SSE of Parkfield, California	earthquake	0.14	0.25		4	reviewed	nc	nc
9/26/2004	16:26:33	35.533	-120.821	4.66	2.17	md	59	50	0.07027	0.08	nc	nc21399980	2017-01-08T22:23:55.410Z	10 km W of Templeton, California	earthquake	0.16	0.63	0.21	30	reviewed	nc	nc
9/26/2004	5:53:09	35.5541667	-120.8491667	5.861	2.24	md	46	36	0.05135	0.09	nc	nc21399859	2017-01-08T22:20:29.320Z	13 km NNE of Cayucos, CA	earthquake	0.17	0.56	0.17	34	reviewed	nc	nc
9/25/2004	16:54:34	35.62	-120.749	7.987	2.05	md	31	45	0.0982	0.08	nc	nc21399512	2017-01-08T22:17:11.066Z	5 km W of Paso Robles, California	earthquake	0.26	1.31	0.05	5	reviewed	nc	nc
9/24/2004	8:29:54	35.6338333	-120.756	6.014	2.04	md	43	38	0.09009	0.07	nc	nc21398626	2017-01-08T22:06:14.680Z	5 km W of Paso Robles, California	earthquake	0.2	0.76	0.18	12	reviewed	nc	nc
9/23/2004	11:21:56	35.983	-119.9211667	5.245	2.17	md	42	180	0.1234	0.17	nc	nc21398013	2017-01-08T21:56:56.840Z	Central California	earthquake	0.49	0.67	0.1	23	reviewed	nc	nc
9/23/2004	7:04:18	36.0103333	-119.6725	18.53	2.29	md	39	229	0.2739	0.17	nc	nc21397951	2017-01-08T21:54:11.960Z	14 km SW of Corcoran, California	earthquake	1.18	0.54	0.13	15	reviewed	nc	nc
9/23/2004	6:11:29	35.4658333	-120.774	4.185	2.72	md	58	60	0.08829	0.09	nc	nc21397927	2017-01-08T21:53:30.550Z	9 km WSW of Atascadero, California	earthquake	0.16	0.61	0.09	52	reviewed	nc	nc
9/23/2004	1:21:13	35.0536667	-119.034	12.042	2.87	ml	30	30.8	0.08963	0.32	ci	ci10047725	2016-04-01T21:24:31.451Z	16km NW of Grapevine, CA	earthquake	0.36	0.88	0.226	67	reviewed	ci	ci
9/23/2004	0:13:39	35.4495	-120.8633333	-0.312	2.03	md	33	93	0.01802	0.3	nc	nc21397819	2017-01-08T21:50:44.106Z	2 km ENE of Cayucos, California	earthquake	0.45	1.15	0.21	14	reviewed	nc	nc
9/22/2004	23:29:57	35.0541667	-119.0243333	13.582	2.74	ml	28	36.6	0.09293	0.34	ci	ci10047693	2016-04-02T19:44:25.052Z	15km NW of Grapevine, CA	earthquake	0.52	1.15	0.247	36	reviewed	ci	ci
9/21/2004	17:10:48	35.5521667	-120.808	6.3	2.24	md	58	45	0.08288	0.08	nc	nc21397136	2017-01-08T21:34:23.400Z	9 km W of Templeton, California	earthquake	0.16	0.7	0.15	43	reviewed	nc	nc
9/20/2004	17:32:38	35.4925	-120.8226667	6.648	2.07	md	47	51	0.05856	0.09	nc	nc21396991	2017-01-08T21:18:17.310Z	8 km NE of Cayucos, California	earthquake	0.17	0.56	0.19	18	reviewed	nc	nc
9/20/2004	9:53:03	35.5891667	-120.8305	6.441	2	md	45	41	0.05946	0.09	nc	nc21396707	2017-01-08T21:11:00.520Z	12 km WNW of Templeton, California	earthquake	0.18	0.62	0.28	20	reviewed	nc	nc
9/17/2004	8:00:45	35.5241667	-120.8175	2.205	2.14	md	14	182	0.07387	0.07	nc	nc68011367	2017-01-08T20:06:42.264Z	10 km WSW of Templeton, California	earthquake	0.37	1.24	0.13	8	reviewed	nc	nc
9/17/2004	5:00:37	35.516	-120.7885	0.14	2.03	md	32	174	0.1396	0.07	nc	nc21395887	2017-01-08T20:06:25.140Z	8 km WSW of Templeton, California	earthquake	0.86	6.64	0.15	7	reviewed	nc	nc
9/16/2004	12:48:22	36.1826667	-120.1295	8.763	2.01	md	19	140	0.07568	0.09	nc	nc21395741	2017-01-08T20:04:00.882Z	3 km SW of Huron, California	earthquake	0.99	1.15	0.17	3	reviewed	nc	nc
9/16/2004	8:41:47	35.5658333	-120.7925	3.614	2.04	md	47	48	0.0964	0.08	nc	nc21395831	2017-01-08T20:03:26.590Z	8 km WNW of Templeton, California	earthquake	0.18	0.83	0.23	25	reviewed	nc	nc
9/14/2004	20:10:21	35.5008333	-120.781	4.078	2.09	md	25	60	0.09189	0.09	nc	nc21395209	2017-01-08T19:56:48.693Z	8 km SW of Templeton, California	earthquake	0.26	0.92	0.21	13	reviewed	nc	nc
9/13/2004	14:39:59	35.5895	-120.8426667	6.623	2.26	md	45	62	0.05495	0.08	nc	nc21394802	2017-01-08T19:51:48.310Z	13 km WNW of Templeton, California	earthquake	0.25	0.52	0.14	37	reviewed	nc	nc
9/11/2004	6:21:14	36.0375	-120.5946667	4.265	2.47	md	64	33	0.03153	0.07	nc	nc21394617	2017-01-08T19:42:04.170Z	21 km NW of Parkfield, California	earthquake	0.14	0.24	0.1	61	reviewed	nc	nc
9/9/2004	21:12:38	35.6131667	-120.892	6.063	2.16	md	48	52	0.03514	0.07	nc	nc21394425	2017-01-08T19:36:38.760Z	12 km S of Lake Nacimiento, California	earthquake	0.18	0.39	0.18	30	reviewed	nc	nc
9/9/2004	15:35:30	35.5275	-120.8326667	4.2	2.07	md	39	52	0.06036	0.07	nc	nc21394372	2017-01-08T19:35:24.240Z	10 km NNE of Cayucos, California	earthquake	0.17	0.58	0.15	15	reviewed	nc	nc
9/7/2004	16:55:36	35.4376667	-120.7236667	6.094	2.14	md	29	42	0.04685	0.06	nc	nc21393983	2017-01-08T19:28:36.910Z	7 km SW of Atascadero, California	earthquake	0.2	0.43	0.21	14	reviewed	nc	nc
9/6/2004	18:34:02	35.55	-120.8331667	2.825	2.04	md	37	51	0.06216	0.15	nc	nc21393789	2017-01-08T19:25:20.330Z	11 km W of Templeton, California	earthquake	0.39	1.42	0.25	11	reviewed	nc	nc
9/6/2004	9:42:38	35.5988333	-120.7621667	5.508	2.01	md	55	36	0.09459	0.08	nc	nc21393707	2017-01-08T19:23:01.220Z	7 km WSW of Paso Robles, California	earthquake	0.16	0.83	0.24	31	reviewed	nc	nc
9/5/2004	21:07:57	35.6056667	-120.894	5.851	2.4	md	56	51	0.04234	0.09	nc	nc21393584	2017-01-08T19:20:16.010Z	13 km S of Lake Nacimiento, California	earthquake	0.13	0.35	0.15	53	reviewed	nc	nc
9/5/2004	9:10:13	35.4773333	-120.7601667	5.445	2.17	md	54	51	0.09459	0.08	nc	nc21393555	2017-01-08T19:18:33.050Z	8 km W of Atascadero, California	earthquake	0.16	0.49	0.23	34	reviewed	nc	nc
9/5/2004	3:48:47	35.6175	-120.7261667	2.575	2.02	md	11	237	0.1694	0.18	nc	nc68011153	2017-01-08T19:17:48.611Z	3 km WSW of Paso Robles, California	earthquake	1.36	4.8	0.05	5	reviewed	nc	nc
9/4/2004	15:48:16	35.9783333	-120.533	10.764	2.23	md	47	35	0.01532	0.05	nc	nc21393418	2017-01-08T19:16:04.710Z	12 km NW of Parkfield, California	earthquake	0.16	0.21	0.13	33	reviewed	nc	nc
9/4/2004	12:18:26	35.5625	-120.8271667	4.641	2.21	md	58	42	0.07117	0.08	nc	nc21393390	2017-01-08T19:15:12.720Z	11 km W of Templeton, California	earthquake	0.15	0.65	0.18	46	reviewed	nc	nc
9/3/2004	17:38:52	35.6196667	-120.7403333	5.18	2.86	md	62	50	0.1054	0.08	nc	nc21393241	2017-01-08T19:12:46.130Z	4 km W of Paso Robles, California	earthquake	0.15	0.8	0.08	62	reviewed	nc	nc
9/1/2004	19:58:02	36.1808333	-120.3038333	10.289	2.81	md	57	111	0.07568	0.08	nc	nc21392768	2017-01-08T19:04:32.850Z	6 km NE of Coalinga, California	earthquake	0.2	0.32	0.11	115	reviewed	nc	nc
9/1/2004	16:09:58	35.5488333	-120.8418333	5.74	2.13	md	56	45	0.05495	0.08	nc	nc21392702	2017-01-08T19:03:29.120Z	12 km W of Templeton, California	earthquake	0.15	0.45	0.23	37	reviewed	nc	nc
9/1/2004	7:51:08	35.5846667	-120.8816667	3.631	2.16	md	49	46	0.05495	0.08	nc	nc21392622	2017-01-08T19:01:18.880Z	15 km N of Cayucos, California	earthquake	0.18	0.4	0.25	24	reviewed	nc	nc
8/29/2004	20:20:53	35.4811667	-120.7708333	4.557	2.25	md	29	75	0.1027	0.05	nc	nc21392006	2017-01-08T18:51:26.980Z	9 km W of Atascadero, California	earthquake	0.24	1.43	0.12	24	reviewed	nc	nc
8/28/2004	1:35:36	35.5426667	-120.7756667	2.476	2.16	md	8	279	0.1234	0.05	nc	nc21391748	2017-01-08T18:43:46.457Z	6 km W of Templeton, California	earthquake	5.56	2.73		1	reviewed	nc	nc
8/27/2004	19:28:01	35.487	-120.7631667	1.625	2.67	md	48	57	0.1009	0.09	nc	nc21391708	2017-01-08T18:42:49.200Z	8 km W of Atascadero, California	earthquake	0.19	1.59	0.13	40	reviewed	nc	nc
8/27/2004	14:37:43	35.6051667	-120.8931667	5.791	2.07	md	47	51	0.04234	0.09	nc	nc21391674	2017-01-08T18:41:15.650Z	13 km S of Lake Nacimiento, California	earthquake	0.14	0.47	0.15	29	reviewed	nc	nc
8/26/2004	22:38:17	35.6008333	-120.8708333	7.301	2.06	md	40	47	0.04054	0.1	nc	nc21391580	2017-01-08T18:38:00.323Z	14 km S of Lake Nacimiento, California	earthquake	0.2	0.52	0.19	25	reviewed	nc	nc
8/26/2004	20:10:28	35.5163333	-120.8131667	2.84	2.28	md	60	55	0.07838	0.1	nc	nc21391548	2017-01-08T18:37:18.140Z	10 km WSW of Templeton, California	earthquake	0.14	0.7	0.18	44	reviewed	nc	nc
8/21/2004	16:19:03	35.619	-120.7381667	5.584	2.29	md	53	33	0.1072	0.08	nc	nc21390539	2017-01-08T18:14:14.550Z	4 km W of Paso Robles, California	earthquake	0.16	0.95	0.17	41	reviewed	nc	nc
8/20/2004	12:59:44	35.6201667	-120.7415	6.434	3.08	md	80	33	0.1045	0.08	nc	nc21390196	2017-01-08T18:08:28.520Z	4 km W of Paso Robles, California	earthquake	0.12	0.9	0.09	113	reviewed	nc	nc
8/20/2004	8:43:02	35.588	-120.804	4.121	2.09	md	30	59	0.07387	0.13	nc	nc21390170	2017-01-08T18:07:24.912Z	9 km WNW of Templeton, California	earthquake	0.25	1.19	0.13	11	reviewed	nc	nc
8/20/2004	8:12:40	35.5256667	-120.8211667	1.1	2.07	md	53	30	0.07027	0.12	nc	nc21390166	2017-01-08T18:07:14.070Z	10 km WSW of Templeton, California	earthquake	0.21	1.77	0.16	28	reviewed	nc	nc
8/20/2004	5:02:53	35.1315	-118.9611667	12.951	2	mh	18	138	0.1075	0.23	ci	ci14086312	2016-02-16T10:57:40.718Z	15km SW of Arvin, California	earthquake	0.69	1.31		0	reviewed	ci	ci
8/20/2004	1:40:19	35.4801667	-120.7545	2.375	2.28	md	58	49	0.0955	0.12	nc	nc21390118	2017-01-08T18:06:14.900Z	7 km W of Atascadero, California	earthquake	0.15	0.78	0.2	43	reviewed	nc	nc
8/19/2004	23:44:15	35.5525	-120.8046667	4.511	2.1	md	41	68	0.1018	0.09	nc	nc21390080	2017-01-08T18:05:39.560Z	8 km W of Templeton, California	earthquake	0.2	0.78	0.15	27	reviewed	nc	nc
8/19/2004	21:46:55	35.5228333	-120.8285	3.471	2.52	md	50	78	0.1225	0.07	nc	nc21390042	2017-01-08T18:05:26.570Z	10 km NNE of Cayucos, California	earthquake	0.19	1.55	0.08	47	reviewed	nc	nc
8/19/2004	5:50:03	35.5428333	-120.8611667	6.331	2.2	md	55	46	0.03784	0.07	nc	nc21389909	2017-01-08T18:02:27.780Z	11 km NNE of Cayucos, California	earthquake	0.16	0.46	0.24	40	reviewed	nc	nc
8/16/2004	0:36:29	35.5416667	-120.8495	3.831	2.83	md	62	76	0.1009	0.07	nc	nc21389086	2017-01-08T17:47:10.590Z	11 km NNE of Cayucos, California	earthquake	0.15	1.13	0.08	65	reviewed	nc	nc
8/11/2004	9:11:04	35.5573333	-120.799	5.87	3.43	ml	68	44	0.09099	0.07	nc	nc21387746	2017-01-08T17:19:24.280Z	8 km W of Templeton, California	earthquake	0.14	0.64		7	reviewed	nc	nc
8/10/2004	12:50:18	35.5401667	-120.8556667	6.6	2.32	md	55	47	0.04234	0.06	nc	nc21387470	2017-01-08T17:14:53.430Z	11 km NNE of Cayucos, California	earthquake	0.16	0.47	0.16	43	reviewed	nc	nc
8/9/2004	8:59:39	35.5098333	-120.8445	5.321	2.14	md	46	36	0.05946	0.09	nc	nc21387177	2017-01-08T17:08:12.610Z	Central California	earthquake	0.2	0.61	0.28	30	reviewed	nc	nc
8/7/2004	8:20:30	35.0713333	-119.0615	12.062	2.3	ml	30	42	0.1027	0.28	ci	ci10036061	2016-02-16T03:54:46.101Z	19km NW of Grapevine, California	earthquake	0.6	1.26	0.268	36	reviewed	ci	ci
8/6/2004	7:57:33	35.5675	-120.829	5.701	2.25	md	58	36	0.07207	0.09	nc	nc21386445	2017-01-07T20:35:06.870Z	11 km W of Templeton, California	earthquake	0.15	0.53	0.16	46	reviewed	nc	nc
8/6/2004	6:36:07	35.558	-120.7991667	4.59	2	md	51	44	0.09099	0.07	nc	nc21386435	2017-01-07T20:34:41.330Z	8 km W of Templeton, California	earthquake	0.16	0.69	0.18	30	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
8/5/2004	14:00:57	35.2601667	-119.5496667	27.138	2.01	ml	7	233	0.1445	0.27	ci	ci10035213	2016-04-02T19:54:52.718Z	16km NNW of Taft, CA	earthquake	3.12	1.69		1	reviewed	ci	ci
8/4/2004	17:55:40	35.5148333	-120.7981667	6.895	2.63	md	50	75	0.1378	0.05	nc	nc21386127	2017-01-07T20:27:17.460Z	9 km WSW of Templeton, California	earthquake	0.21	1.14	0.11	60	reviewed	nc	nc
7/30/2004	4:49:12	35.5331667	-120.8068333	2.56	2.15	md	23	80	0.08198	0.1	nc	nc21385019	2017-01-07T19:51:35.103Z	9 km WSW of Templeton, California	earthquake	0.26	1.31	0.25	13	automatic	nc	nc
7/29/2004	4:22:40	35.9906667	-119.9198333	5.214	2.86	md	93	47	0.1315	0.27	nc	nc21384762	2017-01-07T19:45:14.080Z	4 km ESE of Kettleman City, California	earthquake	0.38	0.68	0.1	88	reviewed	nc	nc
7/28/2004	7:13:39	35.0641667	-118.9216667	12.93	2.84	ml	54	38	0.09776	0.31	ci	ci14079016	2016-04-01T21:27:23.618Z	14km N of Grapevine, CA	earthquake	0.39	0.75	0.232	79	reviewed	ci	ci
7/28/2004	4:15:03	35.6145	-120.8925	8.516	2.43	md	46	83	0.08108	0.08	nc	nc21384060	2017-01-07T19:39:15.930Z	12 km S of Lake Nacimiento, California	earthquake	0.18	0.77	0.17	38	automatic	nc	nc
7/27/2004	12:05:28	35.5421667	-120.7716667	2.787	2.1	md	13	201	0.1108	0.16	nc	nc68010278	2017-01-07T19:34:53.437Z	6 km W of Templeton, California	earthquake	0.78	2.3	0.14	7	reviewed	nc	nc
7/27/2004	6:53:54	35.5806667	-120.8231667	2.605	2.09	md	24	73	0.08288	0.17	nc	nc21383431	2017-01-07T19:32:44.411Z	11 km WNW of Templeton, California	earthquake	0.36	1.67	0.18	10	automatic	nc	nc
7/26/2004	7:28:37	35.5573333	-120.7975	4.598	2.51	md	46	44	0.09189	0.07	nc	nc21382979	2017-01-07T19:25:44.211Z	8 km W of Templeton, California	earthquake	0.19	0.86	0.17	40	automatic	nc	nc
7/26/2004	3:47:46	35.6036667	-120.8868333	7.533	2.09	md	16	192	0.07117	0.16	nc	nc68010218	2017-01-07T19:24:43.555Z	13 km S of Lake Nacimiento, California	earthquake	0.59	0.89	0.15	10	reviewed	nc	nc
7/26/2004	3:35:17	35.5563333	-120.7976667	5.44	2.01	md	49	49	0.09189	0.07	nc	nc21383035	2017-01-07T19:24:35.390Z	8 km W of Templeton, California	earthquake	0.15	0.66	0.23	24	reviewed	nc	nc
7/25/2004	21:02:08	35.5468333	-120.838	5.25	2.06	md	26	66	0.05766	0.08	nc	nc21382841	2017-01-07T19:22:55.072Z	11 km W of Templeton, California	earthquake	0.36	0.85	0.14	7	reviewed	nc	nc
7/25/2004	14:28:37	35.5453333	-120.8563333	4.605	2.32	md	21	54	0.04234	0.09	nc	nc21382512	2017-01-07T19:20:56.165Z	11 km NNE of Cayucos, California	earthquake	0.26	0.79	0.18	14	automatic	nc	nc
7/24/2004	18:56:15	35.5395	-120.8483333	5.96	2.14	md	31	48	0.04775	0.07	nc	nc21381652	2017-01-07T19:16:46.022Z	11 km NNE of Cayucos, California	earthquake	0.18	0.53	0.24	17	reviewed	nc	nc
7/24/2004	14:04:29	35.5608333	-120.7976667	4.095	2.32	md	12	201	0.09279	0.25	nc	nc68010162	2017-01-07T19:15:46.195Z	8 km W of Templeton, California	earthquake	1.4	1.59	0.14	9	reviewed	nc	nc
7/23/2004	20:54:12	35.5466667	-120.8663333	5.263	2.37	md	18	121	0.09459	0.06	nc	nc21380818	2017-01-07T19:11:54.282Z	11 km NNE of Cayucos, California	earthquake	0.58	0.84	0.63	2	reviewed	nc	nc
7/23/2004	18:17:16	36.1493333	-119.9686667	11.219	2.29	md	14	167	0.1441	0.17	nc	nc21380772	2017-01-07T19:11:26.549Z	13 km ESE of Huron, California	earthquake	1.92	0.78	0.18	2	automatic	nc	nc
7/23/2004	5:08:24	35.6086667	-120.8878333	5.972	2.8	md	61	128	0.2541	0.08	nc	nc21380633	2017-01-07T19:08:40.870Z	13 km S of Lake Nacimiento, California	earthquake	0.19	0.97	0.09	55	automatic	nc	nc
7/22/2004	17:14:57	35.5251667	-120.823	5.591	2.16	md	34	77	0.1216	0.06	nc	nc21380477	2017-01-07T19:05:27.170Z	10 km WSW of Templeton, California	earthquake	0.23	0.91	0.09	24	reviewed	nc	nc
7/19/2004	11:13:47	35.6183333	-120.8971667	7.876	2.22	md	24	83	0.08468	0.16	nc	nc21379631	2017-01-07T18:48:26.594Z	12 km S of Lake Nacimiento, California	earthquake	0.4	0.79	0.16	19	automatic	nc	nc
7/18/2004	9:44:01	36.414	-119.5895	11.372	2.62	md	106	56	0.4135	0.32	nc	nc21379323	2017-01-07T18:42:26.300Z	7 km ENE of Lucerne, California	earthquake	0.45	0.93	0.12	63	reviewed	nc	nc
7/16/2004	4:53:21	35.5415	-120.846	5.68	2.01	md	32	56	0.05045	0.08	nc	nc21378542	2017-01-07T18:28:37.012Z	11 km NNE of Cayucos, California	earthquake	0.22	0.7	0.2	12	reviewed	nc	nc
7/15/2004	1:43:22	35.3148333	-119.4325	0.608	3.5	ml	29	117	0.1689	0.39	ci	ci14074120	2016-04-02T03:58:15.742Z	10km SSE of Buttonwillow, CA	earthquake	0.61	1.44	0.217	119	reviewed	ci	ci
7/13/2004	10:19:42	35.5478333	-120.8078333	4.35	2.86	md	49	46	0.08198	0.11	nc	nc21377790	2017-01-07T18:09:35.620Z	9 km W of Templeton, California	earthquake	0.16	0.69	0.11	67	automatic	nc	nc
7/12/2004	17:48:42	35.0806667	-119.0318333	13.102	2.32	ml	21	107	0.1159	0.19	ci	ci14073404	2016-02-17T06:24:55.518Z	18km NNW of Grapevine, California	earthquake	0.56	0.98	0.232	32	reviewed	ci	ci
7/12/2004	17:15:51	35.591	-120.8641667	2.723	2	md	13	193	0.06667	0.19	nc	nc68009860	2017-01-07T18:06:18.996Z	15 km WNW of Templeton, California	earthquake	0.85	1.45	0.1	6	reviewed	nc	nc
7/12/2004	11:58:55	35.6081667	-119.5108333	6.697	2.05	ml	13	149	0.4173	0.44	ci	ci14073324	2016-02-16T20:38:24.077Z	15km W of Wasco, California	earthquake	1.07	30.62	0.31	13	reviewed	ci	ci
7/11/2004	20:10:46	35.5358333	-120.78	2.99	2.35	md	39	58	0.1036	0.14	nc	nc21377336	2017-01-07T18:02:39.378Z	6 km WSW of Templeton, California	earthquake	0.25	1.2	0.2	17	automatic	nc	nc
7/11/2004	3:47:03	35.6136667	-120.8831667	7.684	2.22	md	51	50	0.03063	0.07	nc	nc21377166	2017-01-07T17:59:40.140Z	12 km S of Lake Nacimiento, California	earthquake	0.18	0.41	0.17	38	reviewed	nc	nc
7/10/2004	1:37:16	35.5438333	-120.84	6.23	2.37	md	55	47	0.05495	0.08	nc	nc21376948	2017-01-07T17:52:27.650Z	12 km W of Templeton, California	earthquake	0.14	0.51	0.17	43	reviewed	nc	nc
7/9/2004	18:41:20	35.5451667	-120.8558333	6.201	2.55	md	68	45	0.04324	0.07	nc	nc21376859	2017-01-07T17:50:31.180Z	11 km NNE of Cayucos, California	earthquake	0.15	0.47	0.14	74	reviewed	nc	nc
7/8/2004	8:17:25	35.5305	-120.8233333	5.26	2.54	md	64	52	0.06847	0.08	nc	nc21376532	2017-01-07T17:41:14.320Z	10 km WSW of Templeton, California	earthquake	0.14	0.6	0.11	73	reviewed	nc	nc
7/7/2004	20:44:23	36.225	-120.2731667	11.963	2.28	md	50	116	0.06126	0.06	nc	nc21376418	2017-01-07T17:37:52.320Z	12 km NE of Coalinga, California	earthquake	0.19	0.33	0.13	42	reviewed	nc	nc
7/7/2004	6:58:41	35.5421667	-120.8665	4.162	2.5	md	59	46	0.03423	0.07	nc	nc21376291	2017-01-07T17:33:39.070Z	11 km NNE of Cayucos, California	earthquake	0.14	0.39	0.15	54	reviewed	nc	nc
7/6/2004	4:20:50	35.5313333	-120.8171667	4.2	2.22	md	46	51	0.07297	0.1	nc	nc21375923	2017-01-07T17:26:27.310Z	10 km WSW of Templeton, California	earthquake	0.16	0.68	0.23	20	reviewed	nc	nc
7/5/2004	2:17:07	35.5721667	-120.8423333	3.211	2.3	md	47	39	0.06486	0.09	nc	nc30227925	2017-01-07T17:18:18.760Z	12 km WNW of Templeton, California	earthquake	0.18	0.58	0.21	32	reviewed	nc	nc
7/3/2004	12:18:05	35.5943333	-120.733	1.388	2.44	md	60	37	0.1189	0.09	nc	nc21375277	2017-01-07T17:09:24.950Z	5 km SW of Paso Robles, California	earthquake	0.13	0.85	0.17	46	reviewed	nc	nc
7/1/2004	3:42:43	35.552	-120.8	4.06	2.7	md	71	45	0.08919	0.09	nc	nc21374561	2017-01-07T16:54:56.330Z	8 km W of Templeton, California	earthquake	0.14	0.63	0.11	90	reviewed	nc	nc
6/27/2004	22:30:41	35.4435	-120.7315	5.524	2	md	34	45	0.05405	0.07	nc	nc21373350	2017-01-07T16:43:27.708Z	7 km SW of Atascadero, California	earthquake	0.17	0.61	0.16	19	reviewed	nc	nc
6/25/2004	21:46:17	35.938	-120.4875	10.227	2.24	md	48	38	0.01982	0.06	nc	nc21372944	2017-01-07T16:35:58.240Z	6 km NW of Parkfield, California	earthquake	0.19	0.24	0.12	40	reviewed	nc	nc
6/25/2004	14:07:33	35.5613333	-120.8298333	4.941	2.3	md	54	43	0.06847	0.07	nc	nc21372850	2017-01-07T16:34:16.510Z	11 km W of Templeton, California	earthquake	0.15	0.55	0.12	45	reviewed	nc	nc
6/24/2004	7:18:49	36.1773333	-119.9606667	7.261	2.04	md	28	159	0.1676	0.08	nc	nc21372560	2017-01-07T16:29:21.110Z	10 km SSW of Lemoore Station, California	earthquake	0.39	0.58	0.06	4	reviewed	nc	nc
6/24/2004	2:50:06	35.7225	-119.7041667	26.499	2.23	ml	24	124	0.3534	0.22	ci	ci14068284	2016-04-02T07:44:38.903Z	27km SW of Alpaugh, CA	earthquake	0.49	1.52	0.183	17	reviewed	ci	ci
6/24/2004	1:52:56	36.0858333	-120.6715	3.124	2.01	md	39	63	0.04865	0.1	nc	nc21372504	2017-01-07T16:27:57.510Z	22 km ENE of San Ardo, California	earthquake	0.25	0.58	0.15	18	reviewed	nc	nc
6/21/2004	23:16:10	36.2385	-120.359	10.503	2.41	md	53	44	0.01712	0.08	nc	nc21372128	2017-01-07T16:20:26.000Z	10 km N of Coalinga, California	earthquake	0.18	0.25	0.14	72	reviewed	nc	nc
6/20/2004	0:56:45	36.125	-120.0095	8.704	2.19	md	17	223	0.1036	0.07	nc	nc21371776	2017-01-07T16:11:03.941Z	12 km SE of Huron, California	earthquake	1.76	0.43	0.1	3	automatic	nc	nc
6/19/2004	11:57:20	35.5675	-120.824	5.301	2.02	md	46	43	0.07568	0.07	nc	nc21371651	2017-01-07T16:08:05.080Z	10 km W of Templeton, California	earthquake	0.18	0.53	0.23	21	reviewed	nc	nc
6/19/2004	1:12:53	35.5403333	-120.5628333	8.561	3.08	ml	74	37	0.1198	0.1	nc	nc21371575	2022-06-18T09:01:18.508Z	4 km NW of Creston, California	earthquake	0.16	0.91		6	reviewed	nc	nc
6/18/2004	14:59:04	35.6073333	-120.7593333	3.664	2.38	md	58	35	0.09369	0.08	nc	nc21371441	2017-01-07T16:02:21.560Z	6 km WSW of Paso Robles, California	earthquake	0.14	0.78	0.13	58	reviewed	nc	nc
6/18/2004	9:35:18	35.5121667	-120.8176667	4.78	2.16	md	48	57	0.07477	0.09	nc	nc21371413	2017-01-07T16:01:04.820Z	10 km NE of Cayucos, California	earthquake	0.16	0.76	0.27	25	reviewed	nc	nc
6/18/2004	8:30:40	35.6021667	-120.8595	7.781	2.04	md	49	44	0.03964	0.06	nc	nc21371405	2017-01-07T16:00:36.520Z	14 km S of Lake Nacimiento, California	earthquake	0.17	0.43	0.28	25	reviewed	nc	nc
6/18/2004	4:24:47	35.5223333	-120.84	1.81	2.19	md	33	54	0.05586	0.13	nc	nc21371378	2017-01-07T15:59:52.566Z	10 km NNE of Cayucos, California	earthquake	0.22	0.99	0.22	13	reviewed	nc	nc
6/17/2004	22:45:24	35.5256667	-120.7925	5.238	2.13	md	53	51	0.09369	0.08	nc	nc21371335	2017-01-07T15:59:03.270Z	8 km WSW of Templeton, California	earthquake	0.16	0.64	0.25	33	reviewed	nc	nc
6/17/2004	3:57:06	36.1336667	-119.9975	8.539	2.25	md	41	202	0.1162	0.09	nc	nc21371169	2017-01-07T15:54:58.730Z	12 km SE of Huron, California	earthquake	0.54	0.45	0.08	25	reviewed	nc	nc
6/17/2004	2:01:41	36.1225	-120.0086667	9.469	2.23	md	42	195	0.1027	0.12	nc	nc21371153	2017-01-07T15:54:38.630Z	12 km SE of Huron, California	earthquake	0.32	0.3	0.12	24	reviewed	nc	nc
6/17/2004	0:15:26	36.1356667	-119.9941667	8.087	2.04	md	30	229	0.1198	0.08	nc	nc21371142	2017-01-07T15:54:14.090Z	12 km SE of Huron, California	earthquake	0.49	0.34	0.13	9	reviewed	nc	nc
6/14/2004	15:11:10	35.5246667	-120.8045	4.15	2.06	md	38	59	0.08378	0.08	nc	nc21370649	2017-01-07T15:43:19.121Z	9 km WSW of Templeton, California	earthquake	0.21	0.65	0.11	12	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/14/2004	13:29:05	35.486	-120.7881667	0.988	2.45	md	57	62	0.08108	0.08	nc	nc21370635	2017-01-07T15:42:54.780Z	10 km SW of Templeton, California	earthquake	0.14	0.92	0.11	48	reviewed	nc	nc
6/12/2004	14:13:08	35.5336667	-120.798	5.498	2	md	57	50	0.08919	0.07	nc	nc21370348	2017-01-07T15:34:43.110Z	8 km WSW of Templeton, California	earthquake	0.14	0.57	0.21	31	reviewed	nc	nc
6/11/2004	18:24:44	35.5743333	-120.7886667	2.372	2.59	md	57	61	0.09189	0.09	nc	nc21370240	2017-01-07T15:31:30.250Z	7 km WNW of Templeton, California	earthquake	0.18	0.96	0.09	53	reviewed	nc	nc
6/10/2004	19:58:15	35.9771667	-120.5265	10.285	2.37	md	54	36	0.02072	0.04	nc	nc21370082	2017-01-07T15:26:54.020Z	12 km NW of Parkfield, California	earthquake	0.14	0.22	0.11	60	reviewed	nc	nc
6/10/2004	7:58:58	35.102	-119.0133333	11.731	2.52	ml	17	95	0.04289	0.26	ci	ci14063700	2016-02-17T06:23:05.751Z	19km NNW of Grapevine, California	earthquake	0.75	1.17		1	reviewed	ci	ci
6/7/2004	8:27:21	36.0441667	-120.606	5.675	2.02	md	39	59	0.02613	0.07	nc	nc21369403	2017-01-07T15:11:05.150Z	22 km NW of Parkfield, California	earthquake	0.21	0.32	0.09	24	reviewed	nc	nc
6/6/2004	17:05:56	36.2246667	-120.296	8.369	2.09	md	35	110	0.04505	0.1	nc	nc21369329	2017-01-07T15:08:32.570Z	11 km NNE of Coalinga, California	earthquake	0.18	0.34	0.15	25	reviewed	nc	nc
6/3/2004	9:21:15	35.6108333	-120.9021667	7.158	2.25	md	46	54	0.04234	0.07	nc	nc21368418	2017-01-07T14:47:52.150Z	13 km S of Lake Nacimiento, California	earthquake	0.16	0.41	0.13	35	reviewed	nc	nc
6/2/2004	9:37:37	35.589	-120.8908333	4.945	2.01	md	50	48	0.05586	0.08	nc	nc21368172	2017-01-07T14:42:48.640Z	15 km S of Lake Nacimiento, California	earthquake	0.16	0.39	0.17	30	reviewed	nc	nc
5/30/2004	16:39:28	35.613	-120.8866667	7.805	2.03	md	20	142	0.03243	0.05	nc	nc21367660	2017-01-07T14:28:29.930Z	12 km S of Lake Nacimiento, California	earthquake	0.29	0.42	0.12	11	automatic	nc	nc
5/30/2004	16:25:51	34.8876667	-119.0881667	3.62	2.99	ml	50	20	0.08224	0.4	ci	ci10014393	2022-07-20T22:05:56.200Z	7km NE of Pine Mountain Club, CA	earthquake	0.39	0.77	0.23	90	reviewed	ci	ci
5/30/2004	7:01:06	35.614	-120.8935	3.821	2.84	md	53	109	0.03514	0.07	nc	nc21367590	2017-01-07T14:26:04.170Z	12 km S of Lake Nacimiento, California	earthquake	0.22	1.32	0.07	58	automatic	nc	nc
5/29/2004	17:04:02	35.5466667	-120.813	-0.223	2.43	md	33	116	0.1045	0.05	nc	nc21367504	2017-01-07T14:23:12.540Z	9 km W of Templeton, California	earthquake	0.29	5.38	0.08	27	automatic	nc	nc
5/28/2004	4:30:08	35.587	-120.8603333	3.243	2.35	md	29	64	0.05405	0.08	nc	nc30500687	2017-01-07T14:14:54.432Z	14 km WNW of Templeton, California	earthquake	0.24	1.39	0.1	25	automatic	nc	nc
5/27/2004	18:42:08	35.522	-120.8493333	6.5	2.71	md	52	58	0.04865	0.07	nc	nc21367062	2017-01-07T14:12:03.230Z	9 km NNE of Cayucos, California	earthquake	0.19	0.59	0.08	56	automatic	nc	nc
5/27/2004	18:15:40	35.613	-120.8978333	7.453	3.47	ml	71	84	0.03784	0.08	nc	nc30500685	2017-01-07T14:11:41.860Z	12 km S of Lake Nacimiento, California	earthquake	0.14	0.43		9	automatic	nc	nc
5/27/2004	3:42:40	35.5315	-120.8348333	7.471	2.07	md	30	77	0.1126	0.05	nc	nc21366830	2017-01-07T14:07:54.218Z	11 km NNE of Cayucos, California	earthquake	0.3	1.08	0.13	18	automatic	nc	nc
5/26/2004	20:09:31	35.52	-120.8415	5.131	2.44	md	50	81	0.1225	0.06	nc	nc21366632	2017-01-07T14:05:48.550Z	9 km NNE of Cayucos, California	earthquake	0.14	0.64	0.11	51	reviewed	nc	nc
5/26/2004	12:44:20	35.5235	-120.8383333	1.041	2.2	md	34	80	0.1198	0.06	nc	nc21366434	2017-01-07T14:04:34.270Z	10 km NNE of Cayucos, California	earthquake	0.16	1.83	0.09	28	reviewed	nc	nc
5/26/2004	12:35:25	35.523	-120.8343333	-0.325	2.83	md	45	112	0.1667	0.17	nc	nc21366433	2017-01-07T14:04:27.650Z	10 km NNE of Cayucos, California	earthquake	0.34	2.32	0.07	40	automatic	nc	nc
5/25/2004	9:11:37	35.5213333	-120.8271667	2.735	2.32	md	12	179	0.06577	0.06	nc	nc68009370	2017-01-07T13:57:27.026Z	10 km NE of Cayucos, California	earthquake	0.44	1.07	0.16	13	reviewed	nc	nc
5/23/2004	3:34:37	35.5503333	-120.7986667	3.75	2.13	md	44	25	0.09009	0.14	nc	nc21365827	2017-01-07T13:44:11.894Z	Central California	earthquake	0.19	0.83	0.13	33	automatic	nc	nc
5/22/2004	13:28:30	35.1781667	-120.615	7.672	2.46	md	11	156	0.1207	0.06	nc	nc68009361	2017-01-07T13:41:43.002Z	2 km S of Edna, California	earthquake	0.36	1.19	0.06	3	reviewed	nc	nc
5/20/2004	17:39:55	35.5251667	-120.7905	6.372	2.38	md	32	112	0.1315	0.07	nc	nc21365420	2017-01-07T13:32:29.240Z	8 km WSW of Templeton, California	earthquake	0.31	1.34	0.08	31	automatic	nc	nc
5/20/2004	11:56:53	35.5195	-120.835	6.012	2.02	md	38	119	0.1243	0.05	nc	nc21365360	2017-01-07T13:31:01.440Z	9 km NNE of Cayucos, California	earthquake	0.28	1.17	0.13	22	reviewed	nc	nc
5/19/2004	17:48:03	35.5413333	-120.8438333	4.931	2.19	md	31	75	0.1018	0.06	nc	nc21365200	2017-01-07T13:26:26.030Z	11 km NNE of Cayucos, California	earthquake	0.18	0.8	0.12	28	reviewed	nc	nc
5/19/2004	16:11:21	35.4421667	-118.7068333	2.079	2	mh	18	72	0.09324	0.16	ci	ci10010509	2016-04-02T00:39:44.635Z	25km SW of Bodfish, CA	earthquake	0.86	1.24		0	reviewed	ci	ci
5/19/2004	15:50:31	35.5711667	-120.8185	2.801	2.33	md	51	40	0.08018	0.09	nc	nc21365178	2017-01-07T13:26:13.580Z	10 km WNW of Templeton, California	earthquake	0.16	0.74	0.09	41	reviewed	nc	nc
5/19/2004	5:35:30	35.5676667	-120.8308333	8.165	2	md	36	33	0.07027	0.13	nc	nc21365104	2017-01-07T13:23:51.660Z	11 km W of Templeton, California	earthquake	0.2	1.11	0.09	24	automatic	nc	nc
5/18/2004	6:58:38	35.4838333	-120.784	4.055	2.48	md	52	52	0.08378	0.1	nc	nc21364898	2017-01-07T13:19:18.276Z	10 km SW of Templeton, California	earthquake	0.16	0.74	0.07	41	automatic	nc	nc
5/18/2004	3:24:33	35.598	-120.8481667	1.792	2.04	md	7	303	0.04595	0.04	nc	nc21364884	2017-01-07T13:18:37.262Z	13 km WNW of Templeton, California	earthquake	8.54	3.4		1	reviewed	nc	nc
5/17/2004	2:05:05	35.2375	-120.5143333	4.881	2.14	md	28	59	0.08288	0.05	nc	nc21364669	2017-01-07T13:12:24.290Z	9 km ENE of Edna, California	earthquake	0.19	0.66	0.13	17	reviewed	nc	nc
5/16/2004	14:09:40	35.5928333	-120.7918333	3.161	2.02	md	10	276	0.07748	0.07	nc	nc21364561	2017-01-07T13:09:50.174Z	9 km WNW of Templeton, California	earthquake	7.11	7.34		1	reviewed	nc	nc
5/14/2004	12:40:48	35.5356667	-120.8241667	-0.295	2.21	md	29	74	0.1108	0.06	nc	nc21364217	2017-01-07T13:00:28.109Z	10 km W of Templeton, California	earthquake	0.32	6.48	0.11	22	automatic	nc	nc
5/14/2004	12:22:24	34.875	-119.4328333	13.339	2.02	ml	27	90	0.1483	0.27	ci	ci10008765	2016-02-16T18:09:01.821Z	21km S of Maricopa, California	earthquake	0.73	0.82	0.304	19	reviewed	ci	ci
5/14/2004	1:17:47	35.9005	-120.4438333	6.26	2.11	md	35	54	0.03964	0.08	nc	nc21364131	2017-01-07T12:57:57.750Z	1 km W of Parkfield, California	earthquake	0.2	0.36	0.13	26	automatic	nc	nc
5/13/2004	10:20:10	35.609	-120.8813333	6.948	2.51	md	50	58	0.03423	0.06	nc	nc21363985	2017-01-07T12:54:26.510Z	13 km S of Lake Nacimiento, California	earthquake	0.19	0.24	0.08	44	reviewed	nc	nc
5/11/2004	5:01:01	35.4913333	-120.7718333	1.355	2	md	44	49	0.0955	0.13	nc	nc21363601	2017-01-07T12:42:42.570Z	8 km SW of Templeton, California	earthquake	0.15	1.24	0.08	17	reviewed	nc	nc
5/10/2004	16:34:34	35.5323333	-120.8193333	5.13	2.04	md	44	58	0.07117	0.08	nc	nc21363516	2017-01-07T12:39:46.090Z	10 km W of Templeton, California	earthquake	0.21	0.65	0.18	22	reviewed	nc	nc
5/9/2004	1:35:59	35.5121667	-120.8136667	5.03	2.07	md	48	33	0.07658	0.11	nc	nc21363310	2017-01-07T12:30:57.800Z	10 km NE of Cayucos, California	earthquake	0.19	0.71	0.13	21	reviewed	nc	nc
5/8/2004	18:02:30	35.5278333	-120.8131667	3.06	2.03	md	29	46	0.07658	0.18	nc	nc21363247	2017-01-07T12:28:31.347Z	10 km WSW of Templeton, California	earthquake	0.31	1.07	0.15	10	reviewed	nc	nc
5/8/2004	12:30:47	35.4846667	-120.7893333	4.768	2.1	md	53	56	0.08018	0.1	nc	nc21363188	2017-01-07T12:26:51.520Z	10 km ENE of Cayucos, California	earthquake	0.15	0.7	0.16	23	reviewed	nc	nc
5/8/2004	3:25:55	35.4446667	-120.8336667	0.518	2.15	md	46	85	0.04144	0.09	nc	nc21363103	2017-01-07T12:24:26.390Z	5 km E of Cayucos, California	earthquake	0.13	0.45	0.24	16	reviewed	nc	nc
5/7/2004	20:32:08	35.4431667	-120.8343333	0.868	2.11	md	51	86	0.04144	0.09	nc	nc21363017	2017-01-07T12:22:09.520Z	5 km E of Cayucos, California	earthquake	0.13	0.5	0.2	28	reviewed	nc	nc
5/7/2004	15:12:42	36.0476667	-120.626	2.785	2.27	md	37	68	0.03243	0.09	nc	nc21362943	2017-01-07T12:20:52.660Z	23 km NW of Parkfield, California	earthquake	0.33	0.68	0.16	27	reviewed	nc	nc
5/7/2004	14:22:54	35.4573333	-120.7305	0.875	2.24	md	63	45	0.06757	0.09	nc	nc21362941	2017-01-07T12:20:46.440Z	6 km WSW of Atascadero, California	earthquake	0.13	0.98	0.19	38	reviewed	nc	nc
5/7/2004	4:28:00	35.5318333	-120.7951667	3.968	2.16	md	62	50	0.09099	0.09	nc	nc21362875	2017-01-07T12:18:13.920Z	8 km WSW of Templeton, California	earthquake	0.14	0.65	0.21	47	reviewed	nc	nc
5/6/2004	6:23:24	35.5668333	-120.8278333	2.821	2.08	md	49	27	0.07207	0.15	nc	nc21362661	2017-01-07T12:13:19.970Z	11 km W of Templeton, California	earthquake	0.2	0.87	0.16	28	reviewed	nc	nc
5/6/2004	3:52:10	35.5206667	-120.8321667	4.79	2.17	md	54	31	0.06216	0.12	nc	nc21362635	2017-01-07T12:12:53.940Z	10 km NNE of Cayucos, California	earthquake	0.17	0.62	0.21	33	reviewed	nc	nc
5/5/2004	0:42:09	35.5218333	-120.8375	7.35	2.2	md	55	34	0.05766	0.08	nc	nc21362421	2017-01-07T12:06:51.530Z	10 km NNE of Cayucos, California	earthquake	0.18	0.65	0.19	37	reviewed	nc	nc
5/4/2004	17:25:13	35.5216667	-120.8416667	7.32	2.76	md	66	35	0.05405	0.07	nc	nc30227537	2021-03-10T00:03:14.561Z	9 km NNE of Cayucos, California	earthquake	0.16	0.62	0.2	44	reviewed	nc	nc
5/4/2004	9:50:25	35.5698333	-120.791	3.504	2.28	md	59	41	0.09459	0.08	nc	nc21362249	2017-01-07T12:02:03.100Z	8 km WNW of Templeton, California	earthquake	0.14	0.67	0.15	48	reviewed	nc	nc
5/3/2004	22:28:36	35.5495	-120.8756667	6.401	2.63	md	60	43	0.02973	0.06	nc	nc21362135	2017-01-07T11:58:18.070Z	11 km N of Cayucos, California	earthquake	0.16	0.54	0.1	66	reviewed	nc	nc
5/3/2004	1:29:49	35.5355	-120.8	0.401	2.36	md	8	303	0.1189	0.06	nc	nc21361908	2017-01-07T11:53:15.909Z	8 km W of Templeton, California	earthquake	5.69	7.65		1	reviewed	nc	nc
5/2/2004	18:09:58	35.5795	-120.7835	2.464	2.01	md	42	92	0.09189	0.04	nc	nc21361857	2017-01-07T11:51:40.790Z	7 km WNW of Templeton, California	earthquake	0.14	0.6	0.14	25	reviewed	nc	nc
5/2/2004	13:22:00	35.504	-120.8071667	4.815	3.5	mw	55	80	0.1378	0.07	nc	nc30227590	2022-06-18T08:55:07.516Z	10 km NE of Cayucos, California	earthquake	0.19	0.96		2	reviewed	nc	nc
5/2/2004	4:29:42	35.5835	-120.889	4.118	2.02	md	33	67	0.06036	0.08	nc	nc21361689	2017-01-07T11:47:05.780Z	15 km N of Cayucos, California	earthquake	0.27	0.49	0.14	24	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/1/2004	21:21:58	35.5616667	-120.84	6.818	2.02	md	23	149	0.08198	0.07	nc	nc21361614	2017-01-07T11:45:28.397Z	12 km W of Templeton, California	earthquake	0.41	1.1		1	reviewed	nc	nc
5/1/2004	15:41:40	35.5978333	-120.8903333	5.068	2.07	md	30	98	0.04775	0.08	nc	nc21361551	2017-01-07T11:43:59.290Z	14 km S of Lake Nacimiento, California	earthquake	0.33	0.51	0.01	3	reviewed	nc	nc
5/1/2004	13:46:11	35.5751667	-120.8188333	3.578	2.03	md	47	65	0.07658	0.08	nc	nc21361533	2017-01-07T11:43:40.800Z	10 km WNW of Templeton, California	earthquake	0.29	0.72	0.19	28	reviewed	nc	nc
5/1/2004	2:52:58	35.5298333	-120.816	3.92	3.43	mw	69	51	0.07387	0.09	nc	nc30227596	2022-06-18T08:53:24.195Z	10 km WSW of Templeton, California	earthquake	0.14	0.69		1	reviewed	nc	nc
4/30/2004	6:12:33	35.5818333	-120.8926667	4.878	2.19	md	45	67	0.06306	0.06	nc	nc21361124	2017-01-07T11:34:39.580Z	15 km N of Cayucos, California	earthquake	0.2	0.44	0.15	37	reviewed	nc	nc
4/29/2004	3:29:52	35.615	-120.8923333	6.513	2	md	52	53	0.03333	0.09	nc	nc21360924	2017-01-07T11:27:55.940Z	12 km S of Lake Nacimiento, California	earthquake	0.15	0.35	0.24	27	reviewed	nc	nc
4/27/2004	14:48:21	35.529	-120.8358333	7.486	2.14	md	38	78	0.1144	0.05	nc	nc21360565	2017-01-07T11:20:10.640Z	10 km NNE of Cayucos, California	earthquake	0.21	0.95	0.15	29	reviewed	nc	nc
4/27/2004	11:38:16	35.6018333	-120.8886667	5.808	2.19	md	42	89	0.04324	0.07	nc	nc21360525	2017-01-07T11:19:05.080Z	14 km S of Lake Nacimiento, California	earthquake	0.22	0.56	0.14	23	reviewed	nc	nc
4/26/2004	0:17:16	35.601	-120.8961667	4.578	2.13	md	32	89	0.04685	0.08	nc	nc21360067	2017-01-07T11:07:22.360Z	14 km S of Lake Nacimiento, California	earthquake	0.28	0.56	0.36	2	reviewed	nc	nc
4/25/2004	5:49:58	35.542	-120.8533333	6.66	2.79	md	65	47	0.04414	0.09	nc	nc21359927	2017-01-07T11:02:33.280Z	11 km NNE of Cayucos, California	earthquake	0.14	0.47	0.12	67	reviewed	nc	nc
4/24/2004	22:58:40	35.5175	-120.8023333	2.508	2.04	md	55	54	0.08649	0.11	nc	nc21359899	2017-01-07T11:01:01.800Z	9 km WSW of Templeton, California	earthquake	0.19	1.06	0.19	24	reviewed	nc	nc
4/24/2004	14:47:11	35.5876667	-120.8838333	4.501	2.35	md	61	47	0.05495	0.09	nc	nc21359861	2017-01-07T10:59:00.330Z	15 km S of Lake Nacimiento, California	earthquake	0.15	0.38	0.12	52	reviewed	nc	nc
4/24/2004	12:19:24	35.5301667	-120.8175	4.28	2.08	md	45	58	0.07297	0.09	nc	nc21359841	2017-01-07T10:57:46.220Z	10 km WSW of Templeton, California	earthquake	0.26	1.01	0.32	13	reviewed	nc	nc
4/24/2004	9:49:43	35.5418333	-120.8496667	7.93	2.73	md	69	36	0.04685	0.08	nc	nc21359833	2017-01-07T10:56:21.430Z	11 km NNE of Cayucos, California	earthquake	0.15	0.63	0.1	78	reviewed	nc	nc
4/22/2004	13:54:26	35.5281667	-120.8291667	5.28	2.36	md	59	53	0.06396	0.08	nc	nc21359511	2017-01-07T10:47:04.920Z	11 km NNE of Cayucos, California	earthquake	0.14	0.53	0.11	59	reviewed	nc	nc
4/21/2004	12:59:32	35.5653333	-120.8403333	6.281	2.06	md	48	56	0.06306	0.07	nc	nc21359377	2017-01-07T10:43:28.490Z	12 km W of Templeton, California	earthquake	0.18	0.5	0.13	27	reviewed	nc	nc
4/21/2004	5:25:09	35.5486667	-120.8565	5.471	2.28	md	57	45	0.04324	0.09	nc	nc21359343	2017-01-07T10:42:05.310Z	12 km NNE of Cayucos, California	earthquake	0.15	0.42	0.14	50	reviewed	nc	nc
4/19/2004	19:31:41	35.527	-120.8165	3.69	2.22	md	53	52	0.07387	0.09	nc	nc21359095	2017-01-07T10:33:04.570Z	10 km WSW of Templeton, California	earthquake	0.16	0.71	0.19	44	reviewed	nc	nc
4/18/2004	22:26:05	35.488	-120.7886667	5.476	2.13	md	45	78	0.1162	0.06	nc	nc21358921	2017-01-07T10:26:39.940Z	10 km SW of Templeton, California	earthquake	0.19	1.09	0.09	29	reviewed	nc	nc
4/17/2004	23:11:14	35.4853333	-120.757	-0.333	2.25	md	45	72	0.1009	0.22	nc	nc21358717	2017-01-07T10:19:44.760Z	7 km W of Atascadero, California	earthquake	0.39	5.1	0.1	31	reviewed	nc	nc
4/16/2004	20:55:19	34.855	-120.2413333	-0.905	2.73	ml	22	111	0.1234	0.21	ci	ci10001081	2016-04-02T03:41:08.919Z	13km NNE of Los Alamos, CA	earthquake	0.52	1.03	0.222	29	reviewed	ci	ci
4/15/2004	5:41:17	35.4853333	-120.7848333	2.988	2.02	md	43	54	0.08378	0.1	nc	nc21358203	2017-01-07T10:03:18.140Z	10 km SW of Templeton, California	earthquake	0.17	0.77	0.16	13	reviewed	nc	nc
4/14/2004	23:26:37	35.5263333	-120.7943333	4.918	2.1	md	47	58	0.09189	0.07	nc	nc21358153	2017-01-07T10:02:06.360Z	8 km WSW of Templeton, California	earthquake	0.17	0.71	0.12	22	reviewed	nc	nc
4/14/2004	10:08:09	35.549	-120.8123333	6.21	2.18	md	60	32	0.07838	0.09	nc	nc21358039	2017-01-07T09:59:37.200Z	9 km W of Templeton, California	earthquake	0.16	0.75	0.14	42	reviewed	nc	nc
4/14/2004	4:35:43	35.2178333	-119.0625	22.972	2.32	ml	33	58	0.1309	0.25	ci	ci10000269	2016-04-02T03:41:04.179Z	14km WSW of Lamont, CA	earthquake	0.46	1.36	0.286	30	reviewed	ci	ci
4/12/2004	17:30:57	34.9021667	-119.5501667	12.601	2.43	ml	36	75	0.1847	0.35	ci	ci9999629	2016-04-02T06:51:08.428Z	22km SW of Maricopa, CA	earthquake	0.57	1.2	0.262	35	reviewed	ci	ci
4/12/2004	11:44:27	35.5678333	-120.7971667	4.711	2.11	md	49	46	0.09279	0.1	nc	nc21357606	2017-01-07T09:49:07.880Z	8 km WNW of Templeton, California	earthquake	0.17	0.71	0.19	17	reviewed	nc	nc
4/12/2004	9:18:38	35.4273333	-120.8546667	2.218	2.14	md	46	101	0.03874	0.07	nc	nc21357578	2017-01-07T09:48:09.930Z	3 km ESE of Cayucos, California	earthquake	0.14	0.37	0.13	14	reviewed	nc	nc
4/11/2004	20:40:10	35.0205	-119.5028333	13.815	2.88	ml	45	45	0.07141	0.41	ci	ci9999337	2016-04-02T00:27:25.487Z	10km WSW of Maricopa, CA	earthquake	0.51	0.85	0.287	56	reviewed	ci	ci
4/11/2004	16:24:01	35.5165	-120.8273333	5.28	2.18	md	51	56	0.06757	0.1	nc	nc21357413	2017-01-07T09:44:19.540Z	10 km NE of Cayucos, California	earthquake	0.14	0.56	0.25	18	reviewed	nc	nc
4/11/2004	14:43:36	36.1295	-119.7185	22.649	2.45	md	26	124	0.3243	0.08	nc	nc21357371	2017-01-07T09:43:51.760Z	11 km SE of Stratford, California	earthquake	0.41	0.33	0.1	15	reviewed	nc	nc
4/11/2004	1:52:02	35.5403333	-120.8421667	5.92	2.58	md	67	48	0.05315	0.08	nc	nc21357255	2017-01-07T09:40:32.740Z	11 km NNE of Cayucos, California	earthquake	0.14	0.47	0.11	80	reviewed	nc	nc
4/10/2004	4:40:39	35.5856667	-120.8458333	5.661	2.08	md	55	43	0.05766	0.08	nc	nc21357035	2017-01-07T09:36:01.040Z	13 km WNW of Templeton, California	earthquake	0.16	0.55	0.21	32	reviewed	nc	nc
4/10/2004	2:08:22	35.5116667	-120.8163333	2.63	2.08	md	49	57	0.07477	0.1	nc	nc21357007	2017-01-07T09:35:36.010Z	10 km NE of Cayucos, California	earthquake	0.19	0.83	0.15	26	reviewed	nc	nc
4/9/2004	13:43:59	35.528	-120.7983333	4.798	2	md	50	57	0.08829	0.09	nc	nc21356897	2017-01-07T09:32:27.510Z	8 km WSW of Templeton, California	earthquake	0.16	0.69	0.12	20	reviewed	nc	nc
4/9/2004	4:04:42	36.2373333	-120.374	10.399	2.31	md	48	42	0.02793	0.07	nc	nc21356801	2017-01-07T09:29:16.130Z	Central California	earthquake	0.15	0.25	0.14	46	reviewed	nc	nc
4/8/2004	12:29:59	35.5818333	-120.876	4.371	2.66	md	65	44	0.05405	0.09	nc	nc21356657	2017-01-07T09:26:08.640Z	15 km N of Cayucos, California	earthquake	0.13	0.42	0.11	71	reviewed	nc	nc
4/8/2004	0:00:22	35.5118333	-120.8336667	5.868	2.02	md	41	50	0.06396	0.13	nc	nc21356541	2017-01-07T09:22:30.681Z	9 km NE of Cayucos, California	earthquake	0.18	0.6	0.17	11	reviewed	nc	nc
4/7/2004	8:10:47	35.5698333	-120.7951667	4.561	2.13	md	56	41	0.09189	0.08	nc	nc21356384	2017-01-07T09:18:33.900Z	8 km WNW of Templeton, California	earthquake	0.15	0.63	0.18	34	reviewed	nc	nc
4/6/2004	14:50:31	35.4721667	-120.7861667	3.435	2.8	md	66	59	0.07928	0.08	nc	nc21356161	2017-01-07T09:13:49.780Z	10 km ENE of Cayucos, California	earthquake	0.14	0.6	0.09	70	reviewed	nc	nc
4/6/2004	14:48:30	35.4728333	-120.7843333	2.755	2.36	md	41	59	0.08108	0.12	nc	nc21356159	2017-01-07T09:13:43.010Z	10 km ENE of Cayucos, California	earthquake	0.2	0.98	0.23	25	reviewed	nc	nc
4/5/2004	0:45:11	35.5433333	-120.8436667	6.06	2.08	md	45	33	0.05225	0.12	nc	nc21355853	2017-01-07T09:04:04.770Z	11 km NNE of Cayucos, California	earthquake	0.18	0.54	0.21	17	reviewed	nc	nc
4/4/2004	19:08:41	35.5551667	-120.8295	5.571	2.12	md	45	50	0.06667	0.08	nc	nc21355785	2017-01-07T09:02:12.730Z	11 km W of Templeton, California	earthquake	0.17	0.57	0.25	25	reviewed	nc	nc
4/4/2004	13:45:11	35.5415	-120.8571667	8.04	3.11	ml	71	38	0.04144	0.07	nc	nc21355717	2017-01-07T08:59:43.020Z	11 km NNE of Cayucos, California	earthquake	0.14	0.6		5	reviewed	nc	nc
4/4/2004	8:27:18	35.5566667	-120.832	5.891	2.5	md	61	44	0.06486	0.08	nc	nc21355659	2017-01-07T08:57:47.740Z	11 km W of Templeton, California	earthquake	0.14	0.56	0.11	62	reviewed	nc	nc
4/4/2004	6:21:22	35.6056667	-120.893	6.001	2.78	md	67	51	0.04144	0.09	nc	nc21355631	2017-01-07T08:57:03.200Z	13 km S of Lake Nacimiento, California	earthquake	0.12	0.31	0.12	73	reviewed	nc	nc
4/3/2004	18:41:51	35.5645	-120.8053333	3.89	2.03	md	39	48	0.08829	0.07	nc	nc21355515	2017-01-07T08:54:18.460Z	9 km W of Templeton, California	earthquake	0.17	0.75	0.24	20	reviewed	nc	nc
3/31/2004	21:28:36	34.8598333	-120.2331667	-0.925	2.73	ml	24	89	0.1299	0.28	ci	ci14042504	2016-04-02T16:30:17.886Z	14km NNE of Los Alamos, CA	earthquake	0.47	1.1	0.233	31	reviewed	ci	ci
3/31/2004	21:19:15	35.6005	-120.8646667	6.681	2.47	md	54	46	0.04054	0.08	nc	nc21354949	2017-01-07T08:35:39.210Z	14 km S of Lake Nacimiento, California	earthquake	0.15	0.42	0.08	54	reviewed	nc	nc
3/31/2004	1:21:08	35.9475	-120.4975	10.187	2.16	md	44	63	0.009009	0.07	nc	nc21354834	2017-01-07T08:32:03.870Z	7 km NW of Parkfield, California	earthquake	0.16	0.23	0.16	32	automatic	nc	nc
3/30/2004	23:41:32	35.5595	-120.7986667	4.39	2.1	md	56	32	0.09189	0.08	nc	nc21354810	2017-01-07T08:31:34.570Z	8 km W of Templeton, California	earthquake	0.15	0.63	0.2	31	reviewed	nc	nc
3/30/2004	15:08:55	35.5738333	-120.787	-0.339	2.79	md	63	40	0.09369	0.08	nc	nc21354710	2017-01-07T08:30:10.420Z	7 km WNW of Templeton, California	earthquake	0.13	0.98	0.1	80	reviewed	nc	nc
3/30/2004	12:05:16	35.5526667	-120.7931667	2.015	2.26	md	14	199	0.09459	0.19	nc	nc68009046	2017-01-07T08:29:31.420Z	Central California	earthquake	0.77	2.53	0.16	8	reviewed	nc	nc
3/30/2004	4:17:21	35.949	-120.4991667	10.404	2.44	md	73	35	0.007207	0.06	nc	nc21354624	2017-01-07T08:27:41.310Z	8 km NW of Parkfield, California	earthquake	0.12	0.16	0.12	70	reviewed	nc	nc
3/29/2004	23:42:50	35.5648333	-120.8901667	5.005	2.82	md	54	132	0.07838	0.08	nc	nc21354536	2017-01-07T08:26:22.010Z	13 km N of Cayucos, California	earthquake	0.26	1.3	0.07	54	automatic	nc	nc
3/29/2004	3:53:24	35.5365	-120.8156667	5.2	2.56	md	65	30	0.07477	0.09	nc	nc21354352	2017-01-07T08:21:34.540Z	10 km W of Templeton, California	earthquake	0.16	0.81	0.1	62	reviewed	nc	nc
3/29/2004	3:13:17	35.861	-119.303	16.758	2.01	ml	22	134	0.1785	0.23	ci	ci14041656	2016-04-02T19:32:14.289Z	11km NNW of Delano, CA	earthquake	0.69	1.97	0.229	10	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
3/29/2004	3:01:52	35.5375	-120.8183333	3.32	2.67	md	63	49	0.07207	0.07	nc	nc21354344	2017-01-07T08:21:16.350Z	10 km W of Templeton, California	earthquake	0.14	0.67	0.09	59	reviewed	nc	nc
3/28/2004	17:50:15	35.5795	-120.7831667	2.628	2.3	md	45	44	0.09189	0.07	nc	nc21354251	2017-01-07T08:18:32.430Z	7 km WNW of Templeton, California	earthquake	0.18	0.91	0.18	31	reviewed	nc	nc
3/28/2004	14:51:13	35.0118333	-119.1495	10.882	2.45	ml	37	60	0.07895	0.33	ci	ci9994777	2016-04-01T21:11:58.757Z	18km N of Pine Mountain Club, CA	earthquake	0.54	1.2	0.274	46	reviewed	ci	ci
3/28/2004	5:39:34	35.563	-120.8233333	5.885	2.26	md	26	58	0.07387	0.14	nc	nc21354115	2017-01-07T08:15:22.030Z	10 km W of Templeton, California	earthquake	0.27	1.35	0.13	10	automatic	nc	nc
3/27/2004	22:33:17	35.5713333	-120.8511667	3.691	2.42	md	53	39	0.05856	0.09	nc	nc21353892	2017-01-07T08:13:39.410Z	13 km W of Templeton, California	earthquake	0.16	0.51	0.12	52	reviewed	nc	nc
3/27/2004	15:12:56	35.5735	-120.7816667	2.264	2.24	md	30	107	0.0964	0.15	nc	nc21353746	2017-01-07T08:12:11.520Z	7 km WNW of Templeton, California	earthquake	0.28	1.7	0.17	12	automatic	nc	nc
3/27/2004	14:52:21	35.5681667	-120.7913333	4.834	2.48	md	18	116	0.0955	0.09	nc	nc30227294	2017-01-07T08:12:07.966Z	8 km WNW of Templeton, California	earthquake	0.31	1.21	0.09	5	reviewed	nc	nc
3/27/2004	14:51:58	35.5701667	-120.7881667	2.634	2.51	md	63	41	0.0955	0.09	nc	nc21353744	2017-01-07T08:12:03.410Z	7 km WNW of Templeton, California	earthquake	0.13	0.81	0.16	61	reviewed	nc	nc
3/26/2004	19:31:47	35.543	-120.8513333	6.12	2.56	md	49	49	0.04595	0.08	nc	nc21353499	2017-01-07T08:08:15.410Z	11 km NNE of Cayucos, California	earthquake	0.18	0.54	0.12	48	automatic	nc	nc
3/26/2004	16:04:49	35.6133333	-120.8855	7.434	2.28	md	46	50	0.03153	0.1	nc	nc21353488	2017-01-07T08:07:23.780Z	12 km S of Lake Nacimiento, California	earthquake	0.16	0.35	0.13	37	reviewed	nc	nc
3/26/2004	8:30:29	35.583	-120.8558333	7.521	2.07	md	52	42	0.05856	0.09	nc	nc21353462	2017-01-07T08:05:58.740Z	14 km WNW of Templeton, California	earthquake	0.16	0.6	0.16	32	reviewed	nc	nc
3/26/2004	7:19:28	35.572	-120.7733333	2.838	2.33	md	40	49	0.1027	0.13	nc	nc21353459	2017-01-07T08:05:38.977Z	6 km WNW of Templeton, California	earthquake	0.26	1.24	0.15	24	automatic	nc	nc
3/26/2004	7:17:02	35.615	-120.8948333	7.013	2.13	md	54	53	0.03514	0.08	nc	nc21353458	2017-01-07T08:05:34.360Z	12 km S of Lake Nacimiento, California	earthquake	0.16	0.43	0.17	37	reviewed	nc	nc
3/26/2004	1:40:43	35.5115	-120.8613333	5.23	2.24	md	49	46	0.04324	0.09	nc	nc21353430	2017-01-07T08:04:17.240Z	8 km NNE of Cayucos, California	earthquake	0.15	0.47	0.22	34	reviewed	nc	nc
3/23/2004	5:34:09	35.5598333	-120.808	5.2	2.07	md	59	49	0.08468	0.07	nc	nc21353107	2017-01-07T07:49:27.220Z	9 km W of Templeton, California	earthquake	0.15	0.65	0.18	28	reviewed	nc	nc
3/22/2004	9:44:43	35.5578333	-120.8178333	4.24	2.25	md	61	44	0.07658	0.07	nc	nc21352918	2017-01-07T07:44:55.650Z	10 km W of Templeton, California	earthquake	0.14	0.44	0.16	40	reviewed	nc	nc
3/22/2004	4:27:59	35.0166667	-119.1176667	10.782	2.2	ml	32	70	0.06245	0.45	ci	ci9993197	2016-04-02T16:28:43.131Z	19km WNW of Grapevine, CA	earthquake	0.66	1.82	0.26	16	reviewed	ci	ci
3/21/2004	23:32:58	35.6331667	-120.7616667	7.154	2.15	md	63	35	0.08559	0.07	nc	nc21352768	2017-01-07T07:41:45.090Z	6 km W of Paso Robles, California	earthquake	0.13	0.61	0.15	49	reviewed	nc	nc
3/21/2004	16:58:48	35.5781667	-120.8748333	4.551	2.11	md	51	44	0.05135	0.07	nc	nc21352598	2017-01-07T07:40:00.790Z	15 km N of Cayucos, California	earthquake	0.14	0.45	0.15	35	reviewed	nc	nc
3/21/2004	16:01:41	35.5776667	-120.798	3.461	2.2	md	54	34	0.08468	0.09	nc	nc21352590	2017-01-07T07:39:46.960Z	8 km WNW of Templeton, California	earthquake	0.17	0.72	0.22	34	reviewed	nc	nc
3/20/2004	21:48:25	35.5976667	-120.8781667	6.441	3.38	ml	72	47	0.04414	0.08	nc	nc21352348	2017-01-07T07:33:27.360Z	14 km S of Lake Nacimiento, California	earthquake	0.13	0.41		7	reviewed	nc	nc
3/20/2004	8:49:00	35.5346667	-120.884	1.862	2.14	md	40	55	0.01892	0.14	nc	nc21352224	2017-01-07T07:30:52.400Z	10 km N of Cayucos, California	earthquake	0.21	0.48	0.18	15	reviewed	nc	nc
3/20/2004	5:53:10	35.5346667	-120.8831667	1.952	2.05	md	41	55	0.01892	0.13	nc	nc21352156	2017-01-07T07:29:27.200Z	10 km N of Cayucos, California	earthquake	0.2	0.48	0.31	14	reviewed	nc	nc
3/20/2004	2:38:16	35.5923333	-120.8723333	3.821	2.48	md	62	45	0.04865	0.08	nc	nc21352114	2017-01-07T07:28:37.990Z	15 km S of Lake Nacimiento, California	earthquake	0.14	0.46	0.12	53	reviewed	nc	nc
3/20/2004	1:24:17	35.592	-120.8721667	3.811	2.49	md	64	45	0.04955	0.08	nc	nc21352094	2017-01-07T07:28:21.250Z	15 km S of Lake Nacimiento, California	earthquake	0.12	0.43	0.11	60	reviewed	nc	nc
3/19/2004	7:59:38	35.5911667	-120.845	6.761	2.08	md	49	42	0.05315	0.09	nc	nc21351899	2017-01-07T07:22:50.780Z	13 km WNW of Templeton, California	earthquake	0.16	0.45	0.3	15	reviewed	nc	nc
3/19/2004	6:45:57	35.532	-120.8016667	5.428	2.91	md	67	50	0.08559	0.07	nc	nc21351894	2017-01-07T07:22:26.190Z	8 km WSW of Templeton, California	earthquake	0.13	0.57	0.11	84	reviewed	nc	nc
3/19/2004	2:02:29	36.0295	-120.5891667	4.335	2.33	md	53	46	0.03964	0.07	nc	nc21351841	2017-01-07T07:20:46.640Z	20 km NW of Parkfield, California	earthquake	0.21	0.27	0.1	43	reviewed	nc	nc
3/19/2004	1:18:16	35.5501667	-120.8088333	4.32	2.09	md	54	45	0.08198	0.09	nc	nc21351829	2017-01-07T07:20:33.400Z	9 km W of Templeton, California	earthquake	0.13	0.53	0.28	27	reviewed	nc	nc
3/19/2004	0:39:14	35.6138333	-120.895	6.713	2.18	md	56	53	0.03604	0.08	nc	nc21351822	2017-01-07T07:20:12.810Z	12 km S of Lake Nacimiento, California	earthquake	0.14	0.37	0.14	41	reviewed	nc	nc
3/19/2004	0:18:25	35.523	-120.7871667	5.058	2.23	md	55	52	0.0982	0.08	nc	nc21351817	2017-01-07T07:19:59.110Z	7 km WSW of Templeton, California	earthquake	0.17	0.84	0.18	35	reviewed	nc	nc
3/19/2004	0:16:30	35.542	-120.7891667	3.298	2.04	md	39	84	0.0964	0.09	nc	nc21351816	2017-01-07T07:19:52.670Z	7 km W of Templeton, California	earthquake	0.27	1.02	0.09	11	reviewed	nc	nc
3/19/2004	0:00:26	35.5366667	-120.8038333	5.67	2.08	md	47	62	0.08378	0.11	nc	nc21351814	2017-01-07T07:19:45.640Z	8 km W of Templeton, California	earthquake	0.23	0.69	0.17	10	reviewed	nc	nc
3/18/2004	20:52:21	35.5926667	-120.895	4.351	2.05	md	50	49	0.05405	0.08	nc	nc21351750	2017-01-07T07:18:42.920Z	15 km S of Lake Nacimiento, California	earthquake	0.18	0.33	0.19	24	reviewed	nc	nc
3/18/2004	9:43:28	35.5376667	-120.8395	4.2	2.09	md	31	56	0.05495	0.16	nc	nc21351522	2017-01-07T07:12:22.747Z	11 km NNE of Cayucos, California	earthquake	0.24	0.67	0.21	15	reviewed	nc	nc
3/18/2004	7:54:35	35.5301667	-120.8208333	5.75	2.05	md	55	51	0.07027	0.08	nc	nc21351503	2017-01-07T07:10:32.280Z	10 km WSW of Templeton, California	earthquake	0.15	0.59	0.24	31	reviewed	nc	nc
3/17/2004	15:07:31	35.5448333	-120.8126667	4.84	2.09	md	57	46	0.07748	0.07	nc	nc21351248	2017-01-07T06:59:27.300Z	9 km W of Templeton, California	earthquake	0.14	0.55	0.17	33	reviewed	nc	nc
3/17/2004	9:45:24	35.5336667	-120.809	5.98	2.05	md	43	54	0.08018	0.1	nc	nc21351177	2017-01-07T06:57:15.330Z	9 km W of Templeton, California	earthquake	0.21	0.98	0.19	11	reviewed	nc	nc
3/17/2004	2:49:09	35.5655	-120.8166667	4.111	2.17	md	56	42	0.08018	0.07	nc	nc21351085	2017-01-07T06:53:01.770Z	10 km W of Templeton, California	earthquake	0.16	0.62	0.17	53	reviewed	nc	nc
3/17/2004	0:49:19	35.5215	-120.8003333	2.028	2.23	md	47	60	0.08739	0.1	nc	nc21351052	2017-01-07T06:51:51.890Z	9 km WSW of Templeton, California	earthquake	0.21	1.15	0.23	19	reviewed	nc	nc
3/17/2004	0:28:45	35.5921667	-120.8915	5.171	2.32	md	62	49	0.05315	0.1	nc	nc21351047	2017-01-07T06:51:34.530Z	15 km S of Lake Nacimiento, California	earthquake	0.13	0.38	0.13	51	reviewed	nc	nc
3/16/2004	16:56:59	35.5578333	-120.7981667	3.97	2.03	md	47	44	0.09189	0.07	nc	nc21350928	2017-01-07T06:48:03.300Z	8 km W of Templeton, California	earthquake	0.2	0.66	0.14	26	reviewed	nc	nc
3/16/2004	16:11:17	35.5173333	-120.8246667	3.99	2.14	md	51	55	0.06937	0.07	nc	nc21350920	2017-01-07T06:47:39.420Z	10 km NE of Cayucos, California	earthquake	0.22	0.68	0.16	31	reviewed	nc	nc
3/16/2004	15:04:27	35.5248333	-120.8358333	3.33	2.15	md	53	54	0.05856	0.06	nc	nc21350903	2017-01-07T06:46:57.570Z	10 km NNE of Cayucos, California	earthquake	0.18	0.68	0.15	35	reviewed	nc	nc
3/16/2004	11:31:56	35.5311667	-120.8423333	8.55	2.14	md	57	34	0.05225	0.08	nc	nc21350878	2017-01-07T06:46:03.970Z	10 km NNE of Cayucos, California	earthquake	0.16	0.66	0.2	36	reviewed	nc	nc
3/16/2004	5:32:59	35.5275	-120.8101667	3.97	2.03	md	50	34	0.07928	0.11	nc	nc21350797	2017-01-07T06:43:17.560Z	9 km WSW of Templeton, California	earthquake	0.21	1.1	0.17	20	reviewed	nc	nc
3/16/2004	0:17:25	35.5978333	-120.8536667	2.641	2.7	md	61	44	0.04414	0.08	nc	nc21350730	2017-01-07T06:40:56.930Z	14 km WNW of Templeton, California	earthquake	0.13	0.43	0.1	73	reviewed	nc	nc
3/15/2004	18:50:34	35.5186667	-120.8146667	2.01	2.1	md	45	55	0.07658	0.07	nc	nc21350664	2017-01-07T06:39:03.780Z	10 km WSW of Templeton, California	earthquake	0.22	1.16	0.14	10	reviewed	nc	nc
3/15/2004	8:51:05	35.533	-120.801	4.558	2.03	md	52	56	0.08649	0.08	nc	nc21350558	2017-01-07T06:36:17.360Z	8 km WSW of Templeton, California	earthquake	0.16	0.68	0.17	18	reviewed	nc	nc
3/15/2004	2:26:17	35.5425	-120.8545	5.84	2	md	46	46	0.04324	0.09	nc	nc21350506	2017-01-07T06:34:45.450Z	11 km NNE of Cayucos, California	earthquake	0.15	0.39	0.14	15	reviewed	nc	nc
3/15/2004	1:29:26	35.5366667	-120.8393333	5.65	2.2	md	57	50	0.05495	0.08	nc	nc21350494	2017-01-07T06:34:23.660Z	11 km NNE of Cayucos, California	earthquake	0.15	0.49	0.13	39	reviewed	nc	nc
3/14/2004	14:22:32	35.5916667	-120.872	3.381	2.82	md	65	45	0.04955	0.08	nc	nc21350408	2017-01-07T06:30:51.350Z	15 km S of Lake Nacimiento, California	earthquake	0.14	0.46	0.09	76	reviewed	nc	nc
3/14/2004	3:38:18	36.2181667	-120.3005	8.33	2	md	34	62	0.1306	0.15	nc	nc21350280	2017-01-07T06:26:54.040Z	10 km NNE of Coalinga, California	earthquake	0.31	0.62	0.1	19	reviewed	nc	nc
3/13/2004	14:20:31	35.547	-120.8615	5.841	2.7	md	62	44	0.03964	0.08	nc	nc21350187	2017-01-07T06:23:03.930Z	11 km NNE of Cayucos, California	earthquake	0.14	0.49	0.15	67	reviewed	nc	nc
3/13/2004	14:14:18	35.5466667	-120.8648333	6.511	3.55	ml	68	45	0.03604	0.08	nc	nc21350186	2017-01-07T06:22:54.800Z	11 km NNE of Cayucos, California	earthquake	0.15	0.62		6	reviewed	nc	nc
3/13/2004	4:26:31	36.1365	-119.7285	23.069	2.46	md	25	164	0.318	0.05	nc	nc21350108	2017-01-07T06:20:15.931Z	10 km SE of Stratford, California	earthquake	0.51	0.33	0.14	22	reviewed	nc	nc
3/13/2004	3:19:08	35.5751667	-120.7848333	1.788	2.14	md	52	40	0.09369	0.09	nc	nc21350106	2017-01-07T06:20:01.520Z	Central California	earthquake	0.16	1.11	0.14	35	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depth Error	magError	magNst	status	location Source	magSource
3/12/2004	16:35:05	35.5796667	-120.7871667	7.221	2.1	md	49	34	0.08919	0.08	nc	nc21349995	2017-01-07T06:17:22.820Z	8 km WNW of Templeton, California	earthquake	0.16	1.35	0.25	31	reviewed	nc	nc
3/12/2004	2:55:19	35.5671667	-120.7861667	2.534	2.07	md	41	57	0.0991	0.09	nc	nc21349845	2017-01-07T06:13:31.200Z	7 km WNW of Templeton, California	earthquake	0.15	0.57	0.22	15	reviewed	nc	nc
3/12/2004	1:25:22	35.5648333	-120.8478333	7.761	2.4	md	55	37	0.05676	0.09	nc	nc21349826	2017-01-07T06:13:00.700Z	12 km W of Templeton, California	earthquake	0.17	0.66	0.13	50	reviewed	nc	nc
3/11/2004	14:43:42	35.588	-120.886	4.401	2.44	md	58	47	0.05586	0.08	nc	nc21349675	2017-01-07T06:08:50.490Z	15 km S of Lake Nacimiento, California	earthquake	0.15	0.42	0.12	54	reviewed	nc	nc
3/11/2004	12:01:07	35.5711667	-120.7916667	2.521	2.27	md	57	40	0.09279	0.11	nc	nc21349641	2017-01-07T06:07:57.060Z	8 km WNW of Templeton, California	earthquake	0.15	0.78	0.15	43	reviewed	nc	nc
3/11/2004	8:12:13	35.4451667	-120.8223333	1.518	2.3	md	60	83	0.05045	0.09	nc	nc21349585	2017-01-07T06:06:18.590Z	6 km E of Cayucos, California	earthquake	0.12	0.65	0.19	40	reviewed	nc	nc
3/11/2004	6:20:22	35.5713333	-120.7948333	3.381	2.25	md	58	41	0.09099	0.09	nc	nc21349569	2017-01-07T06:05:16.240Z	8 km WNW of Templeton, California	earthquake	0.15	0.81	0.16	47	reviewed	nc	nc
3/10/2004	17:05:56	35.9283333	-120.477	9.75	2.9	md	64	39	0.03063	0.07	nc	nc21349380	2017-01-07T06:01:56.690Z	5 km NW of Parkfield, California	earthquake	0.14	0.21	0.07	80	reviewed	nc	nc
3/10/2004	16:39:27	35.5743333	-120.7993333	6.885	2.05	md	42	55	0.0964	0.11	nc	nc21349376	2017-01-07T06:01:49.620Z	8 km WNW of Templeton, California	earthquake	0.2	1.35	0.17	15	reviewed	nc	nc
3/10/2004	16:08:40	35.5736667	-120.784	4.424	2.5	md	61	32	0.0955	0.1	nc	nc21349370	2017-01-07T06:01:34.020Z	7 km WNW of Templeton, California	earthquake	0.14	0.69	0.09	62	reviewed	nc	nc
3/10/2004	14:35:40	35.5746667	-120.7836667	4.068	3.02	md	70	32	0.09459	0.1	nc	nc21349352	2017-01-07T06:00:58.430Z	7 km WNW of Templeton, California	earthquake	0.13	0.64	0.09	88	reviewed	nc	nc
3/10/2004	14:20:19	35.5765	-120.7835	4.468	2.71	md	63	33	0.09369	0.1	nc	nc21349348	2017-01-07T06:00:45.020Z	7 km WNW of Templeton, California	earthquake	0.15	0.75	0.09	67	reviewed	nc	nc
3/10/2004	11:50:12	35.4456667	-120.8171667	0.308	2.47	md	57	80	0.05405	0.08	nc	nc21349328	2017-01-07T06:00:04.970Z	6 km E of Cayucos, California	earthquake	0.11	0.63	0.12	44	reviewed	nc	nc
3/10/2004	9:25:32	35.5766667	-120.7868333	1.431	2.14	md	48	40	0.09189	0.09	nc	nc21349304	2017-01-07T05:58:57.020Z	7 km WNW of Templeton, California	earthquake	0.16	1.3	0.22	34	reviewed	nc	nc
3/10/2004	6:56:34	35.5751667	-120.7793333	2.598	2.11	md	54	25	0.0973	0.12	nc	nc21349269	2017-01-07T05:58:14.880Z	7 km WNW of Templeton, California	earthquake	0.17	0.85	0.12	32	reviewed	nc	nc
3/10/2004	6:17:06	35.5763333	-120.7846667	4.101	2.49	md	57	33	0.09279	0.11	nc	nc21349264	2017-01-07T05:57:31.920Z	7 km WNW of Templeton, California	earthquake	0.15	0.69	0.15	56	reviewed	nc	nc
3/10/2004	6:13:02	35.5781667	-120.7848333	3.171	3.55	md	69	40	0.09189	0.09	nc	nc21349262	2022-06-18T08:34:15.254Z	7 km WNW of Templeton, California	earthquake	0.14	0.76	0.09	80	reviewed	nc	nc
3/10/2004	5:03:04	35.5348333	-120.8428333	5.27	2.08	md	50	50	0.05225	0.1	nc	nc21349233	2017-01-07T05:57:00.520Z	11 km NNE of Cayucos, California	earthquake	0.19	0.65	0.19	32	reviewed	nc	nc
3/10/2004	0:40:03	35.539	-120.9043333	3.328	3.37	ml	58	130	0.1063	0.07	nc	nc21349179	2017-01-07T05:55:10.080Z	10 km N of Cayucos, California	earthquake	0.22	0.62		1	automatic	nc	nc
3/9/2004	22:14:43	35.5763333	-120.8738333	4.021	2.14	md	50	43	0.05045	0.08	nc	nc21349153	2017-01-07T05:53:45.110Z	14 km N of Cayucos, California	earthquake	0.16	0.33	0.16	38	reviewed	nc	nc
3/9/2004	21:50:51	35.5726667	-120.7843333	3.154	2.57	md	59	40	0.0955	0.07	nc	nc21349147	2017-01-07T05:53:25.200Z	Central California	earthquake	0.14	0.75	0.12	62	reviewed	nc	nc
3/9/2004	20:09:27	35.4853333	-120.7681667	4.365	2.69	md	62	51	0.0964	0.1	nc	nc21349126	2017-01-07T05:52:41.770Z	8 km W of Atascadero, California	earthquake	0.15	0.84	0.11	69	reviewed	nc	nc
3/9/2004	15:05:50	35.5651667	-120.7913333	2.305	2.1	md	39	56	0.0991	0.16	nc	nc21349062	2017-01-07T05:51:27.200Z	7 km WNW of Templeton, California	earthquake	0.25	1.64	0.17	12	reviewed	nc	nc
3/9/2004	6:29:06	35.516	-120.8198333	3.79	2.41	md	59	55	0.07297	0.08	nc	nc21348980	2017-01-07T05:49:26.830Z	10 km NE of Cayucos, California	earthquake	0.15	0.64	0.1	56	reviewed	nc	nc
3/8/2004	19:40:49	35.5365	-120.8095	3.27	2.55	md	65	50	0.07928	0.09	nc	nc21348795	2017-01-07T05:47:02.480Z	9 km W of Templeton, California	earthquake	0.14	0.84	0.09	62	reviewed	nc	nc
3/8/2004	15:18:54	35.5901667	-120.8883333	4.481	2.04	md	51	47	0.05405	0.09	nc	nc21348717	2017-01-07T05:46:00.140Z	15 km S of Lake Nacimiento, California	earthquake	0.15	0.39	0.17	25	reviewed	nc	nc
3/8/2004	8:25:13	35.581	-120.8575	7.141	2.01	md	50	43	0.06036	0.08	nc	nc21348647	2017-01-07T05:43:53.030Z	14 km WNW of Templeton, California	earthquake	0.16	0.56	0.15	31	reviewed	nc	nc
3/7/2004	7:16:03	35.5746667	-120.7886667	2.901	2.11	md	40	74	0.09189	0.17	nc	nc21348397	2017-01-07T05:36:48.290Z	7 km WNW of Templeton, California	earthquake	0.25	1.06	0.19	16	reviewed	nc	nc
3/7/2004	2:26:31	35.5683333	-120.8218333	1.601	2.07	md	32	47	0.07748	0.09	nc	nc21348351	2017-01-07T05:35:15.796Z	10 km W of Templeton, California	earthquake	0.19	1.13	0.27	20	reviewed	nc	nc
3/6/2004	18:22:05	35.5743333	-120.8678333	3.663	3.39	ml	49	73	0.05135	0.06	nc	nc21348241	2022-09-24T00:00:23.043Z	14 km N of Cayucos, California	earthquake	0.13	0.48		4	automatic	nc	nc
3/6/2004	17:47:52	35.5783333	-120.862	4.721	2.4	md	47	42	0.05766	0.11	nc	nc21348233	2017-01-07T05:32:26.990Z	14 km WNW of Templeton, California	earthquake	0.17	0.51	0.12	49	reviewed	nc	nc
3/6/2004	8:12:12	35.5586667	-120.8025	4.19	2.2	md	56	44	0.08829	0.07	nc	nc21348151	2017-01-07T05:29:25.130Z	8 km W of Templeton, California	earthquake	0.14	0.53	0.18	38	reviewed	nc	nc
3/6/2004	4:54:59	35.533	-120.8211667	5.07	2.15	md	57	50	0.07027	0.07	nc	nc21348099	2017-01-07T05:28:17.160Z	10 km W of Templeton, California	earthquake	0.14	0.5	0.21	33	reviewed	nc	nc
3/6/2004	2:54:45	35.3315	-119.3386667	25.446	2.35	ml	32	100	0.1919	0.31	ci	ci9988417	2016-04-02T06:18:03.921Z	14km ESE of Buttonwillow, CA	earthquake	0.43	1.17	0.249	58	reviewed	ci	ci
3/6/2004	0:09:25	35.5356667	-120.8048333	4.08	2.21	md	32	74	0.08288	0.08	nc	nc21348043	2017-01-07T05:27:27.253Z	9 km W of Templeton, California	earthquake	0.2	0.64	0.21	7	reviewed	nc	nc
3/5/2004	21:50:27	35.532	-120.807	5.91	2.01	md	46	54	0.08108	0.07	nc	nc21348013	2017-01-07T05:26:58.110Z	9 km WSW of Templeton, California	earthquake	0.16	0.65	0.11	21	reviewed	nc	nc
3/5/2004	19:11:46	35.5326667	-120.8688333	0.79	2.77	md	58	50	0.03063	0.08	nc	nc21347983	2017-01-07T05:26:24.650Z	10 km NNE of Cayucos, California	earthquake	0.14	0.61	0.07	71	reviewed	nc	nc
3/5/2004	11:14:45	35.5153333	-120.8145	4.94	2.62	md	65	55	0.07748	0.08	nc	nc21347907	2017-01-07T05:24:32.150Z	10 km WSW of Templeton, California	earthquake	0.13	0.64	0.08	64	reviewed	nc	nc
3/5/2004	5:09:16	35.5758333	-120.8556667	7.241	3.25	ml	59	67	0.05946	0.09	nc	nc21347871	2017-01-07T05:23:32.650Z	13 km WNW of Templeton, California	earthquake	0.17	0.49		1	automatic	nc	nc
3/5/2004	2:22:23	35.5316667	-120.8781667	1.182	2.79	md	62	49	0.02342	0.11	nc	nc21347855	2017-01-07T05:22:57.750Z	9 km N of Cayucos, California	earthquake	0.14	0.48	0.08	67	reviewed	nc	nc
3/4/2004	23:58:55	35.1108333	-119.0071667	24.61	2.5	ml	33	49	0.05279	0.25	ci	ci9988149	2016-04-02T03:42:29.124Z	19km SSW of Lamont, CA	earthquake	0.5	1.27	0.318	39	reviewed	ci	ci
3/4/2004	17:10:20	35.5666667	-120.8248333	2.401	2.36	md	54	47	0.07477	0.1	nc	nc21347723	2017-01-07T05:20:28.340Z	10 km W of Templeton, California	earthquake	0.16	0.96	0.12	46	reviewed	nc	nc
3/4/2004	1:59:46	35.5665	-120.8271667	3.821	2.25	md	50	42	0.07297	0.08	nc	nc21347597	2017-01-07T05:16:46.390Z	11 km W of Templeton, California	earthquake	0.17	0.7	0.16	38	reviewed	nc	nc
3/3/2004	20:42:53	35.5153333	-120.819	3.95	2.46	md	55	56	0.07387	0.08	nc	nc21347529	2017-01-07T05:14:22.730Z	10 km NE of Cayucos, California	earthquake	0.14	0.57	0.16	54	reviewed	nc	nc
3/3/2004	14:45:09	35.5745	-120.8491667	6.541	2.32	md	47	49	0.06216	0.07	nc	nc21347456	2017-01-07T05:12:48.700Z	13 km WNW of Templeton, California	earthquake	0.16	0.45	0.22	42	reviewed	nc	nc
3/3/2004	13:33:08	36.0133333	-120.5736667	4.369	2.35	md	62	45	0.03063	0.07	nc	nc21347442	2017-01-07T05:12:18.770Z	17 km NW of Parkfield, California	earthquake	0.16	0.2	0.23	61	reviewed	nc	nc
3/3/2004	13:28:56	36.013	-120.575	4.157	2	md	42	44	0.03153	0.07	nc	nc21347440	2017-01-07T05:12:11.970Z	17 km NW of Parkfield, California	earthquake	0.18	0.22	0.07	27	reviewed	nc	nc
3/3/2004	12:14:29	34.9996667	-119.1791667	11.162	2.17	ml	29	67	0.09564	0.29	ci	ci9987725	2016-04-02T15:51:25.661Z	17km N of Pine Mountain Club, CA	earthquake	0.51	1.32	0.201	23	reviewed	ci	ci
3/3/2004	11:41:33	35.5156667	-120.8203333	3.83	2.64	md	62	56	0.07297	0.08	nc	nc21347430	2017-01-07T05:11:55.440Z	10 km NE of Cayucos, California	earthquake	0.13	0.56	0.1	67	reviewed	nc	nc
3/3/2004	5:41:19	35.5273333	-120.8725	4.42	2.87	md	50	117	0.02883	0.06	nc	nc21347382	2017-01-07T05:10:19.020Z	9 km N of Cayucos, California	earthquake	0.17	1.1	0.1	71	automatic	nc	nc
3/3/2004	3:02:04	35.53	-120.8068333	5.35	2.14	md	44	57	0.08198	0.08	nc	nc21347354	2017-01-07T05:09:16.690Z	9 km WSW of Templeton, California	earthquake	0.16	0.59	0.24	19	reviewed	nc	nc
3/3/2004	1:20:44	35.531	-120.8348333	4.5	2.04	md	41	59	0.05856	0.1	nc	nc21347342	2017-01-07T05:08:39.530Z	11 km NNE of Cayucos, California	earthquake	0.15	0.54	0.15	21	reviewed	nc	nc
3/2/2004	4:11:15	36.0386667	-119.854	5.345	2.02	md	34	121	0.1946	0.21	nc	nc21347178	2017-01-07T05:03:49.910Z	10 km ENE of Kettleman City, California	earthquake	1.01	1.82	0.06	5	reviewed	nc	nc
3/2/2004	3:18:21	35.174	-120.5986667	4.6	2.21	md	38	63	0.03694	0.13	nc	nc21347164	2017-01-07T05:03:15.820Z	3 km SSE of Edna, California	earthquake	0.19	0.34	0.25	18	reviewed	nc	nc
3/1/2004	19:33:10	35.5201667	-120.8473333	6.06	2.58	md	52	37	0.05045	0.09	nc	nc21347112	2017-01-07T05:01:19.720Z	9 km NNE of Cayucos, California	earthquake	0.17	0.62	0.12	56	reviewed	nc	nc
3/1/2004	15:31:20	35.5463333	-120.8161667	3.74	2.04	md	43	52	0.07477	0.09	nc	nc21347084	2017-01-07T05:00:37.440Z	9 km W of Templeton, California	earthquake	0.18	0.82	0.16	16	reviewed	nc	nc
3/1/2004	13:50:16	35.5591667	-120.8773333	6.041	2.02	md	47	46	0.03514	0.13	nc	nc21347070	2017-01-07T05:00:04.710Z	12 km N of Cayucos, California	earthquake	0.19	0.54	0.15	17	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
3/1/2004	12:36:18	35.5906667	-120.8853333	6.661	2.17	md	54	80	0.05315	0.07	nc	nc21347056	2017-01-07T04:59:24.300Z	15 km S of Lake Nacimiento, California	earthquake	0.15	0.34	0.18	35	reviewed	nc	nc
3/1/2004	5:13:18	35.531	-120.8446667	6.24	2.31	md	58	51	0.05045	0.08	nc	nc21346998	2017-01-07T04:57:10.140Z	10 km NNE of Cayucos, California	earthquake	0.14	0.51	0.18	45	reviewed	nc	nc
3/1/2004	1:54:49	35.6011667	-120.8868333	6.091	2.09	md	53	31	0.04324	0.11	nc	nc21346974	2017-01-07T04:56:20.480Z	14 km S of Lake Nacimiento, California	earthquake	0.16	0.34	0.2	32	reviewed	nc	nc
2/28/2004	18:29:17	35.5571667	-120.796	6.085	2.07	md	16	108	0.09369	0.14	nc	nc21346724	2017-01-07T04:50:23.165Z	8 km W of Templeton, California	earthquake	0.44	1.55	0.11	6	automatic	nc	nc
2/27/2004	11:06:41	35.5883333	-120.8768333	3.636	2.34	md	40	46	0.05946	0.25	nc	nc21346474	2017-01-07T04:44:41.281Z	15 km S of Lake Nacimiento, California	earthquake	0.3	0.86	0.13	33	automatic	nc	nc
2/27/2004	8:33:05	35.5768333	-120.8618333	3.296	3.82	ml	62	41	0.05676	0.09	nc	nc21346462	2022-06-18T08:31:01.764Z	14 km WNW of Templeton, California	earthquake	0.13	0.52		9	automatic	nc	nc
2/27/2004	5:54:41	35.5298333	-120.8026667	4.788	2.16	md	49	57	0.08468	0.08	nc	nc21346448	2017-01-07T04:43:26.880Z	9 km WSW of Templeton, California	earthquake	0.17	0.7	0.16	33	reviewed	nc	nc
2/27/2004	3:10:18	35.078	-119.1073333	21.265	2.22	ml	28	63	0.06807	0.33	ci	ci9986653	2016-04-02T09:45:51.127Z	22km NW of Grapevine, CA	earthquake	0.62	1.08	0.206	16	reviewed	ci	ci
2/27/2004	1:49:17	35.5683333	-120.8218333	5.291	2.09	md	28	57	0.07748	0.12	nc	nc21346424	2017-01-07T04:42:33.227Z	10 km W of Templeton, California	earthquake	0.22	0.98	0.13	17	automatic	nc	nc
2/24/2004	22:27:06	35.5048333	-120.8036667	5.035	2.1	md	32	78	0.1369	0.09	nc	nc21345672	2017-01-07T04:36:16.450Z	10 km WSW of Templeton, California	earthquake	0.27	1.07	0.09	20	reviewed	nc	nc
2/24/2004	14:12:30	35.6045	-120.8983333	5.046	2.08	md	30	48	0.07117	0.15	nc	nc21345562	2017-01-07T04:34:58.801Z	13 km S of Lake Nacimiento, California	earthquake	0.25	0.73	0.1	18	automatic	nc	nc
2/24/2004	11:34:54	35.6093333	-120.901	6.123	2	md	28	63	0.07568	0.06	nc	nc21345522	2017-01-07T04:34:30.727Z	13 km S of Lake Nacimiento, California	earthquake	0.19	0.6	0.11	19	automatic	nc	nc
2/24/2004	9:49:38	35.6038333	-120.9015	3.991	2.78	md	56	53	0.04685	0.08	nc	nc21345506	2017-01-07T04:34:11.820Z	13 km S of Lake Nacimiento, California	earthquake	0.14	0.41	0.08	53	reviewed	nc	nc
2/24/2004	8:33:15	35.5896667	-120.8391667	3.221	2.64	md	65	27	0.05586	0.11	nc	nc21345492	2017-01-07T04:33:48.010Z	12 km WNW of Templeton, California	earthquake	0.12	0.39	0.12	63	reviewed	nc	nc
2/24/2004	1:30:53	35.0941667	-119.1171667	17.477	2.5	ml	22	74	0.08113	0.14	ci	ci9985905	2016-04-02T03:03:31.566Z	24km NW of Grapevine, CA	earthquake	0.5	1.2	0.234	40	reviewed	ci	ci
2/23/2004	8:21:22	35.6133333	-120.8873333	6.824	2.43	md	27	51	0.08108	0.11	nc	nc21345250	2017-01-07T04:30:36.951Z	12 km S of Lake Nacimiento, California	earthquake	0.25	0.67	0.22	20	automatic	nc	nc
2/22/2004	23:28:58	35.5703333	-120.8098333	3.615	2.26	md	10	200	0.08739	0.19	nc	nc68008642	2017-01-07T04:29:11.791Z	Central California	earthquake	0.77	1.57	0.09	7	reviewed	nc	nc
2/22/2004	20:48:50	35.528	-120.8335	5.31	2.68	md	54	52	0.06036	0.07	nc	nc21345148	2017-01-07T04:28:47.310Z	10 km NNE of Cayucos, California	earthquake	0.14	0.55	0.11	45	automatic	nc	nc
2/22/2004	17:30:01	35.5651667	-120.8373333	2.885	2.27	md	31	51	0.06486	0.1	nc	nc21345120	2017-01-07T04:28:10.577Z	12 km W of Templeton, California	earthquake	0.18	0.58	0.23	21	automatic	nc	nc
2/22/2004	8:20:01	35.5886667	-120.88	4.483	2.11	md	24	61	0.05856	0.15	nc	nc21345066	2017-01-07T04:26:46.227Z	15 km S of Lake Nacimiento, California	earthquake	0.26	0.8	0.19	13	automatic	nc	nc
2/22/2004	7:16:21	35.1093333	-119.1265	17.847	2	mh	9	119	0.1482	0.14	ci	ci9985465	2016-02-17T13:21:11.290Z	26km SW of Lamont, California	earthquake	0.85	1.91		0	reviewed	ci	ci
2/22/2004	3:51:56	35.5811667	-120.862	5.243	2.23	md	32	57	0.05946	0.15	nc	nc30500664	2017-01-07T04:25:27.748Z	14 km WNW of Templeton, California	earthquake	0.25	0.86	0.2	18	automatic	nc	nc
2/21/2004	19:43:46	35.0983333	-119.1308333	16.807	2.1	mh	17	115	0.1391	0.27	ci	ci9985341	2016-02-17T11:02:35.384Z	25km E of Maricopa, California	earthquake	0.85	2.15		0	reviewed	ci	ci
2/21/2004	16:25:18	35.5295	-120.8245	5.447	2.02	md	12	201	0.06757	0.16	nc	nc68008630	2017-01-07T04:21:47.597Z	10 km WSW of Templeton, California	earthquake	1.03	1.18	0.15	7	reviewed	nc	nc
2/21/2004	15:27:27	35.5871667	-120.8865	4.593	2.99	md	59	80	0.05586	0.1	nc	nc21344924	2017-01-07T04:21:32.430Z	15 km S of Lake Nacimiento, California	earthquake	0.14	0.51	0.11	78	automatic	nc	nc
2/21/2004	4:31:58	35.0931667	-119.0978333	18.23	2.18	ml	26	63	0.1265	0.24	ci	ci9985205	2016-04-02T10:13:36.751Z	23km NW of Grapevine, CA	earthquake	0.47	1.48	0.247	27	reviewed	ci	ci
2/21/2004	3:57:16	35.5773333	-120.7795	6.419	2.42	md	42	39	0.1126	0.1	nc	nc21344810	2017-01-07T04:19:20.629Z	7 km WNW of Templeton, California	earthquake	0.2	1.34	0.15	37	automatic	nc	nc
2/20/2004	17:56:18	35.5735	-120.7893333	0.899	2.51	md	44	40	0.1036	0.07	nc	nc21344662	2017-01-07T04:17:13.440Z	8 km WNW of Templeton, California	earthquake	0.18	1.77	0.13	43	automatic	nc	nc
2/20/2004	17:41:45	35.5866667	-120.8816667	3.981	2.05	md	43	33	0.05586	0.12	nc	nc21344658	2017-01-07T04:17:03.500Z	Central California	earthquake	0.19	0.43	0.17	27	reviewed	nc	nc
2/20/2004	15:41:57	35.5235	-120.8201667	5.615	2.05	md	14	181	0.07117	0.17	nc	nc68008614	2017-01-07T04:16:30.857Z	10 km WSW of Templeton, California	earthquake	0.61	0.95	0.15	8	reviewed	nc	nc
2/20/2004	10:57:10	35.1135	-119.1466667	16.464	2	mh	15	132	0.1114	0.22	ci	ci12160451	2016-02-17T03:50:57.716Z	24km ENE of Maricopa, California	earthquake	0.84	2.04		0	reviewed	ci	ci
2/20/2004	10:56:24	35.095	-119.1095	17.167	3	ml	54	51	0.07582	0.35	ci	ci9984901	2016-04-02T15:52:06.397Z	24km NW of Grapevine, CA	earthquake	0.41	1.41	0.257	73	reviewed	ci	ci
2/20/2004	5:59:45	35.5713333	-120.863	5.411	2.11	md	42	41	0.05135	0.1	nc	nc21344566	2017-01-07T04:13:50.580Z	14 km W of Templeton, California	earthquake	0.19	0.49	0.12	34	reviewed	nc	nc
2/20/2004	1:30:50	35.5445	-120.8601667	6.181	2.16	md	52	45	0.03964	0.06	nc	nc21344512	2017-01-07T04:12:04.640Z	11 km NNE of Cayucos, California	earthquake	0.17	0.45	0.16	36	reviewed	nc	nc
2/19/2004	19:00:02	35.5601667	-120.8518333	7.101	2	md	28	50	0.05225	0.11	nc	nc21344420	2017-01-07T04:10:13.648Z	13 km W of Templeton, California	earthquake	0.25	0.63	0.17	14	automatic	nc	nc
2/19/2004	11:13:17	35.5436667	-120.8531667	4.775	2.96	md	57	46	0.04505	0.1	nc	nc21344358	2017-01-07T04:09:35.010Z	11 km NNE of Cayucos, California	earthquake	0.14	0.5	0.08	77	automatic	nc	nc
2/19/2004	9:26:11	35.5821667	-120.7868333	3.711	2.22	md	26	49	0.08739	0.16	nc	nc21344338	2017-01-07T04:09:18.311Z	8 km WNW of Templeton, California	earthquake	0.25	0.73	0.29	12	automatic	nc	nc
2/19/2004	7:24:00	35.4805	-120.7806667	4.215	2.27	md	21	79	0.08559	0.13	nc	nc21344314	2017-01-07T04:08:53.858Z	10 km W of Atascadero, California	earthquake	0.24	0.83	0.14	12	automatic	nc	nc
2/18/2004	21:26:30	35.0825	-119.1008333	19.005	2.18	ml	21	75	0.1166	0.29	ci	ci9984533	2016-04-02T10:09:24.305Z	22km NW of Grapevine, CA	earthquake	0.62	1.65	0.257	16	reviewed	ci	ci
2/18/2004	20:10:23	35.0915	-119.1188333	19.985	2	ml	13	90	0.1293	0.22	ci	ci9984513	2016-04-02T06:51:17.989Z	24km NW of Grapevine, CA	earthquake	0.77	1.89	0.243	14	reviewed	ci	ci
2/18/2004	18:23:33	35.5478333	-120.872	6.471	2.42	md	66	43	0.03153	0.07	nc	nc21344200	2017-01-07T04:06:47.390Z	11 km N of Cayucos, California	earthquake	0.13	0.37	0.16	54	reviewed	nc	nc
2/18/2004	13:36:53	35.576	-120.7928333	1.059	2.35	md	40	56	0.1018	0.09	nc	nc21344162	2017-01-07T04:06:08.626Z	8 km WNW of Templeton, California	earthquake	0.21	1.77	0.17	32	automatic	nc	nc
2/18/2004	2:28:15	35.5396667	-120.8345	4.89	2.07	md	25	57	0.05946	0.09	nc	nc21344062	2017-01-07T04:05:07.498Z	11 km W of Templeton, California	earthquake	0.26	0.82	0.21	11	automatic	nc	nc
2/18/2004	2:16:19	35.4908333	-120.7893333	5.848	2.07	md	29	53	0.08198	0.14	nc	nc21344060	2017-01-07T04:05:03.810Z	9 km SW of Templeton, California	earthquake	0.25	0.94	0.09	17	automatic	nc	nc
2/17/2004	21:04:51	34.9423333	-119.1933333	3.223	2	mh	6	117	0.1054	0.3	ci	ci9984289	2016-02-17T03:50:46.472Z	11km NNW of Pine Mountain Club, California	earthquake	1.09	1.15		0	reviewed	ci	ci
2/17/2004	21:01:16	35.6068333	-120.8678333	4.205	2.38	md	25	125	0.03423	0.08	nc	nc21343987	2017-01-07T04:04:37.046Z	13 km S of Lake Nacimiento, California	earthquake	0.37	1.37	0.1	27	automatic	nc	nc
2/17/2004	20:36:53	35.173	-120.6013333	3.669	2.21	md	11	129	0.1315	0.16	nc	nc68008586	2017-01-07T04:04:33.209Z	3 km SSE of Edna, California	earthquake	0.46	1.86	0.15	8	reviewed	nc	nc
2/17/2004	20:01:38	35.174	-120.6061667	5.342	2.71	md	41	59	0.03153	0.08	nc	nc21343971	2017-01-07T04:04:18.890Z	3 km S of Edna, California	earthquake	0.13	0.32	0.17	43	reviewed	nc	nc
2/17/2004	14:17:48	35.5428333	-120.8531667	5.24	2.49	md	48	47	0.04505	0.1	nc	nc21343899	2017-01-07T04:03:40.600Z	11 km NNE of Cayucos, California	earthquake	0.19	0.6	0.12	44	automatic	nc	nc
2/17/2004	13:54:26	35.5566667	-120.8193333	5.35	2.43	md	48	44	0.07477	0.08	nc	nc21343889	2017-01-07T04:03:30.880Z	10 km W of Templeton, California	earthquake	0.18	0.61	0.18	43	reviewed	nc	nc
2/17/2004	12:54:26	35.58	-120.8343333	4.641	2.55	md	62	39	0.06667	0.09	nc	nc21343873	2017-01-07T04:03:14.960Z	12 km WNW of Templeton, California	earthquake	0.15	0.47	0.16	61	reviewed	nc	nc
2/17/2004	8:09:58	35.0465	-119.0905	23	2.04	ml	13	59	0.05386	0.37	ci	ci9984157	2016-02-17T13:20:57.602Z	19km NW of Grapevine, California	earthquake	1.33	1.29		1	reviewed	ci	ci
2/17/2004	7:41:38	35.089	-119.1105	14.495	2.18	ml	32	64	0.1249	0.3	ci	ci9984149	2016-04-02T10:11:36.833Z	23km NW of Grapevine, CA	earthquake	0.49	0.8	0.227	27	reviewed	ci	ci
2/17/2004	7:39:29	35.099	-119.1065	5.456	2.3	mh	13	81	0.2682	0.23	ci	ci9984153	2016-02-17T08:37:03.664Z	24km NW of Grapevine, California	earthquake	0.69	16.7		0	reviewed	ci	ci
2/17/2004	7:16:03	35.055	-119.107	14.3	3.4	ml	14	120.9			us	usp000cmdb	2014-11-07T01:21:21.969Z	12 km W of Mettler, California	earthquake					reviewed	pas	pas
2/17/2004	7:16:01	35.0885	-119.1218333	16.45	3.01	ml	35	64	0.08255	0.17	ci	ci12160415	2021-02-18T19:21:45.441Z	24km NW of Grapevine, CA	earthquake	0.31	0.8	0.107	2	reviewed	ci	ci
2/17/2004	3:25:27	35.1095	-119.1221667	11.944	2	mh	13	156	0.1472	0.2	ci	ci9984109	2016-02-16T03:45:20.722Z	25km SW of Lamont, California	earthquake	0.7	2.16		0	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
2/17/2004	2:14:30	35.0868333	-119.1063333	20.305	2.41	ml	37	64	0.07008	0.3	ci	ci9984097	2016-04-02T13:21:26.043Z	23km NW of Grapevine, CA	earthquake	0.47	0.89	0.236	41	reviewed	ci	ci
2/17/2004	1:47:55	35.0871667	-119.1125	19.375	2.09	ml	30	76	0.07491	0.33	ci	ci9984085	2016-04-02T10:11:34.906Z	23km NW of Grapevine, CA	earthquake	0.61	1.19	0.286	20	reviewed	ci	ci
2/16/2004	18:28:30	35.0936667	-119.1025	20.597	2.58	ml	35	64	0.07012	0.42	ci	ci9984025	2016-04-02T19:36:13.373Z	23km NW of Grapevine, CA	earthquake	0.63	1.15	0.257	43	reviewed	ci	ci
2/16/2004	16:37:29	35.4026667	-120.6833333	3.09	2.65	md	58	27	0.02252	0.09	nc	nc21343625	2017-01-07T04:00:42.080Z	6 km WNW of Santa Margarita, California	earthquake	0.12	0.51	0.08	52	automatic	nc	nc
2/16/2004	15:22:11	35.5735	-120.7828333	2.045	2.09	md	15	207	0.109	0.18	nc	nc68008569	2017-01-07T04:00:36.261Z	7 km WNW of Templeton, California	earthquake	0.71	1.8	0.06	8	reviewed	nc	nc
2/16/2004	15:09:57	35.5045	-120.8263333	3.117	2.25	md	14	173	0.06396	0.17	nc	nc68008567	2017-01-07T04:00:29.454Z	9 km NE of Cayucos, California	earthquake	0.56	1.23	0.11	10	reviewed	nc	nc
2/16/2004	12:53:21	35.6103333	-120.8421667	6.414	2.18	md	26	48	0.09279	0.14	nc	nc21343591	2017-01-07T04:00:07.023Z	13 km SSE of Lake Nacimiento, California	earthquake	0.26	1.17	0.19	17	automatic	nc	nc
2/16/2004	12:50:03	35.5168333	-120.8405	2.805	2.07	md	13	172	0.05676	0.2	nc	nc68008564	2017-01-07T04:00:02.835Z	9 km NNE of Cayucos, California	earthquake	0.64	1.48	0.12	8	reviewed	nc	nc
2/16/2004	5:54:36	35.557	-120.808	5.348	2.25	md	33	40	0.08378	0.14	nc	nc21343495	2017-01-07T03:59:13.777Z	9 km W of Templeton, California	earthquake	0.26	1.06	0.14	13	automatic	nc	nc
2/16/2004	4:35:11	35.5491667	-120.8073333	0.928	3.03	md	58	46	0.08288	0.08	nc	nc21343475	2017-01-07T03:59:08.690Z	9 km W of Templeton, California	earthquake	0.15	0.91	0.11	83	automatic	nc	nc
2/16/2004	3:44:13	35.521	-120.809	4.738	2.37	md	39	60	0.08108	0.08	nc	nc21343469	2017-01-07T03:58:56.530Z	9 km WSW of Templeton, California	earthquake	0.18	0.81	0.21	32	automatic	nc	nc
2/16/2004	1:02:30	35.0301667	-119.1321667	4.137	2.36	ml	39	60	0.1967	0.44	ci	ci9983865	2016-04-02T10:14:40.661Z	20km N of Pine Mountain Club, CA	earthquake	0.6	38.37	0.278	41	reviewed	ci	ci
2/15/2004	23:03:10	35.4023333	-120.6825	3.6	2.49	md	47	28	0.07477	0.08	nc	nc21343435	2017-01-07T03:58:38.270Z	6 km WNW of Santa Margarita, California	earthquake	0.14	0.53	0.12	44	automatic	nc	nc
2/15/2004	19:53:02	35.5395	-120.805	4.12	2.22	md	28	48	0.08288	0.09	nc	nc21343399	2017-01-07T03:58:29.235Z	9 km W of Templeton, California	earthquake	0.22	0.81	0.19	19	automatic	nc	nc
2/15/2004	16:48:40	35.5666667	-120.7868333	2.525	2.41	md	12	205	0.1036	0.21	nc	nc68008555	2017-01-07T03:58:15.397Z	7 km WNW of Templeton, California	earthquake	0.97	2.13	0.05	9	reviewed	nc	nc
2/15/2004	16:39:40	35.0835	-119.096	18.385	2.14	ml	25	75	0.1168	0.29	ci	ci9983745	2016-04-02T16:30:34.676Z	22km NW of Grapevine, CA	earthquake	0.61	1.7	0.284	25	reviewed	ci	ci
2/15/2004	14:22:45	35.5655	-120.7851667	5.895	2.17	md	19	107	0.1045	0.12	nc	nc21343343	2017-01-07T03:57:58.324Z	7 km WNW of Templeton, California	earthquake	0.32	1.94	0.1	11	automatic	nc	nc
2/15/2004	13:03:57	35.5746667	-120.874	4.376	2.24	md	29	88	0.04865	0.11	nc	nc21343331	2017-01-07T03:57:51.947Z	14 km N of Cayucos, California	earthquake	0.2	0.56	0.16	15	automatic	nc	nc
2/15/2004	5:33:36	35.5273333	-120.8411667	5.198	2.27	md	35	57	0.05405	0.12	nc	nc21343270	2017-01-07T03:57:14.087Z	10 km NNE of Cayucos, California	earthquake	0.21	0.64	0.33	26	automatic	nc	nc
2/15/2004	4:01:37	35.555	-120.799	4.127	2.04	md	12	213	0.09009	0.17	nc	nc68008549	2017-01-07T03:56:47.662Z	8 km W of Templeton, California	earthquake	1.02	1.7	0.08	7	reviewed	nc	nc
2/15/2004	2:52:22	35.578	-120.8761667	3.193	3.41	mw	56	76	0.05045	0.08	nc	nc21343245	2022-06-18T08:21:29.511Z	15 km N of Cayucos, California	earthquake	0.17	0.58		3	automatic	nc	nc
2/15/2004	0:36:51	35.5278333	-120.7885	6.838	2.37	md	27	43	0.0964	0.1	nc	nc21343221	2017-01-07T03:55:59.689Z	7 km WSW of Templeton, California	earthquake	0.24	1.03	0.17	17	automatic	nc	nc
2/14/2004	20:30:14	35.5263333	-120.813	4.98	2.84	md	66	53	0.07658	0.08	nc	nc21343183	2017-01-07T03:55:25.450Z	10 km WSW of Templeton, California	earthquake	0.15	0.6	0.1	80	reviewed	nc	nc
2/14/2004	20:24:21	35.089	-119.1056667	21.265	2.45	ml	34	64	0.07042	0.27	ci	ci9983521	2016-04-02T03:41:25.640Z	23km NW of Grapevine, CA	earthquake	0.54	1.19	0.237	49	reviewed	ci	ci
2/14/2004	18:17:02	34.9978333	-119.1371667	14.16	2.05	ml	28	95	0.06314	0.35	ci	ci9983505	2016-04-02T16:29:53.992Z	17km N of Pine Mountain Club, CA	earthquake	0.65	0.88	0.232	21	reviewed	ci	ci
2/14/2004	13:42:56	35.4465	-119.369	4.986	2	mh	10	150	0.3552	0.19	ci	ci9983449	2016-02-16T20:30:31.892Z	10km ENE of Buttonwillow, California	earthquake	1.64	31.61		0	reviewed	ci	ci
2/14/2004	13:31:52	35.54	-120.8191667	3.728	2.39	md	33	71	0.07207	0.07	nc	nc30500656	2017-01-07T03:54:33.350Z	10 km W of Templeton, California	earthquake	0.19	0.69	0.29	20	automatic	nc	nc
2/14/2004	12:43:11	35.0398333	-119.145	10.447	4.34	ml	72	62		0.34	ci	ci9983429	2020-05-06T06:52:26.444Z	22km N of Pine Mountain Club, CA	earthquake	0.34	1.66	0.284	139	reviewed	ci	ci
2/14/2004	12:43:06	35.0836667	-119.1058333	16.891	2	mh	25	72	0.2086	0.29	ci	ci12160407	2016-02-16T18:04:20.501Z	22km NW of Grapevine, California	earthquake	0.71	2.87		0	reviewed	ci	ci
2/14/2004	4:49:48	35.5453333	-120.8513333	5.93	2.53	md	57	46	0.04685	0.08	nc	nc21343039	2017-01-07T03:53:21.950Z	11 km NNE of Cayucos, California	earthquake	0.14	0.46	0.1	49	reviewed	nc	nc
2/13/2004	21:17:57	35.5501667	-120.8643333	5.961	2.29	md	38	44	0.03784	0.08	nc	nc21342960	2017-01-07T03:52:32.340Z	12 km NNE of Cayucos, California	earthquake	0.2	0.5	0.3	32	automatic	nc	nc
2/13/2004	20:37:25	35.5485	-120.86	6.831	2.41	md	48	37	0.04054	0.16	nc	nc21342943	2017-01-07T03:52:17.182Z	12 km NNE of Cayucos, California	earthquake	0.25	0.75	0.18	38	automatic	nc	nc
2/13/2004	16:58:39	35.5343333	-120.8278333	7.18	2.42	md	41	32	0.06486	0.09	nc	nc21342896	2017-01-07T03:51:46.960Z	11 km W of Templeton, California	earthquake	0.22	0.97	0.11	38	automatic	nc	nc
2/13/2004	14:15:08	35.5655	-120.8893333	4.623	2.36	md	14	173	0.03423	0.08	nc	nc68008530	2017-01-07T03:51:26.271Z	13 km N of Cayucos, California	earthquake	0.5	0.37	0.15	13	reviewed	nc	nc
2/13/2004	2:09:09	35.5246667	-120.8285	4.195	2.23	md	13	179	0.06486	0.2	nc	nc68008523	2017-01-07T03:49:58.767Z	10 km NNE of Cayucos, California	earthquake	0.83	1.02	0.2	10	reviewed	nc	nc
2/13/2004	0:39:22	35.5346667	-120.842	4.296	2.24	md	30	57	0.05315	0.16	nc	nc21342720	2017-01-07T03:49:48.394Z	Central California	earthquake	0.26	0.82	0.21	16	automatic	nc	nc
2/12/2004	21:10:33	35.5883333	-120.8785	3.403	2.28	md	13	200	0.05946	0.17	nc	nc68008521	2017-01-07T03:49:16.384Z	15 km S of Lake Nacimiento, California	earthquake	0.57	0.96	0.18	9	reviewed	nc	nc
2/12/2004	15:38:50	35.5465	-120.8636667	7.193	2.05	md	11	193	0.03694	0.15	nc	nc68008520	2017-01-07T03:48:42.014Z	11 km NNE of Cayucos, California	earthquake	0.69	0.66	0.11	8	reviewed	nc	nc
2/12/2004	14:00:55	35.5766667	-120.9015	6.071	2.17	md	35	85	0.04324	0.08	nc	nc21342532	2017-01-07T03:48:15.108Z	14 km N of Cayucos, California	earthquake	0.21	0.4	0.25	26	automatic	nc	nc
2/12/2004	13:50:11	35.5278333	-120.7903333	3.898	2.42	md	43	51	0.0955	0.08	nc	nc21342528	2017-01-07T03:48:11.455Z	8 km WSW of Templeton, California	earthquake	0.21	0.9	0.13	39	automatic	nc	nc
2/12/2004	10:39:42	35.6051667	-120.8813333	6.972	2.09	md	27	94	0.07387	0.08	nc	nc21342466	2017-01-07T03:47:39.126Z	Central California	earthquake	0.25	0.74	0.09	13	automatic	nc	nc
2/12/2004	10:21:23	35.5865	-120.8683333	3.223	2.4	md	14	190	0.06126	0.19	nc	nc68008511	2017-01-07T03:47:25.668Z	15 km WNW of Templeton, California	earthquake	0.8	1.39	0.16	12	reviewed	nc	nc
2/12/2004	9:27:46	35.5891667	-120.8781667	3.382	3.61	mw	72	46	0.05315	0.07	nc	nc30227007	2022-06-18T08:20:01.136Z	15 km S of Lake Nacimiento, California	earthquake	0.13	0.39		3	reviewed	nc	nc
2/12/2004	2:51:33	35.5408333	-120.8246667	6.827	2.21	md	12	198	0.06757	0.15	nc	nc68008505	2017-01-07T03:45:37.015Z	10 km W of Templeton, California	earthquake	0.66	0.92	0.13	9	reviewed	nc	nc
2/11/2004	17:34:25	35.5761667	-120.7863333	2.874	2.16	md	32	57	0.09189	0.14	nc	nc30227086	2017-01-07T03:42:59.579Z	7 km WNW of Templeton, California	earthquake	0.23	0.84	0.18	12	reviewed	nc	nc
2/11/2004	17:07:39	35.5623333	-120.8518333	5.59	2.33	md	26	44	0.05315	0.17	nc	nc21342164	2017-01-07T03:42:45.857Z	13 km W of Templeton, California	earthquake	0.36	0.81	0.22	17	automatic	nc	nc
2/11/2004	10:38:43	35.591	-120.8476667	6.633	2.16	md	11	206	0.07477	0.19	nc	nc68008495	2017-01-07T03:41:36.742Z	13 km WNW of Templeton, California	earthquake	1.72	1.17	0.07	6	reviewed	nc	nc
2/11/2004	10:33:58	35.5496667	-120.8643333	6.226	2.21	md	36	44	0.03784	0.08	nc	nc21342048	2017-01-07T03:41:33.349Z	12 km NNE of Cayucos, California	earthquake	0.15	0.43	0.23	27	automatic	nc	nc
2/11/2004	5:33:00	35.5476667	-120.8696667	6.383	2.87	md	53	51	0.03333	0.07	nc	nc21341977	2017-01-07T03:40:48.550Z	11 km N of Cayucos, California	earthquake	0.15	0.46	0.1	71	automatic	nc	nc
2/10/2004	22:28:33	35.579	-120.8786667	3.852	2.84	md	61	45	0.05045	0.08	nc	nc21341901	2017-01-07T03:39:19.770Z	15 km N of Cayucos, California	earthquake	0.14	0.34	0.09	80	reviewed	nc	nc
2/10/2004	11:38:03	35.5343333	-120.8741667	7.062	2.18	md	44	46	0.02613	0.09	nc	nc21341770	2017-01-07T03:37:17.400Z	10 km N of Cayucos, California	earthquake	0.21	0.59	0.21	31	reviewed	nc	nc
2/9/2004	14:05:47	35.547	-120.8125	4.63	3.42	ml	67	47	0.07838	0.08	nc	nc21341475	2022-06-18T08:18:20.245Z	9 km W of Templeton, California	earthquake	0.14	0.65		6	reviewed	nc	nc
2/9/2004	9:13:42	35.5008333	-120.7878333	2.107	2.04	md	12	201	0.08739	0.16	nc	nc68008467	2017-01-07T03:34:27.135Z	9 km SW of Templeton, California	earthquake	0.65	2.31	0.12	6	reviewed	nc	nc
2/9/2004	7:31:45	35.5031667	-120.7941667	2.478	2.32	md	31	58	0.08378	0.07	nc	nc21341387	2017-01-07T03:34:16.575Z	9 km WSW of Templeton, California	earthquake	0.19	0.96	0.24	19	automatic	nc	nc
2/9/2004	5:05:28	35.5353333	-120.8398333	6.653	2.1	md	11	200	0.05495	0.15	nc	nc68008464	2017-01-07T03:33:59.393Z	11 km NNE of Cayucos, California	earthquake	0.84	1.08	0.2	8	reviewed	nc	nc
2/9/2004	1:29:54	35.6041667	-120.9021667	3.982	2.46	md	63	53	0.04685	0.08	nc	nc21341314	2017-01-07T03:33:27.230Z	13 km S of Lake Nacimiento, California	earthquake	0.12	0.34	0.12	56	reviewed	nc	nc
2/7/2004	15:52:16	35.564	-120.8566667	5.852	2.01	md	48	40	0.05045	0.09	nc	nc21340991	2017-01-07T03:28:41.830Z	13 km W of Templeton, California	earthquake	0.15	0.44	0.18	37	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
2/7/2004	15:37:30	35.5715	-120.7863333	1.454	2.58	md	62	41	0.0955	0.1	nc	nc21340989	2017-01-07T03:28:35.230Z	7 km WNW of Templeton, California	earthquake	0.14	0.86	0.1	75	reviewed	nc	nc
2/7/2004	7:20:57	35.5706667	-120.8476667	3.251	2.51	md	55	39	0.06036	0.09	nc	nc21340869	2017-01-07T03:27:12.200Z	13 km W of Templeton, California	earthquake	0.16	0.53	0.12	58	reviewed	nc	nc
2/7/2004	5:32:34	35.5583333	-120.8363333	6.395	2.26	md	40	38	0.06216	0.13	nc	nc21340840	2017-01-07T03:26:59.119Z	11 km W of Templeton, California	earthquake	0.22	0.86	0.18	27	automatic	nc	nc
2/7/2004	4:36:41	35.5496667	-120.8601667	5.822	2.02	md	42	38	0.04144	0.1	nc	nc21340819	2017-01-07T03:26:33.090Z	12 km NNE of Cayucos, California	earthquake	0.19	0.46	0.12	19	reviewed	nc	nc
2/7/2004	2:17:12	35.5416667	-120.7968333	3.318	2.24	md	26	62	0.09009	0.1	nc	nc21340790	2017-01-07T03:26:04.685Z	8 km W of Templeton, California	earthquake	0.23	0.91	0.17	11	automatic	nc	nc
2/6/2004	23:22:50	35.5358333	-120.8345	6.697	2.07	md	11	201	0.05856	0.14	nc	nc68008433	2017-01-07T03:25:27.684Z	11 km NNE of Cayucos, California	earthquake	0.76	1.12	0.12	6	reviewed	nc	nc
2/6/2004	21:54:51	35.5431667	-120.7855	2.558	2.25	md	25	64	0.0991	0.16	nc	nc21340695	2017-01-07T03:24:57.016Z	7 km W of Templeton, California	earthquake	0.34	1.63	0.09	10	automatic	nc	nc
2/6/2004	20:51:36	35.5631667	-120.803	2.54	2.62	md	50	43	0.08919	0.08	nc	nc30500649	2017-01-07T03:24:27.420Z	8 km W of Templeton, California	earthquake	0.16	0.87	0.12	46	automatic	nc	nc
2/6/2004	17:19:11	35.2963333	-120.6208333	9.964	2.22	md	45	72	0.03063	0.08	nc	nc21340622	2017-01-07T03:23:35.730Z	3 km ENE of San Luis Obispo, California	earthquake	0.2	0.37	0.25	30	reviewed	nc	nc
2/6/2004	1:19:28	35.5586667	-120.81	5.41	2.52	md	63	44	0.08288	0.07	nc	nc21340430	2017-01-07T03:18:46.480Z	9 km W of Templeton, California	earthquake	0.14	0.57	0.1	62	reviewed	nc	nc
2/5/2004	3:08:17	35.5336667	-120.8893333	1.962	2.93	md	59	47	0.01441	0.07	nc	nc21340198	2017-01-07T03:12:26.020Z	10 km N of Cayucos, California	earthquake	0.12	0.31	0.07	82	reviewed	nc	nc
2/5/2004	1:38:59	35.5385	-120.8478333	6.25	2.54	md	55	48	0.04865	0.06	nc	nc21340186	2017-01-07T03:12:02.430Z	11 km NNE of Cayucos, California	earthquake	0.13	0.42	0.1	60	reviewed	nc	nc
2/5/2004	1:07:43	35.5205	-120.8355	4.7	2.05	md	41	54	0.05946	0.06	nc	nc21340182	2017-01-07T03:11:52.660Z	10 km NNE of Cayucos, California	earthquake	0.13	0.52	0.13	23	reviewed	nc	nc
2/3/2004	8:20:40	35.5905	-120.8978333	3.001	2.59	md	62	50	0.05676	0.07	nc	nc21339862	2017-01-07T03:02:49.140Z	15 km S of Lake Nacimiento, California	earthquake	0.14	0.44	0.09	72	reviewed	nc	nc
2/2/2004	13:21:55	35.5115	-120.7818333	5.498	2.15	md	54	39	0.0973	0.11	nc	nc30227054	2017-01-07T02:58:47.670Z	8 km WSW of Templeton, California	earthquake	0.18	0.69	0.21	22	reviewed	nc	nc
2/2/2004	10:01:59	35.5385	-120.7966667	3.468	2.11	md	49	27	0.09009	0.15	nc	nc21339656	2017-01-07T02:58:01.101Z	8 km W of Templeton, California	earthquake	0.17	0.74	0.16	29	reviewed	nc	nc
2/2/2004	9:59:01	35.5396667	-120.85	5.65	2.17	md	47	56	0.04685	0.07	nc	nc21339654	2017-01-07T02:57:56.190Z	11 km NNE of Cayucos, California	earthquake	0.18	0.52	0.22	27	reviewed	nc	nc
2/2/2004	8:43:04	35.5386667	-120.8535	6.79	2.07	md	48	48	0.04414	0.07	nc	nc21339648	2017-01-07T02:57:39.870Z	11 km NNE of Cayucos, California	earthquake	0.15	0.43	0.2	17	reviewed	nc	nc
2/2/2004	8:29:57	35.5935	-120.9001667	6.432	2.12	md	35	50	0.05495	0.06	nc	nc21339642	2017-01-07T02:57:23.440Z	15 km S of Lake Nacimiento, California	earthquake	0.19	0.38	0.17	29	reviewed	nc	nc
2/2/2004	4:13:08	35.5585	-120.8463333	6.642	2	md	45	50	0.05495	0.08	nc	nc21339594	2017-01-07T02:55:41.480Z	12 km W of Templeton, California	earthquake	0.15	0.45	0.27	20	reviewed	nc	nc
2/2/2004	3:52:29	35.5635	-120.7985	3.36	2.12	md	52	42	0.09279	0.08	nc	nc21339584	2017-01-07T02:55:26.100Z	8 km W of Templeton, California	earthquake	0.16	0.64	0.21	31	reviewed	nc	nc
2/2/2004	3:17:35	35.5296667	-120.8531667	2.77	2.16	md	53	52	0.04414	0.1	nc	nc21339574	2017-01-07T02:55:06.330Z	10 km NNE of Cayucos, California	earthquake	0.14	0.48	0.21	36	reviewed	nc	nc
2/1/2004	23:58:17	35.5236667	-120.8143333	5.19	2.06	md	49	53	0.07658	0.07	nc	nc21339542	2017-01-07T02:53:56.280Z	10 km WSW of Templeton, California	earthquake	0.16	0.65	0.15	23	reviewed	nc	nc
2/1/2004	16:49:45	35.5303333	-120.8116667	3.57	2.03	md	43	57	0.07748	0.09	nc	nc21339483	2017-01-07T02:52:07.250Z	9 km WSW of Templeton, California	earthquake	0.16	0.6	0.16	15	reviewed	nc	nc
2/1/2004	7:20:52	35.614	-120.8891667	6.674	2.18	md	51	52	0.03333	0.07	nc	nc30226999	2017-01-07T02:47:05.420Z	12 km S of Lake Nacimiento, California	earthquake	0.14	0.36	0.13	38	reviewed	nc	nc
1/31/2004	21:38:58	35.5408333	-120.854	6.23	2.44	md	53	48	0.04324	0.07	nc	nc21339270	2017-01-07T02:44:54.030Z	11 km NNE of Cayucos, California	earthquake	0.16	0.46	0.12	45	reviewed	nc	nc
1/31/2004	21:21:47	35.5716667	-120.787	2.94	2.1	md	23	62	0.0955	0.16	nc	nc21339268	2017-01-07T02:44:46.769Z	7 km WNW of Templeton, California	earthquake	0.33	1.24	0.15	9	automatic	nc	nc
1/31/2004	17:04:46	35.524	-120.8498333	0.993	2.05	md	13	189	0.04775	0.2	nc	nc68008349	2017-01-07T02:44:15.095Z	9 km NNE of Cayucos, California	earthquake	0.75	1.22	0.15	7	reviewed	nc	nc
1/31/2004	12:26:33	35.5701667	-120.8366667	2.455	2.07	md	25	56	0.06757	0.09	nc	nc21339152	2017-01-07T02:43:21.557Z	12 km W of Templeton, California	earthquake	0.21	0.71	0.13	16	automatic	nc	nc
1/31/2004	9:11:09	34.8411667	-120.1931667	12.374	2.55	ml	5	226	0.1273	0.22	ci	ci14026424	2016-04-02T06:57:50.322Z	13km NE of Los Alamos, CA	earthquake	1.68	4.03	0.281	17	reviewed	ci	ci
1/31/2004	5:48:32	35.5641667	-120.8398333	0.303	2.03	md	10	201	0.06216	0.21	nc	nc68008342	2017-01-07T02:41:56.885Z	12 km W of Templeton, California	earthquake	0.96	1.75	0.17	7	reviewed	nc	nc
1/31/2004	1:02:15	35.5295	-120.8221667	5.27	2.12	md	27	90	0.06937	0.07	nc	nc21339018	2017-01-07T02:40:51.987Z	10 km WSW of Templeton, California	earthquake	0.24	0.68	0.18	13	automatic	nc	nc
1/30/2004	22:28:48	35.5268333	-120.8135	4.008	2.87	md	61	52	0.07658	0.08	nc	nc21338984	2017-01-07T02:40:26.020Z	10 km WSW of Templeton, California	earthquake	0.15	0.65	0.1	81	automatic	nc	nc
1/30/2004	19:31:33	35.6315	-120.8941667	8.551	2.08	md	33	46	0.02432	0.14	nc	nc21338942	2017-01-07T02:40:07.431Z	Central California	earthquake	0.28	0.56	0.15	21	automatic	nc	nc
1/30/2004	9:40:24	35.9408333	-120.4898333	10.253	2.13	md	40	46	0.01622	0.06	nc	nc21338826	2017-01-07T02:39:07.020Z	6 km NW of Parkfield, California	earthquake	0.17	0.23	0.13	30	automatic	nc	nc
1/30/2004	4:50:14	35.5308333	-120.7888333	4.518	2.01	md	25	65	0.0964	0.12	nc	nc21338772	2017-01-07T02:38:24.438Z	7 km WSW of Templeton, California	earthquake	0.34	1.43	0.05	10	automatic	nc	nc
1/30/2004	0:25:07	35.5756667	-120.779	2.677	2.1	md	11	214	0.1126	0.25	nc	nc68008325	2017-01-07T02:38:00.789Z	7 km WNW of Templeton, California	earthquake	1.12	2.22	0.08	5	reviewed	nc	nc
1/30/2004	0:20:51	35.5778333	-120.7838333	0.224	2.35	md	40	57	0.09279	0.08	nc	nc21338716	2017-01-07T02:37:57.594Z	7 km WNW of Templeton, California	earthquake	0.18	1.07	0.1	34	automatic	nc	nc
1/29/2004	22:34:49	35.5908333	-120.883	6.512	2.65	md	65	47	0.05225	0.06	nc	nc21338693	2017-01-07T02:37:37.850Z	15 km S of Lake Nacimiento, California	earthquake	0.14	0.34	0.08	76	reviewed	nc	nc
1/29/2004	22:03:31	35.3955	-120.6706667	3.97	2.31	md	37	38	0.07297	0.09	nc	nc30506068	2017-01-07T02:37:19.779Z	5 km W of Santa Margarita, California	earthquake	0.16	0.52	0.2	24	automatic	nc	nc
1/29/2004	21:36:19	36.2426667	-120.4023333	7.138	2.01	md	17	95	0.0973	0.06	nc	nc21338671	2017-01-07T02:37:01.266Z	12 km NNW of Coalinga, California	earthquake	0.34	0.85	0.11	7	automatic	nc	nc
1/29/2004	19:57:17	35.4856667	-120.8025	5.508	2.01	md	23	73	0.07027	0.14	nc	nc21338636	2017-01-07T02:36:36.241Z	9 km ENE of Cayucos, California	earthquake	0.26	0.82	0.17	11	automatic	nc	nc
1/28/2004	12:06:40	35.5271667	-120.8158333	4.71	2.6	md	41	52	0.07477	0.08	nc	nc21338333	2017-01-07T02:32:19.930Z	10 km WSW of Templeton, California	earthquake	0.18	0.71	0.07	39	automatic	nc	nc
1/28/2004	0:04:10	35.561	-120.801	5.177	2.14	md	13	207	0.09009	0.15	nc	nc68008304	2017-01-07T02:31:04.040Z	8 km W of Templeton, California	earthquake	0.64	1.07	0.22	10	reviewed	nc	nc
1/27/2004	20:11:24	35.4991667	-120.8681667	6.289	2.35	md	10	189	0.04144	0.07	nc	nc68008302	2017-01-07T02:30:36.238Z	6 km NNE of Cayucos, California	earthquake	0.61	0.41	0.2	7	reviewed	nc	nc
1/27/2004	15:41:27	35.5403333	-120.8398333	5.365	2.21	md	37	48	0.05495	0.07	nc	nc21338095	2017-01-07T02:29:54.023Z	11 km NNE of Cayucos, California	earthquake	0.22	0.62	0.17	27	automatic	nc	nc
1/27/2004	13:15:42	35.5353333	-120.8163333	4.488	2.34	md	41	50	0.07387	0.06	nc	nc21338074	2017-01-07T02:29:29.111Z	10 km W of Templeton, California	earthquake	0.17	0.69	0.16	30	automatic	nc	nc
1/27/2004	7:35:43	35.5585	-120.8093333	5.1	2.69	md	61	44	0.08288	0.07	nc	nc21338008	2017-01-07T02:28:56.490Z	9 km W of Templeton, California	earthquake	0.14	0.61	0.09	78	reviewed	nc	nc
1/27/2004	5:21:09	35.5708333	-120.823	6.267	2.01	md	11	205	0.07748	0.17	nc	nc68008290	2017-01-07T02:28:44.851Z	10 km WNW of Templeton, California	earthquake	0.71	1.12	0.21	7	reviewed	nc	nc
1/27/2004	3:45:06	35.5458333	-120.8631667	5.955	2.3	md	38	45	0.03784	0.07	nc	nc21337972	2017-01-07T02:28:31.479Z	11 km NNE of Cayucos, California	earthquake	0.19	0.52	0.2	35	automatic	nc	nc
1/26/2004	22:58:16	35.56	-120.8111667	7.51	2.92	md	66	33	0.08198	0.08	nc	nc21337885	2017-01-07T02:27:53.310Z	9 km W of Templeton, California	earthquake	0.13	0.67	0.09	97	reviewed	nc	nc
1/26/2004	22:04:09	35.6095	-120.8863333	6.558	2.21	md	32	80	0.03514	0.08	nc	nc21337867	2017-01-07T02:27:33.779Z	13 km S of Lake Nacimiento, California	earthquake	0.18	0.61	0.26	20	automatic	nc	nc
1/26/2004	14:18:45	35.6106667	-120.8935	7.031	2.66	md	62	51	0.03784	0.08	nc	nc21337751	2017-01-07T02:26:42.060Z	13 km S of Lake Nacimiento, California	earthquake	0.15	0.4	0.1	67	reviewed	nc	nc
1/26/2004	12:16:01	35.121	-119.0096667	10.61	2.01	ml	30	48	0.062	0.3	ci	ci14025020	2016-04-02T13:23:33.044Z	18km SSW of Lamont, CA	earthquake	0.54	1.78	0.181	19	reviewed	ci	ci
1/26/2004	9:42:23	35.54	-120.8593333	3.853	2.05	md	13	191	0.03874	0.24	nc	nc68008280	2017-01-07T02:26:16.194Z	11 km NNE of Cayucos, California	earthquake	0.79	0.82	0.16	8	reviewed	nc	nc
1/26/2004	5:21:13	35.1246667	-119.0241667	11.251	2.19	ml	12	146	0.06404	0.25	ci	ci14024960	2016-02-16T15:35:08.972Z	18km SSW of Lamont, California	earthquake	1.19	1.32		1	reviewed	ci	ci
1/26/2004	4:09:20	35.5275	-120.8221667	4.358	2.08	md	25	59	0.06937	0.08	nc	nc21337651	2017-01-07T02:25:36.091Z	10 km WSW of Templeton, California	earthquake	0.26	0.9	0.12	15	automatic	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
1/25/2004	7:21:51	35.5541667	-120.8343333	9.683	2.24	md	9	199	0.06216	0.11	nc	nc68008263	2017-01-07T02:23:17.006Z	Central California	earthquake	1.09	2.11	0.1	7	reviewed	nc	nc
1/25/2004	7:20:31	35.5315	-120.8251667	6.247	2.08	md	13	195	0.06667	0.15	nc	nc68008262	2017-01-07T02:23:13.737Z	10 km W of Templeton, California	earthquake	0.71	1.03	0.08	7	reviewed	nc	nc
1/25/2004	3:17:27	35.5273333	-120.8231667	4.206	2.24	md	30	59	0.06847	0.08	nc	nc21337393	2017-01-07T02:22:47.185Z	10 km WSW of Templeton, California	earthquake	0.24	0.78	0.15	18	automatic	nc	nc
1/24/2004	21:50:02	35.5466667	-120.8451667	5.343	2.18	md	22	93	0.05225	0.06	nc	nc21337307	2017-01-07T02:22:08.111Z	12 km NNE of Cayucos, California	earthquake	0.26	0.67	0.09	9	automatic	nc	nc
1/24/2004	21:41:59	35.5363333	-120.8445	6.05	2.54	md	57	49	0.05045	0.08	nc	nc21337305	2017-01-07T02:22:00.540Z	11 km NNE of Cayucos, California	earthquake	0.16	0.5	0.09	53	reviewed	nc	nc
1/24/2004	20:55:37	35.5445	-120.8531667	5.996	2.2	md	38	55	0.04505	0.07	nc	nc21337295	2017-01-07T02:21:51.424Z	11 km NNE of Cayucos, California	earthquake	0.19	0.58	0.14	31	automatic	nc	nc
1/24/2004	17:48:42	35.5281667	-120.8095	6.017	2.09	md	14	204	0.07928	0.16	nc	nc68008249	2017-01-07T02:21:16.350Z	9 km WSW of Templeton, California	earthquake	0.73	1.09	0.12	6	reviewed	nc	nc
1/24/2004	17:26:08	35.53	-120.8193333	3.938	2.51	md	45	51	0.07117	0.07	nc	nc21337239	2017-01-07T02:21:09.447Z	10 km WSW of Templeton, California	earthquake	0.16	0.63	0.09	44	automatic	nc	nc
1/24/2004	14:11:09	35.5606667	-120.8545	5.346	2.23	md	35	42	0.05045	0.09	nc	nc21337197	2017-01-07T02:20:33.027Z	13 km W of Templeton, California	earthquake	0.19	0.57	0.24	17	automatic	nc	nc
1/24/2004	14:03:13	35.495	-120.793	0.897	2.22	md	11	198	0.08108	0.15	nc	nc68008245	2017-01-07T02:20:29.096Z	9 km SW of Templeton, California	earthquake	0.69	2.83	0.05	4	reviewed	nc	nc
1/24/2004	13:12:56	35.529	-120.826	4.948	2.72	md	53	52	0.06577	0.08	nc	nc21337185	2017-01-07T02:20:24.570Z	11 km WSW of Templeton, California	earthquake	0.17	0.62	0.08	51	automatic	nc	nc
1/24/2004	12:56:25	35.5493333	-120.8613333	5.485	2.34	md	41	48	0.04054	0.07	nc	nc21337183	2017-01-07T02:20:16.727Z	12 km NNE of Cayucos, California	earthquake	0.18	0.51	0.14	37	automatic	nc	nc
1/24/2004	11:54:49	35.5475	-120.8078333	5.447	2.08	md	11	203	0.08198	0.17	nc	nc68008242	2017-01-07T02:20:09.223Z	9 km W of Templeton, California	earthquake	0.73	1.04	0.05	7	reviewed	nc	nc
1/24/2004	6:24:53	35.5343333	-120.808	2.858	2.36	md	40	49	0.08018	0.08	nc	nc21337090	2017-01-07T02:19:24.253Z	9 km W of Templeton, California	earthquake	0.18	0.9	0.12	38	automatic	nc	nc
1/24/2004	6:09:58	35.5268333	-120.8298333	4.9	2.38	md	47	53	0.06306	0.07	nc	nc21337086	2017-01-07T02:19:18.920Z	10 km NNE of Cayucos, California	earthquake	0.17	0.61	0.06	39	automatic	nc	nc
1/23/2004	22:19:30	35.614	-120.8976667	6.968	2.24	md	44	84	0.03694	0.08	nc	nc21337016	2017-01-07T02:18:25.023Z	12 km S of Lake Nacimiento, California	earthquake	0.17	0.55	0.13	36	automatic	nc	nc
1/23/2004	18:39:07	35.5618333	-120.8843333	6.212	2.24	md	31	50	0.03333	0.14	nc	nc21337008	2017-01-07T02:17:52.946Z	13 km N of Cayucos, California	earthquake	0.3	0.59	0.21	14	automatic	nc	nc
1/23/2004	17:34:38	35.5378333	-120.8275	-0.093	2.04	md	23	58	0.06486	0.15	nc	nc21336996	2017-01-07T02:17:43.107Z	11 km W of Templeton, California	earthquake	0.34	2.74	0.1	10	automatic	nc	nc
1/23/2004	17:21:39	35.5743333	-120.8263333	2.046	2.39	md	42	46	0.07748	0.09	nc	nc21336990	2017-01-07T02:17:38.330Z	11 km WNW of Templeton, California	earthquake	0.17	0.94	0.09	31	automatic	nc	nc
1/23/2004	12:58:22	35.5671667	-120.8256667	8.881	2.34	md	54	36	0.07387	0.09	nc	nc21336867	2017-01-07T02:16:33.330Z	11 km W of Templeton, California	earthquake	0.15	0.62	0.1	46	reviewed	nc	nc
1/23/2004	5:44:08	35.5931667	-120.884	5.042	2.09	md	26	62	0.06216	0.14	nc	nc21336888	2017-01-07T02:15:11.561Z	14 km S of Lake Nacimiento, California	earthquake	0.27	0.89	0.09	14	automatic	nc	nc
1/23/2004	4:06:38	35.545	-120.8461667	3.695	2.16	md	51	46	0.05045	0.08	nc	nc21336841	2017-01-07T02:14:41.630Z	12 km NNE of Cayucos, California	earthquake	0.14	0.48	0.21	32	reviewed	nc	nc
1/22/2004	22:20:58	35.5871667	-120.8933333	5.683	2.06	md	12	197	0.05405	0.19	nc	nc68008213	2017-01-07T02:13:24.882Z	15 km S of Lake Nacimiento, California	earthquake	0.87	1.03	0.07	9	reviewed	nc	nc
1/22/2004	19:22:39	35.5528333	-120.8065	3.137	2.02	md	11	205	0.08378	0.19	nc	nc68008211	2017-01-07T02:12:56.788Z	9 km W of Templeton, California	earthquake	0.82	1.97	0.27	6	reviewed	nc	nc
1/22/2004	14:12:37	35.5605	-120.7976667	3.995	2.06	md	30	58	0.09279	0.15	nc	nc21336389	2017-01-07T02:12:23.102Z	8 km W of Templeton, California	earthquake	0.3	1.44	0.12	13	automatic	nc	nc
1/22/2004	13:57:40	35.6103333	-120.8713333	6.555	2.63	md	52	105	0.03153	0.06	nc	nc21336387	2017-01-07T02:12:18.240Z	13 km S of Lake Nacimiento, California	earthquake	0.27	1.13	0.09	49	automatic	nc	nc
1/22/2004	10:18:33	35.5648333	-120.7886667	3.005	2.26	md	13	204	0.1009	0.2	nc	nc68008202	2017-01-07T02:11:43.220Z	7 km WNW of Templeton, California	earthquake	0.84	1.95	0.08	9	reviewed	nc	nc
1/22/2004	7:57:31	35.1146667	-119.0093333	12.06	2.29	ml	12	141	0.05595	0.34	ci	ci14023956	2016-02-17T13:19:57.173Z	18km SSW of Lamont, California	earthquake	1.89	1.49	0.378	3	reviewed	ci	ci
1/22/2004	5:47:36	35.5403333	-120.8928333	1.273	2.37	md	21	50	0.01351	0.22	nc	nc21336273	2017-01-07T02:11:05.932Z	10 km N of Cayucos, California	earthquake	0.38	0.73	0.12	13	automatic	nc	nc
1/22/2004	0:57:15	35.5835	-120.8445	5.662	2.1	md	28	49	0.06036	0.08	nc	nc21336199	2017-01-07T02:10:06.328Z	13 km WNW of Templeton, California	earthquake	0.2	0.58	0.18	17	automatic	nc	nc
1/21/2004	23:50:09	35.5905	-120.8626667	7.333	2.1	md	12	203	0.06667	0.18	nc	nc68008194	2017-01-07T02:09:55.289Z	14 km WNW of Templeton, California	earthquake	0.72	1.02	0.24	8	reviewed	nc	nc
1/21/2004	20:41:49	35.4618333	-120.748	4.656	2.09	md	13	198	0.1027	0.1	nc	nc68008191	2017-01-07T02:09:20.366Z	7 km WSW of Atascadero, California	earthquake	0.58	1.08	0.07	8	reviewed	nc	nc
1/21/2004	15:37:52	35.5408333	-120.8478333	3.63	2.22	md	31	55	0.04865	0.08	nc	nc21336063	2017-01-07T02:08:06.096Z	11 km NNE of Cayucos, California	earthquake	0.17	0.46	0.16	25	automatic	nc	nc
1/21/2004	11:41:42	35.5573333	-120.802	3.608	2.36	md	41	43	0.08829	0.11	nc	nc21336026	2017-01-07T02:07:17.580Z	8 km W of Templeton, California	earthquake	0.19	0.95	0.1	40	automatic	nc	nc
1/21/2004	10:33:25	35.6093333	-120.8981667	8.313	2.1	md	12	190	0.07568	0.18	nc	nc68008181	2017-01-07T02:07:12.437Z	13 km S of Lake Nacimiento, California	earthquake	0.71	1.39	0.14	8	reviewed	nc	nc
1/21/2004	6:25:58	35.5568333	-120.81	5.65	3.53	ml	63	44	0.08198	0.07	nc	nc30228696	2017-01-07T02:05:47.910Z	9 km W of Templeton, California	earthquake	0.15	0.61		9	reviewed	nc	nc
1/20/2004	18:10:20	35.5488333	-120.862	6.392	2.03	md	27	38	0.03964	0.16	nc	nc21335760	2017-01-07T02:03:52.076Z	12 km NNE of Cayucos, California	earthquake	0.26	0.65	0.34	14	automatic	nc	nc
1/20/2004	15:29:56	35.5565	-120.804	2.27	2.64	md	46	44	0.08649	0.1	nc	nc21335735	2017-01-07T02:03:40.840Z	8 km W of Templeton, California	earthquake	0.17	0.97	0.08	56	automatic	nc	nc
1/20/2004	15:17:46	35.558	-120.8041667	2.72	2.46	md	41	45	0.08739	0.06	nc	nc21335731	2017-01-07T02:03:34.470Z	8 km W of Templeton, California	earthquake	0.15	0.81	0.09	45	automatic	nc	nc
1/20/2004	14:46:53	35.5398333	-120.842	5.13	2.26	md	37	48	0.05315	0.07	nc	nc21335727	2017-01-07T02:03:28.575Z	11 km NNE of Cayucos, California	earthquake	0.15	0.51	0.13	33	automatic	nc	nc
1/20/2004	14:13:50	35.5553333	-120.8511667	8.593	2.02	md	11	253	0.05045	0.13	nc	nc68008168	2017-01-07T02:03:24.805Z	13 km NNE of Cayucos, California	earthquake	1.42	1.64	0.19	7	reviewed	nc	nc
1/20/2004	12:24:35	35.5408333	-120.8471667	5.946	2.35	md	35	48	0.04955	0.07	nc	nc21335706	2017-01-07T02:03:10.891Z	11 km NNE of Cayucos, California	earthquake	0.18	0.56	0.13	35	automatic	nc	nc
1/20/2004	9:11:20	35.5333333	-120.8371667	6.25	2.93	md	48	57	0.05676	0.06	nc	nc21335669	2017-01-07T02:02:55.980Z	11 km NNE of Cayucos, California	earthquake	0.14	0.54	0.06	73	automatic	nc	nc
1/20/2004	8:42:03	35.5513333	-120.8091667	2.43	2.03	md	28	51	0.08108	0.07	nc	nc21335659	2017-01-07T02:02:47.143Z	9 km W of Templeton, California	earthquake	0.2	0.87	0.14	15	automatic	nc	nc
1/20/2004	8:09:01	35.5911667	-120.883	6.431	2.08	md	27	49	0.05135	0.13	nc	nc21335656	2017-01-07T02:02:43.749Z	15 km S of Lake Nacimiento, California	earthquake	0.26	0.59	0.11	19	automatic	nc	nc
1/20/2004	3:38:27	35.6131667	-120.8708333	7.054	2.05	md	31	48	0.08468	0.11	nc	nc21335596	2017-01-07T02:01:14.194Z	12 km S of Lake Nacimiento, California	earthquake	0.22	0.77	0.16	24	automatic	nc	nc
1/20/2004	1:59:47	35.5676667	-120.8205	2.095	2.14	md	32	52	0.07838	0.15	nc	nc21335567	2017-01-07T02:00:42.893Z	10 km W of Templeton, California	earthquake	0.24	1.48	0.11	24	automatic	nc	nc
1/19/2004	23:47:04	35.4966667	-120.804	5.027	2.02	md	14	191	0.07387	0.16	nc	nc68008156	2017-01-07T02:00:31.736Z	9 km NE of Cayucos, California	earthquake	0.59	0.96	0.19	6	reviewed	nc	nc
1/19/2004	23:01:21	35.5483333	-120.8366667	7.17	2.11	md	60	45	0.05856	0.07	nc	nc30228693	2017-01-07T02:00:15.680Z	11 km W of Templeton, California	earthquake	0.15	0.5	0.23	40	reviewed	nc	nc
1/19/2004	22:45:54	35.5483333	-120.8346667	6.108	3	md	55	38	0.06036	0.09	nc	nc21335512	2017-01-07T02:00:00.130Z	11 km W of Templeton, California	earthquake	0.15	0.58	0.08	77	automatic	nc	nc
1/19/2004	17:28:48	35.5365	-120.8176667	4.198	2.12	md	35	30	0.07297	0.15	nc	nc21335453	2017-01-07T01:59:13.836Z	10 km W of Templeton, California	earthquake	0.21	0.8	0.1	24	automatic	nc	nc
1/19/2004	13:04:39	35.5791667	-120.8758333	2.813	2.41	md	34	77	0.05225	0.07	nc	nc21335409	2017-01-07T01:58:45.770Z	15 km N of Cayucos, California	earthquake	0.19	0.62	0.08	41	automatic	nc	nc
1/19/2004	8:36:07	35.5318333	-120.8363333	6.2	2.04	md	32	57	0.05766	0.14	nc	nc21335377	2017-01-07T01:58:30.792Z	11 km NNE of Cayucos, California	earthquake	0.24	0.7	0.13	19	automatic	nc	nc
1/19/2004	7:47:07	35.5936667	-120.8771667	2.412	2.42	md	37	77	0.06486	0.07	nc	nc21335368	2017-01-07T01:58:22.587Z	14 km S of Lake Nacimiento, California	earthquake	0.17	0.69	0.08	40	automatic	nc	nc
1/19/2004	6:05:24	35.4913333	-120.7825	0.747	2.08	md	9	205	0.08739	0.1	nc	nc68008144	2017-01-07T01:58:07.880Z	9 km SW of Templeton, California	earthquake	0.57	1.93	0.03	6	reviewed	nc	nc
1/19/2004	5:37:28	35.548	-120.8096667	0.868	2.41	md	38	52	0.08018	0.08	nc	nc21335343	2017-01-07T01:58:01.270Z	9 km W of Templeton, California	earthquake	0.15	1.68	0.11	35	automatic	nc	nc
1/19/2004	2:06:24	35.5888333	-120.8728333	3.336	2.16	md	30	31	0.06126	0.13	nc	nc21335305	2017-01-07T01:57:31.014Z	15 km S of Lake Nacimiento, California	earthquake	0.23	0.8	0.18	17	automatic	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
1/19/2004	1:28:00	35.5656667	-120.8378333	4.345	2.12	md	14	191	0.06486	0.18	nc	nc68008141	2017-01-07T01:57:23.588Z	12 km W of Templeton, California	earthquake	0.61	1.26	0.11	8	reviewed	nc	nc
1/18/2004	21:24:09	35.5658333	-120.7968333	0.63	2.2	md	37	42	0.09459	0.06	nc	nc21335229	2017-01-07T01:56:48.180Z	8 km WNW of Templeton, California	earthquake	0.17	1.76	0.12	33	automatic	nc	nc
1/18/2004	16:43:36	35.542	-120.8445	5.545	2.38	md	37	48	0.05135	0.09	nc	nc21335161	2017-01-07T01:56:04.064Z	11 km NNE of Cayucos, California	earthquake	0.19	0.89	0.06	40	automatic	nc	nc
1/18/2004	15:57:58	35.5885	-120.884	4.246	2.03	md	25	50	0.05766	0.07	nc	nc21335145	2017-01-07T01:55:35.604Z	15 km S of Lake Nacimiento, California	earthquake	0.19	0.51	0.12	10	automatic	nc	nc
1/18/2004	15:42:45	36.0401667	-120.6028333	2.645	2.09	md	15	109	0.02883	0.07	nc	nc21335139	2017-01-07T01:55:18.253Z	21 km NW of Parkfield, California	earthquake	0.45	1.1	1.14	2	reviewed	nc	nc
1/18/2004	12:02:45	35.519	-120.827	5.628	2.05	md	23	96	0.06667	0.13	nc	nc21335102	2017-01-07T01:53:58.026Z	10 km NE of Cayucos, California	earthquake	0.29	0.8	0.14	13	automatic	nc	nc
1/18/2004	9:07:11	35.5656667	-120.7986667	2.25	2.5	md	47	42	0.09369	0.07	nc	nc21335068	2017-01-07T01:53:04.590Z	8 km WNW of Templeton, California	earthquake	0.15	0.99	0.09	49	automatic	nc	nc
1/17/2004	13:09:52	35.5503333	-120.8005	0.038	2.12	md	24	62	0.08829	0.17	nc	nc21334820	2017-01-07T01:48:35.795Z	8 km W of Templeton, California	earthquake	0.5	6.76	0.1	12	automatic	nc	nc
1/17/2004	10:05:25	35.5951667	-120.897	6.333	3.22	md	15	184	0.06216	0.09	nc	nc68008113	2017-01-07T01:48:28.105Z	14 km S of Lake Nacimiento, California	earthquake	0.44	0.62	0.09	14	reviewed	nc	nc
1/17/2004	9:41:26	35.5928333	-120.897	4.893	3.4	md	16	183	0.05946	0.17	nc	nc68008112	2017-01-07T01:48:13.373Z	15 km S of Lake Nacimiento, California	earthquake	0.72	0.88	0.1	14	reviewed	nc	nc
1/17/2004	8:32:20	35.489	-120.7723333	0.275	2.2	md	25	59	0.09459	0.12	nc	nc21334765	2017-01-07T01:48:09.741Z	9 km SW of Templeton, California	earthquake	0.21	0.94	0.12	17	automatic	nc	nc
1/17/2004	8:04:57	35.5676667	-120.796	3.975	2.29	md	13	204	0.0964	0.2	nc	nc68008110	2017-01-07T01:48:06.130Z	8 km WNW of Templeton, California	earthquake	0.86	1.44	0.14	7	reviewed	nc	nc
1/17/2004	0:47:39	35.572	-120.8235	3.29	2.11	md	21	64	0.07748	0.15	nc	nc21334691	2017-01-07T01:47:21.730Z	10 km WNW of Templeton, California	earthquake	0.3	1.02	0.14	16	automatic	nc	nc
1/16/2004	19:12:55	35.5353333	-120.855	6.42	2.12	md	32	54	0.04234	0.08	nc	nc21334601	2017-01-07T01:45:54.713Z	10 km NNE of Cayucos, California	earthquake	0.17	0.44	0.12	21	automatic	nc	nc
1/16/2004	14:21:10	35.5321667	-120.8143333	4.84	2.1	md	49	57	0.07568	0.07	nc	nc21334544	2017-01-07T01:44:41.150Z	10 km W of Templeton, California	earthquake	0.18	0.74	0.13	28	reviewed	nc	nc
1/16/2004	13:11:03	35.5303333	-120.8188333	5.67	2.14	md	55	51	0.07207	0.07	nc	nc21334529	2017-01-07T01:44:02.610Z	10 km WSW of Templeton, California	earthquake	0.17	0.56	0.13	35	reviewed	nc	nc
1/15/2004	23:16:13	35.5528333	-120.8068333	3.33	2.03	md	42	54	0.08378	0.08	nc	nc21334367	2017-01-07T01:40:38.944Z	9 km W of Templeton, California	earthquake	0.15	0.61	0.14	27	reviewed	nc	nc
1/15/2004	6:15:21	35.5371667	-120.865	3.1	2.06	md	40	56	0.03423	0.07	nc	nc21334140	2017-01-07T01:37:34.640Z	10 km NNE of Cayucos, California	earthquake	0.16	0.46	0.22	19	reviewed	nc	nc
1/15/2004	5:43:13	35.3095	-120.799	4.895	2.31	md	21	63	0.03784	0.14	nc	nc21334134	2017-01-07T01:37:25.964Z	3 km E of Los Osos, California	earthquake	0.33	0.68	0.11	17	automatic	nc	nc
1/15/2004	5:08:06	35.5913333	-120.8746667	6.191	2.39	md	56	46	0.05045	0.07	nc	nc30226851	2017-01-07T01:37:14.010Z	15 km S of Lake Nacimiento, California	earthquake	0.13	0.35	0.08	57	reviewed	nc	nc
1/15/2004	4:07:49	35.5508333	-120.8021667	4.06	2.3	md	40	45	0.08739	0.07	nc	nc30226849	2017-01-07T01:36:48.930Z	8 km W of Templeton, California	earthquake	0.16	0.58	0.15	40	reviewed	nc	nc
1/15/2004	3:38:57	35.5311667	-120.8401667	6.34	2.16	md	48	51	0.05405	0.06	nc	nc21334101	2017-01-07T01:36:06.990Z	Central California	earthquake	0.15	0.5	0.17	28	reviewed	nc	nc
1/15/2004	3:26:51	35.5916667	-120.8918333	4.692	2.04	md	31	48	0.05405	0.06	nc	nc21334099	2017-01-07T01:36:01.794Z	15 km S of Lake Nacimiento, California	earthquake	0.19	0.35	0.2	11	reviewed	nc	nc
1/15/2004	1:24:18	35.5256667	-120.8303333	4.937	2.08	md	13	193	0.06306	0.17	nc	nc68008061	2017-01-07T01:35:16.707Z	11 km NNE of Cayucos, CA	earthquake	0.67	1.04	0.18	8	reviewed	nc	nc
1/14/2004	17:10:17	35.5603333	-120.8203333	6.52	2	md	40	51	0.07568	0.07	nc	nc21333967	2017-01-07T01:32:49.370Z	10 km W of Templeton, California	earthquake	0.17	0.54	0.21	24	reviewed	nc	nc
1/14/2004	16:08:06	35.5891667	-120.8028333	11.239	2.43	md	7	279	0.145	0.04	nc	nc68008056	2017-01-07T01:32:36.175Z	9 km WNW of Templeton, California	earthquake	2.17	1.74	0.08	4	reviewed	nc	nc
1/14/2004	15:38:52	36.0273333	-119.8813333	3.614	2.04	md	10	308	0.1757	0.08	nc	nc21333945	2017-01-07T01:32:26.213Z	7 km ENE of Kettleman City, California	earthquake	0.66	1.07	0.04	4	reviewed	nc	nc
1/14/2004	11:45:25	35.5665	-120.8211667	3.401	2.39	md	56	42	0.07748	0.08	nc	nc21333891	2017-01-07T01:31:34.700Z	10 km W of Templeton, California	earthquake	0.12	0.62	0.11	60	reviewed	nc	nc
1/14/2004	11:19:24	35.5771667	-120.8821667	3.901	2.54	md	55	44	0.04775	0.07	nc	nc21333885	2017-01-07T01:31:24.700Z	14 km N of Cayucos, California	earthquake	0.13	0.31	0.1	71	reviewed	nc	nc
1/14/2004	11:00:09	35.5421667	-120.8558333	6.213	2.31	md	43	76	0.0991	0.07	nc	nc21333883	2017-01-07T01:31:17.410Z	Central California	earthquake	0.15	0.64	0.09	39	reviewed	nc	nc
1/14/2004	3:02:55	35.5796667	-120.8716667	4.923	2.19	md	21	75	0.05405	0.08	nc	nc21333782	2017-01-07T01:29:45.769Z	15 km N of Cayucos, California	earthquake	0.2	0.57	0.14	11	automatic	nc	nc
1/14/2004	2:54:45	35.5303333	-120.8065	3.91	2.03	md	40	57	0.08198	0.07	nc	nc21333779	2017-01-07T01:29:40.720Z	9 km WSW of Templeton, California	earthquake	0.16	0.61	0.21	13	reviewed	nc	nc
1/14/2004	2:18:05	35.5746667	-120.796	3.5	2.04	md	47	40	0.08829	0.07	nc	nc21333773	2017-01-07T01:29:27.460Z	8 km WNW of Templeton, California	earthquake	0.14	0.58	0.21	28	reviewed	nc	nc
1/14/2004	1:20:20	35.5763333	-120.7913333	0.408	2.05	md	46	46	0.1036	0.08	nc	nc21333768	2017-01-07T01:29:17.730Z	8 km WNW of Templeton, California	earthquake	0.14	1.27	0.21	29	reviewed	nc	nc
1/14/2004	1:09:15	35.5753333	-120.7971667	1.078	3.68	ml	52	46	0.0982	0.08	nc	nc21333767	2022-06-18T08:00:06.195Z	8 km WNW of Templeton, California	earthquake	0.15	1.41		9	automatic	nc	nc
1/14/2004	0:44:49	35.3041667	-120.7983333	5.185	2.78	md	55	56	0.03694	0.09	nc	nc21333759	2017-01-07T01:28:57.320Z	3 km ESE of Los Osos, California	earthquake	0.13	0.33	0.08	64	reviewed	nc	nc
1/14/2004	0:31:04	35.5281667	-120.8106667	7.52	2.05	md	35	31	0.07838	0.06	nc	nc21333757	2017-01-07T01:28:50.780Z	9 km WSW of Templeton, California	earthquake	0.18	0.89	0.23	23	reviewed	nc	nc
1/13/2004	23:30:59	35.5925	-120.8778333	6.172	2.6	md	48	47	0.04955	0.06	nc	nc21333738	2017-01-07T01:28:24.930Z	15 km S of Lake Nacimiento, California	earthquake	0.14	0.36	0.09	58	reviewed	nc	nc
1/13/2004	23:13:01	35.0773333	-119.0403333	14.201	2.14	ml	34	73	0.01997	0.24	ci	ci9975045	2016-04-01T21:17:00.050Z	18km NW of Grapevine, CA	earthquake	0.39	0.64	0.191	22	reviewed	ci	ci
1/13/2004	10:57:01	35.5335	-120.8648333	0.18	2.03	md	38	57	0.03423	0.11	nc	nc21333562	2017-01-07T01:25:36.840Z	10 km NNE of Cayucos, California	earthquake	0.15	0.55	0.19	24	reviewed	nc	nc
1/13/2004	4:04:49	35.5671667	-120.8425	7.051	2.43	md	51	46	0.06216	0.07	nc	nc21333472	2017-01-07T01:22:50.130Z	12 km W of Templeton, California	earthquake	0.13	0.43	0.1	62	reviewed	nc	nc
1/13/2004	2:45:16	35.5845	-120.8526667	4.303	2.03	md	36	95	0.05766	0.07	nc	nc21333456	2017-01-07T01:22:01.330Z	13 km WNW of Templeton, California	earthquake	0.27	1.28	0.13	27	reviewed	nc	nc
1/12/2004	20:45:06	35.5826667	-120.893	4.002	2.18	md	30	48	0.05045	0.11	nc	nc21333397	2017-01-07T01:20:26.974Z	15 km N of Cayucos, California	earthquake	0.2	0.46	0.16	22	automatic	nc	nc
1/12/2004	18:30:19	35.5438333	-120.8643333	6.472	2.02	md	38	54	0.03604	0.06	nc	nc21333371	2017-01-07T01:20:01.150Z	11 km NNE of Cayucos, California	earthquake	0.15	0.45	0.15	29	reviewed	nc	nc
1/12/2004	13:19:41	35.5596667	-120.789	4.004	2.07	md	21	63	0.1	0.17	nc	nc21333297	2017-01-07T01:18:59.260Z	7 km W of Templeton, California	earthquake	0.46	1.54	0.09	9	automatic	nc	nc
1/12/2004	9:36:53	35.5591667	-120.81	3.68	2.03	md	46	50	0.08288	0.09	nc	nc21333265	2017-01-07T01:18:17.690Z	9 km W of Templeton, California	earthquake	0.13	0.46	0.15	27	reviewed	nc	nc
1/12/2004	7:55:52	35.5686667	-120.817	1.558	2.21	md	25	50	0.08108	0.16	nc	nc30500634	2017-01-07T01:17:48.030Z	10 km WNW of Templeton, California	earthquake	0.29	1.88	0.14	14	automatic	nc	nc
1/12/2004	7:46:38	35.5588333	-120.8056667	1.4	2.22	md	49	43	0.08649	0.06	nc	nc21333237	2017-01-07T01:17:37.260Z	9 km W of Templeton, California	earthquake	0.12	0.96	0.1	44	reviewed	nc	nc
1/12/2004	6:18:31	35.6311667	-120.7531667	5.597	2.25	md	57	34	0.09279	0.07	nc	nc21333211	2017-01-07T01:16:58.380Z	5 km W of Paso Robles, California	earthquake	0.12	0.66	0.1	59	reviewed	nc	nc
1/12/2004	4:37:33	35.5461667	-120.8611667	5.881	2.59	md	55	45	0.03874	0.05	nc	nc21333191	2017-01-07T01:16:41.490Z	11 km NNE of Cayucos, California	earthquake	0.13	0.38	0.08	69	reviewed	nc	nc
1/12/2004	2:00:00	35.5728333	-120.828	-0.322	2.16	md	18	52	0.07477	0.07	nc	nc21333145	2017-01-07T01:15:45.967Z	11 km WNW of Templeton, California	earthquake	0.24	1.77	0.06	11	automatic	nc	nc
1/12/2004	1:17:09	35.5456667	-120.863	6.201	2.24	md	49	45	0.03784	0.06	nc	nc21333129	2017-01-07T01:15:30.610Z	11 km NNE of Cayucos, California	earthquake	0.14	0.35	0.17	35	reviewed	nc	nc
1/11/2004	20:39:20	35.4591667	-120.762	0.825	2.14	md	46	56	0.08018	0.13	nc	nc21333012	2017-01-07T01:13:52.580Z	8 km WSW of Atascadero, California	earthquake	0.18	0.89	0.18	20	reviewed	nc	nc
1/11/2004	16:37:01	35.5421667	-120.8498333	6.02	2.4	md	56	47	0.04685	0.06	nc	nc21332877	2017-01-07T01:13:03.760Z	11 km NNE of Cayucos, California	earthquake	0.12	0.35	0.13	56	reviewed	nc	nc
1/11/2004	9:51:35	35.6138333	-120.8926667	6.703	2.29	md	54	52	0.03514	0.07	nc	nc21332707	2017-01-07T01:11:57.600Z	Central California	earthquake	0.13	0.47	0.12	45	reviewed	nc	nc
1/11/2004	9:15:09	35.5496667	-120.8353333	2.565	2.25	md	13	185	0.06036	0.19	nc	nc68007981	2017-01-07T01:11:52.048Z	11 km W of Templeton, California	earthquake	0.73	1.68	0.21	7	reviewed	nc	nc
1/11/2004	7:57:55	35.5761667	-120.8741667	4.111	2.36	md	55	43	0.04955	0.06	nc	nc21332643	2017-01-07T01:11:25.910Z	14 km N of Cayucos, California	earthquake	0.12	0.26	0.11	52	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
1/11/2004	3:16:44	34.9476667	-119.138	14.61	2.21	ml	20	79	0.0604	0.23	ci	ci9974269	2016-04-02T13:24:45.791Z	11km N of Pine Mountain Club, CA	earthquake	0.58	1.02	0.167	2	reviewed	ci	ci
1/11/2004	1:15:30	35.5666667	-120.8246667	2.15	2.35	md	52	41	0.07477	0.06	nc	nc21332461	2017-01-07T01:10:32.250Z	10 km W of Templeton, California	earthquake	0.16	0.95	0.12	50	reviewed	nc	nc
1/10/2004	23:07:36	35.568	-120.8255	0.45	2.5	md	49	41	0.07477	0.06	nc	nc30500632	2017-01-07T01:10:01.330Z	11 km W of Templeton, California	earthquake	0.14	0.84	0.12	48	automatic	nc	nc
1/10/2004	22:02:01	35.4203333	-120.7241667	1.683	2.57	md	42	40	0.08739	0.12	nc	nc21332440	2017-01-07T01:09:31.087Z	9 km SSW of Atascadero, California	earthquake	0.17	1.12	0.11	43	automatic	nc	nc
1/10/2004	21:58:38	35.6088333	-120.8876667	6.548	2.7	md	48	81	0.03694	0.07	nc	nc21332439	2017-01-07T01:09:22.690Z	13 km S of Lake Nacimiento, California	earthquake	0.15	0.52	0.08	62	automatic	nc	nc
1/10/2004	15:09:36	35.5681667	-120.8036667	3.221	2.78	md	51	41	0.08919	0.09	nc	nc21332390	2017-01-07T01:07:38.180Z	9 km WNW of Templeton, California	earthquake	0.15	0.67	0.08	62	automatic	nc	nc
1/10/2004	15:04:33	35.5853333	-120.88	5.972	2.17	md	27	46	0.05586	0.1	nc	nc21332389	2017-01-07T01:07:32.557Z	15 km N of Cayucos, California	earthquake	0.19	0.28	0.12	27	automatic	nc	nc
1/10/2004	12:24:51	35.4835	-120.815	6.407	2.17	md	11	190	0.05946	0.11	nc	nc68007957	2017-01-07T01:07:00.246Z	8 km ENE of Cayucos, California	earthquake	1.12	0.78	0.1	9	reviewed	nc	nc
1/10/2004	12:03:09	35.5978333	-120.8835	3.041	2.05	md	41	48	0.04595	0.07	nc	nc21332368	2017-01-07T01:06:44.960Z	14 km S of Lake Nacimiento, California	earthquake	0.15	0.34	0.12	25	reviewed	nc	nc
1/10/2004	11:00:16	35.531	-120.836	5.058	2.1	md	22	64	0.05766	0.15	nc	nc21332361	2017-01-07T01:06:23.233Z	11 km NNE of Cayucos, California	earthquake	0.25	0.74	0.17	14	automatic	nc	nc
1/10/2004	7:11:51	35.5411667	-120.8063333	2.347	2.12	md	8	208	0.08198	0.21	nc	nc68007947	2017-01-07T01:05:41.610Z	9 km W of Templeton, California	earthquake	1.07	3.26	0.25	6	reviewed	nc	nc
1/10/2004	5:58:53	35.5903333	-120.8756667	3.092	2.26	md	54	46	0.05135	0.07	nc	nc21332323	2017-01-07T01:05:30.190Z	15 km S of Lake Nacimiento, California	earthquake	0.13	0.3	0.13	46	reviewed	nc	nc
1/10/2004	4:12:15	35.5598333	-120.862	7.482	2.17	md	26	44	0.04505	0.09	nc	nc30500630	2017-01-07T01:04:16.530Z	13 km NNE of Cayucos, California	earthquake	0.26	0.69	0.21	21	automatic	nc	nc
1/9/2004	20:20:41	35.5741667	-120.8636667	3.842	2.3	md	43	33	0.05315	0.12	nc	nc21332247	2017-01-07T01:01:52.474Z	Central California	earthquake	0.18	0.51	0.14	44	reviewed	nc	nc
1/9/2004	18:25:10	35.5351667	-120.8428333	2.953	2.18	md	13	194	0.05225	0.2	nc	nc68007929	2017-01-07T01:01:38.686Z	11 km NNE of Cayucos, California	earthquake	0.84	1.55	0.21	7	reviewed	nc	nc
1/9/2004	12:48:57	35.5628333	-120.8345	3.27	2.14	md	33	41	0.06577	0.12	nc	nc21332204	2017-01-07T01:01:01.389Z	11 km W of Templeton, California	earthquake	0.18	0.62	0.26	32	reviewed	nc	nc
1/9/2004	9:59:42	35.5541667	-120.8165	3.093	2.32	md	13	202	0.07658	0.12	nc	nc68007920	2017-01-07T00:59:59.375Z	10 km W of Templeton, California	earthquake	1.28	1.54	0.11	8	reviewed	nc	nc
1/9/2004	9:15:38	35.542	-120.851	6.28	2.1	md	43	47	0.04595	0.07	nc	nc21332179	2017-01-07T00:59:53.000Z	11 km NNE of Cayucos, California	earthquake	0.14	0.37	0.17	22	reviewed	nc	nc
1/9/2004	7:48:19	35.2865	-120.2765	4.978	2.05	ml	11	120	0.2049	0.28	ci	ci9973797	2016-04-02T16:35:59.064Z	26km WSW of Simmler, CA	earthquake	0.82	26.36	0.413	9	reviewed	ci	ci
1/9/2004	7:36:09	35.2901667	-120.2875	5.008	2.57	ml	17	121	0.2002	0.38	ci	ci9973789	2016-04-02T16:36:08.763Z	27km WSW of Simmler, CA	earthquake	0.92	34.38	0.132	11	reviewed	ci	ci
1/9/2004	7:34:50	35.2871667	-120.2808333	5.008	3.01	ml	17	121	0.2025	0.39	ci	ci9973785	2016-04-01T21:18:14.003Z	26km WSW of Simmler, CA	earthquake	0.89	35.21	0.192	44	reviewed	ci	ci
1/9/2004	4:13:07	35.6098333	-120.8645	7.699	2.09	md	39	48	0.03153	0.09	nc	nc21332149	2017-01-07T00:59:00.780Z	13 km S of Lake Nacimiento, California	earthquake	0.19	0.42	0.19	33	reviewed	nc	nc
1/8/2004	22:02:01	35.609	-120.8695	7.449	2.32	md	48	48	0.03243	0.06	nc	nc21332030	2017-01-07T00:57:42.290Z	13 km S of Lake Nacimiento, California	earthquake	0.13	0.45	0.11	49	reviewed	nc	nc
1/8/2004	16:48:33	35.576	-120.7973333	1.09	2.12	md	46	45	0.08649	0.09	nc	nc21331921	2017-01-07T00:55:49.930Z	8 km WNW of Templeton, California	earthquake	0.16	1.14	0.24	26	reviewed	nc	nc
1/8/2004	16:06:09	35.551	-120.8021667	2.81	2.01	md	40	32	0.08739	0.16	nc	nc21331895	2017-01-07T00:55:41.346Z	8 km W of Templeton, California	earthquake	0.21	0.94	0.19	16	reviewed	nc	nc
1/8/2004	15:41:08	35.5411667	-120.8075	4.09	2.45	md	53	48	0.08108	0.07	nc	nc21331883	2017-01-07T00:55:26.760Z	9 km W of Templeton, California	earthquake	0.13	0.53	0.12	57	reviewed	nc	nc
1/8/2004	14:11:31	35.5351667	-120.8353333	3.21	2.09	md	40	50	0.05856	0.06	nc	nc21331827	2017-01-07T00:54:38.788Z	11 km NNE of Cayucos, California	earthquake	0.16	0.53	0.22	19	reviewed	nc	nc
1/8/2004	12:06:27	35.529	-120.813	3.61	2.08	md	26	53	0.07658	0.16	nc	nc21331794	2017-01-07T00:54:02.220Z	9 km WSW of Templeton, California	earthquake	0.29	1.05	0.2	9	reviewed	nc	nc
1/8/2004	10:00:17	35.4961667	-120.8643333	5.98	2.13	md	42	50	0.03964	0.08	nc	nc21331718	2017-01-07T00:53:00.500Z	6 km NNE of Cayucos, California	earthquake	0.17	0.41	0.28	28	reviewed	nc	nc
1/8/2004	8:55:47	35.6143333	-120.8911667	6.273	2.09	md	47	52	0.03333	0.07	nc	nc21331695	2017-01-07T00:52:30.730Z	12 km S of Lake Nacimiento, California	earthquake	0.12	0.25	0.25	31	reviewed	nc	nc
1/8/2004	8:38:02	35.5336667	-120.7913333	2.638	2.26	md	19	47	0.09459	0.17	nc	nc21331683	2017-01-07T00:52:21.787Z	7 km WSW of Templeton, California	earthquake	0.3	1.51	0.2	12	automatic	nc	nc
1/8/2004	5:43:28	35.5846667	-120.793	2.284	2.07	md	37	56	0.08198	0.17	nc	nc30226775	2017-01-07T00:50:41.597Z	8 km WNW of Templeton, California	earthquake	0.29	1.48	0.18	12	reviewed	nc	nc
1/8/2004	5:42:02	35.5778333	-120.8676667	5.601	2.13	md	36	51	0.05405	0.08	nc	nc21331593	2017-01-07T00:50:37.999Z	14 km WNW of Templeton, California	earthquake	0.18	0.53	0.22	11	reviewed	nc	nc
1/8/2004	5:32:17	35.5303333	-120.85	6.79	2.17	md	42	38	0.04595	0.07	nc	nc30226772	2017-01-07T00:50:33.200Z	10 km NNE of Cayucos, California	earthquake	0.14	0.51	0.21	39	reviewed	nc	nc
1/8/2004	4:49:36	35.5846667	-120.796	4.041	2.5	md	47	34	0.08018	0.08	nc	nc21331574	2017-01-07T00:50:02.850Z	9 km WNW of Templeton, California	earthquake	0.16	0.56	0.09	48	reviewed	nc	nc
1/7/2004	22:37:26	35.529	-120.7991667	5.708	2.34	md	22	102	0.08829	0.14	nc	nc21331412	2017-01-07T00:47:36.393Z	8 km WSW of Templeton, California	earthquake	0.34	1.06	0.21	16	automatic	nc	nc
1/7/2004	19:32:27	35.5598333	-120.892	3.828	2.31	md	35	67	0.02883	0.11	nc	nc21331395	2017-01-07T00:46:57.924Z	12 km N of Cayucos, California	earthquake	0.2	0.42	0.21	32	automatic	nc	nc
1/7/2004	19:10:29	35.5328333	-120.8483333	1.56	2.42	md	29	36	0.04775	0.2	nc	nc21331392	2017-01-07T00:46:50.528Z	10 km NNE of Cayucos, California	earthquake	0.3	1.1	0.2	18	automatic	nc	nc
1/7/2004	18:36:15	35.5298333	-120.815	2.59	2.8	md	42	51	0.07477	0.07	nc	nc21331384	2017-01-07T00:46:38.870Z	10 km WSW of Templeton, California	earthquake	0.15	0.78	0.11	55	automatic	nc	nc
1/7/2004	17:27:41	35.6156667	-120.871	7.272	2.24	md	22	47	0.08649	0.14	nc	nc21331379	2017-01-07T00:46:23.084Z	12 km S of Lake Nacimiento, California	earthquake	0.28	1.02	0.2	16	automatic	nc	nc
1/7/2004	13:21:03	35.6186667	-120.8971667	7.663	2.06	md	11	204	0.08559	0.12	nc	nc68007839	2017-01-07T00:45:06.948Z	12 km S of Lake Nacimiento, California	earthquake	0.63	1.71	0.17	10	reviewed	nc	nc
1/7/2004	12:52:45	35.528	-120.8265	5.268	2.43	md	22	77	0.06577	0.15	nc	nc21331342	2017-01-07T00:44:59.913Z	11 km NNE of Cayucos, California	earthquake	0.27	0.76	0.15	15	automatic	nc	nc
1/7/2004	8:43:28	35.5976667	-120.885	2.761	3.03	md	54	80	0.04595	0.09	nc	nc21331266	2017-01-07T00:44:13.540Z	14 km S of Lake Nacimiento, California	earthquake	0.15	0.66	0.07	76	automatic	nc	nc
1/7/2004	7:01:04	35.5581667	-120.8756667	6.253	2.48	md	12	200	0.03514	0.18	nc	nc68007831	2017-01-07T00:44:06.222Z	12 km N of Cayucos, California	earthquake	1.33	0.75	0.19	9	reviewed	nc	nc
1/7/2004	5:15:16	35.5746667	-120.8298333	2.953	2.38	md	12	205	0.07477	0.18	nc	nc68007828	2017-01-07T00:43:45.606Z	11 km WNW of Templeton, California	earthquake	0.79	1.36	0.21	11	reviewed	nc	nc
1/6/2004	20:36:33	35.5695	-120.8306667	6.47	2.19	md	21	51	0.07207	0.16	nc	nc21331280	2017-01-07T00:43:00.592Z	11 km W of Templeton, California	earthquake	0.31	0.76	0.12	14	automatic	nc	nc
1/6/2004	20:11:12	35.6036667	-120.8796667	7.422	2.37	md	37	79	0.07297	0.11	nc	nc21331276	2017-01-07T00:42:53.610Z	13 km S of Lake Nacimiento, California	earthquake	0.19	0.69	0.14	35	automatic	nc	nc
1/6/2004	17:21:07	35.5848333	-120.873	5.603	2.16	md	7	200	0.05766	0.05	nc	nc68007818	2017-01-07T00:42:31.126Z	15 km WNW of Templeton, California	earthquake	0.57	0.75	0.13	8	reviewed	nc	nc
1/6/2004	16:23:57	35.5481667	-120.8645	3.373	2.42	md	28	127	0.09279	0.04	nc	nc21331231	2017-01-07T00:42:22.800Z	11 km NNE of Cayucos, California	earthquake	0.28	1.86	0.09	29	automatic	nc	nc
1/6/2004	14:55:57	35.5768333	-120.8875	4.143	2.16	md	13	196	0.04595	0.09	nc	nc68007815	2017-01-07T00:42:10.737Z	14 km N of Cayucos, California	earthquake	0.48	0.56	0.18	10	reviewed	nc	nc
1/6/2004	14:45:27	35.5353333	-120.9041667	3.953	2.28	md	14	157	0.002703	0.22	nc	nc68007814	2017-01-07T00:42:07.117Z	10 km N of Cayucos, California	earthquake	0.7	0.55	0.12	9	reviewed	nc	nc
1/6/2004	14:24:16	35.5503333	-120.8218333	1.905	2.39	md	29	33	0.07117	0.19	nc	nc30500620	2017-01-07T00:41:59.965Z	10 km W of Templeton, California	earthquake	0.28	1.76	0.14	17	automatic	nc	nc
1/6/2004	10:13:39	35.5795	-120.862	6.751	2.16	md	28	72	0.05856	0.09	nc	nc21331175	2017-01-07T00:41:08.951Z	14 km WNW of Templeton, California	earthquake	0.21	0.49	0.15	18	automatic	nc	nc
1/6/2004	7:57:45	35.549	-120.8495	3.45	2.08	md	16	103	0.04955	0.2	nc	nc21330772	2017-01-07T00:40:15.015Z	12 km NNE of Cayucos, California	earthquake	0.51	1.15	0.25	8	reviewed	nc	nc
1/6/2004	5:24:59	35.5508333	-120.8795	3.441	2.55	md	56	41	0.02793	0.06	nc	nc21330716	2017-01-07T00:38:59.050Z	12 km N of Cayucos, California	earthquake	0.12	0.32	0.11	65	reviewed	nc	nc
1/6/2004	5:23:24	35.5353333	-120.8506667	6.52	2.14	md	32	49	0.04595	0.06	nc	nc21330711	2017-01-07T00:38:49.872Z	10 km NNE of Cayucos, California	earthquake	0.2	0.57	0.13	13	reviewed	nc	nc
1/6/2004	4:00:59	35.5295	-120.8401667	5.9	2.47	md	40	51	0.05495	0.08	nc	nc21330583	2017-01-07T00:38:25.290Z	10 km NNE of Cayucos, California	earthquake	0.16	0.48	0.16	44	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
1/6/2004	3:34:48	35.577	-120.789	-0.396	2.16	md	36	57	0.09009	0.09	nc	nc21330540	2017-01-07T00:38:10.267Z	8 km WNW of Templeton, California	earthquake	0.19	0.8	0.28	17	reviewed	nc	nc
1/6/2004	3:32:34	35.5718333	-120.8083333	4.341	2.12	md	43	58	0.08378	0.07	nc	nc21330537	2017-01-07T00:38:05.920Z	9 km WNW of Templeton, California	earthquake	0.15	0.48	0.31	31	reviewed	nc	nc
1/6/2004	0:09:07	35.5755	-120.8316667	2.813	2.21	md	11	205	0.07387	0.19	nc	nc68007788	2017-01-07T00:36:38.036Z	11 km WNW of Templeton, California	earthquake	0.78	1.32	0.17	8	reviewed	nc	nc
1/5/2004	23:57:34	35.573	-120.8303333	1.618	2.46	md	36	53	0.07387	0.08	nc	nc21330806	2017-01-07T00:36:23.758Z	11 km WNW of Templeton, California	earthquake	0.16	0.83	0.16	39	automatic	nc	nc
1/5/2004	23:56:25	35.5676667	-120.8363333	2.563	2.59	md	12	202	0.06667	0.08	nc	nc68007785	2017-01-07T00:36:19.808Z	11 km W of Templeton, California	earthquake	0.49	0.95	0.06	13	reviewed	nc	nc
1/5/2004	21:59:30	35.5931667	-120.8836667	6.368	2.25	md	33	62	0.04955	0.15	nc	nc21331125	2017-01-07T00:35:39.096Z	14 km S of Lake Nacimiento, California	earthquake	0.25	0.78	0.18	28	automatic	nc	nc
1/5/2004	19:47:06	35.5496667	-120.8713333	6.503	2.23	md	28	55	0.03333	0.07	nc	nc21331103	2017-01-07T00:34:53.618Z	12 km N of Cayucos, California	earthquake	0.19	0.43	0.23	18	automatic	nc	nc
1/5/2004	16:58:37	35.534	-120.8208333	2.928	2.28	md	25	50	0.07027	0.06	nc	nc21331080	2017-01-07T00:34:29.016Z	10 km W of Templeton, California	earthquake	0.15	0.67	0.16	18	automatic	nc	nc
1/5/2004	15:48:35	35.5386667	-120.8131667	2.488	2.44	md	31	48	0.07658	0.06	nc	nc30500604	2017-01-07T00:34:18.548Z	9 km W of Templeton, California	earthquake	0.16	0.76	0.13	33	automatic	nc	nc
1/5/2004	13:19:35	35.6226667	-120.8973333	7.676	2.25	md	30	83	0.08919	0.09	nc	nc21331043	2017-01-07T00:33:33.243Z	11 km S of Lake Nacimiento, California	earthquake	0.21	0.7	0.07	28	automatic	nc	nc
1/5/2004	1:47:54	35.525	-120.8131667	6.41	2.12	md	31	71	0.07658	0.1	nc	nc21330599	2017-01-07T00:29:09.784Z	10 km WSW of Templeton, California	earthquake	0.21	0.69	0.16	15	reviewed	nc	nc
1/5/2004	1:45:45	35.5273333	-120.8076667	2.37	2.25	md	24	36	0.08108	0.18	nc	nc21330789	2017-01-07T00:29:06.000Z	9 km WSW of Templeton, California	earthquake	0.29	1.44	0.23	21	automatic	nc	nc
1/4/2004	20:04:05	35.5363333	-120.8436667	6.228	2.24	md	32	36	0.05135	0.12	nc	nc21330990	2017-01-07T00:28:26.760Z	11 km NNE of Cayucos, California	earthquake	0.21	0.65	0.18	21	automatic	nc	nc
1/4/2004	19:51:04	35.567	-120.8316667	3.183	2.1	md	13	203	0.06937	0.24	nc	nc68007736	2017-01-07T00:28:19.568Z	11 km W of Templeton, California	earthquake	1.12	1.52	0.04	6	reviewed	nc	nc
1/4/2004	18:48:09	35.534	-120.8306667	3.417	2.03	md	11	212	0.06216	0.21	nc	nc68007734	2017-01-07T00:28:05.761Z	11 km W of Templeton, California	earthquake	0.9	1.22	0.13	7	reviewed	nc	nc
1/4/2004	18:18:48	35.5375	-120.8368333	-0.322	2.36	md	40	32	0.05766	0.11	nc	nc21330974	2017-01-07T00:28:01.080Z	11 km NNE of Cayucos, California	earthquake	0.18	1.59	0.19	42	automatic	nc	nc
1/4/2004	18:06:06	35.5813333	-120.8996667	6.332	2.26	md	37	68	0.04775	0.12	nc	nc21330972	2017-01-07T00:27:55.504Z	15 km N of Cayucos, California	earthquake	0.22	0.61	0.09	32	automatic	nc	nc
1/4/2004	17:30:32	35.54	-120.8135	0.93	2.2	md	31	55	0.07658	0.07	nc	nc30500617	2017-01-07T00:27:41.782Z	9 km W of Templeton, California	earthquake	0.15	1.23	0.13	20	automatic	nc	nc
1/4/2004	17:29:09	35.5238333	-120.8361667	8.44	2.43	md	34	54	0.05856	0.09	nc	nc30500616	2017-01-07T00:27:37.968Z	10 km NNE of Cayucos, California	earthquake	0.2	0.64	0.17	28	automatic	nc	nc
1/4/2004	17:27:53	35.526	-120.8348333	5.567	2.76	md	41	100	0.05946	0.06	nc	nc30500615	2017-01-07T00:27:34.023Z	10 km NNE of Cayucos, California	earthquake	0.16	1.42	0.09	35	automatic	nc	nc
1/4/2004	17:27:09	35.5243333	-120.836	8.81	3.48	md	28	39	0.05856	0.12	nc	nc21330963	2017-01-07T00:27:30.329Z	10 km NNE of Cayucos, California	earthquake	0.27	0.83	0.18	12	automatic	nc	nc
1/4/2004	16:45:04	35.541	-120.8465	1.728	2.58	md	41	48	0.04955	0.09	nc	nc21330955	2017-01-07T00:27:23.287Z	11 km NNE of Cayucos, California	earthquake	0.14	0.79	0.13	45	automatic	nc	nc
1/4/2004	16:35:01	35.5848333	-120.8951667	7.108	2.35	md	38	66	0.05225	0.12	nc	nc21330953	2017-01-07T00:27:19.263Z	15 km N of Cayucos, California	earthquake	0.2	0.65	0.15	38	automatic	nc	nc
1/4/2004	14:10:13	35.5575	-120.8063333	4.45	2.23	md	27	57	0.08559	0.08	nc	nc21330937	2017-01-07T00:27:11.373Z	9 km W of Templeton, California	earthquake	0.19	0.53	0.25	15	automatic	nc	nc
1/4/2004	13:32:33	35.5405	-120.8856667	2.405	2.04	md	13	179	0.01802	0.24	nc	nc68007722	2017-01-07T00:27:01.115Z	10 km N of Cayucos, California	earthquake	0.76	0.58	0.22	7	reviewed	nc	nc
1/4/2004	11:58:22	35.5251667	-120.8346667	8.208	2.25	md	36	53	0.05946	0.08	nc	nc30500614	2017-01-07T00:26:53.670Z	10 km NNE of Cayucos, California	earthquake	0.18	0.63	0.14	19	automatic	nc	nc
1/4/2004	11:57:02	35.5211667	-120.837	9.36	2.17	md	26	65	0.05856	0.08	nc	nc21330921	2017-01-07T00:26:49.801Z	10 km NNE of Cayucos, California	earthquake	0.22	0.85	0.21	11	automatic	nc	nc
1/4/2004	10:36:20	35.5393333	-120.8691667	2.193	2.38	md	12	196	0.03153	0.23	nc	nc68007719	2017-01-07T00:26:32.737Z	10 km N of Cayucos, California	earthquake	0.96	1.03	0.14	10	reviewed	nc	nc
1/4/2004	10:14:11	35.5348333	-120.8063333	2.958	2.51	md	32	50	0.08198	0.06	nc	nc21330905	2017-01-07T00:26:25.516Z	9 km W of Templeton, California	earthquake	0.16	0.73	0.17	33	automatic	nc	nc
1/4/2004	6:58:45	35.543	-120.8561667	5.54	2.5	md	55	47	0.04234	0.08	nc	nc21330541	2017-01-07T00:24:26.560Z	11 km NNE of Cayucos, California	earthquake	0.14	0.42	0.13	51	reviewed	nc	nc
1/4/2004	6:04:43	35.5636667	-120.884	6.362	2.07	md	44	46	0.03514	0.05	nc	nc21330746	2017-01-07T00:23:35.320Z	13 km N of Cayucos, California	earthquake	0.16	0.34	0.16	33	reviewed	nc	nc
1/4/2004	4:22:47	35.5881667	-120.8611667	2.561	2.33	md	52	29	0.05315	0.16	nc	nc21330513	2017-01-07T00:22:04.870Z	14 km WNW of Templeton, California	earthquake	0.17	0.49	0.14	44	reviewed	nc	nc
1/4/2004	1:50:52	35.5331667	-120.8346667	5.93	2.15	md	52	51	0.05856	0.06	nc	nc21330533	2017-01-07T00:21:06.360Z	11 km NNE of Cayucos, California	earthquake	0.13	0.45	0.21	31	reviewed	nc	nc
1/4/2004	1:17:37	35.5028333	-120.8053333	4.468	2.3	md	50	39	0.07658	0.14	nc	nc21330721	2017-01-07T00:20:35.580Z	10 km NE of Cayucos, California	earthquake	0.17	0.57	0.15	34	reviewed	nc	nc
1/3/2004	14:15:26	35.5393333	-120.829	5.64	2.13	md	21	58	0.06396	0.16	nc	nc21330750	2017-01-07T00:17:03.305Z	11 km W of Templeton, California	earthquake	0.29	0.83	0.08	11	automatic	nc	nc
1/3/2004	13:49:41	35.5401667	-120.8465	2.86	2.14	md	45	48	0.04955	0.07	nc	nc21330704	2017-01-07T00:16:55.330Z	11 km NNE of Cayucos, California	earthquake	0.16	0.57	0.12	29	reviewed	nc	nc
1/3/2004	12:41:05	36.0515	-120.6143333	4.776	2.06	md	22	76	0.02252	0.05	nc	nc21330678	2017-01-07T00:16:23.019Z	23 km NW of Parkfield, California	earthquake	0.28	0.55	0.12	22	automatic	nc	nc
1/3/2004	7:47:29	35.565	-120.8816667	4.172	2.1	md	45	35	0.03694	0.14	nc	nc21330483	2017-01-07T00:13:07.270Z	13 km N of Cayucos, California	earthquake	0.19	0.41	0.15	25	reviewed	nc	nc
1/3/2004	3:14:51	35.6036667	-120.898	6.852	2.44	md	31	63	0.07027	0.12	nc	nc21330835	2017-01-07T00:10:50.798Z	13 km S of Lake Nacimiento, California	earthquake	0.23	0.61	0.1	34	automatic	nc	nc
1/2/2004	22:49:14	35.5203333	-120.8283333	2.7	2.21	md	44	55	0.06577	0.08	nc	nc21329846	2017-01-07T00:08:31.370Z	10 km NE of Cayucos, California	earthquake	0.15	0.71	0.18	33	reviewed	nc	nc
1/2/2004	21:58:43	35.5238333	-120.8945	2.472	2.13	md	37	58	0.01441	0.17	nc	nc21329820	2017-01-07T00:08:09.055Z	8 km N of Cayucos, California	earthquake	0.23	0.38	0.16	8	reviewed	nc	nc
1/2/2004	18:55:47	35.5358333	-120.8356667	4.868	2.22	md	49	50	0.05766	0.07	nc	nc21329627	2017-01-07T00:06:55.380Z	11 km NNE of Cayucos, California	earthquake	0.15	0.53	0.11	34	reviewed	nc	nc
1/2/2004	18:08:56	35.5135	-120.8343333	-0.292	2.01	md	33	71	0.06216	0.1	nc	nc21329532	2017-01-07T00:06:40.347Z	9 km NE of Cayucos, California	earthquake	0.19	1.44	0.14	13	reviewed	nc	nc
1/2/2004	17:20:53	35.6165	-120.8488333	0.722	2.77	md	56	71	0.0955	0.07	nc	nc21329465	2017-01-07T00:06:10.990Z	12 km SSE of Lake Nacimiento, California	earthquake	0.14	0.8	0.09	79	reviewed	nc	nc
1/2/2004	16:32:19	35.5301667	-120.8098333	2.99	2.81	md	53	58	0.07928	0.07	nc	nc21329434	2017-01-07T00:05:24.330Z	9 km WSW of Templeton, California	earthquake	0.13	0.66	0.08	61	reviewed	nc	nc
1/2/2004	16:04:30	35.539	-120.8026667	3.39	2.42	md	43	55	0.08559	0.07	nc	nc30226978	2017-01-07T00:05:03.680Z	8 km W of Templeton, California	earthquake	0.16	0.74	0.1	46	reviewed	nc	nc
1/2/2004	14:50:42	35.595	-120.8745	3.873	2.21	md	30	130	0.04685	0.07	nc	nc21329367	2017-01-07T00:04:15.040Z	14 km S of Lake Nacimiento, California	earthquake	0.27	0.3	0.11	24	reviewed	nc	nc
1/2/2004	13:56:21	35.5438333	-120.8023333	4.52	2.17	md	36	38	0.08559	0.22	nc	nc30226980	2017-01-07T00:03:40.130Z	8 km W of Templeton, California	earthquake	0.3	1.12	0.12	29	reviewed	nc	nc
1/2/2004	13:11:36	35.5195	-120.8693333	3.2	2.06	md	26	68	0.03333	0.15	nc	nc21329319	2017-01-07T00:02:58.175Z	8 km NNE of Cayucos, California	earthquake	0.48	0.75	0.15	9	reviewed	nc	nc
1/2/2004	11:14:42	35.5858333	-120.8841667	3.701	2.48	md	46	46	0.05495	0.1	nc	nc21329290	2017-01-07T00:01:34.910Z	15 km S of Lake Nacimiento, California	earthquake	0.16	0.33	0.11	42	reviewed	nc	nc
1/2/2004	10:08:35	35.5481667	-120.86	5.081	2.6	md	50	52	0.04054	0.09	nc	nc21329234	2017-01-07T00:00:27.970Z	12 km NNE of Cayucos, California	earthquake	0.15	0.52	0.1	60	reviewed	nc	nc
1/2/2004	9:15:08	35.5903333	-120.8786667	4.062	2.19	md	44	46	0.05225	0.07	nc	nc21329231	2017-01-07T00:00:11.350Z	15 km S of Lake Nacimiento, California	earthquake	0.14	0.34	0.1	38	reviewed	nc	nc
1/2/2004	8:14:00	35.5805	-120.8536667	3.162	2.12	md	44	40	0.06126	0.15	nc	nc21329092	2017-01-06T23:59:36.580Z	13 km WNW of Templeton, California	earthquake	0.2	0.54	0.12	34	reviewed	nc	nc
1/2/2004	0:32:30	35.6851667	-120.7741667	2.363	2.1	md	38	48	0.08739	0.14	nc	nc21328790	2017-01-06T23:57:35.130Z	9 km NW of Paso Robles, California	earthquake	0.24	0.88	0.13	28	reviewed	nc	nc
1/1/2004	17:07:28	35.5833333	-120.8703333	5.892	2.67	md	50	44	0.05766	0.06	nc	nc21328647	2017-01-06T23:54:54.480Z	15 km WNW of Templeton, California	earthquake	0.13	0.35	0.1	67	reviewed	nc	nc
1/1/2004	16:42:50	35.5655	-120.8056667	2.71	2.16	md	40	48	0.08829	0.08	nc	nc30226960	2017-01-06T23:54:35.120Z	9 km W of Templeton, California	earthquake	0.14	0.54	0.3	29	reviewed	nc	nc
1/1/2004	15:57:21	35.5925	-120.8596667	6.891	2.4	md	47	44	0.04865	0.08	nc	nc21328631	2017-01-06T23:54:03.430Z	14 km WNW of Templeton, California	earthquake	0.15	0.49	0.09	50	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
1/1/2004	14:57:25	35.5255	-120.8155	4.91	2.07	md	36	59	0.07477	0.07	nc	nc21328627	2017-01-06T23:53:52.447Z	10 km WSW of Templeton, California	earthquake	0.18	0.67	0.22	26	reviewed	nc	nc
1/1/2004	13:30:05	35.5236667	-120.8358333	3.43	2.14	md	44	54	0.05856	0.08	nc	nc21328461	2017-01-06T23:53:14.720Z	10 km NNE of Cayucos, California	earthquake	0.13	0.57	0.14	31	reviewed	nc	nc
1/1/2004	12:48:34	35.5753333	-120.8965	6.211	2.32	md	51	46	0.04234	0.11	nc	nc21328429	2017-01-06T23:52:35.050Z	14 km N of Cayucos, California	earthquake	0.17	0.35	0.08	45	reviewed	nc	nc
1/1/2004	10:29:09	35.5475	-120.865	6.241	2.31	md	53	44	0.03694	0.08	nc	nc21328393	2017-01-06T23:51:32.240Z	11 km NNE of Cayucos, California	earthquake	0.14	0.39	0.12	44	reviewed	nc	nc
1/1/2004	8:42:47	35.5223333	-120.8225	4.03	2.1	md	44	54	0.06937	0.07	nc	nc21328344	2017-01-06T23:50:16.330Z	10 km NE of Cayucos, California	earthquake	0.15	0.62	0.16	25	reviewed	nc	nc
1/1/2004	3:21:09	35.5296667	-120.836	5.38	2.01	md	43	59	0.05766	0.06	nc	nc21328224	2017-01-06T23:47:35.840Z	10 km NNE of Cayucos, California	earthquake	0.14	0.45	0.15	17	reviewed	nc	nc
1/1/2004	2:27:46	35.6041667	-120.8926667	6.091	2	md	37	62	0.04234	0.16	nc	nc21328197	2017-01-06T23:46:51.640Z	13 km S of Lake Nacimiento, California	earthquake	0.26	0.46	0.1	20	reviewed	nc	nc
1/1/2004	0:33:04	35.5951667	-120.8961667	5.182	2.09	md	50	33	0.05225	0.16	nc	nc21328164	2017-01-06T23:45:21.000Z	14 km S of Lake Nacimiento, California	earthquake	0.2	0.53	0.19	39	reviewed	nc	nc
12/31/2003	22:57:01	35.5466667	-120.8753333	4.16	2.39	md	29	66	0.02883	0.13	nc	nc21328129	2017-01-04T23:39:39.989Z	11 km N of Cayucos, California	earthquake	0.25	0.47	0.17	19	reviewed	nc	nc
12/31/2003	22:01:47	35.5613333	-120.806	7.45	2.59	md	49	56	0.08649	0.06	nc	nc21328106	2017-01-04T23:39:23.080Z	9 km W of Templeton, California	earthquake	0.15	0.88	0.1	50	reviewed	nc	nc
12/31/2003	19:25:43	35.5185	-120.8075	3.748	2.45	md	35	32	0.08288	0.17	nc	nc21328054	2017-01-04T23:38:19.828Z	9 km WSW of Templeton, California	earthquake	0.29	0.81	0.19	33	reviewed	nc	nc
12/31/2003	15:53:32	35.5703333	-120.9035	6.783	2.1	md	10	200	0.03694	0.16	nc	nc68007511	2017-01-04T23:37:36.412Z	14 km N of Cayucos, California	earthquake	0.71	0.65	0.15	6	reviewed	nc	nc
12/31/2003	11:24:56	35.5405	-120.8168333	5.098	2.3	md	34	34	0.07387	0.13	nc	nc21327854	2017-01-04T23:37:05.254Z	10 km W of Templeton, California	earthquake	0.21	0.73	0.18	20	reviewed	nc	nc
12/31/2003	10:27:33	35.5695	-120.8078333	3.685	2.99	md	15	201	0.08829	0.19	nc	nc68007505	2017-01-04T23:37:01.057Z	9 km WNW of Templeton, California	earthquake	0.7	1.52	0.09	9	reviewed	nc	nc
12/31/2003	10:10:26	35.5325	-120.838	7.393	2.07	md	11	200	0.05586	0.15	nc	nc68007503	2017-01-04T23:36:52.528Z	11 km NNE of Cayucos, California	earthquake	0.8	1.08	0.14	7	reviewed	nc	nc
12/31/2003	9:46:17	35.5368333	-120.8535	6.45	3.33	ml	57	49	0.04324	0.06	nc	nc21327818	2017-01-04T23:36:47.340Z	11 km NNE of Cayucos, California	earthquake	0.15	0.48		2	reviewed	nc	nc
12/31/2003	9:20:51	35.5538333	-120.801	3.04	2.37	md	35	45	0.08829	0.06	nc	nc30500598	2017-01-04T23:36:28.242Z	8 km W of Templeton, California	earthquake	0.18	0.92	0.12	39	reviewed	nc	nc
12/31/2003	6:48:26	35.5581667	-120.8091667	5.343	2.04	md	12	205	0.08288	0.15	nc	nc68007492	2017-01-04T23:35:33.086Z	9 km W of Templeton, California	earthquake	0.62	0.98	0.16	8	reviewed	nc	nc
12/31/2003	5:18:46	35.588	-120.8705	7.082	2.28	md	32	58	0.06126	0.17	nc	nc21327729	2017-01-04T23:34:40.230Z	Central California	earthquake	0.26	0.83	0.12	29	reviewed	nc	nc
12/31/2003	3:53:36	35.5926667	-120.8978333	4.983	2.02	md	12	198	0.05946	0.19	nc	nc68007480	2017-01-04T23:33:53.577Z	Central California	earthquake	0.77	1.1	0.18	7	reviewed	nc	nc
12/31/2003	3:49:25	35.5583333	-120.8046667	4.09	2.01	md	28	60	0.08649	0.08	nc	nc21327711	2017-01-04T23:33:40.274Z	8 km W of Templeton, California	earthquake	0.19	0.66	0.11	14	reviewed	nc	nc
12/31/2003	1:48:00	35.543	-120.8533333	5.59	2.75	md	53	47	0.04414	0.08	nc	nc21327664	2017-01-04T23:32:54.420Z	12 km NNE of Cayucos, CA	earthquake	0.15	0.47	0.1	65	reviewed	nc	nc
12/30/2003	23:55:34	35.5256667	-120.8138333	4.84	2	md	25	40	0.07658	0.14	nc	nc21327651	2017-01-04T23:32:21.041Z	10 km WSW of Templeton, California	earthquake	0.25	0.93	0.17	12	reviewed	nc	nc
12/30/2003	23:37:52	35.577	-120.8728333	5.523	2	md	21	75	0.05135	0.08	nc	nc21327646	2017-01-04T23:32:13.216Z	14 km N of Cayucos, California	earthquake	0.23	0.6	0.13	11	reviewed	nc	nc
12/30/2003	22:48:09	35.5825	-120.8743333	3.052	2.05	md	24	76	0.05495	0.1	nc	nc21327632	2017-01-04T23:32:04.443Z	15 km N of Cayucos, California	earthquake	0.21	0.56	0.09	17	reviewed	nc	nc
12/30/2003	19:59:56	35.5491667	-120.8293333	3.77	2.83	md	53	60	0.06486	0.1	nc	nc21327554	2017-01-04T23:31:18.680Z	11 km W of Templeton, California	earthquake	0.17	0.84	0.07	67	reviewed	nc	nc
12/30/2003	18:59:23	35.5346667	-120.8661667	-0.26	2.12	md	28	53	0.03333	0.27	nc	nc21327515	2017-01-04T23:31:06.452Z	10 km NNE of Cayucos, California	earthquake	0.34	1.35	0.12	16	reviewed	nc	nc
12/30/2003	18:50:38	35.5643333	-120.8091667	3.743	2.73	md	14	206	0.08559	0.16	nc	nc68007463	2017-01-04T23:31:02.466Z	9 km W of Templeton, California	earthquake	0.7	1.04	0.09	13	reviewed	nc	nc
12/30/2003	18:44:05	35.5296667	-120.8015	3.068	3.26	ml	58	51	0.08649	0.07	nc	nc21327513	2017-01-04T23:30:57.650Z	8 km WSW of Templeton, California	earthquake	0.14	0.7		2	reviewed	nc	nc
12/30/2003	18:36:17	35.5286667	-120.8155	6.587	2.02	md	12	197	0.07477	0.16	nc	nc68007461	2017-01-04T23:30:50.498Z	10 km WSW of Templeton, California	earthquake	0.79	1.36	0.01	5	reviewed	nc	nc
12/30/2003	13:14:40	35.5908333	-120.898	2.305	2.69	md	39	160	0.05676	0.05	nc	nc21327374	2017-01-04T23:29:41.030Z	15 km S of Lake Nacimiento, California	earthquake	0.25	1.14	0.06	46	automatic	nc	nc
12/30/2003	13:03:28	35.5703333	-120.8273333	2.38	2.23	md	35	51	0.07387	0.08	nc	nc30500595	2017-01-04T23:29:30.949Z	11 km WNW of Templeton, California	earthquake	0.16	0.66	0.12	30	reviewed	nc	nc
12/30/2003	9:44:24	35.5656667	-120.887	6.308	2.1	md	27	65	0.03604	0.19	nc	nc21327253	2017-01-04T23:28:31.164Z	13 km N of Cayucos, California	earthquake	0.32	0.66	0.08	17	reviewed	nc	nc
12/30/2003	7:35:36	35.5531667	-120.801	3.37	2.13	md	32	61	0.08829	0.08	nc	nc21327194	2017-01-04T23:28:20.735Z	8 km W of Templeton, California	earthquake	0.2	0.85	0.12	28	reviewed	nc	nc
12/30/2003	6:49:53	35.5875	-120.8866667	5.378	2	md	24	63	0.05586	0.17	nc	nc30500592	2017-01-04T23:28:09.605Z	15 km S of Lake Nacimiento, California	earthquake	0.33	0.8	0.07	8	reviewed	nc	nc
12/30/2003	5:33:59	35.5696667	-120.8133333	3.271	2.15	md	31	59	0.08378	0.08	nc	nc21327157	2017-01-04T23:27:43.386Z	9 km WNW of Templeton, California	earthquake	0.19	0.57	0.14	18	reviewed	nc	nc
12/30/2003	4:38:50	35.5563333	-120.868	3.14	2.02	md	28	81	0.03874	0.17	nc	nc21327140	2017-01-04T23:27:35.669Z	12 km N of Cayucos, California	earthquake	0.3	0.83	0.11	13	reviewed	nc	nc
12/30/2003	4:35:05	35.6371667	-120.7898333	7.172	2.25	md	38	58	0.1405	0.09	nc	nc21327139	2017-01-04T23:27:31.944Z	9 km W of Paso Robles, California	earthquake	0.18	1.17	0.09	32	reviewed	nc	nc
12/30/2003	4:01:30	35.5175	-120.8015	2.707	2.75	md	15	197	0.08739	0.18	nc	nc68007427	2017-01-04T23:27:28.221Z	9 km WSW of Templeton, California	earthquake	0.75	1.57	0.09	13	reviewed	nc	nc
12/30/2003	2:32:51	35.5195	-120.8383333	2.43	2.45	md	37	55	0.05766	0.13	nc	nc21327122	2017-01-04T23:26:58.097Z	9 km NNE of Cayucos, California	earthquake	0.2	0.85	0.11	35	reviewed	nc	nc
12/30/2003	0:41:15	35.5388333	-120.8188333	1.29	2.15	md	21	48	0.07207	0.08	nc	nc21327098	2017-01-04T23:26:44.212Z	10 km W of Templeton, California	earthquake	0.19	1.08	0.15	14	reviewed	nc	nc
12/29/2003	23:25:03	35.5315	-120.8346667	6.28	2.51	md	35	65	0.05856	0.07	nc	nc21327083	2017-01-04T23:26:15.121Z	11 km NNE of Cayucos, California	earthquake	0.19	0.57	0.09	36	reviewed	nc	nc
12/29/2003	22:58:45	35.5146667	-120.815	3.27	2.35	md	28	36	0.07748	0.14	nc	nc21327078	2017-01-04T23:26:07.345Z	10 km NE of Cayucos, California	earthquake	0.22	0.87	0.24	18	reviewed	nc	nc
12/29/2003	20:09:52	35.5165	-120.8008333	3.147	2.58	md	15	197	0.08739	0.17	nc	nc68007401	2017-01-04T23:25:22.296Z	9 km WSW of Templeton, California	earthquake	0.7	1.34	0.03	9	reviewed	nc	nc
12/29/2003	18:50:30	35.5396667	-120.8435	0.963	2.06	md	11	201	0.05225	0.2	nc	nc68007396	2017-01-04T23:25:00.471Z	11 km NNE of Cayucos, California	earthquake	0.86	1.53	0.03	3	reviewed	nc	nc
12/29/2003	18:32:45	35.5388333	-120.8666667	3.69	2.3	md	27	49	0.03333	0.08	nc	nc21327041	2017-01-04T23:24:50.010Z	10 km NNE of Cayucos, California	earthquake	0.26	0.49	0.12	19	reviewed	nc	nc
12/29/2003	17:54:44	35.5226667	-120.821	4.48	2.57	md	58	54	0.07117	0.07	nc	nc21327031	2017-01-04T23:24:16.820Z	10 km WSW of Templeton, California	earthquake	0.13	0.5	0.08	61	reviewed	nc	nc
12/29/2003	16:38:21	35.5486667	-120.7978333	4.18	2.06	md	36	55	0.09009	0.16	nc	nc21327022	2017-01-04T23:23:43.978Z	8 km W of Templeton, California	earthquake	0.25	0.72	0.21	23	reviewed	nc	nc
12/29/2003	14:59:34	35.5211667	-120.8471667	6.4	2.48	md	45	57	0.05045	0.07	nc	nc21327004	2017-01-04T23:22:57.210Z	9 km NNE of Cayucos, California	earthquake	0.16	0.49	0.09	48	reviewed	nc	nc
12/29/2003	14:49:10	35.5596667	-120.8003333	3.47	2.35	md	48	43	0.09099	0.07	nc	nc21327001	2017-01-04T23:22:44.150Z	8 km W of Templeton, California	earthquake	0.15	0.62	0.17	47	reviewed	nc	nc
12/29/2003	14:42:39	35.5361667	-120.8411667	1.98	2.07	md	41	56	0.05405	0.09	nc	nc21327000	2017-01-04T23:22:35.760Z	11 km NNE of Cayucos, California	earthquake	0.15	0.8	0.14	20	reviewed	nc	nc
12/29/2003	14:24:21	35.5355	-120.8381667	4.313	2.31	md	12	194	0.05586	0.15	nc	nc68007377	2017-01-04T23:22:31.919Z	11 km NNE of Cayucos, California	earthquake	0.61	0.66	0.18	8	reviewed	nc	nc
12/29/2003	14:08:25	35.5706667	-120.9003333	5.42	2.18	md	11	192	0.03694	0.15	nc	nc68007375	2017-01-04T23:22:25.123Z	14 km N of Cayucos, California	earthquake	0.95	0.55	0.09	5	reviewed	nc	nc
12/29/2003	10:36:35	35.5835	-120.8981667	5.483	2.41	md	13	196	0.05045	0.2	nc	nc68007365	2017-01-04T23:21:11.625Z	15 km N of Cayucos, California	earthquake	1.22	0.68	0.11	9	reviewed	nc	nc
12/29/2003	9:01:10	35.5813333	-120.8408333	4.243	2.25	md	11	211	0.07207	0.22	nc	nc68007359	2017-01-04T23:20:33.858Z	12 km WNW of Templeton, California	earthquake	1.74	1.6	0.13	8	reviewed	nc	nc
12/29/2003	9:00:27	35.6051667	-120.8846667	6.898	2.25	md	33	80	0.03874	0.07	nc	nc21326884	2017-01-04T23:20:30.276Z	13 km S of Lake Nacimiento, California	earthquake	0.18	0.55	0.2	32	reviewed	nc	nc
12/29/2003	8:59:14	35.5326667	-120.819	4.587	2.14	md	11	212	0.07207	0.19	nc	nc68007357	2017-01-04T23:20:26.325Z	10 km W of Templeton, California	earthquake	0.86	1.6	0.05	6	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/29/2003	8:37:37	35.5423333	-120.811	4.497	2.21	md	24	48	0.07838	0.09	nc	nc21326881	2017-01-04T23:20:19.292Z	9 km W of Templeton, California	earthquake	0.2	0.65	0.2	18	reviewed	nc	nc
12/29/2003	8:04:00	35.5415	-120.8515	5.068	2.52	md	41	47	0.04595	0.08	nc	nc21326902	2017-01-04T23:20:11.220Z	11 km NNE of Cayucos, California	earthquake	0.18	0.54	0.15	42	reviewed	nc	nc
12/29/2003	7:44:33	35.5893333	-120.874	6.178	2.08	md	20	117	0.05225	0.14	nc	nc21326905	2017-01-04T23:20:03.203Z	15 km S of Lake Nacimiento, California	earthquake	0.36	0.49	0.28	14	reviewed	nc	nc
12/29/2003	5:51:07	35.5301667	-120.8368333	5.27	2.52	md	48	51	0.05676	0.06	nc	nc21326676	2017-01-04T23:19:07.690Z	10 km NNE of Cayucos, California	earthquake	0.15	0.56	0.12	47	reviewed	nc	nc
12/29/2003	5:45:04	35.5415	-120.8446667	5.113	2	md	11	194	0.05135	0.17	nc	nc68007344	2017-01-04T23:18:56.493Z	11 km NNE of Cayucos, California	earthquake	0.7	0.97	0.18	8	reviewed	nc	nc
12/29/2003	5:38:23	35.5758333	-120.868	4.493	3.1	md	57	74	0.05225	0.08	nc	nc21326667	2017-01-04T23:18:47.280Z	14 km N of Cayucos, California	earthquake	0.14	0.49	0.06	84	reviewed	nc	nc
12/29/2003	5:02:02	35.5466667	-120.8643333	7.315	2.19	md	14	176	0.03694	0.21	nc	nc68007341	2017-01-04T23:18:28.790Z	11 km NNE of Cayucos, California	earthquake	1.03	0.76	0.18	9	reviewed	nc	nc
12/29/2003	4:09:27	35.5318333	-120.811	-0.043	2.25	md	10	223	0.07838	0.23	nc	nc68007339	2017-01-04T23:18:16.359Z	9 km WSW of Templeton, California	earthquake	1.21	2.76	0.14	6	reviewed	nc	nc
12/29/2003	3:30:27	35.5291667	-120.8283333	2.358	2.35	md	32	51	0.06396	0.06	nc	nc21326979	2017-01-04T23:18:00.758Z	11 km NNE of Cayucos, California	earthquake	0.17	0.85	0.17	29	reviewed	nc	nc
12/29/2003	2:44:04	35.5803333	-120.843	3.921	2.48	md	4	306	0.06937	0.22	nc	nc68007328	2017-01-04T23:17:24.723Z	12 km WNW of Templeton, California	earthquake	3.18	3.55	0.07	4	reviewed	nc	nc
12/29/2003	2:35:29	35.613	-120.8945	6.182	2.81	md	54	83	0.07928	0.07	nc	nc21326962	2017-01-04T23:17:01.510Z	12 km S of Lake Nacimiento, California	earthquake	0.13	0.56	0.12	65	reviewed	nc	nc
12/29/2003	1:16:20	35.5626667	-120.8068333	2.653	2.21	md	10	213	0.08649	0.21	nc	nc68007321	2017-01-04T23:16:47.528Z	9 km W of Templeton, California	earthquake	0.84	2.23	0.16	7	reviewed	nc	nc
12/29/2003	0:47:15	35.5366667	-120.871	4.66	2.33	md	27	44	0.02883	0.15	nc	nc21326550	2017-01-04T23:16:26.163Z	10 km N of Cayucos, California	earthquake	0.23	0.48	0.14	20	reviewed	nc	nc
12/28/2003	23:06:54	35.6031667	-120.8778333	6.692	2.3	md	45	48	0.03874	0.08	nc	nc30226731	2017-01-04T23:15:57.920Z	13 km S of Lake Nacimiento, California	earthquake	0.13	0.34	0.17	44	reviewed	nc	nc
12/28/2003	22:49:52	35.5305	-120.8193333	2.96	2.33	md	57	51	0.07117	0.07	nc	nc21326469	2017-01-04T23:15:33.030Z	10 km WSW of Templeton, California	earthquake	0.12	0.59	0.14	55	reviewed	nc	nc
12/28/2003	20:01:59	35.6165	-120.8963333	6.751	2.25	md	33	83	0.03423	0.12	nc	nc21326422	2017-01-04T23:14:33.841Z	12 km S of Lake Nacimiento, California	earthquake	0.24	0.64	0.1	30	reviewed	nc	nc
12/28/2003	17:37:17	35.5355	-120.8265	2.827	2.12	md	14	197	0.06577	0.21	nc	nc68007299	2017-01-04T23:13:16.644Z	11 km W of Templeton, California	earthquake	1.14	1.62	0.23	9	reviewed	nc	nc
12/28/2003	16:48:06	35.5726667	-120.814	1.34	2	md	42	48	0.08108	0.1	nc	nc21326431	2017-01-04T23:13:02.610Z	10 km WNW of Templeton, California	earthquake	0.15	0.62	0.14	20	reviewed	nc	nc
12/28/2003	16:25:20	35.5618333	-120.8486667	-0.157	2.35	md	36	49	0.05495	0.22	nc	nc21326612	2017-01-04T23:12:58.695Z	13 km W of Templeton, California	earthquake	0.3	1.98	0.15	23	reviewed	nc	nc
12/28/2003	13:20:28	35.5425	-120.8401667	5.08	2.1	md	22	72	0.05495	0.15	nc	nc21326265	2017-01-04T23:12:04.279Z	12 km NNE of Cayucos, California	earthquake	0.29	0.73	0.18	10	reviewed	nc	nc
12/28/2003	7:14:57	35.514	-120.8323333	2.978	2.2	md	30	42	0.06396	0.15	nc	nc21326028	2017-01-04T23:08:55.293Z	9 km NE of Cayucos, California	earthquake	0.26	0.86	0.19	12	reviewed	nc	nc
12/28/2003	7:04:17	35.6275	-120.8901667	7.671	2.26	md	21	99	0.02342	0.16	nc	nc21326045	2017-01-04T23:08:47.915Z	11 km S of Lake Nacimiento, California	earthquake	0.42	1.03	0.11	10	reviewed	nc	nc
12/28/2003	6:28:49	35.5523333	-120.8575	-0.167	2.12	md	10	227	0.04414	0.21	nc	nc68007275	2017-01-04T23:08:19.227Z	12 km NNE of Cayucos, California	earthquake	1.19	2.73	0.12	6	reviewed	nc	nc
12/28/2003	5:29:35	35.5721667	-120.8238333	1.868	2.83	md	45	50	0.07748	0.08	nc	nc30500536	2017-01-04T23:07:39.070Z	10 km WNW of Templeton, California	earthquake	0.15	0.8	0.11	54	reviewed	nc	nc
12/28/2003	5:02:35	35.527	-120.8105	4.238	2.12	md	24	53	0.07928	0.15	nc	nc21325972	2017-01-04T23:06:58.070Z	9 km WSW of Templeton, California	earthquake	0.25	0.98	0.17	12	reviewed	nc	nc
12/28/2003	3:41:12	35.5735	-120.8333333	0.975	2	md	21	54	0.07207	0.09	nc	nc21325845	2017-01-04T23:06:22.176Z	11 km WNW of Templeton, California	earthquake	0.2	0.94	0.05	6	reviewed	nc	nc
12/28/2003	2:55:40	35.5801667	-120.886	5.618	2.29	md	29	64	0.04955	0.18	nc	nc21325835	2017-01-04T23:05:53.655Z	15 km N of Cayucos, California	earthquake	0.31	0.87	0.18	24	reviewed	nc	nc
12/28/2003	1:54:58	35.6153333	-120.847	1.669	2.26	md	50	70	0.03063	0.07	nc	nc21325823	2017-01-04T23:05:12.660Z	12 km SSE of Lake Nacimiento, California	earthquake	0.14	0.44	0.2	36	reviewed	nc	nc
12/28/2003	1:47:46	35.6088333	-120.8978333	6.313	3.76	ml	65	53	0.07568	0.07	nc	nc21326944	2022-06-18T07:51:06.388Z	13 km S of Lake Nacimiento, California	earthquake	0.14	0.61		7	reviewed	nc	nc
12/28/2003	1:04:18	35.5496667	-120.8271667	-0.25	2.27	md	21	51	0.06667	0.2	nc	nc21325818	2017-01-04T23:04:35.063Z	10 km W of Templeton, California	earthquake	0.31	1.27	0.16	11	reviewed	nc	nc
12/28/2003	0:27:22	35.5311667	-120.829	5.27	2.71	md	53	51	0.06306	0.07	nc	nc21325742	2017-01-04T23:04:03.010Z	11 km W of Templeton, California	earthquake	0.15	0.53	0.1	64	reviewed	nc	nc
12/28/2003	0:05:04	35.5783333	-120.8471667	2.913	2.1	md	10	202	0.06577	0.18	nc	nc68007248	2017-01-04T23:03:42.326Z	13 km WNW of Templeton, California	earthquake	1.04	1.7	0.09	5	reviewed	nc	nc
12/27/2003	22:44:05	35.547	-120.8635	3.12	2.05	md	37	39	0.03784	0.18	nc	nc21325677	2017-01-04T23:02:53.890Z	11 km NNE of Cayucos, California	earthquake	0.24	0.59	0.12	15	reviewed	nc	nc
12/27/2003	21:02:54	35.5391667	-120.8486667	5.228	2.38	md	35	63	0.04775	0.09	nc	nc21325656	2017-01-04T23:01:36.030Z	11 km NNE of Cayucos, California	earthquake	0.21	0.59	0.12	34	reviewed	nc	nc
12/27/2003	20:42:52	35.5721667	-120.828	2.517	2.01	md	7	212	0.07477	0.19	nc	nc68007227	2017-01-04T23:01:26.380Z	11 km WNW of Templeton, California	earthquake	1.08	2.94	0.1	6	reviewed	nc	nc
12/27/2003	19:02:52	35.6255	-120.8906667	7.772	2.17	md	30	61	0.09279	0.16	nc	nc21326101	2017-01-04T23:00:19.841Z	11 km S of Lake Nacimiento, California	earthquake	0.27	0.83	0.17	24	reviewed	nc	nc
12/27/2003	18:14:40	35.5561667	-120.8581667	7.963	2.08	md	10	257	0.04595	0.14	nc	nc68007217	2017-01-04T23:00:04.322Z	12 km NNE of Cayucos, California	earthquake	1.54	1.68	0.17	5	reviewed	nc	nc
12/27/2003	18:10:07	35.5886667	-120.8951667	4.572	2.05	md	45	34	0.05586	0.14	nc	nc21326093	2017-01-04T22:59:57.080Z	15 km S of Lake Nacimiento, California	earthquake	0.19	0.41	0.19	29	reviewed	nc	nc
12/27/2003	17:23:28	35.533	-120.8746667	1.232	2.12	md	40	56	0.02613	0.06	nc	nc21325766	2017-01-04T22:59:08.210Z	10 km N of Cayucos, California	earthquake	0.14	0.39	0.19	19	reviewed	nc	nc
12/27/2003	16:17:58	35.5433333	-120.8371667	10.433	2.07	md	12	196	0.05766	0.15	nc	nc68007210	2017-01-04T22:58:29.784Z	11 km W of Templeton, California	earthquake	1.34	1.45	0.19	6	reviewed	nc	nc
12/27/2003	15:51:03	35.551	-120.8228333	-0.037	2.09	md	10	207	0.07027	0.32	nc	nc68007208	2017-01-04T22:58:17.460Z	10 km W of Templeton, California	earthquake	1.49	4.32	0.12	7	reviewed	nc	nc
12/27/2003	14:58:29	35.5373333	-120.8533333	6.45	2.13	md	49	49	0.04324	0.06	nc	nc21326452	2017-01-04T22:57:35.390Z	11 km NNE of Cayucos, California	earthquake	0.13	0.38	0.28	36	reviewed	nc	nc
12/27/2003	14:25:37	35.527	-120.8143333	4.22	2.23	md	29	59	0.07568	0.07	nc	nc30500540	2017-01-04T22:56:59.972Z	10 km WSW of Templeton, California	earthquake	0.19	0.64	0.17	18	reviewed	nc	nc
12/27/2003	12:25:55	35.5463333	-120.844	5.68	2.24	md	32	46	0.05225	0.07	nc	nc21326252	2017-01-04T22:55:25.910Z	12 km NNE of Cayucos, California	earthquake	0.23	0.54	0.23	22	reviewed	nc	nc
12/27/2003	11:56:43	35.5706667	-120.8211667	2.1	2.35	md	51	27	0.07928	0.15	nc	nc21325450	2017-01-04T22:55:06.090Z	10 km WNW of Templeton, California	earthquake	0.19	1.09	0.15	47	reviewed	nc	nc
12/27/2003	10:21:20	35.5253333	-120.8056667	5.788	2.14	md	18	78	0.09099	0.11	nc	nc21326116	2017-01-04T22:53:40.115Z	9 km WSW of Templeton, California	earthquake	0.32	1.03	0.14	10	reviewed	nc	nc
12/27/2003	9:42:32	35.5438333	-120.8546667	5.99	2.35	md	39	48	0.04414	0.06	nc	nc21326107	2017-01-04T22:53:29.186Z	11 km NNE of Cayucos, California	earthquake	0.17	0.44	0.13	38	reviewed	nc	nc
12/27/2003	9:02:17	35.5515	-120.8103333	5.278	2.22	md	33	35	0.08108	0.12	nc	nc21326080	2017-01-04T22:53:05.240Z	9 km W of Templeton, California	earthquake	0.21	0.68	0.15	27	reviewed	nc	nc
12/27/2003	8:24:53	35.5431667	-120.8436667	5.2	2.32	md	32	47	0.05225	0.07	nc	nc21325378	2017-01-04T22:52:48.755Z	11 km NNE of Cayucos, California	earthquake	0.2	0.63	0.11	32	reviewed	nc	nc
12/27/2003	6:48:08	35.5665	-120.8175	2.118	2.67	md	46	46	0.08018	0.06	nc	nc21325348	2017-01-04T22:51:11.540Z	Central California	earthquake	0.16	0.77	0.07	50	reviewed	nc	nc
12/27/2003	5:01:41	35.5353333	-120.84	8.111	2.21	md	31	59	0.08378	0.09	nc	nc21325241	2017-01-04T22:50:02.025Z	11 km NNE of Cayucos, California	earthquake	0.25	0.96	0.18	21	reviewed	nc	nc
12/27/2003	4:59:01	35.5311667	-120.8136667	4.678	2.21	md	36	32	0.07568	0.14	nc	nc21325236	2017-01-04T22:49:57.973Z	9 km WSW of Templeton, California	earthquake	0.22	0.86	0.14	27	reviewed	nc	nc
12/27/2003	4:36:24	35.564	-120.8016667	2.388	2.23	md	32	28	0.09099	0.17	nc	nc21325204	2017-01-04T22:49:39.855Z	8 km W of Templeton, California	earthquake	0.26	1.44	0.16	19	reviewed	nc	nc
12/27/2003	4:16:37	35.5193333	-120.8191667	5.1	2.47	md	44	54	0.07297	0.08	nc	nc21325195	2017-01-04T22:49:29.011Z	10 km NE of Cayucos, California	earthquake	0.17	0.65	0.12	41	reviewed	nc	nc
12/27/2003	4:01:06	35.5831667	-120.8655	7.253	2.23	md	12	201	0.05946	0.14	nc	nc68007145	2017-01-04T22:49:09.853Z	14 km WNW of Templeton, California	earthquake	0.62	0.79	0.13	7	reviewed	nc	nc
12/26/2003	23:33:50	35.583	-120.8568333	9.092	2.13	md	30	71	0.06396	0.1	nc	nc21325131	2017-01-04T22:46:40.228Z	14 km WNW of Templeton, California	earthquake	0.2	1.33	0.13	20	reviewed	nc	nc
12/26/2003	23:24:55	35.6106667	-120.9011667	7.232	2.18	md	30	85	0.07658	0.11	nc	nc21325126	2017-01-04T22:46:33.278Z	13 km S of Lake Nacimiento, California	earthquake	0.2	0.76	0.18	18	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/26/2003	23:17:12	35.5701667	-120.9003333	1.458	2.27	md	23	70	0.03694	0.19	nc	nc21325119	2017-01-04T22:46:22.736Z	14 km N of Cayucos, California	earthquake	0.35	0.94	0.15	15	reviewed	nc	nc
12/26/2003	22:24:54	35.5753333	-120.8238333	1.403	2.08	md	27	57	0.07928	0.07	nc	nc21326132	2017-01-04T22:45:54.873Z	11 km WNW of Templeton, California	earthquake	0.2	1.03	0.16	18	reviewed	nc	nc
12/26/2003	22:20:51	35.5436667	-120.8153333	3.917	2.01	md	10	206	0.07568	0.18	nc	nc68007125	2017-01-04T22:45:50.882Z	9 km W of Templeton, California	earthquake	0.85	1.23	0.23	6	reviewed	nc	nc
12/26/2003	21:36:51	35.5435	-120.8681667	6.94	2.65	md	43	45	0.03333	0.06	nc	nc21325069	2017-01-04T22:45:27.500Z	11 km N of Cayucos, California	earthquake	0.15	0.41	0.11	58	reviewed	nc	nc
12/26/2003	21:27:50	35.8771667	-120.6063333	9.009	2.14	md	6	306	0.07297	0.03	nc	nc21325056	2017-01-04T22:45:20.551Z	15 km W of Parkfield, California	earthquake	7.1	3.44		1	reviewed	nc	nc
12/26/2003	21:08:36	35.6176667	-120.8976667	7.091	2.21	md	25	83	0.03423	0.1	nc	nc21325052	2017-01-04T22:45:05.882Z	12 km S of Lake Nacimiento, California	earthquake	0.25	0.44	0.14	16	reviewed	nc	nc
12/26/2003	20:47:55	35.5751667	-120.8338333	4.728	2.85	md	6	231	0.2099	0.11	nc	nc21325041	2017-01-04T22:44:47.873Z	11 km WNW of Templeton, California	earthquake	3.62	7.99		1	reviewed	nc	nc
12/26/2003	20:15:12	35.5365	-120.8473333	7.37	2.09	md	27	73	0.04865	0.12	nc	nc21326009	2017-01-04T22:44:28.147Z	11 km NNE of Cayucos, California	earthquake	0.26	0.65	0.14	12	reviewed	nc	nc
12/26/2003	16:59:49	35.593	-120.8756667	3.703	2.45	md	33	126	0.04865	0.06	nc	nc21325967	2017-01-04T22:42:29.403Z	15 km S of Lake Nacimiento, California	earthquake	0.25	0.4	0.09	30	automatic	nc	nc
12/26/2003	15:59:28	35.5475	-120.8253333	5.335	2.27	md	15	154	0.0991	0.04	nc	nc21325036	2017-01-04T22:42:04.197Z	10 km W of Templeton, California	earthquake	0.36	0.8	0.09	8	automatic	nc	nc
12/26/2003	13:56:20	35.5571667	-120.7953333	3.56	2.24	md	21	134	0.1018	0.08	nc	nc21324991	2017-01-04T22:41:01.295Z	Central California	earthquake	0.3	0.92	0.12	20	automatic	nc	nc
12/26/2003	12:52:17	35.6208333	-120.841	2.083	2.2	md	9	208	0.02883	0.03	nc	nc21324962	2017-01-04T22:40:17.127Z	Central California	earthquake	0.91	1.55	0.34	2	automatic	nc	nc
12/26/2003	12:45:15	35.5825	-120.9005	4.935	2.1	md	19	165	0.06486	0.04	nc	nc21326487	2017-01-04T22:40:06.513Z	15 km N of Cayucos, California	earthquake	0.71	0.45	0.14	18	reviewed	nc	nc
12/26/2003	11:39:25	35.5351667	-120.8511667	7.162	2.17	md	34	115	0.1063	0.04	nc	nc30226729	2017-01-04T22:39:03.860Z	10 km NNE of Cayucos, California	earthquake	0.2	0.88	0.09	28	reviewed	nc	nc
12/26/2003	11:02:51	35.5396667	-120.8513333	6.212	2.82	md	48	101	0.1018	0.06	nc	nc21326505	2017-01-04T22:38:32.150Z	11 km NNE of Cayucos, California	earthquake	0.18	0.73	0.07	59	reviewed	nc	nc
12/26/2003	10:50:21	35.562	-120.8168333	3.805	2.04	md	16	137	0.08919	0.06	nc	nc21326502	2017-01-04T22:38:19.035Z	10 km W of Templeton, California	earthquake	0.29	0.76	0.19	16	reviewed	nc	nc
12/26/2003	8:04:49	35.5226667	-120.8145	4.03	2.43	md	35	61	0.07568	0.09	nc	nc21325001	2017-01-04T22:37:20.567Z	10 km WSW of Templeton, California	earthquake	0.18	0.7	0.13	35	reviewed	nc	nc
12/26/2003	7:55:27	35.5611667	-120.8721667	6.59	2.11	md	22	57	0.03964	0.18	nc	nc21324999	2017-01-04T22:37:13.455Z	13 km N of Cayucos, California	earthquake	0.41	0.81	0.21	12	reviewed	nc	nc
12/26/2003	7:46:18	35.5406667	-120.814	3.888	2.11	md	23	61	0.07568	0.08	nc	nc21324925	2017-01-04T22:37:06.676Z	9 km W of Templeton, California	earthquake	0.26	0.79	0.13	16	reviewed	nc	nc
12/26/2003	6:43:52	35.5748333	-120.8636667	3.95	2.18	md	19	72	0.05405	0.08	nc	nc21324912	2017-01-04T22:36:46.074Z	14 km W of Templeton, California	earthquake	0.24	0.46	0.18	14	reviewed	nc	nc
12/26/2003	5:24:08	35.5628333	-120.9005	6.223	2	md	13	198	0.02973	0.16	nc	nc68007052	2017-01-04T22:36:10.995Z	13 km N of Cayucos, California	earthquake	0.78	0.62	0.15	5	reviewed	nc	nc
12/26/2003	4:56:34	35.595	-120.8776667	6.925	3.04	md	44	78	0.04685	0.07	nc	nc21324885	2017-01-04T22:35:58.590Z	14 km S of Lake Nacimiento, California	earthquake	0.17	0.45	0.08	63	reviewed	nc	nc
12/26/2003	4:54:13	35.5656667	-120.8231667	6.345	2.47	md	38	48	0.07568	0.11	nc	nc21324897	2017-01-04T22:35:51.639Z	10 km W of Templeton, California	earthquake	0.2	1.3	0.13	34	reviewed	nc	nc
12/26/2003	4:50:46	35.5255	-120.8178333	3.26	2.2	md	30	60	0.07297	0.1	nc	nc21324895	2017-01-04T22:35:43.971Z	10 km WSW of Templeton, California	earthquake	0.22	0.94	0.12	17	reviewed	nc	nc
12/26/2003	4:42:14	35.5411667	-120.886	2.97	2.51	md	36	48	0.01802	0.16	nc	nc21324894	2017-01-04T22:35:40.198Z	10 km N of Cayucos, California	earthquake	0.23	0.54	0.12	32	reviewed	nc	nc
12/26/2003	4:39:18	35.5815	-120.8755	2.422	2.56	md	36	76	0.05405	0.06	nc	nc21324893	2017-01-04T22:35:36.280Z	15 km N of Cayucos, California	earthquake	0.17	0.68	0.09	38	reviewed	nc	nc
12/26/2003	4:18:45	35.591	-120.8735	5.441	2.24	md	32	77	0.05045	0.08	nc	nc21325009	2017-01-04T22:35:29.187Z	15 km S of Lake Nacimiento, California	earthquake	0.18	0.53	0.14	22	reviewed	nc	nc
12/26/2003	4:14:48	35.5728333	-120.9045	5.601	2.8	md	47	86	0.03874	0.07	nc	nc21324892	2017-01-04T22:35:24.040Z	14 km N of Cayucos, California	earthquake	0.19	0.37	0.12	57	reviewed	nc	nc
12/26/2003	3:45:05	35.5423333	-120.8655	8.28	2.24	md	29	67	0.03423	0.08	nc	nc30500415	2017-01-04T22:34:43.756Z	11 km NNE of Cayucos, California	earthquake	0.24	0.72	0.11	20	reviewed	nc	nc
12/26/2003	3:43:56	35.5388333	-120.8515	5.545	2.92	md	48	56	0.04505	0.07	nc	nc21324882	2017-01-04T22:34:38.790Z	11 km NNE of Cayucos, California	earthquake	0.16	0.5	0.1	58	reviewed	nc	nc
12/26/2003	2:20:34	35.5415	-120.8536667	6.327	2.07	md	10	236	0.04414	0.16	nc	nc68007027	2017-01-04T22:33:06.131Z	11 km NNE of Cayucos, California	earthquake	0.87	1.32	0.28	6	reviewed	nc	nc
12/26/2003	1:03:20	35.5408333	-120.8476667	6.665	2.24	md	31	36	0.04865	0.14	nc	nc21324854	2017-01-04T22:31:55.296Z	11 km NNE of Cayucos, California	earthquake	0.24	0.69	0.19	13	reviewed	nc	nc
12/25/2003	23:53:13	35.5453333	-120.8288333	3.47	2.24	md	31	58	0.06486	0.07	nc	nc30500405	2017-01-04T22:31:03.312Z	11 km W of Templeton, California	earthquake	0.18	0.7	0.15	22	reviewed	nc	nc
12/25/2003	23:04:44	35.5356667	-120.8495	6.761	2.96	md	7	275	0.1279	0.02	nc	nc68007009	2017-01-04T22:30:26.426Z	11 km NNE of Cayucos, California	earthquake	0.56	1.02	0.1	4	reviewed	nc	nc
12/25/2003	23:04:15	35.5721667	-120.8973333	4.463	3.51	md	14	193	0.03874	0.09	nc	nc68007008	2017-01-04T22:30:22.918Z	14 km N of Cayucos, California	earthquake	0.68	0.46	0.06	12	reviewed	nc	nc
12/25/2003	22:21:42	35.5298333	-120.8475	1.4	2.2	md	35	52	0.04865	0.1	nc	nc21325500	2017-01-04T22:29:50.931Z	10 km NNE of Cayucos, California	earthquake	0.15	0.67	0.15	22	reviewed	nc	nc
12/25/2003	22:16:31	35.542	-120.8105	4.67	2.07	md	26	44	0.07928	0.16	nc	nc21325499	2017-01-04T22:29:47.168Z	9 km W of Templeton, California	earthquake	0.29	1.14	0.16	16	reviewed	nc	nc
12/25/2003	20:49:03	35.5708333	-120.8256667	1.64	2.55	md	46	37	0.07568	0.08	nc	nc21324792	2017-01-04T22:29:00.587Z	11 km WNW of Templeton, California	earthquake	0.15	1.14	0.1	36	reviewed	nc	nc
12/25/2003	20:33:18	35.5788333	-120.8806667	3.798	2.88	md	41	78	0.04955	0.06	nc	nc21324790	2017-01-04T22:28:51.570Z	15 km N of Cayucos, California	earthquake	0.16	0.38	0.09	58	reviewed	nc	nc
12/25/2003	20:04:19	35.5781667	-120.8591667	2.803	2.47	md	40	70	0.05856	0.08	nc	nc21324783	2017-01-04T22:28:24.500Z	14 km WNW of Templeton, California	earthquake	0.16	0.59	0.11	37	reviewed	nc	nc
12/25/2003	19:47:22	35.5316667	-120.8293333	6.717	2.11	md	13	195	0.06306	0.16	nc	nc68006994	2017-01-04T22:28:13.692Z	11 km W of Templeton, California	earthquake	0.75	1.06	0.04	5	reviewed	nc	nc
12/25/2003	19:41:46	35.5358333	-120.837	5.87	3.36	ml	51	56	0.05676	0.07	nc	nc21324779	2017-01-04T22:28:09.030Z	11 km NNE of Cayucos, California	earthquake	0.16	0.58		3	reviewed	nc	nc
12/25/2003	19:18:58	35.5711667	-120.804	1.358	2.19	md	26	55	0.09189	0.06	nc	nc21325079	2017-01-04T22:27:41.156Z	9 km WNW of Templeton, California	earthquake	0.21	1.21	0.11	19	reviewed	nc	nc
12/25/2003	18:03:46	35.5698333	-120.8393333	7.9	2.17	md	17	157	0.06577	0.14	nc	nc30500533	2017-01-04T22:26:25.901Z	12 km W of Templeton, California	earthquake	0.51	2.17	0.05	7	reviewed	nc	nc
12/25/2003	18:03:16	35.6001667	-120.8653333	7.151	2.06	md	25	74	0.04144	0.12	nc	nc21325922	2017-01-04T22:26:22.522Z	14 km S of Lake Nacimiento, California	earthquake	0.31	0.93	0.12	18	reviewed	nc	nc
12/25/2003	17:39:23	35.5236667	-120.8208333	4.26	2.3	md	30	60	0.07117	0.07	nc	nc21325916	2017-01-04T22:26:09.225Z	10 km WSW of Templeton, California	earthquake	0.22	0.77	0.14	25	reviewed	nc	nc
12/25/2003	17:24:56	35.5948333	-120.8995	3.523	2.33	md	34	84	0.06126	0.06	nc	nc21325912	2017-01-04T22:25:57.684Z	14 km S of Lake Nacimiento, California	earthquake	0.16	0.56	0.1	31	reviewed	nc	nc
12/25/2003	17:22:42	35.526	-120.8261667	4.55	2.11	md	38	60	0.06667	0.06	nc	nc30227366	2017-01-04T22:25:52.440Z	11 km NNE of Cayucos, California	earthquake	0.2	0.63	0.13	18	reviewed	nc	nc
12/25/2003	17:15:34	35.5373333	-120.8403333	4.473	2.29	md	18	74	0.05405	0.07	nc	nc21325907	2017-01-04T22:25:35.510Z	11 km NNE of Cayucos, California	earthquake	0.25	0.9	0.1	14	reviewed	nc	nc
12/25/2003	17:01:31	35.5418333	-120.8103333	3.408	2.12	md	18	61	0.07928	0.07	nc	nc21325904	2017-01-04T22:25:16.988Z	9 km W of Templeton, California	earthquake	0.27	0.99	0.15	11	reviewed	nc	nc
12/25/2003	15:59:28	35.6285	-120.8971667	7.375	2.02	md	29	59	0.02793	0.14	nc	nc21324761	2017-01-04T22:24:43.791Z	11 km S of Lake Nacimiento, California	earthquake	0.28	0.47	0.29	20	reviewed	nc	nc
12/25/2003	15:45:34	35.5348333	-120.8611667	3.67	2.33	md	31	41	0.03694	0.16	nc	nc21324756	2017-01-04T22:24:36.779Z	10 km NNE of Cayucos, California	earthquake	0.26	0.74	0.08	25	reviewed	nc	nc
12/25/2003	15:25:08	35.5398333	-120.835	5.623	2.13	md	26	55	0.05856	0.06	nc	nc30500391	2017-01-04T22:24:16.712Z	11 km W of Templeton, California	earthquake	0.2	0.66	0.14	13	reviewed	nc	nc
12/25/2003	15:23:34	35.5913333	-120.899	5.128	2.38	md	35	85	0.05676	0.08	nc	nc21324734	2017-01-04T22:24:12.919Z	15 km S of Lake Nacimiento, California	earthquake	0.19	0.54	0.14	35	reviewed	nc	nc
12/25/2003	15:07:39	35.55	-120.846	-0.167	2.1	md	11	203	0.05225	0.22	nc	nc68006964	2017-01-04T22:23:42.029Z	12 km NNE of Cayucos, California	earthquake	0.71	1.05	0.04	6	reviewed	nc	nc
12/25/2003	14:59:46	35.5446667	-120.8555	6.161	2.37	md	34	54	0.04324	0.07	nc	nc21324705	2017-01-04T22:23:31.599Z	11 km NNE of Cayucos, California	earthquake	0.21	0.54	0.15	33	reviewed	nc	nc
12/25/2003	13:56:33	35.5833333	-120.8833333	5.218	2.28	md	28	63	0.05315	0.16	nc	nc21326513	2017-01-04T22:22:17.990Z	15 km N of Cayucos, California	earthquake	0.24	0.74	0.09	12	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/25/2003	13:10:41	35.5445	-120.851	-0.157	2.14	md	12	211	0.04685	0.31	nc	nc68006952	2017-01-04T22:21:41.376Z	11 km NNE of Cayucos, California	earthquake	1	1.9	0.1	5	reviewed	nc	nc
12/25/2003	12:55:16	35.6268333	-120.8961667	7.615	2.2	md	32	83	0.02793	0.1	nc	nc21324700	2017-01-04T22:21:26.145Z	11 km S of Lake Nacimiento, California	earthquake	0.22	0.37	0.18	25	reviewed	nc	nc
12/25/2003	12:35:38	35.5406667	-120.8525	5.6	2.94	md	50	56	0.04505	0.08	nc	nc21324689	2017-01-04T22:21:10.100Z	11 km NNE of Cayucos, California	earthquake	0.16	0.49	0.11	71	reviewed	nc	nc
12/25/2003	12:18:12	35.5186667	-120.855	1.413	2.21	md	12	187	0.04505	0.18	nc	nc68006945	2017-01-04T22:20:51.392Z	9 km NNE of Cayucos, California	earthquake	0.7	1.44	0.08	5	reviewed	nc	nc
12/25/2003	12:04:40	35.5546667	-120.8513333	7.183	2.91	md	13	196	0.04955	0.13	nc	nc68006942	2017-01-04T22:20:30.448Z	12 km NNE of Cayucos, California	earthquake	0.92	0.62	0.09	11	reviewed	nc	nc
12/25/2003	12:00:17	35.5378333	-120.8476667	5.833	2.58	md	15	193	0.04865	0.17	nc	nc68006940	2017-01-04T22:20:23.696Z	11 km NNE of Cayucos, California	earthquake	0.74	0.7	0.05	7	reviewed	nc	nc
12/25/2003	11:57:53	35.5816667	-120.8941667	4.738	2.29	md	29	66	0.04865	0.15	nc	nc21324677	2017-01-04T22:20:19.822Z	15 km N of Cayucos, California	earthquake	0.28	0.51	0.21	23	reviewed	nc	nc
12/25/2003	11:50:02	35.5476667	-120.8286667	4.591	4.41	ml	12	215	0.27	0.25	ci	ci9968977	2022-06-18T07:47:52.871Z	11km W of Templeton, CA	earthquake	2.18	6.69	0.205	131	reviewed	ci	ci
12/25/2003	11:47:13	35.5321667	-120.8226667	7.57	2.07	md	24	66	0.06847	0.1	nc	nc21325879	2017-01-04T22:19:59.341Z	10 km W of Templeton, California	earthquake	0.29	1.04	0.26	13	reviewed	nc	nc
12/25/2003	11:41:06	35.5953333	-120.8983333	4.638	2.35	md	36	84	0.05315	0.08	nc	nc21325873	2017-01-04T22:19:52.132Z	14 km S of Lake Nacimiento, California	earthquake	0.18	0.39	0.14	35	reviewed	nc	nc
12/25/2003	11:14:11	35.5421667	-120.8661667	4.183	2.17	md	14	191	0.03423	0.2	nc	nc68006930	2017-01-04T22:19:18.761Z	11 km NNE of Cayucos, California	earthquake	0.78	0.7	0.05	7	reviewed	nc	nc
12/25/2003	10:47:23	35.5793333	-120.8885	4.048	2.71	md	49	80	0.04775	0.07	nc	nc21324736	2017-01-04T22:18:59.880Z	15 km N of Cayucos, California	earthquake	0.16	0.35	0.08	57	reviewed	nc	nc
12/25/2003	10:40:33	35.5713333	-120.8305	2.145	2.6	md	35	53	0.07297	0.07	nc	nc21324733	2017-01-04T22:18:48.000Z	11 km WNW of Templeton, California	earthquake	0.17	1	0.17	36	reviewed	nc	nc
12/25/2003	9:29:44	35.542	-120.8543333	8.508	2.31	md	31	64	0.04324	0.06	nc	nc21324749	2017-01-04T22:17:31.836Z	11 km NNE of Cayucos, California	earthquake	0.21	0.84	0.18	27	reviewed	nc	nc
12/25/2003	8:50:21	35.578	-120.882	4.411	2.5	md	40	78	0.04865	0.12	nc	nc21326765	2017-01-04T22:17:01.866Z	15 km N of Cayucos, California	earthquake	0.23	0.57	0.11	31	reviewed	nc	nc
12/25/2003	8:32:44	35.5588333	-120.8143333	4.28	2.06	md	34	41	0.07928	0.15	nc	nc21326761	2017-01-04T22:16:58.175Z	9 km W of Templeton, California	earthquake	0.29	0.71	0.12	13	reviewed	nc	nc
12/25/2003	7:54:21	35.5778333	-120.8846667	3.863	2.66	md	37	79	0.04775	0.06	nc	nc21324659	2017-01-04T22:16:26.127Z	15 km N of Cayucos, California	earthquake	0.17	0.47	0.06	44	reviewed	nc	nc
12/25/2003	7:40:23	35.5383333	-120.8603333	1.193	2.67	md	8	212	0.03784	0.2	nc	nc68006907	2017-01-04T22:16:22.493Z	Central California	earthquake	0.61	1.16	0.03	4	reviewed	nc	nc
12/25/2003	7:36:48	35.5258333	-120.8178333	4.84	2.7	md	43	59	0.07297	0.08	nc	nc21324657	2017-01-04T22:16:08.085Z	10 km WSW of Templeton, California	earthquake	0.16	0.7	0.08	53	reviewed	nc	nc
12/25/2003	6:12:00	35.5388333	-120.8588333	6.825	2.58	md	36	56	0.03964	0.06	nc	nc30500587	2017-01-04T22:14:00.230Z	11 km NNE of Cayucos, California	earthquake	0.2	0.61	0.11	39	reviewed	nc	nc
12/25/2003	5:26:08	35.544	-120.8476667	5.637	2.46	md	8	217	0.04955	0.08	nc	nc68006875	2017-01-04T22:13:23.255Z	11 km NNE of Cayucos, California	earthquake	0.93	0.73	0.04	6	reviewed	nc	nc
12/25/2003	5:24:34	35.592	-120.8975	4.288	2.47	md	28	84	0.05495	0.08	nc	nc30500584	2017-01-04T22:13:15.297Z	15 km S of Lake Nacimiento, California	earthquake	0.2	0.39	0.14	25	reviewed	nc	nc
12/25/2003	5:15:19	35.5416667	-120.8485	4.958	2.76	md	38	57	0.04865	0.09	nc	nc21326779	2017-01-04T22:12:38.690Z	11 km NNE of Cayucos, California	earthquake	0.19	0.66	0.1	43	reviewed	nc	nc
12/25/2003	4:52:31	35.576	-120.8815	4.538	2.48	md	18	86	0.1171	0.07	nc	nc21324606	2017-01-04T22:12:10.516Z	14 km N of Cayucos, California	earthquake	0.26	1.07	0.17	12	reviewed	nc	nc
12/25/2003	4:33:17	35.5433333	-120.8473333	4.86	2.63	md	41	55	0.04955	0.07	nc	nc21324594	2017-01-04T22:12:03.407Z	11 km NNE of Cayucos, California	earthquake	0.16	0.54	0.09	44	reviewed	nc	nc
12/25/2003	4:01:59	35.5391667	-120.8276667	4.128	2.29	md	32	56	0.06486	0.07	nc	nc21324567	2017-01-04T22:11:30.411Z	11 km W of Templeton, California	earthquake	0.18	0.69	0.17	26	reviewed	nc	nc
12/25/2003	3:59:15	35.5673333	-120.8595	-0.306	2.13	md	13	161	0.05135	0.35	nc	nc21324559	2017-01-04T22:11:26.313Z	14 km W of Templeton, California	earthquake	1.2	2.57	0.1	7	reviewed	nc	nc
12/25/2003	2:59:24	35.5288333	-120.8456667	6.61	2.37	md	33	60	0.05045	0.07	nc	nc21324497	2017-01-04T22:10:17.335Z	10 km NNE of Cayucos, California	earthquake	0.2	0.6	0.13	33	reviewed	nc	nc
12/25/2003	2:45:28	35.5901667	-120.8758333	3.118	2.35	md	31	77	0.05135	0.08	nc	nc21326912	2017-01-04T22:10:09.876Z	15 km S of Lake Nacimiento, California	earthquake	0.2	0.44	0.13	29	reviewed	nc	nc
12/25/2003	2:44:18	35.5928333	-120.8753333	2.953	2.07	md	9	223	0.06396	0.18	nc	nc68006845	2017-01-04T22:10:06.072Z	15 km S of Lake Nacimiento, California	earthquake	0.76	1.35	0.06	3	reviewed	nc	nc
12/25/2003	2:08:51	35.532	-120.8273333	5.14	2.14	md	25	58	0.06486	0.07	nc	nc21324460	2017-01-04T22:09:40.173Z	11 km W of Templeton, California	earthquake	0.23	0.74	0.12	10	reviewed	nc	nc
12/25/2003	1:48:11	35.5798333	-120.895	4.132	2.37	md	26	82	0.04685	0.07	nc	nc21326921	2017-01-04T22:09:26.408Z	15 km N of Cayucos, California	earthquake	0.21	0.48	0.14	17	reviewed	nc	nc
12/25/2003	1:46:12	35.6186667	-120.897	7.452	2.37	md	36	60	0.08559	0.17	nc	nc21324444	2017-01-04T22:09:22.838Z	12 km S of Lake Nacimiento, California	earthquake	0.22	0.83	0.12	32	reviewed	nc	nc
12/25/2003	0:46:25	35.5425	-120.8403333	3.988	2.03	md	19	94	0.05495	0.1	nc	nc21325859	2017-01-04T22:08:57.490Z	12 km NNE of Cayucos, California	earthquake	0.27	0.83	0.11	8	reviewed	nc	nc
12/25/2003	0:43:42	35.5801667	-120.8445	0.57	2.49	md	38	63	0.06396	0.06	nc	nc21325858	2017-01-04T22:08:54.064Z	13 km WNW of Templeton, California	earthquake	0.16	0.73	0.15	33	reviewed	nc	nc
12/25/2003	0:36:30	35.595	-120.8988333	4.568	2.27	md	33	84	0.05315	0.09	nc	nc30500531	2017-01-04T22:08:40.366Z	14 km S of Lake Nacimiento, California	earthquake	0.21	0.43	0.08	28	reviewed	nc	nc
12/24/2003	23:50:05	35.5441667	-120.8763333	1.641	2.26	md	37	52	0.02703	0.13	nc	nc21324500	2017-01-04T22:07:36.577Z	11 km N of Cayucos, California	earthquake	0.21	0.61	0.13	30	reviewed	nc	nc
12/24/2003	23:22:07	35.5836667	-120.8655	7.082	2.03	md	41	47	0.05766	0.08	nc	nc21324486	2017-01-04T22:06:56.350Z	14 km WNW of Templeton, California	earthquake	0.18	0.43	0.2	18	reviewed	nc	nc
12/24/2003	23:13:46	35.5353333	-120.8386667	5.57	2.4	md	39	57	0.05586	0.08	nc	nc21324485	2017-01-04T22:06:49.648Z	11 km NNE of Cayucos, California	earthquake	0.17	0.58	0.12	33	reviewed	nc	nc
12/24/2003	20:45:35	35.5413333	-120.8386667	5.648	2.22	md	31	48	0.05586	0.06	nc	nc30500355	2017-01-04T22:04:37.631Z	11 km NNE of Cayucos, California	earthquake	0.17	0.56	0.12	21	reviewed	nc	nc
12/24/2003	20:45:06	35.5855	-120.8798333	4.008	2.14	md	25	61	0.05586	0.18	nc	nc21324523	2017-01-04T22:04:33.507Z	15 km S of Lake Nacimiento, California	earthquake	0.32	0.6	0.13	13	reviewed	nc	nc
12/24/2003	20:43:24	35.5421667	-120.8926667	4.078	2	md	22	83	0.01441	0.2	nc	nc21324519	2017-01-04T22:04:29.611Z	11 km N of Cayucos, California	earthquake	0.32	0.57	0.07	8	reviewed	nc	nc
12/24/2003	20:15:47	35.5725	-120.8293333	3.14	2.14	md	23	80	0.07387	0.07	nc	nc30506038	2017-01-04T22:04:12.104Z	11 km WNW of Templeton, California	earthquake	0.21	0.61	0.07	10	reviewed	nc	nc
12/24/2003	20:06:22	35.533	-120.8983333	7.123	2.82	md	14	183	0.007207	0.15	nc	nc68006783	2017-01-04T22:03:51.005Z	10 km N of Cayucos, California	earthquake	0.81	0.93	0.09	10	reviewed	nc	nc
12/24/2003	19:59:25	35.5696667	-120.855	5.55	2.64	md	46	63	0.05495	0.07	nc	nc30500353	2017-01-04T22:03:39.490Z	13 km W of Templeton, California	earthquake	0.18	0.52	0.1	49	reviewed	nc	nc
12/24/2003	19:58:26	35.537	-120.843	3.81	2.22	md	22	56	0.05225	0.16	nc	nc21324502	2017-01-04T22:03:32.191Z	11 km NNE of Cayucos, California	earthquake	0.29	0.93	0.1	8	reviewed	nc	nc
12/24/2003	19:56:15	35.5368333	-120.8066667	7.308	2.09	md	17	110	0.08198	0.12	nc	nc21324501	2017-01-04T22:03:28.651Z	9 km W of Templeton, California	earthquake	0.41	1.42	0.11	11	reviewed	nc	nc
12/24/2003	19:17:36	35.6226667	-120.8741667	6.871	2.61	md	50	49	0.01982	0.06	nc	nc21325784	2017-01-04T22:03:16.340Z	11 km S of Lake Nacimiento, California	earthquake	0.14	0.59	0.08	56	reviewed	nc	nc
12/24/2003	18:47:48	35.5488333	-120.852	3.731	2.22	md	19	144	0.1955	0.03	nc	nc21324474	2017-01-04T22:02:45.218Z	12 km NNE of Cayucos, California	earthquake	0.55	2.17	0.17	17	automatic	nc	nc
12/24/2003	18:20:04	35.533	-120.8203333	3.908	2.13	md	20	78	0.07027	0.19	nc	nc21324469	2017-01-04T22:02:30.371Z	10 km W of Templeton, California	earthquake	0.36	0.86	0.08	9	reviewed	nc	nc
12/24/2003	17:21:41	35.5766667	-120.8758333	3.74	2.17	md	24	76	0.04955	0.07	nc	nc21324527	2017-01-04T22:01:30.427Z	14 km N of Cayucos, California	earthquake	0.22	0.45	0.09	15	reviewed	nc	nc
12/24/2003	17:09:47	35.5465	-120.8605	6.17	2.08	md	26	57	0.03964	0.07	nc	nc21324566	2017-01-04T22:01:20.103Z	11 km NNE of Cayucos, California	earthquake	0.24	0.5	0.13	17	reviewed	nc	nc
12/24/2003	16:59:06	35.5346667	-120.8895	1.66	3.09	ml	45	54	0.01441	0.06	nc	nc21324600	2017-01-04T22:01:04.630Z	10 km N of Cayucos, California	earthquake	0.16	0.37		2	reviewed	nc	nc
12/24/2003	16:54:11	35.5891667	-120.8828333	1.193	2.57	md	34	79	0.05856	0.08	nc	nc21324599	2017-01-04T22:00:58.181Z	15 km S of Lake Nacimiento, California	earthquake	0.17	1.01	0.12	39	reviewed	nc	nc
12/24/2003	16:22:40	35.5425	-120.8498333	5.098	2.1	md	20	97	0.04685	0.07	nc	nc21324371	2017-01-04T22:00:13.919Z	11 km NNE of Cayucos, California	earthquake	0.25	0.64	0.13	12	reviewed	nc	nc
12/24/2003	15:52:29	35.5281667	-120.8271667	4.85	2.29	md	29	59	0.06486	0.07	nc	nc21324376	2017-01-04T21:59:39.918Z	11 km NNE of Cayucos, California	earthquake	0.22	0.77	0.13	25	reviewed	nc	nc
12/24/2003	15:27:06	35.5648333	-120.822	3.52	3.13	ml	45	34	0.07568	0.11	nc	nc21324585	2017-01-04T21:59:16.590Z	10 km W of Templeton, California	earthquake	0.19	0.66		2	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/24/2003	14:56:07	35.5981667	-120.9005	4.252	2.35	md	48	52	0.05135	0.08	nc	nc21324577	2017-01-04T21:58:48.590Z	14 km S of Lake Nacimiento, California	earthquake	0.14	0.35	0.11	43	reviewed	nc	nc
12/24/2003	14:37:46	35.5568333	-120.8815	-0.475	2.36	md	18	229	0.08559	0.08	nc	nc30500350	2017-01-04T21:58:27.643Z	12 km N of Cayucos, California	earthquake	0.74	2.71	0.06	21	automatic	nc	nc
12/24/2003	14:36:09	35.5705	-120.8596667	8.696	2.85	md	8	226	0.2649	0.02	nc	nc30500349	2017-01-04T21:58:23.664Z	14 km W of Templeton, California	earthquake	1.5	5.29	0.06	12	automatic	nc	nc
12/24/2003	14:09:15	35.5648333	-120.8173333	3.385	2.23	md	23	150	0.08649	0.07	nc	nc21324329	2017-01-04T21:57:46.106Z	10 km W of Templeton, California	earthquake	0.32	0.86	0.05	23	automatic	nc	nc
12/24/2003	14:02:27	35.5425	-120.8453333	-0.405	2.32	md	22	158	0.1	0.07	nc	nc21324326	2017-01-04T21:57:34.745Z	11 km NNE of Cayucos, California	earthquake	0.29	3.93	0.11	22	automatic	nc	nc
12/24/2003	13:12:06	35.5278333	-120.876	4.015	2.25	md	12	171	0.1135	0.03	nc	nc21324582	2017-01-04T21:57:04.494Z	9 km N of Cayucos, California	earthquake	0.85	0.79	0.11	11	automatic	nc	nc
12/24/2003	12:46:18	35.5956667	-120.8786667	-0.085	2.57	md	31	140	0.04685	0.08	nc	nc21324327	2017-01-04T21:56:45.750Z	14 km S of Lake Nacimiento, California	earthquake	0.27	1.45	0.1	36	automatic	nc	nc
12/24/2003	12:17:56	35.6265	-120.895	6.85	2.16	md	12	154	0.02793	0.06	nc	nc21324320	2017-01-04T21:56:30.226Z	11 km S of Lake Nacimiento, California	earthquake	0.67	1.36	0.07	17	automatic	nc	nc
12/24/2003	11:51:28	35.3705	-120.7661667	15.571	2.34	md	5	330	0.1342	0.06	nc	nc21324243	2017-01-04T21:55:54.021Z	7 km E of Morro Bay, California	earthquake	7.74	1.97	0.09	9	automatic	nc	nc
12/24/2003	10:52:29	35.6041667	-120.86	7.47	2.43	md	27	152	0.03694	0.03	nc	nc21324191	2017-01-04T21:54:45.707Z	13 km S of Lake Nacimiento, California	earthquake	0.3	0.48	0.05	29	automatic	nc	nc
12/24/2003	10:14:31	35.6073333	-120.8868333	3.555	2.15	md	20	138	0.03784	0.06	nc	nc21324160	2017-01-04T21:54:07.930Z	13 km S of Lake Nacimiento, California	earthquake	0.27	1.64	0.1	16	automatic	nc	nc
12/24/2003	10:06:29	35.5646667	-120.8381667	3.853	2.48	md	38	102	0.08018	0.04	nc	nc21324153	2017-01-04T21:54:00.010Z	12 km W of Templeton, California	earthquake	0.32	0.76	0.09	43	reviewed	nc	nc
12/24/2003	9:36:08	35.5388333	-120.8426667	5.96	3.74	ml	49	55	0.05225	0.07	nc	nc21326523	2017-01-04T21:53:38.040Z	11 km NNE of Cayucos, California	earthquake	0.17	0.59		7	reviewed	nc	nc
12/24/2003	9:28:05	35.5706667	-120.8146667	2.205	2.28	md	8	224	0.08198	0.03	nc	nc30500545	2017-01-04T21:53:19.468Z	10 km WNW of Templeton, California	earthquake	1.11	6.33	0.12	10	automatic	nc	nc
12/24/2003	9:27:27	35.5951667	-120.877	4.155	2.16	md	19	140	0.04685	0.06	nc	nc21326519	2017-01-04T21:53:15.614Z	14 km S of Lake Nacimiento, California	earthquake	0.42	1.21	0.12	20	automatic	nc	nc
12/24/2003	9:13:03	35.527	-120.8686667	3.363	2.74	md	35	115	0.1144	0.06	nc	nc21324120	2017-01-04T21:53:03.890Z	9 km NNE of Cayucos, California	earthquake	0.24	0.55	0.09	43	reviewed	nc	nc
12/24/2003	9:02:00	35.5978333	-120.8333333	5.437	2.24	md	19	145	0.05135	0.12	nc	nc21324125	2017-01-04T21:52:49.918Z	12 km WNW of Templeton, California	earthquake	0.39	2.21	0.11	22	automatic	nc	nc
12/24/2003	8:48:37	35.5351667	-120.8661667	0.303	2.84	md	38	150	0.1063	0.05	nc	nc21324117	2017-01-04T21:52:35.370Z	10 km NNE of Cayucos, California	earthquake	0.27	0.94	0.05	47	reviewed	nc	nc
12/24/2003	8:45:01	35.5986667	-120.8766667	6.02	2.32	md	22	197	0.04324	0.04	nc	nc21324114	2017-01-04T21:52:25.197Z	14 km S of Lake Nacimiento, California	earthquake	0.89	0.38	0.07	23	automatic	nc	nc
12/24/2003	8:06:00	35.5496667	-120.8638333	2.643	2.28	md	34	110	0.09189	0.06	nc	nc21325750	2017-01-04T21:51:31.650Z	12 km NNE of Cayucos, California	earthquake	0.31	1.89	0.1	34	reviewed	nc	nc
12/24/2003	8:03:08	35.5456667	-120.832	0.992	2.75	md	45	98	0.0991	0.04	nc	nc21324103	2017-01-04T21:51:17.410Z	11 km W of Templeton, California	earthquake	0.29	2.71	0.09	56	reviewed	nc	nc
12/24/2003	7:28:57	35.5833333	-120.8925	4.293	2.29	md	25	66	0.06126	0.05	nc	nc21325513	2017-01-04T21:50:40.710Z	15 km N of Cayucos, California	earthquake	0.21	0.49	0.1	27	reviewed	nc	nc
12/24/2003	7:26:11	35.582	-120.8391667	2.752	2.2	md	21	120	0.06306	0.09	nc	nc21325511	2017-01-04T21:50:32.362Z	12 km WNW of Templeton, California	earthquake	0.35	0.79	0.08	19	automatic	nc	nc
12/24/2003	6:59:19	35.5451667	-120.8585	3.313	2.26	md	30	76	0.0964	0.08	nc	nc30226825	2017-01-04T21:50:03.140Z	11 km NNE of Cayucos, California	earthquake	0.24	0.84	0.18	29	reviewed	nc	nc
12/24/2003	6:59:02	35.56	-120.89	5.743	2.13	md	36	96	0.08378	0.03	nc	nc21324078	2017-01-04T21:49:54.960Z	13 km N of Cayucos, California	earthquake	0.2	0.46	0.35	23	reviewed	nc	nc
12/24/2003	6:39:51	35.602	-120.887	4.325	2.51	md	34	140	0.04234	0.05	nc	nc21324162	2017-01-04T21:49:21.950Z	14 km S of Lake Nacimiento, California	earthquake	0.26	0.36	0.09	37	automatic	nc	nc
12/24/2003	5:47:50	35.5753333	-120.861	3.568	2.76	md	43	69	0.05586	0.07	nc	nc21324631	2017-01-04T21:48:12.890Z	14 km WNW of Templeton, California	earthquake	0.17	0.45	0.11	55	reviewed	nc	nc
12/24/2003	5:27:05	35.5385	-120.8345	6.103	2.07	md	10	219	0.05946	0.17	nc	nc68006649	2017-01-04T21:47:43.107Z	11 km W of Templeton, California	earthquake	0.99	1.16	0.05	4	reviewed	nc	nc
12/24/2003	5:08:06	35.535	-120.8676667	2.683	2.35	md	14	189	0.03153	0.22	nc	nc68006644	2017-01-04T21:47:13.963Z	10 km NNE of Cayucos, California	earthquake	0.86	0.93	0.14	7	reviewed	nc	nc
12/24/2003	5:06:32	35.5285	-120.8728333	1.42	2.84	md	32	50	0.02793	0.11	nc	nc21324152	2017-01-04T21:47:10.623Z	9 km N of Cayucos, California	earthquake	0.19	0.61	0.09	43	reviewed	nc	nc
12/24/2003	3:35:03	35.5503333	-120.889	2.032	2.29	md	37	45	0.02162	0.25	nc	nc21324174	2017-01-04T21:44:48.075Z	11 km N of Cayucos, California	earthquake	0.28	0.58	0.11	23	reviewed	nc	nc
12/24/2003	3:09:56	35.5531667	-120.8555	6.933	2.27	md	10	210	0.04595	0.14	nc	nc68006618	2017-01-04T21:44:02.248Z	12 km NNE of Cayucos, California	earthquake	1.1	0.69	0.09	8	reviewed	nc	nc
12/24/2003	3:06:53	35.5285	-120.8426667	6.2	2.4	md	26	52	0.05225	0.07	nc	nc21324181	2017-01-04T21:43:49.993Z	10 km NNE of Cayucos, California	earthquake	0.22	0.6	0.15	28	reviewed	nc	nc
12/24/2003	3:03:39	35.5275	-120.8413333	5.46	3.05	md	36	53	0.05405	0.08	nc	nc21326752	2017-01-04T21:43:42.990Z	10 km NNE of Cayucos, California	earthquake	0.18	0.52	0.1	51	reviewed	nc	nc
12/24/2003	2:27:20	35.5915	-120.9033333	7.683	2.14	md	7	217	0.05766	0.14	nc	nc68006606	2017-01-04T21:42:35.196Z	15 km S of Lake Nacimiento, California	earthquake	1.82	1.05	0.01	5	reviewed	nc	nc
12/24/2003	2:19:49	35.5401667	-120.8873333	2.825	2.15	md	13	165	0.01712	0.25	nc	nc68006603	2017-01-04T21:42:10.567Z	10 km N of Cayucos, California	earthquake	1.15	0.67	0.05	5	reviewed	nc	nc
12/24/2003	1:46:02	35.5426667	-120.8665	1.273	2.27	md	14	191	0.03423	0.23	nc	nc68006596	2017-01-04T21:41:05.060Z	11 km NNE of Cayucos, California	earthquake	0.77	1.01	0.13	9	reviewed	nc	nc
12/24/2003	1:41:01	35.5693333	-120.8253333	2.15	2.24	md	26	50	0.07568	0.08	nc	nc21324172	2017-01-04T21:41:00.922Z	11 km WNW of Templeton, California	earthquake	0.2	1.07	0.1	20	reviewed	nc	nc
12/24/2003	1:07:12	35.5481667	-120.866	6.245	2.63	md	36	50	0.03604	0.09	nc	nc21324171	2017-01-04T21:40:19.629Z	11 km NNE of Cayucos, California	earthquake	0.19	0.51	0.07	44	reviewed	nc	nc
12/24/2003	0:59:11	35.5353333	-120.8315	7.137	2.35	md	13	195	0.06126	0.14	nc	nc68006587	2017-01-04T21:40:09.216Z	11 km W of Templeton, California	earthquake	0.86	1.17	0.12	8	reviewed	nc	nc
12/24/2003	0:44:12	35.5468333	-120.8588333	5.46	2.13	md	33	45	0.04144	0.08	nc	nc21325740	2017-01-04T21:39:52.894Z	11 km NNE of Cayucos, California	earthquake	0.2	0.46	0.12	23	reviewed	nc	nc
12/24/2003	0:36:05	35.574	-120.8366667	3.33	2.11	md	27	56	0.07027	0.09	nc	nc21324116	2017-01-04T21:39:35.935Z	12 km WNW of Templeton, California	earthquake	0.19	0.57	0.15	23	reviewed	nc	nc
12/24/2003	0:24:32	35.548	-120.8323333	3.95	2.01	md	20	72	0.06216	0.15	nc	nc21325049	2017-01-04T21:39:04.286Z	11 km W of Templeton, California	earthquake	0.4	1.07	0.11	6	reviewed	nc	nc
12/24/2003	0:10:17	35.5695	-120.829	3.783	2.61	md	13	204	0.07297	0.17	nc	nc68006576	2017-01-04T21:38:48.988Z	11 km W of Templeton, California	earthquake	0.94	1.01	0.1	8	reviewed	nc	nc
12/23/2003	23:50:31	35.5723333	-120.8218333	4.02	2.48	md	45	49	0.07748	0.06	nc	nc30500501	2017-01-04T21:38:29.520Z	10 km WNW of Templeton, California	earthquake	0.16	0.49	0.07	43	reviewed	nc	nc
12/23/2003	23:42:31	35.5788333	-120.833	1.75	2.39	md	36	57	0.06847	0.1	nc	nc21325289	2017-01-04T21:38:17.081Z	11 km WNW of Templeton, California	earthquake	0.19	0.97	0.11	32	reviewed	nc	nc
12/23/2003	23:37:39	35.517	-120.8608333	5.51	2.24	md	17	69	0.04144	0.09	nc	nc30500499	2017-01-04T21:38:06.753Z	8 km NNE of Cayucos, California	earthquake	0.34	0.74	0.17	14	reviewed	nc	nc
12/23/2003	23:31:24	35.5775	-120.8321667	2.198	2.24	md	21	57	0.07477	0.18	nc	nc21325285	2017-01-04T21:37:49.987Z	11 km WNW of Templeton, California	earthquake	0.41	1.41	0.12	10	reviewed	nc	nc
12/23/2003	22:53:53	35.5648333	-120.893	6.208	2.13	md	26	68	0.03333	0.15	nc	nc21325234	2017-01-04T21:36:36.942Z	13 km N of Cayucos, California	earthquake	0.27	0.57	0.12	21	reviewed	nc	nc
12/23/2003	22:20:12	35.5225	-120.8198333	6.711	2.49	md	22	153	0.1595	0.05	nc	nc21325217	2017-01-04T21:35:43.765Z	10 km WSW of Templeton, California	earthquake	0.35	2.09	0.08	24	automatic	nc	nc
12/23/2003	21:53:41	35.5676667	-120.8221667	-0.089	3.02	ml	47	48	0.07658	0.06	nc	nc21325202	2017-01-04T21:35:08.410Z	10 km W of Templeton, California	earthquake	0.15	1.04		2	reviewed	nc	nc
12/23/2003	21:05:29	35.5725	-120.8541667	4.595	2.61	md	28	123	0.06937	0.04	nc	nc30500371	2017-01-04T21:34:00.095Z	13 km W of Templeton, California	earthquake	0.27	0.57	0.08	36	automatic	nc	nc
12/23/2003	20:41:51	35.535	-120.8268333	4.834	2.5	md	28	79	0.06486	0.06	nc	nc21325468	2017-01-04T21:32:59.763Z	11 km W of Templeton, California	earthquake	0.27	0.73	0.11	32	reviewed	nc	nc
12/23/2003	20:20:54	35.5401667	-120.8878333	1.94	2.68	md	31	69	0.01712	0.08	nc	nc21326711	2017-01-04T21:32:31.746Z	10 km N of Cayucos, California	earthquake	0.19	0.35	0.1	35	reviewed	nc	nc
12/23/2003	20:17:12	35.5356667	-120.8735	0.285	3.26	ml	46	47	0.02703	0.1	nc	nc21326708	2017-01-04T21:32:24.780Z	10 km N of Cayucos, California	earthquake	0.14	0.61		2	reviewed	nc	nc
12/23/2003	20:08:33	35.5673333	-120.8948333	3.388	2.01	md	8	200	0.03514	0.17	nc	nc68006505	2017-01-04T21:32:07.123Z	13 km N of Cayucos, California	earthquake	1.48	1.08	0.11	3	reviewed	nc	nc
12/23/2003	19:52:19	35.556	-120.8376667	0.082	2.94	md	17	155	0.08829	0.03	nc	nc21326632	2017-01-04T21:31:49.584Z	11 km W of Templeton, California	earthquake	0.56	2.63	0.03	21	automatic	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/23/2003	19:42:00	35.5686667	-120.8283333	-0.478	2.68	md	35	53	0.07297	0.12	nc	nc30500522	2017-01-04T21:31:36.970Z	11 km W of Templeton, California	earthquake	0.21	2.46	0.08	37	reviewed	nc	nc
12/23/2003	19:41:21	35.5176667	-120.8276667	3.776	2.59	md	33	94	0.06667	0.05	nc	nc21325489	2017-01-04T21:31:25.700Z	10 km NE of Cayucos, California	earthquake	0.27	0.77	0.07	29	reviewed	nc	nc
12/23/2003	19:32:15	35.5608333	-120.9038333	8.938	2.11	md	5	208	0.1604	0.18	nc	nc68006495	2017-01-04T21:31:09.744Z	13 km N of Cayucos, California	earthquake	3.85	8.41	0.15	2	reviewed	nc	nc
12/23/2003	19:18:50	35.5346667	-120.8373333	5.794	2.59	md	28	81	0.05676	0.05	nc	nc21325477	2017-01-04T21:30:42.620Z	11 km NNE of Cayucos, California	earthquake	0.22	0.67	0.06	32	reviewed	nc	nc
12/23/2003	19:13:18	35.5358333	-120.826	5.972	2.19	md	20	119	0.1099	0.06	nc	nc30500520	2017-01-04T21:30:28.420Z	10 km W of Templeton, California	earthquake	0.32	1.01	0.11	23	automatic	nc	nc
12/23/2003	18:51:58	35.5488333	-120.8448333	-0.054	2.28	md	22	158	0.1919	0.05	nc	nc21324310	2017-01-04T21:29:38.067Z	12 km NNE of Cayucos, California	earthquake	0.58	6.45	0.15	21	automatic	nc	nc
12/23/2003	18:35:34	35.614	-120.8886667	5.814	2.25	md	22	97	0.03243	0.07	nc	nc21324302	2017-01-04T21:29:09.943Z	12 km S of Lake Nacimiento, California	earthquake	0.21	0.83	0.11	24	reviewed	nc	nc
12/23/2003	18:27:36	35.5846667	-120.8128333	-0.292	2.31	md	25	124	0.2099	0.08	nc	nc21324297	2017-01-04T21:28:51.536Z	10 km WNW of Templeton, California	earthquake	0.51	3.62	0.07	26	automatic	nc	nc
12/23/2003	18:08:22	35.6056667	-120.854	-0.367	2.38	md	28	124	0.03694	0.1	nc	nc21324039	2017-01-04T21:28:02.910Z	13 km S of Lake Nacimiento, California	earthquake	0.33	6.02	0.06	31	reviewed	nc	nc
12/23/2003	17:50:49	35.5431667	-120.8423333	6.465	2.03	md	8	160	0.1	0.03	nc	nc21324343	2017-01-04T21:27:25.604Z	12 km NNE of Cayucos, California	earthquake	0.67	4.15	0.08	3	automatic	nc	nc
12/23/2003	17:24:05	35.6521667	-120.8963333	8.101	2.29	md	20	71	0.02703	0.11	nc	nc21324246	2017-01-04T21:26:47.825Z	8 km S of Lake Nacimiento, California	earthquake	0.36	0.56	0.08	22	reviewed	nc	nc
12/23/2003	17:13:08	35.548	-120.8105	2.261	2.62	md	37	69	0.1036	0.06	nc	nc30226815	2017-01-04T21:26:24.060Z	9 km W of Templeton, California	earthquake	0.21	2.37	0.12	42	reviewed	nc	nc
12/23/2003	17:04:43	35.5766667	-120.8213333	2.912	2.67	md	41	94	0.07387	0.06	nc	nc21323998	2017-01-04T21:25:53.810Z	10 km WNW of Templeton, California	earthquake	0.29	1	0.08	47	reviewed	nc	nc
12/23/2003	16:53:16	35.5641667	-120.8273333	1.64	2.18	md	11	184	0.08378	0.06	nc	nc21324374	2017-01-04T21:25:20.953Z	11 km W of Templeton, California	earthquake	0.65	2.85	0.06	11	automatic	nc	nc
12/23/2003	16:38:57	35.5935	-120.8978333	4.197	2.52	md	12	102	0.05405	0.05	nc	nc21324370	2017-01-04T21:24:55.038Z	15 km S of Lake Nacimiento, California	earthquake	0.48	1.56	0.04	5	reviewed	nc	nc
12/23/2003	16:26:42	35.5718333	-120.8296667	4.508	2.37	md	22	118	0.07568	0.04	nc	nc30500346	2017-01-04T21:24:40.142Z	11 km WNW of Templeton, California	earthquake	0.47	0.63	0.11	18	automatic	nc	nc
12/23/2003	16:10:01	35.5401667	-120.8598333	-0.4	2.35	md	20	116	0.1928	0.13	nc	nc21324232	2017-01-04T21:24:03.751Z	11 km NNE of Cayucos, California	earthquake	0.44	3.25	0.07	19	automatic	nc	nc
12/23/2003	15:58:32	35.5638333	-120.8425	3.475	2.33	md	20	145	0.08018	0.04	nc	nc30500331	2017-01-04T21:23:48.517Z	12 km W of Templeton, California	earthquake	0.27	1.9	0.09	21	automatic	nc	nc
12/23/2003	15:45:21	35.5248333	-120.9025	1.696	2.14	md	14	70	0.00991	0.1	nc	nc21324220	2017-01-04T21:23:05.825Z	9 km N of Cayucos, California	earthquake	0.37	0.27	0.15	11	reviewed	nc	nc
12/23/2003	15:42:48	35.5638333	-120.8461667	-0.062	2.36	md	10	182	0.2054	0.14	nc	nc21324216	2017-01-04T21:22:51.102Z	12 km W of Templeton, California	earthquake	0.79	7.92	0.14	7	automatic	nc	nc
12/23/2003	15:26:46	35.5428333	-120.8613333	6.963	2.18	md	19	164	0.0982	0.04	nc	nc21324194	2017-01-04T21:22:25.612Z	11 km NNE of Cayucos, California	earthquake	0.42	1	0.13	19	automatic	nc	nc
12/23/2003	15:19:33	35.6313333	-120.8901667	6.612	2.01	md	26	122	0.02162	0.04	nc	nc21324022	2017-01-04T21:22:16.134Z	10 km S of Lake Nacimiento, California	earthquake	0.23	0.19	0.16	21	reviewed	nc	nc
12/23/2003	15:12:34	35.567	-120.8528333	0.823	2.27	md	31	133	0.07477	0.11	nc	nc21324019	2017-01-04T21:22:03.420Z	13 km W of Templeton, California	earthquake	0.4	1.61	0.12	33	reviewed	nc	nc
12/23/2003	15:08:04	35.7588333	-120.6583333	0.101	2.03	md	10	165	0.1315	0.14	nc	nc21323993	2017-01-04T21:21:50.350Z	3 km ENE of San Miguel, California	earthquake	0.93	7.27	0.13	2	reviewed	nc	nc
12/23/2003	14:58:35	35.5611667	-120.7923333	0.611	2.19	md	5	233	0.1	0.02	nc	nc30506034	2017-01-04T21:21:28.327Z	7 km W of Templeton, California	earthquake	1.36	8.14	0.2	7	automatic	nc	nc
12/23/2003	14:42:06	35.5263333	-120.9043333	2.858	3.9	md	9	143	0.008108	0.19	nc	nc68006404	2017-01-04T21:20:37.153Z	9 km N of Cayucos, California	earthquake	0.94	0.67		1	reviewed	nc	nc
12/23/2003	14:32:59	35.547	-120.8241667	-0.189	2.07	md	18	153	0.1811	0.2	nc	nc30500451	2017-01-04T21:20:09.644Z	10 km W of Templeton, California	earthquake	0.81	8.55	0.13	15	automatic	nc	nc
12/23/2003	14:13:59	35.5251667	-120.836	4.814	2.19	md	13	207	0.1694	0.05	nc	nc30506033	2017-01-04T21:19:26.119Z	10 km NNE of Cayucos, California	earthquake	1.17	6.49	0.05	7	automatic	nc	nc
12/23/2003	13:58:23	35.5815	-120.8635	4.318	2.17	md	13	124	0.05946	0.04	nc	nc21325044	2017-01-04T21:19:03.341Z	14 km WNW of Templeton, California	earthquake	0.75	0.45	0.14	14	automatic	nc	nc
12/23/2003	13:44:50	35.6141667	-120.8813333	5.599	2.24	md	24	71	0.02973	0.12	nc	nc21325042	2017-01-04T21:18:21.155Z	12 km S of Lake Nacimiento, California	earthquake	0.28	0.94	0.1	24	reviewed	nc	nc
12/23/2003	13:36:35	35.5986667	-120.8936667	7.978	3.25	md	8	209	0.06577	0.08	nc	nc68006379	2017-01-04T21:17:52.741Z	14 km S of Lake Nacimiento, California	earthquake	0.52	1.24	0.11	9	reviewed	nc	nc
12/23/2003	13:03:04	35.5376667	-120.8186667	0.164	2.04	md	16	162	0.1712	0.06	nc	nc30500309	2017-01-04T21:16:24.986Z	10 km W of Templeton, California	earthquake	0.55	5.03	0.12	10	automatic	nc	nc
12/23/2003	12:38:26	35.5756667	-120.8251667	2.555	2.46	md	28	150	0.07387	0.03	nc	nc21326597	2017-01-04T21:15:29.333Z	11 km WNW of Templeton, California	earthquake	0.31	1.35	0.08	26	automatic	nc	nc
12/23/2003	12:33:25	35.5693333	-120.8725	-0.407	3	md	44	130	0.07207	0.3	nc	nc21326595	2017-01-04T21:15:23.540Z	14 km N of Cayucos, California	earthquake	0.71	4.42	0.1	51	automatic	nc	nc
12/23/2003	12:30:31	35.5856667	-120.8641667	6.198	2.39	md	26	145	0.05586	0.06	nc	nc21326593	2017-01-04T21:15:14.133Z	14 km WNW of Templeton, California	earthquake	0.3	0.51	0.08	28	automatic	nc	nc
12/23/2003	12:22:44	35.5546667	-120.829	6.213	2.01	md	15	177	0.09189	0.05	nc	nc21326591	2017-01-04T21:15:01.770Z	11 km W of Templeton, California	earthquake	0.46	1.63	0.18	14	automatic	nc	nc
12/23/2003	12:07:31	35.5875	-120.8546667	2.071	3.28	ml	47	70	0.05405	0.08	nc	nc30500551	2017-01-04T21:14:29.010Z	14 km WNW of Templeton, California	earthquake	0.17	0.67		2	reviewed	nc	nc
12/23/2003	12:04:00	35.6021667	-120.843	-0.402	2.45	md	31	102	0.1856	0.25	nc	nc30500305	2017-01-04T21:14:14.380Z	13 km WNW of Templeton, California	earthquake	0.51	5.87	0.06	28	automatic	nc	nc
12/23/2003	12:02:30	35.5888333	-120.8473333	6.914	2.34	md	25	122	0.05495	0.06	nc	nc30500304	2017-01-04T21:14:09.623Z	13 km WNW of Templeton, California	earthquake	0.36	0.9	0.11	25	reviewed	nc	nc
12/23/2003	11:26:05	35.594	-120.8368333	3.952	2.92	md	40	41	0.05315	0.04	nc	nc21323896	2017-01-04T21:12:27.840Z	12 km WNW of Templeton, California	earthquake	0.29	0.83	0.06	37	reviewed	nc	nc
12/23/2003	11:11:07	35.526	-120.9048333	-0.337	2.48	md	24	84	0.08649	0.25	nc	nc30500464	2017-01-04T21:12:10.294Z	9 km N of Cayucos, California	earthquake	0.43	4.23	0.09	24	reviewed	nc	nc
12/23/2003	10:34:15	35.6725	-120.8695	7.076	2	md	5	264	0.0991	0.01	nc	nc68006319	2017-01-04T21:11:04.562Z	6 km S of Lake Nacimiento, California	earthquake	2.16	1.8	0.02	5	reviewed	nc	nc
12/23/2003	10:30:57	35.4173333	-120.7828333	2.41	2.33	md	5	175	0.05045	0	nc	nc68006315	2017-01-04T21:10:46.466Z	8 km NE of Morro Bay, California	earthquake	3.92	6.89	0.12	5	reviewed	nc	nc
12/23/2003	10:30:09	35.5711667	-120.8741667	2.316	2.41	md	8	182	0.04595	0.06	nc	nc68006314	2017-01-04T21:10:42.798Z	14 km N of Cayucos, California	earthquake	0.58	1.32	0.18	6	reviewed	nc	nc
12/23/2003	10:24:22	35.0635	-119.0741667	18.675	2.04	ml	29	93	0.03872	0.29	ci	ci9967589	2016-04-01T21:16:42.332Z	19km NW of Grapevine, CA	earthquake	0.66	0.81	0.316	16	reviewed	ci	ci
12/23/2003	10:15:06	35.5926667	-120.8638333	11.425	3	ml	43	89	0.06847	0.08	nc	nc30500470	2017-01-04T21:10:05.480Z	15 km WNW of Templeton, California	earthquake	0.19	1.55		1	reviewed	nc	nc
12/23/2003	10:14:25	35.5481667	-120.8171667	3.339	2.18	md	30	56	0.1568	0.08	nc	nc21325093	2017-01-04T21:09:56.346Z	10 km W of Templeton, California	earthquake	0.27	1.72	0.07	20	reviewed	nc	nc
12/23/2003	9:58:47	35.5751667	-120.829	1.884	2.52	md	28	70	0.07297	0.03	nc	nc30500466	2017-01-04T21:09:10.902Z	11 km WNW of Templeton, California	earthquake	0.38	1.85	0.08	37	reviewed	nc	nc
12/23/2003	9:55:22	35.5328333	-120.8161667	4.185	2.13	md	19	155	0.1162	0.07	nc	nc21325088	2017-01-04T21:09:01.141Z	10 km W of Templeton, California	earthquake	0.32	0.87	0.18	16	automatic	nc	nc
12/23/2003	9:19:28	35.5375	-120.824	1.752	2.72	md	29	153	0.109	0.03	nc	nc21325114	2017-01-04T21:07:35.397Z	10 km W of Templeton, California	earthquake	0.25	1.97	0.07	37	automatic	nc	nc
12/23/2003	9:09:44	35.5913333	-120.8688333	2.836	2.11	md	10	184	0.04955	0.03	nc	nc21325110	2017-01-04T21:07:19.544Z	15 km S of Lake Nacimiento, California	earthquake	0.6	1.44	0.48	2	automatic	nc	nc
12/23/2003	9:06:58	35.5918333	-120.8903333	0.168	2.29	md	7	187	0.05315	0.02	nc	nc30500472	2017-01-04T21:07:10.502Z	15 km S of Lake Nacimiento, California	earthquake	0.88	1.64	0.09	8	automatic	nc	nc
12/23/2003	9:05:09	35.566	-120.8928333	5.566	2.29	md	6	213	0.03423	0.04	nc	nc68006281	2017-01-04T21:06:54.613Z	13 km N of Cayucos, California	earthquake	1.31	0.53	0.09	4	reviewed	nc	nc
12/23/2003	8:36:24	35.5651667	-120.8233333	2.634	2.08	md	17	90	0.07477	0.11	nc	nc21325184	2017-01-04T21:05:57.924Z	10 km W of Templeton, California	earthquake	0.44	1.14	0.12	11	reviewed	nc	nc
12/23/2003	8:25:49	35.5695	-120.8233333	-0.378	2.25	md	21	144	0.08018	0.09	nc	nc30500485	2017-01-04T21:05:43.151Z	10 km WNW of Templeton, California	earthquake	0.38	4.27	0.12	18	automatic	nc	nc
12/23/2003	8:21:51	35.0611667	-119.0683333	15.622	2.12	ml	20	73	0.03382	0.23	ci	ci9967465	2016-04-02T06:54:35.761Z	18km NW of Grapevine, CA	earthquake	0.69	1.42	0.311	11	reviewed	ci	ci
12/23/2003	8:20:56	35.5335	-120.8891667	-0.404	2.8	ml	8	204	0.2719	0.12	ci	ci9967461	2016-04-02T10:12:50.257Z	10km N of Cayucos, CA	earthquake	2.51	5.48	0.266	17	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/23/2003	8:19:37	35.065	-119.0606667	14.945	2.03	ml	26	67	0.02789	0.31	ci	ci9967457	2016-04-02T06:57:00.247Z	18km NW of Grapevine, CA	earthquake	0.55	0.82	0.217	11	reviewed	ci	ci
12/23/2003	8:19:21	35.5706667	-120.811	3.184	2.51	md	27	100	0.08378	0.05	nc	nc30500483	2017-01-04T21:05:29.253Z	9 km WNW of Templeton, California	earthquake	0.26	0.85	0.08	29	reviewed	nc	nc
12/23/2003	8:14:10	35.5443333	-120.8468333	5.192	3.32	ml	43	52	0.05045	0.06	nc	nc21325138	2017-01-04T21:05:11.840Z	11 km NNE of Cayucos, California	earthquake	0.22	0.75		2	reviewed	nc	nc
12/23/2003	8:09:34	35.5443333	-120.818	2.158	2.22	md	7	206	0.07297	0.07	nc	nc68006264	2017-01-04T21:05:02.846Z	10 km W of Templeton, California	earthquake	1.33	3.2	0.04	4	reviewed	nc	nc
12/23/2003	8:03:34	35.607	-120.8843333	7.023	3.49	ml	53	49	0.03694	0.08	nc	nc30500482	2017-01-04T21:04:44.530Z	Central California	earthquake	0.15	0.4		0	reviewed	nc	nc
12/23/2003	7:57:09	35.6111667	-120.8908333	6.786	2.4	md	34	101	0.164	0.06	nc	nc21325127	2017-01-04T21:04:18.371Z	13 km S of Lake Nacimiento, California	earthquake	0.26	1.42	0.06	32	reviewed	nc	nc
12/23/2003	7:50:41	35.6296667	-120.8195	4.554	2.26	md	15	112	0.1667	0.75	nc	nc21325124	2017-01-04T21:04:04.623Z	11 km W of Paso Robles, California	earthquake	2.61	6.39	0.08	10	automatic	nc	nc
12/23/2003	7:36:43	35.6505	-120.805	0.537	2.4	md	5	183	0.05135	0.07	nc	nc30500528	2017-01-04T21:03:45.974Z	10 km WNW of Paso Robles, California	earthquake	1.66	5.32	0.39	3	automatic	nc	nc
12/23/2003	7:35:02	35.5265	-120.8203333	3.354	3.03	md	24	85	0.07117	0.08	nc	nc30500527	2017-01-04T21:03:40.470Z	10 km WSW of Templeton, California	earthquake	0.23	0.77	0.09	37	reviewed	nc	nc
12/23/2003	7:29:33	35.577	-120.8203333	-0.385	2.13	md	11	183	0.2063	0.19	nc	nc21325718	2017-01-04T21:03:27.031Z	10 km WNW of Templeton, California	earthquake	1.29	7.76	0.07	7	automatic	nc	nc
12/23/2003	7:26:39	35.5353333	-120.8458333	4.507	2.03	md	6	215	0.04955	0.06	nc	nc68006245	2017-01-04T21:03:16.089Z	Central California	earthquake	0.79	1.11	0.02	3	reviewed	nc	nc
12/23/2003	7:25:48	35.619	-120.8948333	7.111	3.23	ml	31	83	0.03243	0.09	nc	nc21325714	2017-01-04T21:03:09.250Z	12 km S of Lake Nacimiento, California	earthquake	0.21	0.79		2	reviewed	nc	nc
12/23/2003	7:18:16	35.5185	-120.8266667	3.805	2.24	md	10	150	0.127	0.06	nc	nc21325707	2017-01-04T21:02:50.165Z	10 km NE of Cayucos, California	earthquake	0.46	1.04	0.09	7	automatic	nc	nc
12/23/2003	7:09:21	35.5905	-120.8098333	4.732	2.59	md	10	186	0.2829	0.07	nc	nc21325696	2017-01-04T21:02:34.622Z	10 km WNW of Templeton, California	earthquake	0.94	7.49	0.05	10	automatic	nc	nc
12/23/2003	7:05:42	35.5738333	-120.821	1.112	2.28	md	15	117	0.07658	0.06	nc	nc21325694	2017-01-04T21:02:29.101Z	10 km WNW of Templeton, California	earthquake	0.39	2.27	0.28	13	automatic	nc	nc
12/23/2003	6:48:47	35.6008333	-120.8888333	4.615	2.39	md	23	140	0.04414	0.04	nc	nc30500399	2017-01-04T21:02:02.715Z	14 km S of Lake Nacimiento, California	earthquake	0.33	0.38	0.07	24	automatic	nc	nc
12/23/2003	6:46:45	35.571	-120.819	1.345	2.7	md	35	102	0.08018	0.09	nc	nc21324812	2017-01-04T21:01:53.530Z	10 km WNW of Templeton, California	earthquake	0.27	1.43	0.06	41	automatic	nc	nc
12/23/2003	6:43:36	35.6131667	-120.8828333	-0.481	2.3	md	22	126	0.1676	0.16	nc	nc21324811	2017-01-04T21:01:46.094Z	12 km S of Lake Nacimiento, California	earthquake	0.45	2.61	0.16	22	automatic	nc	nc
12/23/2003	6:37:34	35.6113333	-120.8971667	7.454	2.75	md	34	62	0.1613	0.09	nc	nc21324809	2017-01-04T21:01:36.460Z	13 km S of Lake Nacimiento, California	earthquake	0.26	1.49	0.07	48	reviewed	nc	nc
12/23/2003	6:23:27	35.6126667	-120.8955	5.453	2.52	md	32	111	0.03694	0.03	nc	nc30500401	2017-01-04T21:01:08.650Z	12 km S of Lake Nacimiento, California	earthquake	0.25	0.29	0.08	32	automatic	nc	nc
12/23/2003	6:12:23	35.5483333	-120.8591667	2.116	2.07	md	9	197	0.1991	0.01	nc	nc30500402	2017-01-04T21:00:33.586Z	12 km NNE of Cayucos, California	earthquake	0.73	7.14	0.1	7	automatic	nc	nc
12/23/2003	6:04:55	35.5438333	-120.8158333	12.558	2.03	md	9	187	0.1748	0.24	nc	nc21326555	2017-01-04T21:00:06.714Z	9 km W of Templeton, California	earthquake	1.45	1.65	0.07	4	automatic	nc	nc
12/23/2003	5:41:42	35.5726667	-120.8185	-0.02	2.23	md	21	101	0.2018	0.26	nc	nc21326535	2017-01-04T20:58:51.298Z	10 km WNW of Templeton, California	earthquake	0.55	7.48	0.15	20	automatic	nc	nc
12/23/2003	5:35:07	35.5313333	-120.881	0.82	2.08	md	14	86	0.02072	0.07	nc	nc21324864	2017-01-04T20:58:40.774Z	9 km N of Cayucos, California	earthquake	0.26	0.38	0.17	8	reviewed	nc	nc
12/23/2003	5:22:32	35.5763333	-120.8383333	2.256	2.21	md	17	157	0.2108	0.04	nc	nc30500409	2017-01-04T20:57:31.872Z	12 km WNW of Templeton, California	earthquake	0.41	1.65	0.05	15	automatic	nc	nc
12/23/2003	5:19:57	35.5988333	-120.8515	-0.128	2.56	md	32	104	0.07928	0.15	nc	nc21324851	2017-01-04T20:57:23.033Z	14 km WNW of Templeton, California	earthquake	0.39	4.81	0.08	32	reviewed	nc	nc
12/23/2003	5:17:21	35.5223333	-120.8778333	3.572	2.04	md	15	114	0.02613	0.04	nc	nc30226768	2017-01-04T20:57:12.283Z	8 km N of Cayucos, California	earthquake	0.77	0.75	0.13	3	reviewed	nc	nc
12/23/2003	5:14:19	35.626	-120.8525	0.134	2.15	md	22	97	0.01892	0.25	nc	nc21324849	2017-01-04T20:57:02.231Z	11 km SSE of Lake Nacimiento, California	earthquake	0.63	8.44	0.08	24	reviewed	nc	nc
12/23/2003	5:06:13	35.5635	-120.8565	0.138	2.15	md	5	219	0.05045	0.07	nc	nc68006182	2017-01-04T20:56:48.422Z	13 km W of Templeton, California	earthquake	1.26	2.49	0.16	4	reviewed	nc	nc
12/23/2003	5:04:56	35.5735	-120.8166667	0.146	2.32	md	6	263	0.08378	0.08	nc	nc68006181	2017-01-04T20:56:43.292Z	10 km WNW of Templeton, California	earthquake	5.7	6.72	0.01	3	reviewed	nc	nc
12/23/2003	5:00:56	35.5243333	-120.8248333	4.017	3.48	ml	34	54	0.06757	0.08	nc	nc30500407	2017-01-04T20:56:25.820Z	10 km NE of Cayucos, California	earthquake	0.17	0.61		0	reviewed	nc	nc
12/23/2003	5:00:24	35.5908333	-120.8095	2.617	2.06	md	11	142	0.06847	0.03	nc	nc30500406	2017-01-04T20:56:14.239Z	10 km WNW of Templeton, California	earthquake	0.45	0.57	0.08	6	automatic	nc	nc
12/23/2003	4:57:33	35.5555	-120.8576667	6.263	2.13	md	7	171	0.08559	0.01	nc	nc30500404	2017-01-04T20:56:04.334Z	12 km NNE of Cayucos, California	earthquake	1.72	1.5	0.27	4	automatic	nc	nc
12/23/2003	4:57:05	35.6021667	-120.8876667	4.305	2.4	md	25	129	0.04234	0.05	nc	nc30500403	2017-01-04T20:55:59.464Z	14 km S of Lake Nacimiento, California	earthquake	0.26	0.34	0.07	21	automatic	nc	nc
12/23/2003	4:56:06	35.5986667	-120.8853333	2.545	2.6	md	23	110	0.04505	0.09	nc	nc21324836	2017-01-04T20:55:53.965Z	14 km S of Lake Nacimiento, California	earthquake	0.3	1.32	0.11	20	automatic	nc	nc
12/23/2003	4:54:21	35.6245	-120.861	-0.418	2	md	19	81	0.0982	0.42	nc	nc21324835	2017-01-04T20:55:48.800Z	11 km S of Lake Nacimiento, California	earthquake	0.88	17.6	0.18	9	reviewed	nc	nc
12/23/2003	4:48:18	35.568	-120.828	1.719	2.23	md	6	179	0.07928	0.04	nc	nc21324832	2017-01-04T20:55:39.495Z	11 km W of Templeton, California	earthquake	0.71	3	0.15	2	automatic	nc	nc
12/23/2003	4:39:41	35.5356667	-120.8391667	5.795	2.96	md	7	160	0.1793	0.02	nc	nc30500395	2017-01-04T20:55:34.929Z	11 km NNE of Cayucos, California	earthquake	0.56	5.46	0.02	4	automatic	nc	nc
12/23/2003	4:35:41	35.5935	-120.8983333	4.323	2.97	md	25	84	0.05405	0.08	nc	nc30500393	2017-01-04T20:55:20.182Z	15 km S of Lake Nacimiento, California	earthquake	0.24	0.43	0.1	41	reviewed	nc	nc
12/23/2003	4:32:52	35.5973333	-120.8816667	-0.293	2.95	md	47	97	0.1559	0.19	nc	nc21324771	2017-01-04T20:54:51.370Z	14 km S of Lake Nacimiento, California	earthquake	0.31	2.41	0.08	47	reviewed	nc	nc
12/23/2003	4:30:37	35.5753333	-120.8315	0.382	2.42	md	18	50	0.07207	0.14	nc	nc21324769	2017-01-04T20:54:40.423Z	11 km WNW of Templeton, California	earthquake	0.33	2.29	0.12	14	reviewed	nc	nc
12/23/2003	4:26:59	35.5276667	-120.826	4.376	2.2	md	8	181	0.1405	0.04	nc	nc68006160	2017-01-04T20:54:35.105Z	11 km WSW of Templeton, California	earthquake	1.78	3.78	0.01	3	reviewed	nc	nc
12/23/2003	4:25:00	35.673	-120.5623333	3.006	2.38	md	6	298	0.3135	0.14	nc	nc68006158	2017-01-04T20:54:27.554Z	5 km WNW of Whitley Gardens, California	earthquake	6.62	14.45	0.09	6	reviewed	nc	nc
12/23/2003	4:12:16	35.527	-120.846	5.048	2.51	md	7	213	0.05045	0.06	nc	nc68006151	2017-01-04T20:53:52.534Z	10 km NNE of Cayucos, California	earthquake	0.78	1.4	0.12	6	reviewed	nc	nc
12/23/2003	4:07:00	35.0576667	-119.0576667	14.845	2.07	ml	27	43	0.02523	0.36	ci	ci9967153	2016-04-02T03:47:36.566Z	17km NW of Grapevine, CA	earthquake	0.66	0.93	0.297	16	reviewed	ci	ci
12/23/2003	4:03:50	35.565	-120.8176667	7.493	2.32	md	7	202	0.1946	0.01	nc	nc30500376	2017-01-04T20:53:24.492Z	10 km W of Templeton, California	earthquake	0.73	5.04	0.17	5	automatic	nc	nc
12/23/2003	4:00:22	35.5538333	-120.8563333	5.112	3.05	ml	32	50	0.04595	0.07	nc	nc21324639	2017-01-04T20:53:11.760Z	12 km NNE of Cayucos, California	earthquake	0.16	0.48		3	reviewed	nc	nc
12/23/2003	3:55:47	35.5605	-120.8668333	3.718	2.96	md	37	126	0.08018	0.38	nc	nc30500375	2017-01-04T20:53:04.522Z	13 km N of Cayucos, California	earthquake	0.7	2.92	0.08	37	reviewed	nc	nc
12/23/2003	3:43:30	35.5466667	-120.8493333	7.127	2.05	md	12	165	0.0955	0.03	nc	nc21324206	2017-01-04T20:52:15.102Z	12 km NNE of Cayucos, California	earthquake	0.44	0.91	0.22	8	automatic	nc	nc
12/23/2003	3:26:35	35.5625	-120.863	3.448	2.22	md	8	204	0.04595	0.19	nc	nc68006129	2017-01-04T20:51:30.447Z	13 km NNE of Cayucos, California	earthquake	1.91	1.89	0.05	7	reviewed	nc	nc
12/23/2003	3:13:52	35.628	-120.8881667	1.14	2.23	md	24	123	0.2234	0.07	nc	nc30500295	2017-01-04T20:50:39.592Z	11 km S of Lake Nacimiento, California	earthquake	0.25	2.65	0.09	21	automatic	nc	nc
12/23/2003	2:59:59	35.5738333	-120.8833333	7.779	2.09	md	24	63	0.1153	0.17	nc	nc40149081	2017-01-04T20:49:13.162Z	14 km N of Cayucos, California	earthquake	0.36	1.43	0.13	10	reviewed	nc	nc
12/23/2003	2:51:50	35.5336667	-120.8336667	1.34	2.15	md	35	51	0.05946	0.12	nc	nc30226895	2017-01-04T20:48:13.912Z	11 km NNE of Cayucos, California	earthquake	0.18	0.85	0.12	31	reviewed	nc	nc
12/23/2003	2:45:20	35.5458333	-120.8585	2.69	2.11	md	16	69	0.04144	0.17	nc	nc30500333	2017-01-04T20:47:59.579Z	11 km NNE of Cayucos, California	earthquake	0.59	1.4	0.01	5	reviewed	nc	nc
12/23/2003	2:36:26	35.5973333	-120.8603333	7.719	2.29	md	24	73	0.04414	0.07	nc	nc30500431	2017-01-04T20:47:09.920Z	14 km S of Lake Nacimiento, California	earthquake	0.2	0.53	0.16	25	reviewed	nc	nc
12/23/2003	2:35:08	35.5406667	-120.8463333	5.45	3.03	md	50	48	0.04955	0.06	nc	nc30500430	2017-01-04T20:47:04.020Z	11 km NNE of Cayucos, California	earthquake	0.16	0.52	0.08	71	reviewed	nc	nc
12/23/2003	2:34:03	35.603	-120.8673333	8.219	2.11	md	16	74	0.03784	0.18	nc	nc21324939	2017-01-04T20:46:52.172Z	13 km S of Lake Nacimiento, California	earthquake	0.44	0.69	0.06	11	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/23/2003	2:18:23	35.5601667	-120.8723333	4.462	2.36	md	11	215	0.1018	0.2	nc	nc68006092	2017-01-04T20:45:46.279Z	13 km N of Cayucos, California	earthquake	0.97	1.52	0.02	5	reviewed	nc	nc
12/23/2003	2:17:14	35.5128333	-120.84	9.697	2.14	md	6	217	0.05856	0.07	nc	nc68006091	2017-01-04T20:45:40.221Z	9 km NNE of Cayucos, California	earthquake	1.11	1.02		3	reviewed	nc	nc
12/23/2003	2:16:15	35.572	-120.9016667	4.338	2.14	md	19	85	0.03874	0.06	nc	nc30500514	2017-01-04T20:45:35.491Z	14 km N of Cayucos, California	earthquake	0.27	0.34	0.25	11	reviewed	nc	nc
12/23/2003	2:15:16	35.5455	-120.8428333	8.867	2.12	md	9	256	0.05315	0.14	nc	nc68006088	2017-01-04T20:45:21.881Z	12 km NNE of Cayucos, California	earthquake	1.2	1.61	0.1	4	reviewed	nc	nc
12/23/2003	2:12:07	35.5348333	-120.8973333	11.996	2.29	md	5	280	0.07658	0.07	nc	nc68006087	2017-01-04T20:45:08.391Z	10 km N of Cayucos, California	earthquake	1.55	1.29	0.06	5	reviewed	nc	nc
12/23/2003	2:05:42	35.5411667	-120.8456667	5.65	2.73	md	45	49	0.05045	0.07	nc	nc30500511	2017-01-04T20:44:20.900Z	11 km NNE of Cayucos, California	earthquake	0.17	0.46	0.11	45	reviewed	nc	nc
12/23/2003	2:01:42	35.6128333	-120.8813333	6.462	2.54	md	49	58	0.08198	0.11	nc	nc21325392	2017-01-04T20:43:49.900Z	12 km S of Lake Nacimiento, California	earthquake	0.22	0.87	0.12	49	reviewed	nc	nc
12/23/2003	1:59:01	35.5846667	-120.8921667	7.243	2.28	md	6	224	0.05225	0.08	nc	nc68006076	2017-01-04T20:43:25.343Z	15 km N of Cayucos, California	earthquake	0.89	1.05	0.06	5	reviewed	nc	nc
12/23/2003	1:48:04	35.592	-120.8953333	11.379	3.16	md	10	210	0.1333	0.09	nc	nc68006068	2017-01-04T20:42:32.094Z	15 km S of Lake Nacimiento, California	earthquake	1.22	1.6	0.09	5	reviewed	nc	nc
12/23/2003	1:33:26	35.5698333	-120.8365	2.333	2.07	md	15	203	0.06757	0.25	nc	nc68006065	2017-01-04T20:42:01.051Z	12 km W of Templeton, California	earthquake	1.21	2.38	0.3	6	reviewed	nc	nc
12/23/2003	1:30:30	35.6251667	-120.8978333	7.425	3.23	ml	33	59	0.02973	0.16	nc	nc21325271	2017-01-04T20:41:45.260Z	11 km S of Lake Nacimiento, California	earthquake	0.27	0.74		5	reviewed	nc	nc
12/23/2003	1:28:32	35.5661667	-120.8523333	-0.187	2.04	md	9	219	0.05495	0.06	nc	nc68006060	2017-01-04T20:41:36.811Z	13 km W of Templeton, California	earthquake	0.95	0.88	0.02	3	reviewed	nc	nc
12/23/2003	1:21:22	35.6433333	-120.8978333	8.173	2.06	md	8	313	0.1099	0.17	nc	nc68006059	2017-01-04T20:41:32.052Z	9 km S of Lake Nacimiento, California	earthquake	4.21	1.91	0.06	5	reviewed	nc	nc
12/23/2003	1:20:27	35.5956667	-120.8623333	7.746	2.2	md	19	56	0.04595	0.28	nc	nc30500497	2017-01-04T20:41:27.692Z	14 km S of Lake Nacimiento, California	earthquake	0.5	1.43	0.23	12	reviewed	nc	nc
12/23/2003	1:18:04	35.5766667	-120.828	4.03	3.44	ml	41	63	0.07207	0.11	nc	nc21325265	2017-01-04T20:41:19.550Z	11 km WNW of Templeton, California	earthquake	0.2	0.64		5	reviewed	nc	nc
12/23/2003	1:16:46	35.5965	-120.8408333	6.693	2.31	md	10	223	0.08288	0.18	nc	nc68006055	2017-01-04T20:41:11.836Z	13 km WNW of Templeton, California	earthquake	1.09	1.35	0.02	5	reviewed	nc	nc
12/23/2003	1:16:08	35.5715	-120.8301667	3.281	2.79	md	35	53	0.07297	0.08	nc	nc30500496	2017-01-04T20:41:06.770Z	11 km WNW of Templeton, California	earthquake	0.17	0.55	0.07	36	reviewed	nc	nc
12/23/2003	1:10:47	35.5443333	-120.8483333	6.721	2.88	md	37	53	0.09009	0.1	nc	nc21325261	2017-01-04T20:40:49.490Z	11 km NNE of Cayucos, California	earthquake	0.21	0.96	0.07	49	reviewed	nc	nc
12/23/2003	0:59:36	35.6063333	-120.8996667	7.242	2.27	md	21	63	0.07297	0.12	nc	nc21325249	2017-01-04T20:40:05.260Z	13 km S of Lake Nacimiento, California	earthquake	0.26	0.8	0.15	13	reviewed	nc	nc
12/23/2003	0:46:06	35.5491667	-120.8726667	3.523	2.17	md	10	223	0.03153	0.21	nc	nc68006034	2017-01-04T20:38:59.069Z	11 km N of Cayucos, California	earthquake	0.94	0.95	0.09	6	reviewed	nc	nc
12/23/2003	0:32:59	35.5901667	-120.8866667	4.102	2.28	md	28	53	0.05315	0.05	nc	nc30226688	2017-01-04T20:37:53.110Z	15 km S of Lake Nacimiento, California	earthquake	0.19	0.41	0.19	15	reviewed	nc	nc
12/23/2003	0:31:53	35.5883333	-120.8628333	8.163	2.03	md	9	297	0.06486	0.15	nc	nc68006024	2017-01-04T20:37:42.380Z	14 km WNW of Templeton, California	earthquake	2.92	1.47	0.17	5	reviewed	nc	nc
12/23/2003	0:26:59	35.5448333	-120.86	7.928	2.16	md	21	85	0.03964	0.13	nc	nc21324922	2017-01-04T20:37:16.105Z	11 km NNE of Cayucos, California	earthquake	0.39	1.01	0.13	14	reviewed	nc	nc
12/23/2003	0:18:47	35.5351667	-120.8776667	2.273	2.69	md	33	47	0.02342	0.11	nc	nc30500456	2017-01-04T20:36:32.113Z	10 km N of Cayucos, California	earthquake	0.17	0.48	0.12	39	reviewed	nc	nc
12/23/2003	0:14:27	35.5701667	-120.8263333	1.04	2.01	md	30	57	0.07477	0.08	nc	nc21325067	2017-01-04T20:35:56.317Z	11 km WNW of Templeton, California	earthquake	0.18	0.76	0.19	17	reviewed	nc	nc
12/23/2003	0:11:15	35.5763333	-120.8428333	4.216	2.65	md	25	66	0.06757	0.1	nc	nc30500321	2017-01-04T20:35:31.139Z	12 km WNW of Templeton, California	earthquake	0.25	0.63	0.08	26	reviewed	nc	nc
12/23/2003	0:09:58	35.5358333	-120.842	5.84	2.82	md	37	49	0.05315	0.08	nc	nc30500320	2017-01-04T20:35:24.795Z	11 km NNE of Cayucos, California	earthquake	0.18	0.51	0.08	37	reviewed	nc	nc
12/23/2003	0:05:59	35.5373333	-120.8848333	5.592	3.36	mw	43	45	0.01802	0.09	nc	nc30500318	2017-01-04T20:34:54.590Z	10 km N of Cayucos, California	earthquake	0.18	0.52		1	reviewed	nc	nc
12/22/2003	23:52:36	35.5366667	-120.886	3.473	4.1	mw	49	45	0.1054	0.07	nc	nc30226891	2017-03-17T19:37:45.852Z	10 km N of Cayucos, California	earthquake	0.12	0.56		3	reviewed	nc	nc
12/22/2003	23:51:41	35.5793333	-120.8608333	2.7	2.05	md	24	72	0.05856	0.08	nc	nc30226890	2017-01-04T20:32:57.683Z	14 km WNW of Templeton, California	earthquake	0.22	0.63	0.09	17	reviewed	nc	nc
12/22/2003	23:50:10	35.5723333	-120.8353333	3.872	2.04	md	27	88	0.07027	0.18	nc	nc21324118	2017-01-04T20:32:37.469Z	11 km WNW of Templeton, California	earthquake	0.52	1.14	0.18	15	reviewed	nc	nc
12/22/2003	23:46:49	35.5353333	-120.845	6.55	2.09	md	17	82	0.05045	0.14	nc	nc30226823	2017-01-04T20:31:55.275Z	11 km NNE of Cayucos, California	earthquake	0.37	0.85	0.1	8	reviewed	nc	nc
12/22/2003	23:44:17	35.501	-120.8561667	10.089	2.26	md	6	255	0.04685	0.06	nc	nc68005981	2017-01-04T20:31:38.126Z	7 km NNE of Cayucos, California	earthquake	1.09	0.81	0.14	4	reviewed	nc	nc
12/22/2003	23:29:20	35.5768333	-120.8583333	6.33	2.59	md	17	98	0.06486	0.12	nc	nc30500446	2017-01-04T20:29:29.398Z	Central California	earthquake	0.47	1.23	0.097	21	reviewed	nc	nc
12/22/2003	23:23:42	35.5355	-120.886	6.352	2.77	md	41	46	0.01712	0.1	nc	nc30226832	2017-01-04T20:28:26.080Z	10 km N of Cayucos, California	earthquake	0.18	0.42	0.1	40	reviewed	nc	nc
12/22/2003	23:17:19	35.5905	-120.8596667	6.918	2.38	md	38	72	0.05045	0.06	nc	nc30500370	2017-01-04T20:27:54.931Z	14 km WNW of Templeton, California	earthquake	0.19	0.55	0.13	36	reviewed	nc	nc
12/22/2003	23:08:40	35.6063333	-120.9006667	6.668	2.68	md	44	64	0.04505	0.12	nc	nc21324609	2017-01-04T20:26:42.430Z	13 km S of Lake Nacimiento, California	earthquake	0.16	1.01	0.14	44	reviewed	nc	nc
12/22/2003	23:00:40	35.5811667	-120.8855	6.243	2.83	md	24	80	0.05045	0.13	nc	nc30500562	2017-01-04T20:25:57.830Z	15 km N of Cayucos, California	earthquake	0.28	0.88	0.07	8	reviewed	nc	nc
12/22/2003	22:57:43	35.5918333	-120.858	7.509	2.47	md	33	72	0.04955	0.07	nc	nc30500560	2017-01-04T20:25:39.956Z	14 km WNW of Templeton, California	earthquake	0.17	0.34	0.08	41	reviewed	nc	nc
12/22/2003	22:54:09	35.5756667	-120.8725	3.708	2.69	md	37	75	0.05045	0.07	nc	nc30500558	2017-01-04T20:25:15.460Z	14 km N of Cayucos, California	earthquake	0.19	0.63	0.09	48	reviewed	nc	nc
12/22/2003	22:46:15	35.5391667	-120.8631667	2.59	2.58	md	46	48	0.03604	0.08	nc	nc30500556	2017-01-04T20:24:37.410Z	11 km NNE of Cayucos, California	earthquake	0.16	0.55	0.08	42	reviewed	nc	nc
12/22/2003	22:39:17	35.5543333	-120.8745	8.994	3.22	ml	47	73	0.0955	0.07	nc	nc30500573	2017-01-04T20:23:52.130Z	Central California	earthquake	0.18	0.87		3	reviewed	nc	nc
12/22/2003	22:34:38	35.5755	-120.8756667	7.408	2.36	md	32	76	0.04865	0.09	nc	nc30500569	2017-01-04T20:23:04.174Z	14 km N of Cayucos, California	earthquake	0.24	0.81	0.16	23	reviewed	nc	nc
12/22/2003	22:33:02	35.5836667	-120.8913333	8.328	2.53	md	20	88	0.05135	0.1	nc	nc21326651	2017-01-04T20:22:58.810Z	15 km N of Cayucos, California	earthquake	0.41	1.33	0.14	19	reviewed	nc	nc
12/22/2003	22:27:10	35.7138333	-120.8563333	19.867	2.66	md	6	333	0.1847	0.12	nc	nc68005913	2017-01-04T20:22:27.258Z	2 km SE of Lake Nacimiento, California	earthquake	11.45	4.11	0.09	3	reviewed	nc	nc
12/22/2003	22:25:10	35.5651667	-120.8728333	8.993	2.68	md	13	195	0.04144	0.07	nc	nc68005911	2017-01-04T20:22:14.952Z	13 km N of Cayucos, California	earthquake	0.59	0.89	0.08	12	reviewed	nc	nc
12/22/2003	22:22:25	35.2453333	-120.738	6.104	2.29	md	24	55	0.03784	0.06	nc	nc30500565	2017-01-04T20:21:59.211Z	Central California	earthquake	0.17	0.36	0.11	19	reviewed	nc	nc
12/22/2003	22:21:35	35.565	-120.8606667	7.266	2.31	md	37	57	0.07658	0.12	nc	nc30500564	2017-01-04T20:21:50.681Z	13 km NNE of Cayucos, California	earthquake	0.21	1.37	0.17	32	reviewed	nc	nc
12/22/2003	22:17:55	35.6351667	-120.8933333	5.973	2.23	md	19	92	0.1018	0.08	nc	nc21326635	2017-01-04T20:21:18.064Z	10 km S of Lake Nacimiento, California	earthquake	0.35	0.66	0.12	10	reviewed	nc	nc
12/22/2003	22:11:32	35.6045	-120.8548333	3.413	2.45	md	8	255	0.08198	0.03	nc	nc68005901	2017-01-04T20:20:41.995Z	13 km S of Lake Nacimiento, California	earthquake	1.07	1.44	0.25	3	reviewed	nc	nc
12/22/2003	22:06:58	35.5933333	-120.879	7.452	2.95	md	9	111	0.06396	0.03	nc	nc30500578	2017-01-04T20:19:49.974Z	14 km S of Lake Nacimiento, California	earthquake	0.36	0.88	0.06	6	reviewed	nc	nc
12/22/2003	21:58:44	35.5326667	-120.836	6.693	2.45	md	17	111	0.05766	0.15	nc	nc30226811	2017-01-04T20:18:51.662Z	11 km NNE of Cayucos, California	earthquake	0.44	0.91	0.12	3	reviewed	nc	nc
12/22/2003	21:54:18	35.6076667	-120.8966667	6.422	2.41	md	39	84	0.07387	0.08	nc	nc40148884	2017-01-04T20:18:24.040Z	13 km S of Lake Nacimiento, California	earthquake	0.17	1.16	0.09	38	reviewed	nc	nc
12/22/2003	21:50:07	35.5361667	-120.8935	7.414	2.72	md	29	76	0.07748	0.06	nc	nc30500426	2017-01-04T20:17:21.944Z	10 km N of Cayucos, California	earthquake	0.2	0.63	0.17	23	reviewed	nc	nc
12/22/2003	21:43:46	35.6275	-120.8636667	6.939	2	md	14	113	0.01351	0.12	nc	nc30500517	2017-01-04T20:15:56.828Z	11 km S of Lake Nacimiento, California	earthquake	0.35	0.75	0.28	6	reviewed	nc	nc
12/22/2003	21:42:50	35.541	-120.8621667	9.958	2.04	md	14	154	0.03694	0.1	nc	nc30500516	2017-01-04T20:15:48.495Z	11 km NNE of Cayucos, California	earthquake	0.57	1.36	0.17	9	reviewed	nc	nc
12/22/2003	21:27:23	35.5823333	-120.8926667	6.018	2.13	md	24	66	0.04955	0.06	nc	nc30500303	2017-01-04T20:13:19.429Z	15 km N of Cayucos, California	earthquake	0.23	0.49	0.1	11	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/22/2003	21:25:11	35.533	-120.8351667	8.013	3.21	md	14	200	0.05856	0.12	nc	nc68005862	2017-01-04T20:13:10.976Z	11 km NNE of Cayucos, California	earthquake	0.63	1.02	0.19	5	reviewed	nc	nc
12/22/2003	21:19:44	35.5765	-120.8825	3.86	2.6	md	34	78	0.04685	0.07	nc	nc21323920	2017-01-04T20:12:11.143Z	14 km N of Cayucos, California	earthquake	0.23	0.48	0.07	30	reviewed	nc	nc
12/22/2003	21:17:05	35.6036667	-120.836	3.615	2.31	md	24	75	0.04505	0.04	nc	nc40148854	2017-01-04T20:11:54.019Z	13 km WNW of Templeton, California	earthquake	0.25	1.48	0.08	22	reviewed	nc	nc
12/22/2003	21:12:25	35.5675	-120.8196667	1.898	2.39	md	25	77	0.1198	0.1	nc	nc21324926	2017-01-04T20:11:27.995Z	10 km W of Templeton, California	earthquake	0.25	2.07	0.11	23	reviewed	nc	nc
12/22/2003	21:10:34	35.5945	-120.869	6.413	3.01	md	9	203	0.1586	0.04	nc	nc68005851	2017-01-04T20:11:19.001Z	14 km S of Lake Nacimiento, California	earthquake	0.79	1.93	0.04	5	reviewed	nc	nc
12/22/2003	21:09:07	35.5256667	-120.8425	6.19	2.13	md	27	56	0.05315	0.16	nc	nc21323751	2017-01-04T20:11:10.046Z	10 km NNE of Cayucos, California	earthquake	0.34	0.73	0.11	22	reviewed	nc	nc
12/22/2003	21:06:52	35.5446667	-120.8508333	8.672	2.97	md	11	201	0.08919	0.11	nc	nc68005849	2017-01-04T20:11:01.748Z	11 km NNE of Cayucos, California	earthquake	1.03	1.15	0.18	6	reviewed	nc	nc
12/22/2003	21:03:33	35.5791667	-120.8785	3.093	3.06	md	44	77	0.05045	0.07	nc	nc40148844	2017-01-04T20:10:19.200Z	15 km N of Cayucos, California	earthquake	0.17	0.61	0.08	58	reviewed	nc	nc
12/22/2003	21:01:00	35.5441667	-120.846	4.928	2.53	md	22	147	0.09009	0.06	nc	nc40148841	2017-01-04T20:09:56.549Z	12 km NNE of Cayucos, California	earthquake	0.34	1.42	0.07	25	reviewed	nc	nc
12/22/2003	21:00:21	35.5568333	-120.8723333	6.533	2.22	md	17	82	0.03604	0.11	nc	nc40148840	2017-01-04T20:09:47.550Z	12 km N of Cayucos, California	earthquake	0.35	0.86	0.1	18	reviewed	nc	nc
12/22/2003	20:56:07	35.5843333	-120.8943333	4.69	3.49	md	28	83	0.05135	0.13	nc	nc40148835	2017-01-04T20:08:54.683Z	Central California	earthquake	0.34	1.03	0.08	16	reviewed	nc	nc
12/22/2003	20:52:39	35.575	-120.8751667	4.81	2.37	md	8	218	0.1396	0.08	nc	nc68005837	2017-01-04T20:08:38.220Z	14 km N of Cayucos, California	earthquake	1	1.22		1	reviewed	nc	nc
12/22/2003	20:46:16	35.6048333	-120.791	0.063	2.81	md	11	225	0.118	0.04	nc	nc68005832	2017-01-04T20:07:57.757Z	9 km WSW of Paso Robles, California	earthquake	0.5	1.19	0.05	2	reviewed	nc	nc
12/22/2003	20:41:09	35.5861667	-120.8871667	2.753	4.28	ml	36	80	0.05495	0.09	nc	nc30500441	2017-03-17T19:45:46.955Z	15 km S of Lake Nacimiento, California	earthquake	0.22	0.73		0	reviewed	nc	nc
12/22/2003	20:36:33	35.5501667	-120.848	8.499	2.77	md	31	69	0.0955	0.05	nc	nc30500290	2017-01-04T20:07:17.230Z	12 km NNE of Cayucos, California	earthquake	0.21	0.8	0.13	30	reviewed	nc	nc
12/22/2003	20:33:39	35.54	-120.849	10.389	2.38	md	12	89	0.08559	0.07	nc	nc30500287	2017-01-04T20:07:00.637Z	Central California	earthquake	0.43	1.1	0.15	4	reviewed	nc	nc
12/22/2003	20:31:01	35.5598333	-120.8898333	10.216	2.34	md	29	79	0.08378	0.07	nc	nc21323760	2017-01-04T20:06:42.131Z	12 km N of Cayucos, California	earthquake	0.29	0.93	0.08	27	reviewed	nc	nc
12/22/2003	20:29:28	35.5258333	-120.8456667	8.22	2.08	md	34	152	0.07297	0.04	nc	nc68005818	2017-01-04T20:06:20.260Z	10 km NNE of Cayucos, California	earthquake	0.37	0.73	0.189	23	reviewed	nc	nc
12/22/2003	20:19:00	35.5511667	-120.85	4.92	2.54	md	18	97	0.04955	0.06	nc	nc40148804	2017-01-04T20:04:37.532Z	12 km NNE of Cayucos, California	earthquake	0.33	0.6	0.09	18	reviewed	nc	nc
12/22/2003	20:14:48	35.6676667	-120.8803333	0.061	3.17	ml	33	48	0.02883	0.27	nc	nc21323743	2017-01-04T20:04:11.797Z	6 km S of Lake Nacimiento, California	earthquake	0.4	4.52		15	reviewed	nc	nc
12/22/2003	20:12:19	35.5316667	-120.8243333	3.312	2.57	md	19	69	0.08649	0.09	nc	nc30500284	2017-01-04T20:03:50.398Z	10 km W of Templeton, California	earthquake	0.33	1.73	0.12	16	reviewed	nc	nc
12/22/2003	20:01:32	35.5886667	-120.8721667	2.367	3.32	md	9	222	0.06126	0.06	nc	nc68005791	2017-01-04T20:02:43.799Z	15 km S of Lake Nacimiento, California	earthquake	1.07	1.96		1	reviewed	nc	nc
12/22/2003	19:46:39	35.59	-120.8625	8.554	3.35	ml	49	73	0.1324	0.07	nc	nc30500279	2017-01-04T20:00:55.600Z	14 km WNW of Templeton, California	earthquake	0.16	1.22		3	reviewed	nc	nc
12/22/2003	19:41:05	35.5426667	-120.8531667	4.138	3.36	md	33	184	0.08739	0.04	nc	nc30500275	2017-01-04T20:00:23.529Z	11 km NNE of Cayucos, California	earthquake	0.36	1.4		5	reviewed	nc	nc
12/22/2003	19:36:12	35.6008333	-120.864	7.99	2.6	md	7	125	0.1667	0.02	nc	nc30506030	2017-01-04T20:00:04.164Z	14 km S of Lake Nacimiento, California	earthquake	1.47	7.37	0.1	2	reviewed	nc	nc
12/22/2003	19:35:28	35.5571667	-120.8798333	6.614	3.3	ml	46	40	0.03153	0.07	nc	nc21323717	2017-01-04T19:59:50.300Z	12 km N of Cayucos, California	earthquake	0.17	0.76		2	reviewed	nc	nc
12/22/2003	19:31:05	35.534	-120.832	3.587	4.02	ml	17	142	0.1387	0.07	nc	nc68005767	2017-01-04T19:59:32.577Z	11 km NNE of Cayucos, California	earthquake	0.26	0.96		8	reviewed	nc	nc
12/22/2003	19:29:39	35.5421667	-120.8503333	4.948	3.89	ml	35	63	0.04685	0.07	nc	nc30500274	2017-01-04T19:59:19.763Z	11 km NNE of Cayucos, California	earthquake	0.23	1.05		3	reviewed	nc	nc
12/18/2003	13:05:58	35.1178333	-119.015	11.263	2.23	ml	12	179	0.05803	0.28	ci	ci9965581	2016-02-16T20:27:41.864Z	18km SSW of Lamont, California	earthquake	1.21	1.5		1	reviewed	ci	ci
12/18/2003	5:56:12	35.1133333	-119.0175	10.451	2.19	ml	12	178	0.05327	0.27	ci	ci9965533	2016-02-16T20:27:40.493Z	19km SSW of Lamont, California	earthquake	1.18	1.5	0.548	4	reviewed	ci	ci
12/17/2003	21:10:25	35.121	-119.0128333	6.602	2.13	ml	11	180	0.06146	0.23	ci	ci9965453	2016-02-17T03:47:17.538Z	18km SSW of Lamont, California	earthquake	1.04	2.44		1	reviewed	ci	ci
12/16/2003	21:50:26	35.5221667	-120.8098333	8.16	2.01	md	32	62	0.08018	0.05	nc	nc21322780	2017-01-04T19:35:27.994Z	9 km WSW of Templeton, California	earthquake	0.18	0.61	0.1	21	reviewed	nc	nc
12/15/2003	10:25:43	35.117	-119.0211667	12.593	2.02	ml	10	177	0.05655	0.24	ci	ci9964589	2016-02-17T01:25:15.110Z	19km SSW of Lamont, California	earthquake	1.07	1.15		1	reviewed	ci	ci
12/11/2003	2:50:29	35.1165	-118.996	6.133	2.69	ml	43	33	0.06139	0.28	ci	ci9962625	2016-04-02T03:35:03.160Z	18km SSW of Lamont, CA	earthquake	0.42	2.31	0.219	51	reviewed	ci	ci
12/7/2003	16:22:18	36.0563333	-120.6026667	9.326	2.45	md	31	66	0.01351	0.03	nc	nc21321753	2017-01-04T19:00:50.140Z	23 km NW of Parkfield, California	earthquake	0.24	0.26	0.09	37	reviewed	nc	nc
12/7/2003	1:13:37	36.055	-120.605	9.056	2.55	md	33	55	0.01532	0.04	nc	nc21321626	2017-01-04T18:58:08.080Z	23 km NW of Parkfield, California	earthquake	0.19	0.25	0.09	42	reviewed	nc	nc
12/6/2003	13:49:16	36.0013333	-120.5575	4.592	2.77	md	49	59	0.02793	0.04	nc	nc21321539	2017-01-04T18:56:34.860Z	15 km NW of Parkfield, California	earthquake	0.15	0.21	0.09	53	reviewed	nc	nc
11/17/2003	2:18:18	35.1348333	-118.8641667	8.041	2	mh	11	59	0.02903	0.25	ci	ci14004208	2016-02-17T08:32:54.598Z	9km SSW of Arvin, California	earthquake	0.79	1.98		0	reviewed	ci	ci
11/15/2003	4:37:33	36.0485	-120.6085	3.466	2.49	md	55	53	0.02252	0.09	nc	nc21318434	2017-01-04T17:43:01.850Z	22 km NW of Parkfield, California	earthquake	0.16	0.26	0.11	54	reviewed	nc	nc
11/7/2003	21:24:54	35.9781667	-120.5291667	10.778	2.18	md	48	56	0.03333	0.03	nc	nc21317413	2017-01-04T10:27:26.930Z	12 km NW of Parkfield, California	earthquake	0.17	0.22	0.15	44	reviewed	nc	nc
11/7/2003	13:55:26	35.3148333	-119.492	24.728	2.31	ml	21	104	0.1787	0.23	ci	ci14002392	2016-02-16T13:06:00.916Z	10km SSW of Buttonwillow, California	earthquake	0.58	1.12	0.197	4	reviewed	ci	ci
11/1/2003	14:52:35	35.1331667	-118.9391667	14.213	3.28	ml	48	22	0.08962	0.29	ci	ci14000872	2016-04-02T00:22:33.259Z	13km SW of Arvin, CA	earthquake	0.38	0.6	0.217	117	reviewed	ci	ci
11/1/2003	4:51:22	35.3125	-120.3201667	8.015	2.4	md	47	111	0.08649	0.11	nc	nc21316499	2017-01-04T10:09:11.000Z	27 km ESE of Santa Margarita, California	earthquake	0.26	0.57	0.12	50	reviewed	nc	nc
11/1/2003	1:53:38	35.9695	-120.52	10.815	2.41	md	52	48	0.02162	0.04	nc	nc21316478	2017-01-04T10:08:38.190Z	11 km NW of Parkfield, California	earthquake	0.14	0.21	0.1	63	reviewed	nc	nc
10/31/2003	12:13:30	36.3056667	-119.7425	-0.573	2	md	15	117	0.4757	0.09	nc	nc21316339	2017-01-04T10:06:36.317Z	3 km WSW of Armona, California	earthquake	0.68	5.61		1	reviewed	nc	nc
10/21/2003	13:43:36	35.2081667	-120.8048333	3.446	2.55	md	51	115	0.02973	0.11	nc	nc21314116	2017-01-04T09:37:47.190Z	Central California	earthquake	0.16	0.21	0.12	43	reviewed	nc	nc
10/21/2003	9:00:15	35.982	-120.5438333	3.671	2.03	md	37	76	0.00991	0.06	nc	nc21314065	2017-01-04T09:36:47.260Z	13 km NW of Parkfield, California	earthquake	0.19	0.26	0.14	23	reviewed	nc	nc
10/21/2003	4:20:13	34.9803333	-119.1543333	17.512	2	mh	25	65	0.07106	0.32	ci	ci13998596	2016-04-01T21:09:16.836Z	15km N of Pine Mountain Club, CA	earthquake	0.53	1.57		0	reviewed	ci	ci
10/20/2003	11:25:46	35.9835	-120.5433333	3.741	2.18	md	47	56	0.01171	0.05	nc	nc30227076	2017-01-04T09:34:17.230Z	13 km NW of Parkfield, California	earthquake	0.18	0.24	0.13	33	reviewed	nc	nc
10/18/2003	7:38:59	35.2015	-120.805	3.776	3.42	ml	55	127	0.03153	0.09	nc	nc21313416	2021-03-10T00:02:46.101Z	7 km WNW of Avila Beach, California	earthquake	0.15	0.22		3	reviewed	nc	nc
10/18/2003	7:27:18	35.2035	-120.8046667	3.786	3.44	ml	54	124	0.03063	0.1	nc	nc21313413	2022-06-18T07:29:37.187Z	7 km WNW of Avila Beach, California	earthquake	0.14	0.19		4	reviewed	nc	nc
10/15/2003	7:47:01	35.3888333	-119.9713333	5.692	2.04	ml	18	71	0.04373	0.2	ci	ci13997548	2016-04-02T16:27:31.295Z	5km NNE of Simmler, CA	earthquake	0.56	1	0.101	7	reviewed	ci	ci
10/15/2003	5:31:47	35.391	-119.968	6.222	2.28	ml	18	63	0.04594	0.24	ci	ci13997532	2016-04-02T16:26:12.400Z	5km NNE of Simmler, CA	earthquake	0.6	1.13	0.205	12	reviewed	ci	ci
10/12/2003	13:32:28	35.2055	-120.8003333	3.49	2.18	md	66	128	0.03141	0.11	nc	nc21312292	2022-11-19T05:58:49.020Z	7km WNW of Avila Beach, CA	earthquake	0.16	0.18	0.138	64	reviewed	nc	nc
10/4/2003	22:07:36	35.1765	-120.5803333	8.574	2.07	md	11	170	0.1261	0.15	nc	nc68005591	2017-01-04T08:42:46.879Z	4 km SE of Edna, California	earthquake	0.77	2.78	0.12	6	reviewed	nc	nc
10/1/2003	3:01:42	36.0351667	-120.5898333	5.615	2.33	md	48	58	0.06847	0.04	nc	nc21310209	2017-01-04T08:24:20.420Z	20 km NW of Parkfield, California	earthquake	0.15	0.38	0.1	39	reviewed	nc	nc
9/29/2003	13:24:32	36.2145	-119.6358333	17.311	2.31	md	12	191	0.4135	0.07	nc	nc21309846	2017-01-04T08:17:25.901Z	9 km S of Home Garden, California	earthquake	1.19	0.62		1	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/24/2003	21:22:47	35.6525	-120.8066667	5.504	2.16	md	50	38	0.05045	0.07	nc	nc21308916	2017-01-04T08:00:37.559Z	10 km SE of Lake Nacimiento, California	earthquake	0.13	0.32	0.17	37	reviewed	nc	nc
9/23/2003	5:01:42	35.4391667	-120.8028333	6.087	2.01	md	6	187	0.06126	0.02	nc	nc68005569	2017-01-04T07:54:53.121Z	8 km E of Cayucos, California	earthquake	0.93	0.7	0.04	5	reviewed	nc	nc
9/22/2003	18:28:23	35.4715	-120.7751667	4.535	2.08	md	28	57	0.08829	0.09	nc	nc21308497	2017-01-04T07:53:48.831Z	9 km WSW of Atascadero, California	earthquake	0.17	0.54	0.2	7	reviewed	nc	nc
9/21/2003	20:59:22	35.4706667	-120.7728333	4.715	2.91	md	60	57	0.09009	0.08	nc	nc21308369	2017-01-04T07:49:59.430Z	9 km WSW of Atascadero, California	earthquake	0.13	0.52	0.08	75	reviewed	nc	nc
9/21/2003	7:43:25	36.0785	-120.6355	5.701	3.21	ml	60	68	0.1252	0.07	nc	nc21308308	2017-01-04T07:48:07.590Z	25 km ENE of San Ardo, California	earthquake	0.15	0.56		9	reviewed	nc	nc
9/20/2003	23:13:15	36.1496667	-119.9958333	6.58	2.13	md	30	148	0.1279	0.12	nc	nc21308271	2017-01-04T07:47:07.923Z	11 km ESE of Huron, California	earthquake	0.35	0.32	0.06	19	reviewed	nc	nc
9/20/2003	16:41:45	35.4996667	-120.7815	1.378	2.08	md	34	53	0.09189	0.19	nc	nc21308213	2017-01-04T07:45:50.309Z	8 km SW of Templeton, California	earthquake	0.25	1.78	0.18	10	reviewed	nc	nc
9/18/2003	1:51:20	36.0943333	-120.0326667	7.643	2.13	md	22	180	0.07117	0.11	nc	nc21307812	2017-01-04T07:37:51.911Z	11 km NW of Kettleman City, California	earthquake	0.48	0.24	0.16	9	reviewed	nc	nc
9/17/2003	21:39:45	36.0331667	-120.5643333	9.077	2.39	md	37	72	0.06036	0.04	nc	nc21307770	2017-01-04T07:37:01.070Z	18 km NW of Parkfield, California	earthquake	0.16	0.32	0.1	45	reviewed	nc	nc
9/13/2003	8:23:25	34.8766667	-119.485	3.06	2.9	ml	42	30		0.43	ci	ci9944669	2016-04-02T16:21:30.552Z	22km SSW of Maricopa, CA	earthquake	0.52	2.02	0.255	131	reviewed	ci	ci
8/29/2003	8:15:54	35.1831667	-120.4931667	11.779	2.06	md	21	147	0.02613	0.05	nc	nc21303738	2017-01-04T06:36:52.922Z	11 km ESE of Edna, California	earthquake	0.96	1.15	0.18	12	reviewed	nc	nc
8/28/2003	17:33:32	36.2243333	-120.3338333	9.883	2.97	md	54	58	0.02613	0.06	nc	nc21303568	2017-01-04T06:33:48.230Z	9 km NNE of Coalinga, California	earthquake	0.13	0.21	0.11	118	reviewed	nc	nc
8/28/2003	10:03:18	36.1745	-120.3168333	12.429	2.02	md	31	55	0.07748	0.05	nc	nc21303475	2017-01-04T06:31:18.550Z	5 km NE of Coalinga, California	earthquake	0.21	0.3	0.1	24	reviewed	nc	nc
8/28/2003	0:11:12	35.9241667	-120.4701667	5.393	3.04	md	50	43	0.01982	0.06	nc	nc21303302	2017-01-04T06:29:27.140Z	4 km NW of Parkfield, California	earthquake	0.17	0.21	0.1	65	reviewed	nc	nc
8/27/2003	8:50:07	35.6271667	-119.51	6.415	2.42	ml	17	135.1	0.4065	0.33	ci	ci9941145	2016-04-02T10:00:34.742Z	16km WNW of Wasco, CA	earthquake	0.8	24.35	0.274	15	reviewed	ci	ci
8/25/2003	22:52:56	36.1826667	-120.1655	7.479	2.31	md	26	106	0.09369	0.09	nc	nc21302708	2017-01-04T06:22:40.800Z	6 km WSW of Huron, California	earthquake	0.32	0.56	0.12	27	reviewed	nc	nc
8/22/2003	20:45:23	35.0783333	-119.0808333	23.505	2.04	ml	17	102	0.1099	0.19	ci	ci9940085	2016-04-02T14:13:02.819Z	20km NW of Grapevine, CA	earthquake	0.58	1.44	0.279	41	reviewed	ci	ci
8/22/2003	17:28:34	35.9705	-120.52	10.725	2.16	md	45	50	0.02252	0.03	nc	nc21301963	2017-01-04T06:12:29.170Z	11 km NW of Parkfield, California	earthquake	0.19	0.15	0.17	46	reviewed	nc	nc
8/13/2003	15:58:33	36.1891667	-120.3016667	32.004	2.98	md	7	83	0.109	0.4	nc	nc40145604	2017-01-04T05:45:34.770Z	7 km NE of Coalinga, California	earthquake	2.52	10.95	0.25	6	reviewed	nc	nc
8/13/2003	13:04:00	36.046	-120.577	7.915	2.01	md	38	72	0.07477	0.06	nc	nc21299269	2017-01-04T05:44:50.270Z	20 km NW of Parkfield, California	earthquake	0.18	0.6	0.2	25	reviewed	nc	nc
8/1/2003	15:07:36	36.0328333	-120.6103333	7.935	2.07	md	31	127	0.07568	0.09	nc	nc21296699	2017-01-04T05:13:46.860Z	21 km NW of Parkfield, California	earthquake	0.39	0.79	0.12	25	reviewed	nc	nc
8/1/2003	13:38:03	36.0765	-120.207	7.251	2.21	md	16	217	0.08018	0.07	nc	nc21296688	2017-01-04T05:13:31.756Z	10 km NW of Avenal, California	earthquake	0.45	0.62	0.65	2	reviewed	nc	nc
7/30/2003	20:15:07	36.1125	-120.117	7.807	2.14	md	26	141	0.05135	0.05	nc	nc21296237	2017-01-04T05:08:03.240Z	10 km S of Huron, California	earthquake	0.28	0.2	0.17	27	reviewed	nc	nc
7/30/2003	11:49:21	35.8706667	-120.3188333	11.279	2.94	md	42	50	0.03423	0.07	nc	nc21296131	2017-01-04T05:06:13.410Z	10 km ESE of Parkfield, California	earthquake	0.17	0.3	0.09	67	reviewed	nc	nc
7/29/2003	21:51:16	36.0921667	-120.1806667	8.592	2.36	md	38	92	0.06577	0.06	nc	nc21295998	2017-01-04T05:03:47.150Z	10 km NNW of Avenal, California	earthquake	0.23	0.3	0.11	40	reviewed	nc	nc
7/25/2003	19:42:08	36.1438333	-120.1698333	9.669	2.19	md	27	115	0.0964	0.07	nc	nc21294822	2017-01-04T04:52:05.130Z	8 km SW of Huron, California	earthquake	0.24	0.46	0.09	30	reviewed	nc	nc
7/25/2003	5:43:18	36.0358333	-120.5868333	8.445	2.46	md	48	44	0.06847	0.05	nc	nc21294631	2017-01-04T04:50:11.730Z	20 km NW of Parkfield, California	earthquake	0.17	0.46	0.11	53	reviewed	nc	nc
7/22/2003	18:20:18	35.171	-119.0123333	20.882	2.66	ml	44	65	0.1557	0.25	ci	ci13979580	2016-04-01T20:57:36.498Z	13km SW of Lamont, CA	earthquake	0.33	1.08	0.251	93	reviewed	ci	ci
7/19/2003	5:40:36	36.1958333	-120.26	18.532	2.78	md	5	154	0.1351	0.06	nc	nc51130053	2017-01-04T04:32:01.084Z	10 km NE of Coalinga, California	earthquake	1.74	1.9		1	reviewed	nc	nc
7/14/2003	10:07:25	36.2953333	-120.3203333	8.771	2.11	md	5	139	0.1631	0.28	nc	nc51129936	2017-01-04T04:12:02.420Z	17 km NNE of Coalinga, California	earthquake	1.63	9.83		1	reviewed	nc	nc
7/9/2003	23:04:23	36.15	-120.0661667	8.549	2.85	md	37	170	0.0955	0.09	nc	nc21291770	2017-01-04T03:59:01.950Z	6 km SSE of Huron, California	earthquake	0.33	0.24	0.09	84	reviewed	nc	nc
7/9/2003	1:55:22	36.0518333	-120.6048333	9.046	2.39	md	54	42	0.01802	0.03	nc	nc21291634	2017-01-04T03:57:09.120Z	22 km NW of Parkfield, California	earthquake	0.16	0.25	0.11	60	reviewed	nc	nc
7/8/2003	18:10:46	35.0616667	-119.0821667	10.215	2.61	ml	32	94	0.04518	0.28	ci	ci9929149	2016-04-01T20:58:06.231Z	19km NW of Grapevine, CA	earthquake	0.54	1.3	0.267	109	reviewed	ci	ci
6/22/2003	1:45:44	36.249	-120.3341667	8.559	2.6	md	40	107	0.007207	0.06	nc	nc21288847	2017-01-04T03:09:42.250Z	12 km N of Coalinga, California	earthquake	0.14	0.15	0.11	64	reviewed	nc	nc
5/31/2003	14:08:00	36.266	-120.3796667	9.479	2.09	md	32	55	0.03423	0.09	nc	nc30225893	2017-01-04T02:06:38.900Z	14 km N of Coalinga, California	earthquake	0.21	0.29	0.13	30	reviewed	nc	nc
5/26/2003	3:31:30	34.8951667	-119.5223333	4.243	2.06	ml	25	94.7	0.184	0.35	ci	ci13967144	2016-04-02T19:20:38.104Z	21km SSW of Maricopa, CA	earthquake	0.61	31.38	0.236	0	reviewed	ci	ci
5/25/2003	21:01:12	35.335	-119.2211667	24.019	2.56	md	41	79	0.09589	0.32	ci	ci13967100	2016-04-02T13:07:30.840Z	9km SW of Rosedale, CA	earthquake	0.52	1.06	0.307	90	reviewed	ci	ci
5/25/2003	19:32:57	35.9683333	-120.5185	10.605	2.39	md	51	35	0.01982	0.03	nc	nc21283545	2017-01-04T01:45:33.490Z	10 km NW of Parkfield, California	earthquake	0.15	0.2	0.12	60	reviewed	nc	nc
5/22/2003	18:38:54	35.7458333	-119.7696667	17.978	2.03	md	13	130	0.1919	0.27	nc	nc21283086	2017-01-04T01:34:39.330Z	15 km NNW of Lost Hills, California	earthquake	1.3	2.43	0.06	2	reviewed	nc	nc
5/21/2003	5:59:15	36.2108333	-120.0796667	10.17	2.02	md	4	249	0.03784	0	nc	nc51128239	2017-01-04T01:30:16.825Z	2 km ENE of Huron, California	earthquake	1.72	0.51	0.14	2	reviewed	nc	nc
5/9/2003	2:15:12	35.9051667	-120.449	5.699	2.08	md	39	54	0.03153	0.06	nc	nc21278570	2017-01-04T00:53:51.250Z	1 km WNW of Parkfield, California	earthquake	0.17	0.22	0.16	40	reviewed	nc	nc
5/6/2003	4:00:11	36.3913333	-119.9951667	17.14	2.2	md	4	158	0.1595	0	nc	nc51127872	2017-01-04T00:44:50.248Z	7 km SW of Lanare, California	earthquake	2.63	2.35		1	reviewed	nc	nc
5/2/2003	8:02:17	36.217	-120.2986667	18.15	2.38	md	5	138	0.1324	0.01	nc	nc51127804	2017-01-04T00:34:08.606Z	10 km NNE of Coalinga, California	earthquake	0.51	4.49		1	reviewed	nc	nc
4/28/2003	5:07:47	35.9866667	-120.0175	10.605	2.59	md	37	169	0.1054	0.09	nc	nc21277414	2017-01-04T00:23:27.260Z	5 km WSW of Kettleman City, California	earthquake	0.35	0.45	0.13	74	reviewed	nc	nc
4/21/2003	22:18:14	35.4531667	-120.8593333	-0.332	2.09	md	30	100	0.01892	0.3	nc	nc21276783	2017-01-04T00:03:27.962Z	3 km ENE of Cayucos, California	earthquake	0.45	0.98	0.12	10	reviewed	nc	nc
4/9/2003	14:10:52	35.0713333	-119.6041667	14.472	2.6	ml	22	57		0.45	ci	ci9906317	2016-04-02T16:14:31.515Z	16km WSW of Taft, CA	earthquake	0.86	1.43	0.188	78	reviewed	ci	ci
4/8/2003	23:38:54	35.6356667	-120.741	6.784	2.15	md	63	28	0.1027	0.1	nc	nc21275359	2017-01-03T23:15:10.120Z	4 km WNW of Paso Robles, California	earthquake	0.11	0.62	0.13	47	reviewed	nc	nc
4/8/2003	20:31:32	35.1855	-119.3865	5.265	2	ml	19	81	0.04784	0.26	ci	ci9906157	2016-04-02T00:08:41.274Z	8km NE of Taft, CA	earthquake	0.54	1.88	0.228	28	reviewed	ci	ci
4/8/2003	5:28:20	35.1975	-119.384	7.455	2.57	ml	19	93.8	0.0591	0.23	ci	ci9905953	2016-04-02T16:11:01.996Z	9km NE of Taft, CA	earthquake	0.58	0.84	0.656	0	reviewed	ci	ci
4/4/2003	14:02:02	35.8513333	-119.788	6.412	2.27	ml	8	250.9		0.26	ci	ci13952532	2016-02-17T01:13:37.906Z	23km SE of Kettleman City, California	earthquake	5.69	24.38	0.035	1	reviewed	ci	ci
4/2/2003	3:11:14	36.2493333	-120.402	6.859	2.01	md	24	68	0.04775	0.03	nc	nc21273608	2017-01-03T22:58:57.147Z	12 km NNW of Coalinga, California	earthquake	0.24	0.39	0.11	16	reviewed	nc	nc
4/1/2003	22:00:50	36.0553333	-120.6056667	9.036	2.24	md	37	42	0.01532	0.05	nc	nc21273531	2017-01-03T22:58:00.880Z	23 km NW of Parkfield, California	earthquake	0.18	0.21	0.12	42	reviewed	nc	nc
4/1/2003	21:16:26	36.048	-120.614	8.866	2.4	md	45	32	0.02523	0.07	nc	nc30225621	2017-01-03T22:57:33.100Z	23 km NW of Parkfield, California	earthquake	0.15	0.24	0.09	54	reviewed	nc	nc
4/1/2003	21:13:07	36.047	-120.6116667	9.866	2.36	md	35	71	0.02523	0.06	nc	nc21273514	2017-01-03T22:57:25.300Z	22 km NW of Parkfield, California	earthquake	0.16	0.27	0.09	46	reviewed	nc	nc
4/1/2003	20:58:55	36.059	-120.6063333	9.306	2.12	md	25	73	0.01261	0.05	nc	nc21273512	2017-01-03T22:57:11.590Z	23 km NW of Parkfield, California	earthquake	0.24	0.22	0.1	33	reviewed	nc	nc
4/1/2003	20:54:36	36.0518333	-120.6103333	9.056	3.12	ml	55	31	0.02072	0.07	nc	nc21273511	2017-01-03T22:57:01.580Z	23 km NW of Parkfield, California	earthquake	0.13	0.23		4	reviewed	nc	nc
4/1/2003	9:08:15	36.0563333	-120.1655	1.837	2.5	md	32	66	0.04595	0.65	nc	nc21273448	2017-01-03T22:55:39.597Z	6 km NNW of Avenal, California	earthquake	0.95	2.97	0.1	29	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
4/1/2003	9:00:32	36.079	-120.1605	13.522	2.71	md	43	67	0.04505	0.09	nc	nc21273444	2017-01-03T22:55:34.450Z	8 km NNW of Avenal, California	earthquake	0.16	0.28	0.07	69	reviewed	nc	nc
4/1/2003	1:05:09	35.8538333	-120.3966667	4.409	3.03	md	42	40	0.01802	0.05	nc	nc21273399	2017-01-03T22:54:37.370Z	6 km SSE of Parkfield, California	earthquake	0.15	0.23	0.08	78	reviewed	nc	nc
3/26/2003	5:26:03	35.7913333	-119.7513333	6.329	2.05	ml	12	69.5		0.52	ci	ci13950088	2016-04-02T06:35:09.141Z	26km WSW of Alpaugh, CA	earthquake	2.24	39.55	0.251	6	reviewed	ci	ci
3/22/2003	15:10:22	36.2476667	-120.4306667	6.437	2.41	md	39	55	0.07117	0.06	nc	nc21272090	2017-01-03T22:27:58.110Z	13 km NNW of Coalinga, California	earthquake	0.13	0.24	0.09	41	reviewed	nc	nc
3/15/2003	19:03:48	35.5465	-119.2205	6.298	2	ml	13	146	0.3139	0.38	ci	ci13947600	2016-04-02T03:12:29.250Z	7km NE of Shafter, CA	earthquake	1.02	27	0.242	26	reviewed	ci	ci
3/14/2003	12:11:32	36.1893333	-120.1648333	8.708	2.01	md	27	160	0.136	0.07	nc	nc21271175	2017-01-03T22:01:13.951Z	5 km WSW of Huron, California	earthquake	0.35	0.37	0.12	7	reviewed	nc	nc
2/28/2003	11:12:05	36.0406667	-120.593	4.432	2.02	md	41	45	0.02793	0.06	nc	nc21269335	2017-01-03T20:34:28.740Z	21 km NW of Parkfield, California	earthquake	0.14	0.21	0.11	31	reviewed	nc	nc
2/28/2003	3:39:24	36.0018333	-120.5616667	4.372	2.11	md	45	55	0.02883	0.05	nc	nc21269300	2017-01-03T20:33:10.070Z	Central California	earthquake	0.16	0.22	0.15	31	reviewed	nc	nc
2/27/2003	19:42:39	35.4496667	-120.8645	-0.342	2.14	md	30	104	0.01712	0.13	nc	nc21269252	2017-01-03T20:30:33.624Z	2 km ENE of Cayucos, California	earthquake	0.24	0.49	0.12	10	reviewed	nc	nc
2/27/2003	12:52:41	35.5126667	-119.898	6.529	2.2	ml	5	275.2	0.09128	0.1	ci	ci13940056	2016-02-16T20:14:13.272Z	20km NNE of Simmler, California	earthquake	9.22	5.77	0.412	5	reviewed	ci	ci
2/25/2003	21:24:32	36.0553333	-119.9975	8.84	2.07	md	33	173	0.09099	0.13	nc	nc21269057	2017-01-03T20:24:32.000Z	6 km NNW of Kettleman City, California	earthquake	0.65	0.3	0.18	13	reviewed	nc	nc
2/23/2003	22:04:30	35.038	-118.9946667	9.447	2.48	ml	36	58	0.09231	0.36	ci	ci13937748	2016-04-02T00:01:26.892Z	12km NNW of Grapevine, CA	earthquake	0.46	2.04	0.217	34	reviewed	ci	ci
2/21/2003	19:47:44	34.8936667	-119.3581667	11.66	2.71	ml	44	34.1		0.43	ci	ci13935788	2016-04-02T06:26:09.293Z	19km SSE of Maricopa, CA	earthquake	0.5	0.97	0.333	37	reviewed	ci	ci
2/20/2003	22:52:02	36.1821667	-120.489	10.157	2.24	md	7	292	0.1423	0.1	nc	nc21268419	2017-01-03T20:03:14.934Z	12 km WNW of Coalinga, California	earthquake	1.01	2.65	0.81	2	reviewed	nc	nc
2/19/2003	21:00:57	34.895	-119.3571667	11.54	3.13	ml	50	32.9		0.39	ci	ci13935312	2016-04-02T16:04:55.042Z	19km SSE of Maricopa, CA	earthquake	0.47	0.98	0.213	78	reviewed	ci	ci
2/19/2003	17:10:24	34.8928333	-119.3616667	10.359	3.38	ml	51	32.7		0.4	ci	ci13935208	2016-04-02T12:55:05.887Z	19km S of Maricopa, CA	earthquake	0.48	1.24	0.214	99	reviewed	ci	ci
2/13/2003	9:45:25	35.7338333	-119.8131667	2.648	2.08	md	14	207	0.1739	0.15	nc	nc21267691	2017-01-03T19:34:49.891Z	16 km NW of Lost Hills, California	earthquake	0.87	3.64	0.01	4	reviewed	nc	nc
1/31/2003	18:03:09	35.7413333	-119.8133333	10.12	2.27	md	25	207	0.1685	0.11	nc	nc21265928	2017-01-03T18:34:05.767Z	17 km NW of Lost Hills, California	earthquake	0.47	0.99	0.27	15	reviewed	nc	nc
1/31/2003	12:27:28	34.881	-120.4286667	3.421	2.12	ml	12	136.3		0.24	ci	ci13930556	2016-04-01T20:43:10.010Z	2km NNE of Orcutt, CA	earthquake	0.85	0.5	0.308	4	reviewed	ci	ci
1/30/2003	15:00:07	35.7498333	-119.8048333	11.08	2.18	md	18	219	0.1676	0.04	nc	nc21265701	2017-01-03T18:30:09.683Z	17 km NW of Lost Hills, California	earthquake	0.49	0.83	0.11	9	reviewed	nc	nc
1/30/2003	11:27:49	35.7455	-119.807	10.5	2.1	md	11	218	0.1685	0.04	nc	nc21265689	2017-01-03T18:29:38.757Z	17 km NW of Lost Hills, California	earthquake	0.78	1.17	0.09	6	reviewed	nc	nc
1/29/2003	5:11:16	35.035	-118.9748333	4.409	2.28	ml	25	65	0.2773	0.42	ci	ci9883745	2016-04-02T16:05:44.726Z	11km NNW of Grapevine, CA	earthquake	0.81	37.34	0.226	23	reviewed	ci	ci
1/27/2003	21:48:54	34.8815	-120.4265	1.811	2.65	ml	19	131.7		0.32	ci	ci9883333	2016-04-02T19:13:08.606Z	2km NNE of Orcutt, CA	earthquake	0.8	0.83	0.293	14	reviewed	ci	ci
1/20/2003	21:16:32	35.4815	-120.605	-0.347	2.23	md	17	85	0.1586	0.07	nc	nc21264427	2017-01-03T17:54:43.978Z	6 km E of Atascadero, California	earthquake	0.3	0.97	0.04	4	reviewed	nc	nc
1/15/2003	7:45:22	35.8583333	-119.0403333	20.275	2.12	ml	13	148	0.04002	0.18	ci	ci9880193	2016-04-02T19:09:07.689Z	21km ENE of Delano, CA	earthquake	1	1.28	0.155	23	reviewed	ci	ci
1/15/2003	5:10:49	35.5263333	-120.8218333	3.56	2.53	md	52	52	0.06937	0.1	nc	nc21263592	2017-01-03T17:30:53.040Z	10 km WSW of Templeton, California	earthquake	0.15	0.74	0.1	64	reviewed	nc	nc
1/10/2003	7:59:23	35.5238333	-120.8323333	6.581	2.06	md	35	79	0.1189	0.03	nc	nc21263161	2017-01-03T17:15:52.050Z	10 km NNE of Cayucos, California	earthquake	0.34	0.91	0.16	26	reviewed	nc	nc
12/31/2002	3:29:01	36.2386667	-120.287	11.799	3.03	md	43	69	0.04685	0.08	nc	nc21261750	2017-01-03T09:52:16.900Z	12 km NNE of Coalinga, California	earthquake	0.19	0.32	0.11	95	reviewed	nc	nc
12/29/2002	12:48:39	36.0078333	-120.5641667	4.672	2.61	md	44	48	0.03514	0.04	nc	nc21261590	2017-01-03T09:49:04.170Z	Central California	earthquake	0.18	0.21	0.09	48	reviewed	nc	nc
12/28/2002	14:08:20	36.1448333	-120.1628333	10.869	3.73	mw	39	118		0.08	nc	nc21261534	2022-02-17T18:43:41.845Z	8km SW of Huron, CA	earthquake	0.21	0.45		2	reviewed	nc	nc
12/27/2002	17:01:14	35.8356667	-119.969	5.907	2.17	md	28	158	0.02883	0.19	nc	nc21261466	2017-01-03T09:46:58.630Z	19 km S of Kettleman City, California	earthquake	0.73	0.44	0.15	17	reviewed	nc	nc
12/25/2002	20:43:50	35.8586667	-119.9405	8.798	2.01	md	21	275	0.01351	0.11	nc	nc21261320	2017-01-03T09:43:17.296Z	16 km S of Kettleman City, California	earthquake	1.16	0.53	0.13	13	reviewed	nc	nc
12/23/2002	10:12:48	36.0288333	-120.168	16.497	2.11	md	37	78	0.05766	0.13	nc	nc21260977	2017-01-03T09:35:34.200Z	4 km NW of Avenal, California	earthquake	0.58	0.72	0.16	32	reviewed	nc	nc
12/23/2002	8:07:19	34.961	-118.9793333	8.817	2.09	ml	23	85.9	0.07402	0.26	ci	ci9872937	2016-04-02T09:47:46.980Z	5km WNW of Grapevine, CA	earthquake	0.56	2.19	0.158	10	reviewed	ci	ci
12/21/2002	8:59:34	36.1735	-120.3536667	14.027	2.2	md	41	49	0.07658	0.06	nc	nc21260721	2017-01-03T09:31:38.440Z	3 km N of Coalinga, California	earthquake	0.23	0.29	0.11	51	reviewed	nc	nc
12/17/2002	11:37:57	36.0398333	-120.5933333	4.295	2.47	md	32	42	0.02883	0.06	nc	nc21260445	2017-01-03T09:26:17.650Z	21 km NW of Parkfield, California	earthquake	0.19	0.3	0.13	30	reviewed	nc	nc
12/11/2002	20:33:18	36.0838333	-119.8688333	19.871	2.31	md	22	115	0.1964	0.16	nc	nc21259905	2017-01-03T09:18:13.800Z	11 km NE of Kettleman City, California	earthquake	0.91	1.06	0.22	13	reviewed	nc	nc
12/11/2002	17:24:44	36.1195	-120.2753333	12.542	2.01	md	27	69	0.08198	0.06	nc	nc21259921	2017-01-03T09:17:51.248Z	7 km ESE of Coalinga, California	earthquake	0.21	0.32	0.11	34	reviewed	nc	nc
12/7/2002	14:11:16	36.074	-120.1313333	5.772	2.06	md	40	114	0.02162	0.1	nc	nc21259337	2017-01-03T09:07:44.620Z	7 km N of Avenal, California	earthquake	0.24	0.2	0.16	23	reviewed	nc	nc
12/6/2002	11:21:55	36.2415	-120.367	9.759	2.92	md	39	62	0.02072	0.06	nc	nc21259159	2017-01-03T09:04:34.210Z	11 km N of Coalinga, California	earthquake	0.16	0.2	0.1	92	reviewed	nc	nc
11/24/2002	18:15:09	35.9718333	-120.5275	4.605	2.81	md	52	48	0.01892	0.07	nc	nc21256718	2017-01-03T08:17:06.430Z	11 km NW of Parkfield, California	earthquake	0.14	0.18	0.08	70	reviewed	nc	nc
11/18/2002	17:36:30	36.0666667	-120.201	8.872	2.66	md	43	67	0.07387	0.05	nc	nc21255571	2017-01-03T07:57:00.480Z	9 km NW of Avenal, California	earthquake	0.14	0.28	0.11	84	reviewed	nc	nc
11/18/2002	1:55:16	35.5453333	-118.8073333	3.948	2.02	ml	31	59.3	0.07714	0.24	ci	ci13911120	2016-04-02T09:28:05.742Z	24km NE of Oildale, CA	earthquake	0.48	0.55	0.227	9	reviewed	ci	ci
11/12/2002	21:52:18	35.2201667	-120.5493333	5.529	2.19	md	8	177	0.1108	0.07	nc	nc68005099	2017-01-03T07:38:31.519Z	6 km ENE of Edna, California	earthquake	0.61	1.26	0.06	5	reviewed	nc	nc
11/12/2002	16:48:25	35.9725	-120.5235	7.415	4.1	mw	60	35	0.02252	0.05	nc	nc21254383	2022-06-18T05:53:33.283Z	11 km NW of Parkfield, California	earthquake	0.14	0.22		4	reviewed	nc	nc
11/12/2002	4:42:40	36.066	-120.2018333	8.512	2.14	md	39	66	0.07477	0.04	nc	nc21254249	2017-01-03T07:35:56.410Z	9 km NW of Avenal, California	earthquake	0.14	0.25	0.13	45	reviewed	nc	nc
11/9/2002	1:05:58	34.9113333	-119.0231667	13.189	2.33	ml	25	55.3	0.0684	0.24	ci	ci13909232	2016-04-02T09:17:47.556Z	9km WSW of Grapevine, CA	earthquake	0.39	0.73	0.204	7	reviewed	ci	ci
11/8/2002	23:19:06	34.924	-119.0166667	11.205	3.52	ml	58	34.2	0.06184	0.37	ci	ci13909220	2016-04-02T02:56:27.195Z	8km WSW of Grapevine, CA	earthquake	0.38	1.16	0.21	114	reviewed	ci	ci
11/6/2002	22:28:08	35.2146667	-120.5515	2.872	2	md	7	174	0.1153	0.06	nc	nc68005078	2017-01-03T07:28:30.852Z	5 km ENE of Edna, California	earthquake	0.57	1.49	0.07	3	reviewed	nc	nc
11/3/2002	9:34:45	36.1595	-120.1355	8.279	2.1	md	36	128	0.0982	0.09	nc	nc21253071	2017-01-03T07:09:40.540Z	5 km SSW of Huron, California	earthquake	0.27	0.31	0.08	25	reviewed	nc	nc
10/30/2002	19:37:19	35.9141667	-119.9373333	15.167	2.23	md	8	269	0.05405	0.04	nc	nc21252496	2017-01-03T06:54:04.076Z	10 km SSE of Kettleman City, California	earthquake	2.43	1.16	0.45	2	reviewed	nc	nc
10/28/2002	17:26:50	35.8716667	-120.4156667	5.401	2.25	md	41	42	0.01532	0.04	nc	nc21252154	2017-01-03T06:43:12.560Z	Central California	earthquake	0.15	0.18	0.15	47	reviewed	nc	nc
10/12/2002	3:48:31	35.637	-119.5728333	6.332	2.45	ml	21	144.2		0.33	ci	ci9849941	2016-04-01T20:25:27.805Z	22km WNW of Wasco, CA	earthquake	0.92	27	0.395	13	reviewed	ci	ci
10/9/2002	15:25:39	36.0896667	-120.2096667	9.152	2.7	md	40	77	0.08649	0.06	nc	nc21248803	2017-01-03T05:21:05.390Z	11 km NW of Avenal, California	earthquake	0.14	0.31	0.14	91	reviewed	nc	nc
9/28/2002	17:32:41	36.3488333	-119.6533333	-0.178	2.39	md	23	99	0.4595	0.14	nc	nc21247568	2017-01-03T04:36:49.709Z	2 km NNW of Hanford, California	earthquake	0.47	1.96	0.26	4	reviewed	nc	nc
9/27/2002	20:32:46	35.9266667	-120.4741667	4.943	2.36	md	42	44	0.01892	0.06	nc	nc21247429	2017-01-03T04:32:16.920Z	4 km NW of Parkfield, California	earthquake	0.15	0.18	0.13	40	reviewed	nc	nc
9/24/2002	1:28:04	36.2456667	-120.4078333	6.667	2.35	md	49	47	0.05315	0.05	nc	nc21246654	2017-01-03T04:14:39.520Z	12 km NNW of Coalinga, California	earthquake	0.11	0.17	0.09	48	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/23/2002	1:46:48	36.2468333	-120.4055	6.907	2.08	md	39	70	0.05045	0.06	nc	nc21246513	2017-01-03T04:11:05.981Z	12 km NNW of Coalinga, California	earthquake	0.12	0.19	0.18	22	reviewed	nc	nc
9/21/2002	9:40:30	36.079	-119.974	9.162	2.19	md	42	134	0.1117	0.13	nc	nc21246305	2017-01-03T04:05:47.340Z	7 km N of Kettleman City, California	earthquake	0.49	0.19	0.07	19	reviewed	nc	nc
9/21/2002	3:11:29	35.9925	-120.543	8.093	2.63	md	6	163	0.05135	0.02	nc	nc21246273	2017-01-03T04:04:38.141Z	14 km NW of Parkfield, California	earthquake	0.73	1.72		1	reviewed	nc	nc
9/12/2002	6:29:36	35.7071667	-119.2651667	20.205	2.03	ml	20	155	0.1984	0.38	ci	ci13812012	2016-04-02T18:46:08.146Z	5km NW of McFarland, CA	earthquake	1.03	2.91	0.246	13	reviewed	ci	ci
9/7/2002	17:31:01	36.0548333	-120.6126667	6.468	2.37	md	47	75	0.07477	0.05	nc	nc21244195	2017-01-03T03:05:28.040Z	23 km NW of Parkfield, California	earthquake	0.19	0.26	0.11	51	reviewed	nc	nc
9/7/2002	2:54:09	35.702	-120.241	8.868	2.03	md	30	73	0.03153	0.04	nc	nc21244102	2017-01-03T03:01:31.740Z	13 km ENE of Shandon, California	earthquake	0.15	0.27	0.14	24	reviewed	nc	nc
9/6/2002	7:28:22	35.8651667	-120.4135	8.588	3.9	mw	47	39	0.01892	0.04	nc	nc21243814	2017-03-17T17:08:16.738Z	4 km SSE of Parkfield, California	earthquake	0.15	0.26		4	reviewed	nc	nc
9/4/2002	21:18:11	35.9478333	-120.0343333	9.241	2.98	md	36	150	0.1063	0.09	nc	nc21243572	2017-01-03T02:52:50.510Z	9 km SW of Kettleman City, California	earthquake	0.3	0.47	0.12	87	reviewed	nc	nc
9/4/2002	21:03:02	36.2091667	-120.1933333	6.7	2.78	md	7	321	0.3541	0.05	nc	nc21243567	2017-01-03T02:52:33.314Z	8 km W of Huron, California	earthquake	3.09	5.62		1	reviewed	nc	nc
8/29/2002	3:39:53	35.995	-119.9681667	6.171	2.29	md	23	246	0.1324	0.08	nc	nc21242534	2017-01-03T02:24:20.899Z	1 km SSW of Kettleman City, California	earthquake	0.64	0.74	0.16	30	reviewed	nc	nc
8/24/2002	21:39:30	36.0001667	-119.9528333	8.348	2.92	md	34	205	0.1378	0.11	nc	nc21242044	2017-01-03T02:11:39.290Z	1 km SE of Kettleman City, California	earthquake	0.64	0.55	0.14	89	reviewed	nc	nc
8/18/2002	8:09:53	35.9386667	-120.4858333	9.823	3.12	md	56	31	0.02072	0.06	nc	nc21241088	2017-01-03T01:49:25.340Z	6 km NW of Parkfield, CA	earthquake	0.15	0.21	0.07	83	reviewed	nc	nc
8/14/2002	15:01:38	36.0951667	-120.665	7.142	2.01	md	50	66	0.05045	0.08	nc	nc21240478	2017-01-03T01:38:57.390Z	23 km ENE of San Ardo, California	earthquake	0.16	0.25	0.12	29	reviewed	nc	nc
8/13/2002	18:03:25	35.3118333	-119.4466667	13.567	3.15	ml	24	105.5	0.238	0.35	ci	ci9809025	2016-04-02T02:42:42.552Z	10km SSE of Buttonwillow, CA	earthquake	0.82	1.82	0.354	53	reviewed	ci	ci
8/12/2002	14:55:54	36.1936667	-120.2808333	10.489	2.08	md	13	96	0.07477	0.02	nc	nc21240124	2017-01-03T01:33:34.040Z	9 km NE of Coalinga, California	earthquake	0.3	0.52	0.08	17	reviewed	nc	nc
8/9/2002	15:02:01	36.1601667	-120.3048333	13.549	2.78	md	48	58	0.08378	0.09	nc	nc21239738	2017-01-03T01:24:36.770Z	5 km ENE of Coalinga, California	earthquake	0.19	0.39	0.12	79	reviewed	nc	nc
8/6/2002	22:48:13	34.8965	-119.0511667	11.309	2.02	ml	26	60.6	0.07338	0.24	ci	ci9806865	2016-04-01T20:07:47.841Z	11km ENE of Pine Mountain Club, CA	earthquake	0.46	1.21	0.287	12	reviewed	ci	ci
8/5/2002	7:23:09	35.929	-120.679	11.58	2.5	md	56	36	0.07117	0.07	nc	nc21239151	2017-01-03T01:07:56.470Z	13 km ENE of Bradley, California	earthquake	0.14	0.38	0.08	62	reviewed	nc	nc
8/5/2002	6:41:33	35.931	-120.679	11.43	3.11	ml	64	24	0.07027	0.06	nc	nc21239146	2017-01-03T01:07:34.250Z	13 km NE of Bradley, California	earthquake	0.13	0.33		2	reviewed	nc	nc
8/5/2002	3:23:52	35.9268333	-120.6783333	10.812	2.05	md	46	30	0.07117	0.08	nc	nc21239121	2017-01-03T01:06:30.950Z	13 km ENE of Bradley, California	earthquake	0.16	0.45	0.15	47	reviewed	nc	nc
8/4/2002	9:07:41	36.0013333	-120.5516667	10.136	2.22	md	50	39	0.02703	0.04	nc	nc21238995	2017-01-03T01:02:18.510Z	15 km NW of Parkfield, California	earthquake	0.14	0.21	0.15	41	reviewed	nc	nc
8/3/2002	1:31:54	35.8936667	-120.4361667	10.53	2.06	md	40	43	0.03063	0.04	nc	nc21238834	2017-01-03T00:58:34.450Z	0 km SSW of Parkfield, California	earthquake	0.2	0.28	0.18	40	reviewed	nc	nc
8/2/2002	5:00:11	36.0045	-120.561	4.38	2.51	md	53	52	0.03063	0.05	nc	nc21238654	2017-01-03T00:54:41.560Z	16 km NW of Parkfield, California	earthquake	0.14	0.21	0.12	61	reviewed	nc	nc
7/31/2002	18:53:39	35.7915	-119.9923333	6.273	3.06	ml	41	153	0.07658	0.18	nc	nc21238361	2017-01-03T00:48:35.410Z	24 km S of Kettleman City, California	earthquake	0.36	0.71		3	reviewed	nc	nc
7/30/2002	8:19:08	36.063	-120.6273333	1.706	2.4	md	50	49	0.02613	0.08	nc	nc21238073	2017-01-03T00:41:12.950Z	25 km NW of Parkfield, California	earthquake	0.13	0.41	0.12	51	reviewed	nc	nc
7/25/2002	16:38:30	35.961	-119.9348333	20.101	2.05	md	19	220	0.1	0.14	nc	nc21237394	2017-01-03T00:21:39.877Z	5 km SSE of Kettleman City, California	earthquake	1.36	0.49	0.09	5	reviewed	nc	nc
7/24/2002	15:24:51	35.9996667	-120.5598333	4.445	2.13	md	37	53	0.04234	0.04	nc	nc21237217	2017-01-03T00:16:59.584Z	Central California	earthquake	0.14	0.24	0.11	29	reviewed	nc	nc
7/22/2002	0:54:28	35.4411667	-120.7286667	4.624	2.27	md	51	44	0.05135	0.09	nc	nc21236737	2017-01-03T00:06:13.060Z	7 km SW of Atascadero, California	earthquake	0.12	0.48	0.11	46	reviewed	nc	nc
7/22/2002	0:17:40	35.7283333	-119.7976667	11.71	2.48	md	24	215	0.1865	0.11	nc	nc21236727	2017-01-03T00:05:59.335Z	15 km NW of Lost Hills, California	earthquake	0.52	0.77	0.19	13	reviewed	nc	nc
7/15/2002	18:41:48	35.7691667	-119.7753333	18.642	2.05	md	9	128	0.1748	0.03	nc	nc21235537	2017-01-02T23:37:02.174Z	18 km NNW of Lost Hills, California	earthquake	0.47	0.71	0.04	3	reviewed	nc	nc
7/14/2002	23:21:46	36.2896667	-120.406	10.294	2.92	md	60	60	0.05495	0.08	nc	nc21235437	2017-01-02T23:33:47.570Z	17 km NNW of Coalinga, California	earthquake	0.13	0.21	0.1	89	reviewed	nc	nc
7/12/2002	23:24:47	35.7396667	-119.7855	12.468	2.12	md	14	222	0.1856	0.03	nc	nc21235074	2017-01-02T23:24:51.105Z	15 km NNW of Lost Hills, California	earthquake	0.6	1.32	0.13	7	reviewed	nc	nc
7/9/2002	9:18:08	36.0708333	-119.3443333	21.218	2.59	ml	19	106		0.2	ci	ci9799221	2016-04-02T18:36:46.931Z	3km WNW of Tipton, CA	earthquake	0.52	1.74	0.261	60	reviewed	ci	ci
7/5/2002	7:38:46	36.1861667	-120.1246667	7.45	2.71	md	37	130	0.07027	0.06	nc	nc21233677	2017-01-02T22:48:43.430Z	2 km SW of Huron, California	earthquake	0.11	0.19	0.09	62	reviewed	nc	nc
6/30/2002	1:19:37	36.0068333	-120.5658333	4.555	2.07	md	39	81	0.04234	0.05	nc	nc30224497	2017-01-02T22:25:57.780Z	16 km NW of Parkfield, California	earthquake	0.19	0.23	0.08	25	reviewed	nc	nc
6/22/2002	18:07:55	36.082	-120.0391667	17.493	2.04	md	27	233	0.06126	0.09	nc	nc21231868	2017-01-02T21:55:46.206Z	10 km NW of Kettleman City, California	earthquake	0.81	0.62	0.23	19	reviewed	nc	nc
6/22/2002	16:06:47	36.0581667	-120.0608333	15.463	2.03	md	25	193	0.03964	0.05	nc	nc21231852	2017-01-02T21:55:40.719Z	8 km NE of Avenal, California	earthquake	0.53	0.26	0.16	14	reviewed	nc	nc
6/22/2002	12:33:06	36.3105	-119.7186667	19.579	2.23	md	8	211	0.4874	0.03	nc	nc21231821	2017-01-02T21:54:33.660Z	1 km WSW of Armona, California	earthquake	2.23	0.75		1	reviewed	nc	nc
6/22/2002	12:26:23	36.2958333	-119.7146667	17.605	2.63	md	66	53	0.3027	0.29	nc	nc21231820	2017-01-02T21:54:25.710Z	2 km SSW of Armona, California	earthquake	0.43	0.63	0.18	61	reviewed	nc	nc
6/22/2002	11:24:00	36.072	-120.0421667	16.733	2.17	md	26	181	0.05586	0.1	nc	nc21231813	2017-01-02T21:53:48.910Z	10 km NW of Kettleman City, California	earthquake	0.35	0.52	0.17	20	reviewed	nc	nc
6/13/2002	13:01:31	36.299	-120.2715	4.254	2.15	md	8	182	0.3495	0.17	nc	nc21230318	2017-01-02T21:15:26.143Z	18 km NW of Huron, California	earthquake	1.1	3.89		1	reviewed	nc	nc
6/13/2002	11:33:42	36.152	-120.255	17.399	2.36	md	37	84	0.1685	0.08	nc	nc21230306	2017-01-02T21:15:05.000Z	9 km E of Coalinga, California	earthquake	0.23	0.32	0.08	34	reviewed	nc	nc
6/13/2002	11:25:44	36.1626667	-120.2491667	16.298	2.07	md	44	72	0.2423	0.07	nc	nc21230300	2017-01-02T21:14:53.030Z	10 km ENE of Coalinga, California	earthquake	0.23	0.56	0.14	14	reviewed	nc	nc
6/13/2002	11:02:44	36.1995	-120.2436667	11.81	2.17	md	6	85	0.1378	0.22	nc	nc51119446	2017-01-02T21:14:32.776Z	12 km ENE of Coalinga, California	earthquake	0.9	4.24	0.1	6	reviewed	nc	nc
6/13/2002	6:33:07	35.9306667	-119.9701667	18.903	2.43	md	42	96	0.06847	0.14	nc	nc21230212	2017-01-02T21:12:11.760Z	8 km S of Kettleman City, California	earthquake	0.3	0.32	0.21	33	reviewed	nc	nc
6/13/2002	3:46:27	36.2318333	-120.3115	0.084	2.32	md	4	133	0.1144	0.09	nc	nc51119343	2017-01-02T21:09:56.463Z	11 km NNE of Coalinga, California	earthquake	0.63	10.48	0.22	3	reviewed	nc	nc
6/12/2002	22:53:10	36.1881667	-120.3046667	33.714	2.1	md	7	83	0.1072	0.44	nc	nc51119289	2017-01-02T21:08:10.997Z	7 km NE of Coalinga, California	earthquake	2.83	10.7	0.13	7	reviewed	nc	nc
6/12/2002	12:39:04	35.4678333	-119.3263333	22.788	2.4	ml	26	120	0.2191	0.32	ci	ci13656964	2016-04-02T05:56:30.511Z	6km SW of Shafter, CA	earthquake	0.64	1.58	0.282	70	reviewed	ci	ci
6/12/2002	5:38:41	36.1656667	-120.1943333	16.81	2	md	6	99	0.1216	0.36	nc	nc51119194	2017-01-02T21:02:32.430Z	9 km WSW of Huron, California	earthquake	2.52	9.65	0.14	6	reviewed	nc	nc
6/11/2002	17:19:43	35.9703333	-120.5203333	10.598	2.36	md	45	120	0.02252	0.03	nc	nc21229845	2017-01-02T20:59:27.980Z	11 km NW of Parkfield, California	earthquake	0.24	0.19	0.1	52	reviewed	nc	nc
6/9/2002	3:34:17	36.0471667	-120.6078333	4.681	2.61	md	47	60	0.02342	0.05	nc	nc21229408	2017-01-02T20:41:27.870Z	22 km NW of Parkfield, California	earthquake	0.16	0.36	0.12	45	reviewed	nc	nc
6/9/2002	0:45:01	35.0673333	-118.8935	7.934	2.78	ml	52	55.6	0.07896	0.3	ci	ci13656276	2016-04-02T12:17:01.039Z	14km NNE of Grapevine, CA	earthquake	0.29	1.37	0.219	59	reviewed	ci	ci
6/8/2002	5:31:01	36.2665	-120.335	8.579	3	md	55	65	0.01802	0.1	nc	nc21229272	2017-01-02T20:37:01.970Z	14 km N of Coalinga, California	earthquake	0.15	0.22	0.1	94	reviewed	nc	nc
6/8/2002	3:40:28	36.2373333	-120.4151667	11.607	2.19	md	44	69	0.05946	0.09	nc	nc21229260	2017-01-02T20:36:33.488Z	11 km NNW of Coalinga, California	earthquake	0.17	0.25	0.12	37	reviewed	nc	nc
6/7/2002	22:57:41	36.1676667	-120.3236667	12.86	2.21	md	39	103	0.08198	0.06	nc	nc21229223	2017-01-02T20:34:48.850Z	4 km NE of Coalinga, California	earthquake	0.14	0.4	0.11	47	reviewed	nc	nc
6/7/2002	5:32:22	36.17	-120.3243333	13.64	2.09	md	38	103	0.08108	0.05	nc	nc21229092	2017-01-02T20:29:41.860Z	4 km NE of Coalinga, California	earthquake	0.22	0.45	0.11	37	reviewed	nc	nc
6/4/2002	22:50:02	35.9278333	-120.6798333	10.789	2.3	md	48	35	0.07207	0.07	nc	nc21228784	2017-01-02T20:18:49.730Z	13 km ENE of Bradley, California	earthquake	0.14	0.39	0.1	57	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/4/2002	22:33:56	35.9281667	-120.6771667	11.319	2.27	md	49	26	0.07027	0.07	nc	nc21228776	2017-01-02T20:18:25.180Z	13 km ENE of Bradley, California	earthquake	0.13	0.4	0.12	57	reviewed	nc	nc
6/2/2002	23:22:12	35.3166667	-120.5198333	5.056	2.18	md	42	81	0.06757	0.06	nc	nc21228444	2017-01-02T20:06:29.260Z	11 km SE of Santa Margarita, California	earthquake	0.19	0.36	0.11	27	reviewed	nc	nc
6/2/2002	4:30:13	36.0951667	-120.1698333	6.992	2.31	md	51	157	0.05946	0.06	nc	nc21228303	2017-01-02T19:28:58.430Z	10 km NNW of Avenal, California	earthquake	0.11	0.17	0.13	46	reviewed	nc	nc
6/1/2002	12:42:14	36.098	-120.1655	7.722	2.77	md	51	163	0.05856	0.07	nc	nc21228216	2017-01-02T19:26:44.340Z	10 km NNW of Avenal, California	earthquake	0.18	0.24	0.11	69	reviewed	nc	nc
5/29/2002	4:20:57	36.3683333	-119.9093333	-0.296	2.34	md	45	53	0.3477	0.59	nc	nc21227742	2017-01-02T19:14:11.717Z	7 km SSE of Lanare, California	earthquake	1.62	10.97	0.12	12	reviewed	nc	nc
5/20/2002	4:29:59	36.1065	-120.2206667	10.262	2.12	md	39	79	0.1009	0.06	nc	nc21226442	2017-01-02T18:42:01.610Z	13 km ESE of Coalinga, California	earthquake	0.2	0.34	0.15	36	reviewed	nc	nc
5/20/2002	3:59:34	36.1031667	-120.2175	9.066	2.01	md	28	79	0.0973	0.06	nc	nc21226436	2017-01-02T18:41:52.080Z	13 km ESE of Coalinga, California	earthquake	0.17	0.37	0.21	18	reviewed	nc	nc
5/19/2002	2:55:40	34.6498333	-119.9185	2.816	2.18	ml	20	100.2	0.09702	0.26	ci	ci13227452	2016-02-16T12:39:49.588Z	15km ENE of Santa Ynez, California	earthquake	0.69	1.54	0.199	16	reviewed	ci	ci
5/18/2002	7:46:06	36.1558333	-120.2266667	10.432	2.03	md	40	132	0.1315	0.06	nc	nc21226178	2017-01-02T18:34:14.781Z	12 km E of Coalinga, California	earthquake	0.15	0.27	0.19	27	reviewed	nc	nc
5/15/2002	23:32:12	35.1061667	-118.9573333	15.333	2.23	ml	8	168	0.07313	0.14	ci	ci13115460	2016-02-17T10:31:16.276Z	16km SW of Arvin, California	earthquake	1.41	1.11	0.243	2	reviewed	ci	ci
5/11/2002	13:33:02	35.9701667	-120.0291667	21.631	2	md	19	226	0.1117	0.09	nc	nc21225247	2017-01-02T18:09:35.280Z	7 km SW of Kettleman City, California	earthquake	0.76	1.4	0.05	7	reviewed	nc	nc
5/8/2002	16:18:11	36.2361667	-120.3423333	9.393	3.19	md	51	58	0.01351	0.08	nc	nc21224941	2017-01-02T18:01:37.680Z	10 km N of Coalinga, California	earthquake	0.16	0.24	0.1	115	reviewed	nc	nc
4/29/2002	3:03:09	35.9601667	-120.513	5.048	2.19	md	26	71	0.01261	0.05	nc	nc30505413	2017-01-02T17:22:37.496Z	9 km NW of Parkfield, California	earthquake	0.28	0.27	0.12	25	automatic	nc	nc
4/21/2002	3:49:09	36.0861667	-120.6711667	2.946	2.01	md	40	63	0.04865	0.1	nc	nc21222246	2017-01-02T16:57:22.350Z	22 km ENE of San Ardo, California	earthquake	0.16	0.37	0.17	30	reviewed	nc	nc
4/3/2002	20:52:46	35.839	-120.3876667	8.511	2.2	md	41	61	0.009009	0.03	nc	nc21219849	2017-01-02T09:36:21.030Z	7 km SSE of Parkfield, California	earthquake	0.15	0.21	0.1	47	reviewed	nc	nc
4/1/2002	2:23:27	36.24	-120.4148333	12.167	2.45	md	41	68	0.05946	0.08	nc	nc21219418	2017-01-02T09:27:11.690Z	12 km NNW of Coalinga, California	earthquake	0.16	0.26	0.13	54	reviewed	nc	nc
3/30/2002	11:30:26	36.3275	-119.8526667	-0.31	2.39	md	40	79	0.3378	0.78	nc	nc21219168	2017-01-02T09:23:00.548Z	6 km WNW of Lemoore, California	earthquake	2.29	15.79	0.05	6	reviewed	nc	nc
3/10/2002	21:59:38	36.0135	-120.5715	4.333	2.17	md	46	45	0.04414	0.04	nc	nc21216010	2017-01-02T08:05:15.110Z	17 km NW of Parkfield, California	earthquake	0.14	0.19	0.12	32	reviewed	nc	nc
3/10/2002	21:47:48	36.0135	-120.5723333	4.363	2.58	md	52	41	0.04324	0.05	nc	nc21216005	2017-01-02T08:04:52.090Z	Central California	earthquake	0.14	0.22	0.09	59	reviewed	nc	nc
3/10/2002	1:34:06	36.0866667	-120.2173333	9.402	2.07	md	34	118	0.09099	0.03	nc	nc21215908	2017-01-02T08:01:45.710Z	12 km NW of Avenal, California	earthquake	0.2	0.34	0.16	36	reviewed	nc	nc
3/8/2002	2:10:37	36.0226667	-120.5751667	4.653	2.64	md	52	49	0.04955	0.05	nc	nc21215674	2017-01-02T07:56:22.510Z	18 km NW of Parkfield, California	earthquake	0.13	0.18	0.11	65	reviewed	nc	nc
3/7/2002	3:09:34	36.0223333	-120.5775	4.493	2.48	md	52	48	0.04775	0.05	nc	nc21215533	2017-01-02T07:52:20.050Z	18 km NW of Parkfield, California	earthquake	0.15	0.21	0.09	58	reviewed	nc	nc
2/28/2002	8:07:17	35.0363333	-118.9323333	11.285	2.07	ml	35	45.6	0.08142	0.34	ci	ci12467628	2016-04-01T19:37:58.174Z	10km N of Grapevine, CA	earthquake	0.59	1.55	0.254	25	reviewed	ci	ci
2/23/2002	4:26:43	36.032	-120.5843333	4.533	2.26	md	48	59	0.03784	0.05	nc	nc21213836	2017-01-02T07:07:11.710Z	20 km NW of Parkfield, California	earthquake	0.13	0.17	0.09	42	reviewed	nc	nc
2/20/2002	3:14:13	35.933	-119.8323333	14.575	2.08	md	17	194	0.3189	0.1	nc	nc21213446	2017-01-02T06:57:58.547Z	14 km SE of Kettleman City, California	earthquake	1.91	0.95	0.04	2	reviewed	nc	nc
2/19/2002	18:47:43	36.3345	-120.3128333	-0.4	2.09	md	22	151	0.3514	0.19	nc	nc21213397	2017-01-02T06:57:03.885Z	18 km S of Cantua Creek, California	earthquake	0.67	6.18	0.06	4	reviewed	nc	nc
2/16/2002	20:10:34	35.1698333	-119.3983333	20.177	2.87	ml	39	65	0.1396	0.31	ci	ci12451628	2016-04-02T08:31:13.417Z	6km ENE of Taft, CA	earthquake	0.45	1.92	0.307	11	reviewed	ci	ci
2/12/2002	3:05:23	36.0621667	-120.6286667	0.441	2.05	md	24	77	0.02703	0.06	nc	nc21212437	2017-01-02T06:30:08.030Z	25 km NW of Parkfield, California	earthquake	0.28	0.68	0.16	21	reviewed	nc	nc
2/7/2002	15:57:40	36.0295	-120.5843333	4.683	2.83	md	58	42	0.04054	0.07	nc	nc21211956	2017-01-02T06:16:13.930Z	19 km NW of Parkfield, California	earthquake	0.14	0.25	0.07	74	reviewed	nc	nc
1/28/2002	3:53:42	35.8998333	-120.4426667	6.377	2.36	md	44	49	0.03784	0.05	nc	nc21210572	2017-01-02T05:31:34.930Z	0 km W of Parkfield, California	earthquake	0.14	0.18	0.1	55	reviewed	nc	nc
1/27/2002	23:02:50	36.2111667	-120.2768333	8.309	2.1	md	25	107	0.06577	0.09	nc	nc21210556	2017-01-02T05:30:58.135Z	10 km NE of Coalinga, California	earthquake	0.31	0.42	0.1	17	reviewed	nc	nc
1/27/2002	7:01:14	36.0236667	-119.826	15.311	3.08	ml	92	44	0.2333	0.24	nc	nc21210477	2017-01-02T05:28:32.260Z	12 km E of Kettleman City, California	earthquake	0.31	0.76		3	reviewed	nc	nc
1/26/2002	22:54:54	35.9095	-120.4523333	5.77	2.18	md	40	50	0.04865	0.06	nc	nc21210444	2017-01-02T05:26:56.290Z	2 km WNW of Parkfield, California	earthquake	0.16	0.23	0.15	40	reviewed	nc	nc
1/20/2002	16:48:04	36.2901667	-119.8636667	23.2	2.55	md	63	137	0.1829	0.15	nc	nc21209675	2017-01-02T04:58:03.040Z	4 km NE of Lemoore Station, California	earthquake	0.36	0.23	0.18	39	reviewed	nc	nc
1/15/2002	19:34:43	35.5536667	-119.4328333	6.241	2.36	ml	16	146.1	0.3918	0.39	ci	ci9748765	2016-04-02T18:07:37.899Z	9km WSW of Wasco, CA	earthquake	1.2	31.61	0.351	14	reviewed	ci	ci
1/13/2002	14:34:45	35.2061667	-120.668	5.406	2.14	md	15	117	0.05225	0.05	nc	nc21208888	2017-01-02T03:07:01.727Z	5 km W of Edna, California	earthquake	0.3	0.26	0.12	15	reviewed	nc	nc
1/12/2002	12:27:12	36.1493333	-120.3268333	11.724	2.26	md	6	99	0.06486	0.31	nc	nc40130302	2017-01-02T03:02:50.423Z	3 km ENE of Coalinga, California	earthquake	1.59	6.15	0.25	5	reviewed	nc	nc
1/1/2002	6:48:33	36.0476667	-119.8728333	10.767	2.14	md	29	66	0.3766	0.29	nc	nc21207722	2017-01-02T02:20:41.585Z	9 km ENE of Kettleman City, California	earthquake	1.31	5.69	0.04	9	reviewed	nc	nc
12/31/2001	14:51:53	35.0083333	-119.1643333	16.013	2.32	ml	35	61.1	0.08776	0.24	ci	ci9741929	2016-04-02T05:14:29.002Z	18km N of Pine Mountain Club, CA	earthquake	0.49	1.04	0.306	30	reviewed	ci	ci
12/30/2001	1:32:58	35.5648333	-120.4333333	6.039	2.47	ml	8	258.2	0.1816	0.48	ci	ci9741173	2016-02-16T10:09:14.436Z	11km SSW of Shandon, California	earthquake	7.54	39.36	0.469	6	reviewed	ci	ci
12/25/2001	11:15:02	36.2166667	-120.4188333	9.214	2.8	md	6	113	0.1261	0.06	nc	nc40129777	2017-01-02T00:52:02.981Z	10 km NNW of Coalinga, California	earthquake	0.38	1.25	0.2	6	reviewed	nc	nc
12/23/2001	12:26:30	35.2905	-120.599	4.888	2.31	md	46	60	0.03243	0.09	nc	nc21206736	2017-01-02T00:46:25.510Z	5 km E of San Luis Obispo, California	earthquake	0.17	0.24	0.15	39	reviewed	nc	nc
12/22/2001	10:39:05	36.1	-120.1911667	8.361	2.14	md	34	122	0.07658	0.06	nc	nc21206679	2017-01-02T00:44:21.993Z	12 km NNW of Avenal, California	earthquake	0.28	0.41	0.1	28	reviewed	nc	nc
12/22/2001	9:41:04	36.0965	-120.1951667	7.861	2.31	md	43	104	0.07748	0.07	nc	nc21206670	2017-01-02T00:43:54.360Z	11 km NNW of Avenal, California	earthquake	0.2	0.33	0.11	43	reviewed	nc	nc
12/20/2001	19:20:38	36.0928333	-120.1976667	7.591	2.22	md	14	118	0.07838	0.03	nc	nc30505637	2017-01-02T00:41:18.735Z	11 km NNW of Avenal, California	earthquake	0.18	0.42	0.09	11	automatic	nc	nc
12/20/2001	8:47:42	36.0943333	-120.1883333	8.452	2.41	md	36	89	0.07207	0.06	nc	nc21206536	2017-01-02T00:40:11.100Z	11 km NNW of Avenal, California	earthquake	0.14	0.26	0.1	54	reviewed	nc	nc
12/20/2001	8:25:16	36.0953333	-120.1973333	8.432	3.4	ml	45	85	0.07928	0.07	nc	nc21206532	2017-01-02T00:39:50.260Z	11 km NNW of Avenal, California	earthquake	0.13	0.28		7	reviewed	nc	nc
12/18/2001	7:54:58	35.9878333	-120.5363333	10.243	2.08	md	42	58	0.04414	0.03	nc	nc21206301	2017-01-02T00:32:40.190Z	13 km NW of Parkfield, California	earthquake	0.19	0.2	0.19	41	reviewed	nc	nc
12/18/2001	1:45:05	34.9766667	-119.4576667	14.63	2.12	ml	11	89.3	0.09984	0.23	ci	ci9737341	2016-02-16T03:07:39.361Z	10km SSW of Maricopa, California	earthquake	0.73	0.96	0.213	1	reviewed	ci	ci
12/6/2001	7:17:01	34.9535	-119.2743333	1.704	2.17	ml	25	71	0.07299	0.33	ci	ci9730473	2016-04-02T05:17:30.050Z	16km SE of Maricopa, CA	earthquake	0.67	1.08	0.211	22	reviewed	ci	ci
12/6/2001	3:38:12	34.9523333	-119.2776667	0.534	2.62	ml	25	83.9	0.07179	0.39	ci	ci9730449	2016-04-01T19:33:18.914Z	16km SE of Maricopa, CA	earthquake	0.82	1.39	0.126	8	reviewed	ci	ci
12/2/2001	13:13:06	35.9366667	-119.6961667	6.127	2.99	ml	7	333.6	1.03	4.41	ci	ci9728661	2016-04-02T02:05:18.929Z	20km WNW of Alpaugh, CA	earthquake	73.4	47.94	0.349	2	reviewed	ci	ci
12/1/2001	16:32:19	36.1971667	-120.3143333	10.075	2.21	md	33	55	0.05676	0.05	nc	nc21204441	2017-01-01T23:41:30.120Z	7 km NNE of Coalinga, California	earthquake	0.19	0.22	0.14	31	reviewed	nc	nc
11/26/2001	19:52:58	35.9233333	-120.4695	4.593	2.85	md	52	40	0.01892	0.05	nc	nc21203954	2017-01-01T23:27:57.100Z	4 km NW of Parkfield, California	earthquake	0.14	0.19	0.1	75	reviewed	nc	nc
11/19/2001	1:15:34	36.0581667	-120.6085	4.351	2.07	md	34	71	0.01441	0.06	nc	nc30223852	2017-01-01T23:06:40.060Z	23 km NW of Parkfield, California	earthquake	0.25	0.26	0.17	28	reviewed	nc	nc
11/12/2001	23:53:01	36.1731667	-120.166	9.07	2.79	md	35	116	0.1	0.07	nc	nc21202315	2017-01-01T22:47:30.310Z	6 km WSW of Huron, California	earthquake	0.27	0.31	0.1	66	reviewed	nc	nc
11/9/2001	3:05:30	34.8911667	-119.4695	16.409	2.07	ml	15	63.9	0.1537	0.12	ci	ci9721541	2016-04-02T08:25:19.031Z	20km SSW of Maricopa, CA	earthquake	0.51	0.94	0.078	1	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/6/2001	21:50:56	34.9111667	-119.0431667	16.416	2.28	mc	21	66.9	0.06107	0.19	ci	ci9721001	2016-04-02T08:24:14.392Z	11km WSW of Grapevine, CA	earthquake	0.69	1.19	0.213	0	reviewed	ci	ci
11/6/2001	8:25:00	36.1983333	-120.3153333	10.159	2.44	md	43	55	0.05586	0.04	nc	nc21201594	2017-01-01T22:23:03.090Z	7 km NNE of Coalinga, California	earthquake	0.14	0.2	0.12	79	reviewed	nc	nc
11/6/2001	6:36:20	36.1973333	-120.3185	10.319	2.21	md	45	54	0.05586	0.05	nc	nc21201591	2017-01-01T22:22:47.510Z	7 km NNE of Coalinga, California	earthquake	0.13	0.19	0.16	47	reviewed	nc	nc
11/6/2001	5:44:45	36.1965	-120.3181667	10.319	2.12	md	48	55	0.05676	0.04	nc	nc21201589	2017-01-01T22:22:39.030Z	7 km NNE of Coalinga, California	earthquake	0.11	0.16	0.13	34	reviewed	nc	nc
11/6/2001	4:38:36	36.1986667	-120.323	9.634	2.75	md	42	55	0.1099	0.05	nc	nc30505632	2017-01-01T22:22:19.770Z	7 km NNE of Coalinga, California	earthquake	0.15	0.34	0.07	64	automatic	nc	nc
11/6/2001	3:54:51	36.1868333	-120.3221667	9.594	2.44	md	23	164	0.0991	0.05	nc	nc30505077	2017-01-01T22:22:11.441Z	6 km NNE of Coalinga, California	earthquake	0.37	0.26	0.12	17	automatic	nc	nc
11/6/2001	3:54:13	36.1966667	-120.3248333	9.624	2.8	md	36	54	0.1081	0.05	nc	nc30505076	2017-01-01T22:22:06.020Z	7 km NNE of Coalinga, California	earthquake	0.17	0.33	0.17	59	automatic	nc	nc
11/3/2001	16:37:08	36.2123333	-120.371	8.867	2.55	md	43	50	0.04324	0.08	nc	nc21201096	2017-01-01T22:13:14.450Z	8 km N of Coalinga, California	earthquake	0.12	0.2	0.1	69	reviewed	nc	nc
11/2/2001	14:44:20	36.0421667	-120.2028333	8.281	2.25	md	42	86	0.07838	0.06	nc	nc21200980	2017-01-01T22:09:48.020Z	7 km WNW of Avenal, California	earthquake	0.12	0.25	0.16	54	reviewed	nc	nc
11/1/2001	0:31:39	35.3773333	-118.8306667	6.91	2.75	ml	72	62	0.07692	0.18	ci	ci9719157	2016-04-02T11:43:40.015Z	15km NNE of Lamont, CA	earthquake	0.16	0.55	0.125	56	reviewed	ci	ci
10/31/2001	1:46:01	35.799	-120.3478333	10.32	2.95	md	41	56	0.03243	0.06	nc	nc21200721	2017-01-01T22:00:43.840Z	13 km SE of Parkfield, California	earthquake	0.18	0.3	0.09	77	reviewed	nc	nc
10/24/2001	12:43:22	35.9616667	-120.1406667	10.906	2.19	md	32	150	0.1027	0.1	nc	nc21199958	2017-01-01T21:36:58.970Z	4 km SSW of Avenal, California	earthquake	0.32	0.61	0.15	31	reviewed	nc	nc
10/22/2001	12:07:05	35.9523333	-119.9255	26.79	2.33	md	34	75	0.1847	0.18	nc	nc21199705	2017-01-01T21:33:05.964Z	7 km SSE of Kettleman City, California	earthquake	0.59	0.52	0.14	15	reviewed	nc	nc
10/17/2001	19:09:31	35.1586667	-119.064	5.943	2.06	mc	8	161.8	0.1897	0.24	ci	ci12016195	2016-02-16T22:17:45.915Z	18km SW of Lamont, California	earthquake	1.79	16.92	0.361	0	reviewed	ci	ci
10/14/2001	21:32:04	35.4505	-120.0076667	5.428	2.32	mc	8	205.3	0.04126	0.09	ci	ci9713853	2016-02-16T05:26:28.094Z	11km N of Simmler, California	earthquake	1.45	1.78	0.159	0	reviewed	ci	ci
10/13/2001	15:56:47	35.4681667	-119.9888333	7.182	2.28	ml	12	150.1		0.19	ci	ci9713633	2016-04-02T05:15:49.665Z	13km N of Simmler, CA	earthquake	1.19	1.57	0.206	9	reviewed	ci	ci
10/11/2001	20:26:00	34.9418333	-119.2553333	17.294	2.2	ml	17	85.6	0.09239	0.22	ci	ci9713181	2016-04-02T08:26:20.018Z	14km NW of Pine Mountain Club, CA	earthquake	0.69	1.31	0.183	1	reviewed	ci	ci
10/10/2001	19:05:22	36.191	-120.3046667	10.579	2.65	md	44	57	0.06577	0.04	nc	nc21198255	2017-01-01T20:57:26.380Z	7 km NE of Coalinga, California	earthquake	0.24	0.16	0.08	80	reviewed	nc	nc
9/29/2001	11:50:01	34.9895	-119.4578333	13.92	3.01	ml	51	40.6		0.44	ci	ci9709589	2016-04-01T19:27:34.954Z	9km SW of Maricopa, CA	earthquake	0.56	0.74	0.232	63	reviewed	ci	ci
9/26/2001	17:52:11	36.1845	-120.3061667	10.759	3.14	ml	44	57	0.07117	0.06	nc	nc21196276	2017-01-01T20:10:25.080Z	6 km NE of Coalinga, California	earthquake	0.16	0.3		3	reviewed	nc	nc
9/25/2001	6:26:03	35.3875	-120.6706667	5.191	2.21	md	52	37	0.03063	0.06	nc	nc21195994	2017-01-01T20:05:33.970Z	5 km W of Santa Margarita, California	earthquake	0.12	0.26	0.15	32	reviewed	nc	nc
9/24/2001	23:02:26	35.3866667	-120.6693333	5.101	2.57	md	53	31	0.03243	0.08	nc	nc21195693	2017-01-01T20:04:33.620Z	5 km W of Santa Margarita, California	earthquake	0.13	0.31	0.11	56	reviewed	nc	nc
9/20/2001	20:06:02	35.9351667	-120.4858333	5.398	2.26	md	42	53	0.02432	0.05	nc	nc21194856	2017-01-01T19:53:12.810Z	6 km NW of Parkfield, California	earthquake	0.16	0.21	0.14	45	reviewed	nc	nc
9/16/2001	21:42:09	35.965	-120.5186667	10.412	2.43	md	50	47	0.03423	0.04	nc	nc21194249	2017-01-01T19:39:16.370Z	10 km NW of Parkfield, California	earthquake	0.15	0.21	0.09	60	reviewed	nc	nc
9/12/2001	13:41:16	34.9018333	-119.544	14.87	2.03	ml	25	51	0.1847	0.23	ci	ci9705673	2016-04-02T05:10:41.103Z	22km SW of Maricopa, CA	earthquake	0.51	1.57	0.189	23	reviewed	ci	ci
9/4/2001	5:58:43	34.7068333	-120.1431667	4.641	2.12	mc	7	100	0.2245	0.32	ci	ci9700973	2016-02-16T22:14:45.390Z	5km NNW of Los Olivos, California	earthquake	1.36	29.35	0.285	8	reviewed	ci	ci
9/4/2001	3:47:05	36.2153333	-120.2821667	7.606	2.01	md	23	88	0.1396	0.04	nc	nc21192521	2017-01-01T18:59:16.735Z	10 km NE of Coalinga, California	earthquake	0.12	0.33	0.16	17	reviewed	nc	nc
9/2/2001	20:45:25	36.2103333	-120.2845	8.519	2.68	md	45	62	0.06126	0.08	nc	nc21192330	2017-01-01T18:56:01.740Z	10 km NE of Coalinga, California	earthquake	0.13	0.22	0.09	70	reviewed	nc	nc
9/2/2001	16:28:42	36.2086667	-120.2743333	8.079	2.76	md	43	63	0.06847	0.06	nc	nc21192290	2017-01-01T18:55:19.590Z	10 km NE of Coalinga, California	earthquake	0.1	0.2	0.12	105	reviewed	nc	nc
9/2/2001	15:48:33	36.2083333	-120.2801667	9.239	2.25	md	39	62	0.06486	0.08	nc	nc21192281	2017-01-01T18:55:03.140Z	10 km NE of Coalinga, California	earthquake	0.13	0.25	0.18	39	reviewed	nc	nc
9/2/2001	14:22:19	36.2126667	-120.2793333	8.159	2.4	md	37	64	0.06306	0.09	nc	nc30223593	2017-01-01T18:54:49.820Z	10 km NE of Coalinga, California	earthquake	0.19	0.27	0.09	33	reviewed	nc	nc
9/2/2001	14:19:39	36.2128333	-120.2723333	7.219	2.58	md	38	64	0.06757	0.08	nc	nc30223589	2017-01-01T18:54:36.410Z	11 km NE of Coalinga, California	earthquake	0.14	0.3	0.12	55	reviewed	nc	nc
9/2/2001	14:18:08	36.22	-120.2805	7.519	2.93	md	39	65	0.05856	0.08	nc	nc21192274	2017-01-01T18:54:23.930Z	11 km NE of Coalinga, California	earthquake	0.13	0.22	0.19	73	reviewed	nc	nc
9/2/2001	14:11:11	36.214	-120.2838333	8.719	3.66	ml	52	63	0.05946	0.09	nc	nc21192272	2017-03-17T16:42:48.100Z	10 km NE of Coalinga, California	earthquake	0.11	0.2		9	reviewed	nc	nc
8/31/2001	16:43:40	34.8641667	-120.2636667	-0.676	2.19	mc	10	137	0.1069	0.26	ci	ci9699657	2016-02-16T19:44:55.003Z	13km N of Los Alamos, California	earthquake	0.97	1.96	0.196	10	reviewed	ci	ci
8/26/2001	4:43:11	34.9381667	-119.0118333	6.277	2.82	ml	40	59	0.1967	0.29	ci	ci9698177	2016-04-02T05:08:29.719Z	8km W of Grapevine, CA	earthquake	0.42	9.11	0.192	74	reviewed	ci	ci
8/23/2001	17:46:32	35.5746667	-119.5735	6.175	2.06	mc	10	195	0.3442	0.26	ci	ci9501038	2016-02-16T17:17:43.543Z	21km W of Wasco, California	earthquake	1.9	22.69	0.116	3	reviewed	ci	ci
8/10/2001	17:25:36	35.9458333	-120.2248333	6.308	2.55	ml	7	262	0.552	0.1	ci	ci9693281	2016-02-16T12:22:56.965Z	11km SW of Avenal, California	earthquake	4.96	14.89	0.406	43	reviewed	ci	ci
8/10/2001	1:01:11	35.4476667	-118.778	2.002	2.15	mc	17	179	0.1022	0.19	ci	ci9693061	2016-04-02T11:36:24.221Z	22km E of Oildale, CA	earthquake	0.69	0.71	0.204	20	reviewed	ci	ci
8/6/2001	8:37:11	36.21	-120.37	9.077	2.24	md	48	51	0.04505	0.07	nc	nc21187250	2017-01-01T17:21:34.650Z	7 km N of Coalinga, California	earthquake	0.11	0.17	0.12	35	reviewed	nc	nc
8/6/2001	8:23:02	36.2116667	-120.366	9.393	2.26	md	49	54	0.04234	0.04	nc	nc21187242	2017-01-01T17:21:27.460Z	8 km N of Coalinga, California	earthquake	0.1	0.13	0.13	37	reviewed	nc	nc
7/24/2001	15:12:03	36.2003333	-120.3305	9.963	2.63	md	34	54	0.04955	0.07	nc	nc21183071	2017-01-01T16:46:37.340Z	7 km NNE of Coalinga, California	earthquake	0.24	0.31	0.13	56	reviewed	nc	nc
7/24/2001	12:04:30	36.2006667	-120.3278333	10.173	2.2	md	41	55	0.05045	0.05	nc	nc21183047	2017-01-01T16:46:11.940Z	7 km NNE of Coalinga, California	earthquake	0.13	0.2	0.16	42	reviewed	nc	nc
7/24/2001	11:54:12	36.2016667	-120.33	10.303	2.48	md	38	54	0.04865	0.06	nc	nc21183046	2017-01-01T16:46:00.350Z	7 km NNE of Coalinga, California	earthquake	0.17	0.26	0.11	52	reviewed	nc	nc
7/24/2001	10:53:23	36.1986667	-120.3218333	9.399	2.04	md	33	55	0.05315	0.07	nc	nc21183038	2017-01-01T16:45:38.660Z	7 km NNE of Coalinga, California	earthquake	0.17	0.44	0.09	26	reviewed	nc	nc
7/22/2001	17:03:41	35.0971667	-118.9475	14.219	2.03	ml	20	129.9	0.1007	0.21	ci	ci9683045	2016-04-02T17:51:47.239Z	16km SW of Arvin, CA	earthquake	0.66	0.84	0.283	20	reviewed	ci	ci
7/20/2001	14:51:17	35.7953333	-120.3466667	9.234	3.11	md	31	94	0.03604	0.02	nc	nc21241578	2017-01-01T16:31:40.750Z	Central California	earthquake	0.18	0.42	0.26	26	reviewed	nc	nc
7/19/2001	4:01:57	36.069	-120.1166667	8.926	2.7	md	49	180	0.00991	0.08	nc	nc21182318	2017-01-01T16:27:52.960Z	7 km N of Avenal, California	earthquake	0.28	0.16	0.08	66	reviewed	nc	nc
7/16/2001	20:08:02	35.7966667	-120.3485	10.06	2.9	md	53	54	0.03423	0.04	nc	nc21181714	2017-01-01T16:18:17.590Z	13 km SSE of Parkfield, California	earthquake	0.14	0.27	0.08	81	reviewed	nc	nc
7/10/2001	6:53:23	36.2543333	-120.401	7.479	2.3	md	49	51	0.04775	0.05	nc	nc21177832	2017-01-01T15:51:03.120Z	13 km NNW of Coalinga, California	earthquake	0.09	0.17	0.08	41	reviewed	nc	nc
7/7/2001	5:14:40	36.1988333	-119.9913333	4.788	2.15	md	12	301	0.1676	0.07	nc	nc21177100	2017-01-01T15:38:24.298Z	10 km E of Huron, California	earthquake	3.84	1.93	0.09	6	reviewed	nc	nc
6/28/2001	13:24:59	35.3518333	-119.2356667	5.95	2.03	mc	13	119	0.4148	0.28	ci	ci9665769	2016-02-16T14:35:53.720Z	9km WSW of Rosedale, California	earthquake	0.64	23.14	0.142	12	reviewed	ci	ci
6/25/2001	12:06:05	35.0703333	-118.9973333	11.062	2.08	mc	14	129	0.1173	0.28	ci	ci11622648	2016-02-17T12:29:16.917Z	15km NNW of Grapevine, California	earthquake	1.18	2.09	0.586	7	reviewed	ci	ci
6/24/2001	23:45:38	34.9568333	-119.4223333	12.997	2.15	mc	13	87	0.08143	0.35	ci	ci11618772	2016-04-02T04:32:44.722Z	12km S of Maricopa, CA	earthquake	0.93	1.71	0.229	17	reviewed	ci	ci
6/19/2001	9:22:02	36.0001667	-120.5483333	13.103	2.14	md	50	55	0.05135	0.03	nc	nc21171276	2017-01-01T14:17:26.920Z	15 km NW of Parkfield, California	earthquake	0.15	0.22	0.13	43	reviewed	nc	nc
6/17/2001	23:07:01	35.022	-119.0706667	11.202	2.31	mc	17	123	0.05332	0.25	ci	ci9662509	2016-04-02T14:32:48.413Z	16km NW of Grapevine, CA	earthquake	0.8	1.64	0.262	21	reviewed	ci	ci
6/13/2001	21:36:32	35.805	-120.5956667	6.243	2.52	mc	6	177	0.3407	0.25	ci	ci9660665	2016-02-16T00:28:13.965Z	11km ENE of San Miguel, California	earthquake	2.26	24.02	0.189	15	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/7/2001	18:21:03	36.0788333	-120.6426667	2.596	2.76	md	55	51	0.03874	0.07	nc	nc21168939	2017-01-01T13:42:22.360Z	24 km ENE of San Ardo, California	earthquake	0.14	0.31	0.11	67	reviewed	nc	nc
5/31/2001	21:14:13	35.0375	-119.1705	4.434	2.82	mc	13	62		0.26	ci	ci11598724	2016-04-01T19:15:20.046Z	21km E of Maricopa, CA	earthquake	0.66	23.9	0.782	6	reviewed	ci	ci
5/30/2001	10:47:26	35.4225	-120.7091667	4.464	2.32	md	54	41	0.02973	0.06	nc	nc21167341	2017-01-01T13:13:56.290Z	8 km SSW of Atascadero, California	earthquake	0.1	0.29	0.13	44	reviewed	nc	nc
5/28/2001	8:09:30	35.4883333	-120.7858333	4.388	2.16	md	49	61	0.08378	0.07	nc	nc21166939	2017-01-01T13:04:46.710Z	9 km SW of Templeton, California	earthquake	0.14	0.57	0.16	37	reviewed	nc	nc
5/27/2001	0:27:00	35.3328333	-119.2628333	6.315	2.44	mc	17	103	0.3317	0.3	ci	ci9656193	2016-04-02T04:59:42.061Z	12km WSW of Rosedale, CA	earthquake	0.98	24.13	0.146	8	reviewed	ci	ci
5/23/2001	5:00:59	36.0833333	-120.1661667	12.031	2.04	md	27	94	0.05135	0.06	nc	nc30222990	2017-01-01T12:39:36.793Z	9 km NNW of Avenal, California	earthquake	0.22	0.32	0.07	19	reviewed	nc	nc
5/23/2001	5:00:32	36.086	-120.1636667	12.492	2.48	md	37	98	0.05045	0.07	nc	nc21165809	2017-01-01T12:39:27.610Z	9 km NNW of Avenal, California	earthquake	0.2	0.3	0.12	47	reviewed	nc	nc
5/23/2001	2:18:41	35.0298333	-119.1386667	4.604	2.46	mc	26	99		0.33	ci	ci9655033	2016-04-02T17:47:14.542Z	20km N of Pine Mountain Club, CA	earthquake	0.65	29.99	0.338	40	reviewed	ci	ci
5/22/2001	14:13:06	35.0176667	-119.1385	7.262	2.24	mc	22	90	0.1663	0.27	ci	ci9654933	2016-04-01T19:16:00.385Z	19km N of Pine Mountain Club, CA	earthquake	0.53	4.48	0.237	26	reviewed	ci	ci
5/22/2001	1:25:46	35.8111667	-120.5426667	6.161	2.68	mc	6	163	0.3444	0.19	ci	ci9654805	2016-02-17T00:30:09.962Z	14km SW of Parkfield, California	earthquake	1.79	20.1	0.25	28	reviewed	ci	ci
5/22/2001	0:42:10	36.0675	-119.02	4.661	2	mh	14	234	0.1824	0.55	ci	ci9654801	2016-02-16T07:29:55.211Z	0km NW of Porterville, California	earthquake	4.21	44.88		0	reviewed	ci	ci
5/20/2001	23:57:59	35.012	-119.1296667	14.487	2.16	mc	18	96	0.1731	0.25	ci	ci9654597	2016-02-16T22:02:10.776Z	18km N of Pine Mountain Club, California	earthquake	0.73	1.08	0.258	15	reviewed	ci	ci
5/20/2001	14:54:06	35.0205	-119.14	1.931	2.92	ml	36	61.3	0.1653	0.33	ci	ci9654541	2016-04-02T14:35:42.872Z	19km N of Pine Mountain Club, CA	earthquake	0.48	1.48	0.205	71	reviewed	ci	ci
5/19/2001	22:31:18	34.9593333	-119.4093333	13.599	2.27	mc	19	83	0.0713	0.2	ci	ci9654357	2016-02-16T12:13:25.891Z	11km S of Maricopa, California	earthquake	0.48	0.61	0.236	19	reviewed	ci	ci
5/19/2001	6:27:25	35.014	-119.1403333	6.424	2.18	mc	18	90	0.1645	0.19	ci	ci9654149	2016-02-16T22:01:57.248Z	19km N of Pine Mountain Club, California	earthquake	0.55	5.8	0.3	22	reviewed	ci	ci
5/18/2001	11:52:20	35.6315	-120.8223333	2.497	2.02	md	7	291	0.1198	0.19	nc	nc68004485	2017-01-01T12:19:06.212Z	11 km W of Paso Robles, California	earthquake	2.06	2.92	0.1	5	reviewed	nc	nc
5/12/2001	2:09:29	36.2025	-120.3601667	10.253	2.33	md	47	51	0.04865	0.07	nc	nc21163588	2017-01-01T11:55:48.240Z	6 km N of Coalinga, California	earthquake	0.16	0.22	0.15	54	reviewed	nc	nc
5/8/2001	20:42:11	35.2601667	-119.0501667	20.383	2	mh	15	67	0.09509	0.14	ci	ci9651029	2016-04-02T14:32:10.073Z	11km S of Bakersfield, CA	earthquake	0.51	1.01		0	reviewed	ci	ci
5/8/2001	20:10:55	34.9621667	-119.186	14.404	2.01	mc	8	126	0.1179	0.09	ci	ci9651013	2016-04-01T22:25:13.502Z	13km NNW of Pine Mountain Club, CA	earthquake	0.73	1.05	0.193	13	reviewed	ci	ci
5/7/2001	4:26:29	35.1043333	-119.0955	16.401	2.03	mc	13	99	0.1372	0.16	ci	ci9650429	2016-02-17T10:03:26.295Z	23km NW of Grapevine, California	earthquake	0.75	1.86	0.257	17	reviewed	ci	ci
5/6/2001	16:36:00	36.0401667	-120.5936667	4.511	2.11	md	45	45	0.02883	0.06	nc	nc21162438	2017-01-01T11:35:15.560Z	21 km NW of Parkfield, California	earthquake	0.16	0.23	0.1	34	reviewed	nc	nc
5/5/2001	0:03:44	35.9583333	-120.509	8.403	2.03	md	38	71	0.009009	0.03	nc	nc21162103	2017-01-01T11:27:29.330Z	9 km NW of Parkfield, California	earthquake	0.15	0.19	0.15	36	reviewed	nc	nc
5/4/2001	23:26:13	36.2468333	-120.3285	8.659	2.75	md	40	63	0.01171	0.08	nc	nc21162100	2017-01-01T11:27:13.510Z	12 km NNE of Coalinga, California	earthquake	0.15	0.19	0.15	99	reviewed	nc	nc
5/3/2001	20:41:32	35.091	-119.0856667	-1.352	2.33	mc	17	97	0.2677	0.23	ci	ci9649717	2016-02-16T07:28:50.564Z	22km NW of Grapevine, California	earthquake	0.62	2.51	0.218	15	reviewed	ci	ci
5/3/2001	5:45:51	35.7968333	-119.3026667	17.937	2.14	mc	7	298	0.1825	0.07	ci	ci9649549	2016-02-17T12:26:18.353Z	6km WNW of Delano, California	earthquake	2.91	2.13	0.058	5	reviewed	ci	ci
5/2/2001	14:26:01	35.383	-119.41	6.319	2.8	mc	23	113	0.2933	0.29	ci	ci9649393	2016-02-16T07:28:45.211Z	6km ESE of Buttonwillow, California	earthquake	0.73	22.67	0.269	26	reviewed	ci	ci
5/2/2001	3:07:48	35.1068333	-119.1356667	5.715	2.01	mc	5	215	0.268	0.06	ci	ci9649301	2016-02-17T05:16:04.844Z	25km ENE of Maricopa, California	earthquake	1.17	11.06	0.474	4	reviewed	ci	ci
5/2/2001	3:01:14	35.1093333	-119.1125	5.72	2.81	mc	27	65	0.4188	0.21	ci	ci9649297	2016-04-02T01:43:13.862Z	25km SW of Lamont, CA	earthquake	0.43	18.91	0.289	51	reviewed	ci	ci
5/1/2001	19:57:27	35.0851667	-119.0926667	5.468	2.22	mc	14	96	0.26	0.25	ci	ci9649253	2016-02-16T12:12:12.816Z	22km NW of Grapevine, California	earthquake	0.75	18.67	0.289	15	reviewed	ci	ci
5/1/2001	15:50:28	35.0855	-119.0963333	12.068	2.33	mc	16	96	0.259	0.22	ci	ci9649129	2016-04-02T14:32:47.141Z	22km NW of Grapevine, CA	earthquake	0.71	2.23	0.21	16	reviewed	ci	ci
5/1/2001	15:49:20	35.0933333	-119.0953333	5.458	2.15	mc	8	121	0.2665	0.23	ci	ci9649133	2016-02-17T00:28:32.729Z	22km NW of Grapevine, California	earthquake	1.04	17.94	0.264	13	reviewed	ci	ci
4/28/2001	5:54:26	35.4635	-120.7701667	4.085	2.78	md	59	59	0.08739	0.08	nc	nc21160912	2017-01-01T11:01:16.580Z	9 km WSW of Atascadero, California	earthquake	0.13	0.55	0.08	83	reviewed	nc	nc
4/27/2001	12:18:04	35.883	-120.4265	5.601	2.92	md	53	37	0.02072	0.04	nc	nc21160779	2017-01-01T10:58:29.660Z	1 km SSE of Parkfield, California	earthquake	0.13	0.19	0.07	85	reviewed	nc	nc
4/26/2001	11:21:52	35.9725	-119.991	21.276	2.4	md	26	109	0.1306	0.22	nc	nc30224544	2017-01-01T10:54:40.136Z	4 km SSW of Kettleman City, California	earthquake	0.86	1.11	0.21	10	reviewed	nc	nc
4/26/2001	11:21:40	36.0093333	-119.955	5.305	2.22	md	30	204	0.136	0.11	nc	nc21160513	2017-01-01T10:54:32.029Z	0 km E of Kettleman City, California	earthquake	0.54	0.92	0.25	30	reviewed	nc	nc
4/26/2001	9:05:56	36.0116667	-119.9545	5.105	2.63	md	37	189	0.1351	0.13	nc	nc21160492	2017-01-01T10:54:19.520Z	0 km ENE of Kettleman City, California	earthquake	0.51	0.69	0.1	74	reviewed	nc	nc
4/26/2001	5:08:28	36.025	-119.9451667	3.935	2.46	md	40	193	0.1378	0.11	nc	nc21160460	2017-01-01T10:53:00.310Z	2 km NE of Kettleman City, California	earthquake	0.68	0.67	0.09	55	reviewed	nc	nc
4/24/2001	12:07:31	36.0113333	-119.934	8.608	2.38	md	35	194	0.1495	0.12	nc	nc21160020	2017-01-01T10:46:09.940Z	2 km E of Kettleman City, California	earthquake	0.47	0.63	0.1	48	reviewed	nc	nc
4/24/2001	11:57:00	36.0156667	-119.9305	8.752	3.28	ml	43	195	0.1523	0.14	nc	nc21160018	2017-01-01T10:45:48.540Z	2 km ENE of Kettleman City, California	earthquake	0.48	0.54		5	reviewed	nc	nc
4/16/2001	20:02:39	35.0265	-119.0141667	10.786	2.05	mc	16	86		0.23	ci	ci9645093	2016-02-16T00:24:47.673Z	12km NW of Grapevine, California	earthquake	0.55	3.9	0.194	38	reviewed	ci	ci
4/15/2001	1:56:55	36.0226667	-120.5805	4.685	2.41	md	55	42	0.04685	0.06	nc	nc21158349	2017-01-01T10:08:11.270Z	19 km NW of Parkfield, California	earthquake	0.15	0.22	0.1	61	reviewed	nc	nc
4/14/2001	17:56:27	36.0621667	-120.6173333	5.481	2.07	md	42	69	0.01802	0.05	nc	nc21158247	2017-01-01T10:06:54.390Z	24 km NW of Parkfield, California	earthquake	0.16	0.21	0.08	28	reviewed	nc	nc
4/13/2001	20:37:13	35.8841667	-118.9245	6.009	2.03	mc	7	278	0.388	0.11	ci	ci9644213	2016-02-17T02:52:09.835Z	22km SSE of Porterville, California	earthquake	2.5	14.75	0.269	10	reviewed	ci	ci
4/13/2001	2:48:42	35.955	-120.5033333	9.223	3.4	ml	60	33	0.004505	0.05	nc	nc21157989	2017-01-01T09:59:50.320Z	8 km NW of Parkfield, California	earthquake	0.14	0.23		7	reviewed	nc	nc
4/10/2001	2:54:07	36.0688333	-120.066	10.677	2.36	md	50	114	0.03604	0.07	nc	nc21157647	2017-01-01T09:53:16.520Z	9 km NE of Avenal, California	earthquake	0.25	0.12	0.17	61	reviewed	nc	nc
4/9/2001	23:08:40	35.4463333	-120.3741667	6.4	2.02	mc	8	196		0.25	ci	ci9643345	2016-02-16T05:08:36.518Z	22km ENE of Santa Margarita, California	earthquake	2.94	22.65	0.138	6	reviewed	ci	ci
4/9/2001	8:01:06	35.4646667	-120.799	5.857	2.02	md	9	175	0.06757	0.06	nc	nc68004438	2017-01-01T09:49:46.720Z	8 km ENE of Cayucos, California	earthquake	0.7	0.71	0.04	7	reviewed	nc	nc
4/6/2001	4:23:49	35.8518333	-120.3956667	4.865	2.46	md	47	41	0.01622	0.04	nc	nc21157018	2017-01-01T09:38:49.490Z	6 km SSE of Parkfield, California	earthquake	0.12	0.18	0.09	63	reviewed	nc	nc
4/5/2001	21:34:22	35.0625	-119.1358333	15.857	2.34	mc	12	121	0.1086	0.34	ci	ci9642473	2016-02-16T12:10:29.594Z	23km NW of Grapevine, California	earthquake	0.99	2.22	0.332	15	reviewed	ci	ci
4/5/2001	14:49:53	35.5806667	-119.9368333	4.852	2.34	mc	9	199	0.145	0.24	ci	ci9642401	2016-02-16T09:47:18.752Z	26km NNE of Simmler, California	earthquake	1.61	22.47	0.317	7	reviewed	ci	ci
3/22/2001	6:15:25	36.244	-120.3298333	9.309	2.05	md	18	82	0.01171	0.03	nc	nc21154657	2017-01-01T08:58:52.688Z	11 km NNE of Coalinga, California	earthquake	0.21	0.26	0.12	14	reviewed	nc	nc
2/27/2001	23:04:13	35.2465	-119.3246667	16.471	2.55	ml	32	120	0.2349	0.29	ci	ci9632161	2016-04-02T04:50:04.320Z	17km NE of Taft, CA	earthquake	0.54	2.28	0.298	28	reviewed	ci	ci
2/25/2001	9:13:48	35.4606667	-120.7745	2.965	2.15	md	47	61	0.08739	0.1	nc	nc21149356	2017-01-01T07:43:44.120Z	9 km WSW of Atascadero, California	earthquake	0.14	0.66	0.14	25	reviewed	nc	nc
2/25/2001	1:37:00	35.462	-120.7701667	1.495	2.49	md	56	60	0.08649	0.12	nc	nc21149325	2017-01-01T07:42:03.880Z	9 km WSW of Atascadero, California	earthquake	0.14	1.04	0.1	59	reviewed	nc	nc
2/21/2001	4:13:34	35.897	-120.1345	21.861	2	md	34	96	0.1405	0.19	nc	nc21148848	2017-01-01T07:32:08.680Z	11 km S of Avenal, California	earthquake	0.4	0.76	0.14	19	reviewed	nc	nc
2/21/2001	0:55:12	35.8888333	-120.1435	19.651	2.31	md	34	90	0.1288	0.2	nc	nc21148802	2017-01-01T07:31:15.920Z	12 km S of Avenal, California	earthquake	0.4	0.9	0.15	37	reviewed	nc	nc
2/18/2001	20:31:17	35.9936667	-119.8315	7.256	2.15	md	28	129	0.236	0.15	nc	nc21148560	2017-01-01T07:26:50.796Z	11 km E of Kettleman City, California	earthquake	0.48	1.9	0.05	10	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
2/15/2001	23:15:38	35.072	-119.102	4.851	2.09	mc	0	255.8	0.4188	0.196	ci	ci9629513	2016-02-16T14:28:21.000Z	21km NW of Grapevine, California	earthquake				8	reviewed	ci	ci
2/13/2001	21:29:33	35.858	-120.4038333	5.281	2.49	md	40	54	0.02252	0.03	nc	nc21147731	2017-01-01T07:10:34.680Z	5 km SSE of Parkfield, California	earthquake	0.12	0.2	0.08	57	reviewed	nc	nc
2/9/2001	1:47:29	36.3256667	-120.341	7.684	2.01	md	24	109	0.02613	0.06	nc	nc21147005	2017-01-01T06:54:32.882Z	19 km S of Cantua Creek, California	earthquake	0.19	0.15	0.18	16	reviewed	nc	nc
2/7/2001	15:16:10	35.6688333	-120.4776667	5.24	2.2	mh	8	285	0.2663	0.45	ci	ci9625309	2016-02-16T17:00:09.073Z	9km W of Shandon, California	earthquake	12.18	39.38		0	reviewed	ci	ci
1/29/2001	6:03:38	35.8661667	-119.9593333	21.752	2.13	md	32	74	0.2297	0.07	nc	nc21145242	2017-01-01T06:12:42.855Z	15 km S of Kettleman City, California	earthquake	0.29	0.51	0.13	9	reviewed	nc	nc
1/22/2001	19:00:51	36.1975	-120.1941667	10.159	2.03	md	29	97	0.1027	0.11	nc	nc21144506	2017-01-01T05:55:00.958Z	8 km W of Huron, California	earthquake	0.28	0.45	0.27	20	reviewed	nc	nc
1/21/2001	4:15:46	35.0825	-119.0208333	12.292	2.19	ml	26	93	0.1203	0.26	ci	ci9615137	2016-04-01T19:05:37.780Z	18km NNW of Grapevine, CA	earthquake	0.5	1.14	0.162	14	reviewed	ci	ci
1/15/2001	15:05:56	36.0913333	-120.037	8.549	2.16	md	34	177	0.06667	0.06	nc	nc21143578	2017-01-01T05:34:53.829Z	11 km NW of Kettleman City, California	earthquake	0.31	0.1	0.17	28	reviewed	nc	nc
1/8/2001	4:16:11	35.384	-119.441	4.903	2.36	mc	0	153.5	0.2719	0.257	ci	ci9172836	2016-02-16T21:54:15.206Z	3km SE of Buttonwillow, California	earthquake				15	reviewed	ci	ci
1/6/2001	6:53:00	36.0383333	-120.5928333	4.465	2.46	md	60	36	0.03063	0.06	nc	nc21142516	2017-01-01T05:05:57.470Z	21 km NW of Parkfield, California	earthquake	0.13	0.21	0.09	70	reviewed	nc	nc
1/5/2001	9:37:37	36.2783333	-120.4	9.369	2.02	md	31	61	0.05495	0.05	nc	nc21142340	2017-01-01T05:01:14.492Z	15 km NNW of Coalinga, California	earthquake	0.13	0.19	0.16	23	reviewed	nc	nc
1/2/2001	5:22:44	35.3	-119.443	5.252	2.69	ml	0	149	0.4847	0.289	ci	ci9172370	2016-02-16T00:19:39.179Z	11km SSE of Buttonwillow, California	earthquake				2	reviewed	ci	ci
12/31/2000	2:15:50	35.3098333	-119.3808333	22.436	2	mh	24	148	0.2286	0.32	ci	ci9172212	2016-04-02T14:12:11.758Z	13km SE of Buttonwillow, CA	earthquake	0.89	1.98	0.087	0	reviewed	ci	ci
12/24/2000	20:28:19	34.9091667	-119.0213333	13.502	2.16	mc	36	57	0.07103	0.28	ci	ci9171720	2016-02-18T18:54:27.822Z	9km WSW of Grapevine, California	earthquake	0.48	0.82		24	reviewed	ci	ci
12/24/2000	1:19:32	34.9058333	-119.0216667	13.682	2.09	mc	22	68	0.07368	0.19	ci	ci9171667	2016-02-17T07:32:44.643Z	9km WSW of Grapevine, California	earthquake	0.54	0.9		9	reviewed	ci	ci
12/24/2000	1:04:21	34.918	-119.02	12.876	4.42	ml	0	29.5	0.06454	0.355	ci	ci9171679	2022-06-18T00:55:26.714Z	9km WSW of Grapevine, CA	earthquake		0.146		212	reviewed	ci	ci
12/24/2000	0:14:54	35.9138333	-120.7745	16.007	2.07	md	5	176	0.145	0.03	nc	nc51104132	2017-01-01T00:31:49.289Z	6 km NNE of Bradley, California	earthquake	1.31	6.16	0.23	7	reviewed	nc	nc
12/22/2000	23:58:00	36.0771667	-120.6375	4.356	2.73	md	55	65	0.03423	0.08	nc	nc21140267	2017-01-01T00:27:42.410Z	24 km ENE of San Ardo, California	earthquake	0.16	0.27	0.07	81	reviewed	nc	nc
12/18/2000	18:43:45	35.327	-119.433	5.189	2.61	ml	20	106	0.2533	0.48	ci	ci9171216	2016-04-01T22:05:02.617Z	9km SSE of Buttonwillow, CA	earthquake	1.28	31.61	0.222	9	reviewed	ci	ci
12/18/2000	18:42:17	35.312	-119.4403333	5.282	2.78	ml	32	101	0.2377	0.41	ci	ci9171215	2016-04-02T14:12:25.503Z	10km SSE of Buttonwillow, CA	earthquake	0.8	31.61	0.176	14	reviewed	ci	ci
12/18/2000	2:40:20	36.0768333	-119.9915	8.637	2.42	md	58	66	0.0973	0.31	nc	nc21139283	2017-01-01T00:00:45.570Z	8 km NNW of Kettleman City, California	earthquake	0.36	0.6	0.12	49	reviewed	nc	nc
12/15/2000	19:07:49	34.8103333	-120.364	5.203	2.43	ml	9	56	0.2041	0.35	ci	ci7210147	2016-02-16T21:52:55.169Z	9km SE of Orcutt, California	earthquake	1.59	31.61	0.041	1	reviewed	ci	ci
12/13/2000	14:55:43	34.9255	-119.0215	4.706	2.25	mc	21	178	0.2939	0.25	ci	ci9170738	2016-02-17T02:46:06.814Z	9km WSW of Grapevine, California	earthquake	0.87	31.61		25	reviewed	ci	ci
12/6/2000	3:27:22	35.87	-119.0703333	19.588	2.64	mc	23	55	0.0313	0.26	ci	ci9170191	2016-02-16T05:02:02.426Z	20km NE of Delano, California	earthquake	0.75	1.6		28	reviewed	ci	ci
12/3/2000	13:42:03	35.8551667	-120.3975	4.385	2.32	md	45	70	0.01892	0.04	nc	nc21137017	2016-12-31T23:11:55.160Z	5 km SSE of Parkfield, California	earthquake	0.12	0.19	0.14	48	reviewed	nc	nc
12/2/2000	7:43:40	36.2055	-120.4258333	4.292	2.07	md	38	88	0.08018	0.08	nc	nc21136812	2016-12-31T23:05:17.680Z	9 km NW of Coalinga, California	earthquake	0.13	0.33	0.13	20	reviewed	nc	nc
11/30/2000	14:08:04	35.9055	-120.4488333	5.645	2.95	md	43	50	0.03153	0.04	nc	nc21136545	2016-12-31T22:59:27.810Z	1 km WNW of Parkfield, California	earthquake	0.14	0.17	0.07	69	reviewed	nc	nc
11/30/2000	1:58:15	35.9273333	-120.4768333	4.533	2	md	37	61	0.01892	0.05	nc	nc21136526	2016-12-31T22:58:24.570Z	5 km NW of Parkfield, California	earthquake	0.17	0.21	0.17	27	reviewed	nc	nc
11/28/2000	13:38:53	35.5648333	-120.8838333	5.944	2.43	md	52	42	0.03604	0.07	nc	nc21136352	2016-12-31T22:55:41.870Z	13 km N of Cayucos, California	earthquake	0.13	0.29	0.11	63	reviewed	nc	nc
11/26/2000	13:24:28	35.0546667	-119.1875	8.023	2.05	ml	27	101	0.1298	0.36	ci	ci9169368	2016-04-02T17:22:25.756Z	19km E of Maricopa, CA	earthquake	0.7	3.64	0.19	10	reviewed	ci	ci
11/23/2000	22:58:16	36	-120	5.435	3.3	mh	0	312.3	1.066	0.28	ci	ci9169225	2016-02-16T19:20:40.698Z	4km WSW of Kettleman City, California	earthquake				0	reviewed	ci	ci
11/20/2000	6:27:40	35.9411667	-120.4881667	9.723	2.12	md	46	41	0.01712	0.05	nc	nc21134966	2016-12-31T22:27:16.220Z	6 km NW of Parkfield, California	earthquake	0.15	0.18	0.16	47	reviewed	nc	nc
11/15/2000	5:56:38	36.2785	-120.3808333	4.197	2.06	md	9	125	0.04234	0.07	nc	nc21134167	2016-12-31T22:08:38.678Z	15 km N of Coalinga, California	earthquake	1.95	1.26	0.1	5	reviewed	nc	nc
11/13/2000	19:03:34	35.3116667	-119.4128333	5.095	2.11	ml	25	100	0.2457	0.24	ci	ci9168397	2016-04-02T14:15:58.034Z	11km SSE of Buttonwillow, CA	earthquake	0.6	31.61	0.208	11	reviewed	ci	ci
11/4/2000	0:55:47	34.8871667	-119.3806667	11.584	2.18	ml	22	56	0.1199	0.32	ci	ci9167629	2016-04-02T17:35:30.823Z	19km S of Maricopa, CA	earthquake	0.68	2.23	0.222	9	reviewed	ci	ci
11/1/2000	16:31:16	35.0381667	-118.9988333	11.672	2.13	mc	23	95	0.09021	0.22	ci	ci9167385	2016-02-17T05:05:47.255Z	12km NNW of Grapevine, California	earthquake	0.39	1.11	0.129	0	reviewed	ci	ci
10/28/2000	11:06:19	36.103	-120.215	13.742	2.22	md	32	80	0.0955	0.06	nc	nc21131728	2016-12-31T21:10:36.258Z	13 km NW of Avenal, California	earthquake	0.3	0.66	0.08	36	reviewed	nc	nc
10/28/2000	10:13:22	36.1028333	-120.2251667	12.982	2.4	md	30	76	0.1027	0.05	nc	nc21131726	2016-12-31T21:10:29.720Z	12 km ESE of Coalinga, California	earthquake	0.24	0.62	0.12	52	reviewed	nc	nc
10/28/2000	9:43:40	36.0961667	-120.2136667	15.302	2.05	md	22	78	0.09189	0.03	nc	nc21131719	2016-12-31T21:10:13.326Z	12 km NW of Avenal, California	earthquake	0.48	1.17	0.08	24	reviewed	nc	nc
10/25/2000	11:45:57	35.0841667	-119.1315	14.548	2.2	ml	24	66	0.1262	0.26	ci	ci9166817	2016-04-02T01:26:14.963Z	24km NW of Grapevine, CA	earthquake	0.62	0.95	0.27	32	reviewed	ci	ci
10/24/2000	4:05:50	35.087	-119.1245	12.015	2.03	mc	25	98	0.1266	0.27	ci	ci7206161	2016-02-16T14:22:16.105Z	24km NW of Grapevine, California	earthquake	0.65	1.47	0.087	0	reviewed	ci	ci
10/22/2000	10:12:17	36.1316667	-120.2131667	7.942	2.42	md	39	89	0.1099	0.05	nc	nc21130954	2016-12-31T20:56:28.680Z	12 km SW of Huron, California	earthquake	0.13	0.22	0.17	58	reviewed	nc	nc
10/22/2000	8:47:48	36.1346667	-120.2161667	8.642	2.6	md	42	87	0.1135	0.06	nc	nc21130945	2016-12-31T20:56:05.680Z	12 km SW of Huron, California	earthquake	0.15	0.27	0.08	68	reviewed	nc	nc
10/21/2000	23:29:22	36.136	-120.2175	7.462	2.16	md	33	87	0.1153	0.15	nc	nc21130885	2016-12-31T20:54:50.810Z	12 km SW of Huron, California	earthquake	0.41	0.62	0.15	34	reviewed	nc	nc
10/21/2000	22:02:35	36.1345	-120.215	9.082	2.39	md	34	88	0.1126	0.04	nc	nc21130874	2016-12-31T20:54:45.361Z	12 km SW of Huron, California	earthquake	0.18	0.4	0.15	50	reviewed	nc	nc
10/11/2000	19:30:48	35.6135	-119.5003333	5.415	2.93	ml	21	149	0.4073	0.41	ci	ci9165664	2016-04-02T17:24:06.307Z	15km W of Wasco, CA	earthquake	1.27	31.61	0.326	54	reviewed	ci	ci
10/8/2000	0:17:50	35.275	-119.033	20.157	3.11	ml	0	103.8	0.09064	0.297	ci	ci9165420	2016-04-02T00:45:54.189Z	9km S of Bakersfield, CA	earthquake		0.86		221	reviewed	ci	ci
10/1/2000	2:35:02	35.4738333	-119.1651667	14.146	2.22	mc	34	103	0.3721	0.44	ci	ci9164800	2016-02-17T05:03:35.882Z	10km ESE of Shafter, California	earthquake	0.63	31.61		13	reviewed	ci	ci
9/28/2000	20:33:33	35.9033333	-120.8008333	4.027	2.2	md	41	23	0.1405	0.05	nc	nc30222243	2016-12-31T19:44:32.090Z	4 km N of Bradley, California	earthquake	0.14	0.63	0.16	31	reviewed	nc	nc
9/28/2000	16:27:31	35.9103333	-120.8013333	2.987	2.03	md	40	55	0.1351	0.07	nc	nc21127557	2016-12-31T19:42:27.500Z	5 km N of Bradley, California	earthquake	0.17	0.75	0.2	30	reviewed	nc	nc
9/21/2000	18:09:59	35.8461667	-120.3931667	6.14	2.47	md	37	41	0.03514	0.03	nc	nc30222215	2016-12-31T19:08:25.910Z	6 km SSE of Parkfield, California	earthquake	0.13	0.2	0.3	35	reviewed	nc	nc
9/21/2000	18:08:58	35.8471667	-120.3955	6.411	3.28	ml	51	40	0.01171	0.03	nc	nc30222214	2016-12-31T19:08:14.730Z	6 km SSE of Parkfield, California	earthquake	0.13	0.21		5	reviewed	nc	nc
9/21/2000	18:07:34	35.8468333	-120.3948333	6.341	2.78	md	47	55	0.01081	0.03	nc	nc30222216	2016-12-31T19:08:04.550Z	6 km SSE of Parkfield, California	earthquake	0.13	0.2	0.08	65	reviewed	nc	nc
9/16/2000	15:50:06	36.0045	-120.5618333	4.645	2.62	md	53	52	0.04324	0.05	nc	nc21125505	2016-12-31T18:52:45.530Z	16 km NW of Parkfield, California	earthquake	0.16	0.21	0.11	67	reviewed	nc	nc
9/11/2000	17:18:44	35.7361667	-119.6913333	5.715	2.83	mc	8	185	0.5042	0.29	ci	ci9162790	2016-04-02T14:24:10.519Z	25km SW of Alpaugh, CA	earthquake	1.25	31.61		20	reviewed	ci	ci
9/10/2000	11:24:10	36.0181667	-119.8945	-0.359	2.29	md	48	70	0.1802	0.24	nc	nc21124483	2016-12-31T18:29:08.390Z	6 km E of Kettleman City, California	earthquake	0.43	5.45	0.18	12	reviewed	nc	nc
9/10/2000	11:15:48	36.0316667	-120.5838333	4.565	2.35	md	42	75	0.03874	0.05	nc	nc21124481	2016-12-31T18:28:56.610Z	20 km NW of Parkfield, California	earthquake	0.18	0.2	0.08	36	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/9/2000	11:34:08	35.309	-118.976	4.845	2.14	mc	0	100.7	0.4742	0.188	ci	ci9162569	2016-02-16T19:14:57.811Z	7km SE of Bakersfield, California	earthquake				26	reviewed	ci	ci
9/8/2000	22:01:20	36.046	-120.6096667	4.841	2.35	md	44	62	0.02523	0.04	nc	nc21124291	2016-12-31T18:23:51.370Z	22 km NW of Parkfield, California	earthquake	0.17	0.29	0.12	45	reviewed	nc	nc
9/8/2000	21:16:08	35.3685	-118.8716667	4.57	2.26	ml	20	91	0.4375	0.17	ci	ci9162518	2016-04-02T01:23:19.931Z	13km NNE of Lamont, CA	earthquake	0.46	18.74	0.268	35	reviewed	ci	ci
9/6/2000	16:40:54	35.8418333	-120.3835	3.991	2.37	md	42	64	0.01351	0.05	nc	nc21123924	2016-12-31T18:15:14.650Z	7 km SE of Parkfield, California	earthquake	0.13	0.19	0.12	56	reviewed	nc	nc
9/6/2000	5:29:03	36.1186667	-120.1268333	8.031	2.01	md	24	152	0.05946	0.04	nc	nc21123860	2016-12-31T18:13:50.550Z	9 km SSW of Huron, California	earthquake	0.36	0.3	0.12	17	reviewed	nc	nc
9/5/2000	15:16:57	36.1345	-120.1993333	10.542	2.37	md	38	137	0.1036	0.04	nc	nc21123736	2016-12-31T18:10:32.300Z	11 km SW of Huron, California	earthquake	0.12	0.23	0.13	59	reviewed	nc	nc
9/3/2000	8:51:45	35.1078333	-119.0421667	4.873	2.05	mc	8	118	0.2415	0.28	ci	ci9162058	2016-02-16T09:34:34.171Z	20km SW of Lamont, California	earthquake	1.37	31.61		14	reviewed	ci	ci
8/23/2000	4:44:29	36.004	-120.5591667	4.585	2.1	md	40	82	0.04505	0.05	nc	nc21216173	2016-12-31T17:22:57.960Z	16 km NW of Parkfield, California	earthquake	0.2	0.26	0.08	27	reviewed	nc	nc
8/19/2000	19:19:23	35.8595	-119.9291667	8.817	2.19	md	28	136	0.02252	0.14	nc	nc21120689	2016-12-31T17:06:06.591Z	16 km S of Kettleman City, California	earthquake	0.9	0.39	0.14	16	reviewed	nc	nc
8/19/2000	4:18:39	36.1766667	-120.2351667	13.049	2.36	md	41	134	0.1135	0.06	nc	nc21120590	2016-12-31T17:03:39.500Z	11 km ENE of Coalinga, California	earthquake	0.22	0.33	0.15	72	reviewed	nc	nc
8/10/2000	15:24:13	35.9828333	-120.5445	3.643	2.14	md	39	77	0.04595	0.07	nc	nc21119268	2016-12-31T16:37:26.550Z	13 km NW of Parkfield, California	earthquake	0.17	0.28	0.12	26	reviewed	nc	nc
8/10/2000	14:15:15	35.1325	-120.752	1.503	3.53	ml	52	153	0.03604	0.07	nc	nc21119242	2016-12-31T16:37:00.890Z	5 km SSW of Avila Beach, California	earthquake	0.18	0.41		2	reviewed	nc	nc
8/2/2000	15:00:34	35.465	-120.7866667	5.225	2.02	md	32	64	0.07838	0.05	nc	nc21114587	2016-12-31T16:17:24.858Z	9 km ENE of Cayucos, California	earthquake	0.13	0.55	0.1	8	reviewed	nc	nc
8/1/2000	8:55:40	34.967	-119.556	5.209	2.41	ml	0	139.1	0.5411	0.353	ci	ci9158975	2016-04-02T01:22:59.150Z	17km SW of Maricopa, CA	earthquake				86	reviewed	ci	ci
7/28/2000	1:30:38	35.307	-119.437	4.841	2.35	mc	0	167.9	0.7052	0.285	ci	ci9158653	2016-02-16T04:52:46.298Z	11km SSE of Buttonwillow, California	earthquake				14	reviewed	ci	ci
7/24/2000	8:41:48	36.101	-120.6578333	3.896	2	md	33	164	0.05405	0.03	nc	nc21111715	2016-12-31T15:45:34.500Z	24 km ENE of San Ardo, California	earthquake	0.29	0.24	0.17	24	reviewed	nc	nc
7/23/2000	4:55:26	35.0443333	-119.03	-0.306	2.18	ml	17	124	0.3294	0.22	ci	ci9158239	2016-04-02T11:10:46.878Z	14km NW of Grapevine, CA	earthquake	0.48	31.61	0.205	37	reviewed	ci	ci
7/21/2000	6:11:27	36.133	-120.2005	10.222	2.03	md	29	95	0.1027	0.04	nc	nc21111291	2016-12-31T15:35:09.853Z	11 km SW of Huron, California	earthquake	0.16	0.27	0.17	28	reviewed	nc	nc
7/16/2000	10:56:11	35.7496667	-119.7881667	22.933	2.4	md	18	93	0.1775	0.09	nc	nc21110180	2016-12-31T15:18:13.420Z	17 km NNW of Lost Hills, California	earthquake	0.44	0.46	0.16	16	reviewed	nc	nc
7/15/2000	22:14:53	35.284	-119.3201667	4.594	2.29	mc	10	116	0.3338	0.18	ci	ci9157596	2016-02-17T02:35:47.200Z	19km SE of Buttonwillow, California	earthquake	0.56	31.61		13	reviewed	ci	ci
7/15/2000	8:55:16	35.163	-118.882	-0.196	2.2	ml	0	223.2	0.2349	0.197	ci	ci9157553	2016-02-17T04:57:24.669Z	7km SW of Arvin, California	earthquake		2.436		105	reviewed	ci	ci
7/11/2000	0:02:23	36.2686667	-120.371	9.209	2.57	md	51	57	0.02973	0.06	nc	nc21108805	2016-12-31T14:57:10.770Z	14 km N of Coalinga, California	earthquake	0.12	0.16	0.13	93	reviewed	nc	nc
7/8/2000	9:49:36	35.059	-119.066	4.726	2.03	mc	0	128.5	0.3623	0.221	ci	ci9156683	2016-02-16T21:41:11.041Z	18km NW of Grapevine, California	earthquake				21	reviewed	ci	ci
7/8/2000	9:25:53	35.062	-119.068	4.726	2.2	ml	0	128.9	0.365	0.192	ci	ci9156681	2016-02-17T12:08:25.123Z	18km NW of Grapevine, California	earthquake				97	reviewed	ci	ci
6/26/2000	15:50:39	36.0363333	-120.588	7.855	2.37	md	52	41	0.03333	0.04	nc	nc21106055	2016-12-31T14:02:22.900Z	20 km NW of Parkfield, California	earthquake	0.16	0.23	0.12	67	reviewed	nc	nc
6/21/2000	17:28:53	36.1593333	-120.3231667	0.085	2.43	md	6	137	0.07477	0.22	nc	nc21104933	2016-12-31T13:41:30.595Z	3 km ENE of Coalinga, California	earthquake	0.81	14.39		1	reviewed	nc	nc
6/17/2000	16:38:17	34.8851667	-119.0691667	15.597	2.2	ml	11	105	0.08321	0.22	ci	ci9154519	2016-04-02T17:30:12.063Z	8km ENE of Pine Mountain Club, CA	earthquake	1	2.14	0.288	33	reviewed	ci	ci
6/16/2000	16:49:30	35.4925	-120.7951667	4.798	2.37	md	49	61	0.07838	0.07	nc	nc21104107	2016-12-31T13:24:20.350Z	10 km SW of Templeton, California	earthquake	0.14	0.54	0.12	61	reviewed	nc	nc
6/8/2000	15:53:41	36.2761667	-120.3921667	8.414	2.14	md	42	98	0.04775	0.11	nc	nc21102743	2016-12-31T12:57:39.995Z	15 km N of Coalinga, California	earthquake	0.25	0.22	0.2	26	reviewed	nc	nc
6/8/2000	12:32:40	36.1388333	-120.1341667	10.852	2.07	md	33	145	0.08018	0.06	nc	nc21102717	2016-12-31T12:57:08.440Z	7 km SSW of Huron, California	earthquake	0.37	0.28	0.16	23	reviewed	nc	nc
5/23/2000	10:47:21	36.1786667	-120.186	5.469	2.4	md	7	103	0.1081	0.05	nc	nc51098285	2016-12-31T11:52:14.580Z	7 km WSW of Huron, California	earthquake	0.39	1.69	0.04	5	reviewed	nc	nc
5/22/2000	20:13:09	36.0121667	-120.5735	4.405	2.31	md	47	50	0.04144	0.05	nc	nc21099478	2016-12-31T11:50:10.710Z	17 km NW of Parkfield, California	earthquake	0.17	0.23	0.11	42	reviewed	nc	nc
5/22/2000	20:10:13	36.014	-120.572	4.495	2.77	md	59	41	0.04414	0.05	nc	nc21099477	2016-12-31T11:49:58.560Z	17 km NW of Parkfield, California	earthquake	0.14	0.22	0.1	77	reviewed	nc	nc
5/16/2000	15:13:20	35.4626667	-119.5461667	28.743	2.06	mc	12	177	0.2641	0.27	ci	ci9150728	2016-02-16T02:25:52.462Z	10km NW of Buttonwillow, California	earthquake	1.18	31.61		12	reviewed	ci	ci
5/15/2000	19:27:13	36.2803333	-119.881	19.007	2.35	md	13	299	0.1676	0.08	nc	nc21097800	2016-12-31T11:27:53.967Z	2 km NE of Lemoore Station, California	earthquake	3.01	0.56	0.15	7	reviewed	nc	nc
5/14/2000	11:15:06	36.166	-119.601	4.172	2.06	mc	0	213.6		0.299	ci	ci9150537	2016-02-17T12:03:31.336Z	8km NNW of Corcoran, California	earthquake				5	reviewed	ci	ci
5/13/2000	8:12:56	36.068	-120.1493333	11.966	2.16	md	47	86	0.03333	0.05	nc	nc21097287	2016-12-31T11:16:43.240Z	7 km NNW of Avenal, California	earthquake	0.16	0.24	0.13	44	reviewed	nc	nc
5/13/2000	8:05:43	36.0653333	-120.15	11.676	2	md	25	100	0.03333	0.04	nc	nc21203982	2016-12-31T11:16:29.370Z	7 km NNW of Avenal, California	earthquake	0.23	0.27	0.13	19	reviewed	nc	nc
5/10/2000	5:37:25	35.3313333	-118.9418333	15.964	2.25	ml	19	115	0.1336	0.22	ci	ci9149992	2016-04-02T01:27:38.686Z	8km NNW of Lamont, CA	earthquake	0.53	1.24	0.375	25	reviewed	ci	ci
4/29/2000	17:05:41	35.7936667	-120.3451667	9.19	2.87	md	50	37	0.03784	0.03	nc	nc21094494	2016-12-31T10:27:08.930Z	14 km SE of Parkfield, California	earthquake	0.13	0.24	0.08	78	reviewed	nc	nc
4/28/2000	14:16:41	36.0795	-119.6591667	18.691	2.6	md	32	68	0.3243	0.15	nc	nc21094327	2016-12-31T10:23:39.660Z	9 km WSW of Corcoran, California	earthquake	0.65	0.44	0.14	26	reviewed	nc	nc
4/22/2000	12:11:00	36.0681667	-119.9176667	10.299	2.03	md	36	84	0.1559	0.12	nc	nc21093291	2016-12-31T10:00:43.580Z	7 km NNE of Kettleman City, California	earthquake	0.4	0.63	0.04	7	reviewed	nc	nc
4/21/2000	9:09:30	35.956	-120.0558333	28.288	2.19	md	22	143	0.1135	0.07	nc	nc21093094	2016-12-31T09:56:41.090Z	8 km SE of Avenal, California	earthquake	0.45	0.68	0.16	23	reviewed	nc	nc
4/16/2000	0:49:51	36.1963333	-120.2688333	11.709	2.94	md	45	66	0.08018	0.08	nc	nc21092323	2016-12-31T09:34:47.670Z	10 km NE of Coalinga, California	earthquake	0.18	0.34	0.11	110	reviewed	nc	nc
4/14/2000	19:29:08	35.9948333	-119.8741667	5.998	2.16	md	35	112	0.2027	0.14	nc	nc21092113	2016-12-31T09:28:38.346Z	8 km E of Kettleman City, California	earthquake	0.36	1.51	0.09	17	reviewed	nc	nc
4/14/2000	19:01:18	36.0155	-119.8901667	-0.322	2.24	md	51	54	0.1838	0.31	nc	nc21092109	2016-12-31T09:28:33.088Z	6 km E of Kettleman City, California	earthquake	0.47	5.51	0.1	20	reviewed	nc	nc
4/13/2000	8:21:10	35.3268333	-119.2108333	22.775	2.27	mc	23	131	0.08874	0.21	ci	ci9147138	2016-02-17T07:13:41.318Z	9km SW of Rosedale, California	earthquake	0.69	1.34		28	reviewed	ci	ci
4/8/2000	6:51:42	35.8003333	-120.3471667	6.34	2.89	md	50	34	0.03063	0.03	nc	nc21091100	2016-12-31T09:03:37.800Z	13 km SE of Parkfield, California	earthquake	0.12	0.22	0.09	100	reviewed	nc	nc
4/6/2000	23:02:25	36.2003333	-119.4428333	3.852	2.31	md	6	133	0.5604	0.4	nc	nc21090836	2016-12-31T08:59:15.536Z	8 km W of Tulare, California	earthquake	1.27	6.39		1	reviewed	nc	nc
4/4/2000	23:18:29	35.0946667	-118.9128333	9.821	2.14	ml	13	124		0.18	ci	ci9146100	2016-04-02T04:43:39.187Z	15km SSW of Arvin, CA	earthquake	0.6	1.55	0.406	17	reviewed	ci	ci
3/15/2000	7:05:21	34.886	-119.363	10.904	2.32	ml	0	44.3		0.324	ci	ci9143003	2016-02-16T14:04:27.855Z	20km S of Maricopa, California	earthquake		0.467		81	reviewed	ci	ci
3/14/2000	23:34:37	35.9238333	-120.4716667	5.263	2.29	md	38	146	0.01802	0.05	nc	nc21086642	2016-12-31T07:50:05.070Z	4 km NW of Parkfield, California	earthquake	0.18	0.17	0.09	43	reviewed	nc	nc
3/8/2000	5:27:31	34.839	-119.724	3.951	2	mc	0	106.9	0.0976	0.258	ci	ci9142089	2016-02-17T02:24:18.767Z	38km SW of Maricopa, California	earthquake		0.739		9	reviewed	ci	ci
3/8/2000	2:37:37	35.8226667	-119.9388333	8.975	2	md	19	228	0.2459	0.08	nc	nc21085687	2016-12-31T07:33:07.039Z	20 km S of Kettleman City, California	earthquake	1.2	0.97	0.07	8	reviewed	nc	nc
2/27/2000	9:31:33	36.0683333	-120.2558333	9.795	2.13	md	30	115	0.2135	0.04	nc	nc21084465	2016-12-31T07:07:47.360Z	12 km SE of Coalinga, California	earthquake	0.3	0.6	0.1	26	reviewed	nc	nc
2/17/2000	8:52:29	36.0898333	-120.544	5.611	2.14	md	37	154	0.04775	0.07	nc	nc21083244	2016-12-31T06:46:13.960Z	17 km WSW of Coalinga, California	earthquake	0.3	0.27	0.15	27	reviewed	nc	nc
2/12/2000	12:53:50	36.126	-120.3098333	13.823	2.21	md	14	201	0.1955	0.03	nc	nc30504110	2016-12-31T06:39:06.312Z	4 km ESE of Coalinga, California	earthquake	0.65	1.56	0.05	14	automatic	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
2/8/2000	23:58:30	35.4323333	-120.7175	5.774	2.38	md	49	69	0.04054	0.05	nc	nc21082211	2016-12-31T06:32:14.710Z	7 km SW of Atascadero, California	earthquake	0.14	0.36	0.08	55	reviewed	nc	nc
2/4/2000	1:39:31	36.0368333	-120.5995	0.191	2	md	29	85	0.03243	0.07	nc	nc21081496	2016-12-31T06:18:30.709Z	21 km NW of Parkfield, California	earthquake	0.18	0.7	0.21	19	reviewed	nc	nc
2/3/2000	3:57:19	35.0648333	-119.1478333	12.807	2.02	ml	6	235	0.4571	0.29	ci	ci9531365	2016-04-01T22:05:40.858Z	23km E of Maricopa, CA	earthquake	1.73	2.86	0.01	6	reviewed	ci	ci
2/1/2000	18:11:14	35.063	-118.911	16.471	2.24	ml	0	118.4	0.09201	0.207	ci	ci9137318	2016-02-16T11:39:33.884Z	13km N of Grapevine, California	earthquake		0.729		51	reviewed	ci	ci
1/31/2000	2:25:02	36.0078333	-119.9345	15.466	2.21	md	23	213	0.3198	0.06	nc	nc21080871	2016-12-31T06:06:13.919Z	2 km E of Kettleman City, California	earthquake	0.48	1.48	0.06	4	reviewed	nc	nc
1/31/2000	2:02:11	35.3223333	-118.912	14.274	2.05	mc	26	111	0.1589	0.24	ci	ci9137099	2016-02-16T09:17:00.940Z	7km N of Lamont, California	earthquake	0.55	0.82		22	reviewed	ci	ci
1/30/2000	23:27:03	35.311	-119.368	5.04	2.31	mc	0	132.3	0.2623	0.266	ci	ci9137087	2016-02-17T04:43:46.253Z	14km SE of Buttonwillow, California	earthquake				22	reviewed	ci	ci
1/22/2000	14:47:31	35.426	-119.999	3.863	2.11	mc	0	110.3		0.249	ci	ci9135730	2016-02-16T16:28:42.652Z	8km N of Simmler, California	earthquake		0.229		13	reviewed	ci	ci
1/19/2000	17:09:48	35.345	-118.8766667	-0.011	2.11	mc	31	112	0.1912	0.25	ci	ci9135153	2016-02-16T09:15:57.496Z	10km NNE of Lamont, California	earthquake	0.46	0.88		26	reviewed	ci	ci
1/19/2000	3:20:13	35.8568333	-120.4025	4.875	2.31	md	47	54	0.02072	0.04	nc	nc21078386	2016-12-31T05:13:10.020Z	5 km SSE of Parkfield, California	earthquake	0.12	0.19	0.11	52	reviewed	nc	nc
1/18/2000	14:18:09	36.0451667	-120.6035	6.071	2.02	md	37	43	0.02432	0.05	nc	nc21078281	2016-12-31T05:08:26.360Z	22 km NW of Parkfield, CA	earthquake	0.19	0.24	0.12	28	reviewed	nc	nc
1/18/2000	6:50:57	35.8573333	-120.4036667	4.785	2.24	md	43	55	0.02162	0.04	nc	nc21078210	2016-12-31T05:06:59.430Z	5 km SSE of Parkfield, California	earthquake	0.11	0.19	0.11	44	reviewed	nc	nc
1/16/2000	18:31:12	36.0653333	-120.107	8.617	2.55	md	58	161	0.004505	0.09	nc	nc21077966	2016-12-31T04:57:51.590Z	7 km NNE of Avenal, California	earthquake	0.17	0.13	0.15	93	reviewed	nc	nc
1/15/2000	10:29:32	35.9883333	-120.5471667	4.783	2.26	md	48	56	0.04955	0.05	nc	nc21077661	2016-12-31T04:53:15.810Z	14 km NW of Parkfield, California	earthquake	0.17	0.21	0.09	37	reviewed	nc	nc
1/13/2000	1:57:45	35.7985	-119.9665	6.782	2.36	md	33	165	0.06486	0.07	nc	nc21077256	2016-12-31T04:43:55.660Z	23 km S of Kettleman City, California	earthquake	0.18	0.35	0.18	26	reviewed	nc	nc
1/12/2000	22:54:07	35.172	-118.998	17.157	2.21	ml	0	115.4	0.1448	0.231	ci	ci9133879	2016-02-16T02:15:04.685Z	12km SW of Lamont, California	earthquake		1.934		34	reviewed	ci	ci
1/10/2000	6:54:37	36.1703333	-120.1668333	7.113	2.13	md	29	116	0.1027	0.05	nc	nc21076519	2016-12-31T04:21:23.271Z	6 km WSW of Huron, California	earthquake	0.12	0.33	0.17	34	reviewed	nc	nc
1/2/2000	18:35:47	36.0456667	-119.9333333	10.816	2.15	md	37	51	0.1441	0.12	nc	nc21075298	2016-12-31T03:54:22.041Z	4 km NNE of Kettleman City, California	earthquake	0.51	0.94	0.1	16	reviewed	nc	nc
12/30/1999	5:16:20	36.1098333	-120.2131667	14.567	2.04	md	26	83	0.0973	0.07	nc	nc21074703	2016-12-31T01:13:56.910Z	13 km ESE of Coalinga, California	earthquake	0.3	0.78	0.23	26	reviewed	nc	nc
12/28/1999	16:15:47	36.1588333	-120.0498333	7.09	2.29	md	38	190	0.09369	0.11	nc	nc21074370	2016-12-31T01:11:08.200Z	6 km SE of Huron, California	earthquake	0.57	0.51	0.16	39	reviewed	nc	nc
12/27/1999	0:50:24	35.32	-119.337	18.657	2.11	mc	0	121.8	0.2837	0.226	ci	ci9130982	2016-02-15T23:48:52.735Z	15km SE of Buttonwillow, California	earthquake				14	reviewed	ci	ci
12/17/1999	11:42:03	35.005	-119.149	12.225	2.74	ml	0	60.4		0.277	ci	ci9129503	2016-02-17T09:25:25.736Z	18km N of Pine Mountain Club, California	earthquake		0.567		129	reviewed	ci	ci
12/16/1999	5:35:58	35.9621667	-119.8653333	10.837	2.05	md	25	143	0.2216	0.11	nc	nc21072025	2016-12-31T00:39:42.265Z	10 km ESE of Kettleman City, California	earthquake	0.55	3.55	0.05	4	reviewed	nc	nc
12/11/1999	1:46:31	36.054	-120.6128333	3.521	2	md	38	61	0.01982	0.07	nc	nc21071298	2016-12-31T00:28:14.480Z	23 km NW of Parkfield, California	earthquake	0.16	0.29	0.13	32	reviewed	nc	nc
12/9/1999	18:57:22	36.2805	-119.779	0.984	2.55	md	108	37	0.2486	0.8	nc	nc21071120	2016-12-31T00:24:43.850Z	2 km S of Lemoore, California	earthquake	0.8	3.95	0.18	80	reviewed	nc	nc
12/6/1999	17:17:36	35.012	-119.185	13.985	2.39	ml	0	87.8		0.328	ci	ci9127478	2016-02-16T04:31:27.741Z	19km N of Pine Mountain Club, California	earthquake		0.31		67	reviewed	ci	ci
12/1/1999	2:13:10	34.823	-120.351	-0.575	2.05	mc	0	126		0.252	ci	ci9126426	2016-02-16T09:09:45.708Z	9km ESE of Orcutt, California	earthquake		3.495		10	reviewed	ci	ci
11/29/1999	22:43:44	35.2438333	-120.5071667	44.921	2.28	md	5	123	0.08649	0.13	nc	nc51092613	2016-12-30T23:57:56.810Z	10 km ENE of Edna, California	earthquake	2.73	11.76		1	reviewed	nc	nc
11/23/1999	1:00:38	36.1995	-120.326	10.243	2.73	md	54	54	0.05135	0.05	nc	nc21068458	2016-12-30T23:38:57.870Z	7 km NNE of Coalinga, California	earthquake	0.14	0.21	0.11	121	reviewed	nc	nc
11/19/1999	8:48:24	34.85	-119.504	-0.251	2.01	ml	0	73.3	0.2032	0.193	ci	ci9123946	2016-02-16T04:28:51.456Z	25km SSW of Maricopa, California	earthquake		0.825		26	reviewed	ci	ci
11/11/1999	11:26:04	36	-120.561	3.555	2.31	md	44	46	0.04234	0.05	nc	nc21066342	2016-12-30T23:01:46.600Z	16 km NW of Parkfield, California	earthquake	0.15	0.26	0.1	38	reviewed	nc	nc
11/9/1999	20:11:17	36.2503333	-120.278	5.579	2.13	md	5	107	0.05225	0.48	nc	nc30503544	2016-12-30T22:58:23.667Z	14 km NNE of Coalinga, California	earthquake	1.94	5.3	0.54	6	automatic	nc	nc
11/3/1999	20:23:09	36.1551667	-120.0878333	6.709	2.21	md	34	186	0.09369	0.06	nc	nc21064714	2016-12-30T22:43:17.931Z	5 km SSE of Huron, California	earthquake	0.35	0.13	0.12	33	reviewed	nc	nc
11/2/1999	12:09:15	36.2375	-120.166	2.949	2.97	md	5	150	0.06757	0.31	nc	nc51091834	2016-12-30T22:39:32.119Z	6 km NW of Huron, California	earthquake	3.76	11.26	0.42	5	reviewed	nc	nc
10/30/1999	9:37:03	35.052	-118.906	10.223	2.6	ml	0	92		0.326	ci	ci9118215	2016-02-16T06:44:06.856Z	12km N of Grapevine, California	earthquake		0.667		125	reviewed	ci	ci
10/29/1999	9:50:37	36.0001667	-120.5603333	4.575	2.69	md	54	70	0.04234	0.06	nc	nc21063603	2016-12-30T22:27:50.070Z	16 km NW of Parkfield, California	earthquake	0.16	0.22	0.13	76	reviewed	nc	nc
10/29/1999	7:56:17	35.641	-120.791	6.684	2.38	md	52	106	0.06126	0.06	nc	nc21063596	2016-12-30T22:27:23.500Z	9 km W of Paso Robles, California	earthquake	0.13	0.46	0.09	60	reviewed	nc	nc
10/29/1999	2:16:17	36.001	-120.5568333	4.425	2.17	md	39	82	0.04595	0.03	nc	nc21063567	2016-12-30T22:26:08.830Z	15 km NW of Parkfield, California	earthquake	0.19	0.23	0.09	28	reviewed	nc	nc
10/19/1999	23:29:14	36.2343333	-120.301	8.765	2.21	md	47	140	0.03694	0.6	nc	nc21061218	2016-12-30T22:01:15.530Z	11 km NNE of Coalinga, California	earthquake	1.53	0.71	0.17	33	reviewed	nc	nc
10/18/1999	4:36:27	36	-120.5606667	3.865	2.12	md	49	57	0.04234	0.05	nc	nc21060604	2016-12-30T21:54:56.430Z	16 km NW of Parkfield, California	earthquake	0.16	0.2	0.13	33	reviewed	nc	nc
10/16/1999	22:45:22	36.1273333	-120.186	7.862	2.2	md	36	102	0.09099	0.05	nc	nc21060035	2016-12-30T21:49:44.490Z	11 km SW of Huron, California	earthquake	0.18	0.48	0.17	44	reviewed	nc	nc
10/13/1999	19:35:56	35.9973333	-120.5561667	3.853	3.27	ml	60	38	0.04414	0.06	nc	nc21059155	2016-12-30T21:35:10.410Z	15 km NW of Parkfield, California	earthquake	0.14	0.24		6	reviewed	nc	nc
10/13/1999	13:02:53	36.1506667	-120.0623333	7.229	2.16	md	58	77	0.3135	0.1	nc	nc21059081	2016-12-30T21:34:31.530Z	6 km SSE of Huron, California	earthquake	0.24	1.15	0.12	11	reviewed	nc	nc
10/6/1999	5:06:27	36.1088333	-120.3001667	9.917	2.09	md	52	56	0.05946	0.06	nc	nc21057842	2016-12-30T21:14:26.550Z	6 km ESE of Coalinga, California	earthquake	0.15	0.33	0.22	58	reviewed	nc	nc
10/1/1999	0:50:19	35.9258333	-119.6026667	3.374	2.86	md	103	37	0.2946	0.69	nc	nc21056590	2016-12-30T20:59:16.170Z	11 km WNW of Alpaugh, California	earthquake	0.83	2.33	0.18	102	reviewed	nc	nc
9/28/1999	1:45:34	36.2028333	-120.2868333	7.495	2.01	md	15	67	0.06486	0.11	nc	nc21055830	2016-12-30T20:50:18.844Z	9 km NE of Coalinga, California	earthquake	0.32	0.53	0.15	18	reviewed	nc	nc
9/26/1999	14:24:31	35.066	-119.067	4.583	2.12	mc	0	131.9	0.2529	0.122	ci	ci9106238	2016-02-17T01:59:13.747Z	18km NW of Grapevine, California	earthquake				5	reviewed	ci	ci
9/25/1999	9:21:51	36.0515	-120.6048333	3.801	2.35	md	45	55	0.01892	0.08	nc	nc21055383	2016-12-30T20:41:50.370Z	22 km NW of Parkfield, California	earthquake	0.17	0.22	0.13	42	reviewed	nc	nc
9/9/1999	7:50:37	36.3103333	-120.0131667	4.51	2.11	md	8	145	0.2613	0.44	nc	nc40104887	2016-12-30T19:34:08.483Z	11 km WNW of Lemoore Station, California	earthquake	2.3	11.45		1	reviewed	nc	nc
9/9/1999	3:57:07	36.2023333	-119.946	9.505	2.13	md	4	296	0.1207	0.13	nc	nc21051223	2016-12-30T19:33:37.416Z	7 km SSW of Lemoore Station, California	earthquake	7.57	1.87	0.1	5	reviewed	nc	nc
8/27/1999	19:31:49	35.9733333	-119.5231667	4.172	2	mh	6	320	0.819	0.31	ci	ci9102993	2016-02-17T01:57:46.011Z	10km NNW of Alpaugh, California	earthquake	2.53	31.61		0	reviewed	ci	ci
8/24/1999	9:01:34	35.9028333	-120.1635	17.641	2.35	md	25	88	0.1054	0.12	nc	nc21046665	2016-12-30T18:38:48.590Z	11 km SSW of Avenal, California	earthquake	0.38	0.92	0.03	6	reviewed	nc	nc
8/24/1999	8:49:41	35.9001667	-120.1548333	17.101	2.36	md	41	91	0.1108	0.09	nc	nc21046654	2016-12-30T18:38:39.120Z	11 km SSW of Avenal, California	earthquake	0.24	0.45	0.15	47	reviewed	nc	nc
8/24/1999	8:35:18	35.08	-118.984	4.583	2.24	ml	0	93.6		0.271	ci	ci9102386	2016-02-17T11:30:17.438Z	16km NNW of Grapevine, California	earthquake				43	reviewed	ci	ci
8/20/1999	14:08:32	35.171	-118.95	4.583	2.34	ml	0	101.3		0.265	ci	ci9101787	2016-02-16T18:33:03.859Z	10km SSW of Lamont, California	earthquake				63	reviewed	ci	ci
8/18/1999	16:23:14	35.3215	-119.4371667	4.757	2.2	mh	6	212	0.2475	0.23	ci	ci9101474	2016-02-17T09:05:48.886Z	9km SSE of Buttonwillow, California	earthquake	2.04	31.61		0	reviewed	ci	ci
8/15/1999	1:01:25	36.0078333	-120.5643333	4.655	2.62	md	57	40	0.04414	0.06	nc	nc21043690	2016-12-30T18:08:28.610Z	16 km NW of Parkfield, California	earthquake	0.15	0.22	0.11	64	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
8/11/1999	20:36:29	35.9471667	-120.0381667	9.098	2.7	md	37	148	0.1072	0.11	nc	nc21042846	2016-12-30T17:58:18.960Z	9 km SW of Kettleman City, California	earthquake	0.28	0.51	0.09	68	reviewed	nc	nc
8/10/1999	17:10:23	35.264	-119.11	5.3	2.38	mc	0	111.8	0.2967	0.357	ci	ci9099984	2016-02-16T13:37:43.179Z	13km SW of Bakersfield, California	earthquake				31	reviewed	ci	ci
8/7/1999	12:57:54	35.6833333	-119.2986667	28.575	2.78	mc	21	163		0.28	ci	ci9099644	2016-02-17T09:05:07.571Z	6km W of McFarland, California	earthquake	1.1	0.89		44	reviewed	ci	ci
8/6/1999	23:38:11	36.1735	-120.3205	7.619	2.34	md	45	81	0.07838	0.07	nc	nc21041345	2016-12-30T17:39:10.620Z	5 km NE of Coalinga, California	earthquake	0.22	0.15	0.16	54	reviewed	nc	nc
7/31/1999	2:14:19	36.1276667	-120.211	8.472	2.07	md	25	89	0.1063	0.04	nc	nc21039243	2016-12-30T17:09:12.200Z	12 km SW of Huron, California	earthquake	0.14	0.42	0.16	25	reviewed	nc	nc
7/30/1999	6:59:20	35.99	-118.883	4.513	2.05	mc	0	205.9		0.095	ci	ci9098165	2016-02-16T04:13:27.916Z	15km SE of Porterville, California	earthquake				14	reviewed	ci	ci
7/29/1999	13:18:19	35.8006667	-119.9853333	-0.478	2.46	md	9	139	0.06667	0.25	nc	nc30502908	2016-12-30T17:04:10.714Z	23 km S of Kettleman City, California	earthquake	1.26	13.72	0.18	9	automatic	nc	nc
7/25/1999	8:50:54	36.1475	-120.0761667	7.832	2.21	md	37	175	0.09099	0.07	nc	nc21037768	2016-12-30T16:51:05.000Z	6 km SSE of Huron, California	earthquake	0.35	0.18	0.15	31	reviewed	nc	nc
7/21/1999	23:52:51	36.0621667	-120.6283333	0.671	2.5	md	34	63	0.02703	0.08	nc	nc51087987	2016-12-30T16:34:37.830Z	25 km NW of Parkfield, California	earthquake	0.16	0.54	0.14	32	reviewed	nc	nc
7/21/1999	20:54:03	36.0625	-120.6321667	0.021	2.01	md	31	118	0.02973	0.07	nc	nc21036695	2016-12-30T16:33:56.529Z	25 km E of San Ardo, California	earthquake	0.16	0.58	0.22	27	reviewed	nc	nc
7/21/1999	15:38:11	36.1275	-120.1726667	7.972	2.3	md	31	112	0.08378	0.06	nc	nc21036626	2016-12-30T16:32:37.560Z	10 km SW of Huron, California	earthquake	0.29	0.39	0.21	42	reviewed	nc	nc
7/19/1999	15:18:26	35.03	-118.905	12.953	2.1	ml	0	89.5	0.1324	0.229	ci	ci9096606	2016-02-16T11:13:15.895Z	10km NNE of Grapevine, California	earthquake		0.69		27	reviewed	ci	ci
7/17/1999	6:39:07	35.8985	-120.4403333	5.72	3.06	ml	55	43	0.03604	0.06	nc	nc21035432	2016-12-30T15:53:51.150Z	0 km W of Parkfield, California	earthquake	0.14	0.2		4	reviewed	nc	nc
7/8/1999	7:28:42	35.429	-119.99	4.493	2.55	ml	0	110.6		0.21	ci	ci9095110	2016-02-16T23:29:21.220Z	9km N of Simmler, California	earthquake		0.209		26	reviewed	ci	ci
7/6/1999	5:23:54	35.465	-120.018	7.094	2.05	mc	0	246	0.05513	0.085	ci	ci9094839	2016-02-17T06:41:36.746Z	13km N of Simmler, California	earthquake		2.059		13	reviewed	ci	ci
7/4/1999	5:31:10	34.915	-119.044	12.412	2.27	ml	0	44.7		0.256	ci	ci9094521	2016-02-15T23:28:17.110Z	11km WSW of Grapevine, California	earthquake		0.607		3	reviewed	ci	ci
7/3/1999	21:05:21	36.2193333	-120.2741667	11.499	2.19	md	39	112	0.06306	0.06	nc	nc21031488	2016-12-30T13:40:59.200Z	11 km NE of Coalinga, California	earthquake	0.21	0.27	0.14	50	reviewed	nc	nc
7/1/1999	5:46:34	35.7861667	-120.0001667	7.725	2.01	md	32	182	0.1928	0.07	nc	nc21030836	2016-12-30T13:20:17.634Z	Central California	earthquake	0.41	0.69	0.21	12	reviewed	nc	nc
6/15/1999	14:32:38	36.0481667	-120.6248333	-0.629	2.25	md	40	68	0.03153	0.17	nc	nc21026075	2016-12-30T11:03:18.970Z	23 km NW of Parkfield, California	earthquake	0.27	1.35	0.14	29	reviewed	nc	nc
6/15/1999	10:16:00	34.968	-119.167	9.113	2.14	mc	0	86.9	0.08049	0.287	ci	ci9091955	2016-02-17T09:02:28.325Z	14km N of Pine Mountain Club, California	earthquake		1.191		26	reviewed	ci	ci
6/13/1999	15:24:12	36.1506667	-120.198	9.209	2.2	md	32	98	0.1144	0.06	nc	nc21025366	2016-12-30T10:45:46.770Z	10 km SW of Huron, California	earthquake	0.18	0.28	0.12	39	reviewed	nc	nc
6/13/1999	14:57:59	36.1526667	-120.2015	8.523	3.22	ml	46	96	0.118	0.06	nc	nc21025361	2016-12-30T10:45:30.170Z	10 km WSW of Huron, California	earthquake	0.17	0.41		2	reviewed	nc	nc
6/13/1999	14:26:04	36.1536667	-120.2013333	8.766	2.52	md	42	96	0.1189	0.03	nc	nc21025354	2016-12-30T10:45:19.190Z	10 km WSW of Huron, California	earthquake	0.19	0.38	0.11	59	reviewed	nc	nc
6/10/1999	7:33:41	36.2193333	-120.3985	7.967	2.9	md	59	40	0.05405	0.07	nc	nc21024107	2016-12-30T10:27:38.450Z	9 km NNW of Coalinga, California	earthquake	0.1	0.22	0.09	108	reviewed	nc	nc
6/9/1999	8:35:00	35.8101667	-119.9545	8.692	2.17	md	26	100	0.05225	0.08	nc	nc21023787	2016-12-30T10:23:29.120Z	21 km S of Kettleman City, California	earthquake	0.39	0.45	0.18	19	reviewed	nc	nc
6/8/1999	1:44:23	35.073	-119.073	9.733	2.16	ml	0	95.5		0.282	ci	ci9091118	2016-02-16T16:01:42.349Z	19km NW of Grapevine, California	earthquake		1.435		13	reviewed	ci	ci
6/5/1999	7:01:46	34.999	-119.076	9.262	2.36	ml	0	94.2		0.281	ci	ci9090825	2016-02-16T23:27:28.538Z	15km WNW of Grapevine, California	earthquake		0.89		64	reviewed	ci	ci
6/4/1999	18:18:33	34.985	-119.165	8.515	2.88	ml	0	88.4		0.339	ci	ci9090753	2016-02-17T04:16:00.884Z	16km N of Pine Mountain Club, California	earthquake		0.797		76	reviewed	ci	ci
6/4/1999	7:04:16	34.992	-119.076	16.936	2.48	ml	0	86.8		0.271	ci	ci9090681	2016-02-16T16:01:32.811Z	14km WNW of Grapevine, California	earthquake		0.342		51	reviewed	ci	ci
5/31/1999	16:32:00	35.027	-119.001	12.312	2.18	ml	0	94.8		0.286	ci	ci9090112	2016-02-16T13:34:34.076Z	11km NW of Grapevine, California	earthquake		0.824		49	reviewed	ci	ci
5/31/1999	1:52:20	35.248	-119.259	5.225	2.72	ml	0	91.9		0.377	ci	ci9090002	2016-02-17T04:15:43.327Z	18km SW of Rosedale, California	earthquake				88	reviewed	ci	ci
5/27/1999	3:49:13	35.9416667	-120.4826667	10.493	2.07	md	40	48	0.01982	0.04	nc	nc21019445	2016-12-30T07:13:38.000Z	6 km NW of Parkfield, California	earthquake	0.16	0.2	0.11	40	reviewed	nc	nc
5/27/1999	3:13:24	36.1551667	-120.2008333	8.523	2.29	md	37	96	0.1198	0.06	nc	nc30501077	2016-12-30T07:12:32.480Z	10 km WSW of Huron, California	earthquake	0.14	0.4	0.101	40	reviewed	nc	nc
5/26/1999	2:12:28	35.9733333	-120.5286667	4.758	2.75	md	59	48	0.02973	0.06	nc	nc21018732	2016-12-30T06:26:21.090Z	11 km NW of Parkfield, California	earthquake	0.15	0.2	0.09	75	reviewed	nc	nc
5/21/1999	23:29:02	35.054	-119.023	12.012	2.43	ml	0	90.9		0.206	ci	ci7131115	2016-02-16T06:30:46.003Z	15km NW of Grapevine, California	earthquake		0.692		64	reviewed	ci	ci
5/19/1999	7:13:55	35.311	-118.949	14.078	2.98	mc	0	112.6		0.286	ci	ci9088122	2016-02-16T04:09:02.247Z	6km NNW of Lamont, California	earthquake		0.441		4	reviewed	ci	ci
5/18/1999	20:14:56	35.167	-119.485	16.517	2.22	mc	0	114.8	0.08999	0.214	ci	ci9088006	2016-02-17T01:52:54.706Z	4km NW of Taft, California	earthquake		1.194		14	reviewed	ci	ci
5/17/1999	13:04:58	36.145	-120.072	7.311	2.57	md	22	186	0.08919	0.08	nc	nc30220292	2016-12-30T04:23:16.919Z	6 km SSE of Huron, California	earthquake	0.75	0.27	0.88	6	reviewed	nc	nc
5/17/1999	0:19:41	35.671	-119.714	15.8	2.8	ml					us	usp000984t	2016-02-17T01:52:44.631Z	6 km NNW of Lost Hills, California	earthquake					reviewed	nc	pas
5/15/1999	5:21:38	35.853	-119.72	4.986	2.36	mc	0	265.7	0.4592	0.229	ci	ci7129788	2016-02-16T11:09:50.811Z	21km W of Alpaugh, California	earthquake				8	reviewed	ci	ci
5/12/1999	7:23:55	36.2331667	-120.406	7.067	2.22	md	37	50	0.05405	0.06	nc	nc21011833	2016-12-30T01:44:12.760Z	11 km NNW of Coalinga, California	earthquake	0.15	0.22	0.11	34	reviewed	nc	nc
5/4/1999	2:57:38	35.9215	-120.473	4.914	2.26	md	38	59	0.01622	0.06	nc	nc21010723	2016-12-30T01:12:04.350Z	Central California	earthquake	0.18	0.21	0.13	39	reviewed	nc	nc
5/3/1999	2:13:23	35.7703333	-120.3088333	4.152	2.16	md	37	61	0.06036	0.07	nc	nc21010537	2016-12-30T01:07:02.190Z	14 km NNE of Shandon, California	earthquake	0.15	0.39	0.15	37	reviewed	nc	nc
5/2/1999	12:02:20	35.2703333	-119.4381667	23.29	2	mc	13	132	0.1996	0.2	ci	ci9085380	2016-02-17T11:23:56.877Z	14km N of Taft, California	earthquake	0.89	1.68		10	reviewed	ci	ci
5/2/1999	7:35:00	35.664	-119.641	5.05	2.48	mc	0	125.2		0.349	ci	ci9085355	2016-02-17T11:23:54.907Z	28km WNW of Wasco, California	earthquake				28	reviewed	ci	ci
4/29/1999	13:44:24	35.687	-119.647	5.165	2.56	ml	0	204.4		0.237	ci	ci9085034	2016-02-17T01:51:31.474Z	27km SSW of Alpaugh, California	earthquake				25	reviewed	ci	ci
4/29/1999	1:01:38	35.839	-119.657	5.05	2.46	mc	0	169.5		0.171	ci	ci9085018	2016-02-16T15:59:18.478Z	16km WSW of Alpaugh, California	earthquake				9	reviewed	ci	ci
4/24/1999	8:55:54	35.173	-119.042	10.123	2.05	mc	0	133	0.2052	0.297	ci	ci9084518	2016-02-16T18:26:23.529Z	15km SW of Lamont, California	earthquake		5.631		23	reviewed	ci	ci
4/24/1999	3:01:07	35.678	-119.684	4.885	2.39	mc	0	87.6		0.229	ci	ci9084510	2016-02-15T23:24:03.340Z	29km SW of Alpaugh, California	earthquake				27	reviewed	ci	ci
4/21/1999	21:35:48	35.036	-118.968	17.276	2.3	ml	0	118.8	0.1068	0.171	ci	ci9084271	2016-02-17T01:51:18.302Z	11km NNW of Grapevine, California	earthquake		1.855		16	reviewed	ci	ci
4/20/1999	10:49:55	35.893	-119.771	5.059	2.14	mc	0	258.6	0.4808	0.332	ci	ci9084171	2016-02-17T04:13:16.957Z	21km SE of Kettleman City, California	earthquake				8	reviewed	ci	ci
4/20/1999	8:06:30	36.0343333	-120.5958333	5.285	2.33	md	44	73	0.03423	0.05	nc	nc21008529	2016-12-30T00:17:19.070Z	20 km NW of Parkfield, California	earthquake	0.2	0.28	0.11	34	reviewed	nc	nc
4/18/1999	5:38:00	36.115	-120.202	7.836	2.01	md	29	90	0.09189	0.04	nc	nc21008233	2016-12-30T00:05:23.910Z	13 km SW of Huron, California	earthquake	0.22	0.5	0.09	24	reviewed	nc	nc
4/16/1999	8:40:01	35.501	-119.524	5.165	2.83	mc	0	111.3		0.485	ci	ci9083733	2016-02-16T13:32:02.080Z	12km NNW of Buttonwillow, California	earthquake				50	reviewed	ci	ci
4/16/1999	2:57:08	35.827	-119.748	5.165	2.05	mc	0	251	0.4262	0.354	ci	ci3317003	2016-02-16T13:32:00.787Z	24km WSW of Alpaugh, California	earthquake				8	reviewed	ci	ci
4/13/1999	16:12:50	36.0158333	-120.0465	10.411	2.1	md	32	161	0.06847	0.06	nc	nc21007392	2016-12-29T23:46:09.390Z	7 km E of Avenal, California	earthquake	0.21	0.29	0.11	31	reviewed	nc	nc
3/29/1999	1:50:56	35.28	-118.894	12.388	2.56	ml	0	107.8		0.284	ci	ci9082011	2016-02-17T06:36:54.883Z	3km NE of Lamont, California	earthquake		0.544		82	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
3/18/1999	23:37:48	35.9411667	-120.4876667	10.583	3.36	ml	56	43	0.01712	0.06	nc	nc21005421	2016-12-29T22:02:48.460Z	6 km NW of Parkfield, California	earthquake	0.15	0.24		5	reviewed	nc	nc
3/18/1999	16:41:47	35.9773333	-119.5191667	2.949	2.45	md	20	196	0.4856	0.1	nc	nc20100075	2016-12-29T22:01:17.701Z	Central California	earthquake	0.77	3.03	0.29	25	reviewed	nc	nc
3/13/1999	17:06:26	36.2806667	-120.4333333	10.559	2.66	md	52	79	0.07568	0.08	nc	nc30219788	2016-12-29T21:37:06.940Z	Central California	earthquake	0.12	0.17	0.12	100	reviewed	nc	nc
3/5/1999	0:18:49	35.9358333	-120.483	9.253	3.17	ml	61	43	0.02432	0.06	nc	nc21004558	2016-12-29T20:58:36.600Z	6 km NW of Parkfield, California	earthquake	0.14	0.21		5	reviewed	nc	nc
3/4/1999	14:03:53	35.9558333	-120.1383333	18.461	2.24	md	31	152	0.1072	0.09	nc	nc21004515	2016-12-29T20:56:21.713Z	5 km S of Avenal, California	earthquake	0.35	0.65	0.11	31	reviewed	nc	nc
3/2/1999	9:05:53	34.998	-119.213	8.18	2.26	ml	0	95.4		0.309	ci	ci9079573	2016-02-16T20:51:54.855Z	18km NNW of Pine Mountain Club, California	earthquake		1.243		52	reviewed	ci	ci
3/1/1999	5:50:26	35.4668333	-120.743	4.524	2.09	md	34	72	0.07928	0.04	nc	nc21003523	2016-12-29T20:42:05.840Z	7 km WSW of Atascadero, California	earthquake	0.18	0.65	0.09	20	reviewed	nc	nc
2/28/1999	8:59:24	36.3291667	-120.0615	8.059	2.34	md	8	97	0.08288	1.69	nc	nc51070920	2016-12-29T20:37:15.181Z	14 km NNE of Huron, California	earthquake	7.46	29.69	0.28	5	reviewed	nc	nc
2/27/1999	14:00:05	35.47	-118.738	-1.159	2.2	mc	0	108.8	0.06829	0.197	ci	ci9079377	2016-02-17T08:57:47.542Z	26km WSW of Bodfish, California	earthquake		0.634		36	reviewed	ci	ci
2/27/1999	0:49:59	34.88	-119.059	13.272	2.24	ml	0	50.9		0.281	ci	ci9079354	2016-02-16T13:30:24.348Z	9km ENE of Pine Mountain Club, California	earthquake		0.351		47	reviewed	ci	ci
2/26/1999	15:25:56	35.9455	-120.4916667	9.893	4	mw	61	32	0.01261	0.06	nc	nc30218574	2016-12-29T20:27:07.350Z	7 km NW of Parkfield, California	earthquake	0.16	0.24		3	reviewed	nc	nc
2/25/1999	19:20:05	34.977	-119.004	16.322	2.3	ml	0	82.4		0.213	ci	ci9079237	2016-02-17T01:49:03.635Z	8km WNW of Grapevine, California	earthquake		0.401		32	reviewed	ci	ci
2/25/1999	15:59:45	35.468	-118.738	0.565	2.19	mc	0	108	0.0702	0.143	ci	ci9079221	2016-02-16T13:30:19.697Z	26km WSW of Bodfish, California	earthquake		0.435		31	reviewed	ci	ci
2/25/1999	14:10:51	35.475	-118.741	-1.089	2.49	mc	0	112.4		0.218	ci	ci9079214	2016-02-17T04:10:45.496Z	26km WSW of Bodfish, California	earthquake		0.474		42	reviewed	ci	ci
2/24/1999	22:48:19	36.4055	-119.7265	4.391	2.22	md	6	301	0.4937	0.21	nc	nc21003008	2016-12-29T20:03:58.873Z	0 km WNW of Hardwick, California	earthquake	4.58	3.99	0.255	5	reviewed	nc	nc
2/18/1999	18:15:58	35.4675	-120.7465	3.874	2.45	md	45	72	0.08108	0.04	nc	nc21002593	2016-12-29T19:32:52.470Z	7 km WSW of Atascadero, California	earthquake	0.18	0.58	0.1	54	reviewed	nc	nc
2/9/1999	3:31:45	36.1105	-120.1948333	6.342	2.06	md	28	92	0.08468	0.06	nc	nc30216619	2016-12-29T18:51:40.499Z	13 km SW of Huron, California	earthquake	0.29	0.35	0.16	17	reviewed	nc	nc
2/8/1999	3:43:37	35.505	-119.32	5.044	2.08	mc	0	166.6	0.4222	0.296	ci	ci9077809	2016-02-17T04:10:02.047Z	4km W of Shafter, California	earthquake				16	reviewed	ci	ci
2/6/1999	7:54:49	35.9303333	-120.4768333	8.893	2.46	md	57	43	0.02162	0.05	nc	nc30216353	2016-12-29T18:42:42.170Z	5 km NW of Parkfield, California	earthquake	0.14	0.19	0.09	62	reviewed	nc	nc
1/31/1999	4:29:35	36.175	-120.2855	10.332	2.08	md	37	96	0.08739	0.03	nc	nc30215506	2016-12-29T18:17:16.190Z	7 km ENE of Coalinga, California	earthquake	0.28	0.17	0.14	40	reviewed	nc	nc
1/30/1999	14:43:47	35.9753333	-119.6753333	23.398	3.01	md	113	49	0.255	0.2	nc	nc30215433	2016-12-29T18:14:05.750Z	17 km SW of Corcoran, California	earthquake	0.34	0.48	0.16	124	reviewed	nc	nc
1/15/1999	8:46:41	35.723	-119.186	4.727	2.04	mc	0	172.8	0.428	0.199	ci	ci9075979	2016-02-16T06:24:42.818Z	6km NE of McFarland, California	earthquake				17	reviewed	ci	ci
1/12/1999	23:48:09	35.9733333	-120.525	7.508	2.72	md	59	59	0.02703	0.04	nc	nc30213565	2016-12-29T17:05:33.910Z	11 km NW of Parkfield, California	earthquake	0.14	0.19	0.09	76	reviewed	nc	nc
1/10/1999	15:26:42	34.928	-119.242	-1.246	2.2	mc	0	121.3	0.08059	0.091	ci	ci9075576	2016-02-16T23:19:54.784Z	12km NW of Pine Mountain Club, California	earthquake		1.948		7	reviewed	ci	ci
1/10/1999	15:20:18	34.938	-119.223	1.814	2.91	ml	0	84.4		0.336	ci	ci9075593	2016-02-17T08:55:19.947Z	12km NNW of Pine Mountain Club, California	earthquake		0.232		110	reviewed	ci	ci
1/9/1999	17:19:33	34.987	-119.277	0.604	2.24	mc	0	130	0.05419	0.279	ci	ci9075512	2016-02-16T11:04:05.399Z	14km SE of Maricopa, California	earthquake		0.675		8	reviewed	ci	ci
1/7/1999	17:50:35	36.1261667	-120.0596667	7.696	2.11	md	31	182	0.07658	0.03	nc	nc30212888	2016-12-29T16:47:31.591Z	9 km SSE of Huron, California	earthquake	0.37	0.13	0.18	22	reviewed	nc	nc
1/2/1999	17:01:16	36.0395	-120.5936667	4.135	2.07	md	46	45	0.02973	0.06	nc	nc30212079	2016-12-29T16:18:35.530Z	21 km NW of Parkfield, California	earthquake	0.15	0.24	0.1	30	reviewed	nc	nc
1/1/1999	12:21:58	35.013	-119.195	8.163	3.46	ml	0	91.4		0.369	ci	ci9074844	2016-02-16T06:24:01.405Z	19km NNW of Pine Mountain Club, California	earthquake		0.8		139	reviewed	ci	ci
12/29/1998	4:51:59	35.333	-119.433	5.095	2.1	mc	0	124.1	0.2554	0.384	ci	ci9074618	2016-02-11T21:10:19.183Z	8km SSE of Buttonwillow, California	earthquake				15	reviewed	ci	ci
12/26/1998	10:02:37	36.2836667	-120.3008333	5.029	2.34	md	7	89	0.04865	0.02	nc	nc40084320	2016-12-29T14:33:01.648Z	16 km NNE of Coalinga, California	earthquake	0.36	0.91	0.06	9	reviewed	nc	nc
12/24/1998	12:49:22	35.1611667	-119.1518333	22.923	2.14	mc	19	123	0.2038	0.33	ci	ci9074297	2016-02-13T08:33:12.714Z	24km WSW of Lamont, California	earthquake	0.98	2.46		28	reviewed	ci	ci
12/20/1998	19:20:52	35.125	-120.434	5.364	2.94	ml	0	153.7		0.278	ci	ci9074052	2016-02-13T03:30:43.727Z	10km NNE of Nipomo, California	earthquake				28	reviewed	ci	ci
12/18/1998	2:02:17	36.214	-120.417	20.129	2.21	md	4	155	0.06937	0	nc	nc40083836	2016-12-29T14:05:16.970Z	9 km NNW of Coalinga, California	earthquake	0.66	2.33	0.26	6	reviewed	nc	nc
12/16/1998	9:53:01	35.919	-119.834	5.05	2.48	mc	0	264.4	0.4922	0.36	ci	ci7117655	2016-02-13T05:57:34.019Z	15km SE of Kettleman City, California	earthquake				9	reviewed	ci	ci
12/16/1998	8:26:51	35.7133333	-119.83	8.589	2.23	md	34	229	0.2423	0.16	nc	nc30209602	2016-12-29T13:59:42.370Z	16 km NW of Lost Hills, California	earthquake	0.66	0.84	0.16	8	reviewed	nc	nc
12/8/1998	10:17:10	36.1601667	-120.2701667	12.569	2.25	md	38	83	0.1045	0.07	nc	nc30208613	2016-12-29T13:30:54.180Z	8 km ENE of Coalinga, California	earthquake	0.24	0.41	0.18	49	reviewed	nc	nc
12/2/1998	21:05:37	36.2595	-120.3551667	21.588	2.79	md	5	149	0.01441	0.25	nc	nc40083188	2016-12-29T13:04:58.649Z	13 km N of Coalinga, California	earthquake	4.24	1.74		1	reviewed	nc	nc
12/2/1998	3:29:19	35.838	-119.9593333	6.567	2.24	md	34	100	0.02432	0.18	nc	nc30207709	2016-12-29T13:01:48.704Z	18 km S of Kettleman City, California	earthquake	0.63	0.5	0.18	17	reviewed	nc	nc
11/27/1998	5:32:15	36.1593333	-120.1511667	8.259	2.42	md	27	120	0.1036	0.05	nc	nc30207810	2016-12-29T12:43:18.530Z	6 km SW of Huron, California	earthquake	0.14	0.26	0.14	23	reviewed	nc	nc
11/21/1998	1:53:15	36.1341667	-120.2688333	6.712	2.33	md	43	74	0.09189	0.04	nc	nc30206792	2016-12-29T12:21:25.780Z	8 km E of Coalinga, California	earthquake	0.25	0.28	0.11	49	reviewed	nc	nc
11/16/1998	15:15:04	36.2565	-120.2846667	9.689	2.65	md	4	188	0.04775	0	nc	nc51066885	2016-12-29T12:08:46.666Z	14 km NNE of Coalinga, California	earthquake	0.73	1.18	0.31	7	reviewed	nc	nc
11/13/1998	12:43:17	36.0703333	-120.2218333	13.622	2.12	md	37	66	0.09189	0.05	nc	nc30205998	2016-12-29T11:56:07.760Z	11 km NW of Avenal, California	earthquake	0.2	0.39	0.17	31	reviewed	nc	nc
11/12/1998	2:54:15	35.998	-118.866	4.498	2.57	ml	0	132		0.217	ci	ci9071391	2016-02-11T21:08:26.098Z	16km ESE of Porterville, California	earthquake				35	reviewed	ci	ci
11/9/1998	20:48:22	34.945	-119.075	9.175	2.28	mc	0	167.9	0.02403	0.102	ci	ci9071260	2016-02-12T19:53:12.109Z	13km NNE of Pine Mountain Club, California	earthquake		2.671		9	reviewed	ci	ci
11/8/1998	9:07:43	35.9301667	-120.4738333	9.743	3.04	md	55	43	0.02252	0.06	nc	nc30205382	2016-12-29T11:38:55.290Z	5 km NW of Parkfield, California	earthquake	0.15	0.21	0.08	90	reviewed	nc	nc
11/8/1998	6:18:39	35.107	-119.079	10.513	2.23	ml	0	143.9		0.311	ci	ci9071161	2016-02-13T00:55:33.259Z	23km SW of Lamont, California	earthquake		1.649		33	reviewed	ci	ci
11/2/1998	3:30:08	35.422	-119.336	4.818	2.22	mc	0	167.7	0.3651	0.344	ci	ci9070614	2016-02-12T19:52:53.684Z	10km SSW of Shafter, California	earthquake				22	reviewed	ci	ci
10/30/1998	9:54:29	35.559	-119.124	4.831	3.31	ml	0	168	0.3356	0.819	ci	ci9070327	2016-02-13T08:31:03.394Z	15km ENE of Shafter, California	earthquake		60.01		13	reviewed	ci	ci
10/26/1998	8:08:44	35.9593333	-120.5128333	5.143	2.25	md	51	76	0.01171	0.05	nc	nc30203618	2016-12-29T10:51:44.800Z	9 km NW of Parkfield, California	earthquake	0.15	0.13	0.12	43	reviewed	nc	nc
10/25/1998	4:38:21	36.0505	-120.6065	3.511	2.13	md	44	93	0.01982	0.06	nc	nc30203512	2016-12-29T10:45:41.700Z	22 km NW of Parkfield, California	earthquake	0.15	0.25	0.11	31	reviewed	nc	nc
10/23/1998	11:25:46	35.641	-119.794	5.165	2.41	mc	0	232	0.2449	0.233	ci	ci9069759	2016-02-12T14:42:59.433Z	37km NNE of Simmler, California	earthquake				11	reviewed	ci	ci
10/22/1998	3:05:43	36.031	-120.5856667	4.375	2.12	md	48	75	0.03874	0.05	nc	nc30203022	2016-12-29T10:34:58.450Z	20 km NW of Parkfield, California	earthquake	0.18	0.23	0.14	32	reviewed	nc	nc
10/21/1998	16:35:34	35.332	-119.325	4.881	2	mc	0	143.7	0.2992	0.376	ci	ci9069634	2016-02-12T14:42:51.813Z	15km ESE of Buttonwillow, California	earthquake				26	reviewed	ci	ci
10/19/1998	4:27:04	34.98	-119.296	2.104	2.13	ml	0	90.3	0.04274	0.252	ci	ci9069420	2016-02-13T03:27:58.001Z	13km SE of Maricopa, California	earthquake		0.375		17	reviewed	ci	ci
10/16/1998	1:48:11	34.813	-120.353	-0.585	2.94	ml	0	97.6		0.146	ci	ci9069249	2016-02-13T05:54:54.862Z	10km SE of Orcutt, California	earthquake		1.171		54	reviewed	ci	ci
10/11/1998	22:05:19	36.1095	-119.9786667	27.097	2.38	md	28	205	0.1171	0.12	nc	nc30201538	2016-12-29T09:43:23.861Z	11 km N of Kettleman City, California	earthquake	0.63	0.58	0.15	31	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
10/11/1998	19:37:56	35.5218333	-120.8088333	4.12	2.27	md	51	55	0.08108	0.14	nc	nc30201524	2016-12-29T09:42:52.810Z	9 km WSW of Templeton, California	earthquake	0.15	0.48	0.14	44	reviewed	nc	nc
10/9/1998	23:46:50	36.0135	-120.5725	4.405	2.11	md	28	87	0.04324	0.05	nc	nc30201261	2016-12-29T09:34:12.060Z	17 km NW of Parkfield, California	earthquake	0.22	0.26	0.14	20	reviewed	nc	nc
10/7/1998	9:20:09	35.2046667	-120.7663333	4.238	2.01	md	29	104	0.03063	0.07	nc	nc30200815	2016-12-29T09:23:35.368Z	4 km NW of Avila Beach, California	earthquake	0.14	0.24	0.2	18	reviewed	nc	nc
10/6/1998	11:08:44	34.865	-119.199	11.624	2.2	ml	0	79.8	0.027	0.259	ci	ci9068523	2016-02-12T04:40:30.491Z	5km WNW of Pine Mountain Club, California	earthquake		0.38		29	reviewed	ci	ci
9/20/1998	9:45:13	35.756	-119.851	5.05	2.28	ml	0	231.6		0.365	ci	ci9067308	2016-02-11T21:05:23.153Z	30km SSE of Kettleman City, California	earthquake				8	reviewed	ci	ci
9/20/1998	9:38:14	35.9685	-120.5206667	7.108	2.5	md	58	46	0.02162	0.04	nc	nc30197557	2016-12-29T07:53:25.350Z	11 km NW of Parkfield, California	earthquake	0.15	0.16	0.1	71	reviewed	nc	nc
9/19/1998	14:23:38	35.785	-119.872	5.115	2.16	mc	0	271.3	0.355	0.283	ci	ci9067239	2016-02-11T23:39:12.905Z	26km SSE of Kettleman City, California	earthquake				4	reviewed	ci	ci
9/19/1998	13:27:18	35.781	-119.885	4.913	2.53	ml	0	258.1	0.3491	0.306	ci	ci9067236	2016-02-12T07:03:05.033Z	26km SSE of Kettleman City, California	earthquake				16	reviewed	ci	ci
9/19/1998	9:51:58	35.773	-119.891	4.913	2.57	mc	0	256.3	0.3404	0.287	ci	ci9067231	2016-02-12T14:40:17.689Z	27km SSE of Kettleman City, California	earthquake				21	reviewed	ci	ci
9/19/1998	7:43:16	35.789	-119.904	5.059	2.55	mc	0	258.4	0.3546	0.344	ci	ci9067222	2016-02-13T10:56:49.899Z	25km SSE of Kettleman City, California	earthquake				28	reviewed	ci	ci
9/19/1998	7:16:25	35.777	-119.888	4.918	2.4	mc	0	259.9	0.3447	0.276	ci	ci9067220	2016-02-12T02:12:12.994Z	27km SSE of Kettleman City, California	earthquake				12	reviewed	ci	ci
9/17/1998	15:42:58	35.9665	-120.5181667	7.158	2.9	md	58	47	0.01892	0.05	nc	nc30199657	2016-12-29T07:36:04.880Z	10 km NW of Parkfield, California	earthquake	0.16	0.2	0.06	49	reviewed	nc	nc
9/16/1998	16:17:29	35.9623333	-120.5125	7.083	2.88	md	60	48	0.01261	0.04	nc	nc30196884	2016-12-29T07:28:08.630Z	10 km NW of Parkfield, California	earthquake	0.12	0.11	0.11	81	reviewed	nc	nc
9/16/1998	16:09:29	35.9616667	-120.5113333	7.073	3.46	ml	64	47	0.01171	0.05	nc	nc30196883	2016-12-29T07:27:54.590Z	9 km NW of Parkfield, California	earthquake	0.14	0.18		5	reviewed	nc	nc
9/16/1998	9:00:44	35.9588333	-120.5088333	7.033	3.4	mw	66	46	0.009009	0.05	nc	nc30196821	2016-12-29T07:24:17.960Z	9 km NW of Parkfield, California	earthquake	0.14	0.19		3	reviewed	nc	nc
9/15/1998	9:18:17	36.375	-120.0951667	19.921	2.75	md	4	146	0.1108	0.17	nc	nc40079158	2016-12-29T07:18:35.764Z	15 km WSW of Lanare, California	earthquake	4.02	4.43	0.13	4	reviewed	nc	nc
9/13/1998	17:11:29	36.1198333	-120.0653333	8.137	2.52	md	38	166	0.06937	0.07	nc	nc30196358	2016-12-29T07:08:29.930Z	9 km SSE of Huron, California	earthquake	0.26	0.17	0.11	56	reviewed	nc	nc
9/12/1998	5:15:57	35.138	-120.438	5.134	2.2	mc	0	111.8	0.2929	0.23	ci	ci9066571	2016-02-12T02:11:45.817Z	11km NNE of Nipomo, California	earthquake				6	reviewed	ci	ci
9/10/1998	9:05:00	36.2756667	-120.4153333	10.737	2.03	md	11	95	0.06396	0.04	nc	nc30195805	2016-12-29T06:45:45.379Z	15 km NNW of Coalinga, California	earthquake	0.64	0.39	0.11	13	reviewed	nc	nc
9/6/1998	22:49:52	36.3596667	-119.9301667	19.07	2.61	md	50	91	0.1667	0.12	nc	nc30195261	2016-12-29T06:24:59.010Z	7 km S of Lanare, California	earthquake	0.44	0.2	0.14	53	reviewed	nc	nc
9/2/1998	2:24:23	36.0181667	-119.7721667	17.676	2.2	md	22	145	0.2775	0.09	nc	nc30194419	2016-12-29T05:52:54.862Z	17 km E of Kettleman City, California	earthquake	0.77	0.95	0.02	4	reviewed	nc	nc
9/1/1998	21:55:52	35.9978333	-119.8188333	15.308	2.63	md	35	177	0.1757	0.13	nc	nc30194382	2016-12-29T05:50:51.490Z	12 km E of Kettleman City, California	earthquake	0.55	0.77	0.14	39	reviewed	nc	nc
9/1/1998	10:44:50	35.507	-119.24	5.241	2.09	mc	0	145.9	0.4304	0.317	ci	ci9065542	2016-02-11T21:04:19.368Z	3km ENE of Shafter, California	earthquake				16	reviewed	ci	ci
8/25/1998	9:35:18	35.556	-119.281	5.19	2.43	ml	0	154.6		0.472	ci	ci9064960	2016-02-11T21:03:53.144Z	6km N of Shafter, California	earthquake				42	reviewed	ci	ci
8/23/1998	21:55:07	36.1683333	-120.2703333	15.637	2.76	md	49	68	0.1	0.07	nc	nc30192896	2016-12-29T04:57:47.380Z	8 km ENE of Coalinga, California	earthquake	0.24	0.53	0.15	116	reviewed	nc	nc
8/15/1998	19:35:21	36.1616667	-120.2726667	12.082	2.07	md	38	151	0.1045	0.07	nc	nc30191448	2016-12-29T04:04:05.710Z	8 km ENE of Coalinga, California	earthquake	0.32	0.78	0.09	30	reviewed	nc	nc
8/13/1998	11:44:02	36.1638333	-120.2673333	15.537	3.7	mw	62	68	0.1054	0.08	nc	nc30191205	2016-12-29T03:35:36.970Z	8 km ENE of Coalinga, California	earthquake	0.17	0.43		3	reviewed	nc	nc
8/13/1998	11:43:15	36.1703333	-120.2671667	16.937	2.82	md	39	68	0.1	0.07	nc	nc30191210	2016-12-29T03:35:16.050Z	9 km ENE of Coalinga, California	earthquake	0.32	0.64	0.11	39	reviewed	nc	nc
8/11/1998	2:53:16	36.071	-120.0166667	8.791	2.16	md	34	183	0.07568	0.13	nc	nc30190216	2016-12-29T03:00:21.320Z	8 km NW of Kettleman City, California	earthquake	0.43	0.32	0.15	19	reviewed	nc	nc
8/10/1998	10:41:57	35.047	-118.919	9.631	2.58	ml	0	84.2		0.271	ci	ci9063530	2016-02-11T23:36:52.574Z	12km N of Grapevine, California	earthquake		0.684		97	reviewed	ci	ci
8/8/1998	19:59:17	36.1053333	-120.0223333	8.037	2.98	md	51	211	0.08378	0.08	nc	nc30189900	2016-12-29T02:39:46.230Z	12 km NNW of Kettleman City, California	earthquake	0.41	0.22	0.08	94	reviewed	nc	nc
8/7/1998	22:23:31	36.04	-120.0405	11.861	2.34	md	49	104	0.06036	0.07	nc	nc30189756	2016-12-29T02:30:50.340Z	7 km WNW of Kettleman City, California	earthquake	0.33	0.23	0.16	46	reviewed	nc	nc
7/29/1998	5:09:03	35.7771667	-120.3268333	8.118	2.38	md	49	43	0.05766	0.03	nc	nc30187706	2016-12-29T00:54:44.130Z	14 km NNE of Shandon, California	earthquake	0.13	0.26	0.12	63	reviewed	nc	nc
7/22/1998	3:18:55	36.2496667	-120.1133333	6.171	2.97	md	5	178	0.02342	0.03	nc	nc51059464	2016-12-29T00:05:49.180Z	5 km N of Huron, California	earthquake	1.59	0.28	0.43	4	reviewed	nc	nc
7/18/1998	12:34:26	36.3681667	-120.0293333	10.591	2.48	md	6	104	0.2775	0.24	nc	nc51059109	2016-12-28T23:30:28.978Z	11 km SW of Lanare, California	earthquake	5.23	19.46	0.02	3	reviewed	nc	nc
7/12/1998	18:01:34	35.5488333	-120.8015	2.253	2.19	md	51	46	0.08739	0.08	nc	nc30184135	2016-12-28T21:58:51.990Z	8 km W of Templeton, California	earthquake	0.15	0.91	0.13	42	reviewed	nc	nc
7/10/1998	16:30:24	34.866	-119.41	11.537	2.13	mc	0	57.2		0.31	ci	ci9060036	2016-02-13T05:49:28.762Z	22km S of Maricopa, California	earthquake		0.743		26	reviewed	ci	ci
7/1/1998	20:25:19	36.083	-120.2301667	10.706	2.37	md	48	67	0.1	0.08	nc	nc30182425	2016-12-28T20:57:12.510Z	12 km NW of Avenal, California	earthquake	0.16	0.33	0.14	60	reviewed	nc	nc
6/26/1998	12:16:54	36.0803333	-120.037	8.521	2.81	md	59	175	0.06216	0.12	nc	nc30181629	2016-12-28T20:22:24.540Z	10 km NW of Kettleman City, California	earthquake	0.27	0.23	0.08	77	reviewed	nc	nc
6/24/1998	10:36:48	35.015	-119.307	4.898	2.07	mc	0	226		0.281	ci	ci9058044	2016-02-11T23:33:40.787Z	10km ESE of Maricopa, California	earthquake				17	reviewed	ci	ci
6/21/1998	15:32:54	36.158	-119.742	5.881	4	mh	0	198.5		1.646	ci	ci9057864	2016-02-12T22:15:27.253Z	16km SSE of Lemoore, California	earthquake				0	reviewed	ci	ci
6/18/1998	18:55:38	35.064	-118.891	4.784	2.04	mc	0	228.3		0.176	ci	ci9057624	2016-02-13T00:47:45.224Z	14km NNE of Grapevine, California	earthquake				17	reviewed	ci	ci
6/11/1998	19:29:14	36.133	-120.1205	7.577	2.17	md	26	139	0.07207	0.06	nc	nc30178782	2016-12-28T17:56:52.270Z	7 km SSW of Huron, California	earthquake	0.26	0.18	0.09	26	reviewed	nc	nc
6/10/1998	19:25:36	35.6083333	-120.8601667	1.063	2.38	md	28	54	0.03243	0.17	nc	nc30178451	2016-12-28T17:25:19.185Z	13 km S of Lake Nacimiento, California	earthquake	0.29	0.75	0.28	14	reviewed	nc	nc
6/2/1998	9:15:42	36.0043333	-120.5573333	4.655	2.18	md	41	149	0.04685	0.04	nc	nc30176787	2016-12-28T15:17:39.910Z	16 km NW of Parkfield, California	earthquake	0.21	0.2	0.13	31	reviewed	nc	nc
5/24/1998	1:03:03	36.1388333	-120.1703333	7.656	2.5	md	38	115	0.09189	0.05	nc	nc30175369	2016-12-28T14:34:16.530Z	9 km SW of Huron, California	earthquake	0.35	0.44	0.16	62	reviewed	nc	nc
5/21/1998	0:50:00	35.929	-120.1955	17.841	2.01	md	22	231	0.1	0.05	nc	nc30174882	2016-12-28T14:16:17.389Z	10 km SW of Avenal, California	earthquake	0.7	0.42	0.12	18	reviewed	nc	nc
5/6/1998	18:32:20	36.2256667	-120.3508333	10.718	2.55	md	47	55	0.02432	0.09	nc	nc30172852	2016-12-28T13:13:59.270Z	9 km N of Coalinga, California	earthquake	0.18	0.43	0.34	53	reviewed	nc	nc
5/6/1998	18:31:02	36.2303333	-120.3511667	10.608	2.16	md	22	133	0.01982	0.13	nc	nc30173155	2016-12-28T13:13:44.190Z	10 km N of Coalinga, California	earthquake	0.69	1.35	0.32	19	reviewed	nc	nc
5/6/1998	18:30:56	36.2258333	-120.3493333	10.457	2.65	md	23	78	0.02432	0.08	nc	nc30173143	2016-12-28T13:13:29.558Z	9 km N of Coalinga, California	earthquake	0.3	0.33	0.04	5	reviewed	nc	nc
5/3/1998	18:00:13	34.8	-120.399	5.415	2.16	mc	0	137.1		0.251	ci	ci9052661	2016-02-12T02:04:47.697Z	8km SSE of Orcutt, California	earthquake				11	reviewed	ci	ci
5/1/1998	16:43:51	36.1321667	-120.218	8.117	3	ml	40	86	0.1126	0.06	nc	nc569736	2016-12-28T12:53:45.860Z	12 km E of Coalinga, California	earthquake	0.19	0.44		3	reviewed	nc	nc
5/1/1998	2:21:37	35.352	-119.337	4.764	2.3	mc	0	225.5		0.221	ci	ci9052342	2016-02-11T20:56:24.401Z	13km ESE of Buttonwillow, California	earthquake				21	reviewed	ci	ci
5/1/1998	0:07:04	34.927	-119.106	4.775	2.29	mc	0	136.5		0.223	ci	ci9052352	2016-02-12T04:32:04.941Z	10km NNE of Pine Mountain Club, California	earthquake				29	reviewed	ci	ci
4/29/1998	23:23:19	36.0063333	-119.804	19.126	2.17	md	13	144	0.2541	0.06	nc	nc30172134	2016-12-28T12:44:20.154Z	14 km E of Kettleman City, California	earthquake	0.48	1.21	0.4	2	reviewed	nc	nc
4/24/1998	22:08:14	34.927	-119.011	8.972	2.68	ml	0	70.4		0.271	ci	ci9051671	2016-02-12T11:52:06.195Z	8km WSW of Grapevine, California	earthquake		0.654		6	reviewed	ci	ci
4/22/1998	17:40:18	35.295	-119.301	5.225	2.6	mc	0	118		0.378	ci	ci9051436	2016-02-12T17:05:15.226Z	17km SW of Rosedale, California	earthquake				53	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
4/15/1998	8:52:32	36.0131667	-120.5671667	4.705	2.57	md	50	76	0.04595	0.04	nc	nc567463	2016-12-28T11:43:39.920Z	17 km NW of Parkfield, California	earthquake	0.18	0.21	0.12	47	reviewed	nc	nc
4/3/1998	19:30:01	35.5258333	-120.0766667	10.696	2.19	md	32	133	0.05315	0.03	nc	nc565847	2016-12-28T11:02:58.203Z	30 km ESE of Shandon, California	earthquake	0.17	0.33	0.09	32	reviewed	nc	nc
3/27/1998	6:02:55	36.217	-119.7926667	18.327	2.65	md	75	74	0.3009	0.21	nc	nc564136	2016-12-28T10:36:18.820Z	4 km NE of Stratford, California	earthquake	0.31	0.64	0.2	60	reviewed	nc	nc
3/16/1998	1:46:05	36.1146667	-120.1171667	6.297	2.38	md	29	215	0.05405	0.04	nc	nc562090	2016-12-28T09:29:01.881Z	9 km S of Huron, California	earthquake	0.54	0.3	0.08	39	reviewed	nc	nc
3/4/1998	4:49:13	35.3028333	-120.5323333	4.894	2.1	md	43	45	0.06036	0.05	nc	nc559213	2016-12-28T08:02:28.180Z	11 km E of San Luis Obispo, California	earthquake	0.19	0.37	0.12	23	reviewed	nc	nc
2/15/1998	6:36:55	36.0648333	-120.6036667	10.001	2.55	md	45	37	0.007207	0.06	nc	nc556839	2016-12-28T06:09:01.070Z	23 km WSW of Coalinga, California	earthquake	0.19	0.3	0.11	67	reviewed	nc	nc
2/12/1998	14:23:46	36.2538333	-120.3588333	8.789	3.02	ml	47	115	0.01351	0.06	nc	nc556526	2016-12-28T05:55:44.610Z	12 km N of Coalinga, California	earthquake	0.21	0.24		4	reviewed	nc	nc
2/2/1998	14:55:43	36.0035	-120.5616667	4.545	2.46	md	47	45	0.04324	0.05	nc	nc554790	2016-12-28T05:10:36.800Z	16 km NW of Parkfield, California	earthquake	0.18	0.19	0.11	55	reviewed	nc	nc
1/30/1998	17:35:38	35.893	-120.4351667	10.54	2.03	md	40	51	0.02973	0.05	nc	nc554264	2016-12-28T04:54:26.090Z	0 km SSW of Parkfield, California	earthquake	0.16	0.22	0.13	38	reviewed	nc	nc
1/21/1998	20:15:41	36.0225	-120.58	4.655	2.43	md	47	74	0.04775	0.07	nc	nc552939	2016-12-28T03:57:25.160Z	19 km NW of Parkfield, California	earthquake	0.18	0.22	0.1	56	reviewed	nc	nc
1/20/1998	10:18:19	36.2038333	-120.2795	10.528	2.23	md	43	163	0.06847	0.05	nc	nc552746	2016-12-28T03:46:34.020Z	10 km NE of Coalinga, California	earthquake	0.24	0.41	0.13	38	reviewed	nc	nc
1/20/1998	4:10:44	36.1885	-120.2845	6.768	2.17	md	32	156	0.07748	0.06	nc	nc552702	2016-12-28T03:42:05.830Z	8 km NE of Coalinga, California	earthquake	0.33	0.76	0.11	39	reviewed	nc	nc
1/17/1998	0:20:25	36.0085	-120.036	9.838	2.11	md	31	204	0.07928	0.09	nc	nc552238	2016-12-28T03:11:18.090Z	6 km W of Kettleman City, California	earthquake	0.37	0.42	0.09	30	reviewed	nc	nc
1/15/1998	21:45:07	36.0211667	-120.5788333	4.585	2.57	md	47	86	0.04685	0.06	nc	nc552027	2016-12-28T02:59:45.880Z	18 km NW of Parkfield, California	earthquake	0.18	0.24	0.07	53	reviewed	nc	nc
1/13/1998	21:16:46	35.021	-118.949	6.226	2.44	mc	0	83.6		0.322	ci	ci9039762	2016-02-13T03:11:49.222Z	9km NNW of Grapevine, California	earthquake		2.96		91	reviewed	ci	ci
1/10/1998	15:23:48	36.0283333	-120.5831667	4.655	2.83	md	57	55	0.04234	0.06	nc	nc551001	2016-12-28T01:35:31.690Z	19 km NW of Parkfield, California	earthquake	0.16	0.24	0.09	81	reviewed	nc	nc
1/6/1998	21:51:49	36.055	-120.6133333	3.741	2.07	md	44	73	0.01982	0.08	nc	nc550085	2016-12-28T00:02:15.070Z	23 km NW of Parkfield, California	earthquake	0.17	0.25	0.15	29	reviewed	nc	nc
1/6/1998	14:08:48	36.1433333	-120.2026667	7.738	2.11	md	12	172	0.1117	0.11	nc	nc40058863	2016-12-27T23:49:36.486Z	11 km SW of Huron, California	earthquake	0.47	0.77	0.08	9	reviewed	nc	nc
1/6/1998	14:07:57	36.196	-120.099	5.093	2.23	mc	0	187.8		0.462	ci	ci9038814	2016-02-12T16:56:58.080Z	1km SSE of Huron, California	earthquake				15	reviewed	ci	ci
1/4/1998	9:27:40	35.98	-120.5253333	0.572	2.11	md	5	153	0.06396	0.4	nc	nc40058037	2016-12-27T22:24:06.270Z	12 km NW of Parkfield, California	earthquake	2.27	31.84	0.85	6	reviewed	nc	nc
1/1/1998	19:12:36	35.9815	-120.5443333	3.803	2.1	md	41	85	0.04505	0.06	nc	nc30227077	2016-12-27T20:22:07.430Z	13 km NW of Parkfield, California	earthquake	0.2	0.25	0.11	13	reviewed	nc	nc
1/1/1998	7:06:00	35.9838333	-120.5418333	3.493	2.1	md	26	134	0.04505	0.05	nc	nc547969	2016-12-27T19:20:16.315Z	13 km NW of Parkfield, California	earthquake	0.24	0.38	0.11	19	reviewed	nc	nc
12/31/1997	2:30:52	35.6748333	-120.759	-0.396	2.91	md	4	158	0.2847	0.25	nc	nc40054953	2016-12-27T17:18:29.848Z	8 km NW of Paso Robles, California	earthquake	1.88	11.07	0.01	2	reviewed	nc	nc
12/24/1997	23:56:02	35.8706667	-119.7751667	5.455	2.14	md	15	141	0.382	0.17	nc	nc546100	2016-12-27T15:01:42.468Z	22 km SE of Kettleman City, California	earthquake	0.71	1.54	0.08	3	reviewed	nc	nc
12/20/1997	20:57:15	35.4175	-120.796	4.454	2.68	md	8	170	0.07658	0.42	nc	nc51037629	2016-12-27T14:13:10.171Z	7 km NE of Morro Bay, California	earthquake	3.17	12.5	0.15	8	reviewed	nc	nc
12/20/1997	19:48:10	35.6631667	-120.4126667	9.209	2.52	md	9	174	0.07117	0.23	nc	nc51037603	2016-12-27T14:11:52.547Z	3 km WNW of Shandon, California	earthquake	1.35	2.48	0.32	10	reviewed	nc	nc
12/17/1997	14:00:22	35.709	-120.5986667	2.182	2.74	md	4	225	0.4532	0	nc	nc51036946	2016-12-27T13:12:21.274Z	9 km NW of Whitley Gardens, California	earthquake	1.37	8.28		1	reviewed	nc	nc
12/12/1997	11:36:14	36.1165	-120.2985	9.701	3.44	ml	62	92	0.1631	0.09	nc	nc543069	2016-12-27T12:00:27.740Z	6 km ESE of Coalinga, California	earthquake	0.16	0.4		1	reviewed	nc	nc
12/12/1997	7:37:19	35.644	-120.5288333	56.342	2.39	md	5	186	0.1523	0.06	nc	nc51035779	2016-12-27T11:56:49.965Z	2 km SW of Whitley Gardens, California	earthquake	4.05	6.36	0.21	5	reviewed	nc	nc
12/12/1997	7:23:26	35.7861667	-120.68	4.471	2.31	md	7	191	0.1396	0.47	nc	nc40051441	2016-12-27T11:56:38.001Z	4 km NNE of San Miguel, California	earthquake	2.14	11.36	0.05	4	reviewed	nc	nc
12/12/1997	6:48:57	35.7583333	-120.6108333	4.89	2.23	md	12	187	0.1919	0.67	nc	nc51035713	2016-12-27T11:56:17.432Z	7 km E of San Miguel, California	earthquake	3.88	7.77	0.26	3	reviewed	nc	nc
12/7/1997	13:21:04	36.006	-119.8295	24.346	2.33	md	22	127	0.3964	0.12	nc	nc541758	2016-12-27T10:18:59.079Z	11 km E of Kettleman City, California	earthquake	0.5	0.57	0.03	2	reviewed	nc	nc
12/3/1997	13:36:39	36.1713333	-120.1545	13.174	2.09	md	33	106	0.2396	0.12	nc	nc540656	2016-12-27T08:52:11.447Z	5 km SW of Huron, California	earthquake	0.54	0.98	0.17	10	reviewed	nc	nc
12/2/1997	22:06:43	35.8461667	-119.7951667	7.055	2.3	md	12	130	0.3523	0.07	nc	nc540467	2016-12-27T08:32:15.044Z	23 km SE of Kettleman City, California	earthquake	0.67	1.18	0.14	13	reviewed	nc	nc
12/2/1997	21:12:11	34.874	-119.377	12.534	2	mc	0	56.9		0.236	ci	ci9033402	2016-02-12T16:54:11.634Z	21km S of Maricopa, California	earthquake		0.575		27	reviewed	ci	ci
11/29/1997	3:00:32	35.025	-119.517	12.517	2.27	mc	0	61.2		0.318	ci	ci9033003	2016-02-13T08:10:48.879Z	11km WSW of Maricopa, California	earthquake		0.363		62	reviewed	ci	ci
11/27/1997	21:59:46	36.1133333	-119.9771667	0.763	2.05	md	11	170	0.345	0.17	nc	nc538796	2016-12-27T05:39:42.494Z	11 km N of Kettleman City, California	earthquake	0.93	1.99	0.06	2	reviewed	nc	nc
11/27/1997	0:11:13	36.0753333	-120.167	13.885	2.28	md	36	86	0.04865	0.07	nc	nc538550	2016-12-27T05:18:23.940Z	8 km NNW of Avenal, California	earthquake	0.24	0.35	0.11	44	reviewed	nc	nc
11/21/1997	17:15:03	36.0843333	-120.2063333	13.576	2.27	md	25	75	0.08198	0.04	nc	nc536586	2016-12-27T00:48:01.431Z	11 km NW of Avenal, California	earthquake	0.37	0.75	0.11	31	reviewed	nc	nc
11/12/1997	21:36:06	36.0676667	-120.168	8.176	2.5	md	48	119	0.04775	0.08	nc	nc533843	2016-12-26T20:46:55.160Z	7 km NNW of Avenal, California	earthquake	0.24	0.46	0.11	49	reviewed	nc	nc
11/10/1997	0:58:34	36.2245	-120.4755	2.275	2.54	md	5	209	0.1099	0.01	nc	nc40040890	2016-12-26T19:58:26.712Z	14 km NW of Coalinga, California	earthquake	1.72	5.37	1.15	2	reviewed	nc	nc
11/9/1997	8:33:52	36.0981667	-120.1615	8.346	2.38	md	44	144	0.05586	0.04	nc	nc532834	2016-12-26T19:52:25.220Z	Central California	earthquake	0.26	0.45	0.12	38	reviewed	nc	nc
11/8/1997	12:15:46	35.837	-119.7743333	7.965	2.23	md	24	93	0.3568	0.19	nc	nc532605	2016-12-26T19:42:07.828Z	25 km SE of Kettleman City, California	earthquake	0.51	2.5	0.14	13	reviewed	nc	nc
11/6/1997	4:55:46	35.8538333	-119.7806667	1.595	2.15	md	21	131	0.3658	0.1	nc	nc532000	2016-12-26T19:09:45.451Z	23 km SE of Kettleman City, California	earthquake	0.28	2.13	0.15	5	reviewed	nc	nc
11/1/1997	13:05:40	35.8668333	-119.6475	9.844	2.2	md	14	164	0.4532	0.09	nc	nc30149296	2016-12-26T17:58:58.738Z	14 km W of Alpaugh, California	earthquake	0.53	1.48	0.19	10	reviewed	nc	nc
10/31/1997	1:46:56	36.2715	-120.435	10.651	2.06	md	16	131	0.07748	0.04	nc	nc530026	2016-12-26T17:45:14.792Z	16 km NNW of Coalinga, California	earthquake	0.36	0.48	0.09	12	reviewed	nc	nc
10/30/1997	23:09:42	36.172	-119.634	7.96	2.73	md	56	50	0.3721	0.33	nc	nc529981	2016-12-26T17:44:05.390Z	10 km NW of Corcoran, California	earthquake	0.51	1.13	0.11	67	reviewed	nc	nc
10/29/1997	19:05:45	35.896	-119.121	4.478	2.35	mc	0	192	0.4845	0.21	ci	ci9028830	2016-02-13T03:07:32.486Z	17km ESE of Pixley, California	earthquake				38	reviewed	ci	ci
10/14/1997	14:13:19	35.37	-118.839	3.085	2.19	mc	0	117.3	0.1852	0.177	ci	ci9026360	2016-02-12T11:39:36.856Z	14km NNE of Lamont, California	earthquake		0.34		50	reviewed	ci	ci
10/14/1997	10:21:31	35.9356667	-119.8438333	9.618	2.42	md	12	109	0.3541	0.34	nc	nc30150184	2016-12-26T15:01:23.963Z	13 km SE of Kettleman City, California	earthquake	1.39	5.85		1	reviewed	nc	nc
10/11/1997	19:18:59	36.031	-120.5846667	4.455	2.3	md	45	75	0.03874	0.05	nc	nc525253	2016-12-26T14:35:39.820Z	20 km NW of Parkfield, California	earthquake	0.18	0.23	0.11	49	reviewed	nc	nc
10/9/1997	4:11:41	35.113	-119.04	19.672	2.77	ml	0	109.1		0.24	ci	ci3297313	2016-02-13T08:08:07.461Z	20km SW of Lamont, California	earthquake		0.636		80	reviewed	ci	ci
10/8/1997	3:34:15	35.9711667	-120.5215	7.793	3.49	ml	62	46	0.02432	0.04	nc	nc524646	2016-12-26T13:58:41.520Z	11 km NW of Parkfield, California	earthquake	0.13	0.2		1	reviewed	nc	nc
10/7/1997	20:49:25	35.5926667	-120.7818333	3.293	2.17	md	50	34	0.08378	0.09	nc	nc524597	2016-12-26T13:53:30.000Z	8 km NW of Templeton, California	earthquake	0.12	0.68	0.14	48	reviewed	nc	nc
10/5/1997	23:28:14	35.9668333	-120.5175	7.883	3.46	ml	63	32	0.01892	0.04	nc	nc524218	2016-12-26T13:11:12.270Z	10 km NW of Parkfield, California	earthquake	0.13	0.19		0	reviewed	nc	nc
10/4/1997	3:55:52	35.8515	-119.7886667	6.562	2.39	md	13	131	0.3604	0.15	nc	nc30144604	2016-12-26T13:02:23.695Z	23 km SE of Kettleman City, California	earthquake	0.56	4.13	0.15	14	reviewed	nc	nc
9/27/1997	7:28:42	36.3316667	-119.847	-0.273	2.48	md	73	52	0.209	0.77	nc	nc522754	2016-12-26T11:36:53.420Z	6 km WNW of Lemoore, California	earthquake	1.36	4.42	0.18	65	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/19/1997	7:20:26	36.0375	-120.5943333	4.485	2.5	md	52	79	0.03153	0.07	nc	nc521725	2016-12-26T10:42:58.630Z	21 km NW of Parkfield, California	earthquake	0.17	0.26	0.09	61	reviewed	nc	nc
9/18/1997	9:57:43	36.1835	-120.3018333	9.734	2.04	md	34	90	0.07387	0.04	nc	nc521595	2016-12-26T10:38:03.288Z	7 km NE of Coalinga, California	earthquake	0.2	0.31	0.11	19	reviewed	nc	nc
9/12/1997	16:29:06	36.2286667	-120.3555	9.509	2.19	md	27	141	0.02342	0.04	nc	nc520871	2016-12-26T10:00:39.706Z	9 km N of Coalinga, California	earthquake	0.24	0.27	0.07	24	reviewed	nc	nc
9/12/1997	16:20:44	36.2333333	-120.3541667	10.344	3.49	ml	50	56	0.01802	0.06	nc	nc520870	2016-12-26T10:00:18.420Z	10 km N of Coalinga, California	earthquake	0.13	0.27		1	reviewed	nc	nc
9/12/1997	12:29:34	36.0145	-120.5725	4.455	2.41	md	43	132	0.04414	0.04	nc	nc520852	2016-12-26T09:58:47.870Z	Central California	earthquake	0.21	0.22	0.14	40	reviewed	nc	nc
9/12/1997	7:17:09	36.1993333	-120.3068333	10.29	2.14	md	44	56	0.05766	0.04	nc	nc520826	2016-12-26T09:57:19.160Z	8 km NE of Coalinga, California	earthquake	0.14	0.32	0.12	34	reviewed	nc	nc
9/7/1997	21:18:28	35.493	-120.7921667	4.918	2.56	md	58	46	0.08108	0.11	nc	nc520253	2016-12-26T09:36:21.080Z	10 km SW of Templeton, California	earthquake	0.15	0.51	0.11	72	reviewed	nc	nc
9/5/1997	10:48:14	35.111	-119.089	9.532	2.12	mc	0	101.1	0.143	0.364	ci	ci9022322	2016-02-12T06:41:25.873Z	23km SW of Lamont, California	earthquake		1.225		57	reviewed	ci	ci
9/5/1997	8:20:47	34.867	-119.248	9.544	2.3	mc	0	81.9	0.02648	0.284	ci	ci9022312	2016-02-12T21:56:10.033Z	9km WNW of Pine Mountain Club, California	earthquake		0.509		71	reviewed	ci	ci
8/25/1997	2:51:42	35.779	-119.8393333	10.088	2.26	md	26	92	0.2541	0.1	nc	nc518581	2016-12-26T08:38:11.290Z	22 km NW of Lost Hills, California	earthquake	0.64	1.19	0.17	20	reviewed	nc	nc
8/20/1997	19:28:17	36.1271667	-120.2201667	8.457	2.44	md	34	84	0.1117	0.06	nc	nc518036	2016-12-26T08:21:01.760Z	12 km E of Coalinga, California	earthquake	0.18	0.47	0.17	66	reviewed	nc	nc
8/18/1997	18:52:04	36.274	-120.3293333	8.124	2.32	md	37	67	0.02703	0.09	nc	nc517713	2016-12-26T08:12:25.950Z	15 km N of Coalinga, California	earthquake	0.25	0.16	0.11	22	reviewed	nc	nc
8/15/1997	1:37:55	35.5428333	-120.864	5.034	2.13	md	30	40	0.03604	0.15	nc	nc517084	2016-12-26T07:54:32.490Z	11 km NNE of Cayucos, California	earthquake	0.24	0.57	0.37	17	reviewed	nc	nc
8/10/1997	17:01:30	35.5303333	-120.077	10.876	2.9	md	39	130	0.04865	0.06	nc	nc516543	2016-12-26T07:38:29.830Z	Central California	earthquake	0.24	0.37	0.08	71	reviewed	nc	nc
8/9/1997	14:18:20	35.5271667	-120.0781667	10.756	2.55	md	35	130	0.05225	0.03	nc	nc516477	2016-12-26T07:35:11.330Z	30 km ESE of Shandon, California	earthquake	0.16	0.33	0.09	50	reviewed	nc	nc
8/7/1997	14:28:00	35.27	-118.902	4.857	2.22	mc	0	230	0.2829	0.108	ci	ci9018945	2016-02-12T21:54:23.746Z	2km NE of Lamont, California	earthquake				21	reviewed	ci	ci
8/1/1997	5:01:43	34.724	-120.126	-0.959	2.08	mc	0	94		0.392	ci	ci9018336	2016-02-11T23:13:17.944Z	6km N of Los Olivos, California	earthquake		1.092		14	reviewed	ci	ci
7/26/1997	10:39:41	36.1898333	-120.2221667	13.51	2.36	md	35	82	0.1144	0.05	nc	nc514304	2016-12-26T05:49:01.120Z	10 km W of Huron, California	earthquake	0.22	0.64	0.17	58	reviewed	nc	nc
7/24/1997	23:43:30	35.8413333	-120.3903333	6.158	3.32	ml	48	34	0.03153	0.03	nc	nc514162	2016-12-26T05:43:06.120Z	7 km SSE of Parkfield, California	earthquake	0.14	0.24		0	reviewed	nc	nc
7/20/1997	21:05:07	35.998	-118.85	4.478	2.24	mc	0	167.5		0.205	ci	ci9016896	2016-02-12T11:34:51.686Z	17km ESE of Porterville, California	earthquake				39	reviewed	ci	ci
7/8/1997	5:38:30	36.2203333	-119.8903333	24.147	2.52	md	35	147	0.2387	0.27	nc	nc511538	2016-12-26T03:35:13.308Z	4 km SSE of Lemoore Station, California	earthquake	1.51	2.32	0.16	18	reviewed	nc	nc
7/4/1997	1:15:32	36.0325	-120.0601667	10.247	2.1	md	32	177	0.04955	0.05	nc	nc511066	2016-12-26T03:08:24.492Z	6 km ENE of Avenal, California	earthquake	0.28	0.19	0.14	24	reviewed	nc	nc
6/29/1997	21:55:51	35.512	-119.429	5.044	2.08	mc	0	187.3	0.3618	0.42	ci	ci9014534	2016-02-12T16:43:34.674Z	12km SW of Wasco, California	earthquake				28	reviewed	ci	ci
6/19/1997	18:37:37	35.927	-120.4748333	5.053	2.22	md	34	69	0.01892	0.05	nc	nc509163	2016-12-26T02:16:13.190Z	4 km NW of Parkfield, California	earthquake	0.2	0.24	0.17	30	reviewed	nc	nc
6/13/1997	23:30:56	35.184	-119.401	5.171	2.45	mc	0	103.2		0.418	ci	ci9013183	2016-02-12T11:32:33.833Z	7km NE of Taft, California	earthquake		3.787		70	reviewed	ci	ci
6/12/1997	11:16:43	36.2281667	-120.3506667	9.724	2.12	md	54	56	0.02252	0.05	nc	nc508391	2016-12-26T01:55:54.550Z	Central California	earthquake	0.14	0.18	0.07	37	reviewed	nc	nc
6/2/1997	21:47:42	35.302	-119.891	9.56	2.48	mc	0	78.8		0.292	ci	ci9012275	2016-02-11T23:09:52.403Z	11km ESE of Simmler, California	earthquake		1.207		51	reviewed	ci	ci
6/1/1997	10:38:28	35.285	-119.889	0.1	2.02	mc	0	128.5		0.217	ci	ci9012132	2016-02-13T05:24:56.038Z	12km SE of Simmler, California	earthquake		1.277		18	reviewed	ci	ci
5/30/1997	19:54:25	35.282	-119.897	-0.23	2	mc	0	124		0.203	ci	ci9012011	2016-02-13T07:59:00.567Z	12km SE of Simmler, California	earthquake		1.479		21	reviewed	ci	ci
5/26/1997	17:08:43	35.9386667	-120.484	9.803	2.22	md	44	79	0.02162	0.05	nc	nc506523	2016-12-26T01:03:51.210Z	6 km NW of Parkfield, California	earthquake	0.19	0.19	0.11	45	reviewed	nc	nc
5/26/1997	13:27:16	35.9358333	-120.4896667	9.903	3.1	ml	68	32	0.02072	0.08	nc	nc506494	2016-12-26T01:03:35.780Z	6 km NW of Parkfield, California	earthquake	0.14	0.2		0	reviewed	nc	nc
5/23/1997	16:08:46	35.4376667	-120.542	0.656	2.36	md	5	289	0.1252	0.01	nc	nc68003384	2016-12-26T00:54:06.891Z	6 km ENE of Garden Farms, California	earthquake	2.13	5.62	0.07	2	reviewed	nc	nc
5/22/1997	3:23:38	36.2493333	-120.4046667	7.619	2.33	md	42	49	0.05045	0.06	nc	nc505981	2016-12-26T00:49:12.320Z	12 km NNW of Coalinga, California	earthquake	0.11	0.17	0.12	38	reviewed	nc	nc
5/21/1997	4:53:33	35.9743333	-120.5245	10.448	2.84	md	58	47	0.02793	0.04	nc	nc505908	2016-12-26T00:46:31.970Z	11 km NW of Parkfield, California	earthquake	0.15	0.2	0.08	82	reviewed	nc	nc
5/21/1997	0:37:47	35.729	-119.264	4.764	2.1	mc	0	187.9	0.4883	0.336	ci	ci9011098	2016-02-12T16:41:10.470Z	5km SSW of Delano, California	earthquake				30	reviewed	ci	ci
5/18/1997	21:45:33	34.814	-120.308	0.765	3.15	ml	0	90.3		0.262	ci	ci9010927	2016-02-13T05:24:10.699Z	8km NNW of Los Alamos, California	earthquake		2.114		87	reviewed	ci	ci
5/15/1997	6:17:28	35.988	-120.5485	4.883	2.12	md	24	86	0.04775	0.04	nc	nc30133535	2016-12-26T00:27:31.937Z	14 km NW of Parkfield, California	earthquake	0.26	0.3	0.13	23	reviewed	nc	nc
5/14/1997	13:58:08	36.0695	-120.1596667	1.938	2.35	md	29	83	0.04144	0.08	nc	nc30133498	2016-12-26T00:25:11.110Z	7 km NNW of Avenal, California	earthquake	0.28	0.76	0.17	30	reviewed	nc	nc
5/12/1997	11:19:48	34.822	-120.314	-0.585	2.21	mc	0	91.6		0.275	ci	ci9010318	2016-02-13T10:27:34.968Z	9km NNW of Los Alamos, California	earthquake		2.909		29	reviewed	ci	ci
5/11/1997	10:17:49	36.0675	-120.157	2.838	2.16	md	36	81	0.03874	0.07	nc	nc504604	2016-12-26T00:12:51.233Z	7 km NNW of Avenal, California	earthquake	0.28	0.5	0.17	19	reviewed	nc	nc
5/10/1997	2:22:44	34.817	-120.316	0.675	2.36	mc	0	91.5		0.289	ci	ci9010129	2016-02-12T19:18:53.530Z	9km NNW of Los Alamos, California	earthquake		0.96		29	reviewed	ci	ci
5/9/1997	18:10:14	34.823	-120.301	-0.485	3	ml	0	89.6		0.264	ci	ci9010084	2016-02-11T23:08:34.237Z	9km NNW of Los Alamos, California	earthquake		1.512		47	reviewed	ci	ci
5/4/1997	6:54:04	35.107	-119.108	13.755	2.16	mc	0	96.1		0.289	ci	ci9009659	2016-02-13T02:56:16.806Z	24km NW of Grapevine, California	earthquake		0.416		67	reviewed	ci	ci
5/4/1997	2:49:58	35.034	-119.18	11.435	2.39	mc	0	93.3		0.347	ci	ci9009649	2016-02-13T07:56:56.948Z	20km E of Maricopa, California	earthquake		0.734		86	reviewed	ci	ci
5/1/1997	22:07:35	36.0493333	-120.6068333	3.481	2.84	md	54	42	0.02162	0.07	nc	nc503214	2016-12-25T23:44:57.250Z	22 km NW of Parkfield, California	earthquake	0.16	0.28	0.11	81	reviewed	nc	nc
4/30/1997	14:56:09	35.345	-119.326	5.225	2.42	mc	0	125.2	0.3094	0.371	ci	ci9009291	2016-02-12T06:33:26.034Z	14km ESE of Buttonwillow, California	earthquake				52	reviewed	ci	ci
4/21/1997	9:32:14	36.0246667	-119.8748333	10.542	2.3	md	45	156	0.1748	0.19	nc	nc502109	2016-12-25T23:10:59.940Z	8 km ENE of Kettleman City, California	earthquake	0.44	0.76	0.13	30	reviewed	nc	nc
4/19/1997	12:44:52	36.0603333	-120.0826667	9.481	2.8	md	71	144	0.02162	0.12	nc	nc501911	2016-12-25T23:03:24.070Z	7 km NE of Avenal, California	earthquake	0.17	0.24	0.1	82	reviewed	nc	nc
4/16/1997	11:49:07	35.343	-118.987	5.238	2.06	mc	0	173.5		0.31	ci	ci9007944	2016-02-13T02:54:54.634Z	4km ESE of Bakersfield, California	earthquake				40	reviewed	ci	ci
4/15/1997	0:53:46	36.2531667	-120.3573333	10.044	2.47	md	51	58	0.01261	0.05	nc	nc501302	2016-12-25T22:47:09.980Z	12 km N of Coalinga, California	earthquake	0.1	0.15	0.15	66	reviewed	nc	nc
4/14/1997	23:54:58	36.0798333	-120.6336667	5.371	3.45	md	62	38	0.03243	0.06	nc	nc501300	2016-12-25T22:46:48.430Z	25 km ENE of San Ardo, California	earthquake	0.14	0.3	0.08	115	reviewed	nc	nc
4/14/1997	23:05:22	36.0781667	-120.6356667	4.421	2.72	md	59	38	0.03333	0.07	nc	nc501298	2016-12-25T22:46:24.710Z	25 km ENE of San Ardo, California	earthquake	0.14	0.25	0.1	83	reviewed	nc	nc
4/10/1997	13:57:30	36.1271667	-120.2136667	6.217	2.26	md	43	88	0.1072	0.1	nc	nc500842	2016-12-25T22:24:58.050Z	13 km SW of Huron, California	earthquake	0.18	0.46	0.11	49	reviewed	nc	nc
4/9/1997	2:51:44	36.175	-120.1761667	6.807	2.29	md	30	105	0.1045	0.05	nc	nc500765	2016-12-25T22:20:39.817Z	7 km WSW of Huron, California	earthquake	0.3	0.57	0.12	29	reviewed	nc	nc
4/8/1997	10:01:26	35.033	-118.964	8.396	2.19	mc	0	85.6		0.291	ci	ci7064558	2016-02-12T06:31:51.119Z	10km NNW of Grapevine, California	earthquake		1.281		73	reviewed	ci	ci
4/5/1997	2:55:18	35.444	-118.761	11.972	2.11	mc	0	181.9	0.09913	0.131	ci	ci7064278	2016-02-12T06:31:37.826Z	24km E of Oildale, California	earthquake		0.906		32	reviewed	ci	ci
3/27/1997	23:39:36	35.249	-119.4168333	25.891	2.19	mc	19	130		0.27	ci	ci7063544	2016-04-02T16:14:20.183Z	12km NNE of Taft, CA	earthquake	8.96	31.61		35	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
3/23/1997	23:08:42	36.26	-120.4515	3.146	2.02	md	20	77	0.08829	0.05	nc	nc499166	2016-12-25T21:24:39.866Z	15 km NNW of Coalinga, California	earthquake	0.24	0.89	0.12	15	reviewed	nc	nc
3/21/1997	2:36:37	36.2256667	-120.3676667	10.288	2.35	md	38	44	0.03153	0.05	nc	nc498809	2016-12-25T21:15:10.950Z	9 km N of Coalinga, California	earthquake	0.17	0.18	0.12	40	reviewed	nc	nc
3/18/1997	17:43:29	35.9365	-120.4856667	5.243	2.31	md	41	95	0.02252	0.05	nc	nc498447	2016-12-25T21:09:03.110Z	Central California	earthquake	0.2	0.16	0.1	44	reviewed	nc	nc
3/18/1997	8:59:01	36.0005	-119.7358333	19.268	2.62	md	48	53	0.2261	0.2	nc	nc498393	2016-12-25T21:07:11.240Z	19 km SW of Corcoran, California	earthquake	0.3	0.49	0.1	55	reviewed	nc	nc
3/17/1997	2:56:57	35.092	-119.115	8.635	2.41	mc	0	94.8		0.328	ci	ci7062370	2016-02-12T16:37:29.998Z	24km NW of Grapevine, California	earthquake		1.849		62	reviewed	ci	ci
3/14/1997	18:27:33	36.2993333	-120.2361667	10.968	2.26	md	32	223	0.1	0.04	nc	nc498024	2016-12-25T20:56:58.930Z	16 km NW of Huron, California	earthquake	0.48	0.19	0.1	46	reviewed	nc	nc
3/14/1997	9:32:51	35.105	-119.112	9.107	2.32	mc	0	150.4		0.258	ci	ci7062092	2016-02-13T07:53:13.814Z	24km NW of Grapevine, California	earthquake		1.245		75	reviewed	ci	ci
3/12/1997	11:47:44	35.476	-120.7731667	4.115	2.09	md	49	56	0.09009	0.11	nc	nc497577	2016-12-25T20:48:25.940Z	9 km W of Atascadero, California	earthquake	0.14	0.59	0.15	40	reviewed	nc	nc
3/11/1997	3:30:37	35.075	-119.124	16.892	2.02	mc	0	105.9		0.223	ci	ci7061743	2016-02-11T20:26:06.022Z	23km NW of Grapevine, California	earthquake		1.588		31	reviewed	ci	ci
3/11/1997	3:29:49	35.066	-119.114	15.712	2.08	mc	0	92.4		0.252	ci	ci7061737	2016-02-11T23:04:48.936Z	22km NW of Grapevine, California	earthquake		1.06		47	reviewed	ci	ci
2/28/1997	9:59:19	36.1525	-120.0931667	7.513	2.19	md	29	185	0.09279	0.06	nc	nc496445	2016-12-25T20:08:26.418Z	5 km S of Huron, California	earthquake	0.47	0.33	0.15	28	reviewed	nc	nc
2/27/1997	10:25:15	36.2178333	-120.3511667	10.607	2.02	md	16	105	0.03243	0.07	nc	nc496328	2016-12-25T20:05:21.824Z	8 km N of Coalinga, California	earthquake	0.32	0.36	0.11	14	reviewed	nc	nc
2/24/1997	13:04:48	35.024	-119.081	14.334	2.3	mc	0	90.4		0.333	ci	ci3294849	2016-02-12T13:58:30.489Z	16km WNW of Grapevine, California	earthquake		0.556		30	reviewed	ci	ci
2/24/1997	12:53:00	35.027	-119.068	12.724	2.07	mc	0	97.7		0.247	ci	ci7060292	2016-02-13T02:51:08.671Z	16km NW of Grapevine, California	earthquake		0.797		28	reviewed	ci	ci
2/21/1997	6:23:03	36.1476667	-120.2701667	5.199	2.56	md	36	104	0.1171	0.08	nc	nc495718	2016-12-25T19:44:06.140Z	8 km E of Coalinga, California	earthquake	0.15	0.52	0.13	75	reviewed	nc	nc
2/10/1997	5:16:11	35.722	-119.6	5.044	2.02	mc	0	223	0.409	0.258	ci	ci7058992	2016-02-11T20:23:46.912Z	21km SSW of Alpaugh, California	earthquake				10	reviewed	ci	ci
2/2/1997	2:20:20	36.198	-120.2808333	9.534	3.9	mw	63	62	0.07207	0.07	nc	nc493647	2016-12-25T18:46:17.770Z	9 km NE of Coalinga, California	earthquake	0.15	0.32		3	reviewed	nc	nc
2/1/1997	2:17:28	35.8951667	-120.776	3.811	2.55	md	5	165	0.1568	0.02	nc	nc1227966	2016-12-25T18:42:42.687Z	4 km NNE of Bradley, California	earthquake	1.57	3.04	0.41	7	reviewed	nc	nc
1/25/1997	11:55:27	36.0663333	-120.6283333	0.711	2.05	md	23	82	0.02613	0.08	nc	nc492658	2016-12-25T18:24:46.560Z	25 km ENE of San Ardo, California	earthquake	0.21	0.57	0.15	23	reviewed	nc	nc
1/22/1997	2:40:19	35.079	-118.947	9.821	3.31	ml	0	64.8		0.269	ci	ci7057163	2016-02-11T20:22:12.401Z	15km N of Grapevine, California	earthquake		0.478		77	reviewed	ci	ci
1/20/1997	15:55:38	36.0735	-120.1233333	6.073	2.01	md	18	175	0.01712	0.03	nc	nc491829	2016-12-25T18:09:23.506Z	7 km N of Avenal, California	earthquake	0.62	0.42	0.15	11	reviewed	nc	nc
1/16/1997	5:04:01	35.205	-119.027	5.127	2.37	mc	0	110.6		0.262	ci	ci7056539	2016-02-11T20:21:29.080Z	12km WSW of Lamont, California	earthquake		7.464		42	reviewed	ci	ci
1/12/1997	10:12:37	36.253	-120.287	11.951	2.01	md	15	104	0.164	0.03	nc	nc490746	2016-12-25T17:48:23.961Z	14 km NNE of Coalinga, California	earthquake	0.59	1.78	0.21	5	reviewed	nc	nc
1/11/1997	17:17:53	36.1518333	-120.1458333	8.313	2.08	md	24	135	0.0955	0.13	nc	nc490635	2016-12-25T17:45:40.190Z	6 km SW of Huron, California	earthquake	0.95	0.87	0.16	33	reviewed	nc	nc
12/31/1996	20:25:35	36.2715	-120.4065	8.542	2.6	md	45	77	0.05586	0.06	nc	nc489475	2016-12-25T09:02:42.700Z	15 km NNW of Coalinga, California	earthquake	0.11	0.19	0.11	57	reviewed	nc	nc
12/30/1996	20:25:36	36.27	-120.318	5.112	2.7	mc	0	72.6		0.476	ci	ci7054947	2016-02-12T16:32:01.714Z	15km NNE of Coalinga, California	earthquake				35	reviewed	ci	ci
12/25/1996	8:33:35	36.1458333	-120.0785	8.022	2.04	md	30	189	0.08829	0.04	nc	nc488965	2016-12-25T08:50:55.753Z	6 km SSE of Huron, California	earthquake	0.25	0.13	0.12	15	reviewed	nc	nc
12/21/1996	10:17:33	36.2381667	-120.3348333	8.812	2	md	28	102	0.01261	0.04	nc	nc488527	2016-12-25T08:40:40.050Z	11 km NNE of Coalinga, California	earthquake	0.3	0.24	0.12	17	reviewed	nc	nc
12/9/1996	16:53:57	34.94	-118.987	14.21	2.02	mc	0	78.4		0.233	ci	ci7052501	2016-02-12T01:28:43.108Z	5km W of Grapevine, California	earthquake		0.244		37	reviewed	ci	ci
11/16/1996	19:23:42	35.9505	-120.4966667	12.783	2.28	md	43	48	0.006306	0.07	nc	nc484762	2016-12-25T07:10:05.990Z	8 km NW of Parkfield, California	earthquake	0.17	0.19	0.14	56	reviewed	nc	nc
11/13/1996	21:16:27	35.46	-119.267	5.126	2.06	mc	0	140.3		0.319	ci	ci7049213	2016-02-12T06:20:43.546Z	4km S of Shafter, California	earthquake				32	reviewed	ci	ci
11/8/1996	23:47:55	36.0656667	-120.6166667	4.971	2.1	md	38	48	0.01712	0.06	nc	nc484114	2016-12-25T06:48:08.504Z	24 km WSW of Coalinga, California	earthquake	0.18	0.23	0.11	32	reviewed	nc	nc
11/7/1996	10:22:26	36.0078333	-120.5618333	4.455	2.62	md	57	45	0.04595	0.06	nc	nc483945	2016-12-25T06:40:48.590Z	16 km NW of Parkfield, California	earthquake	0.16	0.22	0.11	64	reviewed	nc	nc
11/6/1996	5:37:29	35.2856667	-120.7811667	0.615	2.28	md	9	178	0.08919	0.3	nc	nc1227354	2016-12-25T06:36:18.420Z	5 km ESE of Los Osos, California	earthquake	3.01	25.01		1	reviewed	nc	nc
11/5/1996	19:35:29	36.299	-120.3335	2.582	2.13	md	12	141	0.04775	0.07	nc	nc483766	2016-12-25T06:34:58.514Z	17 km N of Coalinga, California	earthquake	0.56	0.78	0.25	23	reviewed	nc	nc
10/26/1996	12:49:05	36.1251667	-120.0635	3.926	2.02	md	28	136	0.3216	0.06	nc	nc482964	2016-12-25T06:10:19.432Z	9 km SSE of Huron, California	earthquake	0.47	1.42	0.15	16	reviewed	nc	nc
10/24/1996	22:13:03	36.0373333	-120.5856667	7.475	2.13	md	37	137	0.03243	0.05	nc	nc482837	2016-12-25T06:04:47.750Z	20 km NW of Parkfield, California	earthquake	0.19	0.24	0.17	42	reviewed	nc	nc
10/22/1996	23:56:26	35.672	-119.168	4.874	2.33	mc	0	165	0.3946	0.256	ci	ci7047143	2016-02-11T22:54:58.341Z	6km E of McFarland, California	earthquake				44	reviewed	ci	ci
10/18/1996	19:01:05	35.9878333	-120.5355	9.963	2	md	45	92	0.04324	0.05	nc	nc482332	2016-12-25T05:43:47.630Z	13 km NW of Parkfield, California	earthquake	0.21	0.22	0.21	45	reviewed	nc	nc
9/30/1996	6:07:18	35.2118333	-120.4285	3.57	2.11	md	35	107	0.06306	0.07	nc	nc480679	2016-12-25T04:26:04.777Z	16 km E of Edna, California	earthquake	0.15	0.5	0.12	22	reviewed	nc	nc
9/29/1996	19:55:48	36.3185	-119.9165	12.977	2.32	md	7	175	0.3009	0.2	nc	nc480651	2016-12-25T04:24:19.029Z	6 km N of Lemoore Station, California	earthquake	3.28	5.88	0.04	3	reviewed	nc	nc
9/25/1996	21:58:36	35.531	-119.145	4.997	2.02	mc	0	145.1		0.307	ci	ci7044365	2016-02-11T20:10:19.617Z	12km ENE of Shafter, California	earthquake				30	reviewed	ci	ci
9/19/1996	22:14:54	35.13	-118.926	8.459	2.12	mc	0	93	0.07868	0.249	ci	ci7043610	2016-02-12T01:22:30.440Z	12km SW of Arvin, California	earthquake		1.11		44	reviewed	ci	ci
9/19/1996	21:49:28	35.135	-118.932	8.979	2.49	mc	0	94	0.08392	0.265	ci	ci7043606	2016-02-13T00:04:38.262Z	12km SW of Arvin, California	earthquake		0.981		73	reviewed	ci	ci
9/18/1996	9:35:32	35.5443333	-120.7741667	2.65	2.47	md	58	29	0.109	0.15	nc	nc479659	2016-12-25T03:35:29.490Z	6 km W of Templeton, California	earthquake	0.17	0.76	0.15	61	reviewed	nc	nc
9/13/1996	22:50:35	35.9305	-120.4778333	4.903	2.33	md	44	71	0.02162	0.06	nc	nc479253	2016-12-25T03:16:32.960Z	5 km NW of Parkfield, California	earthquake	0.15	0.15	0.13	51	reviewed	nc	nc
9/8/1996	19:07:43	36.0945	-120.2078333	8.128	2.35	md	43	79	0.08649	0.14	nc	nc478783	2016-12-25T02:57:15.360Z	12 km NW of Avenal, California	earthquake	0.22	0.58	0.15	49	reviewed	nc	nc
9/8/1996	7:18:04	35.4781667	-120.792	5.018	2.04	md	36	56	0.07568	0.13	nc	nc478698	2016-12-25T02:55:26.250Z	9 km ENE of Cayucos, California	earthquake	0.21	0.57	0.18	11	reviewed	nc	nc
9/3/1996	7:50:16	35.022	-119.188	13.356	2.17	mc	0	88.6		0.27	ci	ci3275901	2016-02-12T08:40:36.028Z	20km ESE of Maricopa, California	earthquake		0.396		44	reviewed	ci	ci
9/2/1996	19:02:55	36.157	-120.2131667	11.137	2.11	md	26	90	0.1279	0.02	nc	nc478134	2016-12-25T02:35:00.480Z	11 km WSW of Huron, California	earthquake	0.16	0.44	0.12	34	reviewed	nc	nc
8/26/1996	2:09:53	36.2378333	-120.257	12.654	2.13	md	34	92	0.07027	0.05	nc	nc477374	2016-12-25T02:02:40.028Z	Central California	earthquake	0.13	0.34	0.15	33	reviewed	nc	nc
8/25/1996	12:08:21	35.124	-119.087	8.522	2.31	mc	0	97.5		0.267	ci	ci3275087	2016-02-12T11:10:02.080Z	22km SW of Lamont, California	earthquake				67	reviewed	ci	ci
8/17/1996	22:29:13	35.042	-119.002	10.279	2.31	mc	0	123.6		0.328	ci	ci3274377	2016-02-13T05:05:14.019Z	13km NNW of Grapevine, California	earthquake		1.094		54	reviewed	ci	ci
8/17/1996	0:48:05	36.2226667	-120.2391667	5.937	2.43	md	24	115	0.08829	0.03	nc	nc476127	2016-12-25T01:27:42.680Z	12 km W of Huron, California	earthquake	0.16	0.25	0.14	31	reviewed	nc	nc
8/14/1996	3:12:15	36.2168333	-120.3723333	10.177	2.08	md	6	98	0.04054	0.07	nc	nc1226531	2016-12-25T01:14:45.497Z	8 km N of Coalinga, California	earthquake	0.6	1.01	0.08	4	reviewed	nc	nc
8/6/1996	0:54:59	36.0033333	-119.9461667	19.167	2.32	md	44	91	0.145	0.14	nc	nc474545	2016-12-25T00:31:33.670Z	1 km ESE of Kettleman City, California	earthquake	0.48	0.47	0.2	34	reviewed	nc	nc
8/2/1996	4:22:26	35.175	-119.1121667	22.092	2.01	mc	15	50		0.21	ci	ci3272325	2016-04-02T02:12:17.246Z	20km WSW of Lamont, CA	earthquake	0.73	2.04		25	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
7/31/1996	16:12:08	36.2063333	-120.439	8.167	2.61	md	5	219	0.08919	0.07	nc	nc1226303	2016-12-25T00:09:00.844Z	10 km NW of Coalinga, California	earthquake	1.82	0.73	0.8	3	reviewed	nc	nc
7/29/1996	19:43:12	36.2033333	-120.3221667	10.184	2	md	36	86	0.04865	0.06	nc	nc30114909	2016-12-24T23:48:05.690Z	7 km NNE of Coalinga, California	earthquake	0.19	0.31	0.23	24	reviewed	nc	nc
7/27/1996	13:35:35	35.6935	-119.4326667	5.01	3.19	ml	61	182		0.37	ci	ci3271790	2016-04-02T08:36:20.372Z	14km NW of Wasco, CA	earthquake	0.98	31.61		0	reviewed	ci	ci
7/24/1996	13:48:23	36.2201667	-120.1421667	21.467	2.37	md	4	138	0.05495	0.34	nc	nc1226090	2016-12-24T23:26:40.478Z	4 km WNW of Huron, California	earthquake	9.65	21.55	0.8	2	reviewed	nc	nc
7/20/1996	17:21:37	35.7766667	-119.8033333	19.239	2.24	md	23	102	0.2982	0.16	nc	nc30113836	2016-12-24T23:11:51.299Z	20 km NNW of Lost Hills, California	earthquake	0.62	1.32	0.15	14	reviewed	nc	nc
7/18/1996	2:24:10	35.832	-119.7463333	2.759	2	md	14	76	0.3694	0.06	nc	nc30113626	2016-12-24T22:58:38.785Z	24 km WSW of Alpaugh, California	earthquake	0.35	1.38	0.11	9	reviewed	nc	nc
7/18/1996	2:19:03	35.8188333	-119.7438333	3.905	2.06	md	13	102	0.3622	0.06	nc	nc30113625	2016-12-24T22:58:31.230Z	22 km NNW of Lost Hills, California	earthquake	0.63	2.74	0.11	8	reviewed	nc	nc
7/11/1996	2:38:40	36.2648333	-120.4443333	12.299	2.31	md	34	67	0.08378	0.08	nc	nc30112606	2016-12-24T22:36:23.577Z	15 km NNW of Coalinga, California	earthquake	0.32	0.55	0.1	37	reviewed	nc	nc
7/8/1996	18:09:36	36.129	-120.4741667	8.589	2.94	md	5	137	0.1604	0.2	nc	nc1225941	2016-12-24T22:26:27.182Z	10 km W of Coalinga, California	earthquake	0.98	3.07	0.69	2	reviewed	nc	nc
7/8/1996	7:07:47	34.918	-119.548	12.61	2.45	ml	0	44		0.28	ci	ci3269839	2016-02-12T13:40:31.947Z	21km SW of Maricopa, California	earthquake		0.517		10	reviewed	ci	ci
7/6/1996	6:05:03	36.1028333	-120.3948333	-0.541	2.61	md	6	149	0.2063	0.42	nc	nc1225923	2016-12-24T22:18:35.459Z	5 km SW of Coalinga, California	earthquake	1.71	20.85	0.27	2	reviewed	nc	nc
7/2/1996	11:29:15	34.973	-119.053	2.914	2.18	mc	0	84.1		0.381	ci	ci3269412	2016-02-12T13:40:19.226Z	12km WNW of Grapevine, California	earthquake		0.191		45	reviewed	ci	ci
6/24/1996	4:29:21	36.041	-120.1145	3.111	2.88	md	72	102	0.02072	0.1	nc	nc30110848	2016-12-24T21:06:40.470Z	4 km NNE of Avenal, California	earthquake	0.2	0.16	0.12	85	reviewed	nc	nc
6/23/1996	21:49:09	36.0398333	-120.114	3.531	2.96	md	76	95	0.02162	0.13	nc	nc30110824	2016-12-24T21:05:22.810Z	4 km NNE of Avenal, California	earthquake	0.17	0.2	0.11	123	reviewed	nc	nc
5/29/1996	0:33:49	36.0043333	-120.5601667	4.405	2.46	md	39	87	0.04505	0.04	nc	nc30107564	2016-12-24T18:28:37.210Z	16 km NW of Parkfield, California	earthquake	0.17	0.25	0.12	45	reviewed	nc	nc
5/23/1996	12:21:29	36.3158333	-120.2805	6.664	2.19	md	34	97	0.07477	0.03	nc	nc30106911	2016-12-24T18:04:09.362Z	20 km NW of Huron, California	earthquake	0.09	0.1	0.11	39	reviewed	nc	nc
5/20/1996	3:18:30	35.425	-118.895	13.855	2.28	mc	0	147.3		0.205	ci	ci3265118	2016-02-12T08:34:11.437Z	11km E of Oildale, California	earthquake		0.482		50	reviewed	ci	ci
5/20/1996	2:38:59	36.3193333	-120.2938333	4.714	2.43	md	22	252	0.06396	0.05	nc	nc30106624	2016-12-24T17:47:33.978Z	20 km S of Cantua Creek, California	earthquake	0.71	0.12	0.14	46	reviewed	nc	nc
5/16/1996	19:56:47	36.0858333	-120.1408333	6.426	2.87	md	48	88	0.03514	0.06	nc	nc30106425	2016-12-24T17:36:33.030Z	9 km N of Avenal, California	earthquake	0.28	0.25	0.09	87	reviewed	nc	nc
5/9/1996	9:53:38	35.8418333	-119.7643333	22.399	2.18	md	18	227	0.3667	0.06	nc	nc30105775	2016-12-24T16:56:28.836Z	25 km WSW of Alpaugh, California	earthquake	0.86	0.41	0.11	11	reviewed	nc	nc
4/28/1996	5:44:21	36.0495	-120.117	3.586	2.6	md	50	149	0.01261	0.07	nc	nc30104826	2016-12-24T16:08:50.640Z	5 km NNE of Avenal, California	earthquake	0.3	0.21	0.15	61	reviewed	nc	nc
4/26/1996	0:56:26	36.0798333	-120.6381667	1.911	2.71	md	46	38	0.03604	0.05	nc	nc30104691	2016-12-24T15:59:56.330Z	24 km ENE of San Ardo, California	earthquake	0.14	0.43	0.14	62	reviewed	nc	nc
4/20/1996	4:55:43	36.118	-119.868	5.04	2.18	mc	0	92.1	0.5918	0.347	ci	ci3262319	2016-02-13T10:01:36.543Z	15km NE of Kettleman City, California	earthquake				20	reviewed	ci	ci
4/19/1996	11:27:18	35.9995	-119.6506667	20.939	2.55	md	25	125	0.2838	0.07	nc	nc30104092	2016-12-24T15:17:34.561Z	13 km SW of Corcoran, California	earthquake	0.49	0.27	0.15	36	reviewed	nc	nc
4/19/1996	8:45:05	36.0676667	-120.0206667	6.163	3.01	md	6	190	0.07297	0.12	nc	nc1224359	2016-12-24T15:16:39.113Z	8 km NW of Kettleman City, California	earthquake	1.16	1.17	0.89	2	reviewed	nc	nc
4/18/1996	0:46:53	35.4778333	-120.7663333	6.618	2.08	md	30	52	0.0964	0.06	nc	nc30103884	2016-12-24T15:08:42.299Z	8 km W of Atascadero, California	earthquake	0.15	0.49	0.13	21	reviewed	nc	nc
4/16/1996	17:56:47	35.766	-119.183	4.831	2.1	mc	0	178.3	0.4462	0.291	ci	ci3261970	2016-02-13T02:25:16.924Z	6km E of Delano, California	earthquake				30	reviewed	ci	ci
4/16/1996	4:20:10	36.241	-120.332	9.974	2	md	27	83	0.01261	0.24	nc	nc30103625	2016-12-24T14:57:24.671Z	11 km NNE of Coalinga, California	earthquake	0.39	0.51	0.05	16	reviewed	nc	nc
4/15/1996	19:21:17	36.0463333	-120.6125	8.181	2.4	md	44	57	0.02613	0.07	nc	nc30103555	2016-12-24T14:54:17.030Z	22 km NW of Parkfield, California	earthquake	0.19	0.29	0.14	51	reviewed	nc	nc
4/10/1996	11:07:38	35.102	-119.123	12.082	2.51	mc	0	95.7		0.314	ci	ci3261402	2016-02-13T07:27:52.412Z	25km NW of Grapevine, California	earthquake		0.646		116	reviewed	ci	ci
3/26/1996	20:37:22	35.089	-119.047	11.193	2.1	mc	0	96.2		0.278	ci	ci3259511	2016-02-13T07:26:27.146Z	19km NNW of Grapevine, California	earthquake		1.217		61	reviewed	ci	ci
3/22/1996	14:43:21	35.023	-119.126	10.276	2.12	mc	0	91.5		0.324	ci	ci3259165	2016-02-12T01:11:23.322Z	20km N of Pine Mountain Club, California	earthquake		0.624		60	reviewed	ci	ci
3/22/1996	0:46:14	36.0213333	-120.577	4.395	2.61	md	43	75	0.04775	0.07	nc	nc30100189	2016-12-24T10:20:22.610Z	18 km NW of Parkfield, California	earthquake	0.22	0.3	0.09	49	reviewed	nc	nc
3/7/1996	7:19:31	34.903	-119.33	7.784	2.09	mc	0	38.2		0.333	ci	ci3257291	2016-02-13T02:21:43.588Z	18km WNW of Pine Mountain Club, California	earthquake		0.876		56	reviewed	ci	ci
3/4/1996	2:45:24	35.9406667	-120.4883333	9.529	2.25	md	42	33	0.01802	0.05	nc	nc30098356	2016-12-24T08:53:25.690Z	6 km NW of Parkfield, California	earthquake	0.18	0.23	0.13	44	reviewed	nc	nc
2/29/1996	15:31:58	35.9733333	-120.5283333	4.87	2.82	md	46	47	0.02973	0.07	nc	nc30098024	2016-12-24T08:38:52.430Z	11 km NW of Parkfield, California	earthquake	0.18	0.25	0.09	59	reviewed	nc	nc
2/26/1996	23:09:12	36.0585	-120.6091667	2.24	2.34	md	26	61	0.01441	0.09	nc	nc30097875	2016-12-24T08:30:12.666Z	23 km NW of Parkfield, California	earthquake	0.18	0.41	0.11	26	reviewed	nc	nc
2/25/1996	16:23:25	36.0376667	-120.5855	7.703	2.39	md	40	75	0.03243	0.04	nc	nc30097793	2016-12-24T08:26:31.050Z	20 km NW of Parkfield, California	earthquake	0.16	0.25	0.12	47	reviewed	nc	nc
2/10/1996	12:48:07	36.1868333	-120.305	10.33	2.56	md	49	58	0.06937	0.05	nc	nc30096439	2016-12-24T07:12:12.020Z	7 km NE of Coalinga, California	earthquake	0.13	0.28	0.08	53	reviewed	nc	nc
2/9/1996	23:07:43	35.8756667	-120.2178333	18.364	2.1	md	23	198	0.1126	0.22	nc	nc30096381	2016-12-24T07:08:53.636Z	16 km SSW of Avenal, California	earthquake	1.58	0.87	0.18	20	reviewed	nc	nc
1/24/1996	7:56:29	34.921	-119.562	10.429	3.07	ml	0	31.7		0.365	ci	ci3251783	2016-02-12T01:06:48.078Z	21km SW of Maricopa, California	earthquake		0.577		42	reviewed	ci	ci
1/22/1996	4:00:34	36.2653333	-120.3415	7.18	2.28	md	38	201	0.2847	0.07	nc	nc30094979	2016-12-24T06:11:21.912Z	14 km N of Coalinga, California	earthquake	0.32	1.25	0.1	39	reviewed	nc	nc
1/21/1996	8:31:58	36.1445	-120.0313333	-0.623	2.24	md	26	120	0.3279	0.13	nc	nc30094926	2016-12-24T06:09:10.790Z	9 km SE of Huron, California	earthquake	0.3	0.9	0.07	19	reviewed	nc	nc
1/20/1996	17:21:51	36.1828333	-120.0846667	8.452	2.32	md	5	142	0.1234	0.02	nc	nc1222298	2016-12-24T06:06:01.727Z	2 km SE of Huron, California	earthquake	0.92	1.39	0.1	3	reviewed	nc	nc
1/13/1996	9:36:50	35.9935	-120.125	13.183	2.52	md	42	123	0.06847	0.08	nc	nc30094317	2016-12-24T05:42:23.890Z	1 km SSE of Avenal, California	earthquake	0.2	0.37	0.07	54	reviewed	nc	nc
1/12/1996	22:52:22	35.9926667	-120.1266667	12.437	2.25	md	23	155	0.06937	0.07	nc	nc30094289	2016-12-24T05:41:20.506Z	1 km S of Avenal, California	earthquake	0.34	0.5	0.11	30	reviewed	nc	nc
1/12/1996	12:06:42	35.2111667	-120.7035	3.327	2.18	md	31	61	0.06126	0.07	nc	nc30094226	2016-12-24T05:39:54.796Z	4 km NE of Avila Beach, California	earthquake	0.14	0.42	0.19	28	reviewed	nc	nc
1/12/1996	11:27:34	36.1351667	-120.0491667	8.167	3.02	md	38	177	0.08919	0.06	nc	nc30094264	2016-12-24T05:39:38.800Z	8 km SSE of Huron, California	earthquake	0.21	0.17	0.13	96	reviewed	nc	nc
1/12/1996	7:21:34	35.7951667	-120.3461667	9.444	2.12	md	32	94	0.03604	0.02	nc	nc30094204	2016-12-24T05:38:03.970Z	13 km SE of Parkfield, California	earthquake	0.17	0.31	0.17	36	reviewed	nc	nc
1/11/1996	18:11:33	35.718	-119.569	5.02	2.22	mc	0	126.4		0.406	ci	ci3249980	2016-02-12T13:24:54.713Z	20km SSW of Alpaugh, California	earthquake				28	reviewed	ci	ci
1/11/1996	5:26:55	35.9966667	-120.1233333	14.503	2.48	md	49	93	0.06577	0.16	nc	nc30094090	2016-12-24T05:34:23.740Z	0 km SSE of Avenal, California	earthquake	0.28	0.58	0.08	45	reviewed	nc	nc
1/11/1996	2:58:36	36.0011667	-120.1265	16.458	3.31	md	56	92	0.06126	0.11	nc	nc30094082	2016-12-24T05:34:04.550Z	0 km SE of Avenal, California	earthquake	0.18	0.28	0.09	81	reviewed	nc	nc
1/10/1996	19:45:45	36.2908333	-120.4103333	8.962	2.11	md	20	92	0.05586	0.06	nc	nc30094045	2016-12-24T05:32:04.283Z	17 km NNW of Coalinga, California	earthquake	0.27	0.31	0.1	21	reviewed	nc	nc
1/9/1996	22:42:41	35.743	-119.574	5.05	2.43	mc	0	72.8		0.415	ci	ci3249595	2016-02-12T08:22:58.499Z	18km SSW of Alpaugh, California	earthquake				54	reviewed	ci	ci
1/9/1996	22:41:50	35.808	-119.605	5.02	2	mc	0	223.4	0.4702	0.374	ci	ci3249593	2016-02-12T16:04:15.750Z	14km SW of Alpaugh, California	earthquake				21	reviewed	ci	ci
1/6/1996	3:47:13	36.1295	-120.21	9.187	2.32	md	18	90	0.1063	0.07	nc	nc30093580	2016-12-24T05:12:51.852Z	12 km SW of Huron, California	earthquake	0.2	0.62	0.12	23	reviewed	nc	nc
12/27/1995	19:18:37	36.1743333	-120.0413333	15.503	2.18	md	6	234	0.08198	0.03	nc	nc30092907	2016-12-24T04:05:22.488Z	6 km ESE of Huron, California	earthquake	2.69	0.89	0.16	5	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/17/1995	16:44:39	36.201	-119.5683333	12.194	2.47	md	7	128	0.3991	0.13	nc	nc30092183	2016-12-24T03:10:23.513Z	8 km NW of Waukena, California	earthquake	2.6	3.96	0.05	5	reviewed	nc	nc
12/12/1995	1:27:19	36.312	-120.289	16.087	2.64	md	0	153.3		2.113	ci	ci3246679	2016-02-13T07:15:32.656Z	20km NNE of Coalinga, California	earthquake		5.48		1	reviewed	ci	ci
12/11/1995	2:08:44	35.8538333	-120.3985	4.195	2.21	md	33	85	0.01802	0.05	nc	nc30091699	2016-12-24T02:41:53.030Z	5 km SSE of Parkfield, California	earthquake	0.15	0.2	0.09	31	reviewed	nc	nc
12/9/1995	8:56:03	35.5	-119.282	5.095	2.06	mc	0	146.5		0.379	ci	ci3246348	2016-02-12T03:30:52.772Z	1km W of Shafter, California	earthquake				49	reviewed	ci	ci
12/8/1995	16:17:07	35.8483333	-119.8695	0.41	2	md	8	187	0.3054	0.14	nc	nc30091541	2016-12-24T02:31:05.536Z	19 km SSE of Kettleman City, California	earthquake	0.6	0.8	0.08	2	reviewed	nc	nc
12/6/1995	11:09:48	35.8203333	-119.8781667	10.461	2.01	md	9	106	0.2946	0.05	nc	nc30091575	2016-12-24T02:21:20.167Z	22 km SSE of Kettleman City, California	earthquake	1.53	3.07	0.14	3	reviewed	nc	nc
11/28/1995	14:17:22	36.1395	-120.162	-0.561	2.74	md	64	94	0.2523	0.24	nc	nc30090772	2016-12-24T01:40:40.640Z	8 km SW of Huron, California	earthquake	0.38	2.07	0.08	49	reviewed	nc	nc
11/23/1995	17:58:49	36.2221667	-120.348	9.061	2.24	md	34	59	0.02793	0.08	nc	nc30090439	2016-12-24T01:17:58.490Z	9 km N of Coalinga, California	earthquake	0.19	0.24	0.14	35	reviewed	nc	nc
11/20/1995	13:25:05	35.9903333	-120.5453333	4.873	2.23	md	34	69	0.05135	0.03	nc	nc30090188	2016-12-24T00:58:36.670Z	14 km NW of Parkfield, California	earthquake	0.17	0.26	0.13	30	reviewed	nc	nc
11/15/1995	7:33:16	36.3196667	-120.3261667	4.051	2.42	md	33	173	0.03874	0.05	nc	nc30089795	2016-12-24T00:41:04.336Z	20 km S of Cantua Creek, California	earthquake	0.17	0.1	0.11	36	reviewed	nc	nc
11/15/1995	7:22:18	36.3185	-120.3246667	3.511	2.14	md	24	172	0.04054	0.05	nc	nc30089794	2016-12-24T00:40:59.236Z	20 km N of Coalinga, California	earthquake	0.43	0.18	0.14	14	reviewed	nc	nc
11/14/1995	18:49:43	36.0645	-120.6231667	1.401	2.31	md	40	52	0.02252	0.06	nc	nc30089772	2016-12-24T00:38:47.770Z	Central California	earthquake	0.13	0.36	0.11	31	reviewed	nc	nc
11/8/1995	20:44:05	35.178	-119.444	17.951	2.18	mc	0	110.4		0.269	ci	ci3242290	2016-02-13T04:42:47.169Z	4km NNE of Taft, California	earthquake		1.055		54	reviewed	ci	ci
11/1/1995	15:43:17	36.1078333	-120.0256667	7.56	2.43	md	45	193	0.08288	0.13	nc	nc30088644	2016-12-23T23:43:05.070Z	12 km NNW of Kettleman City, California	earthquake	0.65	0.18	0.12	55	reviewed	nc	nc
10/16/1995	14:38:12	35.943	-120.4868333	10.523	2.29	md	52	75	0.01622	0.05	nc	nc30087146	2016-12-23T22:24:53.110Z	6 km NW of Parkfield, California	earthquake	0.15	0.17	0.15	64	reviewed	nc	nc
10/8/1995	8:06:34	36.2476667	-120.4478333	12.305	2.03	md	25	73	0.08468	0.05	nc	nc30086567	2016-12-23T21:49:32.788Z	14 km NNW of Coalinga, California	earthquake	0.24	0.56	0.15	21	reviewed	nc	nc
10/8/1995	6:03:10	36.249	-120.4543333	12.155	2.56	md	41	70	0.09009	0.08	nc	nc30086557	2016-12-23T21:48:47.160Z	14 km NW of Coalinga, California	earthquake	0.16	0.31	0.11	52	reviewed	nc	nc
10/8/1995	5:49:55	36.2478333	-120.4503333	12.085	2.58	md	45	76	0.08739	0.07	nc	nc30086555	2016-12-23T21:48:34.660Z	14 km NW of Coalinga, California	earthquake	0.17	0.38	0.09	66	reviewed	nc	nc
10/4/1995	3:39:04	36.0318333	-120.5865	4.155	2.27	md	44	67	0.03784	0.05	nc	nc30086215	2016-12-23T21:31:04.250Z	20 km NW of Parkfield, California	earthquake	0.19	0.23	0.13	44	reviewed	nc	nc
10/1/1995	21:27:53	35.025	-118.992	10.992	2.88	ml	0	46		0.294	ci	ci3235495	2016-02-12T10:39:18.286Z	11km NNW of Grapevine, California	earthquake		0.356		45	reviewed	ci	ci
9/28/1995	5:56:21	36.1266667	-120.215	8.91	2.34	md	37	86	0.1081	0.08	nc	nc30085672	2016-12-23T21:04:32.730Z	13 km E of Coalinga, California	earthquake	0.22	0.4	0.16	49	reviewed	nc	nc
9/24/1995	18:33:24	36.26	-120.2766667	5.758	2.08	md	32	181	0.05495	0.2	nc	nc30085294	2016-12-23T20:47:36.485Z	15 km NNE of Coalinga, California	earthquake	0.61	0.33	0.16	16	reviewed	nc	nc
9/22/1995	16:11:25	36.264	-120.362	4.401	2.08	md	5	138	0.02162	0.13	nc	nc1221434	2016-12-23T20:36:25.521Z	13 km N of Coalinga, California	earthquake	8.57	5.86	0.07	3	reviewed	nc	nc
9/22/1995	12:27:48	36.257	-120.283	6.957	2.43	md	38	128	0.04865	0.07	nc	nc30084951	2016-12-23T20:35:17.070Z	14 km NNE of Coalinga, California	earthquake	0.14	0.19	0.11	30	reviewed	nc	nc
9/21/1995	13:30:58	36.2573333	-120.296	6.897	2.03	md	28	177	0.03874	0.06	nc	nc30084832	2016-12-23T20:31:26.169Z	14 km NNE of Coalinga, California	earthquake	0.44	0.13	0.16	14	reviewed	nc	nc
9/15/1995	0:57:39	34.738	-120.043	0.601	2.01	mc	0	94.1	0.2164	0.114	ci	ci3230816	2016-02-13T02:00:27.699Z	10km NE of Los Olivos, California	earthquake		1.137		22	reviewed	ci	ci
9/11/1995	2:38:41	36.0001667	-120.5563333	4.615	2.11	md	42	65	0.04595	0.03	nc	nc30083400	2016-12-23T19:33:49.590Z	15 km NW of Parkfield, California	earthquake	0.15	0.2	0.14	27	reviewed	nc	nc
9/10/1995	12:36:48	36.0003333	-120.56	4.525	2.72	md	57	34	0.04324	0.06	nc	nc30083343	2016-12-23T19:31:29.720Z	16 km NW of Parkfield, California	earthquake	0.15	0.2	0.11	50	reviewed	nc	nc
9/8/1995	13:47:13	35.461	-120.7691667	3.425	2.06	md	41	59	0.08468	0.11	nc	nc30083142	2016-12-23T19:23:52.908Z	9 km WSW of Atascadero, California	earthquake	0.16	0.61	0.24	19	reviewed	nc	nc
9/7/1995	3:58:45	34.974	-119.105	15.904	2.54	mc	0	84.9		0.309	ci	ci3229720	2016-02-12T10:33:57.611Z	15km NNE of Pine Mountain Club, California	earthquake		0.456		127	reviewed	ci	ci
9/6/1995	23:54:37	34.946	-119.277	-1.193	2.57	mc	0	107.4		0.235	ci	ci3229700	2016-02-12T03:16:24.971Z	16km NW of Pine Mountain Club, California	earthquake		1.731		114	reviewed	ci	ci
8/31/1995	6:08:11	35.025	-118.994	10.872	3.04	ml	0	86.4		0.296	ci	ci3228670	2016-02-12T08:03:49.979Z	11km NNW of Grapevine, California	earthquake		0.479		62	reviewed	ci	ci
8/24/1995	8:54:14	35.1738333	-120.6048333	2.407	3.03	md	52	56	0.03153	0.09	nc	nc30081269	2016-12-23T18:04:19.210Z	3 km SSE of Edna, California	earthquake	0.11	0.36	0.13	80	reviewed	nc	nc
8/24/1995	5:50:35	35.1738333	-120.6083333	5.229	2.11	md	6	157	0.1252	0.01	nc	nc68002835	2016-12-23T18:03:25.001Z	3 km S of Edna, California	earthquake	0.7	1.74	0.11	3	reviewed	nc	nc
8/20/1995	18:42:48	35.4618333	-120.7675	3.375	2.5	md	60	59	0.08468	0.09	nc	nc30080824	2016-12-23T17:47:33.510Z	9 km WSW of Atascadero, California	earthquake	0.12	0.49	0.14	65	reviewed	nc	nc
8/20/1995	9:17:01	35.4593333	-120.7645	3.395	2.8	md	64	58	0.08108	0.09	nc	nc30080775	2016-12-23T17:45:46.010Z	9 km WSW of Atascadero, California	earthquake	0.13	0.54	0.12	85	reviewed	nc	nc
8/16/1995	14:15:33	34.945	-118.992	11.776	2.79	ml	0	79.1		0.295	ci	ci3224914	2016-02-12T03:12:34.724Z	6km W of Grapevine, California	earthquake		0.357		42	reviewed	ci	ci
8/3/1995	4:50:18	36.19	-120.081	4.983	2.13	mc	0	108	0.4343	0.385	ci	ci3223002	2016-02-12T23:20:43.451Z	2km SE of Huron, California	earthquake				14	reviewed	ci	ci
7/21/1995	21:22:43	35.635	-119.436	5.01	2.19	mc	0	136.8		0.427	ci	ci3221414	2016-02-12T23:20:01.193Z	10km WNW of Wasco, California	earthquake				42	reviewed	ci	ci
7/20/1995	16:43:36	36.1918333	-120.2275	15.261	2	md	4	121	0.1099	0.07	nc	nc1220921	2016-12-23T15:13:13.317Z	11 km W of Huron, California	earthquake	1.7	7.39	0.13	4	reviewed	nc	nc
7/19/1995	9:46:50	35.9826667	-120.542	3.643	2.12	md	33	70	0.04414	0.06	nc	nc30077536	2016-12-23T15:07:07.080Z	13 km NW of Parkfield, California	earthquake	0.2	0.3	0.11	22	reviewed	nc	nc
7/19/1995	9:22:46	35.9865	-120.54	3.853	2.12	md	35	70	0.04505	0.05	nc	nc30077530	2016-12-23T15:06:42.550Z	13 km NW of Parkfield, California	earthquake	0.2	0.23	0.13	27	reviewed	nc	nc
7/17/1995	21:39:20	34.907	-119.331	9.734	2.27	mc	0	50.7		0.292	ci	ci3219862	2016-02-12T05:36:57.362Z	18km WNW of Pine Mountain Club, California	earthquake		0.502		69	reviewed	ci	ci
7/13/1995	2:57:59	36.0093333	-120.5745	4.135	2.13	md	32	59	0.03874	0.07	nc	nc30077127	2016-12-23T14:39:16.100Z	17 km NW of Parkfield, California	earthquake	0.19	0.34	0.1	26	reviewed	nc	nc
7/13/1995	2:52:11	36.0133333	-120.5725	4.405	2.46	md	44	60	0.04324	0.05	nc	nc30077124	2016-12-23T14:39:04.050Z	17 km NW of Parkfield, California	earthquake	0.19	0.24	0.1	46	reviewed	nc	nc
7/13/1995	1:56:37	36.014	-120.5746667	4.255	2	md	29	71	0.04234	0.04	nc	nc30077122	2016-12-23T14:38:45.670Z	18 km NW of Parkfield, California	earthquake	0.22	0.32	0.13	20	reviewed	nc	nc
7/11/1995	23:43:49	35.032	-118.997	10.092	3.11	ml	0	46.4		0.347	ci	ci3219228	2016-02-12T03:10:29.691Z	12km NNW of Grapevine, California	earthquake		0.451		52	reviewed	ci	ci
7/8/1995	20:35:16	36.0731667	-120.261	15.15	2.68	md	37	57	0.1234	0.06	nc	nc30076766	2016-12-23T14:14:05.150Z	11 km SE of Coalinga, California	earthquake	0.18	0.61	0.1	51	reviewed	nc	nc
7/8/1995	0:26:29	35.404	-119.533	20.459	3.13	ml	0	79.9		0.315	ci	ci3218864	2016-02-12T10:27:11.992Z	6km W of Buttonwillow, California	earthquake		1.386		50	reviewed	ci	ci
6/28/1995	14:12:30	36.1241667	-120.207	10.93	2.25	md	40	90	0.1009	0.13	nc	nc30075935	2016-12-23T13:31:00.030Z	12 km SW of Huron, California	earthquake	0.31	0.46	0.27	49	reviewed	nc	nc
6/28/1995	13:48:25	36.1198333	-120.2166667	9.16	2.56	md	51	85	0.1045	0.07	nc	nc30075900	2016-12-23T13:30:28.510Z	13 km E of Coalinga, California	earthquake	0.12	0.3	0.12	66	reviewed	nc	nc
6/25/1995	11:37:58	35.764	-119.672	19.189	2.19	mc	0	235.6	0.4023	0.261	ci	ci3217511	2016-02-12T12:57:33.104Z	22km SW of Alpaugh, California	earthquake				33	reviewed	ci	ci
6/24/1995	15:08:33	36.1238333	-120.2113333	10.38	3.49	md	62	88	0.1036	0.08	nc	nc30075524	2016-12-23T13:10:29.630Z	13 km SW of Huron, California	earthquake	0.17	0.34	0.12	188	reviewed	nc	nc
6/21/1995	19:37:56	36.0986667	-120.6501667	5.516	2	md	36	82	0.05315	0.04	nc	nc30075284	2016-12-23T12:57:10.930Z	24 km ENE of San Ardo, California	earthquake	0.15	0.21	0.18	31	reviewed	nc	nc
6/20/1995	16:26:58	36.0391667	-120.5918333	4.265	2.45	md	41	51	0.02973	0.06	nc	nc30075222	2016-12-23T12:53:09.300Z	21 km NW of Parkfield, California	earthquake	0.17	0.26	0.12	40	reviewed	nc	nc
6/18/1995	19:30:14	36.1501667	-120.0061667	7.057	2.72	md	35	150	0.1171	0.17	nc	nc30075192	2016-12-23T12:45:03.940Z	10 km SE of Huron, California	earthquake	0.48	0.27	0.11	82	reviewed	nc	nc
6/16/1995	23:25:48	36.0893333	-120.0588333	7.89	2.05	md	32	233	0.05045	0.15	nc	nc30075049	2016-12-23T12:38:15.365Z	11 km NE of Avenal, California	earthquake	0.87	0.23	0.11	16	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/9/1995	5:51:37	36.0225	-120.5771667	4.605	2.44	md	53	57	0.04865	0.05	nc	nc30074551	2016-12-23T12:09:18.720Z	18 km NW of Parkfield, California	earthquake	0.16	0.2	0.09	57	reviewed	nc	nc
6/7/1995	14:48:39	34.813	-120.245	2.085	2.03	mc	0	102.2		0.185	ci	ci3215579	2016-02-12T20:46:36.970Z	8km NNE of Los Alamos, California	earthquake		1.093		15	reviewed	ci	ci
6/5/1995	14:59:46	34.887	-119.199	8.314	3.18	ml	0	74.8		0.324	ci	ci3215446	2016-02-13T01:50:38.891Z	6km NW of Pine Mountain Club, California	earthquake		0.351		65	reviewed	ci	ci
5/26/1995	10:48:26	36.2796667	-119.7205	15.561	2.33	md	16	114	0.2955	0.36	nc	nc30073865	2016-12-23T11:10:58.539Z	4 km SSW of Armona, California	earthquake	0.99	1.4	0.04	5	reviewed	nc	nc
5/20/1995	13:31:53	35.998	-119.9395	18.07	2.39	md	57	76	0.1523	0.18	nc	nc30073562	2016-12-23T10:50:29.480Z	2 km ESE of Kettleman City, California	earthquake	0.34	0.51	0.23	60	reviewed	nc	nc
5/18/1995	7:27:25	35.323	-119.057	5.268	2.16	mc	0	125.4		0.345	ci	ci3213378	2016-02-12T03:07:31.415Z	4km SSW of Bakersfield, California	earthquake				73	reviewed	ci	ci
5/17/1995	14:52:21	35.8521667	-120.3971667	4.695	2.4	md	45	56	0.01622	0.04	nc	nc30073364	2016-12-23T10:41:31.370Z	6 km SSE of Parkfield, California	earthquake	0.12	0.18	0.1	53	reviewed	nc	nc
4/26/1995	23:07:04	36.2581667	-120.4221667	0.905	2.01	md	6	171	0.06486	0.01	nc	nc30072375	2016-12-23T09:08:41.271Z	14 km NNW of Coalinga, California	earthquake	0.39	2.1	0.17	13	reviewed	nc	nc
4/25/1995	8:16:20	35.045	-119.196	11.328	2.09	mc	0	111.7		0.239	ci	ci3210961	2016-02-12T05:30:43.233Z	19km E of Maricopa, California	earthquake		0.946		66	reviewed	ci	ci
4/22/1995	18:59:55	35.517	-120.0688333	11.556	2.12	md	30	136	0.06216	0.03	nc	nc30071931	2016-12-23T08:29:51.030Z	31 km ESE of Shandon, California	earthquake	0.2	0.38	0.11	25	reviewed	nc	nc
4/14/1995	0:30:05	35.086	-119.132	16.818	2.07	mc	0	99.7		0.217	ci	ci3209917	2016-02-11T19:16:32.033Z	24km NW of Grapevine, California	earthquake		1.347		43	reviewed	ci	ci
4/14/1995	0:07:58	35.068	-119.123	18.624	2.36	mc	0	135.8	0.1087	0.208	ci	ci3209944	2016-02-12T23:13:46.148Z	22km NW of Grapevine, California	earthquake		2.272		22	reviewed	ci	ci
4/14/1995	0:07:46	35.089	-119.126	16.342	2.24	mc	0	99.9		0.247	ci	ci3209913	2016-02-13T01:47:18.484Z	24km NW of Grapevine, California	earthquake		1.137		57	reviewed	ci	ci
4/13/1995	13:46:30	35.821	-119.61	5.059	2.34	mc	0	305.3	0.478	0.284	ci	ci3209848	2016-02-12T18:11:19.463Z	13km SW of Alpaugh, California	earthquake				13	reviewed	ci	ci
4/13/1995	13:26:01	35.575	-119.755	3.08	2.92	mc	0	208.5		0.398	ci	ci3209845	2016-02-13T01:47:15.921Z	32km NW of Buttonwillow, California	earthquake		9.838		105	reviewed	ci	ci
4/13/1995	10:06:59	35.801	-119.798	5.05	2.14	mc	0	282.8	0.3869	0.213	ci	ci3209833	2016-02-12T20:43:24.588Z	27km SSE of Kettleman City, California	earthquake				22	reviewed	ci	ci
4/6/1995	18:38:56	35.082	-119.067	11.804	2.8	ml	0	93.6		0.271	ci	ci3209143	2016-02-11T22:00:13.729Z	20km NW of Grapevine, California	earthquake		0.402		12	reviewed	ci	ci
4/5/1995	20:20:26	35.7796667	-120.3278333	8.418	3.31	md	50	42	0.05495	0.04	nc	nc30071079	2016-12-23T07:38:33.000Z	14 km NNE of Shandon, California	earthquake	0.15	0.31	0.08	65	reviewed	nc	nc
4/3/1995	7:54:58	35.645	-118.966	4.786	2.02	mc	0	168.8	0.233	0.259	ci	ci3208806	2016-02-12T05:29:27.401Z	24km E of McFarland, California	earthquake				54	reviewed	ci	ci
4/2/1995	10:26:05	35.9965	-119.7968333	24.079	2.29	md	14	269	0.2622	0.24	nc	nc30070862	2016-12-23T07:24:12.893Z	14 km E of Kettleman City, California	earthquake	1.37	2.09		1	reviewed	nc	nc
4/2/1995	10:06:05	35.9605	-119.8548333	9.792	2.03	md	16	238	0.2297	0.05	nc	nc30070860	2016-12-23T07:24:00.314Z	11 km ESE of Kettleman City, California	earthquake	0.85	2.9	0.2	5	reviewed	nc	nc
3/28/1995	5:36:41	35.331	-119.4	5.095	2.92	ml	0	98.3		0.461	ci	ci3208157	2016-02-13T01:45:59.873Z	10km SE of Buttonwillow, California	earthquake				12	reviewed	ci	ci
3/26/1995	21:18:21	35.002	-119.013	11.777	2.33	mc	0	117.6		0.156	ci	ci3208018	2016-02-13T06:46:30.805Z	10km NW of Grapevine, California	earthquake		1.448		6	reviewed	ci	ci
3/26/1995	20:49:05	35.035	-119.016	10.237	2.96	ml	0	88.6		0.312	ci	ci3208012	2016-02-13T04:18:40.132Z	13km NW of Grapevine, California	earthquake		0.429		56	reviewed	ci	ci
3/25/1995	6:57:38	35.9986667	-120.5631667	3.895	2.08	md	25	86	0.03964	0.05	nc	nc30070481	2016-12-23T06:58:07.128Z	16 km NW of Parkfield, California	earthquake	0.21	0.36	0.2	17	reviewed	nc	nc
3/22/1995	14:04:37	35.962	-120.1948333	18.792	2.24	md	21	220	0.1207	0.08	nc	nc30070271	2016-12-23T06:49:13.167Z	7 km SW of Avenal, California	earthquake	1.46	0.61	0.18	24	reviewed	nc	nc
3/19/1995	8:05:20	36.2723333	-120.2915	5.317	2.02	md	10	133	0.04775	0.04	nc	nc30070011	2016-12-23T06:21:18.244Z	15 km NNE of Coalinga, California	earthquake	0.21	0.17	0.11	10	reviewed	nc	nc
2/27/1995	6:14:40	35.9231667	-120.4698333	4.333	2.44	md	40	47	0.01892	0.07	nc	nc30068827	2016-12-23T05:03:19.980Z	4 km NW of Parkfield, California	earthquake	0.16	0.22	0.12	42	reviewed	nc	nc
2/23/1995	7:52:04	35.099	-119.124	13.094	2.26	mc	0	95.4		0.317	ci	ci3204144	2016-02-11T21:57:36.491Z	25km NW of Grapevine, California	earthquake		0.511		86	reviewed	ci	ci
2/10/1995	5:58:31	36.003	-119.375	4.783	2.21	mc	0	124.6		0.404	ci	ci3202763	2016-02-12T05:25:45.146Z	8km WNW of Pixley, California	earthquake				38	reviewed	ci	ci
2/9/1995	0:09:17	35.71	-120.2918333	11.949	2.51	md	50	49	0.04054	0.04	nc	nc30067669	2016-12-23T03:49:41.900Z	9 km NE of Shandon, California	earthquake	0.15	0.27	0.1	62	reviewed	nc	nc
2/7/1995	11:15:14	35.7815	-120.3298333	8.558	2.97	md	49	46	0.05315	0.04	nc	nc30067568	2016-12-23T03:43:38.380Z	14 km NNE of Shandon, California	earthquake	0.14	0.27	0.07	73	reviewed	nc	nc
2/5/1995	23:30:25	35.8758333	-119.3691667	4.978	2.7	mh	6	322	0.6509	0.77	ci	ci3202329	2016-02-13T09:16:38.252Z	11km E of Alpaugh, California	earthquake	12.29	31.61		0	reviewed	ci	ci
2/3/1995	7:37:08	36.0513333	-119.6156667	-0.39	2.22	md	9	125	0.4279	0.22	nc	nc30067330	2016-12-23T03:27:48.087Z	7 km SW of Corcoran, California	earthquake	0.99	18.58		1	reviewed	nc	nc
2/1/1995	14:49:09	34.947	-119.102	11.558	2.32	mc	0	90.5		0.227	ci	ci3201911	2016-02-12T07:47:29.923Z	12km NNE of Pine Mountain Club, California	earthquake		0.363		99	reviewed	ci	ci
1/26/1995	11:53:50	35.012	-119.008	8.224	2.18	mc	0	131.8	0.06622	0.305	ci	ci3201351	2016-02-12T10:15:50.542Z	10km NW of Grapevine, California	earthquake		1.488		60	reviewed	ci	ci
1/23/1995	18:54:38	35.001	-119.061	17.228	2.01	mc	0	87.1		0.213	ci	ci3201017	2016-02-13T06:42:34.196Z	14km WNW of Grapevine, California	earthquake		0.983		47	reviewed	ci	ci
1/11/1995	12:08:43	36.2598333	-119.3495	32.326	2.73	md	12	166	0.2144	0.04	nc	nc30071139	2016-12-23T01:44:28.199Z	5 km N of Tulare, California	earthquake	0.71	0.74	0.01	3	reviewed	nc	nc
1/4/1995	22:59:07	35.9471667	-120.4876667	9.25	2.06	md	24	82	0.01261	0.05	nc	nc30065654	2016-12-23T01:16:25.919Z	7 km NW of Parkfield, California	earthquake	0.21	0.26	0.24	17	reviewed	nc	nc
1/2/1995	1:41:31	35.9303333	-120.4756667	4.343	2.09	md	34	78	0.02162	0.05	nc	nc30065522	2016-12-23T01:03:11.660Z	5 km NW of Parkfield, California	earthquake	0.17	0.22	0.16	24	reviewed	nc	nc
12/30/1994	15:21:10	34.739	-120.131	-0.949	2	mc	0	96.1		0.187	ci	ci3198605	2016-02-12T05:23:12.478Z	8km N of Los Olivos, California	earthquake		1.063		15	reviewed	ci	ci
12/21/1994	18:13:37	36.2185	-120.3241667	9.907	2.16	md	36	59	0.03423	0.06	nc	nc30064796	2016-12-22T23:17:38.341Z	9 km NNE of Coalinga, California	earthquake	0.1	0.16	0.12	37	reviewed	nc	nc
12/21/1994	12:07:49	35.9283333	-120.474	5.053	2.06	md	31	123	0.02072	0.04	nc	nc30064776	2016-12-22T23:16:08.070Z	4 km NW of Parkfield, California	earthquake	0.16	0.17	0.16	25	reviewed	nc	nc
12/20/1994	12:55:06	35.9163333	-120.463	6.537	3.4	md	56	47	0.02072	0.05	nc	nc30064696	2016-12-22T23:07:12.710Z	3 km NW of Parkfield, California	earthquake	0.15	0.2	0.1	104	reviewed	nc	nc
12/20/1994	10:27:47	35.9176667	-120.4646667	8.347	4.9	mw	58	30	0.01982	0.06	nc	nc30064693	2016-12-22T23:06:34.580Z	3 km NW of Parkfield, California	earthquake	0.16	0.24		4	reviewed	nc	nc
12/19/1994	11:36:27	36.005	-120.56	4.582	2.53	md	44	64	0.04505	0.04	nc	nc30064648	2016-12-22T23:01:10.480Z	16 km NW of Parkfield, California	earthquake	0.17	0.21	0.12	47	reviewed	nc	nc
12/17/1994	14:43:11	36.0588333	-120.6086667	6.231	2.4	md	45	45	0.01441	0.04	nc	nc30064572	2016-12-22T22:50:38.230Z	23 km NW of Parkfield, California	earthquake	0.15	0.22	0.14	47	reviewed	nc	nc
12/15/1994	13:16:54	36.124	-119.708	5.262	2.04	mc	0	88.2		0.212	ci	ci3196910	2016-02-12T02:57:12.228Z	14km WNW of Corcoran, California	earthquake				10	reviewed	ci	ci
12/14/1994	3:31:38	35.088	-119.093	19.904	2.18	mc	0	51.1		0.285	ci	ci3196713	2016-02-13T01:39:12.326Z	22km NW of Grapevine, California	earthquake		0.653		81	reviewed	ci	ci
12/12/1994	5:50:00	35.9296667	-120.4745	9.683	3.06	md	58	29	0.02162	0.06	nc	nc30064233	2016-12-22T22:26:06.610Z	5 km NW of Parkfield, California	earthquake	0.14	0.21	0.07	86	reviewed	nc	nc
12/5/1994	9:30:54	35.9498333	-120.4928333	9.688	2.32	md	48	48	0.008108	0.04	nc	nc423309	2016-12-22T21:49:23.790Z	7 km NW of Parkfield, California	earthquake	0.15	0.19	0.15	58	reviewed	nc	nc
11/29/1994	3:07:03	35.9816667	-119.8286667	13.716	2.3	md	33	156	0.2414	0.2	nc	nc30063516	2016-12-22T21:22:25.527Z	12 km ESE of Kettleman City, California	earthquake	1.07	3.26	0.14	23	reviewed	nc	nc
11/25/1994	22:32:42	34.975	-119.328	0.977	2.32	mc	0	119.8	0.02931	0.166	ci	ci3194723	2016-02-13T06:37:53.564Z	12km SE of Maricopa, California	earthquake		1.99		23	reviewed	ci	ci
11/24/1994	6:43:32	35.381	-119.387	19.095	3.62	ml	0	56.2		0.328	ci	ci3194399	2016-02-13T09:10:13.483Z	8km ESE of Buttonwillow, California	earthquake				41	reviewed	ci	ci
11/17/1994	22:37:45	36.1075	-120.2081667	4.92	2.11	md	16	209	0.09279	0.09	nc	nc30062832	2016-12-22T20:30:47.166Z	13 km NNW of Avenal, California	earthquake	0.55	0.7	0.14	26	reviewed	nc	nc
11/17/1994	8:33:11	35.5533333	-120.841	4.223	2.12	md	47	44	0.05676	0.11	nc	nc30062799	2016-12-22T20:27:54.570Z	12 km W of Templeton, California	earthquake	0.15	0.45	0.08	39	reviewed	nc	nc
11/16/1994	12:57:48	36.1366667	-120.1935	7.81	2.59	md	38	100	0.1018	0.13	nc	nc30062721	2016-12-22T20:21:43.160Z	10 km SW of Huron, California	earthquake	0.24	0.59	0.1	37	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/11/1994	21:30:01	35.122	-118.948	9.462	3.05	ml	0	50.9		0.299	ci	ci3192204	2016-02-12T00:21:54.558Z	15km SW of Arvin, California	earthquake		0.625		57	reviewed	ci	ci
11/11/1994	14:26:56	36.2035	-120.2858333	5.061	2.05	md	29	101	0.06486	0.17	nc	nc30062437	2016-12-22T19:55:27.645Z	9 km NE of Coalinga, California	earthquake	0.29	0.77	0.23	20	reviewed	nc	nc
11/4/1994	1:35:13	35.957	-120.5163333	4.778	2.07	md	39	67	0.01441	0.08	nc	nc30062002	2016-12-22T19:08:43.480Z	9 km NW of Parkfield, California	earthquake	0.2	0.24	0.15	31	reviewed	nc	nc
10/31/1994	7:10:32	35.9853333	-119.7766667	31.268	2.11	md	19	151	0.2811	0.2	nc	nc30061776	2016-12-22T18:46:46.402Z	16 km E of Kettleman City, California	earthquake	1.12	4.94	0.23	7	reviewed	nc	nc
10/25/1994	8:37:41	36.2178333	-120.4023333	12.025	2.03	md	29	77	0.05766	0.13	nc	nc30061327	2016-12-22T18:11:02.240Z	9 km NNW of Coalinga, California	earthquake	0.27	0.66	0.11	31	reviewed	nc	nc
10/25/1994	6:32:27	36.2576667	-120.3441667	8.288	2.21	md	35	110	0.008108	0.1	nc	nc30061306	2016-12-22T18:10:13.260Z	13 km N of Coalinga, California	earthquake	0.29	0.22	0.11	33	reviewed	nc	nc
10/23/1994	6:34:42	35.056	-119.139	15.304	2.3	mh	0	182.2		0.19	ci	ci3189702	2016-02-13T01:34:32.428Z	23km WNW of Grapevine, California	earthquake		1.578		0	reviewed	ci	ci
10/21/1994	11:52:50	35.012	-118.951	6.334	2.15	mc	0	86.9		0.245	ci	ci3189108	2016-02-12T23:00:48.663Z	8km NNW of Grapevine, California	earthquake		2.193		61	reviewed	ci	ci
10/21/1994	11:42:08	35.017	-118.957	6.974	3.15	ml	0	53		0.245	ci	ci3189106	2016-02-12T23:00:47.255Z	9km NNW of Grapevine, California	earthquake		1.335		51	reviewed	ci	ci
10/19/1994	6:26:38	35.507	-119.404	5.189	2	mc	0	188.2	0.3722	0.387	ci	ci3188840	2016-02-12T23:00:38.095Z	11km SSW of Wasco, California	earthquake				42	reviewed	ci	ci
10/18/1994	7:34:52	35.677	-118.986	5.166	2.11	mc	0	182.1	0.4155	0.288	ci	ci3188776	2016-02-12T15:20:51.222Z	22km E of McFarland, California	earthquake				42	reviewed	ci	ci
10/13/1994	23:06:54	35.4976667	-120.8511667	7.589	3.05	md	57	73	0.1099	0.09	nc	nc30060474	2016-12-22T16:54:27.500Z	7 km NNE of Cayucos, California	earthquake	0.14	0.74	0.09	89	reviewed	nc	nc
10/13/1994	7:37:54	35.4961667	-120.8495	7.519	2.37	md	51	72	0.1108	0.08	nc	nc30060441	2016-12-22T16:51:44.930Z	7 km NNE of Cayucos, California	earthquake	0.14	0.71	0.12	52	reviewed	nc	nc
10/8/1994	19:49:06	36.0673333	-120.0591667	7.011	2.67	md	45	163	0.04144	0.13	nc	nc30060083	2016-12-22T16:19:02.660Z	9 km NE of Avenal, California	earthquake	0.39	0.2	0.1	41	reviewed	nc	nc
10/8/1994	19:40:18	36.0655	-120.0603333	6.391	2.13	md	24	162	0.04054	0.12	nc	nc30060082	2016-12-22T16:18:49.731Z	9 km NE of Avenal, California	earthquake	0.58	0.28	0.17	18	reviewed	nc	nc
10/5/1994	11:25:11	35.7868333	-120.0105	13.287	2.2	md	20	148	0.08739	0.07	nc	nc30059809	2016-12-22T15:57:06.207Z	Central California	earthquake	0.45	0.63	0.15	17	reviewed	nc	nc
9/29/1994	8:57:10	36.1368333	-120.1183333	7.35	2.14	md	33	140	0.07658	0.04	nc	nc30059210	2016-12-22T15:18:39.322Z	7 km S of Huron, California	earthquake	0.2	0.16	0.12	24	reviewed	nc	nc
9/28/1994	1:11:13	35.1501667	-120.6203333	4.325	3.15	md	50	98	0.01622	0.09	nc	nc30059038	2016-12-22T15:12:04.710Z	2 km ENE of Pismo Beach, California	earthquake	0.13	0.24	0.1	79	reviewed	nc	nc
9/17/1994	20:38:42	35.3325	-120.8715	3.046	2.05	md	27	154	0.1225	0.05	nc	nc30057929	2016-12-22T14:22:13.401Z	4 km SSW of Morro Bay, California	earthquake	0.18	0.52	0.19	21	reviewed	nc	nc
9/16/1994	0:53:07	35.9963333	-119.9301667	18.215	2.16	md	31	213	0.1351	0.2	nc	nc30057683	2016-12-22T14:10:44.970Z	3 km ESE of Kettleman City, California	earthquake	0.87	0.55	0.14	25	reviewed	nc	nc
9/16/1994	0:43:19	35.687	-119.865	5.134	2.03	mc	0	244.1	0.2616	0.346	ci	ci3184728	2016-02-12T20:27:38.658Z	37km SSE of Kettleman City, California	earthquake				26	reviewed	ci	ci
9/7/1994	22:34:30	35.9961667	-120.5563333	3.723	3.27	md	62	60	0.04414	0.06	nc	nc30056809	2016-12-22T13:06:41.530Z	15 km NW of Parkfield, California	earthquake	0.14	0.21	0.1	84	reviewed	nc	nc
9/6/1994	15:29:50	36.1465	-120.5235	7.995	3.29	md	60	72	0.08829	0.1	nc	nc30056723	2016-12-22T12:59:16.280Z	14 km W of Coalinga, California	earthquake	0.15	0.27	0.1	175	reviewed	nc	nc
9/5/1994	0:30:46	35.089	-118.902	4.282	2.17	mc	0	160.7	0.07004	0.181	ci	ci3183357	2016-02-12T20:26:40.251Z	15km SSW of Arvin, California	earthquake		0.992		17	reviewed	ci	ci
8/27/1994	1:18:56	34.934	-119.068	13.238	2	mc	0	54.5		0.288	ci	ci3182251	2016-02-12T22:55:55.611Z	12km NE of Pine Mountain Club, California	earthquake		0.18		54	reviewed	ci	ci
8/26/1994	13:43:25	35.103	-118.951	9.422	2.23	mc	0	91.9		0.323	ci	ci3182189	2016-02-12T02:48:00.932Z	16km SW of Arvin, California	earthquake		0.872		92	reviewed	ci	ci
8/24/1994	22:37:32	36.0928333	-120.4498333	6.245	2.39	md	53	55	0.01171	0.08	nc	nc30055834	2016-12-22T11:50:14.630Z	9 km WSW of Coalinga, California	earthquake	0.13	0.2	0.11	53	reviewed	nc	nc
8/24/1994	16:30:19	36.1563333	-120.1565	15.17	2.1	md	15	208	0.1027	0.07	nc	nc30055806	2016-12-22T11:48:55.009Z	7 km SW of Huron, California	earthquake	0.91	0.47	0.15	19	reviewed	nc	nc
8/18/1994	12:09:45	36.1128333	-120.2061667	6.99	2.14	md	24	213	0.09369	0.07	nc	nc30055367	2016-12-22T11:22:34.278Z	13 km SW of Huron, California	earthquake	0.34	0.48	0.12	27	reviewed	nc	nc
8/18/1994	9:26:43	36.118	-120.1421667	8.44	2.71	md	67	128	0.06306	0.06	nc	nc30055363	2016-12-22T11:22:08.690Z	10 km SSW of Huron, California	earthquake	0.18	0.21	0.11	89	reviewed	nc	nc
8/15/1994	2:49:52	36.1513333	-120.2348333	8.989	2.23	md	26	197	0.1315	0.05	nc	nc30055103	2016-12-22T11:07:59.291Z	11 km E of Coalinga, California	earthquake	0.51	0.45	0.1	24	reviewed	nc	nc
8/11/1994	5:47:27	36.0221667	-120.5798333	4.115	2.25	md	37	56	0.04685	0.05	nc	nc30054796	2016-12-22T10:47:08.610Z	18 km NW of Parkfield, California	earthquake	0.2	0.26	0.18	35	reviewed	nc	nc
8/10/1994	13:28:49	35.498	-120.7941667	3.35	2.06	md	41	44	0.08198	0.17	nc	nc30054748	2016-12-22T10:43:20.776Z	9 km SW of Templeton, California	earthquake	0.22	0.86	0.16	20	reviewed	nc	nc
8/5/1994	13:40:03	36.3211667	-120.3545	12.158	2.1	md	30	127	0.01982	0.06	nc	nc30054339	2016-12-22T10:20:08.698Z	20 km N of Coalinga, California	earthquake	0.19	0.2	0.18	33	reviewed	nc	nc
7/28/1994	2:43:17	35.2358333	-120.778	4.029	2.22	md	40	60	0.004505	0.07	nc	nc30053736	2016-12-22T09:32:15.885Z	7 km NW of Avila Beach, California	earthquake	0.11	0.22	0.09	28	reviewed	nc	nc
7/26/1994	18:57:50	36.003	-120.5598333	4.575	2.1	md	41	64	0.04414	0.04	nc	nc30053626	2016-12-22T09:25:02.050Z	16 km NW of Parkfield, California	earthquake	0.18	0.21	0.2	31	reviewed	nc	nc
7/23/1994	20:37:13	36.2035	-120.327	8.698	2.05	md	32	142	0.04775	0.87	nc	nc30053441	2016-12-22T09:18:04.104Z	7 km NNE of Coalinga, California	earthquake	1.29	1.68	0.21	19	reviewed	nc	nc
7/18/1994	14:33:29	35.422	-118.768	-0.845	2.43	mc	0	123.5		0.269	ci	ci3176502	2016-02-12T15:12:56.186Z	22km NE of Lamont, California	earthquake		0.35		86	reviewed	ci	ci
7/12/1994	11:08:37	35.014	-119.166	9.248	2.83	ml	0	88		0.334	ci	ci3175722	2016-02-11T18:53:33.820Z	19km N of Pine Mountain Club, California	earthquake		0.618		15	reviewed	ci	ci
7/11/1994	0:40:28	35.454	-118.912	13.085	2.65	ml	0	68.3		0.279	ci	ci3175491	2016-02-11T21:37:49.178Z	10km ENE of Oildale, California	earthquake		0.391		15	reviewed	ci	ci
7/8/1994	17:29:59	36.2211667	-120.2985	6.647	2.49	md	30	62	0.04595	0.18	nc	nc30052446	2016-12-22T08:31:41.600Z	10 km NNE of Coalinga, California	earthquake	0.31	0.5	0.12	33	reviewed	nc	nc
7/3/1994	16:45:39	35.3823333	-120.6596667	5.135	2.11	md	12	194	0.06847	0.05	nc	nc68002422	2016-12-22T08:18:17.993Z	4 km W of Santa Margarita, California	earthquake	0.42	0.64	0.11	9	reviewed	nc	nc
7/3/1994	7:31:18	36.0096667	-119.9573333	11.142	2.69	md	42	189	0.1342	0.11	nc	nc30052160	2016-12-22T08:17:30.170Z	0 km ENE of Kettleman City, California	earthquake	0.41	0.38	0.12	47	reviewed	nc	nc
7/3/1994	5:06:00	35.9918333	-119.9615	8.528	2.3	md	35	221	0.1288	0.25	nc	nc30052346	2016-12-22T08:17:20.780Z	1 km S of Kettleman City, California	earthquake	1.17	0.66	0.12	27	reviewed	nc	nc
6/11/1994	12:39:40	35.998	-118.851	4.498	2.18	mc	0	192	0.3526	0.179	ci	ci3171923	2016-02-12T15:09:57.172Z	17km ESE of Porterville, California	earthquake				56	reviewed	ci	ci
6/8/1994	2:17:26	34.848	-119.69	1.681	2.09	mc	0	39.8		0.284	ci	ci3171456	2016-02-13T08:55:37.721Z	35km SW of Maricopa, California	earthquake		0.802		41	reviewed	ci	ci
6/7/1994	3:41:34	35.2438333	-120.7505	5.788	2.14	md	40	60	0.02793	0.08	nc	nc403490	2016-12-22T06:52:49.983Z	7 km NNW of Avila Beach, California	earthquake	0.14	0.25	0.15	28	reviewed	nc	nc
5/29/1994	21:18:26	35.593	-119.781	5.165	2.06	mc	0	231.3	0.2138	0.271	ci	ci3169727	2016-02-12T17:44:55.241Z	33km NE of Simmler, California	earthquake				20	reviewed	ci	ci
5/28/1994	19:06:48	36.1733333	-120.2835	8.54	2.08	md	32	196	0.09009	0.21	nc	nc402950	2016-12-22T06:24:30.801Z	7 km ENE of Coalinga, California	earthquake	0.5	0.66	0.13	29	reviewed	nc	nc
5/28/1994	11:43:59	36.2155	-120.245	12	2	md	20	141	0.08649	0.06	nc	nc402916	2016-12-22T06:22:53.632Z	12 km W of Huron, California	earthquake	0.37	0.44	0.07	18	reviewed	nc	nc
5/9/1994	17:15:28	35.201	-119.314	20.681	2.58	ml	0	114.7		0.31	ci	ci3166805	2016-02-13T03:51:01.052Z	14km ENE of Taft, California	earthquake		0.679		19	reviewed	ci	ci
5/2/1994	14:44:07	34.988	-119.34	7.827	2.51	ml	0	47.2		0.352	ci	ci3165855	2016-02-12T02:36:50.801Z	10km SE of Maricopa, California	earthquake		0.409		14	reviewed	ci	ci
4/29/1994	0:12:13	35.986	-119.803	5.059	2.18	mc	0	322.5	0.5629	0.296	ci	ci3165422	2016-02-11T21:31:33.286Z	14km E of Kettleman City, California	earthquake				11	reviewed	ci	ci
4/28/1994	23:51:09	35.637	-119.805	2.805	2.5	mh	0	231.8	0.2366	0.327	ci	ci3165419	2016-02-12T12:24:14.567Z	36km NNE of Simmler, California	earthquake		2.058		0	reviewed	ci	ci
4/28/1994	9:11:09	35.54	-120.097	8.486	2.01	md	21	110	0.04234	0.04	nc	nc401106	2016-12-22T04:53:30.425Z	28 km ESE of Shandon, California	earthquake	0.22	0.46	0.13	16	reviewed	nc	nc
4/23/1994	15:04:16	36.221	-120.3625	11.621	2.2	md	30	53	0.03243	0.05	nc	nc400945	2016-12-22T04:40:58.400Z	9 km N of Coalinga, California	earthquake	0.22	0.27	0.13	30	reviewed	nc	nc
4/20/1994	8:00:52	35.9963333	-120.5453333	9.793	2.83	md	61	34	0.05225	0.04	nc	nc400787	2016-12-22T04:30:19.480Z	14 km NW of Parkfield, California	earthquake	0.12	0.21	0.09	80	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
4/6/1994	13:39:44	35.2345	-120.781	4.106	2.52	md	46	43	0.001802	0.09	nc	nc399997	2016-12-22T03:52:03.070Z	7 km NW of Avila Beach, California	earthquake	0.13	0.23	0.11	42	reviewed	nc	nc
4/4/1994	12:36:19	36.0125	-120.22	2.112	2.21	md	8	156	0.1018	0.04	nc	nc399762	2016-12-22T03:44:20.045Z	8 km W of Avenal, California	earthquake	0.78	3.03	0.56	2	reviewed	nc	nc
4/4/1994	5:27:57	36.1806667	-120.2851667	8.557	2.25	md	42	63	0.08288	0.12	nc	nc399746	2016-12-22T03:43:13.220Z	Central California	earthquake	0.24	0.54	0.1	43	reviewed	nc	nc
4/1/1994	20:28:48	36.181	-120.3105	9.517	2.3	md	44	154	0.07297	0.13	nc	nc399518	2016-12-22T03:35:37.410Z	6 km NE of Coalinga, California	earthquake	0.2	0.36	0.07	46	reviewed	nc	nc
4/1/1994	7:36:38	36.1883333	-120.2838333	10.357	3.76	md	64	62	0.07748	0.06	nc	nc399423	2016-12-22T03:33:48.470Z	8 km NE of Coalinga, California	earthquake	0.14	0.3	0.08	189	reviewed	nc	nc
4/1/1994	7:26:09	35.843	-120.3841667	3.941	2.11	md	40	59	0.01351	0.05	nc	nc399421	2016-12-22T03:33:34.190Z	Central California	earthquake	0.14	0.21	0.14	33	reviewed	nc	nc
3/31/1994	20:05:56	36.1791667	-120.3001667	10.497	2.6	md	42	59	0.07838	0.05	nc	nc399370	2016-12-22T03:31:51.710Z	6 km NE of Coalinga, California	earthquake	0.19	0.23	0.12	57	reviewed	nc	nc
3/31/1994	20:02:29	36.1781667	-120.2968333	10.927	4.2	mw	52	60	0.08018	0.05	nc	nc399484	2016-12-22T03:31:41.590Z	7 km NE of Coalinga, California	earthquake	0.15	0.26		4	reviewed	nc	nc
3/31/1994	19:59:59	36.1838333	-120.3068333	11.367	4.2	mw	57	110	0.07207	0.05	nc	nc399369	2016-12-22T03:31:24.070Z	6 km NE of Coalinga, California	earthquake	0.16	0.3		4	reviewed	nc	nc
3/29/1994	12:19:31	34.939	-119	10.981	2.5	ml	0	78.9		0.293	ci	ci3160913	2016-02-12T05:00:16.815Z	6km W of Grapevine, California	earthquake		0.225		41	reviewed	ci	ci
3/25/1994	3:43:29	35.9095	-120.4548333	5.689	2.46	md	53	47	0.02613	0.06	nc	nc398655	2016-12-22T03:12:51.210Z	2 km WNW of Parkfield, California	earthquake	0.14	0.19	0.09	59	reviewed	nc	nc
3/22/1994	7:50:28	35.069	-119.168	9.844	2.13	mc	0	96.9		0.361	ci	ci3159832	2016-02-13T01:14:24.907Z	21km E of Maricopa, California	earthquake		1.657		75	reviewed	ci	ci
3/21/1994	15:38:01	36.1868333	-119.635	-0.492	2.46	md	10	154	0.455	0.28	nc	nc398335	2016-12-22T02:59:09.205Z	11 km NW of Corcoran, California	earthquake	2.32	12.96	0.06	3	reviewed	nc	nc
3/19/1994	16:35:40	36.0145	-120.0141667	8.187	2.5	md	15	260	0.09009	0.09	nc	nc398146	2016-12-22T02:52:15.536Z	4 km W of Kettleman City, California	earthquake	1.95	0.53	0.76	2	reviewed	nc	nc
3/12/1994	22:47:50	35.891	-119.08	5.145	2.26	mc	0	251.7		0.268	ci	ci3158142	2016-02-12T12:19:36.813Z	19km SSE of Poplar-Cotton Center, California	earthquake				28	reviewed	ci	ci
3/11/1994	15:48:19	36.2405	-120.354	9.018	2.19	md	21	100	0.01261	0.06	nc	nc397290	2016-12-22T02:10:54.837Z	11 km N of Coalinga, California	earthquake	0.35	0.29	0.1	21	reviewed	nc	nc
3/10/1994	7:55:03	35.935	-120.4858333	5.259	2.22	md	43	71	0.02342	0.05	nc	nc397176	2016-12-22T02:06:23.870Z	6 km NW of Parkfield, California	earthquake	0.15	0.19	0.12	39	reviewed	nc	nc
3/9/1994	10:40:45	34.987	-119.09	19.174	2.13	mc	0	86.8		0.28	ci	ci3157444	2016-02-11T18:39:17.687Z	15km WNW of Grapevine, California	earthquake		0.352		77	reviewed	ci	ci
3/1/1994	14:59:05	35.055	-119.14	11.644	2.16	mc	0	95		0.306	ci	ci3155878	2016-02-12T02:30:08.372Z	23km WNW of Grapevine, California	earthquake		0.469		79	reviewed	ci	ci
2/26/1994	19:46:33	36.0135	-120.5743333	4.625	2.07	md	34	59	0.04234	0.06	nc	nc395709	2016-12-22T01:18:20.600Z	17 km NW of Parkfield, California	earthquake	0.22	0.25	0.17	25	reviewed	nc	nc
2/26/1994	19:43:26	36.0143333	-120.5725	4.205	2.35	md	36	69	0.04414	0.04	nc	nc395923	2016-12-22T01:18:12.160Z	17 km NW of Parkfield, California	earthquake	0.22	0.33	0.17	34	reviewed	nc	nc
2/26/1994	19:38:41	36.0155	-120.5705	4.225	2.01	md	26	63	0.04595	0.03	nc	nc395707	2016-12-22T01:17:54.660Z	17 km NW of Parkfield, California	earthquake	0.25	0.3	0.13	24	reviewed	nc	nc
2/24/1994	14:51:38	36.2838333	-120.3368333	12.898	2.61	md	49	65	0.03514	0.15	nc	nc395511	2016-12-22T01:07:10.100Z	16 km N of Coalinga, California	earthquake	0.28	0.3	0.08	46	reviewed	nc	nc
2/23/1994	6:58:08	36.2931667	-120.3503333	13.558	3.5	mw	85	63	0.04414	0.1	nc	nc395417	2016-12-22T01:01:25.460Z	17 km N of Coalinga, California	earthquake	0.16	0.32		2	reviewed	nc	nc
2/15/1994	19:21:15	35.9226667	-120.471	5.153	2.95	md	57	47	0.01802	0.06	nc	nc394898	2016-12-22T00:35:04.090Z	4 km NW of Parkfield, California	earthquake	0.14	0.2	0.07	83	reviewed	nc	nc
2/15/1994	6:28:21	35.124	-119.347	19.261	2.05	mc	0	104.3		0.334	ci	ci3152413	2016-02-12T22:36:24.209Z	9km NE of Maricopa, California	earthquake		0.98		70	reviewed	ci	ci
2/13/1994	18:54:02	34.731	-120.143	-0.805	2.34	mc	0	106.2		0.253	ci	ci3152191	2016-02-13T01:08:55.260Z	8km NNW of Los Olivos, California	earthquake		1.17		23	reviewed	ci	ci
2/13/1994	18:53:18	34.728	-120.137	-0.869	2.33	mc	0	78.8	0.2145	0.261	ci	ci3151709	2016-02-13T08:43:14.465Z	7km NNW of Los Olivos, California	earthquake		1.135		36	reviewed	ci	ci
2/13/1994	18:52:15	34.729	-120.131	-0.805	2.29	mc	0	102.8	0.2142	0.172	ci	ci3151708	2016-02-13T08:43:13.177Z	7km NNW of Los Olivos, California	earthquake		0.958		28	reviewed	ci	ci
2/13/1994	6:50:49	35.121	-118.971	17.772	2	mc	0	138.2	0.1157	0.25	ci	ci3152328	2016-02-11T23:55:40.945Z	16km SW of Arvin, California	earthquake		2.036		5	reviewed	ci	ci
2/11/1994	22:03:41	35.9405	-120.4876667	10.209	2.39	md	49	53	0.01802	0.06	nc	nc394580	2016-12-22T00:16:42.560Z	6 km NW of Parkfield, California	earthquake	0.16	0.22	0.11	56	reviewed	nc	nc
2/7/1994	4:37:46	36.1708333	-120.2815	9.32	2.03	md	23	96	0.09279	0.13	nc	nc393914	2016-12-21T23:58:35.950Z	7 km ENE of Coalinga, California	earthquake	0.44	0.81	0.14	22	reviewed	nc	nc
2/4/1994	11:54:38	35.364	-119.267	4.881	2	mh	0	284.1	0.3532	0.296	ci	ci3149438	2016-02-12T09:42:20.573Z	11km W of Rosedale, California	earthquake				0	reviewed	ci	ci
2/2/1994	15:12:54	36.2235	-120.2775	12.367	2.46	md	40	66	0.05856	0.06	nc	nc393363	2016-12-21T23:19:46.800Z	11 km NE of Coalinga, California	earthquake	0.17	0.35	0.07	41	reviewed	nc	nc
1/28/1994	2:50:55	35.792	-120.3446667	9.09	2	md	36	55	0.03964	0.03	nc	nc30041153	2016-12-21T22:36:26.010Z	14 km SSE of Parkfield, California	earthquake	0.17	0.33	0.11	29	reviewed	nc	nc
1/28/1994	2:49:27	35.7933333	-120.3421667	9.28	2.81	md	43	39	0.03874	0.04	nc	nc392798	2016-12-21T22:36:13.510Z	14 km SE of Parkfield, California	earthquake	0.17	0.28	0.06	35	reviewed	nc	nc
1/22/1994	3:11:46	36.039	-120.5916667	4.395	2.14	md	36	71	0.02973	0.06	nc	nc392261	2016-12-21T22:00:33.210Z	21 km NW of Parkfield, California	earthquake	0.2	0.29	0.12	29	reviewed	nc	nc
1/20/1994	6:03:54	34.999	-119.175	10.738	3.05	ml	0	89.8		0.256	ci	ci3142646	2016-02-12T09:37:09.282Z	17km N of Pine Mountain Club, California	earthquake		0.458		12	reviewed	ci	ci
1/14/1994	17:36:22	36.031	-120.5848333	4.335	2.23	md	46	63	0.03874	0.05	nc	nc391109	2016-12-21T20:55:22.690Z	20 km NW of Parkfield, California	earthquake	0.16	0.23	0.14	36	reviewed	nc	nc
1/10/1994	13:07:11	35.5531667	-120.8118333	3.193	2.96	md	65	45	0.08018	0.1	nc	nc390754	2016-12-21T20:11:27.910Z	9 km W of Templeton, California	earthquake	0.13	0.55	0.11	78	reviewed	nc	nc
1/7/1994	13:01:31	35.146	-119.1	21.162	2.11	mc	0	99.7	0.1788	0.25	ci	ci3139358	2016-02-11T21:10:59.689Z	21km SW of Lamont, California	earthquake		1.195		58	reviewed	ci	ci
1/7/1994	3:53:17	35.9888333	-120.1313333	15.958	3.52	md	55	118	0.07387	0.11	nc	nc390522	2016-12-21T19:47:35.520Z	1 km S of Avenal, California	earthquake	0.18	0.34	0.08	51	reviewed	nc	nc
1/4/1994	1:23:24	36.0698333	-120.1173333	6.281	2.01	md	26	186	0.01081	0.06	nc	nc390299	2016-12-21T19:16:21.191Z	7 km N of Avenal, California	earthquake	0.41	0.22	0.1	18	reviewed	nc	nc
1/3/1994	23:39:15	36.0723333	-120.107	7.141	3.37	md	58	185	0.01171	0.07	nc	nc390297	2016-12-21T19:15:38.620Z	7 km NNE of Avenal, California	earthquake	0.24	0.16	0.11	154	reviewed	nc	nc
1/3/1994	15:13:19	36.0076667	-120.1493333	15.148	2	md	30	101	0.06216	0.08	nc	nc390277	2016-12-21T19:12:50.752Z	1 km WNW of Avenal, California	earthquake	0.17	0.49	0.12	24	reviewed	nc	nc
12/30/1993	0:39:57	35.06	-118.945	16.482	2.7	ml	0	87		0.25	ci	ci3138522	2016-02-10T03:16:16.460Z	13km N of Grapevine, California	earthquake		0.436		17	reviewed	ci	ci
12/28/1993	18:55:36	35.993	-120.0981667	13.838	2.28	md	40	145	0.06847	0.18	nc	nc389871	2016-12-21T08:53:15.280Z	3 km ESE of Avenal, California	earthquake	0.36	0.9	0.08	41	reviewed	nc	nc
12/27/1993	23:21:59	36.098	-119.577	4.962	2.31	mc	0	332.7	0.7298	0.562	ci	ci3138092	2016-02-10T06:48:24.382Z	2km W of Corcoran, California	earthquake				9	reviewed	ci	ci
12/27/1993	7:38:00	35.9795	-120.0986667	15.438	2.28	md	31	133	0.08198	0.18	nc	nc389778	2016-12-21T08:47:38.870Z	3 km SE of Avenal, California	earthquake	0.33	0.68	0.1	29	reviewed	nc	nc
12/26/1993	18:01:43	35.332	-119.297	5.225	2.18	mc	0	142.4	0.3129	0.372	ci	ci3137980	2016-02-10T13:52:41.602Z	15km WSW of Rosedale, California	earthquake				50	reviewed	ci	ci
12/22/1993	5:08:33	35.3958333	-120.6741667	4.504	2.14	md	53	30	0.02793	0.06	nc	nc389359	2016-12-21T08:18:14.460Z	5 km W of Santa Margarita, California	earthquake	0.1	0.24	0.11	51	reviewed	nc	nc
12/17/1993	21:30:00	35.265	-119.832	5.05	2.01	mc	0	100.5		0.264	ci	ci3136765	2016-02-11T00:38:47.119Z	18km ESE of Simmler, California	earthquake		10.96		19	reviewed	ci	ci
12/15/1993	10:26:22	36.1885	-120.2621667	11.527	2.95	md	58	107	0.08919	0.07	nc	nc30037607	2016-12-21T07:44:28.170Z	10 km ENE of Coalinga, California	earthquake	0.14	0.33	0.09	144	reviewed	nc	nc
12/12/1993	15:17:10	35.071	-119.02	21.399	2.05	mc	0	92.7		0.26	ci	ci3136144	2016-02-10T06:46:20.497Z	16km NNW of Grapevine, California	earthquake		0.684		45	reviewed	ci	ci
12/12/1993	5:32:54	36.2948333	-120.4063333	10.521	2.12	md	34	66	0.05045	0.07	nc	nc30037362	2016-12-21T07:25:56.419Z	17 km NNW of Coalinga, California	earthquake	0.28	0.29	0.14	30	reviewed	nc	nc
12/12/1993	0:45:09	35.469	-119.98	8.803	2.62	mc	0	82.7		0.339	ci	ci3136196	2016-02-10T10:22:44.188Z	13km N of Simmler, California	earthquake		0.528		53	reviewed	ci	ci
12/10/1993	5:47:17	35.2266667	-120.7023333	4.623	2	md	33	50	0.04775	0.06	nc	nc30037222	2016-12-21T07:16:20.576Z	5 km NNE of Avila Beach, California	earthquake	0.16	0.39	0.09	21	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/9/1993	13:59:24	36.2338333	-120.4238333	9.708	2.32	md	35	68	0.06757	0.07	nc	nc30037135	2016-12-21T07:12:18.350Z	11 km NNW of Coalinga, California	earthquake	0.15	0.26	0.15	32	reviewed	nc	nc
12/4/1993	20:27:06	35.9928333	-120.5436667	9.823	2.57	md	48	38	0.05135	0.05	nc	nc30036729	2016-12-21T06:48:30.110Z	14 km NW of Parkfield, California	earthquake	0.18	0.28	0.11	48	reviewed	nc	nc
12/3/1993	0:34:08	34.823	-120.429	5.449	2.68	mc	0	113.4		0.362	ci	ci3134569	2016-02-10T20:55:17.329Z	5km S of Orcutt, California	earthquake				39	reviewed	ci	ci
11/27/1993	4:48:55	34.823	-120.434	5.449	2.66	mc	0	114.4		0.291	ci	ci3133731	2016-02-10T13:46:59.730Z	5km S of Orcutt, California	earthquake				59	reviewed	ci	ci
11/20/1993	12:06:55	36.2671667	-119.6965	16.323	2.41	md	10	118	0.4559	0.06	nc	nc30035418	2016-12-21T04:41:50.527Z	5 km SSE of Armona, California	earthquake	0.56	1.1	0.1	12	reviewed	nc	nc
11/19/1993	16:27:43	35.426	-119.455	5.189	2.12	mc	0	155.2	0.2869	0.47	ci	ci3132637	2016-02-11T00:34:02.978Z	3km NNE of Buttonwillow, California	earthquake				44	reviewed	ci	ci
11/19/1993	2:37:16	36.0676667	-119.8086667	11.182	2.83	md	59	51	0.2378	0.16	nc	nc30035251	2016-12-21T04:30:35.310Z	13 km S of Stratford, California	earthquake	0.26	0.79	0.14	80	reviewed	nc	nc
11/19/1993	2:32:05	36.0613333	-119.7991667	12.162	2.13	md	29	124	0.236	0.06	nc	nc30035250	2016-12-21T04:30:24.343Z	14 km S of Stratford, California	earthquake	0.18	0.54	0.18	17	reviewed	nc	nc
11/19/1993	1:52:26	36.0638333	-120.6166667	5.561	2.05	md	35	43	0.01712	0.05	nc	nc30035242	2016-12-21T04:29:51.720Z	24 km WSW of Coalinga, California	earthquake	0.22	0.36	0.1	24	reviewed	nc	nc
11/18/1993	12:24:37	35.9618333	-120.5093333	10.958	2.41	md	56	77	0.00991	0.05	nc	nc30035181	2016-12-21T04:26:50.770Z	9 km NW of Parkfield, California	earthquake	0.13	0.17	0.09	70	reviewed	nc	nc
11/15/1993	22:32:21	35.807	-119.269	4.783	2.14	mc	0	106.4		0.406	ci	ci3132048	2016-02-10T06:41:39.192Z	5km NNW of Delano, California	earthquake				38	reviewed	ci	ci
11/15/1993	11:01:00	36.0005	-120.5513333	10.315	2.27	md	53	66	0.04955	0.04	nc	nc30034875	2016-12-21T04:06:33.240Z	15 km NW of Parkfield, California	earthquake	0.13	0.21	0.13	55	reviewed	nc	nc
11/15/1993	3:05:04	35.9751667	-120.5228333	10.368	2.62	md	51	73	0.02703	0.04	nc	nc30034830	2016-12-21T04:05:17.560Z	11 km NW of Parkfield, California	earthquake	0.17	0.22	0.09	59	reviewed	nc	nc
11/14/1993	14:55:36	35.9655	-120.5148333	10.648	2.04	md	36	77	0.01622	0.06	nc	nc30034784	2016-12-21T04:03:31.660Z	10 km NW of Parkfield, California	earthquake	0.21	0.27	0.17	31	reviewed	nc	nc
11/14/1993	13:06:42	35.97	-120.5251667	10.418	2.07	md	34	74	0.02523	0.07	nc	nc30034776	2016-12-21T04:02:40.340Z	11 km NW of Parkfield, California	earthquake	0.26	0.3	0.13	34	reviewed	nc	nc
11/14/1993	13:01:49	35.9748333	-120.5255	10.718	2.04	md	30	74	0.02883	0.07	nc	nc30034774	2016-12-21T04:02:27.490Z	11 km NW of Parkfield, California	earthquake	0.26	0.33	0.14	29	reviewed	nc	nc
11/14/1993	12:52:59	35.949	-120.4918333	10.859	2.67	md	38	80	0.009009	0.05	nc	nc30035323	2016-12-21T04:02:10.120Z	7 km NW of Parkfield, California	earthquake	0.2	0.31	0.09	46	reviewed	nc	nc
11/14/1993	12:34:53	35.9586667	-120.5085	10.298	2.68	md	53	52	0.008108	0.04	nc	nc403505	2016-12-21T04:01:24.220Z	9 km NW of Parkfield, California	earthquake	0.15	0.19	0.1	64	reviewed	nc	nc
11/14/1993	12:30:37	35.9661667	-120.5173333	10.828	2.21	md	40	76	0.01802	0.06	nc	nc30034768	2016-12-21T04:01:10.750Z	10 km NW of Parkfield, California	earthquake	0.19	0.27	0.09	39	reviewed	nc	nc
11/14/1993	12:29:14	35.9578333	-120.504	10.788	2.57	md	47	52	0.004505	0.05	nc	nc403503	2016-12-21T04:01:02.090Z	9 km NW of Parkfield, California	earthquake	0.16	0.22	0.09	40	reviewed	nc	nc
11/14/1993	12:25:34	35.9525	-120.498	10.883	4.82	mw	61	51	0.003604	0.06	nc	nc30034766	2016-12-21T04:00:50.130Z	8 km NW of Parkfield, California	earthquake	0.16	0.24		5	reviewed	nc	nc
11/14/1993	4:48:27	35.9548333	-120.4991667	10.518	2.07	md	41	80	0.001802	0.04	nc	nc30034752	2016-12-21T03:59:12.150Z	8 km NW of Parkfield, California	earthquake	0.17	0.23	0.15	40	reviewed	nc	nc
11/14/1993	4:40:59	35.9533333	-120.4991667	10.718	2.17	md	36	76	0.002703	0.04	nc	nc30034751	2016-12-21T03:58:58.060Z	8 km NW of Parkfield, California	earthquake	0.2	0.25	0.14	36	reviewed	nc	nc
11/14/1993	0:11:12	35.9515	-120.4951667	10.458	2.42	md	45	80	0.005405	0.05	nc	nc30034734	2016-12-21T03:57:52.990Z	8 km NW of Parkfield, California	earthquake	0.17	0.24	0.13	47	reviewed	nc	nc
11/13/1993	21:14:05	35.9515	-120.4976667	10.508	3.19	md	58	50	0.004505	0.06	nc	nc30034725	2016-12-21T03:57:12.540Z	8 km NW of Parkfield, California	earthquake	0.15	0.24	0.08	79	reviewed	nc	nc
11/10/1993	1:05:34	36.2381667	-119.7056667	4.104	2.37	md	12	97	0.5027	0.13	nc	nc30034465	2016-12-21T03:38:55.690Z	8 km S of Armona, California	earthquake	0.58	1.86	0.04	6	reviewed	nc	nc
11/5/1993	11:33:53	35.078	-119.109	10.854	2.09	mc	0	96.8		0.253	ci	ci3130599	2016-02-10T10:17:03.844Z	22km NW of Grapevine, California	earthquake		1.023		57	reviewed	ci	ci
11/4/1993	14:27:44	36.1856667	-120.2423333	12.167	2.38	md	32	97	0.1036	0.2	nc	nc30034021	2016-12-21T03:08:12.090Z	11 km ENE of Coalinga, California	earthquake	0.32	0.81	0.12	22	reviewed	nc	nc
10/31/1993	2:25:58	36.271	-120.321	4.411	2.14	md	20	127	0.02793	0.04	nc	nc30033656	2016-12-21T02:43:33.508Z	14 km NNE of Coalinga, California	earthquake	0.21	0.13	0.2	13	reviewed	nc	nc
10/26/1993	2:17:47	36.1353333	-120.182	9.01	2.55	md	43	106	0.09459	0.04	nc	nc30033309	2016-12-21T02:19:37.480Z	10 km SW of Huron, California	earthquake	0.15	0.3	0.08	47	reviewed	nc	nc
10/21/1993	4:58:45	36.2906667	-120.4075	9.988	2.87	md	45	64	0.05495	0.05	nc	nc30032936	2016-12-21T01:54:36.570Z	17 km NNW of Coalinga, California	earthquake	0.11	0.15	0.11	68	reviewed	nc	nc
10/20/1993	13:48:40	35.656	-119.318	4.76	2.77	ml	0	171		0.338	ci	ci3128058	2016-02-10T13:41:23.315Z	7km NNE of Wasco, California	earthquake				17	reviewed	ci	ci
10/18/1993	19:49:55	36.1593333	-120.1583333	7.727	2.62	md	33	117	0.1063	0.05	nc	nc30032393	2016-12-21T01:28:55.550Z	6 km SW of Huron, California	earthquake	0.19	0.33	0.1	58	reviewed	nc	nc
10/18/1993	11:37:12	35.221	-119.554	14.746	2.4	mc	0	104	0.1347	0.28	ci	ci3127713	2016-02-11T00:28:35.471Z	12km NW of Taft, California	earthquake		0.402		63	reviewed	ci	ci
10/17/1993	3:11:34	36.1061667	-120.1693333	10.432	2.47	md	55	119	0.1586	0.08	nc	nc30032129	2016-12-21T01:03:26.550Z	11 km NNW of Avenal, California	earthquake	0.2	0.37	0.1	61	reviewed	nc	nc
10/14/1993	10:13:37	35.153	-119.227	19.186	2.44	mc	0	107.5		0.235	ci	ci3127085	2016-02-10T17:10:20.845Z	19km ENE of Maricopa, California	earthquake		1.467		67	reviewed	ci	ci
10/11/1993	14:29:28	35.158	-119.121	5.182	2.17	mc	0	101.1		0.426	ci	ci3126557	2016-02-11T00:26:46.111Z	22km WSW of Lamont, California	earthquake				54	reviewed	ci	ci
10/3/1993	4:01:45	36.1716667	-120.3186667	14.465	2.11	md	46	69	0.1225	0.06	nc	nc30030506	2016-12-20T23:16:17.990Z	5 km NE of Coalinga, California	earthquake	0.29	0.36	0.14	45	reviewed	nc	nc
10/1/1993	21:53:26	36.012	-119.232	4.475	2.01	mc	0	213	0.6124	0.172	ci	ci3124689	2016-02-09T23:21:39.714Z	7km NE of Pixley, California	earthquake				15	reviewed	ci	ci
9/27/1993	20:15:21	35.7838333	-120.3348333	8.457	3.5	md	52	42	0.04955	0.05	nc	nc30029975	2016-12-20T22:52:23.470Z	14 km NNE of Shandon, California	earthquake	0.16	0.31	0.08	94	reviewed	nc	nc
9/26/1993	7:02:17	36.1253333	-119.3518333	19.915	2.58	md	25	115	0.2685	0.11	nc	nc30029795	2016-12-20T22:45:51.694Z	5 km S of Matheny, California	earthquake	0.42	0.55	0.19	26	reviewed	nc	nc
9/10/1993	2:30:40	35.785	-118.956	4.833	2.1	mc	0	91.8	0.3178	0.186	ci	ci3121664	2016-02-10T17:02:01.404Z	26km E of Delano, California	earthquake				50	reviewed	ci	ci
9/7/1993	20:43:32	36.1248333	-120.2803333	12.335	2.12	md	36	82	0.1297	0.03	nc	nc30027891	2016-12-20T20:37:27.660Z	7 km ESE of Coalinga, California	earthquake	0.24	0.58	0.12	39	reviewed	nc	nc
9/6/1993	10:40:28	36.009	-120.5631667	4.615	2.23	md	42	62	0.04595	0.05	nc	nc30027727	2016-12-20T20:32:18.140Z	16 km NW of Parkfield, California	earthquake	0.17	0.27	0.1	37	reviewed	nc	nc
9/6/1993	9:20:44	36.333	-119.921	18.759	2.04	md	35	97	0.1568	0.29	nc	nc30027723	2016-12-20T20:31:53.510Z	7 km N of Lemoore Station, California	earthquake	0.63	0.71	0.27	7	reviewed	nc	nc
9/4/1993	11:27:17	35.021	-119.105	11.254	2.03	mc	0	95.9	0.06009	0.259	ci	ci3120494	2016-02-10T17:00:16.203Z	18km WNW of Grapevine, California	earthquake		0.788		71	reviewed	ci	ci
9/2/1993	12:29:19	35.8923333	-120.4371667	10.322	2.05	md	46	58	0.03063	0.04	nc	nc30027389	2016-12-20T20:06:54.510Z	0 km SSW of Parkfield, California	earthquake	0.16	0.24	0.13	33	reviewed	nc	nc
8/31/1993	4:27:20	35.658	-119.845	5.05	2.29	mc	0	77.9		0.361	ci	ci3119945	2016-02-09T23:14:27.462Z	37km NNE of Simmler, California	earthquake				48	reviewed	ci	ci
8/30/1993	5:29:59	35.019	-118.96	14.654	2.3	mc	0	84.1		0.252	ci	ci3119801	2016-02-11T00:16:02.359Z	9km NNW of Grapevine, California	earthquake		0.136		86	reviewed	ci	ci
8/27/1993	7:42:09	35.9805	-120.5281667	10.588	2.04	md	37	74	0.03423	0.05	nc	nc376347	2016-12-20T19:30:27.200Z	12 km NW of Parkfield, California	earthquake	0.21	0.29	0.16	28	reviewed	nc	nc
8/24/1993	18:23:24	35.69	-119.866	5.05	2.06	mc	0	218.5		0.282	ci	ci3119004	2016-02-10T13:28:38.197Z	36km SSE of Kettleman City, California	earthquake				28	reviewed	ci	ci
8/24/1993	18:19:29	35.71	-119.886	5.05	2.18	mc	0	250.9	0.2794	0.278	ci	ci3119003	2016-02-10T02:51:24.761Z	34km SSE of Kettleman City, California	earthquake				25	reviewed	ci	ci
8/24/1993	18:04:36	35.677	-119.862	5.05	2.29	mc	0	204.6		0.351	ci	ci3119001	2016-02-10T06:24:55.371Z	38km SSE of Kettleman City, California	earthquake				42	reviewed	ci	ci
8/24/1993	2:29:19	35.669	-119.858	5.05	2.04	mc	0	138.1		0.383	ci	ci3118950	2016-02-09T23:13:33.433Z	38km NNE of Simmler, California	earthquake				24	reviewed	ci	ci
8/24/1993	2:13:02	35.663	-119.853	5.143	2.01	mc	0	137.3		0.364	ci	ci3118947	2016-02-10T16:58:34.489Z	37km NNE of Simmler, California	earthquake				30	reviewed	ci	ci
8/22/1993	3:36:43	35.067	-119.019	19.579	2.25	mc	0	91.9		0.268	ci	ci3118593	2016-02-10T02:50:54.685Z	16km NNW of Grapevine, California	earthquake		0.544		83	reviewed	ci	ci
8/19/1993	17:11:31	36.281	-120.3966667	9.968	2.97	md	44	53	0.05405	0.06	nc	nc375461	2016-12-20T18:36:47.650Z	16 km NNW of Coalinga, California	earthquake	0.14	0.23	0.09	42	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
8/19/1993	17:08:33	36.2788333	-120.3976667	9.728	2.68	md	37	60	0.05315	0.05	nc	nc375460	2016-12-20T18:36:38.670Z	15 km NNW of Coalinga, California	earthquake	0.17	0.25	0.09	31	reviewed	nc	nc
8/19/1993	3:54:40	35.1435	-120.7711667	5.39	2.16	md	29	166	0.02613	0.08	nc	nc375409	2016-12-20T18:32:05.812Z	Central California	earthquake	0.25	0.27	0.08	20	reviewed	nc	nc
8/18/1993	14:44:23	35.147	-120.7695	5.49	2.15	md	28	163	0.02252	0.08	nc	nc375308	2016-12-20T18:29:15.951Z	5 km SW of Avila Beach, California	earthquake	0.36	0.28	0.15	23	reviewed	nc	nc
8/18/1993	7:43:44	36.0081667	-120.1443333	14.468	2.79	md	38	105	0.05946	0.11	nc	nc375276	2016-12-20T18:27:16.410Z	1 km WNW of Avenal, California	earthquake	0.23	0.36	0.09	39	reviewed	nc	nc
8/14/1993	12:20:33	36.0501667	-120.0995	5.811	2.36	md	32	145	0.01351	0.13	nc	nc374825	2016-12-20T18:02:58.300Z	5 km NNE of Avenal, California	earthquake	0.33	0.24	0.12	34	reviewed	nc	nc
8/6/1993	11:01:39	36.2773333	-120.3631667	8.618	2.46	md	43	59	0.03243	0.06	nc	nc373592	2016-12-20T16:37:04.460Z	15 km N of Coalinga, California	earthquake	0.13	0.26	0.12	48	reviewed	nc	nc
8/4/1993	20:20:02	36.0505	-120.607	3.561	2.74	md	50	46	0.02072	0.07	nc	nc373260	2016-12-20T16:28:04.990Z	22 km NW of Parkfield, California	earthquake	0.13	0.25	0.09	51	reviewed	nc	nc
8/1/1993	5:12:03	35.8993333	-120.3055	6.759	2.46	md	42	94	0.04144	0.18	nc	nc372799	2016-12-20T16:03:18.840Z	11 km E of Parkfield, California	earthquake	0.3	0.39	0.1	41	reviewed	nc	nc
7/25/1993	9:01:56	36.0685	-120.6203333	5.761	2.42	md	41	40	0.01982	0.05	nc	nc369860	2016-12-20T15:34:26.790Z	24 km WSW of Coalinga, California	earthquake	0.16	0.26	0.11	31	reviewed	nc	nc
7/23/1993	12:21:02	35.145	-119.101	24.482	2.26	mc	0	104		0.21	ci	ci3114575	2016-02-11T00:09:21.457Z	21km SW of Lamont, California	earthquake		0.925		75	reviewed	ci	ci
7/13/1993	23:33:21	35.9771667	-120.1288333	6.56	2.06	md	9	163	0.08559	0.01	nc	nc368000	2016-12-20T14:51:13.053Z	2 km S of Avenal, California	earthquake	0.71	1.07	0.36	3	reviewed	nc	nc
7/13/1993	23:01:19	35.691	-120.8318333	4.823	2.96	md	63	33	0.05856	0.09	nc	nc367997	2016-12-20T14:51:04.290Z	5 km SE of Lake Nacimiento, California	earthquake	0.12	0.42	0.08	90	reviewed	nc	nc
7/13/1993	18:19:29	36.2458333	-120.4013333	6.605	2.37	md	26	70	0.04775	0.08	nc	nc367979	2016-12-20T14:50:26.790Z	12 km NNW of Coalinga, California	earthquake	0.28	0.35	0.13	27	reviewed	nc	nc
7/13/1993	4:42:29	35.964	-120.0121667	8.366	2.22	md	28	166	0.1108	0.07	nc	nc367895	2016-12-20T14:47:05.083Z	6 km SW of Kettleman City, California	earthquake	0.2	0.34	0.15	17	reviewed	nc	nc
7/12/1993	8:50:11	35.9731667	-120.0438333	1.43	2	md	15	182	0.1027	0.12	nc	nc367802	2016-12-20T14:44:52.082Z	8 km WSW of Kettleman City, California	earthquake	0.44	1.12	0.12	6	reviewed	nc	nc
7/7/1993	16:26:04	36.246	-120.4033333	7.765	2.54	md	36	47	0.04865	0.07	nc	nc365484	2016-12-20T14:29:53.310Z	12 km NNW of Coalinga, California	earthquake	0.17	0.3	0.16	31	reviewed	nc	nc
7/4/1993	4:38:34	36.26	-120.3093333	4.597	2.14	md	21	206	0.02883	0.09	nc	nc364469	2016-12-20T14:13:25.975Z	14 km NNE of Coalinga, California	earthquake	0.43	0.19	0.09	18	reviewed	nc	nc
7/3/1993	3:42:18	34.975	-119.083	18.838	2.01	mc	0	85.5		0.222	ci	ci3112108	2016-02-10T13:19:49.873Z	14km WNW of Grapevine, California	earthquake		0.395		42	reviewed	ci	ci
6/25/1993	10:55:04	36.1611667	-120.2751667	9.877	2.27	md	47	66	0.1036	0.09	nc	nc359142	2016-12-20T13:38:54.140Z	8 km ENE of Coalinga, California	earthquake	0.21	0.3	0.09	44	reviewed	nc	nc
6/24/1993	4:37:49	35.855	-119.8081667	6.623	2.04	md	17	123	0.1207	0.16	nc	nc357961	2016-12-20T13:35:53.528Z	21 km SE of Kettleman City, California	earthquake	1.15	0.63	0.14	8	reviewed	nc	nc
6/23/1993	9:10:00	35.926	-120.4756667	4.963	2.22	md	43	69	0.01802	0.06	nc	nc357242	2016-12-20T13:34:00.860Z	4 km NW of Parkfield, California	earthquake	0.16	0.21	0.13	40	reviewed	nc	nc
6/15/1993	21:56:42	35.144	-119.094	21.203	2.03	mc	0	117.6		0.203	ci	ci3110109	2016-02-10T09:49:15.513Z	21km SW of Lamont, California	earthquake		6.838		15	reviewed	ci	ci
6/12/1993	20:01:48	35.137	-120.082	-0.866	2.12	mc	0	83.1		0.111	ci	ci3109738	2016-02-09T23:01:08.056Z	25km SSW of Simmler, California	earthquake		2.715		10	reviewed	ci	ci
6/8/1993	13:02:43	36.0865	-120.2173333	8.595	2.63	md	46	73	0.09099	0.06	nc	nc352628	2016-12-20T12:51:34.190Z	12 km NW of Avenal, California	earthquake	0.17	0.38	0.09	42	reviewed	nc	nc
6/5/1993	16:25:41	35.3131667	-120.8216667	7.135	2.02	md	42	89	0.02342	0.11	nc	nc352421	2016-12-20T12:41:26.628Z	1 km ENE of Los Osos, California	earthquake	0.18	0.31	0.14	24	reviewed	nc	nc
6/3/1993	4:39:08	34.988	-118.939	13.296	2.08	mc	0	129.2	0.1085	0.095	ci	ci3108282	2016-02-10T09:47:01.686Z	5km N of Grapevine, California	earthquake		5.02		9	reviewed	ci	ci
6/2/1993	18:05:08	34.722	-120.143	3.041	2.28	mc	0	87.8	0.2198	0.325	ci	ci3108220	2016-02-10T06:10:59.191Z	7km NNW of Los Olivos, California	earthquake		2.086		20	reviewed	ci	ci
6/1/1993	9:52:31	35.143	-119.096	22.052	2.74	mc	0	103.6		0.239	ci	ci3108037	2016-02-10T02:36:58.901Z	21km SW of Lamont, California	earthquake		0.555		56	reviewed	ci	ci
6/1/1993	1:41:21	36.1948333	-120.3238333	8.828	2.06	md	27	89	0.05676	0.06	nc	nc351782	2016-12-20T12:23:12.071Z	6 km NNE of Coalinga, California	earthquake	0.17	0.27	0.18	20	reviewed	nc	nc
5/30/1993	5:23:45	35.141	-119.089	18.839	2.05	mc	0	103.2		0.318	ci	ci3107764	2016-02-11T00:00:10.446Z	21km SW of Lamont, California	earthquake		0.998		62	reviewed	ci	ci
5/28/1993	23:18:40	35.145	-119.1	21.922	2.86	ml	0	110.8		0.22	ci	ci3107619	2016-02-10T02:36:17.183Z	21km SW of Lamont, California	earthquake		0.726		9	reviewed	ci	ci
5/28/1993	14:51:41	35.145	-119.099	24.672	2.01	mc	0	115.7		0.204	ci	ci3107561	2016-02-09T22:58:11.328Z	21km SW of Lamont, California	earthquake		1.103		43	reviewed	ci	ci
5/28/1993	11:35:06	35.145	-119.106	22.642	2.02	mc	0	104.1		0.238	ci	ci3107542	2016-02-10T02:36:05.905Z	22km SW of Lamont, California	earthquake		0.76		52	reviewed	ci	ci
5/28/1993	5:11:46	35.144	-119.094	22.752	2.13	mc	0	105.8		0.274	ci	ci3107505	2016-02-10T13:13:46.595Z	21km SW of Lamont, California	earthquake		0.955		36	reviewed	ci	ci
5/28/1993	5:02:07	35.145	-119.102	21.902	2	mc	0	106.4		0.231	ci	ci3107504	2016-02-10T06:09:42.236Z	21km SW of Lamont, California	earthquake		0.884		30	reviewed	ci	ci
5/28/1993	4:47:40	35.149	-119.104	20.612	5.19	ml	0	36.9		0.288	ci	ci3107503	2020-07-09T21:20:43.944Z	21km SW of Lamont, California	earthquake		0.34		51	reviewed	ci	ci
5/27/1993	8:39:36	36.1443333	-120.2701667	9.63	3.39	md	57	67	0.1207	0.09	nc	nc351443	2016-12-20T12:09:36.600Z	8 km E of Coalinga, California	earthquake	0.15	0.37	0.11	157	reviewed	nc	nc
5/27/1993	5:31:09	35.9288333	-120.4793333	5.083	2.23	md	43	76	0.01892	0.06	nc	nc351432	2016-12-20T12:08:57.290Z	5 km NW of Parkfield, California	earthquake	0.17	0.22	0.13	38	reviewed	nc	nc
5/27/1993	4:07:00	36.1991667	-120.3321667	10.078	2.34	md	41	84	0.05045	0.08	nc	nc351429	2016-12-20T12:08:45.440Z	7 km NNE of Coalinga, California	earthquake	0.17	0.38	0.11	41	reviewed	nc	nc
5/19/1993	4:24:35	36.1566667	-120.135	8.09	2.25	md	31	129	0.0982	0.07	nc	nc350355	2016-12-20T11:42:55.770Z	5 km SSW of Huron, California	earthquake	0.2	0.29	0.17	28	reviewed	nc	nc
5/18/1993	16:50:23	36.1591667	-120.1368333	8.24	2.12	md	26	128	0.0991	0.09	nc	nc350003	2016-12-20T11:41:48.594Z	5 km SSW of Huron, California	earthquake	0.24	0.47	0.14	21	reviewed	nc	nc
5/18/1993	3:40:08	35.41	-119.329	5.19	2.07	mc	0	156.8	0.3644	0.251	ci	ci3105269	2016-02-10T02:32:36.393Z	11km SSW of Shafter, California	earthquake				42	reviewed	ci	ci
5/14/1993	2:55:57	35.9105	-120.4526667	5.719	2.11	md	34	73	0.02793	0.05	nc	nc349180	2016-12-20T11:25:00.230Z	2 km WNW of Parkfield, California	earthquake	0.17	0.24	0.06	28	reviewed	nc	nc
5/13/1993	20:27:27	36.165	-120.2523333	9.468	2.94	md	37	199	0.2432	0.18	nc	nc349160	2016-12-20T11:24:07.480Z	10 km ENE of Coalinga, California	earthquake	0.58	1.54	0.13	51	reviewed	nc	nc
5/13/1993	15:28:52	36.2793333	-120.4016667	9.938	2.19	md	41	54	0.05586	0.06	nc	nc349130	2016-12-20T11:23:30.320Z	15 km NNW of Coalinga, California	earthquake	0.15	0.22	0.14	32	reviewed	nc	nc
5/8/1993	5:56:23	35.026	-119.034	10.097	2.19	mc	0	149.4	0.06409	0.121	ci	ci3103939	2016-02-10T16:38:09.179Z	13km NW of Grapevine, California	earthquake		1.929		8	reviewed	ci	ci
5/7/1993	7:34:15	36.344	-120.0745	19.327	2.19	md	25	155	0.0955	0.15	nc	nc30017132	2016-12-20T10:59:58.812Z	15 km N of Huron, California	earthquake	0.5	0.48	0.17	22	reviewed	nc	nc
5/3/1993	10:53:56	36.2113333	-120.3905	11.745	2.21	md	32	75	0.05405	0.11	nc	nc346843	2016-12-20T10:50:28.690Z	8 km NNW of Coalinga, California	earthquake	0.28	0.54	0.14	28	reviewed	nc	nc
5/3/1993	10:35:54	36.2183333	-120.3981667	11.795	2.22	md	26	51	0.05495	0.12	nc	nc346842	2016-12-20T10:50:22.116Z	9 km NNW of Coalinga, California	earthquake	0.23	0.41	0.1	24	reviewed	nc	nc
5/2/1993	9:28:43	35.9546667	-120.5036667	9.158	3.4	md	61	32	0.004505	0.05	nc	nc346793	2016-12-20T10:46:16.600Z	8 km NW of Parkfield, California	earthquake	0.13	0.23	0.07	104	reviewed	nc	nc
4/30/1993	16:35:30	36.2116667	-119.8215	20.134	2.59	md	35	63	0.2153	0.23	nc	nc346720	2016-12-20T10:41:10.818Z	2 km N of Stratford, California	earthquake	0.62	1.23	0.19	34	reviewed	nc	nc
4/25/1993	0:05:24	36.211	-120.317	9.827	2.09	md	29	84	0.04324	0.06	nc	nc346398	2016-12-20T10:23:12.690Z	8 km NNE of Coalinga, California	earthquake	0.28	0.25	0.08	23	reviewed	nc	nc
4/18/1993	17:00:27	36.0565	-120.6171667	0.901	2.25	md	26	96	0.02072	0.06	nc	nc345896	2016-12-20T10:00:48.730Z	24 km NW of Parkfield, California	earthquake	0.3	0.59	0.16	19	reviewed	nc	nc
4/18/1993	14:50:41	36.2658333	-120.3711667	9.277	2.12	md	28	57	0.02793	0.04	nc	nc345886	2016-12-20T10:00:30.760Z	14 km N of Coalinga, California	earthquake	0.25	0.2	0.11	22	reviewed	nc	nc
4/14/1993	14:09:27	36.063	-120.6276667	0.771	2.33	md	34	63	0.02613	0.08	nc	nc345523	2016-12-20T09:52:12.290Z	25 km NW of Parkfield, California	earthquake	0.23	0.52	0.14	25	reviewed	nc	nc
4/12/1993	22:44:33	35.9656667	-120.5163333	7.088	2.7	md	49	46	0.01712	0.04	nc	nc344783	2016-12-20T09:48:30.220Z	10 km NW of Parkfield, California	earthquake	0.15	0.19	0.09	47	reviewed	nc	nc
4/8/1993	2:10:32	35.962	-120.5103333	7.703	3.22	md	57	47	0.01081	0.04	nc	nc344155	2016-12-20T09:25:33.980Z	9 km NW of Parkfield, California	earthquake	0.12	0.18	0.11	94	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
4/7/1993	15:12:46	35.1955	-120.6485	3.812	2.17	md	31	79	0.03874	0.08	nc	nc343548	2016-12-20T09:18:21.857Z	3 km WSW of Edna, California	earthquake	0.19	0.34	0.13	21	reviewed	nc	nc
4/4/1993	5:21:25	35.9416667	-120.493	6.893	4.25	md	57	32	0.01532	0.07	nc	nc342924	2016-12-20T09:01:59.670Z	7 km NW of Parkfield, California	earthquake	0.15	0.21	0.12	230	reviewed	nc	nc
3/30/1993	12:35:10	35.4628333	-120.7685	3.805	2.06	md	43	58	0.08649	0.11	nc	nc341658	2016-12-20T08:48:49.545Z	9 km WSW of Atascadero, California	earthquake	0.16	0.62	0.13	30	reviewed	nc	nc
3/27/1993	4:10:36	36.252	-120.4583333	2.936	2.55	md	34	73	0.09369	0.06	nc	nc341470	2016-12-20T08:39:33.180Z	15 km NW of Coalinga, California	earthquake	0.15	0.33	0.1	46	reviewed	nc	nc
3/26/1993	22:29:01	36.1688333	-120.259	8.337	2.43	md	34	105	0.1054	0.17	nc	nc341434	2016-12-20T08:38:18.105Z	9 km ENE of Coalinga, California	earthquake	0.48	0.37	0.08	25	reviewed	nc	nc
3/21/1993	5:15:42	35.4361667	-120.717	7.632	2.17	md	11	204	0.1766	0.38	nc	nc1201756	2016-12-20T08:15:38.094Z	7 km SW of Atascadero, California	earthquake	3.83	26.53	0.23	9	reviewed	nc	nc
3/19/1993	4:54:32	36.0046667	-120.5598333	4.385	2.45	md	45	64	0.04505	0.04	nc	nc340757	2016-12-20T08:10:44.030Z	16 km NW of Parkfield, California	earthquake	0.18	0.21	0.14	41	reviewed	nc	nc
3/14/1993	7:13:58	35.943	-120.489	10.539	3.4	md	56	42	0.01532	0.05	nc	nc340175	2016-12-20T07:58:44.160Z	6 km NW of Parkfield, California	earthquake	0.14	0.23	0.08	134	reviewed	nc	nc
3/12/1993	13:22:22	36.0636667	-119.9598333	22.495	2.42	md	38	67	0.1216	0.21	nc	nc340090	2016-12-20T07:54:26.720Z	6 km N of Kettleman City, California	earthquake	0.69	0.74	0.13	32	reviewed	nc	nc
3/7/1993	4:30:57	35.6915	-120.8283333	5.603	2.54	md	53	33	0.06036	0.09	nc	nc339447	2016-12-20T07:37:13.010Z	Central California	earthquake	0.14	0.93	0.11	66	reviewed	nc	nc
3/6/1993	20:53:15	35.1535	-120.655	3.942	2.22	md	35	107	0.01441	0.16	nc	nc339422	2016-12-20T07:36:07.163Z	1 km NW of Pismo Beach, California	earthquake	0.34	0.25	0.18	20	reviewed	nc	nc
3/6/1993	2:46:19	35.035	-119.199	16.861	2.21	mc	0	96.7		0.28	ci	ci3094897	2016-02-10T12:59:10.377Z	19km E of Maricopa, California	earthquake		0.685		62	reviewed	ci	ci
3/2/1993	13:32:38	35.1561667	-120.6571667	4.602	2.69	md	47	106	0.01622	0.11	nc	nc338587	2016-12-20T07:25:35.390Z	2 km NW of Pismo Beach, California	earthquake	0.19	0.28	0.08	45	reviewed	nc	nc
3/2/1993	11:32:38	36.0393333	-120.5915	4.271	2.18	md	29	94	0.02973	0.05	nc	nc338584	2016-12-20T07:25:17.180Z	21 km NW of Parkfield, California	earthquake	0.31	0.31	0.07	23	reviewed	nc	nc
3/2/1993	5:34:03	34.868	-119.786	5.024	2.01	mc	0	68.1		0.146	ci	ci3094365	2016-02-10T02:19:03.452Z	37km NE of Los Olivos, California	earthquake		1.002		29	reviewed	ci	ci
2/26/1993	22:53:36	35.894	-119.671	4.976	2.17	mc	0	78		0.311	ci	ci3094002	2016-02-10T16:26:02.365Z	17km W of Alpaugh, California	earthquake				16	reviewed	ci	ci
2/26/1993	20:12:20	35.501	-119.337	5.176	2.42	mc	0	63		0.428	ci	ci3093986	2016-02-10T05:52:21.723Z	6km W of Shafter, California	earthquake				55	reviewed	ci	ci
2/17/1993	18:07:36	35.5215	-120.0713333	11.647	2.87	md	36	139	0.05766	0.07	nc	nc337545	2016-12-20T06:56:04.000Z	31 km ESE of Shandon, California	earthquake	0.23	0.4	0.1	61	reviewed	nc	nc
2/17/1993	5:51:27	36.2268333	-120.3561667	9.881	2.36	md	47	55	0.02523	0.04	nc	nc337518	2016-12-20T06:54:47.940Z	9 km N of Coalinga, California	earthquake	0.11	0.16	0.12	37	reviewed	nc	nc
2/17/1993	5:22:57	36.2275	-120.3603333	9.831	2.07	md	36	52	0.02613	0.06	nc	nc337517	2016-12-20T06:54:36.120Z	9 km N of Coalinga, California	earthquake	0.17	0.23	0.11	19	reviewed	nc	nc
2/17/1993	4:03:35	35.9605	-119.767	18.044	2.31	md	23	90	0.2955	0.04	nc	nc337326	2016-12-20T06:54:21.696Z	18 km ESE of Kettleman City, California	earthquake	0.57	0.52	0.08	14	reviewed	nc	nc
2/15/1993	17:10:59	35.975	-120.5231667	10.458	2.84	md	54	33	0.02703	0.04	nc	nc337175	2016-12-20T06:50:51.840Z	11 km NW of Parkfield, California	earthquake	0.14	0.21	0.08	81	reviewed	nc	nc
2/14/1993	20:45:54	36.2275	-120.435	6.275	3.3	md	44	82	0.07748	0.09	nc	nc337117	2016-12-20T06:48:44.770Z	11 km NW of Coalinga, California	earthquake	0.12	0.26	0.12	149	reviewed	nc	nc
2/3/1993	23:36:04	35.8541667	-119.7166667	18.903	2.1	md	14	177	0.4027	0.09	nc	nc335921	2016-12-20T06:26:00.543Z	21 km W of Alpaugh, California	earthquake	0.76	0.71	0.04	3	reviewed	nc	nc
1/29/1993	7:18:51	35.5638333	-120.4038333	10.179	2.22	md	34	73	0.03063	0.06	nc	nc335077	2016-12-20T06:05:28.940Z	10 km SSW of Shandon, California	earthquake	0.17	0.47	0.11	34	reviewed	nc	nc
1/27/1993	20:26:57	35.403	-119.456	20.17	2.3	mc	0	217.7	0.4106	0.357	ci	ci3089414	2016-02-10T19:57:50.993Z	1km ENE of Buttonwillow, California	earthquake				39	reviewed	ci	ci
1/27/1993	12:41:01	35.469	-119.481	5.151	2.18	mc	0	83.3		0.287	ci	ci3089389	2016-02-10T09:25:40.962Z	8km N of Buttonwillow, California	earthquake				42	reviewed	ci	ci
1/18/1993	23:10:43	35.295	-119.582	20.872	2.17	mc	0	172.7		0.251	ci	ci3088425	2016-02-09T22:33:55.963Z	16km SW of Buttonwillow, California	earthquake		1.373		32	reviewed	ci	ci
1/14/1993	4:06:31	35.8168333	-120.367	7.928	2.33	md	31	49	0.07027	0.03	nc	nc332079	2016-12-20T05:26:40.920Z	10 km SSE of Parkfield, California	earthquake	0.14	0.36	0.11	27	reviewed	nc	nc
1/14/1993	3:41:05	35.8175	-120.3661667	8.108	2.6	md	35	48	0.07027	0.03	nc	nc332078	2016-12-20T05:26:28.480Z	10 km SSE of Parkfield, California	earthquake	0.15	0.33	0.07	40	reviewed	nc	nc
1/9/1993	16:22:57	36.2243333	-120.4615	2.081	2.12	md	4	114	0.0991	0.06	nc	nc1200660	2016-12-20T05:07:57.861Z	13 km NW of Coalinga, California	earthquake	0.61	7.93	0.14	5	reviewed	nc	nc
1/5/1993	0:41:00	35.99	-120.1203333	12.058	2.98	md	47	127	0.07117	0.08	nc	nc330782	2016-12-20T04:57:10.620Z	1 km SSE of Avenal, California	earthquake	0.18	0.4	0.09	67	reviewed	nc	nc
1/3/1993	14:32:14	35.289	-119.013	18.288	2.27	mc	0	118.7		0.248	ci	ci3085957	2016-02-10T12:50:01.193Z	8km SSE of Bakersfield, California	earthquake		1.989		75	reviewed	ci	ci
1/1/1993	16:49:01	35.099	-119.102	11.949	2.51	mc	0	108.9		0.329	ci	ci3085731	2016-02-10T19:53:21.970Z	23km NW of Grapevine, California	earthquake		0.806		92	reviewed	ci	ci
12/28/1992	23:05:43	35.372	-119.08	5.315	2.3	mc	0	140.9		0.394	ci	ci3085258	2016-02-10T19:52:39.208Z	5km WNW of Bakersfield, California	earthquake				39	reviewed	ci	ci
12/28/1992	0:46:01	36.2138333	-120.411	7.015	2.03	md	31	72	0.06577	0.05	nc	nc330219	2016-12-20T02:03:16.284Z	9 km NNW of Coalinga, California	earthquake	0.16	0.28	0.15	27	reviewed	nc	nc
12/26/1992	4:23:46	34.902	-119.547	11.912	2.59	mc	0	50.8		0.268	ci	ci3084870	2016-02-10T23:32:29.662Z	22km SW of Maricopa, California	earthquake		0.709		65	reviewed	ci	ci
12/25/1992	3:35:06	35.9386667	-120.4848333	9.879	3.36	md	58	47	0.02072	0.06	nc	nc330031	2016-12-20T01:55:02.070Z	6 km NW of Parkfield, California	earthquake	0.15	0.22	0.07	102	reviewed	nc	nc
12/23/1992	23:30:03	36.113	-120.1283333	8.75	2.17	md	28	136	0.05405	0.11	nc	nc329974	2016-12-20T01:51:29.910Z	10 km SSW of Huron, California	earthquake	0.31	0.38	0.13	26	reviewed	nc	nc
12/19/1992	17:55:49	36.2388333	-120.2771667	11.297	2.32	md	38	121	0.05405	0.05	nc	nc329591	2016-12-20T01:41:05.180Z	13 km NE of Coalinga, California	earthquake	0.13	0.34	0.1	42	reviewed	nc	nc
12/17/1992	14:49:09	35.096	-118.942	10.842	2.15	mc	0	163.7		0.204	ci	ci3083592	2016-02-09T22:26:25.984Z	16km SW of Arvin, California	earthquake		0.678		40	reviewed	ci	ci
12/11/1992	22:15:33	35.8086667	-120.3578333	8.058	2.19	md	35	50	0.02252	0.04	nc	nc329073	2016-12-20T01:20:01.140Z	12 km SE of Parkfield, California	earthquake	0.17	0.31	0.11	30	reviewed	nc	nc
12/8/1992	19:13:14	35.75	-120.2953333	8.282	2.34	md	32	48	0.04054	0.03	nc	nc328352	2016-12-20T01:12:56.930Z	12 km NE of Shandon, California	earthquake	0.17	0.34	0.08	32	reviewed	nc	nc
12/8/1992	17:28:48	35.75	-120.2961667	8.372	2.31	md	33	48	0.04144	0.03	nc	nc328344	2016-12-20T01:12:28.510Z	12 km NE of Shandon, California	earthquake	0.17	0.36	0.13	30	reviewed	nc	nc
12/8/1992	5:00:20	34.996	-119.04	19.359	2.46	mc	0	114.7		0.225	ci	ci3082194	2016-02-10T16:09:46.080Z	12km WNW of Grapevine, California	earthquake		0.377		51	reviewed	ci	ci
12/6/1992	5:28:27	35.338	-120.5698333	7.768	2.05	md	43	46	0.03063	0.06	nc	nc327950	2016-12-20T01:05:23.730Z	6 km SSE of Santa Margarita, California	earthquake	0.17	0.32	0.21	34	reviewed	nc	nc
12/4/1992	20:30:26	36.2118333	-120.289	13.097	2.19	md	40	62	0.05766	0.04	nc	nc327867	2016-12-20T01:02:12.490Z	10 km NE of Coalinga, California	earthquake	0.21	0.27	0.14	32	reviewed	nc	nc
12/1/1992	4:03:49	35.953	-120.041	5.738	2.25	md	31	148	0.1135	0.09	nc	nc327472	2016-12-20T00:51:11.130Z	Central California	earthquake	0.21	0.44	0.15	28	reviewed	nc	nc
11/29/1992	19:40:34	36.2788333	-120.3343333	10.018	2.82	md	47	108	0.03063	0.07	nc	nc327335	2016-12-20T00:46:03.130Z	15 km N of Coalinga, California	earthquake	0.22	0.17	0.09	46	reviewed	nc	nc
11/28/1992	5:47:21	36.0235	-119.97	26.931	2.27	md	22	198	0.1198	0.13	nc	nc327256	2016-12-20T00:41:42.945Z	1 km NNW of Kettleman City, California	earthquake	0.73	0.43	0.16	24	reviewed	nc	nc
11/27/1992	21:53:07	34.956	-119.341	-0.54	2.08	mc	0	80.1	0.0465	0.339	ci	ci3080076	2016-02-10T01:59:04.309Z	13km SSE of Maricopa, California	earthquake		2.211		11	reviewed	ci	ci
11/26/1992	17:17:41	35.6	-119.421	5.112	2.1	mc	0	179		0.507	ci	ci3079782	2016-02-10T12:38:17.382Z	7km W of Wasco, California	earthquake				26	reviewed	ci	ci
11/26/1992	11:28:05	36.2088333	-120.2861667	12.687	2.03	md	39	62	0.06126	0.06	nc	nc327131	2016-12-20T00:37:04.550Z	10 km NE of Coalinga, California	earthquake	0.25	0.19	0.1	35	reviewed	nc	nc
11/26/1992	6:17:31	35.46	-119.124	4.727	2.11	mc	0	96.6		0.149	ci	ci3079723	2016-02-10T01:58:22.013Z	9km NNE of Rosedale, California	earthquake				30	reviewed	ci	ci
11/22/1992	17:09:30	36.0125	-119.9156667	4.871	2.32	md	15	110	0.3468	0.07	nc	nc326533	2016-12-20T00:25:58.769Z	4 km E of Kettleman City, California	earthquake	0.83	4.73	0.11	4	reviewed	nc	nc
11/16/1992	3:28:37	36.0273333	-120.5855	4.485	2.76	md	57	54	0.04234	0.07	nc	nc324795	2016-12-20T00:02:09.390Z	19 km NW of Parkfield, California	earthquake	0.15	0.23	0.09	73	reviewed	nc	nc
11/15/1992	10:29:43	36.166	-120.0991667	7.347	2.11	md	20	151	0.08378	0.05	nc	nc324750	2016-12-20T00:00:26.522Z	4 km S of Huron, California	earthquake	0.4	0.28	0.14	22	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/7/1992	18:04:29	35.7853333	-119.9303333	11.972	2.71	md	46	177	0.08018	0.18	nc	nc323219	2016-12-19T23:40:26.850Z	24 km S of Kettleman City, California	earthquake	0.48	0.79	0.13	38	reviewed	nc	nc
11/3/1992	16:38:26	35.9843333	-120.5433333	3.033	2.06	md	27	69	0.04595	0.07	nc	nc321997	2016-12-19T23:25:11.830Z	13 km NW of Parkfield, California	earthquake	0.24	0.41	0.23	24	reviewed	nc	nc
11/1/1992	13:16:50	36.2148333	-120.4233333	5.465	2.01	md	31	72	0.07387	0.11	nc	nc321783	2016-12-19T23:16:28.600Z	10 km NW of Coalinga, California	earthquake	0.2	0.45	0.12	17	reviewed	nc	nc
11/1/1992	7:51:24	35.424	-119.425	5.191	2.13	mc	0	133.3		0.593	ci	ci3073934	2016-02-10T23:15:29.204Z	5km ENE of Buttonwillow, California	earthquake				22	reviewed	ci	ci
10/28/1992	17:41:30	35.941	-120.492	8.929	2.16	md	40	78	0.01622	0.08	nc	nc321313	2016-12-19T23:02:55.340Z	7 km NW of Parkfield, California	earthquake	0.22	0.31	0.1	32	reviewed	nc	nc
10/26/1992	7:27:40	35.9461667	-120.4905	9.883	3.65	md	60	32	0.01171	0.05	nc	nc320983	2016-12-19T22:49:26.490Z	7 km NW of Parkfield, California	earthquake	0.16	0.19	0.08	75	reviewed	nc	nc
10/26/1992	7:05:57	35.9456667	-120.4906667	9.719	2.08	md	43	75	0.01261	0.04	nc	nc320982	2016-12-19T22:49:06.990Z	7 km NW of Parkfield, California	earthquake	0.15	0.22	0.17	44	reviewed	nc	nc
10/26/1992	6:55:14	35.9481667	-120.493	9.803	3.19	md	54	48	0.009009	0.05	nc	nc320981	2016-12-19T22:48:53.970Z	7 km NW of Parkfield, California	earthquake	0.16	0.22	0.09	63	reviewed	nc	nc
10/23/1992	12:26:19	36.2801667	-120.338	9.427	2.02	md	24	110	0.03153	0.08	nc	nc320776	2016-12-19T22:37:14.570Z	15 km N of Coalinga, California	earthquake	0.24	0.18	0.06	14	reviewed	nc	nc
10/20/1992	5:48:04	35.9298333	-120.4753333	9.693	2.93	md	53	44	0.02162	0.06	nc	nc320384	2016-12-19T22:20:53.750Z	5 km NW of Parkfield, California	earthquake	0.18	0.24	0.08	70	reviewed	nc	nc
10/20/1992	5:28:08	35.9283333	-120.474	9.443	4.36	md	63	30	0.02072	0.06	nc	nc320382	2016-12-19T22:20:25.350Z	4 km NW of Parkfield, California	earthquake	0.16	0.22	0.12	321	reviewed	nc	nc
10/16/1992	20:45:24	34.851	-119.23	10.654	2.9	ml	0	62.4		0.227	ci	ci3071011	2016-02-10T12:26:15.468Z	7km W of Pine Mountain Club, California	earthquake		0.321		12	reviewed	ci	ci
10/14/1992	21:27:39	36.066	-118.947	4.498	2.18	mc	0	277.4		0.126	ci	ci3070607	2016-02-10T08:56:20.567Z	6km E of Porterville, California	earthquake				21	reviewed	ci	ci
10/8/1992	0:45:07	36.2866667	-120.329	6.505	2.06	md	24	207	0.03874	0.05	nc	nc319166	2016-12-19T21:25:29.795Z	16 km N of Coalinga, California	earthquake	0.88	0.14	0.16	20	reviewed	nc	nc
10/7/1992	13:04:28	35.9736667	-120.5278333	4.648	2.75	md	52	44	0.02973	0.06	nc	nc319103	2016-12-19T21:23:30.990Z	11 km NW of Parkfield, California	earthquake	0.14	0.2	0.11	50	reviewed	nc	nc
10/5/1992	18:59:32	35.9281667	-120.4748333	9.159	2.7	md	51	42	0.03243	0.05	nc	nc318977	2016-12-19T21:14:57.290Z	4 km NW of Parkfield, California	earthquake	0.14	0.22	0.11	74	reviewed	nc	nc
10/4/1992	18:16:57	35.9278333	-120.4731667	9.269	3.07	md	56	42	0.03423	0.05	nc	nc318901	2016-12-19T21:09:56.190Z	4 km NW of Parkfield, California	earthquake	0.15	0.21	0.07	84	reviewed	nc	nc
10/1/1992	19:57:30	36.0015	-119.9436667	0.126	2.19	md	31	211	0.1396	0.23	nc	nc318641	2016-12-19T20:57:11.218Z	1 km ESE of Kettleman City, California	earthquake	1.11	1.77	0.14	27	reviewed	nc	nc
9/29/1992	12:50:20	36.0056667	-119.9555	14.488	2.03	md	24	175	0.1369	0.1	nc	nc318432	2016-12-19T20:47:37.383Z	0 km ESE of Kettleman City, California	earthquake	0.5	0.62	0.14	11	reviewed	nc	nc
9/28/1992	7:19:53	36.0136667	-120.5755	4.195	2.46	md	28	59	0.04144	0.05	nc	nc318039	2016-12-19T20:42:36.120Z	18 km NW of Parkfield, California	earthquake	0.22	0.31	0.13	22	reviewed	nc	nc
9/28/1992	4:22:38	36.004	-119.9655	12.408	2.31	md	35	158	0.1297	0.13	nc	nc318025	2016-12-19T20:42:07.340Z	0 km SW of Kettleman City, California	earthquake	0.41	0.9	0.11	24	reviewed	nc	nc
9/28/1992	3:53:40	36.0136667	-119.8685	0.048	2.24	md	23	240	0.2018	0.11	nc	nc318024	2016-12-19T20:41:55.606Z	Central California	earthquake	0.82	3.75	0.16	22	reviewed	nc	nc
9/27/1992	20:49:06	35.9916667	-119.9343333	13.248	2.14	md	31	179	0.1586	0.14	nc	nc318003	2016-12-19T20:41:02.791Z	3 km SE of Kettleman City, California	earthquake	0.51	0.74	0.13	24	reviewed	nc	nc
9/27/1992	19:44:09	35.9733333	-119.982	7.806	2.02	md	9	227	0.136	0.04	nc	nc317998	2016-12-19T20:40:53.791Z	4 km SSW of Kettleman City, California	earthquake	1.28	2.79		1	reviewed	nc	nc
9/27/1992	19:03:10	35.9976667	-119.9316667	8.911	2.09	md	27	113	0.1577	0.09	nc	nc317996	2016-12-19T20:40:44.403Z	2 km ESE of Kettleman City, California	earthquake	0.33	0.68	0.17	17	reviewed	nc	nc
9/27/1992	18:26:11	36.0085	-119.955	13.152	2.05	md	16	175	0.136	0.12	nc	nc317994	2016-12-19T20:40:39.788Z	0 km E of Kettleman City, California	earthquake	0.61	0.84	0.19	8	reviewed	nc	nc
9/27/1992	16:59:14	36.003	-119.9433333	13.998	4.2	md	119	44	0.1468	0.15	nc	nc317985	2016-12-19T20:40:21.310Z	1 km ESE of Kettleman City, California	earthquake	0.16	0.29	0.11	204	reviewed	nc	nc
9/19/1992	1:46:54	36.0125	-119.9155	12.168	2.18	md	19	233	0.1532	0.09	nc	nc316162	2016-12-19T19:51:34.524Z	Central California	earthquake	1.16	0.92	0.13	13	reviewed	nc	nc
9/19/1992	1:34:57	35.9661667	-119.9656667	6.318	2.4	md	25	214	0.1036	0.07	nc	nc316160	2016-12-19T19:51:28.950Z	Central California	earthquake	0.56	0.35	0.13	37	reviewed	nc	nc
9/16/1992	10:07:58	35.994	-119.9303333	-0.614	2.09	md	10	283	0.3162	0.11	nc	nc315963	2016-12-19T19:37:18.034Z	3 km ESE of Kettleman City, California	earthquake	2.32	1.26		1	reviewed	nc	nc
9/16/1992	6:37:42	35.9853333	-119.9368333	7.252	3.09	md	32	190	0.1234	0.07	nc	nc315903	2016-12-19T19:35:53.640Z	3 km SE of Kettleman City, California	earthquake	0.64	0.46	0.09	63	reviewed	nc	nc
9/16/1992	6:18:55	35.9725	-119.8563333	9.224	2.13	md	11	224	0.1369	0.12	nc	nc1198501	2016-12-19T19:35:39.433Z	10 km ESE of Kettleman City, California	earthquake	1.83	0.77	0.12	3	reviewed	nc	nc
9/16/1992	6:15:31	36.02	-119.879	17.181	3.81	ml	0	168.5	0.5833	0.399	ci	ci3063274	2016-02-10T19:16:38.743Z	8km E of Kettleman City, California	earthquake				4	reviewed	ci	ci
9/16/1992	6:14:33	35.9966667	-119.9403333	10.352	4.38	md	47	190	0.1342	0.12	nc	nc315902	2016-12-19T19:35:31.300Z	2 km ESE of Kettleman City, California	earthquake	0.47	0.79	0.11	269	reviewed	nc	nc
9/16/1992	5:25:13	35.8826667	-120.427	5.83	2.8	md	51	45	0.04595	0.04	nc	nc315899	2016-12-19T19:35:16.420Z	1 km SSE of Parkfield, California	earthquake	0.13	0.19	0.1	80	reviewed	nc	nc
9/16/1992	4:40:22	35.9953333	-119.9293333	6.872	2.2	md	30	211	0.1342	0.06	nc	nc315898	2016-12-19T19:34:57.610Z	3 km ESE of Kettleman City, California	earthquake	0.66	0.34	0.14	31	reviewed	nc	nc
9/16/1992	4:19:40	35.9926667	-119.9323333	7.242	2.31	md	29	192	0.1315	0.09	nc	nc315897	2016-12-19T19:34:41.840Z	3 km ESE of Kettleman City, California	earthquake	0.84	0.43	0.13	34	reviewed	nc	nc
9/11/1992	13:51:41	36.0545	-120.6035	8.561	2.4	md	49	46	0.01532	0.05	nc	nc314967	2016-12-19T18:57:07.660Z	23 km NW of Parkfield, California	earthquake	0.14	0.23	0.12	55	reviewed	nc	nc
9/10/1992	17:07:20	36.0586667	-120.2021667	15.415	2.29	md	24	114	0.07477	0.06	nc	nc30000581	2016-12-19T18:52:19.864Z	8 km NW of Avenal, California	earthquake	0.21	0.4	0.1	22	reviewed	nc	nc
9/10/1992	16:36:00	36.062	-120.2165	14.35	2.92	md	34	66	0.08649	0.06	nc	nc30000579	2016-12-19T18:52:10.090Z	10 km NW of Avenal, California	earthquake	0.16	0.36	0.15	38	reviewed	nc	nc
9/9/1992	23:44:03	36.0523333	-120.2033333	15.255	2.26	md	21	57	0.07658	0.1	nc	nc30000528	2016-12-19T18:50:37.120Z	8 km NW of Avenal, California	earthquake	0.27	0.63	0.22	16	reviewed	nc	nc
9/9/1992	11:50:00	35.8541667	-119.978	5.918	2.35	md	33	84	0.01982	0.18	nc	nc30000444	2016-12-19T18:49:10.550Z	17 km S of Kettleman City, California	earthquake	0.37	0.3	0.12	22	reviewed	nc	nc
9/7/1992	12:42:33	34.957	-119.148	13.778	2.06	mc	0	85.5		0.221	ci	ci3060382	2016-02-10T22:51:19.506Z	12km N of Pine Mountain Club, California	earthquake		0.307		37	reviewed	ci	ci
8/29/1992	3:12:19	35.38	-118.713	-0.965	2.63	mc	0	86.3		0.234	ci	ci3058082	2016-02-10T15:30:31.994Z	22km NNE of Arvin, California	earthquake		0.631		64	reviewed	ci	ci
8/28/1992	9:50:58	35.03	-118.911	13.324	2.41	mc	0	99		0.189	ci	ci3057893	2016-02-10T08:31:19.487Z	10km N of Grapevine, California	earthquake		0.598		53	reviewed	ci	ci
8/25/1992	4:34:24	35.041	-118.929	7.464	2.65	mc	0	84.3		0.278	ci	ci3057045	2016-02-10T12:01:16.958Z	11km N of Grapevine, California	earthquake		1.306		70	reviewed	ci	ci
8/21/1992	0:52:50	35.524	-120.868	18	2.42	md					ci	ci3055957	2016-02-10T22:40:18.925Z	9km NNE of Cayucos, California	earthquake		0.979		1	reviewed	ci	ci
8/14/1992	16:09:49	34.997	-119.116	12.168	2.19	mc	0	99.1		0.175	ci	ci3054042	2016-02-10T22:35:53.668Z	17km N of Pine Mountain Club, California	earthquake		0.514		28	reviewed	ci	ci
8/14/1992	15:41:07	34.993	-119.119	11.378	2.17	mc	0	117.6		0.167	ci	ci3054036	2016-02-10T15:21:01.426Z	16km N of Pine Mountain Club, California	earthquake		0.534		26	reviewed	ci	ci
8/12/1992	1:51:54	35.796	-119.522	5.012	2.25	mc	0	142	0.506	0.373	ci	ci3053219	2016-02-10T01:10:59.192Z	11km SSW of Alpaugh, California	earthquake				28	reviewed	ci	ci
8/11/1992	16:29:02	35.369	-118.826	1.595	2.4	mc	0	114.5	0.1898	0.277	ci	ci3054499	2016-02-10T15:18:49.648Z	15km NNE of Lamont, California	earthquake		0.451		50	reviewed	ci	ci
7/29/1992	5:29:50	36.1361667	-120.0505	7.177	2.01	md	28	177	0.08919	0.11	nc	nc306814	2016-12-19T15:49:19.009Z	8 km SSE of Huron, California	earthquake	0.53	0.23	0.09	22	reviewed	nc	nc
7/29/1992	4:21:24	36.1383333	-120.0423333	8.027	2.25	md	32	190	0.09459	0.04	nc	nc306809	2016-12-19T15:49:05.600Z	8 km SE of Huron, California	earthquake	0.27	0.23	0.13	30	reviewed	nc	nc
7/24/1992	3:03:37	35.751	-119.113	4.786	2.09	mc	0	172.2		0.197	ci	ci3046419	2016-02-09T21:10:44.988Z	12km E of Delano, California	earthquake				28	reviewed	ci	ci
7/22/1992	15:09:37	34.979	-119.058	7.044	2.85	ml	0	85		0.285	ci	ci3045807	2016-02-10T04:28:20.143Z	12km WNW of Grapevine, California	earthquake		0.524		6	reviewed	ci	ci
7/19/1992	5:14:36	36.1878333	-119.7463333	19.906	2.56	md	10	179	0.3207	0.15	nc	nc304602	2016-12-19T15:10:40.920Z	6 km E of Stratford, California	earthquake	1.25	3.4	0.08	5	reviewed	nc	nc
7/17/1992	23:37:57	35.72	-119.585	4.986	2.63	mc	0	106.1		0.602	ci	ci3044153	2016-02-10T22:10:46.133Z	21km SSW of Alpaugh, California	earthquake				45	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
7/12/1992	7:22:27	34.834	-120.381	4.768	2.18	mc	0	104.1		0.185	ci	ci3041620	2016-02-10T04:18:12.417Z	6km SE of Orcutt, California	earthquake		0.25		19	reviewed	ci	ci
7/11/1992	1:58:15	35.8583333	-120.4028333	4.695	2.34	md	45	42	0.02252	0.05	nc	nc303614	2016-12-19T14:43:24.210Z	5 km SSE of Parkfield, California	earthquake	0.15	0.21	0.14	36	reviewed	nc	nc
7/11/1992	0:46:57	35.859	-120.4028333	4.895	2.24	md	41	56	0.02252	0.04	nc	nc303604	2016-12-19T14:43:04.810Z	5 km SSE of Parkfield, California	earthquake	0.13	0.19	0.13	33	reviewed	nc	nc
7/10/1992	17:46:30	36.0356667	-120.2231667	7.651	2.08	md	24	129	0.0955	0.17	nc	nc303553	2016-12-19T14:41:28.750Z	9 km WNW of Avenal, California	earthquake	0.3	0.66	0.1	26	reviewed	nc	nc
7/7/1992	13:35:53	36.035	-120.591	6.848	2.27	md	44	52	0.03423	0.08	nc	nc303142	2016-12-19T14:25:33.860Z	20 km NW of Parkfield, California	earthquake	0.2	0.31	0.09	35	reviewed	nc	nc
6/29/1992	1:09:48	36.2328333	-120.2826667	10.627	2.09	md	32	69	0.05135	0.14	nc	nc300553	2016-12-19T13:36:03.840Z	12 km NE of Coalinga, California	earthquake	0.25	0.44	0.09	26	reviewed	nc	nc
6/25/1992	7:02:43	36.0876667	-120.1358333	6.4	2	md	30	151	0.03423	0.05	nc	nc298675	2016-12-19T13:20:55.225Z	9 km N of Avenal, California	earthquake	0.23	0.17	0.09	20	reviewed	nc	nc
6/25/1992	5:24:54	36.0883333	-120.1443333	6.04	2.46	md	43	143	0.03964	0.07	nc	nc298674	2016-12-19T13:20:39.040Z	9 km N of Avenal, California	earthquake	0.21	0.2	0.12	37	reviewed	nc	nc
6/15/1992	22:55:49	36.0525	-120.2081667	13.495	3.28	md	55	56	0.08018	0.12	nc	nc297250	2016-12-19T12:50:20.690Z	8 km NW of Avenal, California	earthquake	0.17	0.44	0.14	56	reviewed	nc	nc
6/14/1992	18:07:50	35.057	-119.026	12.779	2.81	mc	0	47.6		0.25	ci	ci2055630	2016-02-10T07:24:48.923Z	15km NW of Grapevine, California	earthquake		0.396		79	reviewed	ci	ci
6/9/1992	5:32:10	36.2865	-120.0448333	16.004	2.92	md	69	154	0.04955	0.19	nc	nc290962	2016-12-19T12:24:24.450Z	10 km NNE of Huron, California	earthquake	0.35	0.31	0.13	90	reviewed	nc	nc
6/4/1992	19:24:35	35.9995	-120.5596667	4.138	2.01	md	33	42	0.04234	0.05	nc	nc287024	2016-12-19T12:00:16.220Z	15 km NW of Parkfield, California	earthquake	0.18	0.26	0.12	27	reviewed	nc	nc
5/30/1992	8:19:48	36.2221667	-120.3293333	9.898	2.66	md	48	58	0.02883	0.06	nc	nc282850	2016-12-19T11:37:35.420Z	9 km NNE of Coalinga, California	earthquake	0.14	0.21	0.09	39	reviewed	nc	nc
5/29/1992	22:39:46	35.017	-119.128	19.424	2.32	mc	0	91		0.269	ci	ci2054060	2016-02-10T03:49:47.123Z	19km N of Pine Mountain Club, California	earthquake		0.626		43	reviewed	ci	ci
5/29/1992	17:03:01	35.8296667	-120.3776667	6.801	3.26	md	51	28	0.01802	0.03	nc	nc282492	2016-12-19T11:35:18.800Z	9 km SSE of Parkfield, California	earthquake	0.13	0.2	0.06	82	reviewed	nc	nc
5/28/1992	16:45:26	36.064	-120.6296667	0.821	2.11	md	28	54	0.02793	0.07	nc	nc282411	2016-12-19T11:30:00.660Z	25 km E of San Ardo, California	earthquake	0.16	0.57	0.13	22	reviewed	nc	nc
5/25/1992	2:18:12	35.851	-119.208	4.833	2.27	mc	0	104.4		0.277	ci	ci2053526	2016-02-10T21:35:04.381Z	10km NNE of Delano, California	earthquake				44	reviewed	ci	ci
5/21/1992	18:03:14	36.2153333	-120.3608333	11.871	2.31	md	38	53	0.03694	0.07	nc	nc280191	2016-12-19T10:58:55.070Z	8 km N of Coalinga, California	earthquake	0.19	0.32	0.12	37	reviewed	nc	nc
5/19/1992	12:25:45	35.759	-119.474	5.059	2.09	mc	0	330.6		0.278	ci	ci2052861	2016-02-10T10:54:57.857Z	14km S of Alpaugh, California	earthquake				6	reviewed	ci	ci
5/13/1992	19:53:14	35.889	-119.514	5.089	2.56	mc	0	103.7		0.503	ci	ci2052149	2016-02-10T10:53:15.372Z	2km W of Alpaugh, California	earthquake				43	reviewed	ci	ci
4/22/1992	17:22:17	36.1641667	-120.2318333	9.807	2.47	md	47	82	0.1234	0.07	nc	nc266210	2016-12-19T07:11:31.440Z	11 km ENE of Coalinga, California	earthquake	0.18	0.41	0.13	43	reviewed	nc	nc
4/22/1992	16:52:54	36.167	-120.2358333	10.867	3.69	md	57	79	0.1198	0.06	nc	nc266208	2016-12-19T07:11:16.250Z	11 km ENE of Coalinga, California	earthquake	0.17	0.32	0.11	173	reviewed	nc	nc
4/16/1992	23:59:03	36.0968333	-120.1091667	9.047	2.64	md	43	145	0.03604	0.12	nc	nc265166	2016-12-19T06:57:59.120Z	10 km N of Avenal, California	earthquake	0.32	0.22	0.1	44	reviewed	nc	nc
4/12/1992	22:25:29	34.8515	-119.4981667	-0.815	2.03	mc	12	141		0.21	ci	ci2047069	2016-04-01T19:45:01.709Z	25km SSW of Maricopa, CA	earthquake	0.72	1.55		16	reviewed	ci	ci
4/11/1992	10:11:43	35.398	-119.963	4.099	2.02	mc	0	101.9		0.242	ci	ci2046974	2016-02-10T07:01:37.372Z	6km NNE of Simmler, California	earthquake		0.154		22	reviewed	ci	ci
4/8/1992	15:33:03	36.0286667	-120.5923333	3.488	2.21	md	37	110	0.04054	0.09	nc	nc262406	2016-12-19T06:33:05.090Z	20 km NW of Parkfield, California	earthquake	0.23	0.38	0.19	17	reviewed	nc	nc
4/4/1992	12:53:14	35.1835	-120.6728333	3.827	2.03	md	24	88	0.03874	0.07	nc	nc261784	2016-12-19T06:24:28.527Z	5 km NNW of Pismo Beach, California	earthquake	0.19	0.32	0.13	17	reviewed	nc	nc
4/4/1992	5:35:38	34.949	-119.508	13.399	2	mc	0	77.9		0.293	ci	ci2046341	2016-02-10T07:00:43.507Z	16km SW of Maricopa, California	earthquake		1.03		23	reviewed	ci	ci
3/25/1992	8:25:14	36.1745	-120.1801667	-0.273	2.23	md	37	107	0.1072	0.1	nc	nc259221	2016-12-19T05:52:25.030Z	7 km WSW of Huron, California	earthquake	0.16	1.52	0.12	45	reviewed	nc	nc
3/25/1992	1:32:23	36.1621667	-120.1348333	6.947	2.15	md	22	143	0.0955	0.06	nc	nc259031	2016-12-19T05:51:49.560Z	5 km SSW of Huron, California	earthquake	0.17	0.31	0.09	26	reviewed	nc	nc
3/21/1992	6:16:21	36.1808333	-119.8036667	26.172	2.44	md	15	133	0.2757	0.39	nc	nc258902	2016-12-19T05:40:04.601Z	1 km ESE of Stratford, California	earthquake	3.02	9.99		1	reviewed	nc	nc
3/19/1992	0:36:48	35.5606667	-120.8205	2.193	2.26	md	44	42	0.07568	0.08	nc	nc258160	2016-12-19T05:31:17.190Z	10 km W of Templeton, California	earthquake	0.16	0.86	0.18	43	reviewed	nc	nc
3/18/1992	9:07:40	36.1768333	-120.3103333	7.667	2.25	md	36	57	0.07748	0.11	nc	nc257916	2016-12-19T05:28:14.810Z	6 km NE of Coalinga, California	earthquake	0.22	0.41	0.12	18	reviewed	nc	nc
3/18/1992	6:56:09	36.1756667	-120.3175	8.217	3.22	md	35	56	0.07658	0.16	nc	nc257953	2016-12-19T05:27:45.680Z	5 km NE of Coalinga, California	earthquake	0.3	0.47	0.22	43	reviewed	nc	nc
3/18/1992	6:55:45	36.1696667	-120.3158333	5.737	2.72	md	44	55	0.08288	0.09	nc	nc257908	2016-12-19T05:27:37.240Z	5 km NE of Coalinga, California	earthquake	0.15	0.46	0.18	23	reviewed	nc	nc
3/18/1992	6:31:11	36.1743333	-120.3108333	7.867	2.73	md	46	57	0.07928	0.1	nc	nc257899	2016-12-19T05:27:29.250Z	5 km NE of Coalinga, California	earthquake	0.17	0.34	0.05	20	reviewed	nc	nc
3/7/1992	10:38:04	36.274	-119.674	5.247	2.14	mc	0	96.9		0.235	ci	ci2044379	2016-02-10T21:10:13.960Z	6km SSW of Hanford, California	earthquake				18	reviewed	ci	ci
3/5/1992	18:24:22	35.215	-119.374	22.683	3.84	ml	0	49.8		0.324	ci	ci2044220	2016-02-10T06:57:04.951Z	11km NE of Taft, California	earthquake		0.694		24	reviewed	ci	ci
3/4/1992	21:12:23	36.0278333	-119.8878333	10.758	2.09	md	37	112	0.1829	0.1	nc	nc253968	2016-12-19T04:52:08.080Z	7 km ENE of Kettleman City, California	earthquake	0.62	1.18	0.13	19	reviewed	nc	nc
2/26/1992	8:45:06	36.2355	-120.2725	6.917	2.1	md	24	82	0.05856	0.13	nc	nc252829	2016-12-19T04:30:04.363Z	13 km NE of Coalinga, California	earthquake	0.28	0.48	0.11	18	reviewed	nc	nc
2/26/1992	0:03:48	36.1746667	-120.3168333	7.157	2.23	md	27	56	0.07748	0.15	nc	nc252591	2016-12-19T04:28:26.270Z	5 km NE of Coalinga, California	earthquake	0.32	0.62	0.18	16	reviewed	nc	nc
2/25/1992	23:47:41	36.1703333	-120.315	5.85	2.76	md	53	56	0.08198	0.12	nc	nc252578	2016-12-19T04:28:18.570Z	5 km NE of Coalinga, California	earthquake	0.2	0.35	0.07	23	reviewed	nc	nc
2/24/1992	17:24:01	35.7968333	-120.3491667	9.689	2.81	md	38	35	0.05676	0.04	nc	nc252030	2016-12-19T04:23:22.740Z	13 km SSE of Parkfield, California	earthquake	0.17	0.35	0.12	29	reviewed	nc	nc
2/21/1992	19:19:43	34.984	-119.113	13.148	3.32	ml	0	49.2		0.267	ci	ci2042746	2016-02-10T06:54:14.575Z	16km NNE of Pine Mountain Club, California	earthquake		0.198		10	reviewed	ci	ci
2/17/1992	7:16:21	35.744	-119.121	4.786	2.03	mc	0	97.9		0.258	ci	ci3004248	2016-02-10T13:57:00.271Z	12km ESE of Delano, California	earthquake				24	reviewed	ci	ci
2/11/1992	0:59:36	36.2151667	-120.3903333	8.405	2.17	md	28	42	0.05135	0.05	nc	nc249827	2016-12-19T03:47:27.940Z	8 km NNW of Coalinga, California	earthquake	0.2	0.31	0.19	24	reviewed	nc	nc
2/8/1992	6:38:47	36.1278333	-120.2113333	5.87	2.17	md	39	89	0.1063	0.22	nc	nc249710	2016-12-19T03:39:34.850Z	12 km SW of Huron, California	earthquake	0.34	0.71	0.11	28	reviewed	nc	nc
2/7/1992	3:32:45	36.1296667	-120.2121667	6.47	2.32	md	39	88	0.1081	0.18	nc	nc249649	2016-12-19T03:35:06.430Z	12 km SW of Huron, California	earthquake	0.24	0.61	0.14	28	reviewed	nc	nc
2/6/1992	3:21:16	36.0213333	-120.583	4.408	2.26	md	41	45	0.04505	0.07	nc	nc249551	2016-12-19T03:32:31.930Z	19 km NW of Parkfield, California	earthquake	0.19	0.29	0.15	38	reviewed	nc	nc
2/3/1992	19:36:08	35.016	-119.122	14.778	2.22	mc	0	91.1		0.275	ci	ci2041027	2016-02-09T19:51:53.919Z	19km N of Pine Mountain Club, California	earthquake		0.28		29	reviewed	ci	ci
2/1/1992	16:31:27	36.2756667	-120.3906667	8.328	2	md	16	111	0.04685	0.13	nc	nc248879	2016-12-19T03:19:14.132Z	15 km N of Coalinga, California	earthquake	0.37	0.4	0.09	12	reviewed	nc	nc
2/1/1992	15:53:29	35.225	-118.857	6.938	2.2	mc	0	97.3		0.222	ci	ci2040881	2016-02-10T10:28:17.146Z	3km NW of Arvin, California	earthquake		2.744		48	reviewed	ci	ci
1/29/1992	20:57:45	35.22	-118.84	6	3.1	ml					us	usp00052df	2014-11-07T00:49:57.588Z	1 km NW of Arvin, California	earthquake					reviewed	pas	gs$
1/27/1992	17:22:09	36.1848333	-120.311	7.807	2.05	md	32	57	0.06937	0.11	nc	nc247720	2016-12-19T03:00:57.670Z	6 km NE of Coalinga, California	earthquake	0.28	0.58	0.11	20	reviewed	nc	nc
1/21/1992	23:31:23	36.1241667	-120.2211667	6.19	2.44	md	45	83	0.1108	0.13	nc	nc246442	2016-12-19T02:37:12.710Z	12 km E of Coalinga, California	earthquake	0.21	0.41	0.09	29	reviewed	nc	nc
1/16/1992	5:56:10	35.2638333	-120.8485	9.42	2.44	md	59	83	0.03063	0.09	nc	nc244807	2016-12-19T02:16:21.130Z	5 km SSW of Los Osos, California	earthquake	0.15	0.27	0.09	66	reviewed	nc	nc
1/15/1992	17:23:24	35.1946667	-120.6508333	3.652	2.15	md	30	79	0.03874	0.09	nc	nc244525	2016-12-19T02:15:20.925Z	3 km WSW of Edna, California	earthquake	0.2	0.35	0.12	20	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
1/15/1992	8:51:32	35.093	-118.896	6.242	2.37	mc	0	96.1		0.261	ci	ci2039486	2016-02-09T19:50:18.271Z	14km SSW of Arvin, California	earthquake		2.868		60	reviewed	ci	ci
1/14/1992	19:35:40	36.1335	-120.0973333	6.251	2.63	md	53	145	0.07297	0.13	nc	nc244001	2016-12-19T02:12:47.150Z	7 km S of Huron, California	earthquake	0.42	0.36	0.11	26	reviewed	nc	nc
1/8/1992	19:34:36	35.097	-118.897	7.192	2	mc	0	151.4		0.314	ci	ci2038968	2016-02-10T13:54:01.265Z	14km SSW of Arvin, California	earthquake		1.539		24	reviewed	ci	ci
1/7/1992	18:24:24	35.244	-120.7398333	6.014	2.71	md	55	55	0.03604	0.08	nc	nc242557	2016-12-19T01:51:00.380Z	7 km N of Avila Beach, California	earthquake	0.12	0.25	0.14	40	reviewed	nc	nc
1/5/1992	23:51:13	36.2046667	-120.2836667	11.874	2.26	md	37	121	0.06577	0.05	nc	nc242468	2016-12-19T01:45:24.090Z	9 km NE of Coalinga, California	earthquake	0.24	0.3	0.08	35	reviewed	nc	nc
12/31/1991	22:35:44	35.744	-119.118	4.789	2.24	mc	0	129.3		0.341	ci	ci2038413	2016-02-04T23:24:05.080Z	12km ESE of Delano, CA	earthquake				30	reviewed	ci	ci
12/30/1991	3:34:40	35.334	-118.874	17.218	2.42	mc	0	129.9		0.167	ci	ci2038277	2016-02-04T22:27:14.510Z	9km NNE of Lamont, CA	earthquake		0.191		44	reviewed	ci	ci
12/29/1991	2:48:23	35.248	-119.593	17.071	2.01	mc	0	117.5		0.098	ci	ci2038209	2016-02-04T22:27:13.690Z	17km NW of Taft, CA	earthquake		0.111		20	reviewed	ci	ci
12/23/1991	19:20:11	35.194	-120.6565	5.802	2.18	md	29	80	0.03964	0.15	nc	nc241615	2016-12-18T23:06:30.519Z	4 km WSW of Edna, California	earthquake	0.27	0.37	0.17	25	reviewed	nc	nc
12/22/1991	11:10:50	35.2	-119.232	5.301	2.03	mc	0	153.9		0.318	ci	ci2037564	2016-02-04T23:34:54.420Z	21km ENE of Taft, CA	earthquake				18	reviewed	ci	ci
12/18/1991	14:42:19	35.9666667	-120.5163333	10.44	2.57	md	48	46	0.01802	0.05	nc	nc241159	2016-12-18T22:47:16.200Z	10 km NW of Parkfield, California	earthquake	0.17	0.26	0.09	50	reviewed	nc	nc
12/17/1991	3:56:17	36.0801667	-120.64	2.222	2.57	md	46	49	0.03694	0.05	nc	nc240805	2016-12-18T22:42:20.430Z	24 km ENE of San Ardo, California	earthquake	0.14	0.42	0.15	38	reviewed	nc	nc
12/17/1991	2:18:50	35.625	-119.288	4.762	2.5	mc	0	127.3		0.37	ci	ci2037112	2016-02-04T22:15:52.440Z	6km NE of Wasco, CA	earthquake				36	reviewed	ci	ci
12/9/1991	1:02:36	35.7635	-120.6275	9.816	3.2	ml	58	45	0.1072	0.05	nc	nc239953	2016-12-18T22:15:19.320Z	6 km E of San Miguel, California	earthquake	0.12	0.52		0	reviewed	nc	nc
12/8/1991	21:14:28	36.1201667	-120.1828333	2.49	2.24	md	29	103	0.08378	0.1	nc	nc239950	2016-12-18T22:14:47.430Z	11 km SW of Huron, California	earthquake	0.28	0.62	0.14	20	reviewed	nc	nc
12/4/1991	5:09:44	36.168	-120.2325	13.01	2.02	md	30	103	0.1207	0.08	nc	nc238798	2016-12-18T22:00:39.890Z	11 km ENE of Coalinga, California	earthquake	0.22	0.58	0.13	32	reviewed	nc	nc
12/2/1991	15:38:19	35.8258333	-119.9748333	-0.473	2.24	md	30	171	0.1559	0.33	nc	nc238657	2016-12-18T21:56:00.994Z	20 km S of Kettleman City, California	earthquake	0.89	7.68	0.2	17	reviewed	nc	nc
12/1/1991	1:01:15	35.826	-120.0695	1.954	2.15	md	24	218	0.1018	0.24	nc	nc238571	2016-12-18T21:50:37.330Z	20 km SSE of Avenal, California	earthquake	0.49	0.7	0.18	27	reviewed	nc	nc
11/27/1991	1:33:13	36.2446667	-120.324	8.808	2.59	md	63	63	0.01622	0.06	nc	nc238342	2016-12-18T21:39:19.020Z	12 km NNE of Coalinga, California	earthquake	0.12	0.12	0.12	77	reviewed	nc	nc
11/24/1991	7:32:09	36.1071667	-120.2595	13.86	2.39	md	40	65	0.1297	0.06	nc	nc238134	2016-12-18T21:23:14.230Z	Central California	earthquake	0.18	0.43	0.08	28	reviewed	nc	nc
11/24/1991	2:18:59	36.1163333	-120.2983333	12.156	2.28	md	23	186	0.1135	0.05	nc	nc238115	2016-12-18T21:21:58.970Z	6 km ESE of Coalinga, California	earthquake	0.22	0.48	0.08	29	reviewed	nc	nc
11/20/1991	10:12:26	36.1755	-120.2785	10.893	3.5	ml	58	64	0.09009	0.05	nc	nc237899	2016-12-18T21:10:31.600Z	8 km ENE of Coalinga, California	earthquake	0.12	0.26		0	reviewed	nc	nc
11/20/1991	10:09:16	36.1725	-120.2755	10.673	3.01	md	46	66	0.09459	0.05	nc	nc238026	2016-12-18T21:10:20.500Z	8 km ENE of Coalinga, California	earthquake	0.15	0.3	0.09	63	reviewed	nc	nc
11/20/1991	10:08:45	36.164	-120.2751667	8.303	2.15	md	29	103	0.1018	0.09	nc	nc237897	2016-12-18T21:10:06.940Z	8 km ENE of Coalinga, California	earthquake	0.36	0.53	0.1	24	reviewed	nc	nc
11/20/1991	10:06:45	36.1763333	-120.2785	10.733	3.11	md	57	65	0.09009	0.07	nc	nc237896	2016-12-18T21:09:58.860Z	8 km ENE of Coalinga, California	earthquake	0.14	0.3	0.11	152	reviewed	nc	nc
11/20/1991	9:57:11	36.1908333	-120.2888333	14.185	2.2	md	6	143	0.1757	0.18	nc	nc1190729	2016-12-18T21:09:50.162Z	8 km NE of Coalinga, California	earthquake	1.11	4.7	0.48	3	reviewed	nc	nc
11/20/1991	9:55:08	36.178	-120.2816667	10.903	3.5	ml	61	63	0.08649	0.07	nc	nc237894	2016-12-18T21:09:45.310Z	8 km ENE of Coalinga, California	earthquake	0.14	0.31		0	reviewed	nc	nc
11/16/1991	18:02:18	36.038	-120.5926667	4.178	2.37	md	49	51	0.03063	0.06	nc	nc237647	2016-12-18T20:49:57.240Z	21 km NW of Parkfield, California	earthquake	0.16	0.24	0.11	57	reviewed	nc	nc
11/8/1991	3:01:25	36.0788333	-120.6331667	4.102	2.96	md	27	51	0.03153	0.04	nc	nc236853	2016-12-18T20:17:20.170Z	25 km ENE of San Ardo, California	earthquake	0.18	0.34	0.2	12	reviewed	nc	nc
11/8/1991	3:00:48	36.0791667	-120.635	4.852	3.2	ml	66	39	0.03333	0.08	nc	nc236784	2016-12-18T20:17:12.670Z	25 km ENE of San Ardo, California	earthquake	0.15	0.28		0	reviewed	nc	nc
11/5/1991	5:39:19	36.2191667	-120.3615	12.017	2.48	md	44	56	0.03333	0.07	nc	nc236579	2016-12-18T20:10:29.240Z	8 km N of Coalinga, California	earthquake	0.15	0.23	0.13	56	reviewed	nc	nc
11/4/1991	14:18:14	34.947	-119.103	11.638	2.66	ml	0	83.3		0.198	ci	ci2033584	2016-02-04T23:23:15.310Z	12km NNE of Pine Mountain Club, CA	earthquake		0.356		4	reviewed	ci	ci
11/2/1991	6:52:16	36.002	-120.5631667	4.078	2.11	md	30	57	0.04144	0.05	nc	nc236390	2016-12-18T20:00:46.240Z	16 km NW of Parkfield, California	earthquake	0.22	0.29	0.12	22	reviewed	nc	nc
11/2/1991	6:35:17	35.9996667	-120.559	4.178	2.73	md	55	45	0.04324	0.06	nc	nc236388	2016-12-18T20:00:38.360Z	15 km NW of Parkfield, California	earthquake	0.15	0.22	0.09	24	reviewed	nc	nc
11/1/1991	19:09:36	36.0215	-120.5785	4.478	2.6	md	49	64	0.04685	0.07	nc	nc236351	2016-12-18T19:58:30.770Z	18 km NW of Parkfield, California	earthquake	0.18	0.26	0.11	37	reviewed	nc	nc
10/27/1991	6:10:06	36.0201667	-120.5808333	4.638	2.53	md	57	42	0.04505	0.08	nc	nc235462	2016-12-18T19:40:56.380Z	18 km NW of Parkfield, California	earthquake	0.15	0.21	0.11	72	reviewed	nc	nc
10/25/1991	9:01:25	36.133	-120.1898333	6.31	2.05	md	32	101	0.0973	0.11	nc	nc235383	2016-12-18T19:35:25.820Z	11 km SW of Huron, California	earthquake	0.21	0.5	0.14	29	reviewed	nc	nc
10/23/1991	0:25:03	35.087	-119.117	17.734	2.38	mc	0	97.9		0.222	ci	ci2032395	2016-02-04T23:11:27.210Z	23km NW of Grapevine, CA	earthquake		0.222		36	reviewed	ci	ci
10/20/1991	1:13:05	36.0631667	-120.1305	4.031	2.95	md	62	86	0.01712	0.1	nc	nc234672	2016-12-18T19:11:20.970Z	6 km N of Avenal, California	earthquake	0.16	0.21	0.14	141	reviewed	nc	nc
10/18/1991	9:59:05	35.9208333	-120.4696667	4.733	2.9	md	60	47	0.01802	0.08	nc	nc234575	2016-12-18T19:05:09.880Z	4 km NW of Parkfield, California	earthquake	0.14	0.2	0.09	90	reviewed	nc	nc
10/14/1991	17:17:39	34.967	-119.12	9.828	2.03	mc	0	110.3		0.095	ci	ci2031690	2016-02-04T23:11:16.770Z	14km NNE of Pine Mountain Club, CA	earthquake		0.053		24	reviewed	ci	ci
10/11/1991	7:42:42	36.0626667	-120.1261667	3.951	2.3	md	41	107	0.01351	0.07	nc	nc234205	2016-12-18T18:38:28.330Z	6 km N of Avenal, California	earthquake	0.24	0.2	0.17	37	reviewed	nc	nc
10/11/1991	2:56:29	36.1938333	-120.3036667	9.483	2.65	md	52	58	0.06396	0.07	nc	nc234194	2016-12-18T18:37:46.410Z	7 km NE of Coalinga, California	earthquake	0.14	0.23	0.09	55	reviewed	nc	nc
10/10/1991	18:51:12	36.198	-120.3065	9.793	2.53	md	49	57	0.05946	0.1	nc	nc234179	2016-12-18T18:36:20.770Z	8 km NE of Coalinga, California	earthquake	0.14	0.31	0.1	52	reviewed	nc	nc
10/4/1991	14:48:04	36.1583333	-120.1305	6.571	2.1	md	26	163	0.0991	0.06	nc	nc233204	2016-12-18T18:09:24.912Z	5 km SSW of Huron, California	earthquake	0.43	0.29	0.13	20	reviewed	nc	nc
10/3/1991	6:36:46	36.1613333	-120.1213333	8.197	3.12	md	43	136	0.09189	0.06	nc	nc233082	2016-12-18T18:04:45.920Z	4 km SSW of Huron, California	earthquake	0.24	0.36	0.12	98	reviewed	nc	nc
10/3/1991	4:10:12	36.323	-120.174	5.337	2.22	mc	0	143.6		0.251	ci	ci2030797	2016-02-05T00:08:24.240Z	15km NNW of Huron, CA	earthquake				8	reviewed	ci	ci
9/30/1991	16:51:45	34.817	-120.332	0.218	2.14	mc	0	94.4		0.112	ci	ci2030623	2016-02-04T23:10:56.820Z	10km NNW of Los Alamos, CA	earthquake				9	reviewed	ci	ci
9/30/1991	14:16:10	35.4893333	-120.6311667	8.034	2.29	md	61	45	0.109	0.09	nc	nc232602	2016-12-18T17:51:47.180Z	3 km E of Atascadero, California	earthquake	0.14	0.79	0.11	58	reviewed	nc	nc
9/29/1991	2:25:16	36.2255	-120.3723333	10.751	2.05	md	41	43	0.03333	0.06	nc	nc232524	2016-12-18T17:47:29.250Z	9 km N of Coalinga, California	earthquake	0.14	0.24	0.14	34	reviewed	nc	nc
9/28/1991	18:32:57	35.9061667	-120.666	4.673	2.02	md	5	156	0.2162	0.2	nc	nc1189572	2016-12-18T17:47:01.361Z	13 km ENE of Bradley, California	earthquake	2.78	17.5	0.53	2	reviewed	nc	nc
9/27/1991	12:12:34	36.137	-120.1315	9.687	2.3	md	39	133	0.07838	0.08	nc	nc232389	2016-12-18T17:43:31.260Z	7 km SSW of Huron, California	earthquake	0.2	0.27	0.11	44	reviewed	nc	nc
9/25/1991	9:15:01	35.9441667	-120.4925	9.31	2.37	md	52	35	0.01351	0.06	nc	nc232245	2016-12-18T17:35:52.560Z	7 km NW of Parkfield, California	earthquake	0.16	0.24	0.12	49	reviewed	nc	nc
9/22/1991	9:51:09	36.2545	-120.4013333	7.838	2.5	md	47	51	0.04775	0.1	nc	nc232078	2016-12-18T17:27:46.110Z	13 km NNW of Coalinga, California	earthquake	0.16	0.29	0.12	46	reviewed	nc	nc
9/15/1991	17:34:35	36.1683333	-120.2641667	10.407	4	ml	32	69	0.1027	0.05	nc	nc231587	2016-12-18T16:56:24.830Z	9 km ENE of Coalinga, California	earthquake	0.23	0.42		0	reviewed	nc	nc
9/15/1991	10:50:43	36.2171667	-120.3265	10.057	2.05	md	44	57	0.03514	0.07	nc	nc231545	2016-12-18T16:55:10.370Z	9 km NNE of Coalinga, California	earthquake	0.19	0.23	0.16	26	reviewed	nc	nc
9/12/1991	23:59:54	36.0568333	-120.2078333	14.295	2.18	md	33	111	0.08018	0.08	nc	nc231355	2016-12-18T16:41:59.070Z	9 km NW of Avenal, California	earthquake	0.22	0.45	0.1	27	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/12/1991	1:23:30	36.063	-119.273	4.475	2.51	mc	0	96		0.3	ci	ci2028973	2016-02-04T23:22:21.100Z	4km E of Tipton, CA	earthquake				31	reviewed	ci	ci
9/10/1991	14:57:26	34.998	-118.953	8.754	2.24	mc	0	81.9		0.199	ci	ci750237	2016-02-05T01:04:43.810Z	6km NNW of Grapevine, CA	earthquake		0.119		42	reviewed	ci	ci
9/6/1991	23:41:05	34.85	-119.242	10.314	3.01	ml	0	59.8		0.161	ci	ci2028593	2016-02-04T23:22:16.320Z	8km W of Pine Mountain Club, CA	earthquake		0.015		30	reviewed	ci	ci
9/3/1991	3:43:35	35.9721667	-120.519	10.59	2.48	md	57	33	0.02252	0.04	nc	nc229466	2016-12-18T16:04:41.740Z	11 km NW of Parkfield, California	earthquake	0.14	0.18	0.1	63	reviewed	nc	nc
9/2/1991	1:49:07	36.0016667	-120.5641667	4.078	2.39	md	57	34	0.04054	0.06	nc	nc229398	2016-12-18T16:00:29.330Z	16 km NW of Parkfield, California	earthquake	0.13	0.2	0.14	52	reviewed	nc	nc
8/30/1991	10:58:19	36.1628333	-120.222	8.817	2.29	md	38	86	0.1306	0.06	nc	nc229197	2016-12-18T15:48:15.770Z	11 km WSW of Huron, California	earthquake	0.14	0.36	0.12	36	reviewed	nc	nc
8/30/1991	9:40:50	36.1595	-120.2196667	8.057	2.56	md	47	87	0.1324	0.11	nc	nc229188	2016-12-18T15:47:17.260Z	11 km WSW of Huron, California	earthquake	0.17	0.44	0.06	40	reviewed	nc	nc
8/30/1991	9:30:19	36.1566667	-120.207	5.307	2.62	md	43	117	0.1243	0.13	nc	nc229187	2016-12-18T15:47:09.300Z	10 km WSW of Huron, California	earthquake	0.26	0.55	0.08	46	reviewed	nc	nc
8/27/1991	4:58:03	36.1911667	-120.2326667	14.597	2.11	md	38	78	0.1063	0.05	nc	nc228939	2016-12-18T15:35:44.100Z	11 km W of Huron, California	earthquake	0.17	0.48	0.15	35	reviewed	nc	nc
8/23/1991	21:00:45	35.5256667	-119.7216667	21.223	2.27	mc	17	128		0.35	ci	ci2027465	2016-04-02T15:18:42.753Z	27km WNW of Buttonwillow, CA	earthquake	1.23	31.61		17	reviewed	ci	ci
8/18/1991	14:48:26	36.0403333	-120.2513333	4.569	2.32	md	4	150	0.2486	0.19	nc	nc1188680	2016-12-18T14:53:34.449Z	11 km WNW of Avenal, California	earthquake	1.43	16.42	0.28	3	reviewed	nc	nc
8/14/1991	18:46:44	36.2705	-120.368	9.288	2.14	md	46	58	0.02973	0.11	nc	nc227824	2016-12-18T14:32:04.190Z	14 km N of Coalinga, California	earthquake	0.18	0.23	0.14	28	reviewed	nc	nc
8/13/1991	7:36:14	36.0525	-120.6041667	3.302	2.06	md	26	53	0.01802	0.05	nc	nc227668	2016-12-18T14:25:06.530Z	22 km NW of Parkfield, California	earthquake	0.23	0.34	0.19	19	reviewed	nc	nc
8/6/1991	1:03:54	36.0595	-120.6113333	5.672	3	md	63	48	0.01532	0.07	nc	nc226161	2016-12-18T13:52:49.750Z	23 km NW of Parkfield, California	earthquake	0.14	0.23	0.08	107	reviewed	nc	nc
8/5/1991	0:59:37	35.194	-119.481	19.923	2.07	mc	0	118.3		0.238	ci	ci2024896	2016-02-05T00:52:28.120Z	6km NNW of Taft, CA	earthquake		0.241		22	reviewed	ci	ci
8/3/1991	8:21:41	34.68	-119.963	0.191	2.23	mc	0	74.8		0.094	ci	ci698176	2016-02-04T22:24:54.670Z	13km NE of Santa Ynez, CA	earthquake		0.155		26	reviewed	ci	ci
7/25/1991	0:45:48	35.2075	-120.7541667	3.428	2.05	md	27	85	0.03423	0.09	nc	nc225328	2016-12-18T13:19:04.137Z	3 km NNW of Avila Beach, California	earthquake	0.2	0.38	0.14	21	reviewed	nc	nc
7/22/1991	8:13:39	35.063	-119.224	20.82	2.34	mc	0	96.9		0.196	ci	ci2023032	2016-02-04T22:47:34.280Z	16km E of Maricopa, CA	earthquake		0.097		41	reviewed	ci	ci
7/16/1991	15:40:15	36.0696667	-120.1085	7.715	2.26	md	36	163	0.009009	0.12	nc	nc1187864	2016-12-18T12:54:41.750Z	7 km NNE of Avenal, California	earthquake	0.29	0.38	0.14	24	reviewed	nc	nc
7/16/1991	14:56:00	36.288	-120.378	8.868	2.31	md	23	57	0.04775	0.1	nc	nc1187861	2016-12-18T12:54:26.860Z	16 km N of Coalinga, California	earthquake	0.28	0.4	0.11	23	reviewed	nc	nc
7/11/1991	10:49:54	35.9711667	-120.5203333	10.15	2.2	md	38	50	0.02342	0.05	nc	nc224104	2016-12-18T12:37:23.210Z	11 km NW of Parkfield, California	earthquake	0.19	0.29	0.12	34	reviewed	nc	nc
7/3/1991	21:36:05	35.485	-119.277	5.241	2.29	mc	0	155.8		0.415	ci	ci2021797	2016-02-04T23:09:34.310Z	2km SSW of Shafter, CA	earthquake				31	reviewed	ci	ci
7/3/1991	18:25:16	35.8711667	-120.8218333	5.362	2.04	md	5	143	0.1144	0.02	nc	nc1187481	2016-12-18T12:01:48.338Z	2 km WNW of Bradley, California	earthquake	2.31	4.65	0.03	2	reviewed	nc	nc
6/24/1991	6:24:42	36.079	-120.023	8.75	2.01	md	29	224	0.07297	0.06	nc	nc220761	2016-12-18T11:08:09.090Z	9 km NW of Kettleman City, California	earthquake	0.74	0.16	0.12	17	reviewed	nc	nc
6/21/1991	17:41:43	35.258	-119.006	27.899	3.28	ml	0	88.5		0.245	ci	ci696455	2016-02-04T23:55:22.930Z	8km W of Lamont, CA	earthquake		0.163		9	reviewed	ci	ci
6/20/1991	19:34:04	35.475	-118.848	1.445	2.47	mc	0	124.7		0.129	ci	ci2021119	2016-02-05T00:17:56.180Z	17km ENE of Oildale, CA	earthquake		0.041		45	reviewed	ci	ci
6/19/1991	8:26:19	35.978	-118.866	4.833	2.44	mc	0	105.6		0.133	ci	ci2021031	2016-02-05T01:03:23.440Z	17km SE of Porterville, CA	earthquake				28	reviewed	ci	ci
6/15/1991	3:51:49	36.2093333	-120.362	10.804	2.09	md	32	52	0.04324	0.07	nc	nc220274	2016-12-18T10:44:19.080Z	7 km N of Coalinga, California	earthquake	0.15	0.25	0.11	32	reviewed	nc	nc
6/7/1991	7:02:28	35.123	-118.847	6.339	2.07	mc	0	85.6		0.252	ci	ci2020356	2016-02-05T00:17:45.730Z	10km S of Arvin, CA	earthquake		0.061		30	reviewed	ci	ci
6/5/1991	23:36:21	36.178	-120.2971667	8.87	2.27	md	53	60	0.08018	0.11	nc	nc217905	2016-12-18T10:20:29.440Z	7 km NE of Coalinga, California	earthquake	0.18	0.34	0.13	35	reviewed	nc	nc
6/5/1991	12:51:11	36.0845	-120.2243333	-0.461	2.21	md	31	78	0.0955	0.16	nc	nc217888	2016-12-18T10:19:43.070Z	12 km NW of Avenal, California	earthquake	0.26	3.04	0.12	49	reviewed	nc	nc
6/5/1991	0:05:09	36.2306667	-120.3545	9.281	2.26	md	43	56	0.02072	0.07	nc	nc217868	2016-12-18T10:18:40.910Z	10 km N of Coalinga, California	earthquake	0.16	0.25	0.08	26	reviewed	nc	nc
5/30/1991	5:52:08	35.4496667	-120.7203333	3.834	2.17	md	45	43	0.05766	0.08	nc	nc216290	2016-12-18T09:58:20.150Z	6 km SW of Atascadero, California	earthquake	0.15	0.51	0.12	43	reviewed	nc	nc
5/29/1991	16:41:46	35.8985	-120.4426667	5.586	2.3	md	41	94	0.03784	0.06	nc	nc215811	2016-12-18T09:57:17.600Z	0 km W of Parkfield, California	earthquake	0.21	0.26	0.07	38	reviewed	nc	nc
5/16/1991	12:46:09	36.289	-119.8565	17.885	2.55	md	46	137	0.1883	0.37	nc	nc213195	2016-12-18T09:24:35.410Z	5 km ENE of Lemoore Station, California	earthquake	1.01	1.16	0.24	43	reviewed	nc	nc
5/16/1991	11:54:59	35.032	-118.993	4.638	2.38	mc	0	109.6		0.215	ci	ci2018172	2016-02-04T22:35:07.090Z	11km NNW of Grapevine, CA	earthquake				30	reviewed	ci	ci
5/12/1991	9:42:46	36.1546667	-120.2313333	10.837	2.82	md	49	82	0.1306	0.09	nc	nc212389	2016-12-18T09:09:52.030Z	11 km E of Coalinga, California	earthquake	0.17	0.4	0.08	50	reviewed	nc	nc
5/8/1991	20:01:55	35.9426667	-120.4873333	10.26	2.11	md	42	53	0.01622	0.06	nc	nc212106	2016-12-18T08:56:30.100Z	6 km NW of Parkfield, California	earthquake	0.19	0.28	0.14	39	reviewed	nc	nc
5/7/1991	1:15:39	36.0391667	-120.5941667	3.978	2	md	33	51	0.02973	0.06	nc	nc211997	2016-12-18T08:51:09.620Z	21 km NW of Parkfield, California	earthquake	0.19	0.3	0.16	23	reviewed	nc	nc
5/6/1991	8:59:38	35.9658333	-120.5178333	9.94	2.03	md	49	46	0.01802	0.06	nc	nc211968	2016-12-18T08:49:18.810Z	10 km NW of Parkfield, California	earthquake	0.19	0.26	0.15	42	reviewed	nc	nc
5/4/1991	23:49:02	34.818	-120.331	0.218	2.54	mc	0	94.3		0.201	ci	ci2017605	2016-02-04T22:23:50.960Z	10km NNW of Los Alamos, CA	earthquake				21	reviewed	ci	ci
5/3/1991	12:32:47	35.367	-119.089	19.265	2.56	ml	0	55.3		0.323	ci	ci2017531	2016-02-05T00:05:55.330Z	5km WNW of Bakersfield, CA	earthquake				5	reviewed	ci	ci
5/2/1991	0:17:50	35.995	-118.867	4.498	2.53	mc	0	96		0.161	ci	ci2017449	2016-02-04T23:08:38.800Z	16km ESE of Porterville, CA	earthquake				30	reviewed	ci	ci
4/24/1991	7:51:56	35.173	-119.157	27.313	2.49	mc	0	108.4		0.235	ci	ci694562	2016-02-05T01:02:36.390Z	23km SSW of Bakersfield, CA	earthquake		0.322		59	reviewed	ci	ci
4/17/1991	10:41:26	35.9036667	-119.7916667	22.641	2.27	md	25	98	0.1405	0.15	nc	nc210715	2016-12-18T07:50:02.660Z	19 km SE of Kettleman City, California	earthquake	0.51	0.57	0.21	20	reviewed	nc	nc
4/15/1991	17:10:29	35.263	-119.396	5.027	2.61	mc	0	103.8		0.406	ci	ci2016621	2016-02-04T22:34:38.760Z	14km NNE of Taft, CA	earthquake				45	reviewed	ci	ci
4/12/1991	9:47:15	35.9665	-120.5228333	10.59	2.21	md	49	55	0.02252	0.07	nc	nc210432	2016-12-18T07:34:18.550Z	11 km NW of Parkfield, California	earthquake	0.15	0.2	0.13	49	reviewed	nc	nc
4/12/1991	6:48:51	36.252	-119.521	5.46	2.44	mc	0	131.4		0.317	ci	ci2016354	2016-02-04T22:34:34.750Z	14km SE of Hanford, CA	earthquake				20	reviewed	ci	ci
4/12/1991	6:29:14	35.9653333	-120.5193333	10.19	2	md	35	104	0.01892	0.05	nc	nc210422	2016-12-18T07:33:20.400Z	10 km NW of Parkfield, California	earthquake	0.18	0.23	0.13	29	reviewed	nc	nc
4/10/1991	3:33:44	35.856	-120.3985	4.218	2.24	md	40	57	0.02613	0.04	nc	nc210221	2016-12-18T07:15:54.900Z	5 km SSE of Parkfield, California	earthquake	0.12	0.24	0.14	37	reviewed	nc	nc
4/9/1991	14:00:22	35.8543333	-120.3961667	4.488	2.96	md	51	40	0.02793	0.04	nc	nc210184	2016-12-18T07:13:29.530Z	Central California	earthquake	0.11	0.22	0.11	69	reviewed	nc	nc
4/4/1991	23:56:49	35.776	-119.575	5.256	2.29	mc	0	163.8		0.416	ci	ci2015891	2016-02-04T22:34:29.790Z	15km SSW of Alpaugh, CA	earthquake				28	reviewed	ci	ci
4/4/1991	4:45:17	35.5248333	-120.7993333	2.68	2.22	md	43	30	0.08829	0.14	nc	nc209841	2016-12-18T06:51:59.460Z	8 km WSW of Templeton, California	earthquake	0.23	1.15	0.16	28	reviewed	nc	nc
4/3/1991	3:24:48	35.183	-119.363	19.853	2.41	mc	0	96.8		0.185	ci	ci2015750	2016-02-04T23:54:17.530Z	10km ENE of Taft, CA	earthquake		0.253		37	reviewed	ci	ci
3/30/1991	15:16:03	36.1571667	-120.0645	8.68	2.46	md	37	172	0.09279	0.08	nc	nc209421	2016-12-18T06:28:36.480Z	6 km SE of Huron, California	earthquake	0.2	0.21	0.16	46	reviewed	nc	nc
3/29/1991	11:18:10	34.89	-119.385	11.38	2.03	mc	0	50.3		0.086	ci	ci2015496	2016-02-04T23:42:36.840Z	19km S of Maricopa, CA	earthquake		0.255		24	reviewed	ci	ci
3/29/1991	10:52:44	34.887	-119.391	9.05	2.8	mc	0	50.8		0.149	ci	ci2015495	2016-02-05T00:50:40.600Z	19km S of Maricopa, CA	earthquake		0.126		62	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
3/26/1991	23:01:33	35.939	-119.412	4.759	2	mh	0	311.2	0.6965	0.23	ci	ci2015324	2016-02-04T22:34:24.070Z	9km NE of Alpaugh, CA	earthquake				0	reviewed	ci	ci
3/26/1991	9:46:41	36.0743333	-120.1845	11.94	2.54	md	36	77	0.06216	0.1	nc	nc208919	2016-12-18T05:32:27.360Z	9 km NNW of Avenal, California	earthquake	0.21	0.34	0.12	41	reviewed	nc	nc
3/26/1991	8:31:25	36.0796667	-120.1868333	12.72	2.66	md	48	80	0.06577	0.12	nc	nc220507	2016-12-18T05:26:46.650Z	9 km NNW of Avenal, California	earthquake	0.22	0.34	0.11	35	reviewed	nc	nc
3/26/1991	5:46:18	36.0813333	-120.1918333	13.19	2.18	md	39	79	0.06937	0.07	nc	nc209370	2016-12-18T05:18:34.310Z	10 km NNW of Avenal, California	earthquake	0.18	0.4	0.07	34	reviewed	nc	nc
3/26/1991	5:42:15	36.0818333	-120.1903333	12.86	2.72	md	48	80	0.06847	0.09	nc	nc208848	2016-12-18T05:18:03.050Z	10 km NNW of Avenal, California	earthquake	0.18	0.34	0.09	36	reviewed	nc	nc
3/26/1991	5:27:36	36.0788333	-120.1898333	12.6	2.31	md	39	79	0.06757	0.11	nc	nc208844	2016-12-18T05:17:30.180Z	9 km NNW of Avenal, California	earthquake	0.21	0.4	0.05	30	reviewed	nc	nc
3/23/1991	16:30:11	35.026	-119.537	12.364	2.03	mc	0	147.3		0.093	ci	ci693086	2016-02-04T23:42:28.510Z	13km WSW of Maricopa, CA	earthquake		0.625		14	reviewed	ci	ci
3/23/1991	16:15:34	36.157	-120.183	4.813	2.54	mc	0	116.6		0.191	ci	ci2015076	2016-02-04T23:54:08.970Z	9km SW of Huron, CA	earthquake				12	reviewed	ci	ci
3/22/1991	11:21:52	35.9638333	-120.5173333	9.938	2.4	md	53	32	0.01712	0.08	nc	nc214684	2016-12-18T04:16:23.640Z	10 km NW of Parkfield, California	earthquake	0.15	0.22	0.09	56	reviewed	nc	nc
3/22/1991	0:22:56	35.488	-119.165	5.279	3.09	mc	0	63		0.379	ci	ci2014989	2016-02-04T22:56:40.070Z	10km E of Shafter, CA	earthquake				65	reviewed	ci	ci
3/20/1991	22:37:51	35.85	-119.215	4.833	2.39	mc	0	109.4		0.253	ci	ci2014949	2016-02-04T23:54:07.190Z	10km NNE of Delano, CA	earthquake				31	reviewed	ci	ci
3/18/1991	5:26:01	35.8125	-119.9565	6.342	2.03	md	14	181	0.05045	0.06	nc	nc214602	2016-12-18T04:04:58.020Z	21 km S of Kettleman City, California	earthquake	0.43	0.78	0.16	16	reviewed	nc	nc
3/12/1991	3:01:33	35.4391667	-120.8823333	4.4	2.08	md	46	106	0.01982	0.06	nc	nc207897	2016-12-18T03:47:21.680Z	0 km ESE of Cayucos, California	earthquake	0.17	0.19	0.1	30	reviewed	nc	nc
3/12/1991	0:28:02	36.1355	-120.2143333	7.97	2.4	md	47	88	0.1126	0.09	nc	nc207887	2016-12-18T03:46:55.280Z	12 km SW of Huron, California	earthquake	0.13	0.36	0.16	62	reviewed	nc	nc
3/12/1991	0:26:24	36.134	-120.2203333	7.11	2.22	md	45	86	0.1153	0.06	nc	nc207884	2016-12-18T03:46:46.550Z	12 km E of Coalinga, California	earthquake	0.1	0.29	0.11	49	reviewed	nc	nc
3/5/1991	7:29:57	35.1178333	-119.0608333	21.566	2.22	mc	30	99		0.26	ci	ci2013709	2016-04-02T18:22:52.791Z	21km SW of Lamont, CA	earthquake	0.55	1.73		33	reviewed	ci	ci
2/28/1991	15:02:56	35.959	-120.5145	5.11	2.13	md	42	64	0.01351	0.07	nc	nc207406	2016-12-18T03:17:40.780Z	9 km NW of Parkfield, California	earthquake	0.15	0.18	0.1	33	reviewed	nc	nc
2/27/1991	0:16:20	35.802	-119.9778333	4.462	3.09	md	50	138	0.06306	0.24	nc	nc207321	2016-12-18T03:12:09.530Z	22 km S of Kettleman City, California	earthquake	0.39	0.61	0.1	38	reviewed	nc	nc
2/26/1991	11:51:53	36.1805	-120.3056667	9.423	2.02	md	27	57	0.07477	0.11	nc	nc207278	2016-12-18T03:10:24.830Z	6 km NE of Coalinga, California	earthquake	0.29	0.44	0.14	13	reviewed	nc	nc
2/24/1991	2:39:36	36.2101667	-120.3288333	9.967	3.1	ml	46	56	0.04054	0.06	nc	nc207162	2016-12-18T03:01:26.250Z	8 km NNE of Coalinga, California	earthquake	0.17	0.27		0	reviewed	nc	nc
2/16/1991	13:40:57	35.006	-119.098	12.198	3.14	ml	0	95.4		0.109	ci	ci2012653	2016-02-04T23:30:16.050Z	17km WNW of Grapevine, CA	earthquake		0.02		9	reviewed	ci	ci
2/14/1991	13:16:52	35.4086667	-120.6848333	4.024	2.44	md	52	27	0.02523	0.07	nc	nc206551	2016-12-18T02:34:16.930Z	7 km WNW of Santa Margarita, California	earthquake	0.12	0.38	0.08	36	reviewed	nc	nc
2/12/1991	12:22:39	36.1975	-120.3196667	9.693	2.4	md	40	84	0.05495	0.06	nc	nc206376	2016-12-18T02:24:00.860Z	7 km NNE of Coalinga, California	earthquake	0.16	0.24	0.18	58	reviewed	nc	nc
2/12/1991	10:26:28	36.196	-120.3221667	9.703	2.14	md	38	91	0.05586	0.06	nc	nc206373	2016-12-18T02:23:28.720Z	7 km NNE of Coalinga, California	earthquake	0.23	0.31	0.18	24	reviewed	nc	nc
2/5/1991	11:21:18	35.9771667	-120.5335	10.48	2.04	md	45	43	0.03514	0.08	nc	nc205933	2016-12-18T01:56:16.830Z	12 km NW of Parkfield, California	earthquake	0.18	0.24	0.16	36	reviewed	nc	nc
2/4/1991	2:07:21	35.7808333	-120.331	8.088	2.8	md	51	42	0.05315	0.03	nc	nc205831	2016-12-18T01:49:08.650Z	14 km NNE of Shandon, California	earthquake	0.12	0.24	0.08	60	reviewed	nc	nc
1/31/1991	23:28:18	34.82	-120.383	0.297	3.36	ml	0	103.9		0.133	ci	ci2011371	2016-02-05T00:15:59.870Z	7km SE of Orcutt, CA	earthquake				10	reviewed	ci	ci
1/21/1991	2:47:27	35.7808333	-120.331	8.018	2.93	md	54	42	0.05315	0.03	nc	nc205072	2016-12-18T01:03:35.270Z	14 km NNE of Shandon, California	earthquake	0.13	0.24	0.07	76	reviewed	nc	nc
1/14/1991	9:07:32	36.184	-120.3608333	12.234	3.58	md	12	279	0.109	0.11	nc	nc204711	2016-12-18T00:45:11.335Z	4 km N of Coalinga, California	earthquake	1.12	0.51		1	reviewed	nc	nc
1/9/1991	22:09:04	35.9055	-120.449	5.759	3.13	md	57	59	0.03153	0.05	nc	nc204449	2016-12-18T00:32:31.210Z	1 km WNW of Parkfield, California	earthquake	0.13	0.18	0.08	71	reviewed	nc	nc
1/4/1991	17:35:32	36.1163333	-120.0561667	6.517	2.29	md	31	171	0.07027	0.13	nc	nc204136	2016-12-18T00:17:35.800Z	10 km SSE of Huron, California	earthquake	0.51	0.37	0.14	15	reviewed	nc	nc
1/4/1991	0:26:16	36.0078333	-120.5635	4.445	2.6	md	50	62	0.04414	0.04	nc	nc204105	2016-12-18T00:15:45.030Z	16 km NW of Parkfield, California	earthquake	0.16	0.2	0.12	38	reviewed	nc	nc
1/3/1991	13:05:19	35.5918333	-120.8796667	3.193	2.02	md	33	47	0.04955	0.08	nc	nc204069	2016-12-18T00:13:07.218Z	15 km S of Lake Nacimiento, California	earthquake	0.18	0.33	0.23	7	reviewed	nc	nc
1/2/1991	1:16:17	36.2423333	-120.294	10.37	2.04	md	16	122	0.04054	0.08	nc	nc1182224	2016-12-18T00:08:17.569Z	12 km NNE of Coalinga, California	earthquake	0.59	0.45	0.22	6	reviewed	nc	nc
12/27/1990	13:49:51	36.0196667	-120.0503333	10.37	2.92	md	72	148	0.06335	0.12	nc	nc203653	2019-06-04T01:25:10.349Z	7km ENE of Avenal, CA	earthquake	0.21	0.22	0.181	153	reviewed	nc	nc
12/26/1990	23:07:18	36.0146667	-120.5695	4.115	2.16	md	33	60	0.04595	0.03	nc	nc203634	2016-12-17T23:26:04.790Z	17 km NW of Parkfield, California	earthquake	0.18	0.22	0.14	25	reviewed	nc	nc
12/26/1990	23:02:04	36.0133333	-120.5755	3.645	2.55	md	48	58	0.04144	0.08	nc	nc203633	2016-12-17T23:25:54.700Z	18 km NW of Parkfield, California	earthquake	0.2	0.25	0.08	44	reviewed	nc	nc
12/26/1990	23:00:29	36.015	-120.5743333	3.695	2.21	md	36	62	0.04324	0.06	nc	nc203632	2016-12-17T23:25:46.290Z	18 km NW of Parkfield, California	earthquake	0.19	0.22	0.12	26	reviewed	nc	nc
12/25/1990	1:36:11	36.06	-118.932	4.498	2.01	mc	0	276		0.143	ci	ci2009445	2016-02-05T01:00:57.920Z	8km E of Porterville, CA	earthquake				16	reviewed	ci	ci
12/22/1990	16:26:44	35.727	-119.107	4.963	2.61	mc	0	168.9	0.3732	0.257	ci	ci2009345	2016-02-05T00:49:29.160Z	12km ENE of McFarland, CA	earthquake				36	reviewed	ci	ci
12/19/1990	8:19:17	35.375	-118.844	4.957	2.47	mc	0	118.6		0.135	ci	ci2009145	2016-02-04T22:32:59.040Z	14km NNE of Lamont, CA	earthquake				41	reviewed	ci	ci
12/18/1990	16:56:43	35.374	-118.846	4.957	4.25	ml	0	50.7		0.171	ci	ci688784	2016-02-04T22:44:45.140Z	14km NNE of Lamont, CA	earthquake		2.836		9	reviewed	ci	ci
12/10/1990	2:34:08	35.997	-120.1618333	15.868	3.2	ml	50	95	0.07658	0.11	nc	nc202118	2016-12-17T22:37:13.130Z	3 km WSW of Avenal, California	earthquake	0.22	0.47		0	reviewed	nc	nc
12/10/1990	2:22:06	36.0038333	-120.1706667	14.296	2.28	md	29	88	0.07568	0.12	nc	nc202117	2016-12-17T22:37:00.190Z	3 km W of Avenal, California	earthquake	0.34	0.67	0.15	22	reviewed	nc	nc
12/6/1990	19:15:46	36.0376667	-120.0593333	9.371	2.06	md	36	159	0.04685	0.16	nc	nc201934	2016-12-17T22:26:50.720Z	7 km ENE of Avenal, California	earthquake	0.52	0.36	0.12	20	reviewed	nc	nc
12/5/1990	21:31:36	35.004	-119.096	12.738	2.03	mc	0	120.9		0.071	ci	ci2008491	2016-02-04T23:17:56.450Z	17km WNW of Grapevine, CA	earthquake		0.033		20	reviewed	ci	ci
12/5/1990	16:43:54	36.1278333	-120.1291667	9.27	2.42	md	42	136	0.06847	0.08	nc	nc201828	2016-12-17T22:22:22.800Z	8 km SSW of Huron, California	earthquake	0.21	0.27	0.09	39	reviewed	nc	nc
12/4/1990	23:09:43	35.276	-119.383	1.673	2.09	mc	0	134.3		0.214	ci	ci2008456	2016-02-05T00:03:55.950Z	16km SSE of Buttonwillow, CA	earthquake		0.212		22	reviewed	ci	ci
12/3/1990	2:20:48	36.0818333	-120.2066667	9.615	2.73	md	59	74	0.08108	0.1	nc	nc201660	2016-12-17T22:12:31.150Z	11 km NW of Avenal, California	earthquake	0.15	0.33	0.12	84	reviewed	nc	nc
12/2/1990	1:57:49	35.6405	-119.9053333	6.929	2.38	md	24	94	0.1532	0.26	nc	nc201616	2016-12-17T22:09:34.056Z	19 km W of Lost Hills, California	earthquake	0.77	1.64	0.06	10	reviewed	nc	nc
11/30/1990	15:45:39	36.075	-120.0961667	8.297	2.6	md	52	165	0.01802	0.13	nc	nc201526	2016-12-17T22:05:01.800Z	8 km NNE of Avenal, California	earthquake	0.29	0.23	0.11	34	reviewed	nc	nc
11/30/1990	15:14:51	36.0515	-120.1151667	6.521	2.19	md	28	120	0.01081	0.17	nc	nc202991	2016-12-17T22:04:40.810Z	5 km NNE of Avenal, California	earthquake	0.79	0.47	0.13	13	reviewed	nc	nc
11/30/1990	4:25:59	35.9498333	-120.4963333	10.22	3.09	md	59	29	0.006306	0.05	nc	nc201478	2016-12-17T22:01:38.530Z	7 km NW of Parkfield, California	earthquake	0.13	0.2	0.07	91	reviewed	nc	nc
11/28/1990	3:42:54	35.9531667	-120.4958333	12.79	2.14	md	38	77	0.003604	0.05	nc	nc201333	2016-12-17T21:52:43.610Z	8 km NW of Parkfield, California	earthquake	0.22	0.19	0.19	37	reviewed	nc	nc
11/23/1990	7:26:32	35.9993333	-120.5601667	4.368	2.16	md	34	45	0.04234	0.05	nc	nc200706	2016-12-17T21:34:54.500Z	15 km NW of Parkfield, California	earthquake	0.14	0.26	0.14	26	reviewed	nc	nc
11/22/1990	11:56:10	35.999	-120.5591667	4.398	2	md	34	56	0.04324	0.04	nc	nc200673	2016-12-17T21:32:41.770Z	15 km NW of Parkfield, California	earthquake	0.14	0.23	0.14	22	reviewed	nc	nc
11/18/1990	13:36:43	35.743	-119.112	4.963	2.08	mc	0	229.2		0.283	ci	ci2007674	2016-02-05T00:03:40.940Z	12km ESE of Delano, CA	earthquake				14	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/17/1990	1:07:38	36.0643333	-120.6198333	5.682	2.12	md	38	42	0.01982	0.05	nc	nc200062	2016-12-17T21:10:01.770Z	24 km WSW of Coalinga, California	earthquake	0.16	0.3	0.09	25	reviewed	nc	nc
11/16/1990	0:57:12	35.9665	-120.5231667	6.74	2.39	md	49	32	0.02252	0.05	nc	nc200002	2016-12-17T21:06:25.170Z	11 km NW of Parkfield, California	earthquake	0.15	0.17	0.1	48	reviewed	nc	nc
11/14/1990	19:34:14	35.9661667	-120.5178333	6.97	3.09	md	58	58	0.01892	0.04	nc	nc202223	2016-12-17T21:01:34.280Z	10 km NW of Parkfield, California	earthquake	0.13	0.17	0.08	77	reviewed	nc	nc
11/12/1990	20:58:02	36.0801667	-120.1051667	5.937	2.78	md	53	163	0.01982	0.1	nc	nc202629	2016-12-17T20:55:22.650Z	8 km NNE of Avenal, California	earthquake	0.31	0.15	0.13	35	reviewed	nc	nc
11/3/1990	13:29:04	35.058	-119.131	21.346	2.26	mc	0	95.1		0.155	ci	ci1062479	2016-02-04T23:40:23.680Z	22km NW of Grapevine, CA	earthquake		0.129		30	reviewed	ci	ci
11/1/1990	0:06:35	35.214	-119.271	23.523	2.78	mc	0	107.9		0.28	ci	ci2007308	2016-02-04T23:40:21.320Z	19km ENE of Taft, CA	earthquake		0.667		57	reviewed	ci	ci
10/30/1990	1:48:44	36.0336667	-120.5823333	4.128	2.22	md	43	96	0.03694	0.03	nc	nc201286	2016-12-17T19:55:58.490Z	20 km NW of Parkfield, California	earthquake	0.16	0.15	0.11	38	reviewed	nc	nc
10/28/1990	13:55:21	36.18	-120.2088333	5.913	2.72	md	44	90	0.1216	0.04	nc	nc201265	2016-12-17T19:51:01.770Z	9 km WSW of Huron, California	earthquake	0.17	0.41	0.08	87	reviewed	nc	nc
10/27/1990	15:19:58	34.818	-120.185	3.312	2.22	mc	0	102.3		0.092	ci	ci2007051	2016-02-04T23:17:22.790Z	12km NE of Los Alamos, CA	earthquake		0.119		16	reviewed	ci	ci
10/25/1990	9:34:38	36.2745	-120.3675	8.887	2.01	md	32	142	0.03243	0.08	nc	nc201207	2016-12-17T19:37:02.400Z	14 km N of Coalinga, California	earthquake	0.39	0.29	0.13	14	reviewed	nc	nc
10/21/1990	17:16:57	36.1543333	-120.2671667	10.19	3.29	md	64	69	0.1126	0.07	nc	nc20092940	2016-12-17T19:18:44.170Z	8 km E of Coalinga, California	earthquake	0.14	0.33	0.12	183	reviewed	nc	nc
10/21/1990	4:25:41	35.426	-119.448	5.191	2.42	mc	0	121.2		0.327	ci	ci2006686	2016-02-05T00:48:28.270Z	3km NE of Buttonwillow, CA	earthquake				41	reviewed	ci	ci
10/18/1990	8:15:12	36.163	-119.535	5.257	2.31	mc	0	244.6		0.438	ci	ci2006495	2016-02-04T23:40:08.520Z	8km NNE of Corcoran, CA	earthquake				21	reviewed	ci	ci
10/17/1990	12:09:08	34.815	-120.341	0.297	2.37	mc	0	95.9		0.115	ci	ci2006442	2016-02-04T23:05:51.340Z	10km NW of Los Alamos, CA	earthquake		0.177		18	reviewed	ci	ci
10/16/1990	19:29:39	35.246	-118.901	21.338	2.38	mc	0	118.2		0.181	ci	ci2006412	2016-02-04T23:17:13.260Z	2km SE of Lamont, CA	earthquake		0.102		32	reviewed	ci	ci
10/16/1990	6:01:25	34.954	-118.995	15.241	2.16	mc	0	85.7		0.106	ci	ci2006389	2016-02-04T23:40:06.210Z	6km WNW of Grapevine, CA	earthquake		0.054		40	reviewed	ci	ci
10/11/1990	1:53:42	34.96	-119.5	8.593	3.1	mc	0	71.8		0.177	ci	ci2006130	2016-02-04T22:54:29.230Z	14km SW of Maricopa, CA	earthquake		0.252		76	reviewed	ci	ci
10/9/1990	10:21:08	35.088	-118.851	15.292	3.19	ml	0	82.9		0.145	ci	ci1062443	2016-02-05T00:59:53.650Z	14km S of Arvin, CA	earthquake		0.021		4	reviewed	ci	ci
10/6/1990	3:25:00	35.9318333	-120.4756667	8.989	2.56	md	48	46	0.03063	0.04	nc	nc20092416	2016-12-17T18:12:45.990Z	5 km NW of Parkfield, California	earthquake	0.14	0.18	0.1	70	reviewed	nc	nc
10/1/1990	22:13:35	36.167	-120.0678333	6.7	2.43	md	38	186	0.08288	0.16	nc	nc164762	2016-12-17T17:58:04.060Z	5 km SE of Huron, California	earthquake	0.72	0.5	0.11	25	reviewed	nc	nc
9/15/1990	12:27:55	34.91	-119.039	16.478	2.18	mc	0	45.4		0.116	ci	ci2004804	2016-02-05T00:25:39.170Z	11km WSW of Grapevine, CA	earthquake		0.033		35	reviewed	ci	ci
9/14/1990	20:39:53	36.1818333	-120.1201667	5.513	2.31	md	34	134	0.07297	0.16	nc	nc164125	2016-12-17T16:53:47.580Z	2 km SW of Huron, California	earthquake	0.47	0.6	0.13	27	reviewed	nc	nc
9/14/1990	17:46:28	36.0511667	-120.6156667	4.462	2.07	md	35	158	0.02342	0.07	nc	nc164120	2016-12-17T16:52:50.380Z	23 km NW of Parkfield, California	earthquake	0.29	0.39	0.12	22	reviewed	nc	nc
9/14/1990	14:34:17	35.127	-118.893	17.211	2.05	mc	0	90.1		0.163	ci	ci2004737	2016-02-04T22:20:35.330Z	11km SSW of Arvin, CA	earthquake		0.08		24	reviewed	ci	ci
9/11/1990	7:53:43	36.1778333	-120.3033333	8.173	2.66	md	66	58	0.07838	0.12	nc	nc163986	2016-12-17T16:38:15.090Z	6 km NE of Coalinga, California	earthquake	0.18	0.36	0.12	74	reviewed	nc	nc
9/10/1990	9:00:46	35.9983333	-120.5621667	2.758	2.29	md	36	56	0.04054	0.09	nc	nc163981	2016-12-17T16:32:25.510Z	16 km NW of Parkfield, California	earthquake	0.2	0.39	0.12	26	reviewed	nc	nc
9/10/1990	6:53:03	35.9963333	-120.5558333	3.967	3.2	ml	58	47	0.04414	0.07	nc	nc20092209	2016-12-17T16:31:29.180Z	15 km NW of Parkfield, California	earthquake	0.17	0.24		0	reviewed	nc	nc
9/6/1990	1:25:29	36.2585	-120.354	7.748	2.13	md	23	199	0.01261	0.09	nc	nc163728	2016-12-17T16:09:46.414Z	13 km N of Coalinga, California	earthquake	0.42	0.23	0.1	11	reviewed	nc	nc
9/3/1990	9:20:19	34.948	-119.119	14.854	2.2	mc	0	90.8		0.115	ci	ci2004024	2016-02-04T22:54:01.100Z	12km NNE of Pine Mountain Club, CA	earthquake		0.039		41	reviewed	ci	ci
8/28/1990	2:38:30	35.6771667	-120.225	9.261	3.03	md	43	79	0.02523	0.06	nc	nc163311	2016-12-17T15:26:03.170Z	13 km E of Shandon, California	earthquake	0.18	0.38	0.08	39	reviewed	nc	nc
8/26/1990	7:37:11	36.1861667	-120.1186667	6.973	2.08	md	33	133	0.06847	0.09	nc	nc163239	2016-12-17T15:20:11.250Z	2 km SW of Huron, California	earthquake	0.33	0.43	0.14	20	reviewed	nc	nc
8/23/1990	5:17:02	35.043	-119.133	18.892	2.02	mc	0	110.4		0.124	ci	ci2003369	2016-02-05T00:59:11.410Z	22km WNW of Grapevine, CA	earthquake		0.088		20	reviewed	ci	ci
8/23/1990	2:46:56	35.054	-119.281	20.778	2	mc	0	105		0.071	ci	ci2003362	2016-02-04T23:28:11.160Z	11km E of Maricopa, CA	earthquake		0.075		20	reviewed	ci	ci
8/21/1990	11:13:27	35.072	-119.149	20.712	2.03	mc	0	98.6		0.086	ci	ci2003275	2016-02-04T22:31:13.690Z	23km E of Maricopa, CA	earthquake		0.17		22	reviewed	ci	ci
8/20/1990	22:24:14	35.066	-119.136	17.438	2.5	mc	0	118.3		0.173	ci	ci2003251	2016-02-05T00:25:20.130Z	23km NW of Grapevine, CA	earthquake		0.24		48	reviewed	ci	ci
8/20/1990	18:13:14	36.1245	-120.2128333	3.273	2.27	md	42	87	0.1054	0.26	nc	nc162948	2016-12-17T14:54:04.460Z	13 km SW of Huron, California	earthquake	0.4	1.05	0.12	28	reviewed	nc	nc
8/20/1990	17:20:36	35.056	-119.13	20.562	2.3	ml	0	96		0.15	ci	ci2003235	2016-02-04T23:04:59.850Z	22km NW of Grapevine, CA	earthquake		0.082		3	reviewed	ci	ci
8/20/1990	9:31:33	35.061	-119.134	20.122	2.21	mc	0	96.7		0.159	ci	ci2003219	2016-02-04T22:31:12.860Z	23km NW of Grapevine, CA	earthquake		0.097		27	reviewed	ci	ci
8/17/1990	15:10:04	36.218	-120.2636667	3.041	2.79	md	5	121	0.07117	0.11	nc	nc1179598	2016-12-17T14:45:34.283Z	12 km NE of Coalinga, California	earthquake	0.5	1.73	0.79	4	reviewed	nc	nc
8/15/1990	11:40:38	36.2308333	-120.4285	8.921	2	md	36	74	0.07207	0.08	nc	nc162730	2016-12-17T14:39:19.030Z	11 km NNW of Coalinga, California	earthquake	0.17	0.29	0.17	21	reviewed	nc	nc
8/13/1990	5:15:49	35.925	-120.4698333	5.099	2.15	md	27	121	0.03694	0.05	nc	nc162544	2016-12-17T14:29:26.660Z	4 km NW of Parkfield, California	earthquake	0.22	0.27	0.11	25	reviewed	nc	nc
8/4/1990	12:57:59	35.731	-119.109	4.98	2.4	mc	0	169.5		0.231	ci	ci1061227	2016-02-04T22:53:37.840Z	12km ENE of McFarland, CA	earthquake				33	reviewed	ci	ci
8/2/1990	1:58:55	35.6781667	-120.2286667	8.928	2.12	md	35	77	0.02703	0.06	nc	nc161944	2016-12-17T13:48:20.170Z	13 km E of Shandon, California	earthquake	0.2	0.33	0.11	31	reviewed	nc	nc
8/2/1990	1:00:43	35.6798333	-120.2286667	9.408	3.21	md	50	77	0.02883	0.06	nc	nc20091928	2016-12-17T13:47:51.220Z	13 km ENE of Shandon, California	earthquake	0.16	0.32	0.1	118	reviewed	nc	nc
7/27/1990	4:35:48	36.1	-120.2155	6.413	2.79	md	53	79	0.09459	0.1	nc	nc161690	2016-12-17T13:25:25.060Z	13 km NW of Avenal, CA	earthquake	0.17	0.4	0.07	23	reviewed	nc	nc
7/26/1990	18:06:18	36.1325	-120.3525	12.124	2.2	md	17	236	0.07748	0.07	nc	nc161692	2016-12-17T13:23:58.986Z	Central California	earthquake	0.94	0.7	0.06	17	reviewed	nc	nc
7/26/1990	18:05:59	36.1563333	-120.3355	12.203	2.07	md	23	120	0.09279	0.06	nc	nc161669	2016-12-17T13:23:54.924Z	2 km NE of Coalinga, California	earthquake	0.39	0.44	0.16	20	reviewed	nc	nc
7/25/1990	23:21:37	36.2731667	-120.3978333	8.795	2.01	md	33	125	0.05045	0.12	nc	nc161614	2016-12-17T13:22:02.070Z	15 km NNW of Coalinga, California	earthquake	0.35	0.31	0.1	21	reviewed	nc	nc
7/15/1990	5:48:28	36.1575	-120.2311667	5.89	2.11	md	32	86	0.1288	0.08	nc	nc161080	2016-12-17T12:49:12.190Z	11 km E of Coalinga, California	earthquake	0.19	0.41	0.13	29	reviewed	nc	nc
7/3/1990	20:24:44	35.037	-119.145	14.854	2.17	mc	0	94.2		0.098	ci	ci682776	2016-02-04T23:50:09.950Z	21km N of Pine Mountain Club, CA	earthquake		0.08		19	reviewed	ci	ci
6/27/1990	14:16:50	36.134	-120.21	7.24	2.01	md	31	90	0.109	0.1	nc	nc160057	2016-12-17T11:34:06.510Z	12 km SW of Huron, California	earthquake	0.25	0.6	0.17	21	reviewed	nc	nc
6/21/1990	2:52:12	35.4878333	-120.783	4.688	2.16	md	42	50	0.08559	0.12	nc	nc159720	2016-12-17T10:50:55.610Z	Central California	earthquake	0.18	0.67	0.18	27	reviewed	nc	nc
6/2/1990	13:10:20	35.99	-118.886	4.498	2.12	mc	0	96.8		0.108	ci	ci1059415	2016-02-05T00:24:20.890Z	14km SE of Porterville, CA	earthquake				19	reviewed	ci	ci
6/1/1990	20:47:57	36.0375	-120.5935	4.175	2.4	md	44	50	0.03153	0.07	nc	nc158665	2016-12-17T09:35:49.220Z	21 km NW of Parkfield, California	earthquake	0.18	0.34	0.14	27	reviewed	nc	nc
5/31/1990	17:18:52	36.2716667	-120.3115	5.007	2.12	md	5	113	0.03423	0.03	nc	nc1177199	2016-12-17T09:31:54.697Z	15 km NNE of Coalinga, California	earthquake	0.35	0.74	0.7	4	reviewed	nc	nc
5/28/1990	9:22:15	36.0541667	-120.6136667	4.611	2.29	md	40	44	0.02072	0.08	nc	nc158476	2016-12-17T09:20:06.310Z	23 km NW of Parkfield, California	earthquake	0.19	0.25	0.1	22	reviewed	nc	nc
5/25/1990	14:57:07	36.2608333	-120.3465	8.821	2.35	md	35	107	0.01171	0.09	nc	nc158431	2016-12-17T09:10:28.110Z	13 km N of Coalinga, California	earthquake	0.29	0.3	0.09	25	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/25/1990	14:44:40	36.305	-120.3701667	10.908	2.52	md	48	59	0.03153	0.09	nc	nc158329	2016-12-17T09:10:06.800Z	18 km N of Coalinga, California	earthquake	0.26	0.23	0.09	46	reviewed	nc	nc
5/23/1990	21:48:39	34.965	-118.989	12.387	2.05	mc	0	80.8		0.172	ci	ci1059013	2016-02-04T23:49:37.080Z	6km WNW of Grapevine, CA	earthquake		0.384		15	reviewed	ci	ci
5/19/1990	18:27:32	36.2765	-120.3828333	10.928	2.03	md	17	120	0.04234	0.07	nc	nc157931	2016-12-17T08:44:11.476Z	15 km N of Coalinga, California	earthquake	0.69	0.62	0.07	12	reviewed	nc	nc
5/19/1990	17:55:58	36.2855	-120.3775	12.538	3.7	ml	54	92	0.04595	0.1	nc	nc20091358	2016-12-17T08:44:06.210Z	16 km N of Coalinga, California	earthquake	0.24	0.3		0	reviewed	nc	nc
5/19/1990	9:10:17	35.093	-118.849	15.979	2.71	mc	0	83.1		0.138	ci	ci1058867	2016-02-04T23:49:34.130Z	13km S of Arvin, CA	earthquake		0.018		67	reviewed	ci	ci
5/17/1990	19:24:32	36.0563333	-120.6163333	0.531	2.32	md	34	62	0.02072	0.08	nc	nc157842	2016-12-17T08:33:18.350Z	24 km NW of Parkfield, California	earthquake	0.17	0.45	0.17	23	reviewed	nc	nc
5/16/1990	17:18:13	36.2655	-120.3345	8.867	3.2	ml	54	64	0.01712	0.06	nc	nc20091347	2016-12-17T08:28:06.860Z	14 km N of Coalinga, California	earthquake	0.14	0.19		0	reviewed	nc	nc
5/14/1990	8:44:25	34.852	-120.5	5.54	3.04	mc	0	130.1		0.167	ci	ci1058645	2016-02-05T00:24:07.940Z	6km WSW of Orcutt, CA	earthquake				50	reviewed	ci	ci
5/13/1990	21:07:10	36.3555	-119.753	17.7	2.01	md	11	215	0.2883	0.08	nc	nc157612	2016-12-17T08:13:11.543Z	4 km WNW of Grangeville, California	earthquake	1.77	0.88	0.19	4	reviewed	nc	nc
5/12/1990	17:42:49	36.0485	-120.6081667	3.461	2.91	md	55	52	0.02252	0.08	nc	nc157672	2016-12-17T08:08:06.300Z	22 km NW of Parkfield, California	earthquake	0.15	0.28	0.11	66	reviewed	nc	nc
5/11/1990	10:04:30	35.9343333	-120.4883333	5.193	2.16	md	38	71	0.02162	0.08	nc	nc157415	2016-12-17T07:59:50.590Z	6 km NW of Parkfield, California	earthquake	0.2	0.24	0.14	28	reviewed	nc	nc
5/11/1990	1:50:00	35.424	-118.737	2.465	2.24	mc	0	140.3		0.142	ci	ci1058523	2016-02-04T22:41:40.960Z	24km NE of Lamont, CA	earthquake		0.024		33	reviewed	ci	ci
5/5/1990	7:03:35	36.2153333	-120.364	11.591	2.69	md	48	52	0.03784	0.1	nc	nc157049	2016-12-17T06:56:50.030Z	8 km N of Coalinga, California	earthquake	0.18	0.35	0.05	33	reviewed	nc	nc
4/29/1990	5:30:22	34.998	-119.096	11.694	2	mc	0	94.7		0.099	ci	ci1057884	2016-02-04T23:03:24.060Z	16km WNW of Grapevine, CA	earthquake		0.06		19	reviewed	ci	ci
4/29/1990	0:17:04	36.0848333	-120.1823333	5.24	2.44	md	48	86	0.06396	0.19	nc	nc156754	2016-12-17T06:28:16.410Z	10 km NNW of Avenal, California	earthquake	0.31	0.59	0.11	29	reviewed	nc	nc
4/28/1990	6:30:12	36.0831667	-120.178	6.83	2.54	md	49	87	0.05946	0.1	nc	nc156894	2016-12-17T06:20:26.690Z	9 km NNW of Avenal, California	earthquake	0.19	0.39	0.11	50	reviewed	nc	nc
4/26/1990	23:25:16	34.857	-119.204	10.324	2.02	mc	0	67.9		0.127	ci	ci1057791	2016-02-05T00:12:14.160Z	5km WNW of Pine Mountain Club, CA	earthquake		0.022		14	reviewed	ci	ci
4/25/1990	9:14:05	36.0375	-120.5871667	7.755	2.29	md	44	52	0.03243	0.05	nc	nc156564	2016-12-17T06:04:50.750Z	20 km NW of Parkfield, California	earthquake	0.18	0.28	0.13	32	reviewed	nc	nc
4/20/1990	0:57:49	35.425	-118.734	2.645	2.28	mc	0	139.2		0.108	ci	ci1057484	2016-02-04T22:41:11.800Z	25km NE of Lamont, CA	earthquake		0.02		38	reviewed	ci	ci
4/8/1990	17:58:10	36.0531667	-120.6036667	8.301	2.44	md	54	53	0.01712	0.06	nc	nc155973	2016-12-17T04:06:14.930Z	22 km NW of Parkfield, California	earthquake	0.19	0.29	0.13	39	reviewed	nc	nc
4/7/1990	10:53:44	35.814	-119.034	4.833	2.12	mc	0	267.8		0.165	ci	ci141411	2016-02-04T22:18:13.300Z	20km ENE of Delano, CA	earthquake				21	reviewed	ci	ci
4/4/1990	6:10:20	35.09	-118.963	25.129	2.36	mc	0	91.4		0.174	ci	ci1056604	2016-02-04T22:51:49.960Z	17km N of Grapevine, CA	earthquake		0.134		39	reviewed	ci	ci
3/29/1990	9:05:13	35.324	-119.271	4.883	2.05	mc	0	132.9		0.22	ci	ci1056320	2016-02-05T00:45:20.250Z	13km WSW of Rosedale, CA	earthquake				17	reviewed	ci	ci
3/27/1990	23:19:23	36.2106667	-120.2896667	7.777	2.13	md	18	62	0.05766	0.17	nc	nc1174396	2016-12-17T02:37:21.146Z	10 km NE of Coalinga, California	earthquake	0.48	1.04	0.13	15	reviewed	nc	nc
3/26/1990	11:42:01	35.344	-119.285	5.227	2.21	mc	0	124.4		0.406	ci	ci1056216	2016-02-04T23:36:55.550Z	13km WSW of Rosedale, CA	earthquake				28	reviewed	ci	ci
3/25/1990	9:56:07	36.1338333	-120.0613333	7.077	2.07	md	17	184	0.08288	0.07	nc	nc154766	2016-12-17T02:27:16.388Z	8 km SSE of Huron, California	earthquake	0.46	0.32	0.1	10	reviewed	nc	nc
3/19/1990	23:57:53	36.1121667	-120.3016667	9.683	2	md	31	56	0.1099	0.11	nc	nc154569	2016-12-17T02:04:22.550Z	6 km ESE of Coalinga, California	earthquake	0.26	0.57	0.12	20	reviewed	nc	nc
3/19/1990	23:54:30	36.112	-120.308	6.113	2.25	md	31	54	0.1054	0.14	nc	nc154497	2016-12-17T02:04:07.900Z	5 km ESE of Coalinga, California	earthquake	0.29	0.92	0.18	25	reviewed	nc	nc
3/16/1990	1:06:28	36.1595	-120.3318333	13.747	2	md	25	54	0.09009	0.05	nc	nc154306	2016-12-17T01:44:27.288Z	3 km NE of Coalinga, California	earthquake	0.26	0.4	0.13	20	reviewed	nc	nc
3/15/1990	20:45:38	36.157	-120.3291667	11.807	2.23	md	29	100	0.09279	0.1	nc	nc154320	2016-12-17T01:43:55.670Z	3 km NE of Coalinga, California	earthquake	0.28	0.53	0.14	22	reviewed	nc	nc
3/12/1990	1:39:48	35.573	-119.05	4.786	2.13	mc	0	167.8		0.123	ci	ci1055020	2016-02-04T23:13:50.460Z	17km N of Oildale, CA	earthquake				20	reviewed	ci	ci
3/11/1990	17:47:27	36.2836667	-120.4128333	9.058	2.83	md	46	71	0.06306	0.08	nc	nc154192	2016-12-17T01:27:14.260Z	16 km NNW of Coalinga, California	earthquake	0.18	0.25	0.09	39	reviewed	nc	nc
3/10/1990	16:25:26	36.1425	-120.2476667	10.457	2.65	md	44	74	0.1315	0.06	nc	nc154189	2016-12-17T01:22:25.690Z	10 km E of Coalinga, California	earthquake	0.15	0.36	0.09	53	reviewed	nc	nc
3/8/1990	4:56:50	35.346	-119.281	5.017	2.04	mc	0	124.7		0.375	ci	ci1054651	2016-02-04T22:28:36.150Z	13km WSW of Rosedale, CA	earthquake				20	reviewed	ci	ci
3/5/1990	0:16:09	36.0643333	-120.6341667	1.031	2.11	md	30	52	0.03153	0.09	nc	nc153671	2016-12-17T00:46:05.990Z	24 km E of San Ardo, California	earthquake	0.2	0.76	0.19	14	reviewed	nc	nc
2/27/1990	20:09:44	35.9768333	-119.6843333	18.836	2.18	md	21	123	0.2486	0.21	nc	nc153310	2016-12-16T23:45:19.234Z	17 km SW of Corcoran, California	earthquake	0.71	0.9	0.18	8	reviewed	nc	nc
2/26/1990	17:46:58	36.1515	-120.2353333	10.184	2.72	md	36	128	0.1306	0.05	nc	nc153439	2016-12-16T23:28:50.690Z	11 km E of Coalinga, California	earthquake	0.2	0.39	0.12	35	reviewed	nc	nc
2/17/1990	15:49:32	36.2788333	-120.4005	8.228	2.22	md	27	99	0.05495	0.1	nc	nc152681	2016-12-16T22:38:35.040Z	15 km NNW of Coalinga, California	earthquake	0.28	0.31	0.08	11	reviewed	nc	nc
2/15/1990	15:05:42	35.065	-119.107	19.732	2.13	mc	0	95.4		0.106	ci	ci140720	2016-02-04T22:39:25.760Z	21km NW of Grapevine, CA	earthquake		0.207		25	reviewed	ci	ci
2/15/1990	15:04:43	35.061	-119.107	18.892	2.7	mc	0	95		0.143	ci	ci675268	2016-02-05T00:55:48.930Z	21km NW of Grapevine, CA	earthquake		0.127		60	reviewed	ci	ci
2/15/1990	14:56:49	35.061	-119.108	18.702	2.19	mc	0	95.8		0.113	ci	ci675267	2016-02-04T22:50:35.410Z	21km NW of Grapevine, CA	earthquake		0.139		27	reviewed	ci	ci
2/9/1990	8:20:47	35.54	-120.798	4.4	2.07	md	45	32	0.08919	0.15	nc	nc152302	2016-12-16T21:46:28.540Z	8 km W of Templeton, California	earthquake	0.18	0.76	0.11	32	reviewed	nc	nc
2/5/1990	3:30:35	36.2471667	-120.3891667	8.728	2.89	md	54	49	0.03784	0.12	nc	nc152155	2016-12-16T21:24:21.540Z	12 km NNW of Coalinga, California	earthquake	0.15	0.36	0.06	47	reviewed	nc	nc
1/31/1990	9:02:03	36.251	-120.334	8.547	2.58	md	49	62	0.007207	0.13	nc	nc151609	2016-12-16T20:49:06.450Z	12 km N of Coalinga, California	earthquake	0.17	0.22	0.08	39	reviewed	nc	nc
1/30/1990	22:36:36	36.264	-120.4188333	4.335	2.05	md	6	121	0.06306	0.08	nc	nc1171616	2016-12-16T20:44:41.530Z	14 km NNW of Coalinga, California	earthquake	0.83	2.34	0.12	6	reviewed	nc	nc
1/21/1990	15:41:16	36.0943333	-120.107	8.987	2.09	md	33	146	0.03333	0.1	nc	nc151200	2016-12-16T19:52:08.600Z	10 km N of Avenal, California	earthquake	0.22	0.28	0.09	29	reviewed	nc	nc
1/21/1990	12:32:42	36.0961667	-120.1035	9.107	3.1	ml	42	147	0.03514	0.09	nc	nc151152	2016-12-16T19:51:17.170Z	10 km NNE of Avenal, California	earthquake	0.21	0.24		0	reviewed	nc	nc
1/14/1990	17:10:47	36.0996667	-120.0488333	6.991	2.19	md	31	172	0.06306	0.15	nc	nc150656	2016-12-16T19:13:53.830Z	12 km SSE of Huron, California	earthquake	0.57	0.4	0.15	22	reviewed	nc	nc
1/12/1990	19:50:56	36.2848333	-120.4041667	9.328	3	ml	51	67	0.05856	0.07	nc	nc150623	2016-12-16T19:03:46.630Z	16 km NNW of Coalinga, California	earthquake	0.12	0.19		0	reviewed	nc	nc
1/8/1990	15:48:02	35.07	-119.103	17.836	2.26	mc	0	104.9		0.194	ci	ci1049585	2016-02-05T00:32:55.130Z	21km NW of Grapevine, CA	earthquake		2.087		26	reviewed	ci	ci
1/4/1990	22:16:52	36.1056667	-120.0911667	7.591	2.9	md	64	117	0.04685	0.21	nc	nc150150	2016-12-16T18:17:29.930Z	10 km S of Huron, California	earthquake	0.66	0.39	0.12	38	reviewed	nc	nc
12/29/1989	3:09:46	34.909	-119.053	15.128	2.8	ml	0	42.6		0.127	ci	ci1048817	2016-02-04T03:47:02.340Z	11km NE of Pine Mountain Club, CA	earthquake		0.032		7	reviewed	ci	ci
12/26/1989	19:58:35	35.346	-119.456	28.911	3.2	ml	0	112		0.175	ci	ci1048694	2016-02-04T02:28:58.430Z	6km SSE of Buttonwillow, CA	earthquake		0.502		7	reviewed	ci	ci
12/23/1989	22:13:54	35.7705	-120.309	3.802	2.08	md	38	61	0.06036	0.07	nc	nc149478	2016-12-10T02:21:06.330Z	14 km NNE of Shandon, California	earthquake	0.16	0.39	0.17	30	reviewed	nc	nc
12/20/1989	12:02:48	35.212	-120.373	0.374	2.24	mc	0	82.1		0.137	ci	ci672681	2016-02-03T22:33:30.710Z	21km NNE of Nipomo, CA	earthquake				20	reviewed	ci	ci
12/18/1989	2:02:28	36.2065	-120.2845	7.457	2.07	md	25	103	0.06396	0.08	nc	nc149080	2016-12-10T01:40:23.772Z	10 km NE of Coalinga, California	earthquake	0.18	0.27	0.13	19	reviewed	nc	nc
12/17/1989	17:38:10	36.2116667	-120.2896667	7.027	2.69	md	44	104	0.05676	0.14	nc	nc149099	2016-12-10T01:38:21.100Z	10 km NE of Coalinga, California	earthquake	0.2	0.3	0.1	33	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/16/1989	3:01:04	35.5208333	-120.0761667	11.006	2.46	md	37	131	0.05856	0.05	nc	nc148969	2016-12-10T01:29:04.340Z	30 km ESE of Shandon, California	earthquake	0.22	0.4	0.09	34	reviewed	nc	nc
12/14/1989	19:59:47	35.5353333	-120.7983333	3.07	2.03	md	37	49	0.08829	0.09	nc	nc148890	2016-12-10T01:22:06.190Z	8 km W of Templeton, California	earthquake	0.16	0.76	0.14	25	reviewed	nc	nc
12/14/1989	12:27:28	35.5235	-120.0735	11.026	2.07	md	31	133	0.05586	0.03	nc	nc148841	2016-12-10T01:20:01.770Z	31 km ESE of Shandon, California	earthquake	0.22	0.35	0.21	25	reviewed	nc	nc
12/14/1989	2:20:15	34.981	-119.159	13.39	2.17	mc	0	112.6		0.094	ci	ci672361	2016-02-04T05:42:59.040Z	15km N of Pine Mountain Club, CA	earthquake		0.115		22	reviewed	ci	ci
12/11/1989	2:46:17	35.9511667	-120.0451667	5.518	2.47	md	41	146	0.1144	0.18	nc	nc150034	2016-12-10T01:01:31.900Z	9 km SE of Avenal, California	earthquake	0.36	0.75	0.12	27	reviewed	nc	nc
12/10/1989	9:22:43	35.446	-118.779	2.272	2.07	mc	0	164.7		0.093	ci	ci1047835	2016-02-03T23:11:53.240Z	22km E of Oildale, CA	earthquake		0.051		22	reviewed	ci	ci
12/9/1989	16:39:39	35.4605	-120.7763333	2.285	2.19	md	33	62	0.08649	0.11	nc	nc148806	2016-12-10T00:54:03.354Z	10 km WSW of Atascadero, California	earthquake	0.2	1.08	0.28	14	reviewed	nc	nc
12/8/1989	11:15:37	35.447	-118.778	2.795	2.72	ml	0	123.4		0.11	ci	ci1047684	2016-02-03T22:33:18.100Z	22km E of Oildale, CA	earthquake		0.018		4	reviewed	ci	ci
12/6/1989	4:56:59	35.9533333	-120.0283333	8.788	2.04	md	25	164	0.1081	0.07	nc	nc148627	2016-12-10T00:36:19.539Z	8 km SW of Kettleman City, California	earthquake	0.37	0.63	0.17	27	reviewed	nc	nc
12/5/1989	13:15:24	35.444	-118.779	2.395	2.33	mc	0	118.2		0.132	ci	ci672014	2016-02-03T22:33:14.240Z	22km E of Oildale, CA	earthquake		0.027		40	reviewed	ci	ci
11/24/1989	1:45:02	35.015	-119.039	11.187	2.57	mc	0	124.7		0.105	ci	ci1046781	2016-02-04T04:24:57.770Z	13km NW of Grapevine, CA	earthquake		0.026		37	reviewed	ci	ci
11/12/1989	6:06:07	35.918	-119.8816667	20.748	2.42	md	40	137	0.08198	0.2	nc	nc147284	2016-12-09T21:59:58.110Z	12 km SE of Kettleman City, California	earthquake	0.68	0.58	0.12	32	reviewed	nc	nc
11/10/1989	12:45:38	36.1088333	-119.8671667	13.484	2.02	md	30	127	0.2027	0.17	nc	nc146994	2016-12-09T21:46:41.630Z	9 km SSW of Stratford, California	earthquake	0.76	0.85	0.14	13	reviewed	nc	nc
10/25/1989	16:21:45	35.7953333	-120.3498333	9.72	2.84	md	48	36	0.03604	0.05	nc	nc145762	2016-12-09T17:52:32.780Z	13 km SSE of Parkfield, California	earthquake	0.16	0.3	0.09	51	reviewed	nc	nc
10/13/1989	6:15:03	35.454	-119.452	5.052	2.23	mc	0	140.4		0.413	ci	ci140140	2016-02-04T05:41:58.650Z	6km NNE of Buttonwillow, CA	earthquake				14	reviewed	ci	ci
10/12/1989	17:57:24	36.0635	-120.6343333	-0.159	2.29	md	35	104	0.03153	0.11	nc	nc145384	2016-12-09T12:07:35.460Z	24 km E of San Ardo, California	earthquake	0.24	1.18	0.21	30	reviewed	nc	nc
10/12/1989	14:32:41	36.0606667	-120.6245	0.721	2.24	md	18	78	0.02432	0.06	nc	nc1166558	2016-12-09T12:07:01.751Z	24 km NW of Parkfield, California	earthquake	0.24	0.71	0.12	14	reviewed	nc	nc
10/12/1989	3:29:33	36.25	-119.539	5.487	2.47	mc	0	146.6		0.26	ci	ci1043720	2016-02-04T02:27:41.280Z	13km SE of Hanford, CA	earthquake				6	reviewed	ci	ci
10/7/1989	2:29:28	36.1068333	-120.2993333	5.396	2.03	md	42	56	0.1117	0.19	nc	nc145110	2016-12-09T11:49:56.490Z	6 km ESE of Coalinga, California	earthquake	0.33	0.64	0.11	25	reviewed	nc	nc
10/1/1989	5:43:51	36.173	-120.276	9.367	2.23	md	31	65	0.09369	0.07	nc	nc144909	2016-12-09T11:25:21.290Z	8 km ENE of Coalinga, California	earthquake	0.22	0.43	0.05	27	reviewed	nc	nc
9/29/1989	10:44:59	35.08	-119.111	4.524	2.4	mc	0	97		0.19	ci	ci1042520	2016-02-04T04:23:57.510Z	22km NW of Grapevine, CA	earthquake				32	reviewed	ci	ci
9/25/1989	8:02:04	36.1461667	-120.1521667	9.687	2.31	md	29	122	0.09189	0.09	nc	nc144580	2016-12-09T11:04:25.140Z	7 km SW of Huron, California	earthquake	0.3	0.47	0.16	24	reviewed	nc	nc
9/21/1989	21:31:00	36.2335	-120.3568333	9.801	3	md	51	51	0.01982	0.05	nc	nc10090119	2016-12-09T10:53:51.940Z	10 km N of Coalinga, California	earthquake	0.13	0.17	0.11	104	reviewed	nc	nc
9/21/1989	21:28:47	36.237	-120.3551667	9.791	3.06	md	49	48	0.01622	0.07	nc	nc10090108	2016-12-09T10:53:42.660Z	10 km N of Coalinga, California	earthquake	0.14	0.25	0.11	116	reviewed	nc	nc
9/21/1989	13:05:50	35.8568333	-120.406	5.005	2.38	md	45	39	0.02162	0.06	nc	nc144317	2016-12-09T10:52:18.000Z	5 km SSE of Parkfield, California	earthquake	0.16	0.25	0.11	42	reviewed	nc	nc
9/15/1989	20:08:35	34.916	-119.044	13.838	2.13	mc	0	56.8		0.104	ci	ci1041189	2016-02-04T05:02:16.960Z	11km WSW of Grapevine, CA	earthquake		0.052		29	reviewed	ci	ci
9/15/1989	12:05:11	35.8118333	-119.955	10.382	2.03	md	27	162	0.05045	0.14	nc	nc144087	2016-12-09T10:24:05.480Z	21 km S of Kettleman City, California	earthquake	0.44	0.46	0.18	17	reviewed	nc	nc
9/9/1989	9:49:10	36.0045	-120.0138333	9.861	2.49	md	40	174	0.0964	0.12	nc	nc143791	2016-12-09T10:01:04.470Z	4 km W of Kettleman City, California	earthquake	0.38	0.59	0.13	41	reviewed	nc	nc
9/7/1989	17:23:14	35.6053333	-120.607	4.606	3.13	md	5	173	0.2144	0.5	nc	nc1165754	2016-12-09T09:54:26.513Z	Central California	earthquake	5.67	38.7	0.59	2	reviewed	nc	nc
9/6/1989	4:34:42	34.949	-119.191	19.398	2.52	mc	0	85.7		0.149	ci	ci1040204	2016-02-04T04:23:31.560Z	12km NNW of Pine Mountain Club, CA	earthquake		0.05		38	reviewed	ci	ci
9/4/1989	0:33:46	36.3136667	-119.8683333	4.472	2.03	md	4	196	0.6135	0.15	nc	nc143527	2016-12-09T09:40:59.632Z	6 km NNE of Lemoore Station, California	earthquake	2.23	2.3		1	reviewed	nc	nc
8/21/1989	6:21:04	36.1583333	-120.3026667	13.717	2.37	md	46	79	0.0964	0.05	nc	nc142668	2016-12-09T08:41:25.250Z	5 km ENE of Coalinga, California	earthquake	0.15	0.44	0.12	50	reviewed	nc	nc
8/21/1989	1:25:38	36.1588333	-120.304	13.627	2.19	md	34	79	0.0955	0.05	nc	nc142656	2016-12-09T08:40:09.660Z	5 km ENE of Coalinga, California	earthquake	0.2	0.47	0.12	32	reviewed	nc	nc
8/18/1989	17:40:53	36.2605	-120.3386667	8.457	2.51	md	46	106	0.01171	0.06	nc	nc142568	2016-12-09T08:31:12.030Z	13 km N of Coalinga, California	earthquake	0.15	0.18	0.09	39	reviewed	nc	nc
8/11/1989	22:05:55	36.2611667	-120.3848333	8.921	2.65	md	44	83	0.03604	0.1	nc	nc142090	2016-12-09T08:02:27.920Z	Central California	earthquake	0.24	0.27	0.09	38	reviewed	nc	nc
8/7/1989	3:54:50	36.0008333	-120.562	4.355	2.15	md	42	63	0.04144	0.06	nc	nc141723	2016-12-09T07:36:29.320Z	16 km NW of Parkfield, California	earthquake	0.18	0.26	0.14	30	reviewed	nc	nc
8/6/1989	21:00:34	36.0046667	-120.5603333	4.605	2.55	md	43	34	0.04505	0.06	nc	nc141664	2016-12-09T07:34:00.270Z	16 km NW of Parkfield, California	earthquake	0.16	0.28	0.13	47	reviewed	nc	nc
7/27/1989	13:58:41	36.0758333	-120.1753333	6.3	2.85	md	61	82	0.05495	0.11	nc	nc140920	2016-12-09T06:45:57.080Z	8 km NNW of Avenal, California	earthquake	0.16	0.3	0.13	53	reviewed	nc	nc
7/27/1989	1:55:59	36.1376667	-120.1058333	5.162	2.26	md	24	147	0.07658	0.18	nc	nc140891	2016-12-09T06:43:43.010Z	7 km S of Huron, California	earthquake	0.98	0.94	0.11	27	reviewed	nc	nc
7/25/1989	11:59:47	36.2086667	-120.3583333	11.971	2.55	md	51	52	0.04234	0.08	nc	nc140757	2016-12-09T06:37:40.790Z	7 km N of Coalinga, California	earthquake	0.14	0.25	0.09	39	reviewed	nc	nc
7/15/1989	12:30:06	34.855	-119.485	7.531	2.53	mc	0	49.1		0.173	ci	ci1034763	2016-02-04T03:05:10.430Z	24km SSW of Maricopa, CA	earthquake		1.399		35	reviewed	ci	ci
7/14/1989	4:03:51	35.985	-118.872	4.475	2	mh	0	264.6		0.12	ci	ci1034679	2016-02-03T23:09:27.390Z	16km SE of Porterville, CA	earthquake				0	reviewed	ci	ci
7/13/1989	13:07:40	35.054	-119.151	19.648	2.18	mc	0	188.2		0.073	ci	ci1034603	2016-02-04T01:07:59.100Z	23km E of Maricopa, CA	earthquake		0.172		25	reviewed	ci	ci
7/12/1989	23:59:14	36.1066667	-120.078	8.717	2.22	md	34	202	0.05225	0.09	nc	nc139901	2016-12-09T05:39:33.700Z	10 km SSE of Huron, California	earthquake	0.43	0.25	0.15	26	reviewed	nc	nc
7/12/1989	18:55:32	36.3016667	-120.3235	9.617	2.03	md	28	81	0.05135	0.2	nc	nc139890	2016-12-09T05:38:31.400Z	18 km N of Coalinga, California	earthquake	0.51	0.34	0.14	16	reviewed	nc	nc
7/12/1989	3:57:45	36.2718333	-120.3953333	8.418	2.02	md	29	100	0.04775	0.07	nc	nc139831	2016-12-09T05:35:15.730Z	15 km NNW of Coalinga, California	earthquake	0.28	0.34	0.17	19	reviewed	nc	nc
7/9/1989	17:32:27	35.261	-119.045	5.237	2.16	mc	0	153		0.238	ci	ci1034337	2016-02-03T23:46:48.800Z	11km S of Bakersfield, CA	earthquake				19	reviewed	ci	ci
7/9/1989	17:27:19	35.272	-119.038	5.237	2.2	mc	0	138		0.398	ci	ci1034336	2016-02-04T01:07:55.570Z	10km S of Bakersfield, CA	earthquake				24	reviewed	ci	ci
7/6/1989	5:10:48	36.0776667	-120.1793333	5.36	3	ml	65	82	0.05856	0.14	nc	nc139529	2016-12-09T05:07:57.900Z	9 km NNW of Avenal, California	earthquake	0.19	0.32		2	reviewed	nc	nc
7/5/1989	16:48:22	36.038	-120.5945	3.905	2.02	md	33	50	0.03063	0.08	nc	nc139471	2016-12-09T05:05:52.670Z	Central California	earthquake	0.21	0.37	0.13	26	reviewed	nc	nc
7/5/1989	12:41:45	35.4513333	-120.7355	5.223	2.25	md	45	48	0.1018	0.09	nc	nc139457	2016-12-09T05:05:20.380Z	7 km SW of Atascadero, California	earthquake	0.16	0.57	0.15	41	reviewed	nc	nc
7/2/1989	8:01:37	35.9386667	-119.1501667	4.833	2.1	mh	19	280		0.27	ci	ci1033818	2016-04-02T18:30:16.218Z	13km S of Poplar-Cotton Center, CA	earthquake	1.21	31.61		0	reviewed	ci	ci
6/30/1989	1:35:17	35.9943333	-120.5506667	4.993	2.22	md	43	66	0.04775	0.06	nc	nc139139	2016-12-09T04:45:12.400Z	14 km NW of Parkfield, California	earthquake	0.18	0.26	0.09	33	reviewed	nc	nc
6/28/1989	6:04:58	35.149	-118.984	28.573	2.73	mc	0	110.9		0.209	ci	ci1033456	2016-02-03T23:46:43.310Z	14km SSW of Lamont, CA	earthquake		0.254		48	reviewed	ci	ci
6/27/1989	20:27:46	35.147	-118.982	26.123	3.23	ml	0	99.4		0.239	ci	ci1033398	2016-02-03T23:09:15.520Z	14km SSW of Lamont, CA	earthquake		0.18		10	reviewed	ci	ci
6/26/1989	15:09:40	35.049	-119.002	10.346	2.09	mc	0	97.7		0.106	ci	ci1033242	2016-02-04T05:01:03.910Z	14km NNW of Grapevine, CA	earthquake		0.128		18	reviewed	ci	ci
6/16/1989	20:27:46	35.503	-119.478	5.085	2.05	mc	0	162.4		0.383	ci	ci1032496	2016-02-04T04:22:24.320Z	11km N of Buttonwillow, CA	earthquake				9	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/16/1989	10:15:42	36.1146667	-120.0921667	7.88	2.02	md	26	184	0.05586	0.14	nc	nc138283	2016-12-09T03:53:12.050Z	9 km S of Huron, California	earthquake	0.66	0.35	0.16	21	reviewed	nc	nc
6/15/1989	11:14:12	36.1103333	-120.0793333	8.127	2.07	md	32	159	0.05495	0.07	nc	nc138211	2016-12-09T03:49:37.330Z	10 km SSE of Huron, California	earthquake	0.21	0.14	0.14	26	reviewed	nc	nc
6/12/1989	22:38:22	36.1103333	-120.073	8.547	2.09	md	34	162	0.05766	0.11	nc	nc138031	2016-12-09T03:40:04.960Z	10 km SSE of Huron, California	earthquake	0.41	0.21	0.14	27	reviewed	nc	nc
6/12/1989	21:31:20	36.1228333	-120.0625	8.777	2.43	md	39	182	0.07297	0.08	nc	nc138086	2016-12-09T03:39:48.220Z	9 km SSE of Huron, California	earthquake	0.36	0.23	0.11	37	reviewed	nc	nc
6/11/1989	0:51:26	36.2135	-120.3588333	12.021	3	ml	59	52	0.03784	0.08	nc	nc137896	2016-12-09T03:28:55.940Z	8 km N of Coalinga, California	earthquake	0.13	0.24		2	reviewed	nc	nc
6/9/1989	13:41:38	36.1835	-120.3025	9.647	2.01	md	30	94	0.07297	0.06	nc	nc137775	2016-12-09T03:20:48.600Z	7 km NE of Coalinga, California	earthquake	0.2	0.37	0.12	35	reviewed	nc	nc
6/7/1989	16:31:49	36.1053333	-120.0876667	8.957	2.9	md	46	155	0.04775	0.1	nc	nc137701	2016-12-09T03:12:00.050Z	10 km S of Huron, California	earthquake	0.27	0.22	0.11	59	reviewed	nc	nc
6/5/1989	4:21:25	34.992	-119.538	9.129	2.43	mc	0	51.1		0.142	ci	ci1031518	2016-02-03T19:51:31.680Z	14km WSW of Maricopa, CA	earthquake		0.151		28	reviewed	ci	ci
6/3/1989	9:31:53	35.471	-118.918	4.831	2.23	mc	0	205.7		0.12	ci	ci1031415	2016-02-03T22:30:06.230Z	11km ENE of Oildale, CA	earthquake				25	reviewed	ci	ci
5/25/1989	12:40:09	35.8625	-120.4108333	8.785	3.8	ml	58	39	0.02072	0.04	nc	nc10089653	2016-12-09T02:24:53.670Z	4 km SSE of Parkfield, California	earthquake	0.14	0.23		6	reviewed	nc	nc
5/23/1989	7:44:15	36.2105	-120.3293333	9.907	2.28	md	44	56	0.04054	0.04	nc	nc136611	2016-12-09T02:16:07.970Z	8 km NNE of Coalinga, California	earthquake	0.17	0.21	0.1	46	reviewed	nc	nc
5/22/1989	8:02:47	36.2573333	-120.3178333	8.597	2.13	md	41	67	0.02162	0.11	nc	nc136441	2016-12-09T02:11:59.060Z	13 km NNE of Coalinga, California	earthquake	0.16	0.24	0.14	27	reviewed	nc	nc
5/21/1989	4:06:50	36.1841667	-120.2848333	9.467	2.29	md	44	62	0.08018	0.08	nc	nc136487	2016-12-09T02:08:31.640Z	8 km NE of Coalinga, California	earthquake	0.22	0.41	0.1	45	reviewed	nc	nc
5/21/1989	2:15:12	36.181	-120.281	9.107	3.07	md	65	63	0.08468	0.11	nc	nc136621	2016-12-09T02:07:49.910Z	8 km ENE of Coalinga, California	earthquake	0.2	0.34	0.09	57	reviewed	nc	nc
5/17/1989	18:56:23	34.977	-119.343	-0.19	2.37	mc	0	77.2		0.201	ci	ci1029672	2016-02-04T02:25:12.740Z	10km SSE of Maricopa, CA	earthquake				26	reviewed	ci	ci
5/17/1989	0:22:07	36.1146667	-120.083	7.197	2.13	md	30	157	0.05766	0.11	nc	nc136245	2016-12-09T01:54:16.800Z	9 km S of Huron, California	earthquake	0.51	0.22	0.13	19	reviewed	nc	nc
5/17/1989	0:18:10	36.112	-120.0906667	8.537	2.67	md	39	154	0.05315	0.06	nc	nc136244	2016-12-09T01:54:01.990Z	10 km S of Huron, California	earthquake	0.2	0.16	0.12	44	reviewed	nc	nc
5/16/1989	21:38:08	36.1431667	-120.2298333	10.147	2.86	md	52	82	0.1279	0.06	nc	nc10089648	2016-12-09T01:53:29.800Z	11 km E of Coalinga, California	earthquake	0.14	0.37	0.11	113	reviewed	nc	nc
5/16/1989	19:43:45	36.1411667	-120.2295	10.497	2.6	md	44	82	0.1261	0.06	nc	nc10089626	2016-12-09T01:53:04.240Z	11 km E of Coalinga, California	earthquake	0.16	0.34	0.14	79	reviewed	nc	nc
5/13/1989	15:18:00	35.043	-118.934	12.623	2.34	mc	0	121.4		0.177	ci	ci1029279	2016-02-04T05:00:22.620Z	11km N of Grapevine, CA	earthquake		0.212		36	reviewed	ci	ci
5/13/1989	2:28:56	35.046	-118.956	3.765	2.09	mh	0	182.9		0.097	ci	ci139377	2016-02-04T04:21:47.190Z	12km NNW of Grapevine, CA	earthquake		6.619		6	reviewed	ci	ci
5/13/1989	2:28:13	35.049	-118.927	12.053	2.23	mc	0	85		0.149	ci	ci1029246	2016-02-04T03:04:13.920Z	12km N of Grapevine, CA	earthquake		0.196		31	reviewed	ci	ci
5/13/1989	2:09:29	35.037	-118.931	14.183	2.02	mc	0	141.1		0.167	ci	ci1029245	2016-02-03T23:08:30.580Z	10km N of Grapevine, CA	earthquake		0.105		7	reviewed	ci	ci
5/13/1989	2:02:33	35.042	-118.921	10.913	3.44	ml	0	84		0.173	ci	ci1029243	2016-02-03T19:51:08.950Z	11km N of Grapevine, CA	earthquake		0.068		9	reviewed	ci	ci
5/12/1989	4:39:14	34.744	-119.457	9.191	2.59	mc	0	67.9		0.216	ci	ci1029119	2016-02-03T22:29:41.200Z	30km WSW of Pine Mountain Club, CA	earthquake		0.385		35	reviewed	ci	ci
5/6/1989	2:56:51	36.1133333	-120.21	4.26	2.09	md	44	85	0.0964	0.19	nc	nc135652	2016-12-09T01:19:20.350Z	13 km ESE of Coalinga, California	earthquake	0.29	0.77	0.12	31	reviewed	nc	nc
5/4/1989	19:18:05	36.0288333	-120.0558333	10.141	2.14	md	37	159	0.05405	0.13	nc	nc135592	2016-12-09T01:15:54.580Z	7 km ENE of Avenal, California	earthquake	0.38	0.67	0.19	28	reviewed	nc	nc
5/2/1989	17:31:54	36.4186667	-119.9156667	23.61	2.14	md	20	270	0.218	0.09	nc	nc135460	2016-12-09T01:10:12.672Z	1 km SE of Lanare, California	earthquake	2.68	0.4	0.21	4	reviewed	nc	nc
4/19/1989	6:57:57	35.401	-118.713	2.337	2.36	mc	0	114.9		0.147	ci	ci658410	2016-02-04T02:24:47.570Z	24km NNE of Arvin, CA	earthquake		0.023		31	reviewed	ci	ci
4/15/1989	10:55:15	35.4726667	-120.897	5.436	2.05	md	43	85	0.01892	0.08	nc	nc134639	2016-12-09T00:27:38.650Z	3 km N of Cayucos, California	earthquake	0.16	0.29	0.17	36	reviewed	nc	nc
4/14/1989	9:13:49	36.0668333	-120.0511667	7.091	2.12	md	29	167	0.04775	0.12	nc	nc134598	2016-12-09T00:24:45.100Z	9 km NE of Avenal, California	earthquake	0.41	0.48	0.13	21	reviewed	nc	nc
4/9/1989	2:25:39	35.2031667	-120.7495	7.297	2.15	md	32	81	0.03604	0.08	nc	nc134194	2016-12-09T00:07:45.929Z	3 km NNW of Avila Beach, California	earthquake	0.19	0.35	0.24	16	reviewed	nc	nc
4/9/1989	2:07:37	35.2026667	-120.7476667	7.257	2.93	md	58	79	0.03604	0.09	nc	nc134193	2016-12-09T00:07:40.190Z	2 km NNW of Avila Beach, California	earthquake	0.13	0.27	0.11	72	reviewed	nc	nc
4/7/1989	15:22:58	36.095	-120.0051667	7.107	2.03	md	39	102	0.09099	0.23	nc	nc134110	2016-12-09T00:03:54.600Z	10 km NNW of Kettleman City, California	earthquake	0.5	0.38	0.07	26	reviewed	nc	nc
4/6/1989	18:29:04	35.9245	-119.7571667	19.501	2.16	md	12	204	0.1739	0.05	nc	nc134062	2016-12-09T00:00:46.624Z	20 km ESE of Kettleman City, California	earthquake	0.82	0.57	0.21	5	reviewed	nc	nc
4/6/1989	18:18:10	36.0315	-120.0261667	6.911	2.02	md	29	173	0.07387	0.12	nc	nc134061	2016-12-09T00:00:40.920Z	6 km WNW of Kettleman City, California	earthquake	0.28	0.66	0.12	21	reviewed	nc	nc
4/4/1989	18:53:08	34.834	-119.388	2.2	2.21	mc	0	104.6		0.128	ci	ci1025602	2016-02-04T01:45:52.820Z	22km W of Pine Mountain Club, CA	earthquake		0.038		25	reviewed	ci	ci
4/3/1989	15:41:04	36.2218333	-120.2561667	6.124	2.16	md	6	134	0.07568	0.01	nc	nc133935	2016-12-08T23:48:34.550Z	13 km NE of Coalinga, California	earthquake	0.32	0.8	0.06	4	reviewed	nc	nc
3/28/1989	20:16:05	34.851	-119.442	1.356	2.15	mc	0	85.3		0.165	ci	ci1025095	2016-02-04T01:06:16.080Z	23km S of Maricopa, CA	earthquake		0.075		8	reviewed	ci	ci
3/28/1989	9:47:28	35.947	-120.5031667	6.028	2.13	md	45	48	0.00991	0.08	nc	nc133557	2016-12-08T23:30:35.560Z	Central California	earthquake	0.15	0.2	0.18	37	reviewed	nc	nc
3/21/1989	11:53:31	36.0061667	-120.0235	6.891	2.03	md	18	178	0.08919	0.08	nc	nc133173	2016-12-08T23:10:12.645Z	5 km W of Kettleman City, California	earthquake	0.58	1.2	0.14	16	reviewed	nc	nc
3/17/1989	1:15:45	36.0655	-120.1353333	4.315	2.03	md	23	111	0.02162	0.07	nc	nc132942	2016-12-08T22:56:09.430Z	6 km N of Avenal, California	earthquake	0.29	0.33	0.12	22	reviewed	nc	nc
3/10/1989	16:14:54	35.469	-118.906	14.095	2.76	ml	0	110.8		0.154	ci	ci1023356	2016-02-04T01:45:25.680Z	12km ENE of Oildale, CA	earthquake		0.087		7	reviewed	ci	ci
3/1/1989	6:58:34	34.907	-119.316	8.28	2.08	mc	0	81.5		0.148	ci	ci655326	2016-02-03T23:45:02.980Z	17km WNW of Pine Mountain Club, CA	earthquake		0.184		22	reviewed	ci	ci
2/27/1989	3:05:09	36.0266667	-120.5933333	3.643	2.25	md	47	72	0.04234	0.09	nc	nc10089373	2016-12-08T22:01:36.300Z	20 km NW of Parkfield, California	earthquake	0.18	0.32	0.12	34	reviewed	nc	nc
2/17/1989	6:10:28	35.043	-119.143	13.074	3.28	ml	0	79.3		0.147	ci	ci1021227	2016-02-04T03:41:58.260Z	22km N of Pine Mountain Club, CA	earthquake		0.044		12	reviewed	ci	ci
2/14/1989	17:00:00	35.045	-119.143	14.204	2.09	mc	0	107.1		0.13	ci	ci1020981	2016-02-04T05:37:44.100Z	22km N of Pine Mountain Club, CA	earthquake		0.06		16	reviewed	ci	ci
2/14/1989	15:43:54	35.043	-119.156	12.894	4.1	ml	0	46.1		0.166	ci	ci1020974	2016-02-04T04:58:48.140Z	22km N of Pine Mountain Club, CA	earthquake		0.04		9	reviewed	ci	ci
2/11/1989	3:01:48	36.166	-120.254	3.017	2.02	md	28	72	0.1099	0.28	nc	nc131213	2016-12-08T21:13:14.810Z	9 km ENE of Coalinga, California	earthquake	0.47	1.34	0.16	20	reviewed	nc	nc
2/10/1989	23:50:09	35.926	-120.4743333	4.619	2.27	md	45	47	0.03333	0.08	nc	nc131207	2016-12-08T21:12:42.150Z	4 km NW of Parkfield, California	earthquake	0.17	0.27	0.14	38	reviewed	nc	nc
2/6/1989	16:31:31	35.9788333	-120.261	16.45	2.16	md	24	128	0.07838	0.17	nc	nc131051	2016-12-08T21:01:52.998Z	12 km WSW of Avenal, California	earthquake	0.48	0.75	0.13	21	reviewed	nc	nc
2/3/1989	6:52:08	34.92	-119.238	12.898	3.02	ml	0	79.5		0.095	ci	ci1020135	2016-02-03T23:06:55.790Z	12km NW of Pine Mountain Club, CA	earthquake		0.027		9	reviewed	ci	ci
2/1/1989	13:44:49	34.971	-119.311	-1.02	2.23	mc	0	127.6		0.081	ci	ci1019992	2016-02-04T01:05:18.540Z	13km SE of Maricopa, CA	earthquake		0.208		19	reviewed	ci	ci
1/31/1989	0:38:33	35.098	-119.088	27.694	3.73	ml	0	49.7		0.2	ci	ci1019808	2016-02-04T00:23:11.720Z	22km NW of Grapevine, CA	earthquake		0.084		11	reviewed	ci	ci
1/26/1989	3:28:56	36.2155	-120.2928333	8.887	2.5	md	42	62	0.05315	0.08	nc	nc130492	2016-12-08T20:29:24.280Z	10 km NE of Coalinga, California	earthquake	0.16	0.28	0.07	46	reviewed	nc	nc
1/24/1989	1:34:31	34.773	-119.514	6.791	2.06	mc	0	76.4		0.18	ci	ci1019101	2016-02-03T21:07:41.130Z	33km SSW of Maricopa, CA	earthquake		2.713		17	reviewed	ci	ci
1/20/1989	20:48:52	36.1575	-120.2303333	9.307	2.67	md	44	82	0.1297	0.08	nc	nc130242	2016-12-08T20:13:37.740Z	11 km E of Coalinga, California	earthquake	0.15	0.42	0.07	55	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
1/16/1989	14:51:32	36.0256667	-120.0533333	10.427	2.05	md	31	178	0.05766	0.1	nc	nc130012	2016-12-08T19:59:54.226Z	7 km ENE of Avenal, California	earthquake	0.49	0.17	0.09	23	reviewed	nc	nc
1/15/1989	5:27:55	34.974	-119.523	13.979	2.53	mc	0	57.7		0.123	ci	ci1018278	2016-02-04T04:20:02.080Z	15km SW of Maricopa, CA	earthquake		0.059		31	reviewed	ci	ci
1/15/1989	1:10:15	35.7781667	-120.3301667	8.088	2.33	md	41	58	0.05586	0.04	nc	nc129952	2016-12-08T19:55:28.730Z	14 km NNE of Shandon, California	earthquake	0.16	0.28	0.11	42	reviewed	nc	nc
1/11/1989	22:24:19	34.854	-120.419	5.052	2.37	mc	0	174.8	0.22	0.276	ci	ci1017712	2016-02-04T01:44:26.290Z	2km SE of Orcutt, CA	earthquake				9	reviewed	ci	ci
1/8/1989	16:43:39	36.1096667	-120.1301667	4.053	2.37	md	47	103	0.1441	0.16	nc	nc129660	2016-12-08T19:34:56.130Z	10 km SSW of Huron, California	earthquake	0.45	0.89	0.08	38	reviewed	nc	nc
1/8/1989	16:37:23	36.1073333	-120.1341667	8.073	2.62	md	55	99	0.1468	0.16	nc	nc129659	2016-12-08T19:34:45.590Z	10 km SSW of Huron, California	earthquake	0.26	0.38	0.11	48	reviewed	nc	nc
1/8/1989	7:53:58	36.2115	-120.359	11.811	2.19	md	36	86	0.03964	0.08	nc	nc129651	2016-12-08T19:33:53.110Z	7 km N of Coalinga, California	earthquake	0.2	0.36	0.16	36	reviewed	nc	nc
12/23/1988	8:41:00	36.2173333	-120.3638333	11.331	2.04	md	17	87	0.03604	0.12	nc	nc129091	2016-12-08T15:32:05.425Z	8 km N of Coalinga, California	earthquake	0.38	0.62	0.07	10	reviewed	nc	nc
12/22/1988	22:39:56	36.2155	-120.3656667	10.791	2.04	md	27	52	0.03874	0.11	nc	nc129072	2016-12-08T15:30:44.990Z	8 km N of Coalinga, California	earthquake	0.23	0.44	0.1	25	reviewed	nc	nc
12/22/1988	22:30:16	36.2113333	-120.3525	10.141	2.29	md	34	53	0.03874	0.12	nc	nc129037	2016-12-08T15:30:29.800Z	7 km N of Coalinga, California	earthquake	0.22	0.24	0.12	39	reviewed	nc	nc
12/22/1988	22:21:13	36.2153333	-120.3666667	12.351	3.3	ml	51	52	0.03874	0.08	nc	nc10088530	2016-12-08T15:29:57.170Z	8 km N of Coalinga, California	earthquake	0.14	0.33		4	reviewed	nc	nc
12/15/1988	15:06:31	36.1841667	-120.094	8.11	2.54	md	33	164	0.06486	0.07	nc	nc128621	2016-12-08T15:02:39.670Z	2 km SSE of Huron, California	earthquake	0.5	0.52	0.13	36	reviewed	nc	nc
12/15/1988	6:00:45	36.205	-120.3216667	9.977	2.22	md	39	56	0.04775	0.07	nc	nc128606	2016-12-08T15:01:33.500Z	8 km NNE of Coalinga, California	earthquake	0.21	0.32	0.11	35	reviewed	nc	nc
12/14/1988	15:55:13	35.8293333	-119.7315	19.877	2.08	md	8	173	0.4135	0.03	nc	nc128567	2016-12-08T14:59:38.308Z	22 km WSW of Alpaugh, California	earthquake	1.04	2	0.02	4	reviewed	nc	nc
12/9/1988	11:14:15	35.072	-119.101	20.429	2.17	mc	0	121.8		0.142	ci	ci1014911	2016-02-04T01:44:02.290Z	21km NW of Grapevine, CA	earthquake		0.087		25	reviewed	ci	ci
12/6/1988	22:55:41	36.166	-119.7286667	19.401	2.33	md	12	178	0.2991	0.07	nc	nc128148	2016-12-08T14:34:21.435Z	8 km ESE of Stratford, California	earthquake	1.94	0.94	0.33	8	reviewed	nc	nc
12/4/1988	16:33:42	36.108	-120.0466667	8.695	3.1	md	38	185	0.06937	0.1	nc	nc10088617	2016-12-08T14:27:47.390Z	11 km SSE of Huron, California	earthquake	0.34	0.26	0.12	108	reviewed	nc	nc
12/3/1988	11:23:51	36.1373333	-120.2093333	0.175	2.13	md	33	91	0.1108	0.27	nc	nc127966	2016-12-08T14:24:16.090Z	12 km SW of Huron, California	earthquake	0.35	3.76	0.2	25	reviewed	nc	nc
12/2/1988	4:59:17	34.971	-119.219	13.548	2.03	mc	0	92.8		0.044	ci	ci1014307	2016-02-03T22:27:07.670Z	15km NNW of Pine Mountain Club, CA	earthquake		0.097		16	reviewed	ci	ci
11/29/1988	15:30:40	34.988	-119.201	3.898	3.11	ml	0	98.4		0.116	ci	ci1014077	2016-02-04T00:22:09.450Z	16km NNW of Pine Mountain Club, CA	earthquake		0.025		10	reviewed	ci	ci
11/25/1988	20:54:20	36.0808333	-120.6403333	2.889	2.7	md	46	45	0.03784	0.06	nc	nc127633	2016-12-08T14:02:53.410Z	24 km ENE of San Ardo, California	earthquake	0.13	0.32	0.13	49	reviewed	nc	nc
11/24/1988	23:49:24	35.506	-119.346	5.046	2.31	mc	0	167.7		0.292	ci	ci1013707	2016-02-04T03:40:36.750Z	7km W of Shafter, CA	earthquake				12	reviewed	ci	ci
11/23/1988	8:19:01	34.83	-120.348	5.295	2.06	mc	0	125.3		0.282	ci	ci1013565	2016-02-03T22:26:58.510Z	9km ESE of Orcutt, CA	earthquake				7	reviewed	ci	ci
11/10/1988	12:52:26	35.9655	-120.517	10.528	2.4	md	47	47	0.01802	0.05	nc	nc126745	2016-12-08T12:49:58.070Z	10 km NW of Parkfield, California	earthquake	0.18	0.24	0.06	44	reviewed	nc	nc
11/9/1988	18:47:42	36.112	-120.0221667	7.308	2.24	md	32	200	0.08739	0.1	nc	nc126795	2016-12-08T12:46:29.390Z	Central California	earthquake	0.7	0.2	0.12	32	reviewed	nc	nc
11/5/1988	22:21:32	35.9655	-120.159	16.422	2.54	md	38	131	0.1036	0.07	nc	nc126440	2016-12-08T12:34:37.110Z	5 km SSW of Avenal, California	earthquake	0.22	0.42	0.12	36	reviewed	nc	nc
11/5/1988	15:03:25	34.865	-119.46	13.558	2.09	mc	0	86.1		0.089	ci	ci1012692	2016-02-03T21:06:28.720Z	22km SSW of Maricopa, CA	earthquake		0.141		13	reviewed	ci	ci
11/4/1988	19:14:14	36.1626667	-120.182	7.264	2.12	md	32	154	0.1171	0.07	nc	nc10088445	2016-12-08T12:31:19.150Z	8 km WSW of Huron, California	earthquake	0.44	0.65	0.09	28	reviewed	nc	nc
11/1/1988	3:11:16	36.1598333	-120.1801667	8.957	3.23	md	45	108	0.1144	0.06	nc	nc126163	2016-12-08T12:18:17.280Z	8 km SW of Huron, California	earthquake	0.17	0.36	0.13	77	reviewed	nc	nc
10/25/1988	8:11:38	34.685	-120.029	5.154	2.09	mc	0	87.4		0.094	ci	ci1012165	2016-02-04T03:01:08.060Z	8km ENE of Los Olivos, CA	earthquake				8	reviewed	ci	ci
10/23/1988	11:20:49	35.7865	-120.3321667	8.244	3.18	md	49	58	0.04685	0.04	nc	nc10088052	2016-12-08T11:52:28.510Z	15 km NNE of Shandon, California	earthquake	0.16	0.29	0.11	122	reviewed	nc	nc
10/17/1988	9:28:14	36.1956667	-120.2601667	7.067	2.04	md	20	68	0.08559	0.12	nc	nc125584	2016-12-08T11:35:14.736Z	10 km NE of Coalinga, California	earthquake	0.28	0.73	0.2	13	reviewed	nc	nc
10/17/1988	5:17:13	36.0553333	-120.0498333	6.366	2.35	md	52	163	0.1946	0.23	nc	nc125577	2016-12-08T11:34:36.640Z	9 km NE of Avenal, California	earthquake	0.63	0.85	0.13	38	reviewed	nc	nc
10/12/1988	8:46:04	35.996	-119.836	5.339	2.28	mc	0	86.5		0.534	ci	ci1011015	2016-02-03T21:46:15.270Z	11km E of Kettleman City, CA	earthquake				13	reviewed	ci	ci
10/12/1988	8:45:04	35.9538333	-119.9298333	6.587	2.21	md	33	120	0.1811	0.26	nc	nc125335	2016-12-08T11:22:52.570Z	6 km SSE of Kettleman City, California	earthquake	0.67	3.63	0.16	27	reviewed	nc	nc
10/12/1988	3:37:17	35.9576667	-119.9388333	14.387	2.29	md	37	120	0.173	0.12	nc	nc125328	2016-12-08T11:22:07.870Z	5 km SSE of Kettleman City, California	earthquake	0.46	0.59	0.13	18	reviewed	nc	nc
10/10/1988	20:31:04	35.059	-119.053	17.884	2.49	mc	0	93.2		0.1	ci	ci1010904	2016-02-04T01:43:10.460Z	17km NW of Grapevine, CA	earthquake		0.056		39	reviewed	ci	ci
10/4/1988	17:37:39	36.1611667	-120.0895	5.7	2.24	md	30	188	0.08739	0.13	nc	nc10088164	2016-12-08T11:01:50.620Z	4 km SSE of Huron, California	earthquake	0.6	0.37	0.14	26	reviewed	nc	nc
10/4/1988	17:29:33	36.1595	-120.0841667	7.39	2.89	md	37	172	0.08919	0.12	nc	nc10088163	2016-12-08T11:01:40.870Z	5 km SSE of Huron, California	earthquake	0.42	0.41	0.13	81	reviewed	nc	nc
10/3/1988	14:15:09	36.2696667	-120.4298333	8.378	2.1	md	26	72	0.07297	0.07	nc	nc124839	2016-12-08T10:58:10.730Z	15 km NNW of Coalinga, California	earthquake	0.26	0.45	0.12	21	reviewed	nc	nc
9/27/1988	4:25:12	35.9388333	-120.6448333	7.949	2.23	md	46	39	0.04144	0.07	nc	nc124443	2016-12-08T10:40:37.940Z	16 km ENE of Bradley, California	earthquake	0.13	0.33	0.15	48	reviewed	nc	nc
9/17/1988	15:50:20	35.625	-119.535	5.155	3.18	ml	0	87.5		0.397	ci	ci1009232	2016-02-04T04:18:19.330Z	18km W of Wasco, CA	earthquake				10	reviewed	ci	ci
9/17/1988	13:27:01	35.2925	-120.7901667	6.875	2.71	md	55	41	0.04324	0.09	nc	nc123882	2016-12-08T10:14:33.610Z	4 km ESE of Los Osos, California	earthquake	0.14	0.3	0.09	46	reviewed	nc	nc
9/14/1988	5:21:29	36.1091667	-120.2991667	9.826	2.54	md	47	56	0.1117	0.09	nc	nc123742	2016-12-08T10:03:58.880Z	6 km ESE of Coalinga, California	earthquake	0.16	0.35	0.13	41	reviewed	nc	nc
9/9/1988	1:47:44	36.171	-120.0253333	8.14	2.03	md	22	204	0.09099	0.04	nc	nc123516	2016-12-08T09:49:41.568Z	7 km ESE of Huron, California	earthquake	0.5	0.33	0.12	8	reviewed	nc	nc
9/9/1988	0:27:05	35.098	-118.976	19.582	2.08	mc	0	176.6	0.123	0.115	ci	ci1008804	2016-02-04T05:35:15.020Z	18km NNW of Grapevine, CA	earthquake		0.477		8	reviewed	ci	ci
9/8/1988	23:16:43	35.089	-118.962	17.772	3.6	ml	0	49.3		0.168	ci	ci1008799	2016-02-03T21:05:37.480Z	16km N of Grapevine, CA	earthquake		0.049		10	reviewed	ci	ci
9/6/1988	18:24:59	36.0396667	-120.5906667	4.915	2.25	md	25	71	0.02973	0.04	nc	nc123445	2021-02-18T19:03:38.497Z	21 km NW of Parkfield, California	earthquake	0.33	0.4	0.23	11	reviewed	nc	nc
9/6/1988	18:24:55	36.0381667	-120.5913333	3.775	2.1	ml	28	51	0.03063	0.07	nc	nc123425	2021-03-09T23:58:19.044Z	20 km NW of Parkfield, California	earthquake	0.24	0.35		0	reviewed	nc	nc
9/6/1988	12:44:38	36.1923333	-119.9003333	4.91	2.01	md	17	289	0.1595	0.35	nc	nc123417	2016-12-08T09:41:49.352Z	6 km W of Stratford, California	earthquake	9.38	4.38	0.11	7	reviewed	nc	nc
9/4/1988	22:25:29	36.204	-120.3098333	9.147	2.43	md	43	58	0.05225	0.07	nc	nc123289	2016-12-08T09:37:56.410Z	8 km NNE of Coalinga, California	earthquake	0.15	0.25	0.09	32	reviewed	nc	nc
8/30/1988	22:27:51	36.064	-120.6195	5.181	2.05	md	41	42	0.01982	0.07	nc	nc123117	2016-12-08T09:22:16.150Z	24 km WSW of Coalinga, California	earthquake	0.17	0.3	0.09	22	reviewed	nc	nc
8/26/1988	8:01:55	35.9598333	-119.8278333	17.526	2.74	md	67	84	0.2505	0.24	nc	nc122861	2016-12-08T09:05:28.740Z	13 km ESE of Kettleman City, California	earthquake	0.38	0.77	0.17	43	reviewed	nc	nc
8/25/1988	2:52:46	35.44	-119.474	5.191	2	mh	0	171.5	0.2846	0.286	ci	ci1008115	2016-02-04T02:20:52.670Z	4km N of Buttonwillow, CA	earthquake				0	reviewed	ci	ci
8/23/1988	21:26:18	36.023	-120.5791667	4.195	2.3	md	34	56	0.04775	0.04	nc	nc122740	2016-12-08T08:56:54.760Z	19 km NW of Parkfield, California	earthquake	0.17	0.25	0.14	28	reviewed	nc	nc
8/22/1988	7:16:51	36.2088333	-120.3043333	8.474	2.25	md	28	115	0.05135	0.07	nc	nc122671	2016-12-08T08:51:53.180Z	9 km NNE of Coalinga, California	earthquake	0.32	0.2	0.13	27	reviewed	nc	nc
8/21/1988	16:33:50	36.1168333	-120.068	8.16	2.18	md	35	124	0.06577	0.1	nc	nc122645	2016-12-08T08:50:14.620Z	10 km SSE of Huron, California	earthquake	0.3	0.24	0.19	16	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
8/21/1988	10:06:44	36.1703333	-120.2798333	10.297	2.61	md	41	117	0.09369	0.07	nc	nc10087896	2016-12-08T08:49:07.210Z	7 km ENE of Coalinga, California	earthquake	0.19	0.35	0.23	64	reviewed	nc	nc
8/16/1988	3:16:32	36.1818333	-120.3401667	13.412	2.02	md	25	100	0.06757	0.07	nc	nc122387	2016-12-08T08:33:48.950Z	5 km NNE of Coalinga, California	earthquake	0.31	0.64	0.14	20	reviewed	nc	nc
8/13/1988	20:14:51	36.0125	-120.5726667	4.125	2.17	md	32	70	0.04234	0.05	nc	nc122242	2016-12-08T08:26:03.080Z	17 km NW of Parkfield, California	earthquake	0.17	0.31	0.15	27	reviewed	nc	nc
8/13/1988	20:12:07	36.0135	-120.5713333	4.095	2.66	md	49	46	0.04414	0.06	nc	nc122241	2016-12-08T08:25:49.710Z	17 km NW of Parkfield, California	earthquake	0.15	0.26	0.12	28	reviewed	nc	nc
8/12/1988	15:50:54	36.2253333	-120.3676667	11.218	2.37	md	27	88	0.03153	0.07	nc	nc122201	2016-12-08T08:21:23.620Z	9 km N of Coalinga, California	earthquake	0.22	0.35	0.16	29	reviewed	nc	nc
8/12/1988	14:40:56	36.2143333	-120.3786667	10.195	3.3	ml	54	86	0.04505	0.08	nc	nc122174	2016-12-08T08:21:08.400Z	8 km NNW of Coalinga, California	earthquake	0.14	0.19		4	reviewed	nc	nc
8/11/1988	2:05:55	36.2555	-120.3628333	8.498	2.75	md	46	76	0.01712	0.1	nc	nc122139	2016-12-08T08:16:43.090Z	12 km N of Coalinga, California	earthquake	0.17	0.2	0.12	36	reviewed	nc	nc
8/6/1988	13:25:59	36.2301667	-120.2893333	11.127	2.15	md	32	122	0.04775	0.09	nc	nc121864	2016-12-08T07:58:05.260Z	11 km NNE of Coalinga, California	earthquake	0.29	0.36	0.09	26	reviewed	nc	nc
8/6/1988	2:34:36	36.0828333	-120.2016667	4.49	2.23	md	34	140	0.07748	0.12	nc	nc121835	2016-12-08T07:55:54.910Z	10 km NW of Avenal, California	earthquake	0.23	0.45	0.17	18	reviewed	nc	nc
7/31/1988	10:26:02	36.1816667	-120.2863333	10.687	3.2	ml	50	112	0.08198	0.05	nc	nc121463	2016-12-08T07:30:45.450Z	8 km NE of Coalinga, California	earthquake	0.13	0.26		2	reviewed	nc	nc
7/29/1988	14:58:35	36.2835	-120.4023333	9.258	2.79	md	41	80	0.05856	0.08	nc	nc121245	2016-12-08T07:21:00.260Z	16 km NNW of Coalinga, California	earthquake	0.21	0.28	0.13	38	reviewed	nc	nc
7/29/1988	10:57:45	36.2195	-120.3703333	11.439	2.4	md	33	90	0.03694	0.07	nc	nc121208	2016-12-08T07:19:18.880Z	8 km N of Coalinga, California	earthquake	0.29	0.45	0.1	41	reviewed	nc	nc
7/24/1988	22:17:39	36.1511667	-120.2086667	10.614	2.29	md	25	138	0.1207	0.05	nc	nc120847	2016-12-08T06:33:35.860Z	11 km WSW of Huron, California	earthquake	0.2	0.45	0.08	23	reviewed	nc	nc
7/24/1988	17:18:51	36.15	-120.203	9.114	2.59	md	40	125	0.1171	0.16	nc	nc120838	2016-12-08T06:33:01.410Z	10 km WSW of Huron, California	earthquake	0.43	0.72	0.08	35	reviewed	nc	nc
7/24/1988	2:16:29	35.52	-119.699	5.052	2.19	mc	0	187.8		0.308	ci	ci643559	2016-02-04T02:59:39.290Z	25km WNW of Buttonwillow, CA	earthquake				12	reviewed	ci	ci
7/23/1988	19:03:02	35.465	-120.8408333	0.137	2.44	md	10	193	0.1306	0.21	nc	nc10087758	2016-12-08T06:29:47.825Z	5 km ENE of Cayucos, California	earthquake	1.61	7.56	0.8	2	reviewed	nc	nc
7/22/1988	0:09:26	36.1478333	-120.207	12.014	3.12	md	44	137	0.1171	0.05	nc	nc120740	2016-12-08T06:22:29.230Z	11 km WSW of Huron, California	earthquake	0.16	0.37	0.13	70	reviewed	nc	nc
7/15/1988	10:35:56	36.1566667	-120.214	8.994	2.39	md	35	163	0.1279	0.1	nc	nc120406	2016-12-08T05:59:04.520Z	11 km WSW of Huron, California	earthquake	0.33	0.43	0.12	40	reviewed	nc	nc
7/12/1988	5:54:24	35.201	-119.342	14.894	2.12	mc	0	114.7		0.251	ci	ci642886	2016-02-03T19:46:07.310Z	12km ENE of Taft, CA	earthquake		0.209		21	reviewed	ci	ci
7/12/1988	5:45:40	35.205	-119.342	14.874	2.05	mc	0	115.3		0.264	ci	ci642885	2016-02-04T02:59:31.370Z	12km NE of Taft, CA	earthquake		0.25		18	reviewed	ci	ci
7/11/1988	9:43:49	36.1195	-120.0411667	7.744	2.04	md	27	183	0.08108	0.06	nc	nc120189	2016-12-08T05:39:56.230Z	10 km SSE of Huron, California	earthquake	0.73	0.21	0.16	21	reviewed	nc	nc
7/10/1988	11:21:34	36.1393333	-120.2431667	-0.263	2.39	md	26	76	0.1333	0.18	nc	nc120152	2016-12-08T05:35:46.920Z	10 km E of Coalinga, California	earthquake	0.7	5.58	0.13	31	reviewed	nc	nc
7/9/1988	13:45:02	35.241	-120.329	0.384	2.44	mc	0	155.6		0.064	ci	ci642738	2016-02-04T02:20:05.460Z	26km NNE of Nipomo, CA	earthquake		0.137		16	reviewed	ci	ci
7/3/1988	14:56:30	35.393	-119.944	10.239	2.29	mc	0	145.6		0.096	ci	ci642364	2016-02-04T01:41:36.100Z	7km NE of Simmler, CA	earthquake		0.111		29	reviewed	ci	ci
6/27/1988	3:00:38	35.9443333	-120.0221667	11.826	2.29	md	34	169	0.1369	0.18	nc	nc119609	2016-12-08T04:47:47.170Z	8 km SW of Kettleman City, California	earthquake	0.64	1.03	0.14	17	reviewed	nc	nc
6/23/1988	14:10:25	36.236	-119.8238333	18.2	2.56	md	45	86	0.2108	0.17	nc	nc119467	2016-12-08T04:33:51.160Z	5 km N of Stratford, California	earthquake	0.49	0.61	0.21	34	reviewed	nc	nc
6/18/1988	20:06:10	36.2616667	-120.3438333	9.647	3	ml	51	62	0.01261	0.06	nc	nc119203	2016-12-08T04:16:41.790Z	13 km N of Coalinga, California	earthquake	0.13	0.19		2	reviewed	nc	nc
6/18/1988	10:05:37	35.994	-118.896	4.498	3.14	ml	0	238.3		0.079	ci	ci641333	2016-02-03T22:24:34.340Z	13km SE of Porterville, CA	earthquake				4	reviewed	ci	ci
6/16/1988	7:32:21	35.8173333	-119.899	4.25	2.72	md	37	100	0.2775	0.17	nc	nc119051	2016-12-08T04:04:44.410Z	21 km SSE of Kettleman City, California	earthquake	0.53	1.24	0.17	21	reviewed	nc	nc
6/12/1988	15:55:24	36.0438333	-119.947	17.507	2.15	md	26	210	0.1333	0.14	nc	nc118790	2016-12-08T03:45:23.860Z	4 km NNE of Kettleman City, California	earthquake	0.92	0.76	0.09	19	reviewed	nc	nc
6/9/1988	11:31:41	34.979	-119.12	16.148	2.35	mc	0	110.7		0.121	ci	ci640654	2016-02-03T20:24:54.080Z	15km N of Pine Mountain Club, CA	earthquake		0.052		42	reviewed	ci	ci
6/9/1988	3:23:43	36.1858333	-120.3378333	12.884	2.51	md	43	51	0.06396	0.08	nc	nc118608	2016-12-08T03:32:48.570Z	5 km NNE of Coalinga, California	earthquake	0.17	0.33	0.09	26	reviewed	nc	nc
6/9/1988	3:17:21	35.9733333	-120.5283333	4.658	2.82	md	45	44	0.02973	0.06	nc	nc118605	2016-12-08T03:32:40.540Z	11 km NW of Parkfield, California	earthquake	0.17	0.24	0.11	53	reviewed	nc	nc
6/8/1988	3:58:40	36.0571667	-120.6135	5.671	2.22	md	41	44	0.01802	0.07	nc	nc118547	2016-12-08T03:28:12.610Z	23 km NW of Parkfield, California	earthquake	0.17	0.29	0.13	20	reviewed	nc	nc
6/6/1988	21:15:32	36.1775	-120.3603333	13.099	2.18	md	27	49	0.07297	0.07	nc	nc118465	2016-12-08T03:24:28.810Z	4 km N of Coalinga, California	earthquake	0.24	0.47	0.12	11	reviewed	nc	nc
6/5/1988	1:58:52	35.106	-119.313	24.853	2.24	mc	0	102		0.241	ci	ci640404	2016-02-03T20:24:50.560Z	10km ENE of Maricopa, CA	earthquake		0.187		21	reviewed	ci	ci
6/4/1988	14:51:21	36.1728333	-120.2901667	9.417	2.04	md	22	113	0.08739	0.07	nc	nc118369	2016-12-08T03:18:13.960Z	7 km ENE of Coalinga, California	earthquake	0.28	0.63	0.17	19	reviewed	nc	nc
5/31/1988	15:53:19	35.4395	-120.7268333	6.144	2.45	md	39	43	0.04955	0.06	nc	nc118200	2016-12-08T03:07:09.340Z	7 km SW of Atascadero, California	earthquake	0.16	0.49	0.2	27	reviewed	nc	nc
5/25/1988	21:27:28	36.1248333	-120.2086667	7.04	2.19	md	23	89	0.1027	0.13	nc	nc117917	2016-12-08T02:46:15.970Z	12 km SW of Huron, California	earthquake	0.36	0.56	0.12	14	reviewed	nc	nc
5/21/1988	18:24:41	36.244	-119.5998333	9.769	2.37	md	9	147	0.6297	0.04	nc	nc117689	2016-12-08T02:31:14.084Z	7 km SSE of Home Garden, California	earthquake	0.61	1.43	0.15	6	reviewed	nc	nc
5/18/1988	22:35:43	36.2625	-120.3875	9.408	2.38	md	34	55	0.03874	0.07	nc	nc117495	2016-12-08T02:21:16.990Z	13 km N of Coalinga, California	earthquake	0.17	0.25	0.11	43	reviewed	nc	nc
5/17/1988	12:29:00	36.1486667	-120.2255	9.687	2.29	md	36	84	0.1288	0.07	nc	nc117414	2016-12-08T02:15:15.620Z	12 km E of Coalinga, California	earthquake	0.17	0.37	0.15	42	reviewed	nc	nc
5/12/1988	18:36:15	34.842	-120.389	5.533	2.4	mc	0	134		0.161	ci	ci639240	2016-02-04T04:54:25.080Z	5km ESE of Orcutt, CA	earthquake				13	reviewed	ci	ci
5/10/1988	21:29:54	35.7803333	-119.9263333	4.52	3.07	md	121	245	0.4784	7.45	nc	nc117031	2016-12-08T01:46:38.778Z	25 km S of Kettleman City, California	earthquake	50.28	70.88	0.17	97	reviewed	nc	nc
5/1/1988	1:10:18	36.1131667	-120.238	2.98	2.52	md	37	74	0.1162	0.15	nc	nc116458	2016-12-08T01:08:19.260Z	11 km ESE of Coalinga, California	earthquake	0.26	0.73	0.21	12	reviewed	nc	nc
4/27/1988	2:29:24	36.1948333	-120.3135	10.157	2.29	md	25	55	0.05946	0.07	nc	nc116319	2016-12-08T00:56:44.931Z	7 km NE of Coalinga, California	earthquake	0.22	0.41	0.1	24	reviewed	nc	nc
4/23/1988	16:57:30	36.1825	-120.2555	9.767	3.06	md	60	71	0.0973	0.07	nc	nc116087	2016-12-08T00:46:35.230Z	10 km ENE of Coalinga, California	earthquake	0.12	0.31	0.09	84	reviewed	nc	nc
4/21/1988	20:09:38	36.2723333	-120.3235	8.278	2.17	md	15	176	0.02793	0.05	nc	nc116036	2016-12-08T00:38:24.993Z	Central California	earthquake	0.46	0.22	0.14	12	reviewed	nc	nc
4/19/1988	18:19:15	35.2415	-120.5828333	6.773	2.15	md	32	47	0.07207	0.18	nc	nc115915	2016-12-08T00:29:36.531Z	4 km NNE of Edna, California	earthquake	0.34	0.68	0.18	20	reviewed	nc	nc
4/13/1988	14:28:13	35.178	-119.385	21.327	3.45	ml	0	111.3		0.212	ci	ci747951	2016-02-03T21:43:05.530Z	8km ENE of Taft, CA	earthquake		0.286		3	reviewed	ci	ci
4/13/1988	2:39:27	34.982	-119.17	14.168	2.36	mc	0	88.1		0.156	ci	ci747919	2016-02-03T21:43:04.950Z	15km N of Pine Mountain Club, CA	earthquake		0.031		43	reviewed	ci	ci
4/11/1988	20:21:53	36.1226667	-120.0776667	7.58	2.06	md	22	191	0.06667	0.14	nc	nc115495	2016-12-08T00:03:08.378Z	9 km SSE of Huron, California	earthquake	0.63	0.64	0.14	17	reviewed	nc	nc
4/11/1988	20:06:23	36.118	-120.0796667	7.14	2.18	md	20	172	0.06216	0.07	nc	nc115494	2016-12-08T00:03:04.019Z	9 km SSE of Huron, California	earthquake	0.63	0.28	0.16	20	reviewed	nc	nc
4/10/1988	5:11:40	36.134	-120.1193333	6.89	2.18	md	29	159	0.07387	0.23	nc	nc115422	2016-12-07T23:58:05.510Z	7 km S of Huron, California	earthquake	0.56	0.65	0.13	26	reviewed	nc	nc
4/7/1988	22:12:33	35.412	-119.505	5.189	2.25	mc	0	165.5		0.403	ci	ci747532	2016-02-04T04:15:49.860Z	4km WNW of Buttonwillow, CA	earthquake				16	reviewed	ci	ci
4/5/1988	1:23:55	35.163	-119.146	5.064	2.25	mc	0	107.2		0.452	ci	ci747289	2016-02-04T01:00:22.480Z	24km WSW of Lamont, CA	earthquake				33	reviewed	ci	ci
4/4/1988	20:45:47	36.2915	-120.412	10.208	3.7	ml	55	67	0.05586	0.09	nc	nc115142	2016-12-07T23:35:08.620Z	17 km NNW of Coalinga, California	earthquake	0.17	0.28		6	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
4/4/1988	5:43:32	35.45	-119.655	5.034	2.4	mc	0	164.9		0.112	ci	ci747228	2016-02-03T22:23:16.540Z	18km WNW of Buttonwillow, CA	earthquake				31	reviewed	ci	ci
3/26/1988	21:21:31	36.0143333	-120.1591667	12.628	2.03	md	5	155	0.06126	0.01	nc	nc114651	2016-12-07T22:54:16.733Z	2 km WNW of Avenal, California	earthquake	1.89	0.82	0.19	4	reviewed	nc	nc
3/26/1988	21:20:45	36.0115	-120.146	15.052	3.18	md	51	135	0.05766	0.1	nc	nc114616	2016-12-07T22:54:11.070Z	1 km WNW of Avenal, California	earthquake	0.2	0.35	0.17	78	reviewed	nc	nc
3/17/1988	11:36:10	35.454	-119.157	5.265	2.05	mc	0	221.3		0.272	ci	ci745909	2016-02-03T19:44:01.380Z	8km N of Rosedale, CA	earthquake				18	reviewed	ci	ci
3/16/1988	8:08:03	36.011	-120.1535	13.982	2.17	md	22	129	0.06126	0.08	nc	nc113978	2016-12-07T22:11:10.780Z	2 km WNW of Avenal, California	earthquake	0.36	0.75	0.13	23	reviewed	nc	nc
3/15/1988	17:39:12	35.51	-119.761	4.952	2.07	mc	0	222		0.26	ci	ci745789	2016-02-03T20:23:28.430Z	28km NE of Simmler, CA	earthquake				10	reviewed	ci	ci
3/15/1988	17:29:33	35.423	-119.752	5.114	2.8	ml	0	134.9		0.282	ci	ci745786	2016-02-04T04:15:28.850Z	24km ENE of Simmler, CA	earthquake				6	reviewed	ci	ci
3/15/1988	16:41:23	35.447	-119.735	5.151	2.97	ml	0	192.2		0.284	ci	ci745782	2016-02-04T04:15:28.320Z	25km WNW of Buttonwillow, CA	earthquake				4	reviewed	ci	ci
3/8/1988	8:14:49	35.555	-119.706	5.151	2.05	mc	0	209.4		0.287	ci	ci745257	2016-02-04T02:18:09.620Z	27km NW of Buttonwillow, CA	earthquake				16	reviewed	ci	ci
2/23/1988	4:16:40	35.56	-119.699	5.279	2.01	mc	0	135		0.273	ci	ci744000	2016-02-04T00:59:28.940Z	27km NW of Buttonwillow, CA	earthquake				17	reviewed	ci	ci
2/22/1988	15:25:50	36.013	-120.1468333	14.147	2.63	md	38	123	0.05676	0.09	nc	nc112714	2016-12-07T20:47:58.450Z	1 km WNW of Avenal, California	earthquake	0.22	0.33	0.07	26	reviewed	nc	nc
2/22/1988	11:42:33	35.5666667	-119.7198333	5.358	2.1	mh	8	180	0.3126	0.35	ci	ci743919	2016-04-01T23:17:32.111Z	29km NW of Buttonwillow, CA	earthquake	1.85	29.99		0	reviewed	ci	ci
2/22/1988	7:43:13	35.546	-119.676	5.114	4.2	ml	0	51.9		0.472	ci	ci743909	2016-02-03T20:23:07.570Z	25km NW of Buttonwillow, CA	earthquake				10	reviewed	ci	ci
2/15/1988	9:30:16	35.028	-118.93	13.034	2.15	mc	0	113.6		0.117	ci	ci135763	2016-02-04T04:14:51.100Z	9km N of Grapevine, CA	earthquake		0.101		38	reviewed	ci	ci
2/12/1988	14:00:40	35.9318333	-119.8206667	11.753	2.09	md	22	142	0.2676	0.15	nc	nc10086570	2016-12-07T19:55:32.300Z	15 km ESE of Kettleman City, California	earthquake	0.6	1.18	0.24	7	reviewed	nc	nc
2/6/1988	11:29:43	36.0818333	-120.1016667	10.676	2.97	md	46	169	0.02162	0.11	nc	nc112046	2016-12-07T19:32:33.460Z	8 km NNE of Avenal, California	earthquake	0.33	0.31	0.1	41	reviewed	nc	nc
2/3/1988	20:36:06	36.3656667	-119.9101667	17.98	2.23	md	13	272	0.1829	0.07	nc	nc111807	2016-12-07T19:24:35.817Z	7 km SSE of Lanare, California	earthquake	1.86	0.36	0.1	12	reviewed	nc	nc
2/1/1988	6:09:17	35.372	-118.812	12.735	3.23	ml	0	126.3		0.111	ci	ci742397	2016-02-04T00:59:05.830Z	16km NE of Lamont, CA	earthquake		0.132		10	reviewed	ci	ci
1/28/1988	17:35:13	34.836	-119.243	8.529	2.28	mc	0	90.9	0.01934	0.139	ci	ci742176	2016-02-04T02:56:49.780Z	9km W of Pine Mountain Club, CA	earthquake		0.028		29	reviewed	ci	ci
1/26/1988	2:40:59	35.9501667	-120.0135	24.177	2.12	md	19	195	0.1351	0.09	nc	nc111405	2016-12-07T18:53:17.935Z	7 km SW of Kettleman City, California	earthquake	0.62	0.68	0.13	16	reviewed	nc	nc
1/25/1988	13:49:56	36.2343333	-120.2643333	11.407	2.06	md	25	93	0.06577	0.06	nc	nc111354	2016-12-07T18:51:09.033Z	13 km NE of Coalinga, California	earthquake	0.22	0.48	0.11	23	reviewed	nc	nc
1/17/1988	7:49:26	36.1395	-120.2283333	0.99	2.4	md	17	83	0.1243	0.19	nc	nc111123	2016-12-07T18:23:13.200Z	11 km E of Coalinga, California	earthquake	0.43	3.28	0.17	12	reviewed	nc	nc
1/17/1988	7:49:02	36.1331667	-120.1993333	8.7	2.24	md	20	96	0.1027	0.05	nc	nc111036	2016-12-07T18:23:05.550Z	11 km SW of Huron, California	earthquake	0.24	0.64	0.08	18	reviewed	nc	nc
1/16/1988	23:30:04	36.1801667	-119.2981667	4.337	2	mh	9	308		0.17	ci	ci741181	2016-02-03T23:01:00.400Z	5km SE of Tulare, CA	earthquake	1.19	31.61		0	reviewed	ci	ci
1/2/1988	19:15:30	36.1418333	-120.1683333	9.124	2.02	md	17	117	0.09369	0.04	nc	nc110393	2016-12-07T17:26:12.997Z	8 km SW of Huron, California	earthquake	0.27	0.55	0.12	16	reviewed	nc	nc
12/29/1987	7:23:51	35.377	-118.773	2.415	2.39	mc	0	162.2		0.106	ci	ci739799	2016-02-04T02:16:42.970Z	18km NE of Lamont, CA	earthquake		0.042		38	reviewed	ci	ci
12/16/1987	11:40:28	34.94	-119.169	15.449	2.21	mc	0	95.9		0.136	ci	ci739066	2016-02-03T23:38:27.610Z	11km N of Pine Mountain Club, CA	earthquake		0.081		14	reviewed	ci	ci
12/15/1987	18:23:46	35.372	-118.774	2.345	4.02	ml	0	38.1		0.142	ci	ci630677	2016-02-03T20:21:39.880Z	18km NE of Lamont, CA	earthquake		0.026		9	reviewed	ci	ci
12/14/1987	2:30:05	34.888	-119.046	12.471	3.42	ml	0	49.4		0.179	ci	ci630556	2016-02-03T20:21:35.800Z	10km ENE of Pine Mountain Club, CA	earthquake		0.047		8	reviewed	ci	ci
12/13/1987	16:37:31	34.815	-120.33	0.101	2.19	mc	0	121.7	0.1802	0.049	ci	ci738809	2016-02-03T22:20:44.370Z	9km NNW of Los Alamos, CA	earthquake		0.279		6	reviewed	ci	ci
12/5/1987	14:52:48	35.9705	-120.1585	15.752	2.37	md	25	166	0.0991	0.07	nc	nc109575	2016-12-07T15:13:14.720Z	4 km SW of Avenal, California	earthquake	0.51	0.56	0.06	21	reviewed	nc	nc
12/5/1987	4:36:46	35.606	-118.798	4.786	2.58	mc	0	133		0.127	ci	ci737996	2016-02-04T02:55:25.350Z	28km W of Bodfish, CA	earthquake		0.445		45	reviewed	ci	ci
12/2/1987	18:02:03	36.16	-120.2006667	8.697	2.26	md	19	97	0.1234	0.07	nc	nc109421	2016-12-07T15:05:17.030Z	Central California	earthquake	0.28	0.67	0.11	20	reviewed	nc	nc
11/29/1987	13:33:09	36.0213333	-120.5795	4.753	2.52	md	45	56	0.04685	0.05	nc	nc109244	2016-12-07T14:52:57.320Z	18 km NW of Parkfield, California	earthquake	0.15	0.25	0.09	31	reviewed	nc	nc
11/27/1987	6:39:22	36.2221667	-120.3455	9.284	2.82	md	35	55	0.02703	0.07	nc	nc109120	2016-12-07T14:45:28.160Z	9 km N of Coalinga, California	earthquake	0.13	0.18	0.08	46	reviewed	nc	nc
11/27/1987	6:38:46	36.2215	-120.3456667	9.224	2.06	md	27	55	0.02793	0.07	nc	nc109119	2016-12-07T14:45:18.650Z	9 km N of Coalinga, California	earthquake	0.14	0.17	0.16	20	reviewed	nc	nc
11/23/1987	12:14:53	36.0071667	-120.5645	4.753	2.58	md	43	34	0.04324	0.05	nc	nc108853	2016-12-07T14:29:44.590Z	16 km NW of Parkfield, California	earthquake	0.15	0.28	0.12	34	reviewed	nc	nc
11/21/1987	21:45:45	35.9226667	-119.8216667	7.993	2.25	md	9	240	0.2721	0.15	nc	nc108866	2016-12-07T14:23:31.676Z	15 km SE of Kettleman City, California	earthquake	4.4	9.82	0.22	4	reviewed	nc	nc
11/20/1987	13:41:04	36.0785	-120.0556667	16.706	2.67	md	36	204	0.04685	0.09	nc	nc108702	2016-12-07T14:19:08.930Z	10 km NE of Avenal, California	earthquake	0.41	0.42	0.12	47	reviewed	nc	nc
11/17/1987	4:11:58	35.98	-120.5283333	10.728	2.01	md	36	74	0.03423	0.03	nc	nc10085435	2016-12-07T14:06:32.800Z	12 km NW of Parkfield, California	earthquake	0.18	0.27	0.18	32	reviewed	nc	nc
11/11/1987	20:10:32	36.1275	-120.1681667	6.77	2.12	md	20	150	0.08198	0.12	nc	nc108261	2016-12-07T13:49:29.413Z	10 km SW of Huron, CA	earthquake	0.36	0.63	0.11	12	reviewed	nc	nc
11/6/1987	8:43:08	36.1116667	-120.0415	7.6	2.27	md	30	206	0.07477	0.12	nc	nc108142	2016-12-07T13:33:11.500Z	11 km SSE of Huron, California	earthquake	0.7	0.43	0.14	24	reviewed	nc	nc
10/31/1987	3:27:04	36.0783333	-120.1641667	7.18	3.15	md	43	90	0.04775	0.07	nc	nc107923	2016-12-07T13:15:17.660Z	8 km NNW of Avenal, California	earthquake	0.24	0.31	0.09	59	reviewed	nc	nc
10/29/1987	5:55:16	35.948	-119.403	4.823	2.74	mc	0	69.3		0.295	ci	ci733950	2016-02-04T00:14:10.060Z	10km NE of Alpaugh, CA	earthquake				42	reviewed	ci	ci
10/28/1987	23:41:21	36.2235	-120.286	11.478	2.4	md	28	205	0.05315	0.06	nc	nc107764	2016-12-07T13:09:26.589Z	11 km NE of Coalinga, California	earthquake	0.5	0.29	0.11	34	reviewed	nc	nc
10/17/1987	15:34:31	36.2775	-120.4295	10.664	2.15	md	6	140	0.07568	0.01	nc	nc107302	2016-12-07T12:33:16.102Z	16 km NNW of Coalinga, California	earthquake	2.95	5.15	0.13	6	reviewed	nc	nc
10/11/1987	7:51:50	36.1241667	-120.0941667	8.02	2.6	md	33	167	0.06396	0.08	nc	nc107110	2016-12-07T12:12:17.000Z	8 km S of Huron, California	earthquake	0.34	0.3	0.11	44	reviewed	nc	nc
10/11/1987	1:16:29	35.9993333	-120.0971667	13.047	2.15	md	28	150	0.06216	0.11	nc	nc107032	2016-12-07T12:11:37.510Z	2 km E of Avenal, California	earthquake	0.38	0.58	0.13	23	reviewed	nc	nc
10/10/1987	9:54:30	36.0073333	-120.0885	8.438	2.06	md	8	182	0.2171	0.04	nc	nc1153107	2016-12-07T12:08:43.671Z	3 km E of Avenal, California	earthquake	0.58	1.51	0.25	6	reviewed	nc	nc
10/8/1987	3:22:22	36.1611667	-120.2611667	10.377	2.14	md	35	71	0.1099	0.07	nc	nc106963	2016-12-07T12:01:04.030Z	9 km ENE of Coalinga, California	earthquake	0.19	0.5	0.15	32	reviewed	nc	nc
10/7/1987	21:58:59	36.1875	-120.3093333	9.427	2.08	md	28	56	0.06757	0.04	nc	nc106897	2016-12-07T12:00:30.504Z	7 km NE of Coalinga, California	earthquake	0.14	0.33	0.14	20	reviewed	nc	nc
10/4/1987	9:37:52	35.126	-118.929	10.664	2.23	mc	0	117.6		0.128	ci	ci624946	2016-02-03T22:57:25.510Z	13km SW of Arvin, CA	earthquake		0.063		36	reviewed	ci	ci
10/3/1987	19:35:34	35.8515	-119.7513333	23.046	2.17	md	12	115	0.3586	0.05	nc	nc106797	2016-12-07T11:49:19.120Z	Central California	earthquake	0.93	1.49	0.03	3	reviewed	nc	nc
9/27/1987	12:00:32	35.482	-118.811	3.432	2.1	mc	0	131.3	0.09576	0.048	ci	ci134122	2016-02-04T04:48:56.340Z	20km ENE of Oildale, CA	earthquake		0.021		32	reviewed	ci	ci
9/27/1987	8:43:23	36.2153333	-120.4291667	5.578	2.27	md	33	96	0.07748	0.05	nc	nc106371	2016-12-07T11:30:00.240Z	10 km NW of Coalinga, California	earthquake	0.15	0.31	0.12	40	reviewed	nc	nc
9/25/1987	15:01:26	35.496	-118.969	14.065	3.02	ml	0	132.9		0.191	ci	ci624059	2016-02-04T00:54:37.660Z	10km NNE of Oildale, CA	earthquake		0.182		4	reviewed	ci	ci
9/19/1987	0:02:31	35.9251667	-120.471	5.159	2.21	md	30	121	0.03604	0.05	nc	nc106031	2016-12-07T11:05:55.990Z	4 km NW of Parkfield, California	earthquake	0.19	0.28	0.1	30	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/18/1987	9:40:50	36.259	-120.3671667	9.188	3.14	md	47	57	0.02162	0.07	nc	nc105986	2016-12-07T11:04:07.700Z	13 km N of Coalinga, California	earthquake	0.14	0.26	0.11	99	reviewed	nc	nc
9/17/1987	3:30:44	35.213	-118.936	4.522	2.31	mc	0	301.5		0.179	ci	ci623497	2016-02-03T21:37:25.910Z	6km SSW of Lamont, CA	earthquake				9	reviewed	ci	ci
9/15/1987	10:48:37	36.2818333	-120.4026667	9.403	3.26	md	48	64	0.05856	0.07	nc	nc105842	2016-12-07T10:55:00.730Z	16 km NNW of Coalinga, California	earthquake	0.13	0.27	0.12	110	reviewed	nc	nc
9/15/1987	2:10:14	36.128	-119.8806667	25.083	2.02	md	10	262	0.1973	0.05	nc	nc105811	2016-12-07T10:53:23.464Z	8 km SW of Stratford, California	earthquake	3.14	0.96	0.15	7	reviewed	nc	nc
9/15/1987	2:06:42	36.118	-119.9913333	24.016	3.4	ml	40	151	0.1117	0.21	nc	nc10084691	2016-12-07T10:53:18.350Z	12 km NNW of Kettleman City, California	earthquake	0.99	0.57		4	reviewed	nc	nc
9/14/1987	2:56:27	35.2766667	-120.6178333	8.866	2.29	md	31	65	0.04234	0.08	nc	nc105747	2016-12-07T10:48:27.300Z	3 km E of San Luis Obispo, California	earthquake	0.23	0.6	0.14	32	reviewed	nc	nc
9/9/1987	12:54:22	34.975	-119.129	13.038	2.21	mc	0	87		0.165	ci	ci622936	2016-02-03T20:57:59.850Z	14km N of Pine Mountain Club, CA	earthquake		0.313		26	reviewed	ci	ci
9/2/1987	12:27:39	34.814	-120.371	5.154	2.52	mc	0	163.4		0.157	ci	ci622361	2016-02-04T00:12:58.120Z	8km SE of Orcutt, CA	earthquake				20	reviewed	ci	ci
8/28/1987	20:39:11	35.9785	-120.5261667	10.118	2.34	md	40	44	0.03153	0.04	nc	nc10084454	2016-12-07T09:58:57.870Z	12 km NW of Parkfield, California	earthquake	0.15	0.21	0.14	46	reviewed	nc	nc
8/26/1987	22:08:02	36.1931667	-120.2001667	14.879	2.31	md	22	155	0.109	0.19	nc	nc105080	2016-12-07T09:52:54.255Z	8 km W of Huron, California	earthquake	0.74	1.81	0.19	30	reviewed	nc	nc
8/26/1987	14:43:26	36.1256667	-120.117	5.5	2.25	md	26	162	0.06486	0.1	nc	nc10084624	2016-12-07T09:51:34.918Z	8 km S of Huron, California	earthquake	0.3	0.38	0.12	21	reviewed	nc	nc
8/26/1987	10:13:17	36.2385	-120.3655	10.361	2.83	md	47	43	0.02162	0.09	nc	nc10084623	2016-12-07T09:51:15.140Z	10 km N of Coalinga, California	earthquake	0.18	0.31	0.11	73	reviewed	nc	nc
8/24/1987	10:29:51	36.019	-120.1553333	14.675	2.64	md	38	135	0.05586	0.11	nc	nc105002	2016-12-07T09:45:38.220Z	2 km NW of Avenal, California	earthquake	0.26	0.37	0.09	44	reviewed	nc	nc
8/15/1987	18:29:39	35.5225	-120.0868333	7.902	2.21	md	29	185	0.1676	0.09	nc	nc104684	2016-12-07T09:16:04.480Z	30 km ESE of Shandon, California	earthquake	0.56	0.79	0.14	26	reviewed	nc	nc
8/15/1987	17:54:05	35.5223333	-120.0843333	7.942	2	md	19	206	0.1685	0.07	nc	nc104645	2016-12-07T09:15:58.272Z	30 km ESE of Shandon, California	earthquake	0.77	1.04	0.36	18	reviewed	nc	nc
8/15/1987	17:52:55	35.522	-120.086	7.332	2.66	md	40	113	0.1685	0.13	nc	nc104594	2016-12-07T09:15:54.229Z	30 km ESE of Shandon, California	earthquake	0.46	0.69	0.09	34	reviewed	nc	nc
8/15/1987	16:24:02	35.5226667	-120.0835	10.155	2.07	md	26	155	0.1324	0.04	nc	nc104590	2016-12-07T09:15:41.695Z	30 km ESE of Shandon, California	earthquake	0.36	0.78	0.13	17	reviewed	nc	nc
8/15/1987	16:04:52	35.5251667	-120.0773333	12.002	2.77	md	35	159	0.1703	0.06	nc	nc104589	2016-12-07T09:15:32.280Z	Central California	earthquake	0.35	0.45	0.13	53	reviewed	nc	nc
8/14/1987	15:06:30	36.2381667	-120.3341667	9.237	2.28	md	18	60	0.01351	0.07	nc	nc104567	2016-12-07T09:11:02.994Z	11 km NNE of Coalinga, California	earthquake	0.3	0.28	0.15	15	reviewed	nc	nc
8/14/1987	10:57:30	35.421	-118.724	8.957	3.24	ml	0	93.3		0.096	ci	ci620853	2016-02-03T20:57:31.310Z	25km NE of Lamont, CA	earthquake		0.139		11	reviewed	ci	ci
8/14/1987	2:20:57	36.2301667	-120.2663333	8.287	2.35	md	35	70	0.06486	0.1	nc	nc104579	2016-12-07T09:08:32.500Z	13 km NE of Coalinga, California	earthquake	0.21	0.4	0.13	38	reviewed	nc	nc
8/12/1987	9:05:02	34.817	-120.114	-0.938	2.07	mc	0	116		0.188	ci	ci620725	2016-02-03T22:17:29.300Z	17km N of Los Olivos, CA	earthquake		0.506		7	reviewed	ci	ci
8/12/1987	8:21:11	34.829	-120.117	6.102	2.41	mc	0	116.7		0.108	ci	ci620720	2016-02-03T23:34:52.950Z	18km ENE of Los Alamos, CA	earthquake		1.855		23	reviewed	ci	ci
8/7/1987	4:25:56	35.9456667	-120.4873333	9.879	2.51	md	37	72	0.01441	0.05	nc	nc104204	2016-12-07T08:46:44.900Z	7 km NW of Parkfield, California	earthquake	0.2	0.27	0.11	52	reviewed	nc	nc
8/5/1987	12:06:49	35.29	-119.038	5.395	2.13	mc	0	180.4		0.398	ci	ci133082	2016-02-03T20:57:18.360Z	8km S of Bakersfield, CA	earthquake				20	reviewed	ci	ci
8/5/1987	7:34:20	36.2033333	-120.323	10.527	2.93	md	45	55	0.04865	0.05	nc	nc104145	2016-12-07T08:39:16.860Z	7 km NNE of Coalinga, California	earthquake	0.15	0.29	0.12	66	reviewed	nc	nc
8/2/1987	20:32:12	36.1885	-120.338	14.147	2.37	md	30	55	0.06126	0.08	nc	nc103917	2016-12-07T08:31:12.190Z	5 km NNE of Coalinga, California	earthquake	0.21	0.55	0.07	25	reviewed	nc	nc
8/1/1987	5:01:19	36.2281667	-120.3578333	9.561	2.17	md	25	86	0.02432	0.05	nc	nc103842	2016-12-07T08:21:12.226Z	9 km N of Coalinga, California	earthquake	0.27	0.3	0.14	23	reviewed	nc	nc
7/28/1987	7:30:28	35.027	-119.098	15.274	2.15	mc	0	108.8		0.269	ci	ci726964	2016-02-04T04:09:48.060Z	18km WNW of Grapevine, CA	earthquake		0.206		28	reviewed	ci	ci
7/27/1987	4:03:52	36.1936667	-120.277	2.078	2.43	md	41	117	0.2973	0.16	nc	nc10084653	2016-12-07T07:58:06.250Z	9 km NE of Coalinga, California	earthquake	0.33	1.08	0.15	25	reviewed	nc	nc
7/25/1987	16:34:51	36.0218333	-119.9686667	4.449	2	md	13	260	0.3027	0.05	nc	nc10084651	2016-12-07T07:54:56.427Z	Central California	earthquake	0.86	1.31	0.1	4	reviewed	nc	nc
7/22/1987	3:34:14	36.0898333	-120.0506667	7.688	2.25	md	29	182	0.05586	0.05	nc	nc103460	2016-12-07T07:45:18.406Z	11 km NE of Avenal, California	earthquake	0.42	0.15	0.1	40	reviewed	nc	nc
7/15/1987	12:00:26	36.1806667	-120.3476667	13.221	2	md	24	95	0.06847	0.06	nc	nc103175	2016-12-07T07:24:45.610Z	4 km NNE of Coalinga, California	earthquake	0.24	0.55	0.06	25	reviewed	nc	nc
7/13/1987	11:39:33	36.0345	-120.1541667	12.345	2.51	md	37	112	0.04505	0.07	nc	nc103042	2016-12-07T07:19:40.510Z	4 km NW of Avenal, California	earthquake	0.2	0.36	0.15	49	reviewed	nc	nc
7/9/1987	22:43:10	36.109	-120.1465	7.98	2.17	md	24	186	0.05676	0.06	nc	nc102910	2016-12-07T07:09:02.280Z	11 km SSW of Huron, California	earthquake	0.63	0.58	0.08	26	reviewed	nc	nc
7/9/1987	21:22:24	35.8428333	-120.3843333	3.751	2.45	md	31	59	0.01351	0.06	nc	nc102907	2016-12-07T07:08:33.420Z	7 km SE of Parkfield, California	earthquake	0.18	0.27	0.15	32	reviewed	nc	nc
7/7/1987	22:51:06	35.4638333	-120.7671667	4.29	2.45	md	34	99	0.04505	0.05	nc	nc102813	2016-12-07T07:02:25.390Z	9 km WSW of Atascadero, California	earthquake	0.24	0.58	0.13	36	reviewed	nc	nc
7/3/1987	11:48:36	35.018	-119.087	10.874	2.95	ml	0	141.9		0.083	ci	ci725358	2016-02-03T22:55:33.680Z	16km WNW of Grapevine, CA	earthquake		0.533		3	reviewed	ci	ci
6/26/1987	10:20:25	36.12	-120.1873333	10.08	2.13	md	31	100	0.08649	0.06	nc	nc102377	2016-12-07T06:29:55.640Z	11 km SW of Huron, California	earthquake	0.21	0.42	0.09	37	reviewed	nc	nc
6/24/1987	23:19:15	36.2656667	-120.3191667	8.407	2.22	md	30	148	0.02523	0.06	nc	nc102315	2016-12-07T06:25:02.862Z	14 km NNE of Coalinga, California	earthquake	0.21	0.11	0.13	30	reviewed	nc	nc
6/23/1987	21:16:18	36.2538333	-120.3775	9.671	2	md	16	99	0.02883	0.07	nc	nc102290	2016-12-07T06:20:05.980Z	12 km N of Coalinga, California	earthquake	0.23	0.31	0.14	12	reviewed	nc	nc
6/23/1987	11:55:42	36.1153333	-120.1863333	7.31	2.2	md	31	100	0.08288	0.13	nc	nc102229	2016-12-07T06:18:26.270Z	12 km SW of Huron, California	earthquake	0.23	0.56	0.12	37	reviewed	nc	nc
6/23/1987	11:52:45	36.106	-120.176	8.54	2.92	md	40	102	0.07027	0.03	nc	nc102228	2016-12-07T06:18:16.620Z	12 km NNW of Avenal, California	earthquake	0.18	0.28	0.11	63	reviewed	nc	nc
6/22/1987	13:26:28	35.056	-119.11	15.334	2.28	mc	0	118.2		0.14	ci	ci724481	2016-02-04T01:33:43.160Z	21km NW of Grapevine, CA	earthquake		0.445		30	reviewed	ci	ci
6/22/1987	2:36:46	36.2101667	-120.4533333	6.505	3.2	ml	50	75	0.0973	0.08	nc	nc102188	2016-12-07T06:14:21.640Z	11 km NW of Coalinga, California	earthquake	0.13	0.34		1	reviewed	nc	nc
6/21/1987	12:59:51	35.053	-119.108	14.244	2.94	ml	0	117.6		0.164	ci	ci132621	2016-02-03T19:37:44.350Z	20km NW of Grapevine, CA	earthquake		0.19		3	reviewed	ci	ci
6/13/1987	9:02:32	36.2748333	-120.4041667	10.781	2.24	md	10	104	0.05586	0.01	nc	nc101917	2016-12-07T05:48:30.502Z	15 km NNW of Coalinga, California	earthquake	0.51	0.31	0.25	14	reviewed	nc	nc
6/13/1987	9:02:10	36.2816667	-120.4133333	10.418	2.24	md	40	62	0.06486	0.11	nc	nc101881	2016-12-07T05:48:25.690Z	16 km NNW of Coalinga, California	earthquake	0.18	0.33	0.14	34	reviewed	nc	nc
6/11/1987	20:06:53	34.814	-120.329	5.052	2.02	mc	0	121.4		0.235	ci	ci723762	2016-02-04T01:33:34.720Z	9km NNW of Los Alamos, CA	earthquake				8	reviewed	ci	ci
6/11/1987	11:59:13	35.569	-119.451	5.267	2.13	mc	0	164.8		0.442	ci	ci723749	2016-02-04T05:25:56.710Z	10km WSW of Wasco, CA	earthquake				14	reviewed	ci	ci
6/9/1987	17:14:05	36.092	-119.959	5.218	2.86	mc	0	103.4		0.323	ci	ci132209	2016-02-04T05:25:55.240Z	9km N of Kettleman City, CA	earthquake				27	reviewed	ci	ci
6/9/1987	17:13:05	36.079	-120.0593333	15.216	2.79	md	39	178	0.04505	0.08	nc	nc101664	2016-12-07T05:35:27.400Z	Central California	earthquake	0.28	0.4	0.13	61	reviewed	nc	nc
6/6/1987	6:08:11	36.0735	-120.0615	14.536	2.21	md	28	177	0.04054	0.1	nc	nc101511	2016-12-07T05:25:22.200Z	9 km NE of Avenal, California	earthquake	0.61	0.44	0.11	32	reviewed	nc	nc
6/4/1987	8:11:15	35.014	-119.098	8.848	2.58	mc	0	90.2		0.119	ci	ci723389	2016-02-03T20:16:46.360Z	17km WNW of Grapevine, CA	earthquake		0.712		52	reviewed	ci	ci
5/21/1987	7:51:28	35.172	-119.035	14.077	2.09	mc	0	190.4		0.204	ci	ci722462	2016-02-04T04:47:03.740Z	15km SW of Lamont, CA	earthquake		0.916		14	reviewed	ci	ci
5/19/1987	21:37:17	35.321	-118.938	20.798	2.09	mc	0	190.3		0.194	ci	ci722402	2016-02-03T22:16:16.740Z	7km NNW of Lamont, CA	earthquake		3.363		6	reviewed	ci	ci
5/19/1987	10:26:28	36.0545	-120.6195	0.251	2.32	md	34	66	0.02342	0.08	nc	nc100611	2016-12-07T04:26:03.550Z	24 km NW of Parkfield, California	earthquake	0.18	0.59	0.11	31	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/15/1987	8:38:49	36.134	-120.2441667	10.18	2.78	md	39	119	0.1315	0.06	nc	nc100465	2016-12-07T04:13:11.480Z	10 km E of Coalinga, California	earthquake	0.21	0.43	0.12	70	reviewed	nc	nc
5/10/1987	20:43:11	36.1058333	-120.0976667	7.597	2.25	md	24	166	0.04595	0.08	nc	nc100160	2016-12-07T03:59:08.663Z	10 km S of Huron, California	earthquake	0.3	0.21	0.12	28	reviewed	nc	nc
5/9/1987	17:08:13	35.9285	-120.4796667	4.859	2.25	md	31	101	0.02883	0.05	nc	nc100106	2016-12-07T03:56:09.480Z	5 km NW of Parkfield, California	earthquake	0.21	0.25	0.17	34	reviewed	nc	nc
5/6/1987	20:54:53	35.092	-119.092	19.654	2.01	mc	0	180.8		0.124	ci	ci721740	2016-02-04T00:52:19.790Z	22km NW of Grapevine, CA	earthquake		3.39		14	reviewed	ci	ci
5/4/1987	15:22:42	35.78	-119.9731667	9.99	2.4	md	32	124	0.2144	0.11	nc	nc99800	2016-12-07T03:37:06.080Z	25 km S of Kettleman City, California	earthquake	0.38	0.72	0.13	32	reviewed	nc	nc
5/4/1987	14:57:04	35.7826667	-120.0468333	10.367	2.13	md	23	254	0.155	0.07	nc	nc99799	2016-12-07T03:36:57.715Z	25 km SSE of Avenal, California	earthquake	1.2	0.63	0.19	26	reviewed	nc	nc
5/1/1987	16:05:16	36.2348333	-120.3595	11.351	2.84	md	45	44	0.01982	0.09	nc	nc99702	2016-12-07T03:25:07.240Z	10 km N of Coalinga, California	earthquake	0.2	0.36	0.08	64	reviewed	nc	nc
4/29/1987	2:25:16	36.1846667	-120.3368333	14.557	2.61	md	44	51	0.06486	0.07	nc	nc99449	2016-12-07T03:12:04.860Z	5 km NNE of Coalinga, California	earthquake	0.2	0.49	0.09	62	reviewed	nc	nc
4/28/1987	19:16:55	35.9723333	-120.5185	10.918	2.67	md	47	77	0.02252	0.04	nc	nc99403	2016-12-07T03:10:33.490Z	11 km NW of Parkfield, California	earthquake	0.16	0.23	0.09	71	reviewed	nc	nc
4/27/1987	18:32:47	36.1415	-120.0505	7.41	2.24	md	30	250	0.09369	0.1	nc	nc99411	2016-12-07T03:07:37.117Z	8 km SE of Huron, California	earthquake	0.69	0.32	0.15	35	reviewed	nc	nc
4/26/1987	23:04:10	36.039	-120.5903333	4.355	2.35	md	41	51	0.03063	0.06	nc	nc99273	2016-12-07T03:03:42.390Z	21 km NW of Parkfield, California	earthquake	0.16	0.29	0.13	41	reviewed	nc	nc
4/20/1987	19:02:12	34.739	-120.156	4.933	2.27	mc	0	139.1		0.223	ci	ci720948	2016-02-03T20:55:49.740Z	9km NNW of Los Olivos, CA	earthquake				5	reviewed	ci	ci
4/15/1987	5:22:58	35.046	-119.04	0.918	2.34	mc	0	201.1		0.087	ci	ci720654	2016-02-04T03:29:15.260Z	15km NW of Grapevine, CA	earthquake		0.096		34	reviewed	ci	ci
4/13/1987	10:57:27	36.2165	-120.4175	6.055	2.16	md	36	101	0.06847	0.04	nc	nc98465	2016-12-07T02:08:30.202Z	9 km NNW of Coalinga, California	earthquake	0.14	0.2	0.11	38	reviewed	nc	nc
4/13/1987	9:44:35	34.745	-120.193	5.075	2.1	mc	0	142.4		0.296	ci	ci720543	2016-02-04T02:50:08.030Z	8km E of Los Alamos, CA	earthquake				7	reviewed	ci	ci
4/13/1987	6:59:09	36.0021667	-120.5571667	4.555	2.67	md	55	64	0.04595	0.06	nc	nc98480	2016-12-07T02:07:38.200Z	15 km NW of Parkfield, California	earthquake	0.14	0.24	0.1	67	reviewed	nc	nc
4/6/1987	19:46:00	36.2856667	-120.343	4.747	2.33	md	23	196	0.03604	0.03	nc	nc98049	2016-12-07T01:40:58.643Z	16 km N of Coalinga, California	earthquake	0.38	0.13	0.13	22	reviewed	nc	nc
4/6/1987	5:51:47	35.7905	-120.002	9.177	2.02	md	13	185	0.191	0.04	nc	nc98027	2016-12-07T01:39:06.324Z	24 km S of Kettleman City, California	earthquake	0.37	1.2	0.16	8	reviewed	nc	nc
4/6/1987	5:32:09	36.2923333	-120.2978333	6.307	2.06	md	15	102	0.05676	0.02	nc	nc98026	2016-12-07T01:39:02.426Z	17 km NNE of Coalinga, California	earthquake	0.16	0.26	0.09	14	reviewed	nc	nc
4/6/1987	1:23:30	35.7931667	-119.9678333	-0.31	2.31	md	29	170	0.2189	0.23	nc	nc98013	2016-12-07T01:38:17.173Z	23 km S of Kettleman City, California	earthquake	0.59	10.52	0.21	22	reviewed	nc	nc
4/4/1987	17:21:43	36.158	-120.1725	7.694	2.37	md	32	158	0.1099	0.09	nc	nc97946	2016-12-07T01:35:31.690Z	7 km SW of Huron, California	earthquake	0.26	0.46	0.09	17	reviewed	nc	nc
4/3/1987	13:38:10	36.1306667	-120.2551667	10.66	2.17	md	20	71	0.1369	0.06	nc	nc97923	2016-12-07T01:31:41.470Z	9 km E of Coalinga, California	earthquake	0.2	0.52	0.07	33	reviewed	nc	nc
4/3/1987	1:39:05	35.123	-119.358	21.085	2.35	mc	0	135.7		0.126	ci	ci719873	2016-02-04T02:49:56.560Z	8km NNE of Maricopa, CA	earthquake		1.643		21	reviewed	ci	ci
3/30/1987	2:11:01	34.949	-119.112	13.408	3.03	ml	0	83.1		0.092	ci	ci719547	2016-02-03T20:15:56.300Z	12km NNE of Pine Mountain Club, CA	earthquake		0.08		10	reviewed	ci	ci
3/29/1987	13:01:47	36.2813333	-120.4008333	10.178	2.42	md	37	55	0.05676	0.05	nc	nc97605	2016-12-07T01:12:59.950Z	16 km NNW of Coalinga, California	earthquake	0.12	0.19	0.15	39	reviewed	nc	nc
3/28/1987	9:52:56	35.7763333	-119.9363333	8.56	2.45	md	42	183	0.245	0.25	nc	nc97558	2016-12-07T01:08:50.096Z	25 km S of Kettleman City, California	earthquake	1.89	0.79	0.13	33	reviewed	nc	nc
3/28/1987	3:08:25	35.848	-119.935	5.275	2.42	mh	0	207.4		0.207	ci	ci719444	2016-02-03T19:36:39.090Z	18km S of Kettleman City, CA	earthquake				3	reviewed	ci	ci
3/27/1987	21:38:47	35.784	-120.0133333	6.867	2.04	md	10	201	0.182	0.07	nc	nc97546	2016-12-07T01:06:56.949Z	25 km S of Kettleman City, California	earthquake	1.2	1.65	0.14	6	reviewed	nc	nc
3/27/1987	17:01:24	35.788	-119.9835	7.77	2.07	md	15	208	0.2063	0.04	nc	nc97540	2016-12-07T01:06:01.638Z	24 km S of Kettleman City, California	earthquake	1.21	1.05	0.14	8	reviewed	nc	nc
3/26/1987	16:23:06	35.269	-119.374	23.48	2.21	mc	0	161.5		0.14	ci	ci719350	2016-02-04T00:10:30.110Z	16km NNE of Taft, CA	earthquake		2.526		18	reviewed	ci	ci
3/23/1987	15:22:44	36.0523333	-120.0706667	8.007	3.7	ml	46	174	0.03243	0.07	nc	nc97268	2016-12-07T00:53:05.590Z	7 km NE of Avenal, California	earthquake	0.17	0.15		3	reviewed	nc	nc
3/23/1987	8:30:42	36.0598333	-120.0593333	8.457	2.59	md	45	188	0.04054	0.17	nc	nc97262	2016-12-07T00:52:00.110Z	8 km NE of Avenal, California	earthquake	0.56	0.25	0.08	31	reviewed	nc	nc
3/19/1987	8:27:01	36.2816667	-120.3256667	9.747	2.08	md	40	72	0.03514	0.1	nc	nc97072	2016-12-07T00:36:49.100Z	16 km N of Coalinga, California	earthquake	0.17	0.2	0.09	29	reviewed	nc	nc
3/19/1987	2:50:31	36.2038333	-120.3516667	10.391	2	md	27	55	0.04595	0.08	nc	nc97061	2016-12-07T00:35:42.223Z	7 km N of Coalinga, California	earthquake	0.22	0.36	0.13	17	reviewed	nc	nc
3/18/1987	16:59:46	36.2006667	-120.3558333	11.821	3.07	md	44	51	0.04955	0.06	nc	nc97122	2016-12-07T00:33:59.600Z	6 km N of Coalinga, California	earthquake	0.14	0.21	0.1	60	reviewed	nc	nc
3/18/1987	16:33:41	36.2031667	-120.3583333	11.531	2.67	md	38	51	0.04775	0.12	nc	nc97025	2016-12-07T00:33:46.400Z	7 km N of Coalinga, California	earthquake	0.23	0.58	0.1	19	reviewed	nc	nc
3/16/1987	18:58:31	36.1325	-120.2331667	4.597	2.81	md	48	79	0.1234	0.21	nc	nc96880	2016-12-07T00:27:42.700Z	11 km E of Coalinga, California	earthquake	0.36	0.8	0.11	38	reviewed	nc	nc
3/16/1987	18:48:35	36.1251667	-120.2423333	-0.113	2.24	md	36	74	0.1252	0.26	nc	nc97121	2016-12-07T00:27:34.380Z	10 km E of Coalinga, California	earthquake	0.4	4.74	0.1	24	reviewed	nc	nc
3/16/1987	18:47:22	36.1348333	-120.2395	7.807	2.18	md	23	77	0.1288	0.19	nc	nc97120	2016-12-07T00:27:27.130Z	10 km E of Coalinga, California	earthquake	0.48	1.38	0.15	16	reviewed	nc	nc
3/12/1987	5:57:05	36.0645	-120.1233333	6.177	2.91	md	55	98	0.01171	0.12	nc	nc96566	2016-12-07T00:09:30.650Z	6 km N of Avenal, California	earthquake	0.26	0.22	0.08	25	reviewed	nc	nc
3/6/1987	23:00:17	36.179	-120.279	10.397	2.36	md	34	64	0.08739	0.08	nc	nc96274	2016-12-06T23:49:01.240Z	8 km ENE of Coalinga, California	earthquake	0.16	0.43	0.1	40	reviewed	nc	nc
3/4/1987	19:39:02	36.1983333	-120.3641667	12.545	2.28	md	31	88	0.05405	0.11	nc	nc96105	2016-12-06T23:38:59.600Z	6 km N of Coalinga, California	earthquake	0.29	0.49	0.12	24	reviewed	nc	nc
3/4/1987	9:55:27	36.1511667	-120.2598333	2.127	3.3	ml	46	71	0.1189	0.16	nc	nc96444	2016-12-06T23:36:39.090Z	9 km E of Coalinga, California	earthquake	0.42	0.87		6	reviewed	nc	nc
3/3/1987	23:38:58	36.1785	-120.3361667	13.732	2.53	md	37	126	0.07117	0.07	nc	nc96054	2016-12-06T23:34:52.300Z	4 km NNE of Coalinga, California	earthquake	0.25	0.62	0.09	41	reviewed	nc	nc
3/2/1987	14:58:06	35.055	-119.079	4.473	2.39	mc	0	182.2		0.187	ci	ci718120	2016-02-04T00:10:13.010Z	18km NW of Grapevine, CA	earthquake				35	reviewed	ci	ci
2/28/1987	9:21:41	36.0255	-120.0415	11.857	2.45	md	50	140	0.06577	0.13	nc	nc95822	2016-12-06T23:12:16.860Z	7 km WNW of Kettleman City, California	earthquake	0.25	0.23	0.12	47	reviewed	nc	nc
2/27/1987	10:53:00	34.707	-120.141	4.913	2.18	mc	0	156.6		0.324	ci	ci717960	2016-02-03T21:34:18.390Z	5km NNW of Los Olivos, CA	earthquake				7	reviewed	ci	ci
2/25/1987	10:29:17	35.9988333	-119.9305	-0.253	2.63	md	52	104	0.1586	0.42	nc	nc95460	2016-12-06T22:49:00.040Z	3 km ESE of Kettleman City, California	earthquake	0.77	5.7	0.11	32	reviewed	nc	nc
2/25/1987	7:13:06	36.2543333	-119.9883333	23.054	2.9	md	45	181	0.07748	0.19	nc	nc95430	2016-12-06T22:48:09.640Z	7 km W of Lemoore Station, California	earthquake	0.65	0.39	0.14	69	reviewed	nc	nc
2/24/1987	19:09:48	35.037	-119.177	0.86	2.24	mc	0	153.5		0.113	ci	ci717716	2016-02-03T22:15:09.550Z	20km E of Maricopa, CA	earthquake		2.403		18	reviewed	ci	ci
2/23/1987	21:16:52	36.2455	-120.3193333	6.258	2.76	md	51	66	0.01892	0.11	nc	nc95325	2016-12-06T22:42:28.290Z	12 km NNE of Coalinga, California	earthquake	0.12	0.49	0.14	49	reviewed	nc	nc
2/21/1987	2:52:17	36.0636667	-120.6156667	5.551	2.22	md	39	71	0.01712	0.04	nc	nc95177	2016-12-06T22:30:37.580Z	24 km WSW of Coalinga, California	earthquake	0.15	0.21	0.13	33	reviewed	nc	nc
2/19/1987	22:33:37	35.116	-118.891	4.473	2.1	mc	0	157.8		0.126	ci	ci717480	2016-02-03T23:32:28.300Z	12km SSW of Arvin, CA	earthquake				13	reviewed	ci	ci
2/18/1987	9:10:13	36.1691667	-120.3421667	12.031	2.13	md	29	50	0.08018	0.06	nc	nc94969	2016-12-06T22:13:47.390Z	3 km NNE of Coalinga, California	earthquake	0.21	0.4	0.14	26	reviewed	nc	nc
2/15/1987	14:07:06	36.1805	-120.3393333	14.241	2.46	md	36	61	0.06847	0.08	nc	nc94888	2016-12-06T22:04:06.890Z	4 km NNE of Coalinga, California	earthquake	0.22	0.55	0.1	40	reviewed	nc	nc
2/14/1987	8:37:48	36.1796667	-120.3383333	13.671	2.61	md	40	60	0.06937	0.07	nc	nc94701	2016-12-06T21:57:36.420Z	4 km NNE of Coalinga, California	earthquake	0.18	0.44	0.07	34	reviewed	nc	nc
2/14/1987	7:31:39	36.182	-120.3338333	12.978	2.11	md	12	66	0.06757	0.03	nc	nc94712	2016-12-06T21:56:38.845Z	Central California	earthquake	0.43	0.8	0.08	7	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
2/14/1987	7:30:04	36.1793333	-120.332	12.067	2.32	md	9	141	0.1198	0.06	nc	nc94754	2016-12-06T21:56:29.120Z	5 km NNE of Coalinga, California	earthquake	0.52	1.05		4	reviewed	nc	nc
2/14/1987	7:26:50	36.1723333	-120.3405	15.271	5.3	ml	52	51	0.07658	0.1	nc	nc10089611	2022-04-27T21:52:31.548Z	4 km NNE of Coalinga, California	earthquake	0.22	0.55		1	reviewed	nc	nc
2/14/1987	5:54:13	36.1706667	-120.3381667	13.911	3.21	md	46	51	0.07838	0.08	nc	nc94748	2016-12-06T21:56:00.310Z	3 km NNE of Coalinga, California	earthquake	0.16	0.38	0.13	50	reviewed	nc	nc
2/12/1987	9:26:43	36.2296667	-120.2543333	8.024	2.04	md	14	102	0.07477	0.02	nc	nc94564	2016-12-06T21:48:23.108Z	13 km NE of Coalinga, California	earthquake	0.2	0.33	0.11	17	reviewed	nc	nc
2/8/1987	5:00:09	36.1363333	-120.1821667	13.54	2.09	md	23	106	0.0955	0.04	nc	nc94171	2016-12-06T21:18:51.870Z	10 km SW of Huron, California	earthquake	0.3	0.54	0.15	28	reviewed	nc	nc
2/6/1987	17:06:03	34.677	-119.524	4.38	2.36	mc	0	208.4		0.258	ci	ci716731	2016-02-03T21:33:55.360Z	28km NNE of Montecito, CA	earthquake				13	reviewed	ci	ci
2/3/1987	8:55:19	36.1981667	-120.3236667	10.525	2.5	md	45	108	0.05315	0.04	nc	nc93766	2016-12-06T20:57:09.180Z	7 km NNE of Coalinga, California	earthquake	0.21	0.26	0.13	57	reviewed	nc	nc
2/2/1987	10:10:20	35.9708333	-119.9193333	15.227	2.05	md	23	254	0.1793	0.08	nc	nc93699	2016-12-06T20:52:53.138Z	5 km SE of Kettleman City, California	earthquake	0.98	0.58	0.19	14	reviewed	nc	nc
2/2/1987	4:45:01	35.9275	-120.4756667	9.339	2.99	md	47	43	0.03243	0.06	nc	nc93779	2016-12-06T20:51:14.010Z	4 km NW of Parkfield, California	earthquake	0.16	0.26	0.1	60	reviewed	nc	nc
2/1/1987	19:27:33	35.989	-120.2728333	8.894	2.03	md	24	110	0.07838	0.06	nc	nc93728	2016-12-06T20:47:51.860Z	13 km W of Avenal, California	earthquake	0.25	0.52	0.13	21	reviewed	nc	nc
2/1/1987	11:25:33	35.9593333	-120.5126667	5.228	2.13	md	36	77	0.01171	0.06	nc	nc93711	2016-12-06T20:45:45.970Z	9 km NW of Parkfield, California	earthquake	0.17	0.22	0.14	32	reviewed	nc	nc
2/1/1987	2:43:52	36.148	-120.1486667	9.51	2.08	md	27	132	0.09279	0.09	nc	nc93637	2016-12-06T20:43:54.597Z	7 km SW of Huron, California	earthquake	0.56	0.68	0.1	25	reviewed	nc	nc
1/28/1987	7:46:21	36.2281667	-120.366	9.232	2.04	md	24	134	0.02793	0.09	nc	nc93405	2016-12-06T20:23:14.620Z	9 km N of Coalinga, California	earthquake	0.34	0.29	0.1	15	reviewed	nc	nc
1/27/1987	15:27:24	36.1861667	-120.2735	8.914	2.76	md	47	66	0.08468	0.11	nc	nc93307	2016-12-06T20:10:02.740Z	9 km ENE of Coalinga, California	earthquake	0.18	0.35	0.08	24	reviewed	nc	nc
1/26/1987	19:03:03	36.23	-120.3586667	10.908	2.1	md	23	101	0.02342	0.07	nc	nc93261	2016-12-06T20:05:00.979Z	10 km N of Coalinga, California	earthquake	0.3	0.22	0.11	17	reviewed	nc	nc
1/25/1987	21:23:31	34.952	-119.701	3.381	2.02	mc	0	103.3		0.225	ci	ci716308	2016-02-04T00:50:46.280Z	30km WSW of Maricopa, CA	earthquake		0.469		7	reviewed	ci	ci
1/25/1987	11:04:39	36.207	-120.308	8.968	2.2	md	32	114	0.05045	0.07	nc	nc93140	2016-12-06T19:59:16.090Z	8 km NNE of Coalinga, California	earthquake	0.21	0.16	0.14	25	reviewed	nc	nc
1/20/1987	11:22:04	34.862	-119.237	12.359	2.06	mc	0	70.8		0.144	ci	ci716095	2016-02-03T20:54:34.830Z	8km WNW of Pine Mountain Club, CA	earthquake		0.384		10	reviewed	ci	ci
1/19/1987	9:21:26	35.9791667	-119.9531667	7.789	2.07	md	16	235	0.2892	0.06	nc	nc92807	2016-12-06T19:28:39.219Z	3 km SSE of Kettleman City, California	earthquake	1.13	1.35	0.31	2	reviewed	nc	nc
1/16/1987	19:59:32	34.989	-119.102	20.934	2.31	mc	0	118		0.141	ci	ci715977	2016-02-04T02:10:05.640Z	16km NNE of Pine Mountain Club, CA	earthquake		1.151		19	reviewed	ci	ci
1/14/1987	10:10:56	34.922	-119.018	9.664	2.05	mc	0	95.2		0.259	ci	ci715824	2016-02-04T02:48:51.960Z	8km WSW of Grapevine, CA	earthquake		4.006		10	reviewed	ci	ci
1/9/1987	20:26:23	34.74	-120.162	1.441	2.02	mc	0	130.2		0.272	ci	ci715657	2016-02-04T00:50:33.280Z	9km NNW of Los Olivos, CA	earthquake		2.417		6	reviewed	ci	ci
1/8/1987	10:50:06	36.171	-120.282	7.66	2.22	md	27	64	0.09279	0.16	nc	nc92074	2016-12-06T18:41:34.280Z	7 km ENE of Coalinga, California	earthquake	0.29	0.71	0.15	13	reviewed	nc	nc
1/8/1987	0:03:09	35.693	-119.624	5.005	2.3	mc	0	244.9		0.218	ci	ci715570	2016-02-04T04:06:41.820Z	25km SSW of Alpaugh, CA	earthquake				8	reviewed	ci	ci
1/4/1987	3:55:06	35.03	-118.936	9.504	2.25	mc	0	147.2		0.155	ci	ci715399	2016-02-04T02:09:59.020Z	10km N of Grapevine, CA	earthquake		0.245		37	reviewed	ci	ci
12/29/1986	22:37:45	36.0723333	-120.1703333	3.08	2.22	md	33	89	0.05045	0.14	nc	nc91280	2016-12-06T15:58:52.610Z	8 km NNW of Avenal, California	earthquake	0.28	0.67	0.15	24	reviewed	nc	nc
12/26/1986	7:54:45	36.1128333	-120.1843333	9.78	2.38	md	33	134	0.08018	0.05	nc	nc91057	2016-12-06T15:42:18.720Z	12 km SW of Huron, California	earthquake	0.27	0.37	0.1	39	reviewed	nc	nc
12/24/1986	2:29:53	34.741	-120.176	4.804	2.23	mc	0	144		0.334	ci	ci714938	2016-02-04T02:09:47.580Z	9km E of Los Alamos, CA	earthquake				5	reviewed	ci	ci
12/23/1986	2:10:39	35.8316667	-120.0431667	16.45	2.23	md	18	203	0.1649	0.04	nc	nc90832	2016-12-06T15:24:34.864Z	20 km SSE of Avenal, California	earthquake	0.98	0.43	0.12	25	reviewed	nc	nc
12/18/1986	5:48:36	35.9726667	-119.9493333	11.917	2.71	md	65	81	0.1577	0.15	nc	nc90491	2016-12-06T15:01:39.270Z	4 km SSE of Kettleman City, California	earthquake	0.41	0.6	0.1	51	reviewed	nc	nc
12/16/1986	9:43:03	35.585	-119.399	5.176	2.11	mc	0	160.9		0.495	ci	ci714659	2016-02-04T04:45:05.990Z	5km W of Wasco, CA	earthquake				8	reviewed	ci	ci
12/16/1986	0:22:38	34.766	-120.132	4.841	2.17	mc	0	197.3		0.093	ci	ci714643	2016-02-03T21:33:09.640Z	11km N of Los Olivos, CA	earthquake				5	reviewed	ci	ci
12/14/1986	14:14:29	36.343	-120.2998333	6.965	2.18	md	25	113	0.1	0.08	nc	nc90180	2016-12-06T14:39:59.960Z	17 km S of Cantua Creek, California	earthquake	0.25	0.24	0.14	14	reviewed	nc	nc
12/11/1986	0:36:17	36.1095	-119.906	8.504	2.16	md	17	308	0.1721	0.18	nc	nc89915	2016-12-06T14:16:53.104Z	11 km SW of Stratford, California	earthquake	10	2.09		1	reviewed	nc	nc
12/10/1986	23:53:46	36.0581667	-120.0876667	7.246	2.13	md	13	288	0.01802	0.02	nc	nc89913	2016-12-06T14:16:45.627Z	7 km NNE of Avenal, California	earthquake	1.55	0.47	0.07	15	reviewed	nc	nc
12/10/1986	12:41:19	36.0615	-120.1283333	2.372	2.19	md	21	132	0.01532	0.08	nc	nc89861	2016-12-06T14:14:43.347Z	6 km N of Avenal, California	earthquake	0.67	0.52	0.09	13	reviewed	nc	nc
12/10/1986	4:42:53	36.065	-120.135	2.198	2.28	md	29	96	0.02072	0.12	nc	nc89744	2016-12-06T14:12:33.820Z	6 km N of Avenal, California	earthquake	0.39	0.46	0.17	20	reviewed	nc	nc
12/9/1986	14:40:46	36.2751667	-120.345	7.272	2.14	md	38	203	0.02613	0.08	nc	nc89699	2016-12-06T14:10:01.250Z	15 km N of Coalinga, California	earthquake	0.42	0.23	0.18	14	reviewed	nc	nc
12/9/1986	5:45:28	36.2053333	-120.271	8.456	2.1	md	15	103	0.07297	0.04	nc	nc89689	2016-12-06T14:08:58.313Z	10 km NE of Coalinga, California	earthquake	0.82	0.99	0.08	3	reviewed	nc	nc
12/8/1986	20:25:43	35.027	-119.074	1.336	2.22	mc	0	179.3		0.184	ci	ci714339	2016-02-04T02:48:26.190Z	16km NW of Grapevine, CA	earthquake		1.364		19	reviewed	ci	ci
12/7/1986	22:57:30	35.988	-119.9563333	9.276	2.06	md	29	134	0.1441	0.08	nc	nc89651	2016-12-06T14:04:39.330Z	2 km SSE of Kettleman City, California	earthquake	0.47	1.38	0.19	18	reviewed	nc	nc
12/7/1986	10:01:12	35.9923333	-119.955	1.811	2.27	md	34	130	0.1432	0.3	nc	nc89563	2016-12-06T14:02:29.150Z	1 km SSE of Kettleman City, California	earthquake	1.01	3.88	0.14	28	reviewed	nc	nc
12/7/1986	2:25:29	35.9908333	-119.8706667	2.316	2.57	md	57	63	0.2063	0.22	nc	nc89556	2016-12-06T14:01:31.180Z	8 km ESE of Kettleman City, California	earthquake	0.38	2.54	0.16	40	reviewed	nc	nc
12/6/1986	14:34:50	36.1113333	-120.0395	6.717	2.22	md	32	74	0.07568	0.1	nc	nc89539	2016-12-06T13:59:53.006Z	11 km SSE of Huron, California	earthquake	0.5	0.23	0.09	19	reviewed	nc	nc
12/3/1986	18:29:01	34.752	-120.138	5.041	2.69	mc	0	81.4		0.244	ci	ci714018	2016-02-04T00:09:02.200Z	10km NNW of Los Olivos, CA	earthquake				32	reviewed	ci	ci
12/2/1986	23:28:51	36.1098333	-120.154	6.5	2.31	md	29	190	0.06036	0.08	nc	nc89192	2016-12-06T13:45:30.300Z	11 km SSW of Huron, California	earthquake	0.4	0.36	0.12	35	reviewed	nc	nc
12/2/1986	23:14:58	36.1165	-120.126	6.98	2.33	md	26	152	0.05676	0.13	nc	nc89191	2016-12-06T13:45:20.690Z	9 km SSW of Huron, California	earthquake	0.52	0.47	0.08	24	reviewed	nc	nc
12/2/1986	23:09:00	36.1153333	-120.1353333	8.22	3.09	md	33	142	0.05856	0.04	nc	nc89189	2016-12-06T13:45:04.890Z	10 km SSW of Huron, California	earthquake	0.28	0.34	0.1	59	reviewed	nc	nc
12/2/1986	22:23:00	36.1163333	-120.1321667	8.35	2.63	md	32	145	0.05856	0.04	nc	nc89185	2016-12-06T13:44:38.410Z	9 km SSW of Huron, California	earthquake	0.29	0.32	0.12	44	reviewed	nc	nc
12/2/1986	1:50:27	34.734	-120.153	5.041	2.52	mc	0	116.4		0.278	ci	ci713899	2016-02-04T00:09:01.190Z	8km NNW of Los Olivos, CA	earthquake				18	reviewed	ci	ci
12/1/1986	19:32:07	35.19	-119.016	13.592	2.7	ml	0	115.3		0.209	ci	ci713881	2016-02-04T02:09:31.190Z	12km SW of Lamont, CA	earthquake		0.532		4	reviewed	ci	ci
12/1/1986	17:15:28	35.203	-119.023	4.958	2.29	mc	0	121.2		0.215	ci	ci713872	2016-02-04T04:06:07.910Z	12km WSW of Lamont, CA	earthquake				16	reviewed	ci	ci
12/1/1986	0:23:19	34.984	-119.002	8.449	2.24	mc	0	100.1		0.247	ci	ci713850	2016-02-03T20:53:51.320Z	8km NW of Grapevine, CA	earthquake		5.46		21	reviewed	ci	ci
11/29/1986	8:04:49	36.1015	-119.9168333	16.496	2.3	md	28	204	0.1613	0.12	nc	nc88883	2016-12-06T13:30:29.480Z	11 km NNE of Kettleman City, California	earthquake	0.82	1.15	0.15	9	reviewed	nc	nc
11/29/1986	1:16:34	36.1088333	-120.0698333	7.34	2.27	md	36	199	0.05766	0.14	nc	nc88875	2016-12-06T13:29:21.180Z	10 km SSE of Huron, California	earthquake	0.93	0.23	0.06	22	reviewed	nc	nc
11/26/1986	23:14:58	35.002	-119.118	16.109	2.33	mc	0	95.9		0.115	ci	ci713682	2016-02-04T04:06:03.290Z	18km N of Pine Mountain Club, CA	earthquake		2.487		25	reviewed	ci	ci
11/26/1986	19:06:32	36.1156667	-120.1336667	8.25	2.33	md	29	144	0.05766	0.05	nc	nc88783	2016-12-06T13:22:58.990Z	10 km SSW of Huron, California	earthquake	0.33	0.36	0.1	34	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/26/1986	16:25:13	34.735	-120.156	5.041	2.46	mc	0	107.7		0.133	ci	ci713646	2016-02-03T21:32:55.120Z	8km NNW of Los Olivos, CA	earthquake				8	reviewed	ci	ci
11/26/1986	0:45:59	36.1583333	-120.2246667	9.37	2.62	md	37	85	0.1324	0.06	nc	nc88719	2016-12-06T13:19:07.690Z	12 km WSW of Huron, California	earthquake	0.13	0.32	0.07	33	reviewed	nc	nc
11/25/1986	22:37:23	35.473	-119.434	5.036	2.44	mc	0	143.3		0.321	ci	ci713612	2016-02-03T22:52:25.600Z	9km NNE of Buttonwillow, CA	earthquake				16	reviewed	ci	ci
11/24/1986	11:03:29	36.0955	-120.059	7.596	2.59	md	38	203	0.05405	0.09	nc	nc88646	2016-12-06T13:14:33.430Z	11 km NNE of Avenal, California	earthquake	0.39	0.22	0.1	45	reviewed	nc	nc
11/24/1986	4:33:01	36.035	-120.1466667	-0.175	2.4	md	9	140	0.03964	0.12	nc	nc88658	2016-12-06T13:13:40.114Z	3 km NNW of Avenal, California	earthquake	1.4	7.21	0.03	8	reviewed	nc	nc
11/24/1986	4:31:48	36.0835	-120.0811667	7.316	3.1	ml	35	252	0.03243	0.09	nc	nc88638	2016-12-06T13:13:36.331Z	9 km NNE of Avenal, California	earthquake	0.82	0.26		6	reviewed	nc	nc
11/23/1986	19:49:21	36.1001667	-120.0571667	7.44	2.1	md	33	228	0.05766	0.06	nc	nc88669	2016-12-06T13:11:14.640Z	12 km SSE of Huron, California	earthquake	0.67	0.14	0.1	24	reviewed	nc	nc
11/23/1986	2:50:40	36.0881667	-120.0558333	6.706	2.04	md	11	214	0.05135	0.06	nc	nc88555	2016-12-06T13:06:57.139Z	11 km NE of Avenal, California	earthquake	0.96	0.24	0.12	9	reviewed	nc	nc
11/23/1986	2:41:12	36.0863333	-120.0781667	6.716	2.65	md	34	213	0.03604	0.04	nc	nc88554	2016-12-06T13:06:52.240Z	10 km NNE of Avenal, California	earthquake	0.48	0.13	0.12	29	reviewed	nc	nc
11/23/1986	2:30:52	36.1026667	-120.0345	7.59	2.27	md	28	245	0.07387	0.14	nc	nc88553	2016-12-06T13:06:40.201Z	12 km NNW of Kettleman City, California	earthquake	0.91	0.31	0.17	23	reviewed	nc	nc
11/22/1986	22:31:26	36.1193333	-120.0405	7.58	2.78	md	35	220	0.08108	0.1	nc	nc88541	2016-12-06T13:03:56.830Z	10 km SSE of Huron, California	earthquake	0.55	0.42	0.12	48	reviewed	nc	nc
11/22/1986	18:36:56	36.1011667	-120.0608333	8.256	3.2	ml	33	203	0.05676	0.07	nc	nc88605	2016-12-06T13:03:00.740Z	11 km SSE of Huron, California	earthquake	0.42	0.25		4	reviewed	nc	nc
11/17/1986	3:06:20	36.156	-120.1788333	4.926	2.24	md	14	110	0.1108	0.02	nc	nc88138	2016-12-06T12:33:22.893Z	8 km SW of Huron, California	earthquake	0.42	0.58	0.04	16	reviewed	nc	nc
11/16/1986	4:57:14	34.73	-120.193	18.241	2.24	mc	0	139.3		0.36	ci	ci713076	2016-02-04T02:48:01.420Z	8km ESE of Los Alamos, CA	earthquake		1.971		10	reviewed	ci	ci
11/13/1986	20:52:50	36.1711667	-120.2835	7.811	2.6	md	47	112	0.09189	0.08	nc	nc87936	2016-12-06T12:22:54.760Z	7 km ENE of Coalinga, California	earthquake	0.13	0.22	0.08	36	reviewed	nc	nc
11/12/1986	22:07:15	36.124	-120.157	8.406	3.1	ml	39	123	0.07387	0.06	nc	nc87908	2016-12-06T12:17:44.840Z	10 km SSW of Huron, California	earthquake	0.21	0.33		3	reviewed	nc	nc
11/12/1986	13:51:42	34.734	-120.15	4.131	2.68	mc	0	124.9		0.106	ci	ci712857	2016-02-03T19:34:40.930Z	8km NNW of Los Olivos, CA	earthquake		0.001		24	reviewed	ci	ci
11/12/1986	2:01:01	34.737	-120.149	5.041	2.31	mc	0	124.9		0.26	ci	ci712844	2016-02-03T20:14:08.000Z	8km NNW of Los Olivos, CA	earthquake				5	reviewed	ci	ci
11/11/1986	9:13:21	34.734	-120.156	5.371	2.4	mc	0	127.1		0.119	ci	ci712798	2016-02-04T01:30:40.780Z	8km NNW of Los Olivos, CA	earthquake		63.5		12	reviewed	ci	ci
11/10/1986	8:08:20	34.733	-120.145	5.052	2.19	mc	0	84.4		0.259	ci	ci712737	2016-02-03T20:14:05.640Z	8km NNW of Los Olivos, CA	earthquake				6	reviewed	ci	ci
11/9/1986	22:33:43	34.734	-120.152	8.231	2.51	mc	0	125.8		0.136	ci	ci712712	2016-02-03T20:14:05.120Z	8km NNW of Los Olivos, CA	earthquake		3.438		16	reviewed	ci	ci
11/9/1986	19:31:29	34.737	-120.163	5.052	2.28	mc	0	130.1		0.24	ci	ci712701	2016-02-04T00:49:43.050Z	9km NNW of Los Olivos, CA	earthquake				5	reviewed	ci	ci
11/9/1986	1:46:41	34.732	-120.147	5.041	2.44	mc	0	123.9		0.114	ci	ci712660	2016-02-04T00:08:39.560Z	8km NNW of Los Olivos, CA	earthquake				10	reviewed	ci	ci
11/6/1986	9:19:58	34.739	-120.157	4.351	3.97	ml	0	91.1		0.142	ci	ci129146	2016-02-03T20:13:59.220Z	9km NNW of Los Olivos, CA	earthquake		36.31		11	reviewed	ci	ci
11/6/1986	9:19:30	34.738	-120.156	2.851	2.47	mc	0	108.2		0.155	ci	ci610307	2016-02-04T02:47:52.380Z	9km NNW of Los Olivos, CA	earthquake		0.213		15	reviewed	ci	ci
11/3/1986	9:02:27	34.735	-120.149	7.191	2.29	mc	0	124.8		0.163	ci	ci712236	2016-02-04T04:05:41.740Z	8km NNW of Los Olivos, CA	earthquake		8.986		9	reviewed	ci	ci
11/2/1986	2:19:40	36.0723333	-120.0248333	8.386	2.25	md	28	199	0.06937	0.04	nc	nc87070	2016-12-06T11:27:36.050Z	9 km NW of Kettleman City, California	earthquake	0.42	0.18	0.18	25	reviewed	nc	nc
10/30/1986	15:36:39	34.738	-120.157	3.151	2.77	mc	0	83.7		0.161	ci	ci609986	2016-02-04T03:26:55.050Z	9km NNW of Los Olivos, CA	earthquake		0.237		34	reviewed	ci	ci
10/30/1986	13:58:07	35.102	-119.107	4.683	2.33	mc	0	111		0.239	ci	ci712041	2016-02-03T20:13:53.650Z	24km NW of Grapevine, CA	earthquake				22	reviewed	ci	ci
10/29/1986	8:15:34	34.736	-120.15	4.541	3.27	ml	0	84		0.14	ci	ci711966	2016-02-04T02:09:01.670Z	8km NNW of Los Olivos, CA	earthquake		19.71		6	reviewed	ci	ci
10/25/1986	19:19:31	36.2455	-120.2518333	12.227	2.17	md	34	79	0.07387	0.09	nc	nc86578	2016-12-06T10:56:48.920Z	14 km WNW of Huron, California	earthquake	0.17	0.33	0.14	32	reviewed	nc	nc
10/24/1986	16:54:42	35.232	-119.343	27.788	2.06	mc	0	146.5		0.052	ci	ci711657	2016-02-04T01:30:19.460Z	14km NE of Taft, CA	earthquake		1.154		10	reviewed	ci	ci
10/23/1986	16:45:36	36.2673333	-120.3696667	8.608	2.13	md	29	92	0.02793	0.1	nc	nc86374	2016-12-06T10:48:09.115Z	14 km N of Coalinga, California	earthquake	0.39	0.35	0.13	15	reviewed	nc	nc
10/23/1986	7:15:35	35.066	-119.066	4.969	2.24	mc	0	103.3		0.144	ci	ci711557	2016-02-04T05:22:37.640Z	18km NW of Grapevine, CA	earthquake				24	reviewed	ci	ci
10/22/1986	15:00:17	36.0796667	-120.6335	4.499	2.75	md	50	35	0.03243	0.06	nc	nc86221	2016-12-06T10:43:50.790Z	25 km ENE of San Ardo, California	earthquake	0.15	0.26	0.11	40	reviewed	nc	nc
10/22/1986	8:10:57	35.042	-119.081	11.969	2.43	ml	0	115.3		0.16	ci	ci711484	2016-02-03T22:51:52.640Z	18km NW of Grapevine, CA	earthquake		0.423		5	reviewed	ci	ci
10/22/1986	8:07:12	35.037	-119.086	17.099	2.84	ml	0	99.9		0.182	ci	ci711483	2016-02-03T19:34:19.760Z	18km NW of Grapevine, CA	earthquake		0.177		5	reviewed	ci	ci
10/20/1986	9:41:46	34.986	-119.312	-0.197	2.42	ml	0	103.7		0.105	ci	ci711321	2016-02-04T00:49:21.610Z	12km SE of Maricopa, CA	earthquake		0.078		5	reviewed	ci	ci
10/19/1986	11:50:16	34.983	-119.313	0.433	2.32	mc	0	127.7		0.143	ci	ci711258	2016-02-03T19:34:14.840Z	12km SE of Maricopa, CA	earthquake		1.108		32	reviewed	ci	ci
10/19/1986	6:03:20	34.976	-119.32	-0.137	2.17	mc	0	125.9		0.15	ci	ci711247	2016-02-04T02:08:49.980Z	12km SE of Maricopa, CA	earthquake		0.88		19	reviewed	ci	ci
10/19/1986	5:48:31	34.99	-119.309	-0.127	2.72	ml	0	92.6		0.129	ci	ci711246	2016-02-03T20:53:04.040Z	11km SE of Maricopa, CA	earthquake		0.084		5	reviewed	ci	ci
10/18/1986	22:18:18	34.978	-119.308	1.283	2.26	mc	0	126.8		0.073	ci	ci711230	2016-02-04T03:26:42.580Z	12km SE of Maricopa, CA	earthquake		0.067		13	reviewed	ci	ci
10/18/1986	17:18:51	36.099	-120.1876667	6.98	2.08	md	24	91	0.07387	0.11	nc	nc85971	2016-12-06T10:22:49.616Z	Central California	earthquake	0.55	0.98	0.15	16	reviewed	nc	nc
10/16/1986	9:23:49	35.099	-119.119	5.081	2.43	mc	0	109.3		0.354	ci	ci711048	2016-02-04T00:08:16.840Z	24km NW of Grapevine, CA	earthquake				26	reviewed	ci	ci
10/15/1986	8:19:17	34.989	-119.206	0.522	3.17	ml	0	90.9		0.093	ci	ci710955	2016-02-04T04:05:22.240Z	17km NNW of Pine Mountain Club, CA	earthquake		0.066		10	reviewed	ci	ci
10/12/1986	13:48:23	34.934	-119.008	11.074	2.49	mc	0	99.4		0.119	ci	ci710775	2016-02-04T02:47:31.000Z	7km W of Grapevine, CA	earthquake		0.338		53	reviewed	ci	ci
10/8/1986	19:50:41	35.035	-118.924	5.104	2.1	mc	0	114.4		0.26	ci	ci710518	2016-02-04T02:47:25.960Z	10km N of Grapevine, CA	earthquake				22	reviewed	ci	ci
10/5/1986	2:11:06	35.218	-118.904	17.208	2.19	mc	0	114		0.231	ci	ci710288	2016-02-04T04:05:06.360Z	5km SSE of Lamont, CA	earthquake		1.547		17	reviewed	ci	ci
9/26/1986	19:16:19	36.24	-120.2596667	11.937	2.05	md	26	91	0.06847	0.04	nc	nc83893	2016-12-06T08:36:25.280Z	14 km NE of Coalinga, California	earthquake	0.29	0.45	0.18	18	reviewed	nc	nc
9/25/1986	13:26:50	36.1106667	-120.0325	4.226	2.4	md	37	124	0.1441	0.06	nc	nc83810	2016-12-06T08:29:07.060Z	12 km SSE of Huron, California	earthquake	0.3	0.76	0.08	30	reviewed	nc	nc
9/25/1986	9:53:26	36.0915	-120.0051667	14.126	2.5	md	36	207	0.09009	0.19	nc	nc83799	2016-12-06T08:28:05.610Z	10 km NNW of Kettleman City, California	earthquake	0.66	1	0.12	36	reviewed	nc	nc
9/22/1986	19:11:06	35.5943333	-120.514	1.784	2.71	md	4	194	0.2198	0.05	nc	nc1143834	2016-12-06T08:11:41.054Z	7 km S of Whitley Gardens, California	earthquake	1.71	7.01		1	reviewed	nc	nc
9/19/1986	7:19:23	36.0406667	-120.0633333	9.847	2.18	md	35	153	0.04234	0.12	nc	nc83148	2016-12-06T07:47:27.380Z	7 km NE of Avenal, California	earthquake	0.34	0.22	0.11	26	reviewed	nc	nc
9/19/1986	6:26:33	36.289	-120.3716667	9.064	3.21	md	47	58	0.04595	0.08	nc	nc83021	2016-12-06T07:46:45.420Z	Central California	earthquake	0.14	0.2	0.13	71	reviewed	nc	nc
9/14/1986	12:48:07	36.1276667	-120.191	6.99	2.33	md	39	167	0.1486	0.07	nc	nc82395	2016-12-06T06:58:32.070Z	11 km SW of Huron, California	earthquake	0.38	0.76	0.14	42	reviewed	nc	nc
9/12/1986	23:38:09	36.2543333	-120.4561667	4.337	3.4	ml	44	89	0.09189	0.07	nc	nc82401	2016-12-06T06:46:07.310Z	15 km NW of Coalinga, California	earthquake	0.22	0.5		4	reviewed	nc	nc
9/11/1986	15:01:19	36.1761667	-120.2513333	4.637	2.45	md	36	74	0.1045	0.07	nc	nc82098	2016-12-06T06:37:22.050Z	10 km ENE of Coalinga, California	earthquake	0.23	0.62	0.12	27	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/10/1986	17:44:19	36.0308333	-120.5883333	4.035	2.14	md	31	85	0.03874	0.06	nc	nc81956	2016-12-06T06:30:14.960Z	20 km NW of Parkfield, California	earthquake	0.23	0.37	0.16	25	reviewed	nc	nc
9/9/1986	15:13:52	36.0656667	-120.6258333	1.631	2.25	md	37	50	0.02432	0.07	nc	nc81772	2016-12-06T06:23:01.890Z	25 km WSW of Coalinga, California	earthquake	0.18	0.53	0.07	28	reviewed	nc	nc
9/8/1986	7:31:15	36.0553333	-120.4316667	9.98	2.77	md	5	232	0.1342	0.14	nc	nc1143208	2016-12-06T06:15:51.890Z	11 km SW of Coalinga, California	earthquake	3.19	13.34	0.04	5	reviewed	nc	nc
9/7/1986	7:56:58	34.909	-119.035	10.102	2.02	mc	0	133.5		0.066	ci	ci708788	2016-02-03T20:52:04.810Z	10km WSW of Grapevine, CA	earthquake		0.26		12	reviewed	ci	ci
9/4/1986	3:49:12	36.1298333	-120.1616667	6.986	2.23	md	16	219	0.08108	0.02	nc	nc81200	2016-12-06T05:50:47.148Z	9 km SSW of Huron, California	earthquake	0.77	0.94	0.11	22	reviewed	nc	nc
9/1/1986	19:43:02	35.8176667	-120.367	7.908	3.03	md	41	46	0.01712	0.02	nc	nc80920	2016-12-06T05:32:28.740Z	Central California	earthquake	0.13	0.23	0.09	54	reviewed	nc	nc
9/1/1986	19:05:23	36.0221667	-120.5808333	4.335	2.31	md	36	74	0.04685	0.06	nc	nc80983	2016-12-06T05:32:21.420Z	19 km NW of Parkfield, California	earthquake	0.19	0.29	0.15	36	reviewed	nc	nc
8/31/1986	20:52:18	36.2351667	-120.3615	9.604	2.43	md	31	49	0.02072	0.05	nc	nc80845	2016-12-06T05:26:06.910Z	10 km N of Coalinga, California	earthquake	0.19	0.31	0.09	29	reviewed	nc	nc
8/30/1986	0:00:45	36.1793333	-120.3391667	10.761	2.58	md	37	69	0.218	0.1	nc	nc1142994	2016-12-06T05:15:02.040Z	4 km NNE of Coalinga, California	earthquake	0.26	0.65	0.13	38	reviewed	nc	nc
8/29/1986	6:44:42	35.9003333	-120.4458333	6.149	3.3	ml	48	40	0.02973	0.07	nc	nc80587	2016-12-06T05:11:04.740Z	1 km W of Parkfield, California	earthquake	0.17	0.22		2	reviewed	nc	nc
8/22/1986	18:04:37	35.375	-119.943	3.909	2.32	mc	0	138.8		0.182	ci	ci707664	2016-02-04T04:04:01.490Z	6km ENE of Simmler, CA	earthquake		1.199		11	reviewed	ci	ci
8/22/1986	9:15:06	36.0865	-120.045	14.81	2.07	md	7	184	0.1649	0.03	nc	nc1142850	2016-12-06T04:19:51.508Z	11 km NW of Kettleman City, California	earthquake	0.84	3.07	0.04	2	reviewed	nc	nc
8/22/1986	4:20:18	36.153	-120.1125	11.089	2.06	md	7	165	0.09189	0.15	nc	nc79867	2016-12-06T04:17:39.741Z	5 km S of Huron, California	earthquake	9.34	7.03	0.05	5	reviewed	nc	nc
8/21/1986	17:58:51	35.41	-119.32	5.177	2.48	mc	0	156.7		0.254	ci	ci707579	2016-02-04T02:07:19.280Z	11km SSW of Shafter, CA	earthquake				20	reviewed	ci	ci
8/21/1986	11:57:44	34.908	-119.172	8.137	2.56	mc	0	81.6		0.077	ci	ci707560	2016-02-04T02:46:14.840Z	7km NNW of Pine Mountain Club, CA	earthquake		0.051		51	reviewed	ci	ci
8/21/1986	6:57:30	35.4765	-120.7713333	6.327	2.19	md	13	216	0.05766	0.04	nc	nc1142835	2016-12-06T04:11:21.870Z	9 km W of Atascadero, California	earthquake	1.25	0.76	0.15	9	reviewed	nc	nc
8/16/1986	19:45:34	36.0353333	-120.0681667	17.817	2.29	md	22	246	0.04234	0.05	nc	nc82182	2016-12-06T03:40:20.940Z	6 km ENE of Avenal, California	earthquake	0.72	0.29	0.13	28	reviewed	nc	nc
8/16/1986	19:44:34	36.0321667	-120.0378333	18.767	2.26	md	27	210	0.06486	0.11	nc	nc82181	2016-12-06T03:40:11.920Z	7 km WNW of Kettleman City, California	earthquake	0.86	0.45	0.11	29	reviewed	nc	nc
8/16/1986	12:09:12	36.01	-120.3705	51.987	2.63	md	9	271	0.08288	0.09	nc	nc1142796	2016-12-06T03:38:20.708Z	13 km NNE of Parkfield, California	earthquake	4.76	9.09	0.2	13	reviewed	nc	nc
8/16/1986	0:49:41	36.0793333	-120.04	9.078	2.22	md	6	185	0.05946	0.04	nc	nc1142789	2016-12-06T03:33:43.800Z	10 km NW of Kettleman City, California	earthquake	0.68	0.94	0.29	3	reviewed	nc	nc
8/14/1986	23:14:17	35.322	-119.304	4.912	2.04	mc	0	151.2		0.311	ci	ci706989	2016-02-03T19:32:45.880Z	16km WSW of Rosedale, CA	earthquake				5	reviewed	ci	ci
8/2/1986	7:57:05	36.1558333	-120.2075	9.397	2.46	md	39	92	0.1234	0.09	nc	nc85058	2016-12-06T00:43:32.800Z	10 km WSW of Huron, California	earthquake	0.28	0.63	0.11	50	reviewed	nc	nc
7/31/1986	3:59:30	36.0108333	-120.2235	18.016	2.85	md	35	117	0.1054	0.09	nc	nc88907	2016-12-05T23:41:10.910Z	8 km W of Avenal, California	earthquake	0.28	0.52	0.06	30	reviewed	nc	nc
7/28/1986	13:00:12	36.1556667	-120.2635	10.273	2.81	md	30	118	0.1135	0.04	nc	nc10085924	2016-12-05T22:38:49.950Z	8 km ENE of Coalinga, California	earthquake	0.24	0.57	0.11	39	reviewed	nc	nc
7/24/1986	11:16:46	36.1581667	-119.5583333	16.511	2.5	md	5	247	0.4351	0.03	nc	nc77065	2016-12-05T19:51:43.403Z	4 km WNW of Waukena, California	earthquake	5.27	1.23	0.11	5	reviewed	nc	nc
7/20/1986	11:58:17	36.1848333	-120.3013333	10.153	2.33	md	35	102	0.07297	0.05	nc	nc76784	2016-12-05T15:58:03.210Z	7 km NE of Coalinga, California	earthquake	0.19	0.3	0.13	29	reviewed	nc	nc
7/19/1986	2:24:43	36.2873333	-120.4003333	10.108	2.97	md	51	66	0.05495	0.1	nc	nc77804	2016-12-05T15:50:24.520Z	16 km NNW of Coalinga, California	earthquake	0.16	0.21	0.08	54	reviewed	nc	nc
7/18/1986	15:21:55	36.1215	-120.2303333	9.15	2.49	md	31	78	0.1153	0.05	nc	nc76679	2016-12-05T15:46:47.710Z	11 km E of Coalinga, California	earthquake	0.2	0.61	0.23	41	reviewed	nc	nc
7/18/1986	5:40:02	35.324	-119.324	4.883	2.37	mc	0	119.6	0.2929	0.368	ci	ci703050	2016-02-04T01:26:35.060Z	16km ESE of Buttonwillow, CA	earthquake				14	reviewed	ci	ci
7/16/1986	22:16:02	35.023	-119.166	9.828	2.2	mc	0	111.6		0.283	ci	ci702837	2016-02-03T20:10:11.870Z	20km N of Pine Mountain Club, CA	earthquake		3.084		16	reviewed	ci	ci
7/16/1986	11:32:50	36.1973333	-120.3006667	9.937	2.17	md	34	99	0.06216	0.05	nc	nc76505	2016-12-05T15:35:31.320Z	8 km NE of Coalinga, California	earthquake	0.17	0.34	0.12	33	reviewed	nc	nc
7/16/1986	0:36:27	36.2251667	-120.2831667	11.797	2.23	md	24	66	0.05405	0.03	nc	nc76486	2016-12-05T15:33:58.214Z	11 km NE of Coalinga, California	earthquake	0.12	0.28	0.1	30	reviewed	nc	nc
7/14/1986	0:33:30	35.293	-120.403	15.279	3.77	md	24	214	0.1441	0.36	nc	nc1139411	2016-12-05T15:27:32.777Z	21 km ENE of Edna, California	earthquake	2.37	1.82	0.11	10	reviewed	nc	nc
7/10/1986	11:02:10	35.433	-119.468	5.085	2.28	mc	0	173.5		0.32	ci	ci701622	2016-02-03T21:28:07.890Z	4km N of Buttonwillow, CA	earthquake				20	reviewed	ci	ci
7/9/1986	23:01:28	36.1511667	-120.1006667	6.637	2.18	md	22	178	0.09009	0.06	nc	nc76113	2016-12-05T15:11:07.954Z	5 km S of Huron, California	earthquake	0.4	0.27	0.05	21	reviewed	nc	nc
7/5/1986	3:24:22	35.074	-119.096	19.294	3.32	ml	0	91.4		0.133	ci	ci700799	2016-02-04T00:44:17.870Z	21km NW of Grapevine, CA	earthquake		0.055		6	reviewed	ci	ci
7/2/1986	23:52:18	35.1821667	-120.7711667	-0.179	2.01	md	8	195	0.1126	0.04	nc	nc75799	2016-12-05T14:50:17.751Z	3 km W of Avila Beach, California	earthquake	0.49	3.79	0.06	15	reviewed	nc	nc
6/30/1986	3:18:55	36.0365	-120.5881667	7.455	2.27	md	39	52	0.03333	0.04	nc	nc1139164	2016-12-05T14:39:30.470Z	20 km NW of Parkfield, California	earthquake	0.19	0.3	0.13	36	reviewed	nc	nc
6/28/1986	23:10:28	35.9476667	-120.0383333	-0.196	2.02	md	10	186	0.127	0.3	nc	nc1139143	2016-12-05T14:36:00.045Z	9 km SW of Kettleman City, California	earthquake	2.92	16.18	0.05	5	reviewed	nc	nc
6/28/1986	13:50:52	35.9738333	-120.3383333	46.628	2.07	md	4	241	0.2757	0.01	nc	nc1139137	2016-12-05T14:35:05.167Z	11 km NE of Parkfield, California	earthquake	2.46	1.98	0.04	2	reviewed	nc	nc
6/28/1986	12:28:17	36.0378333	-120.1453333	12.932	2	md	10	184	0.1892	0.08	nc	nc1139134	2016-12-05T14:34:50.061Z	4 km NNW of Avenal, California	earthquake	0.94	2.08	0.07	8	reviewed	nc	nc
6/28/1986	0:34:03	36.2653333	-120.416	9.298	2.1	md	30	57	0.06126	0.08	nc	nc75503	2016-12-05T14:32:34.220Z	14 km NNW of Coalinga, California	earthquake	0.21	0.29	0.14	24	reviewed	nc	nc
6/27/1986	13:38:49	35.9863333	-120.1053333	9.252	2.17	md	13	193	0.1928	0.11	nc	nc1139112	2016-12-05T14:31:22.007Z	2 km SE of Avenal, California	earthquake	0.68	1.36	0.13	11	reviewed	nc	nc
6/24/1986	20:29:15	36.1331667	-120.2435	10.08	2.25	md	32	75	0.1306	0.03	nc	nc75278	2016-12-05T14:22:08.400Z	10 km E of Coalinga, California	earthquake	0.22	0.55	0.1	38	reviewed	nc	nc
6/19/1986	17:08:51	36.083	-120.0755	19.926	2.04	md	22	197	0.03514	0.09	nc	nc74995	2016-12-05T14:06:03.950Z	9 km NNE of Avenal, California	earthquake	0.86	0.65	0.12	17	reviewed	nc	nc
6/17/1986	6:18:21	36.416	-120.0016667	19.55	2.79	md	29	212	0.1712	0.04	nc	nc74834	2016-12-05T13:55:23.180Z	6 km WSW of Lanare, California	earthquake	0.72	0.15	0.11	44	reviewed	nc	nc
6/17/1986	6:17:20	36.382	-119.857	5.286	2.87	mc	0	117.3		0.327	ci	ci700022	2016-02-04T02:42:40.060Z	6km S of Riverdale, CA	earthquake				25	reviewed	ci	ci
6/17/1986	5:04:41	35.438	-119.289	5.307	2.5	mc	0	174.2		0.34	ci	ci700021	2016-02-03T22:08:14.360Z	7km SSW of Shafter, CA	earthquake				16	reviewed	ci	ci
6/15/1986	14:31:11	34.988	-119.317	-1.342	2.06	mc	0	127.3		0.139	ci	ci126710	2016-02-03T19:28:57.430Z	11km SE of Maricopa, CA	earthquake		3.726		8	reviewed	ci	ci
6/13/1986	13:25:15	36.0291667	-120.0278333	8.907	3.5	ml	70	100	0.07387	0.12	nc	nc10052616	2016-12-05T13:42:57.510Z	6 km WNW of Kettleman City, California	earthquake	0.15	0.22		5	reviewed	nc	nc
6/13/1986	8:27:50	36.1808333	-120.2221667	14.057	2.28	md	32	84	0.1189	0.05	nc	nc74610	2016-12-05T13:42:28.775Z	10 km WSW of Huron, California	earthquake	0.19	0.45	0.1	28	reviewed	nc	nc
6/7/1986	9:50:01	35.4346667	-120.717	6.051	2.83	md	42	49	0.02072	0.05	nc	nc74156	2016-12-05T13:20:58.170Z	7 km SW of Atascadero, California	earthquake	0.2	0.38	0.09	56	reviewed	nc	nc
6/7/1986	0:36:42	35.088	-118.96	11.902	2.53	mc	0	172.4		0.154	ci	ci126155	2016-02-04T03:21:25.900Z	16km N of Grapevine, CA	earthquake		1.054		41	reviewed	ci	ci
6/6/1986	1:06:56	35.808	-119.311	4.874	2.31	mc	0	317.5		0.176	ci	ci126105	2016-02-03T22:46:57.170Z	7km NW of Delano, CA	earthquake				7	reviewed	ci	ci
6/4/1986	11:41:20	36.2076667	-120.3905	8.885	2.47	md	48	42	0.05676	0.05	nc	nc74377	2016-12-05T13:10:52.730Z	8 km NNW of Coalinga, California	earthquake	0.1	0.18	0.08	49	reviewed	nc	nc
5/31/1986	23:36:59	34.809	-120.383	5.533	2.65	mc	0	134.4		0.085	ci	ci125795	2016-02-03T22:46:49.890Z	8km SE of Orcutt, CA	earthquake				14	reviewed	ci	ci
5/27/1986	6:38:14	35.755	-119.696	5.127	2.1	mc	0	194.1		0.15	ci	ci125389	2016-02-03T20:47:43.720Z	24km SW of Alpaugh, CA	earthquake				5	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/25/1986	23:16:26	35.042	-119.049	4.938	2.06	mc	0	119.3		0.125	ci	ci125307	2016-02-04T02:03:08.710Z	15km NW of Grapevine, CA	earthquake				13	reviewed	ci	ci
5/25/1986	9:23:00	34.999	-119.156	-1.178	2.05	mc	0	121.2		0.145	ci	ci125270	2016-02-04T03:21:07.640Z	17km N of Pine Mountain Club, CA	earthquake		0.919		11	reviewed	ci	ci
5/23/1986	0:41:12	36.1966667	-120.272	7.854	2.13	md	29	124	0.07748	0.1	nc	nc73203	2016-12-05T12:19:38.084Z	10 km NE of Coalinga, California	earthquake	0.37	0.3	0.18	18	reviewed	nc	nc
5/22/1986	14:17:22	35.041	-118.941	9.234	2.65	mc	0	95.9		0.151	ci	ci125070	2016-02-04T02:42:10.270Z	11km N of Grapevine, CA	earthquake		1.651		44	reviewed	ci	ci
5/21/1986	15:07:07	36.2036667	-120.3228333	9.687	2.49	md	39	108	0.04865	0.09	nc	nc73086	2016-12-05T12:16:19.560Z	Central California	earthquake	0.22	0.35	0.07	32	reviewed	nc	nc
5/20/1986	8:19:44	36.003	-120.561	4.485	2.12	md	37	63	0.04324	0.06	nc	nc72999	2016-12-05T12:11:53.760Z	16 km NW of Parkfield, California	earthquake	0.19	0.26	0.12	24	reviewed	nc	nc
5/19/1986	18:01:09	36.0128333	-120.5711667	4.155	2.12	md	39	70	0.04324	0.04	nc	nc73116	2016-12-05T12:09:57.430Z	17 km NW of Parkfield, California	earthquake	0.18	0.24	0.19	31	reviewed	nc	nc
5/19/1986	17:58:16	35.985	-120.5998333	3.466	2.3	md	16	192	0.08378	0.09	nc	nc73015	2016-12-05T12:09:48.037Z	17 km WNW of Parkfield, California	earthquake	0.69	1.05	0.29	15	reviewed	nc	nc
5/16/1986	7:37:30	36.2135	-120.306	9.747	2.23	md	28	111	0.04685	0.04	nc	nc72749	2016-12-05T11:58:33.470Z	9 km NNE of Coalinga, California	earthquake	0.13	0.21	0.16	32	reviewed	nc	nc
5/15/1986	11:57:27	36.1515	-120.206	10.607	2.13	md	32	94	0.1198	0.03	nc	nc72667	2016-12-05T11:56:23.120Z	10 km WSW of Huron, California	earthquake	0.19	0.44	0.12	36	reviewed	nc	nc
5/14/1986	10:38:14	36.0593333	-120.0833333	7.396	2.31	md	34	210	0.02162	0.06	nc	nc72581	2016-12-05T11:52:14.030Z	7 km NE of Avenal, California	earthquake	0.46	0.1	0.14	32	reviewed	nc	nc
5/14/1986	3:29:18	36.2316667	-120.3916667	11.015	2.09	md	26	78	0.04324	0.07	nc	nc72574	2016-12-05T11:51:37.256Z	10 km NNW of Coalinga, California	earthquake	0.29	0.36	0.1	14	reviewed	nc	nc
5/13/1986	13:30:00	36.185	-120.293	10.747	2.39	md	39	60	0.07568	0.05	nc	nc72640	2016-12-05T11:49:30.750Z	7 km NE of Coalinga, California	earthquake	0.13	0.26	0.1	42	reviewed	nc	nc
5/12/1986	9:56:37	36.005	-120.5606667	4.505	2.59	md	50	34	0.04505	0.06	nc	nc72428	2016-12-05T11:43:15.640Z	16 km NW of Parkfield, California	earthquake	0.14	0.24	0.11	50	reviewed	nc	nc
5/11/1986	11:42:11	36.271	-120.3105	10.507	2.1	md	35	76	0.03423	0.09	nc	nc72374	2016-12-05T11:39:45.760Z	15 km NNE of Coalinga, California	earthquake	0.2	0.42	0.09	31	reviewed	nc	nc
5/10/1986	15:46:44	35.073	-119.071	4.938	2.21	mc	0	95.4		0.186	ci	ci124136	2016-02-04T02:02:46.630Z	19km NW of Grapevine, CA	earthquake				15	reviewed	ci	ci
5/7/1986	16:43:27	36.1761667	-120.3028333	9.057	2.8	md	45	59	0.08018	0.07	nc	nc72112	2016-12-05T11:21:56.890Z	6 km NE of Coalinga, California	earthquake	0.21	0.31	0.1	48	reviewed	nc	nc
5/5/1986	15:51:44	35.047	-118.948	4.986	3.21	ml	0	152.5		0.124	ci	ci123653	2016-02-03T20:07:46.700Z	12km N of Grapevine, CA	earthquake		175.4		8	reviewed	ci	ci
5/5/1986	15:51:04	35.045	-118.944	6.766	3.28	ml	0	85.6		0.128	ci	ci123747	2016-02-03T22:07:11.180Z	11km N of Grapevine, CA	earthquake		9.409		8	reviewed	ci	ci
5/3/1986	20:30:56	36.0668333	-120.6255	2.351	2.03	md	33	43	0.02432	0.07	nc	nc71886	2016-12-05T11:06:52.390Z	25 km WSW of Coalinga, California	earthquake	0.19	0.45	0.19	27	reviewed	nc	nc
5/2/1986	14:14:26	35.102	-119.366	18.856	2.25	mc	0	106.2		0.103	ci	ci123426	2016-02-03T20:07:40.530Z	6km NNE of Maricopa, CA	earthquake		1.526		15	reviewed	ci	ci
4/26/1986	20:36:47	36.0495	-120.6066667	3.721	2.94	md	50	46	0.02072	0.06	nc	nc71167	2016-12-05T10:34:30.960Z	22 km NW of Parkfield, California	earthquake	0.15	0.26	0.1	52	reviewed	nc	nc
4/25/1986	8:23:04	36.2796667	-120.4021667	9.028	2.03	md	22	63	0.05676	0.06	nc	nc71109	2016-12-05T10:27:52.940Z	15 km NNW of Coalinga, California	earthquake	0.35	0.4	0.13	9	reviewed	nc	nc
4/23/1986	17:10:44	36.2775	-120.4001667	7.398	2.13	md	23	92	0.05405	0.06	nc	nc70963	2016-12-05T10:21:06.314Z	15 km NNW of Coalinga, California	earthquake	0.16	0.26	0.16	11	reviewed	nc	nc
4/23/1986	1:10:44	36.1738333	-120.3433333	15.507	2.49	md	50	50	0.07568	0.07	nc	nc70898	2016-12-05T10:18:18.190Z	4 km NNE of Coalinga, California	earthquake	0.19	0.4	0.12	46	reviewed	nc	nc
4/22/1986	12:10:20	36.122	-120.1121667	8.047	2.02	md	20	168	0.06126	0.05	nc	nc70788	2016-12-05T10:15:31.281Z	8 km S of Huron, California	earthquake	0.92	0.57	0.2	16	reviewed	nc	nc
4/22/1986	8:15:14	36.1615	-120.0738333	6.65	2.18	md	28	219	0.08739	0.05	nc	nc70824	2016-12-05T10:14:39.767Z	5 km SSE of Huron, California	earthquake	1.01	0.53	0.08	19	reviewed	nc	nc
4/16/1986	7:50:18	36.2158333	-120.2985	7.637	2.19	md	24	62	0.04955	0.04	nc	nc70375	2016-12-05T09:45:30.426Z	10 km NNE of Coalinga, California	earthquake	0.15	0.28	0.14	26	reviewed	nc	nc
4/13/1986	11:52:53	34.899	-119.065	15.486	2.35	mc	0	91.1		0.27	ci	ci121810	2016-02-03T22:06:37.000Z	10km NE of Pine Mountain Club, CA	earthquake		2.018		28	reviewed	ci	ci
4/13/1986	6:00:38	36.0178333	-120.1645	12.486	2.3	md	21	142	0.06216	0.04	nc	nc70130	2016-12-05T09:28:26.058Z	3 km WNW of Avenal, California	earthquake	0.56	0.31	0.17	19	reviewed	nc	nc
4/12/1986	12:47:56	36.2563333	-120.4165	10.898	2.25	md	34	87	0.06036	0.08	nc	nc70094	2016-12-05T09:25:30.890Z	13 km NNW of Coalinga, California	earthquake	0.19	0.29	0.14	28	reviewed	nc	nc
4/9/1986	20:10:38	36.2566667	-120.468	5.065	2.8	md	40	69	0.1018	0.15	nc	nc69873	2016-12-05T09:11:46.040Z	16 km NW of Coalinga, California	earthquake	0.19	0.39	0.14	31	reviewed	nc	nc
4/6/1986	2:00:02	36.136	-120.2146667	8.127	2.67	md	41	88	0.1135	0.12	nc	nc69579	2016-12-05T08:49:33.640Z	12 km SW of Huron, California	earthquake	0.24	0.6	0.09	21	reviewed	nc	nc
4/5/1986	21:05:28	36.2751667	-120.402	8.254	2.48	md	40	52	0.05405	0.11	nc	nc69566	2016-12-05T08:48:23.840Z	15 km NNW of Coalinga, California	earthquake	0.22	0.31	0.1	15	reviewed	nc	nc
4/2/1986	5:55:43	35.9715	-120.5191667	10.543	2.4	md	43	46	0.02252	0.04	nc	nc69292	2016-12-05T08:15:51.880Z	11 km NW of Parkfield, California	earthquake	0.15	0.22	0.15	58	reviewed	nc	nc
3/31/1986	19:18:20	35.5781667	-120.8441667	6.402	2.41	md	34	65	0.06396	0.07	nc	nc71776	2016-12-05T07:51:14.500Z	12 km WNW of Templeton, California	earthquake	0.19	0.52	0.1	36	reviewed	nc	nc
3/31/1986	3:52:27	35.787	-119.819	5.07	2.18	mc	0	213.4		0.324	ci	ci120434	2016-02-04T04:37:21.630Z	28km SSE of Kettleman City, CA	earthquake				9	reviewed	ci	ci
3/31/1986	1:49:32	35.695	-119.759	5.166	2.68	mc	0	94.9		0.447	ci	ci120430	2016-02-04T02:01:54.040Z	33km SW of Alpaugh, CA	earthquake				29	reviewed	ci	ci
3/30/1986	23:48:17	36.1235	-120.2603333	6.95	2.2	md	30	144	0.1369	0.04	nc	nc68927	2016-12-05T07:22:40.470Z	9 km ESE of Coalinga, California	earthquake	0.18	0.4	0.13	22	reviewed	nc	nc
3/29/1986	15:03:28	36.1055	-120.1528333	7.02	2	md	22	120	0.05676	0.05	nc	nc68865	2016-12-05T07:17:42.011Z	11 km N of Avenal, California	earthquake	0.39	0.58	0.09	15	reviewed	nc	nc
3/27/1986	3:04:26	36.0346667	-120.1551667	13.945	2.23	md	31	111	0.04505	0.04	nc	nc68748	2016-12-05T07:10:17.400Z	4 km NW of Avenal, California	earthquake	0.27	0.51	0.14	31	reviewed	nc	nc
3/26/1986	5:38:28	36.2861667	-120.4113333	8.408	2.41	md	39	72	0.06036	0.07	nc	nc68719	2016-12-05T07:08:06.630Z	16 km NNW of Coalinga, California	earthquake	0.18	0.24	0.1	37	reviewed	nc	nc
3/24/1986	12:18:50	36.1981667	-120.3068333	9.81	2.11	md	33	98	0.05856	0.05	nc	nc68624	2016-12-05T07:02:43.664Z	8 km NE of Coalinga, California	earthquake	0.18	0.28	0.1	31	reviewed	nc	nc
3/23/1986	11:41:10	36.0741667	-120.0663333	14.65	2.51	md	36	154	0.03784	0.07	nc	nc68564	2016-12-05T06:59:05.720Z	9 km NE of Avenal, California	earthquake	0.34	0.29	0.13	40	reviewed	nc	nc
3/23/1986	11:14:06	36.0773333	-120.0323333	20.586	2.77	md	27	223	0.06486	0.08	nc	nc68562	2016-12-05T06:58:48.290Z	9 km NW of Kettleman City, California	earthquake	0.54	0.65	0.13	41	reviewed	nc	nc
3/23/1986	7:21:42	36.0753333	-120.063	14.216	2	md	24	177	0.04054	0.08	nc	nc68548	2016-12-05T06:57:59.568Z	9 km NE of Avenal, California	earthquake	0.43	0.28	0.09	18	reviewed	nc	nc
3/23/1986	4:57:24	36.0878333	-120.0638333	18.633	2.09	md	26	177	0.04595	0.09	nc	nc68584	2016-12-05T06:57:40.120Z	10 km NNE of Avenal, California	earthquake	0.41	0.58	0.13	20	reviewed	nc	nc
3/18/1986	15:07:57	34.988	-119.255	-1.178	2.63	mc	0	114.4		0.128	ci	ci119199	2016-02-04T04:37:01.670Z	15km ESE of Maricopa, CA	earthquake		1.563		37	reviewed	ci	ci
3/18/1986	12:14:48	35.016	-119.112	4.825	2.24	mc	0	110		0.222	ci	ci119193	2016-02-03T20:06:47.020Z	18km WNW of Grapevine, CA	earthquake				22	reviewed	ci	ci
3/16/1986	16:34:53	35.922	-119.784	5.002	2.26	mc	0	210.7	0.5051	0.286	ci	ci119234	2016-02-03T22:05:52.880Z	19km ESE of Kettleman City, CA	earthquake				6	reviewed	ci	ci
3/16/1986	15:23:31	36.1221667	-120.218	5.167	2.49	md	40	84	0.1072	0.12	nc	nc68165	2016-12-05T06:36:23.580Z	Central California	earthquake	0.21	0.56	0.09	30	reviewed	nc	nc
3/15/1986	8:07:58	34.748	-120.161	5.052	2.75	mc	0	130.9	0.1927	0.17	ci	ci118949	2016-02-03T22:45:00.270Z	10km NNW of Los Olivos, CA	earthquake				21	reviewed	ci	ci
3/14/1986	19:41:35	35.9638333	-120.0128333	-0.183	2.66	md	43	77	0.1252	0.38	nc	nc68077	2016-12-05T06:30:46.480Z	6 km SW of Kettleman City, California	earthquake	0.6	5.75	0.12	27	reviewed	nc	nc
3/13/1986	11:09:04	36.1406667	-120.244	11.157	2.3	md	28	76	0.1351	0.08	nc	nc68012	2016-12-05T06:26:23.910Z	10 km E of Coalinga, California	earthquake	0.19	0.49	0.13	32	reviewed	nc	nc
3/13/1986	8:36:59	36.2681667	-120.3598333	8.118	3.15	md	53	59	0.02342	0.08	nc	nc68007	2016-12-05T06:26:09.220Z	14 km N of Coalinga, California	earthquake	0.17	0.17	0.14	74	reviewed	nc	nc
3/13/1986	8:35:30	36.2673333	-120.357	8.358	2.6	md	46	59	0.02162	0.05	nc	nc68004	2016-12-05T06:25:58.420Z	14 km N of Coalinga, California	earthquake	0.1	0.13	0.1	43	reviewed	nc	nc
3/6/1986	4:41:28	36.0906667	-120.219	8.13	2.35	md	38	74	0.09369	0.06	nc	nc67635	2016-12-05T06:02:43.850Z	12 km NW of Avenal, California	earthquake	0.15	0.39	0.09	34	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
3/4/1986	17:46:40	36.029	-120.5828333	4.553	2.86	md	52	48	0.04144	0.04	nc	nc67417	2016-12-05T05:57:31.070Z	19 km NW of Parkfield, California	earthquake	0.14	0.23	0.1	45	reviewed	nc	nc
2/24/1986	1:44:25	36.001	-120.5603333	3.045	2.28	md	38	64	0.04324	0.06	nc	nc66846	2016-12-05T05:32:59.620Z	Central California	earthquake	0.15	0.31	0.17	26	reviewed	nc	nc
2/19/1986	23:38:43	35.5761667	-120.8496667	6.839	2.12	md	29	154	0.06486	0.05	nc	nc66734	2016-12-05T05:21:05.640Z	13 km WNW of Templeton, California	earthquake	0.29	0.4	0.11	24	reviewed	nc	nc
2/19/1986	23:22:04	36.234	-120.3983333	7.081	2.02	md	19	96	0.04775	0.05	nc	nc66730	2016-12-05T05:20:57.986Z	11 km NNW of Coalinga, California	earthquake	0.2	0.29	0.16	16	reviewed	nc	nc
2/18/1986	5:59:23	36.1466667	-120.2308333	7.957	2.4	md	37	82	0.1306	0.12	nc	nc66615	2016-12-05T05:17:56.130Z	11 km E of Coalinga, California	earthquake	0.2	0.49	0.07	29	reviewed	nc	nc
2/15/1986	15:13:06	36.0375	-120.108	13.556	2.04	md	14	215	0.2153	0.06	nc	nc67484	2016-12-05T05:13:37.069Z	4 km NNE of Avenal, California	earthquake	0.64	1.28	0.06	14	reviewed	nc	nc
2/15/1986	9:53:10	36.271	-120.3501667	8.347	2.11	md	17	177	0.02252	0.06	nc	nc66521	2016-12-05T05:13:03.954Z	14 km N of Coalinga, California	earthquake	0.5	0.24	0.18	15	reviewed	nc	nc
2/12/1986	21:39:08	36.1535	-120.227	10.087	2.24	md	32	84	0.1324	0.07	nc	nc66384	2016-12-05T05:03:36.150Z	12 km E of Coalinga, California	earthquake	0.17	0.4	0.13	28	reviewed	nc	nc
2/12/1986	7:30:24	36.2636667	-120.3411667	9.357	2.77	md	46	63	0.01441	0.08	nc	nc66249	2016-12-05T04:59:41.210Z	14 km N of Coalinga, CA	earthquake	0.13	0.18	0.13	44	reviewed	nc	nc
2/10/1986	17:16:59	36.15	-120.2261667	8.647	2.17	md	30	84	0.1297	0.06	nc	nc66092	2016-12-05T04:47:44.130Z	12 km E of Coalinga, California	earthquake	0.33	0.62	0.1	25	reviewed	nc	nc
2/10/1986	16:42:13	36.152	-120.2291667	10.497	3.07	md	49	83	0.1324	0.05	nc	nc66044	2016-12-05T04:47:31.120Z	11 km E of Coalinga, California	earthquake	0.12	0.33	0.09	52	reviewed	nc	nc
2/6/1986	14:45:35	36.1546667	-119.295	-0.421	2.6	md	10	82	0.6676	0.09	nc	nc65770	2016-12-05T04:23:45.338Z	5 km ESE of Matheny, California	earthquake	0.36	7.95	0.13	6	reviewed	nc	nc
2/5/1986	12:10:58	36.0808333	-120.1031667	9.886	2.1	md	36	150	0.02072	0.71	nc	nc65680	2016-12-05T04:16:49.999Z	8 km NNE of Avenal, California	earthquake	2.16	1.47	0.09	23	reviewed	nc	nc
2/4/1986	0:12:06	36.1188333	-120.2356667	3.35	2.3	md	41	76	0.1171	0.28	nc	nc65574	2016-12-05T04:07:40.100Z	11 km ESE of Coalinga, California	earthquake	0.35	0.8	0.16	31	reviewed	nc	nc
2/3/1986	23:45:32	36.1213333	-120.2275	7.53	2.12	md	29	80	0.1135	0.11	nc	nc65571	2016-12-05T04:07:25.250Z	12 km E of Coalinga, California	earthquake	0.2	0.45	0.1	20	reviewed	nc	nc
1/28/1986	7:10:04	35.9708333	-120.5166667	10.743	2.43	md	40	77	0.02072	0.04	nc	nc64675	2016-12-05T03:15:14.580Z	10 km NW of Parkfield, California	earthquake	0.17	0.25	0.1	39	reviewed	nc	nc
1/24/1986	18:19:59	36.0383333	-120.5893333	4.853	2.15	md	27	60	0.05946	0.03	nc	nc64364	2016-12-05T02:25:02.752Z	20 km NW of Parkfield, California	earthquake	0.24	0.36	0.15	25	reviewed	nc	nc
1/22/1986	4:15:14	36.01	-119.363	4.783	2.38	mc	0	123.8		0.429	ci	ci114338	2016-02-04T03:57:27.100Z	7km SW of Tipton, CA	earthquake				14	reviewed	ci	ci
1/20/1986	16:05:54	35.07	-119.051	15.989	2.13	mc	0	136.4		0.302	ci	ci114140	2016-02-03T19:25:48.770Z	18km NW of Grapevine, CA	earthquake		1.287		21	reviewed	ci	ci
1/20/1986	15:02:01	35.258	-119.43	20.723	2.03	mc	0	112.8		0.207	ci	ci114181	2016-02-04T02:39:37.660Z	13km N of Taft, CA	earthquake		2.047		10	reviewed	ci	ci
1/18/1986	20:38:41	36.2428333	-120.3223333	8.514	2.83	md	42	63	0.01802	0.03	nc	nc63920	2016-12-05T02:00:34.340Z	11 km NNE of Coalinga, California	earthquake	0.15	0.17	0.1	48	reviewed	nc	nc
1/18/1986	15:03:21	36.0803333	-120.1731667	3.776	2.19	md	36	87	0.05495	0.17	nc	nc63867	2016-12-05T01:58:42.606Z	9 km NNW of Avenal, California	earthquake	0.24	0.41	0.15	27	reviewed	nc	nc
1/17/1986	19:38:28	36.1621667	-120.252	6.187	2	md	31	74	0.1144	0.21	nc	nc63900	2016-12-05T01:52:55.955Z	10 km ENE of Coalinga, California	earthquake	0.32	0.62	0.1	17	reviewed	nc	nc
1/17/1986	17:52:00	36.1781667	-120.2506667	8.87	3.3	ml	60	73	0.1036	0.08	nc	nc64383	2016-12-05T01:52:14.260Z	10 km ENE of Coalinga, California	earthquake	0.14	0.46		6	reviewed	nc	nc
1/15/1986	15:19:13	35.504	-119.742	-0.941	2.72	mc	0	75		0.391	ci	ci113670	2016-02-03T20:44:59.190Z	27km WNW of Buttonwillow, CA	earthquake		2.939		38	reviewed	ci	ci
1/15/1986	11:24:00	35.9976667	-120.163	15.115	2.09	md	26	217	0.1568	0.07	nc	nc63589	2016-12-05T01:41:36.319Z	3 km WSW of Avenal, California	earthquake	0.91	0.56	0.15	26	reviewed	nc	nc
1/9/1986	13:42:09	35.93	-119.9491667	9.306	2.08	md	29	168	0.1847	0.17	nc	nc63174	2016-12-05T01:12:08.637Z	8 km S of Kettleman City, California	earthquake	0.4	0.96	0.14	22	reviewed	nc	nc
1/2/1986	21:41:25	36.2846667	-120.4031667	9.478	2.82	md	49	58	0.05856	0.08	nc	nc62635	2016-12-05T00:45:31.520Z	16 km NNW of Coalinga, California	earthquake	0.12	0.21	0.1	55	reviewed	nc	nc
1/1/1986	11:25:41	35.737	-119.613	4.906	2.02	mc	0	226.3		0.367	ci	ci112443	2016-02-03T21:23:46.710Z	20km SW of Alpaugh, CA	earthquake				7	reviewed	ci	ci
12/30/1985	21:20:06	36.202	-120.3705	8.995	2.03	md	34	87	0.05225	0.09	nc	nc62471	2016-12-03T17:59:01.630Z	6 km N of Coalinga, California	earthquake	0.21	0.35	0.06	19	reviewed	nc	nc
12/30/1985	4:54:46	35.428	-120.004	8.576	3.26	ml	0	114.4		0.079	ci	ci111954	2016-02-03T23:59:12.240Z	8km N of Simmler, CA	earthquake		0.084		10	reviewed	ci	ci
12/26/1985	23:36:09	35.4566667	-120.4455	0.21	2.22	md	4	161	0.264	0.04	nc	nc63661	2016-12-03T17:43:01.142Z	9 km SE of Creston, California	earthquake	0.4	6.34	0.21	4	reviewed	nc	nc
12/23/1985	16:35:31	36.2021667	-120.2518333	8.914	2.97	md	25	106	0.08739	0.08	nc	nc63655	2016-12-03T17:29:06.730Z	11 km NE of Coalinga, California	earthquake	0.24	0.4	0.19	36	reviewed	nc	nc
12/22/1985	20:45:34	35.9351667	-120.4861667	5.189	2.06	md	38	77	0.02342	0.05	nc	nc62034	2016-12-03T17:25:41.880Z	6 km NW of Parkfield, California	earthquake	0.18	0.21	0.18	34	reviewed	nc	nc
12/14/1985	22:41:44	36.0798333	-120.6353333	4.809	3	ml	64	35	0.03333	0.06	nc	nc61679	2016-12-03T16:49:10.590Z	25 km ENE of San Ardo, California	earthquake	0.13	0.26		0	reviewed	nc	nc
12/14/1985	6:35:43	35.466	-120.036	4.236	2.14	mc	0	152.4		0.079	ci	ci133992	2016-02-03T19:24:56.890Z	13km NNW of Simmler, CA	earthquake		0.133		11	reviewed	ci	ci
12/10/1985	23:48:23	36.2446667	-120.3636667	10.321	2.3	md	40	77	0.01712	0.09	nc	nc61105	2016-12-03T16:30:38.860Z	11 km N of Coalinga, California	earthquake	0.24	0.27	0.12	25	reviewed	nc	nc
12/8/1985	4:04:07	36.2573333	-120.4466667	5.285	2.51	md	45	65	0.08468	0.15	nc	nc61019	2016-12-03T16:18:37.200Z	15 km NNW of Coalinga, California	earthquake	0.16	0.35	0.13	30	reviewed	nc	nc
12/7/1985	13:20:39	36.2406667	-120.293	19.247	2.95	md	24	159	0.04144	0.22	nc	nc60887	2016-12-03T16:16:33.477Z	12 km NNE of Coalinga, California	earthquake	0.65	1.54	0.07	26	reviewed	nc	nc
12/7/1985	12:54:53	36.1993333	-120.3735	12.365	2.16	md	32	93	0.05586	0.1	nc	nc60847	2016-12-03T16:16:16.470Z	6 km N of Coalinga, California	earthquake	0.27	0.4	0.15	46	reviewed	nc	nc
12/7/1985	12:32:53	36.198	-120.3606667	11.875	2.04	md	31	96	0.05315	0.09	nc	nc60885	2016-12-03T16:16:05.980Z	6 km N of Coalinga, California	earthquake	0.24	0.32	0.1	30	reviewed	nc	nc
12/7/1985	6:51:15	35.429	-120.008	8.171	2.33	mc	0	128.3		0.077	ci	ci133426	2016-02-04T05:13:32.950Z	9km N of Simmler, CA	earthquake		0.295		13	reviewed	ci	ci
12/2/1985	3:22:39	35.953	-120.0603333	8.572	2.78	md	44	150	0.1153	0.13	nc	nc60305	2016-12-03T15:48:34.490Z	8 km SE of Avenal, California	earthquake	0.38	0.44	0.09	30	reviewed	nc	nc
11/30/1985	10:28:26	36.1416667	-120.104	5.21	2.82	md	26	200	0.08108	0.06	nc	nc60252	2016-12-03T15:39:56.840Z	6 km S of Huron, California	earthquake	0.51	0.23	0.06	30	reviewed	nc	nc
11/29/1985	23:27:07	36.1496667	-120.1775	6.207	2.26	md	25	111	0.1045	0.07	nc	nc60188	2016-12-03T15:36:34.630Z	9 km SW of Huron, CA	earthquake	0.58	0.94	0.12	16	reviewed	nc	nc
11/28/1985	15:27:24	34.954	-119.078	10.978	2	mc	0	98.8		0.114	ci	ci132758	2016-02-03T21:23:01.980Z	14km W of Grapevine, CA	earthquake		0.049		16	reviewed	ci	ci
11/26/1985	8:18:27	36.2386667	-120.3235	8.877	2.28	md	36	63	0.01892	0.07	nc	nc59912	2016-12-03T15:20:32.290Z	11 km NNE of Coalinga, California	earthquake	0.12	0.14	0.08	36	reviewed	nc	nc
11/25/1985	14:04:13	35.305	-119.331	4.85	2.11	mc	0	130.9		0.371	ci	ci132501	2016-02-04T03:17:03.920Z	16km SE of Buttonwillow, CA	earthquake				11	reviewed	ci	ci
11/25/1985	6:59:27	36.1975	-120.2641667	8.3	2.15	md	8	81	0.08198	0.03	nc	nc59858	2016-12-03T15:17:14.443Z	10 km NE of Coalinga, California	earthquake	0.39	1.18	0.04	2	reviewed	nc	nc
11/25/1985	6:59:05	36.1883333	-120.2643333	8.277	2.82	md	41	68	0.08829	0.08	nc	nc59824	2016-12-03T15:17:09.830Z	10 km ENE of Coalinga, California	earthquake	0.16	0.3	0.16	31	reviewed	nc	nc
11/24/1985	12:56:16	36.2616667	-120.3175	9.187	3.18	md	49	67	0.02432	0.07	nc	nc60107	2016-12-03T15:13:59.480Z	14 km NNE of Coalinga, California	earthquake	0.21	0.31	0.13	51	reviewed	nc	nc
11/23/1985	3:22:59	35.958	-120.0625	8.512	2.24	md	31	164	0.1099	0.13	nc	nc59685	2016-12-03T15:06:06.690Z	7 km SE of Avenal, California	earthquake	0.39	0.84	0.15	24	reviewed	nc	nc
11/21/1985	9:13:56	36.0908333	-120.0418333	6.886	2.02	md	22	218	0.06216	0.16	nc	nc59558	2016-12-03T14:59:43.536Z	11 km NW of Kettleman City, California	earthquake	1.05	0.34	0.06	16	reviewed	nc	nc
11/19/1985	6:25:03	36.0196667	-120.0675	9.707	2.2	md	38	160	0.05405	0.09	nc	nc59417	2016-12-03T14:50:15.420Z	5 km ENE of Avenal, California	earthquake	0.26	0.2	0.15	27	reviewed	nc	nc
11/19/1985	1:41:27	36.0946667	-120.0871667	6.83	2.13	md	31	171	0.03784	0.14	nc	nc59407	2016-12-03T14:49:05.544Z	10 km NNE of Avenal, California	earthquake	0.42	0.3	0.11	21	reviewed	nc	nc
11/16/1985	19:05:58	36.1523333	-120.2645	8.412	2.99	md	50	108	0.1162	0.07	nc	nc59234	2016-12-03T14:36:50.970Z	8 km E of Coalinga, California	earthquake	0.18	0.49	0.14	46	reviewed	nc	nc
11/14/1985	13:15:44	35.07	-118.951	12.652	2.06	mc	0	160.3		0.194	ci	ci131673	2016-02-04T04:34:16.400Z	14km N of Grapevine, CA	earthquake		0.955		22	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/12/1985	15:29:21	36.118	-120.1995	8.43	3.21	md	47	92	0.09279	0.07	nc	nc58961	2016-12-03T14:21:13.830Z	12 km SW of Huron, California	earthquake	0.25	0.41	0.12	48	reviewed	nc	nc
11/9/1985	9:46:44	35.9403333	-120.1561667	17.881	2.12	md	22	173	0.1261	0.09	nc	nc58654	2016-12-03T14:09:40.563Z	7 km SSW of Avenal, California	earthquake	0.89	0.98	0.18	17	reviewed	nc	nc
11/8/1985	22:30:11	36.0893333	-120.0858333	8.196	2.25	md	24	201	0.03423	0.05	nc	nc59706	2016-12-03T14:07:54.773Z	10 km NNE of Avenal, California	earthquake	0.82	0.27	0.16	18	reviewed	nc	nc
11/7/1985	20:06:26	36.069	-120.1128333	6.766	2.03	md	26	152	0.008108	0.1	nc	nc58499	2016-12-03T14:02:24.011Z	7 km NNE of Avenal, California	earthquake	0.76	0.4	0.12	18	reviewed	nc	nc
11/7/1985	12:09:51	36.0765	-120.1253333	6.516	2.74	md	47	130	0.01982	0.07	nc	nc58466	2016-12-03T14:00:53.900Z	8 km N of Avenal, California	earthquake	0.3	0.24	0.08	30	reviewed	nc	nc
11/4/1985	22:44:55	35.9518333	-120.0765	8.293	2.1	md	27	170	0.1126	0.08	nc	nc58318	2016-12-03T13:53:40.420Z	7 km SE of Avenal, California	earthquake	0.36	0.58	0.1	23	reviewed	nc	nc
11/4/1985	7:05:29	34.731	-120.171	13.831	2.21	mc	0	131.9		0.356	ci	ci130793	2016-02-03T23:57:53.420Z	9km NW of Los Olivos, CA	earthquake		1.867		6	reviewed	ci	ci
11/4/1985	1:16:54	35.9696667	-120.0945	6.232	2.11	md	16	156	0.09189	0.17	nc	nc58215	2016-12-03T13:50:11.425Z	4 km SE of Avenal, California	earthquake	0.59	1.06	0.18	12	reviewed	nc	nc
11/3/1985	8:58:43	36.031	-120.0496667	12.017	2.66	md	44	168	0.05766	0.11	nc	nc58164	2016-12-03T13:46:36.000Z	7 km ENE of Avenal, California	earthquake	0.25	0.29	0.1	30	reviewed	nc	nc
11/1/1985	11:08:09	35.9491667	-120.0778333	7.621	2.67	md	44	150	0.1144	0.1	nc	nc58052	2016-12-03T13:38:24.200Z	7 km SE of Avenal, California	earthquake	0.27	0.35	0.16	23	reviewed	nc	nc
11/1/1985	4:09:51	35.9483333	-120.0668333	9.332	2.36	md	46	104	0.118	0.11	nc	nc58039	2016-12-03T13:36:56.250Z	8 km SE of Avenal, California	earthquake	0.34	0.49	0.11	38	reviewed	nc	nc
11/1/1985	1:13:46	36.0963333	-120.1023333	7.756	2	md	24	164	0.03604	0.1	nc	nc58032	2016-12-03T13:36:28.491Z	10 km NNE of Avenal, California	earthquake	0.73	0.48	0.07	14	reviewed	nc	nc
10/30/1985	14:04:57	35.9471667	-120.0588333	7.501	2.67	md	40	152	0.1207	0.11	nc	nc57944	2016-12-03T13:30:52.910Z	8 km SE of Avenal, California	earthquake	0.31	0.4	0.11	25	reviewed	nc	nc
10/29/1985	6:47:35	35.952	-120.0975	6.952	2.05	md	21	161	0.109	0.09	nc	nc57851	2016-12-03T13:26:52.186Z	6 km SSE of Avenal, California	earthquake	0.34	0.57	0.13	16	reviewed	nc	nc
10/28/1985	5:58:29	35.9498333	-120.0733333	7.796	2.14	md	30	151	0.1153	0.09	nc	nc57810	2016-12-03T13:23:54.750Z	7 km SE of Avenal, California	earthquake	0.34	0.64	0.18	24	reviewed	nc	nc
10/28/1985	4:40:51	35.9486667	-120.0786667	6.822	2.41	md	34	157	0.1153	0.08	nc	nc57773	2016-12-03T13:23:26.250Z	7 km SE of Avenal, California	earthquake	0.28	0.44	0.11	23	reviewed	nc	nc
10/28/1985	2:55:43	35.9665	-120.0646667	6.222	2.1	md	30	152	0.1009	0.4	nc	nc57767	2016-12-03T13:22:48.835Z	7 km SE of Avenal, California	earthquake	0.8	2.56	0.18	19	reviewed	nc	nc
10/28/1985	1:42:30	35.9476667	-120.0628333	7.741	3.13	md	52	161	0.1198	0.18	nc	nc57766	2016-12-03T13:22:43.210Z	8 km SE of Avenal, California	earthquake	0.41	0.57	0.1	31	reviewed	nc	nc
10/28/1985	1:34:05	35.9475	-120.048	8.116	2.46	md	7	210	0.1243	0.06	nc	nc57741	2016-12-03T13:22:34.978Z	9 km SE of Avenal, California	earthquake	1.39	1.28	0.26	7	reviewed	nc	nc
10/28/1985	1:33:32	35.9308333	-120.0138333	0.986	3.28	md	6	241	0.1514	0.03	nc	nc57740	2016-12-03T13:22:31.093Z	9 km SSW of Kettleman City, California	earthquake	1.23	6.79	0.31	17	reviewed	nc	nc
10/28/1985	1:32:50	35.9525	-120.0723333	7.801	3.2	ml	58	146	0.1126	0.15	nc	nc57739	2016-12-03T13:22:25.970Z	7 km SE of Avenal, California	earthquake	0.37	0.63		0	reviewed	nc	nc
10/24/1985	20:25:32	36.0176667	-120.0565	10.247	2.75	md	42	191	0.06126	0.23	nc	nc57599	2016-12-03T13:11:48.620Z	6 km ENE of Avenal, California	earthquake	0.65	0.34	0.09	30	reviewed	nc	nc
10/24/1985	20:05:33	35.886	-119.901	4.694	2.84	mh	0	339.6	1.028	0.253	ci	ci107745	2016-02-04T04:33:51.590Z	15km SSE of Kettleman City, CA	earthquake				7	reviewed	ci	ci
10/24/1985	14:50:32	36.1586667	-120.031	8.374	3.1	ml	32	203	0.1	0.06	nc	nc57575	2016-12-03T13:11:08.240Z	8 km SE of Huron, California	earthquake	0.6	0.33		0	reviewed	nc	nc
10/24/1985	0:26:17	34.885	-119.464	13.431	2.17	mc	0	64.2		0.135	ci	ci127153	2016-02-03T19:23:42.150Z	20km SSW of Maricopa, CA	earthquake		0.255		13	reviewed	ci	ci
10/21/1985	22:50:07	35.088	-118.947	14.072	2.44	mc	0	159.6		0.217	ci	ci126900	2016-02-03T19:23:39.380Z	16km N of Grapevine, CA	earthquake		1.417		35	reviewed	ci	ci
10/21/1985	20:30:13	36.0336667	-120.1286667	-0.425	2.2	md	16	170	0.03153	0.44	nc	nc57421	2016-12-03T13:03:46.557Z	3 km N of Avenal, California	earthquake	2.44	7.21	0.09	11	reviewed	nc	nc
10/19/1985	13:17:52	35.299	-119.312	4.784	2.63	ml	0	116.3		0.164	ci	ci125475	2016-02-03T20:43:10.020Z	18km WSW of Rosedale, CA	earthquake				4	reviewed	ci	ci
10/17/1985	20:07:31	36.2725	-120.3281667	8.858	2.42	md	29	97	0.02613	0.14	nc	nc57157	2016-12-03T12:49:49.510Z	15 km N of Coalinga, California	earthquake	0.3	0.47	0.1	25	reviewed	nc	nc
10/15/1985	22:24:56	36.2083333	-120.4493333	5.96	2.29	md	34	86	0.0955	0.07	nc	nc57025	2016-12-03T12:44:49.400Z	11 km NW of Coalinga, California	earthquake	0.26	0.32	0.23	31	reviewed	nc	nc
10/12/1985	16:53:29	36.0488333	-120.074	8.907	2.2	md	33	162	0.03153	0.08	nc	nc56795	2016-12-03T12:30:09.128Z	7 km NE of Avenal, California	earthquake	0.18	0.16	0.13	25	reviewed	nc	nc
10/11/1985	5:39:18	36.1533333	-120.2343333	9.41	2.68	md	45	81	0.1306	0.08	nc	nc56650	2016-12-03T12:24:07.980Z	11 km E of Coalinga, California	earthquake	0.18	0.45	0.09	43	reviewed	nc	nc
10/10/1985	21:24:41	36.0876667	-120.082	7.125	2.15	md	24	202	0.03514	0.07	nc	nc56623	2016-12-03T12:22:34.453Z	10 km NNE of Avenal, California	earthquake	0.51	0.22	0.09	17	reviewed	nc	nc
10/9/1985	11:01:27	36.1816667	-120.2506667	12.167	2.06	md	29	73	0.1009	0.05	nc	nc56544	2016-12-03T12:16:57.636Z	10 km ENE of Coalinga, California	earthquake	0.15	0.35	0.1	24	reviewed	nc	nc
10/8/1985	22:43:43	36.1773333	-120.2468333	11.384	2.25	md	31	75	0.1063	0.07	nc	nc56558	2016-12-03T12:15:18.650Z	11 km ENE of Coalinga, California	earthquake	0.15	0.39	0.15	27	reviewed	nc	nc
10/8/1985	22:17:41	36.1866667	-120.2483333	12.594	4	ml	53	73	0.0991	0.06	nc	nc56454	2016-12-03T12:14:54.280Z	11 km ENE of Coalinga, California	earthquake	0.15	0.36		0	reviewed	nc	nc
10/4/1985	13:46:42	36.1826667	-120.2715	11.704	2.03	md	19	208	0.08829	0.05	nc	nc57210	2016-12-03T11:59:39.182Z	9 km ENE of Coalinga, California	earthquake	0.64	0.38	0.14	18	reviewed	nc	nc
10/4/1985	3:50:06	36.1888333	-120.2503333	11.724	2.86	md	46	72	0.0964	0.07	nc	nc56232	2016-12-03T11:58:02.520Z	11 km ENE of Coalinga, California	earthquake	0.14	0.3	0.07	42	reviewed	nc	nc
10/1/1985	12:27:13	35.5398333	-120.8121667	4.407	2.39	md	38	72	0.1099	0.06	nc	nc56056	2016-12-03T11:49:54.320Z	9 km W of Templeton, California	earthquake	0.17	0.53	0.1	29	reviewed	nc	nc
10/1/1985	7:48:41	36.0681667	-120.1546667	11.375	2.18	md	24	93	0.03694	0.03	nc	nc56050	2016-12-03T11:48:58.362Z	7 km NNW of Avenal, California	earthquake	0.21	0.49	0.11	28	reviewed	nc	nc
9/29/1985	21:34:54	36.2606667	-120.3228333	9.137	2.63	md	45	66	0.01982	0.07	nc	nc55993	2016-12-03T11:43:42.780Z	13 km NNE of Coalinga, California	earthquake	0.14	0.2	0.13	38	reviewed	nc	nc
9/28/1985	1:15:03	36.0841667	-120.1445	5.04	2.74	md	39	113	0.03694	0.07	nc	nc55943	2016-12-03T11:37:09.480Z	8 km N of Avenal, California	earthquake	0.21	0.26	0.08	27	reviewed	nc	nc
9/25/1985	23:49:55	35.591	-120.8075	6.125	3.05	md	60	59	0.06847	0.07	nc	nc55868	2016-12-03T11:30:06.260Z	10 km WNW of Templeton, California	earthquake	0.14	0.44	0.1	51	reviewed	nc	nc
9/23/1985	19:41:36	36.0285	-120.071	10.537	2.13	md	30	162	0.04505	0.07	nc	nc55679	2016-12-03T11:19:44.749Z	5 km ENE of Avenal, California	earthquake	0.19	0.18	0.17	23	reviewed	nc	nc
9/22/1985	20:06:46	36.0363333	-120.0351667	9.397	2.15	md	20	157	0.06577	0.11	nc	nc55618	2016-12-03T11:15:56.244Z	7 km WNW of Kettleman City, California	earthquake	0.23	0.29	0.14	27	reviewed	nc	nc
9/22/1985	10:08:03	36.0203333	-120.0615	9.907	2.18	md	40	154	0.05676	0.23	nc	nc55597	2016-12-03T11:14:13.980Z	6 km ENE of Avenal, California	earthquake	0.64	0.46	0.1	27	reviewed	nc	nc
9/21/1985	16:02:54	36.236	-120.3745	8.362	2.12	md	28	67	0.02883	0.07	nc	nc55560	2016-12-03T11:12:12.303Z	10 km N of Coalinga, California	earthquake	0.25	0.3	0.13	16	reviewed	nc	nc
9/19/1985	16:07:38	36.1398333	-120.2021667	7.5	2.02	md	27	95	0.109	0.12	nc	nc55426	2016-12-03T11:04:45.659Z	11 km SW of Huron, California	earthquake	0.24	0.57	0.12	23	reviewed	nc	nc
9/19/1985	12:14:07	35.446	-118.908	12.107	2.18	mc	0	190.9		0.106	ci	ci118851	2016-02-04T01:57:52.740Z	10km ENE of Oildale, CA	earthquake		4.169		14	reviewed	ci	ci
9/19/1985	7:04:12	36.1488333	-120.0318333	6.7	2.01	md	23	202	0.1081	0.06	nc	nc56153	2016-12-03T11:03:39.040Z	8 km SE of Huron, California	earthquake	0.73	0.31	0.13	13	reviewed	nc	nc
9/18/1985	21:27:05	36.0408333	-120.1645	12.895	2.09	md	24	99	0.04865	0.07	nc	nc55417	2016-12-03T11:02:44.685Z	5 km NW of Avenal, California	earthquake	0.19	0.32	0.1	18	reviewed	nc	nc
9/18/1985	15:08:57	36.091	-120.1603333	3.46	2.39	md	35	105	0.05135	0.13	nc	nc55307	2016-12-03T11:01:45.800Z	10 km NNW of Avenal, California	earthquake	0.22	0.37	0.08	22	reviewed	nc	nc
9/15/1985	9:09:46	36.077	-120.16	12.27	3	ml	52	92	0.04414	0.12	nc	nc55151	2016-12-03T10:50:50.880Z	8 km NNW of Avenal, California	earthquake	0.33	0.41		2	reviewed	nc	nc
9/15/1985	0:36:23	36.027	-120.1401667	12.785	2.16	md	28	161	0.04234	0.08	nc	nc55109	2016-12-03T10:48:58.548Z	2 km NNW of Avenal, California	earthquake	0.29	0.41	0.09	21	reviewed	nc	nc
9/14/1985	19:06:40	36.0751667	-120.1471667	12.33	2.1	md	22	122	0.03333	0.04	nc	nc55101	2016-12-03T10:47:48.830Z	8 km NNW of Avenal, California	earthquake	0.52	0.58	0.13	21	reviewed	nc	nc
9/14/1985	18:52:24	36.0726667	-120.1505	12.14	2.2	md	30	92	0.03514	0.04	nc	nc55100	2016-12-03T10:47:44.744Z	Central California	earthquake	0.38	0.45	0.16	29	reviewed	nc	nc
9/14/1985	3:02:44	36.1915	-120.3095	10.547	3.1	ml	55	56	0.06396	0.05	nc	nc55138	2016-12-03T10:45:26.570Z	7 km NE of Coalinga, California	earthquake	0.14	0.24		0	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/13/1985	20:14:42	36.1706667	-120.2905	8.627	2.35	md	32	62	0.08919	0.13	nc	nc55065	2016-12-03T10:44:11.817Z	7 km ENE of Coalinga, California	earthquake	0.37	0.32	0.09	23	reviewed	nc	nc
9/12/1985	12:55:25	35.5421667	-120.8105	4.267	2.14	md	36	72	0.1081	0.09	nc	nc54994	2016-12-03T10:38:21.700Z	9 km W of Templeton, California	earthquake	0.19	0.62	0.12	29	reviewed	nc	nc
9/12/1985	12:10:29	36.08	-120.1638333	11.33	2.2	md	34	93	0.04775	0.1	nc	nc54993	2016-12-03T10:38:12.500Z	8 km NNW of Avenal, California	earthquake	0.38	0.49	0.12	28	reviewed	nc	nc
9/12/1985	0:29:15	36.074	-120.15	13.34	2.98	md	39	94	0.03514	0.1	nc	nc54973	2016-12-03T10:35:55.050Z	7 km NNW of Avenal, California	earthquake	0.32	0.51	0.11	31	reviewed	nc	nc
9/11/1985	17:39:11	36.0768333	-120.1485	12.61	2.14	md	30	150	0.03514	0.06	nc	nc54935	2016-12-03T10:34:51.630Z	8 km NNW of Avenal, California	earthquake	0.43	0.47	0.12	23	reviewed	nc	nc
9/11/1985	14:42:23	36.0803333	-120.1736667	10.89	2.56	md	46	87	0.05586	0.15	nc	nc54953	2016-12-03T10:34:09.210Z	9 km NNW of Avenal, California	earthquake	0.27	0.49	0.07	28	reviewed	nc	nc
9/11/1985	13:39:16	36.0776667	-120.1583333	12.88	2.26	md	32	93	0.04324	0.09	nc	nc55029	2016-12-03T10:33:48.533Z	8 km NNW of Avenal, California	earthquake	0.35	0.52	0.12	23	reviewed	nc	nc
9/10/1985	17:24:58	36.201	-120.3075	10.564	2.01	md	19	113	0.05586	0.06	nc	nc54864	2016-12-03T10:30:05.711Z	8 km NE of Coalinga, California	earthquake	0.28	0.38	0.08	17	reviewed	nc	nc
9/9/1985	1:25:23	34.744	-120.277	5.041	2.28	mc	0	174.7		0.483	ci	ci116939	2016-02-03T22:01:38.210Z	0km ESE of Los Alamos, CA	earthquake				5	reviewed	ci	ci
9/8/1985	12:17:17	36.0115	-120.1378333	16.257	3.1	ml	63	127	0.05495	0.12	nc	nc54922	2016-12-03T10:21:24.000Z	1 km NW of Avenal, California	earthquake	0.28	0.21		0	reviewed	nc	nc
9/7/1985	12:13:33	36.262	-120.3206667	13.607	2.27	md	39	78	0.02162	0.11	nc	nc54759	2016-12-03T10:16:51.990Z	14 km NNE of Coalinga, California	earthquake	0.21	0.41	0.18	35	reviewed	nc	nc
9/7/1985	7:15:55	36.1513333	-120.1815	4.417	2.08	md	28	108	0.1072	0.12	nc	nc54836	2016-12-03T10:15:27.350Z	9 km SW of Huron, California	earthquake	0.4	0.79	0.12	25	reviewed	nc	nc
9/6/1985	21:47:46	36.2418333	-120.2688333	6.497	2.27	md	37	74	0.06036	0.13	nc	nc54820	2016-12-03T10:13:35.360Z	13 km NE of Coalinga, California	earthquake	0.2	0.28	0.11	24	reviewed	nc	nc
9/6/1985	4:32:25	36.0106667	-120.1566667	14.731	2.92	md	35	127	0.06306	0.08	nc	nc54649	2016-12-03T10:11:03.750Z	2 km WNW of Avenal, California	earthquake	0.29	0.64	0.07	31	reviewed	nc	nc
9/4/1985	14:13:58	36.111	-120.2323333	12.12	2.31	md	33	75	0.1117	0.09	nc	nc54529	2016-12-03T10:04:09.130Z	11 km ESE of Coalinga, California	earthquake	0.2	0.43	0.08	27	reviewed	nc	nc
9/2/1985	5:08:46	36.0463333	-120.1115	20.32	2.19	md	15	195	0.01441	0.07	nc	nc54312	2016-12-03T09:54:49.541Z	4 km NNE of Avenal, California	earthquake	1.05	1.25	0.15	14	reviewed	nc	nc
9/2/1985	2:10:58	36.128	-120.1088333	10.4	2.16	md	27	172	0.06667	0.15	nc	nc54420	2016-12-03T09:54:27.259Z	Central California	earthquake	0.69	0.61	0.12	21	reviewed	nc	nc
9/1/1985	22:19:39	36.0631667	-120.011	8.523	2.12	md	30	206	0.08018	0.16	nc	nc54678	2016-12-03T09:54:00.566Z	7 km NW of Kettleman City, California	earthquake	1.11	0.33	0.08	20	reviewed	nc	nc
9/1/1985	22:16:16	36.0486667	-120.0471667	8.653	2.72	md	50	180	0.05225	0.18	nc	nc54514	2016-12-03T09:53:51.990Z	8 km NE of Avenal, California	earthquake	0.64	0.32	0.13	33	reviewed	nc	nc
8/31/1985	22:57:57	36.207	-120.2941667	10.197	2.17	md	40	60	0.05766	0.1	nc	nc54493	2016-12-03T09:51:20.730Z	9 km NE of Coalinga, California	earthquake	0.24	0.47	0.16	34	reviewed	nc	nc
8/31/1985	13:25:51	36.0141667	-120.018	9.742	3.1	ml	57	104	0.08829	0.08	nc	nc54348	2016-12-03T09:49:43.090Z	5 km W of Kettleman City, California	earthquake	0.3	0.22		0	reviewed	nc	nc
8/29/1985	17:36:12	35.9421667	-119.9813333	-0.444	2.1	md	25	207	0.1577	0.28	nc	nc55388	2016-12-03T09:41:53.295Z	7 km SSW of Kettleman City, California	earthquake	1.5	6.83	0.17	14	reviewed	nc	nc
8/29/1985	16:17:28	36.11	-120.115	8.115	2.12	md	24	165	0.04955	0.1	nc	nc54208	2016-12-03T09:41:28.668Z	10 km S of Huron, California	earthquake	0.77	0.59	0.09	18	reviewed	nc	nc
8/28/1985	2:45:41	36.1596667	-120.0985	6.559	2.1	md	20	179	0.09009	0.05	nc	nc53972	2016-12-03T09:35:02.521Z	4 km S of Huron, California	earthquake	0.37	0.38	0.16	15	reviewed	nc	nc
8/27/1985	19:02:07	35.9893333	-120.1196667	14.376	3.2	ml	45	184	0.07207	0.14	nc	nc53955	2016-12-03T09:33:46.710Z	1 km SSE of Avenal, California	earthquake	0.39	0.45		0	reviewed	nc	nc
8/27/1985	18:30:51	36.154	-120.068	9.964	2.97	md	32	207	0.0955	0.08	nc	nc53950	2016-12-03T09:33:28.890Z	6 km SSE of Huron, California	earthquake	0.57	0.44	0.12	43	reviewed	nc	nc
8/27/1985	16:20:51	35.9445	-119.9973333	2.376	2.64	md	41	102	0.1477	0.17	nc	nc53942	2016-12-03T09:33:00.720Z	7 km SSW of Kettleman City, California	earthquake	0.62	1.71	0.1	27	reviewed	nc	nc
8/27/1985	13:58:02	35.969	-119.933	4.932	2.17	mc	0	155.2		0.376	ci	ci112880	2016-02-03T22:01:09.650Z	5km SSE of Kettleman City, CA	earthquake				8	reviewed	ci	ci
8/26/1985	15:28:26	36.0303333	-120.0651667	10.161	2.03	md	19	106	0.04775	0.12	nc	nc53878	2016-12-03T09:28:14.384Z	6 km ENE of Avenal, California	earthquake	0.7	0.35	0.12	14	reviewed	nc	nc
8/23/1985	16:36:57	36.1441667	-120.0678333	6.86	2.43	md	27	201	0.09009	0.09	nc	nc53709	2016-12-03T09:18:53.410Z	7 km SSE of Huron, California	earthquake	0.48	0.33	0.07	19	reviewed	nc	nc
8/23/1985	8:29:50	36.0225	-120.0523333	9.799	2.04	md	14	119	0.06036	0.05	nc	nc53613	2016-12-03T09:17:12.935Z	7 km ENE of Avenal, California	earthquake	0.36	0.28	0.1	9	reviewed	nc	nc
8/22/1985	12:18:12	36.1041667	-120.1048333	7.85	2.66	md	38	180	0.04324	0.08	nc	nc53585	2016-12-03T09:13:22.640Z	Central California	earthquake	0.28	0.25	0.07	24	reviewed	nc	nc
8/22/1985	0:09:22	36.0135	-120.0558333	12.161	2.78	md	48	176	0.06486	0.11	nc	nc53595	2016-12-03T09:10:34.010Z	6 km E of Avenal, California	earthquake	0.44	0.36	0.11	32	reviewed	nc	nc
8/20/1985	14:01:29	36.2158333	-120.333	10.041	2.71	md	34	56	0.03423	0.05	nc	nc54033	2016-12-03T09:03:29.088Z	8 km NNE of Coalinga, California	earthquake	0.17	0.29	0.08	34	reviewed	nc	nc
8/20/1985	12:29:09	36.1541667	-120.2163333	8.677	2.61	md	19	89	0.127	0.06	nc	nc54032	2016-12-03T09:03:18.040Z	11 km WSW of Huron, California	earthquake	0.27	0.52	0.1	21	reviewed	nc	nc
8/20/1985	8:47:33	35.9118333	-120.0961667	13.421	2.11	md	14	228	0.1495	0.04	nc	nc53290	2016-12-03T09:03:00.462Z	10 km SSE of Avenal, California	earthquake	0.76	0.84	0.07	19	reviewed	nc	nc
8/20/1985	6:03:11	36.0445	-120.0915	10.761	2.7	md	20	194	0.02252	0.04	nc	nc54029	2016-12-03T09:02:28.628Z	5 km NE of Avenal, California	earthquake	0.53	0.21	0.11	29	reviewed	nc	nc
8/19/1985	14:06:41	36.0093333	-120.1503333	15.573	2.73	md	22	157	0.06126	0.12	nc	nc53580	2016-12-03T08:59:36.502Z	2 km WNW of Avenal, California	earthquake	0.48	0.88	0.14	22	reviewed	nc	nc
8/18/1985	13:40:08	36.1121667	-120.1661667	5	2.5	md	35	112	0.06847	0.17	nc	nc53350	2016-12-03T08:56:51.970Z	11 km SSW of Huron, California	earthquake	0.34	0.51	0.11	23	reviewed	nc	nc
8/18/1985	11:49:53	36.0153333	-120.1521667	16.259	2.26	md	28	151	0.05676	0.1	nc	nc53231	2016-12-03T08:56:31.959Z	2 km WNW of Avenal, California	earthquake	0.36	0.67	0.13	27	reviewed	nc	nc
8/17/1985	13:40:56	36.0331667	-120.0961667	10.301	2.04	md	21	193	0.02973	0.04	nc	nc53176	2016-12-03T08:52:50.096Z	4 km NE of Avenal, California	earthquake	0.48	0.21	0.12	19	reviewed	nc	nc
8/17/1985	3:47:09	36.0891667	-120.0613333	15.31	2.05	md	12	241	0.04865	0.09	nc	nc53150	2016-12-03T08:52:02.441Z	11 km NNE of Avenal, California	earthquake	2.7	2.13	0.1	15	reviewed	nc	nc
8/17/1985	1:33:18	36.0655	-120.128	7.08	2.08	md	30	95	0.01532	0.11	nc	nc53144	2016-12-03T08:51:47.180Z	6 km N of Avenal, California	earthquake	0.44	0.34	0.09	15	reviewed	nc	nc
8/16/1985	23:08:33	36.1246667	-120.1055	7.08	2.73	md	30	176	0.06396	0.06	nc	nc54039	2016-12-03T08:51:11.580Z	8 km S of Huron, California	earthquake	0.38	0.31	0.13	28	reviewed	nc	nc
8/15/1985	22:35:42	36.1121667	-120.1173333	5.32	2.35	md	11	162	0.05135	0.13	nc	nc53045	2016-12-03T08:48:18.179Z	10 km S of Huron, California	earthquake	0.73	0.66	0.08	9	reviewed	nc	nc
8/15/1985	17:49:04	36.1105	-120.1331667	8.76	2.25	md	21	142	0.05315	0.08	nc	nc53038	2016-12-03T08:47:50.850Z	10 km SSW of Huron, California	earthquake	0.6	0.55	0.04	20	reviewed	nc	nc
8/15/1985	8:24:50	36.13	-120.1196667	5.64	2.88	md	37	160	0.06937	0.17	nc	nc53112	2016-12-03T08:46:50.060Z	8 km S of Huron, California	earthquake	0.45	0.47	0.09	13	reviewed	nc	nc
8/15/1985	5:09:22	36.14	-120.1265	2.845	2.1	md	8	183	0.08018	0.04	nc	nc52992	2016-12-03T08:46:18.050Z	7 km SSW of Huron, California	earthquake	1.19	1.43	0.11	15	reviewed	nc	nc
8/15/1985	3:20:55	36.1251667	-120.1108333	6.58	3	ml	32	170	0.06396	0.1	nc	nc53111	2016-12-03T08:46:01.510Z	8 km S of Huron, California	earthquake	0.33	0.36		0	reviewed	nc	nc
8/15/1985	2:20:18	36.1148333	-120.1403333	8.755	2.29	md	25	137	0.05946	0.09	nc	nc52983	2016-12-03T08:45:43.920Z	10 km SSW of Huron, California	earthquake	0.43	0.49	0.07	25	reviewed	nc	nc
8/14/1985	23:31:40	36.1326667	-120.1365	0.072	2.06	md	9	143	0.07477	0.15	nc	nc53039	2016-12-03T08:44:54.831Z	8 km SSW of Huron, California	earthquake	1.18	10.56	0.17	6	reviewed	nc	nc
8/14/1985	23:29:55	36.1236667	-120.0963333	7.17	2.99	md	31	186	0.06306	0.13	nc	nc52973	2016-12-03T08:44:49.890Z	8 km S of Huron, California	earthquake	0.38	0.32	0.12	32	reviewed	nc	nc
8/14/1985	21:25:42	35.9876667	-120.1221667	14.701	2.24	md	22	186	0.07387	0.16	nc	nc52947	2016-12-03T08:44:36.682Z	1 km SSE of Avenal, California	earthquake	1.11	1.43	0.14	18	reviewed	nc	nc
8/14/1985	0:31:53	36.1188333	-120.1118333	5.025	2	md	13	169	0.05766	0.02	nc	nc52910	2016-12-03T08:42:31.389Z	9 km S of Huron, California	earthquake	1.96	1.42	0.08	8	reviewed	nc	nc
8/13/1985	7:13:35	36.175	-120.06	4.953	2.42	mc	0	184.1	0.4907	0.459	ci	ci109475	2016-02-04T05:10:31.080Z	5km SE of Huron, CA	earthquake				15	reviewed	ci	ci
8/13/1985	7:13:25	36.0873333	-120.1581667	-0.42	2.64	md	24	103	0.04775	0.24	nc	nc52861	2016-12-03T08:39:33.423Z	9 km NNW of Avenal, California	earthquake	0.36	3.34	0.11	18	reviewed	nc	nc
8/12/1985	23:49:59	36.0035	-120.159	9.043	2.91	md	31	202	0.07027	0.07	nc	nc52881	2016-12-03T08:38:20.990Z	2 km W of Avenal, California	earthquake	0.32	0.71	0.11	32	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
8/12/1985	22:09:10	36.1296667	-120.1188333	5.73	2.78	md	33	160	0.06937	0.1	nc	nc52849	2016-12-03T08:38:02.430Z	8 km S of Huron, California	earthquake	0.44	0.43	0.11	29	reviewed	nc	nc
8/12/1985	22:07:21	36.127	-120.097	6.785	2.02	md	16	185	0.06667	0.07	nc	nc52848	2016-12-03T08:37:56.486Z	8 km S of Huron, California	earthquake	1.52	1.08	0.14	14	reviewed	nc	nc
8/12/1985	21:44:39	35.9486667	-120.1808333	14.091	2.07	md	11	245	0.1261	0.08	nc	nc52823	2016-12-03T08:37:49.353Z	7 km SW of Avenal, California	earthquake	1.47	1.18	0.13	12	reviewed	nc	nc
8/12/1985	21:23:47	36.0301667	-120.1801667	9.836	2.52	md	19	172	0.06486	0.05	nc	nc52821	2016-12-03T08:37:38.727Z	5 km WNW of Avenal, California	earthquake	0.6	0.61	0.14	19	reviewed	nc	nc
8/12/1985	15:08:56	35.9958333	-120.1363333	12.644	2.43	md	20	147	0.06847	0.16	nc	nc52801	2016-12-03T08:36:55.318Z	1 km SW of Avenal, California	earthquake	0.61	0.73	0.15	15	reviewed	nc	nc
8/12/1985	14:59:27	35.9908333	-120.1351667	13.169	2.06	md	14	149	0.07297	0.03	nc	nc52799	2016-12-03T08:36:51.510Z	1 km SSW of Avenal, California	earthquake	0.4	1.48	0.14	13	reviewed	nc	nc
8/12/1985	14:21:47	35.9575	-120.0865	12.066	2.54	md	31	103	0.1054	0.16	nc	nc52797	2016-12-03T08:36:40.330Z	6 km SE of Avenal, California	earthquake	0.38	0.36	0.17	21	reviewed	nc	nc
8/11/1985	8:02:34	36.115	-120.12	10.95	2.17	md	20	157	0.05495	0.16	nc	nc52712	2016-12-03T08:34:37.051Z	9 km S of Huron, California	earthquake	0.85	0.72	0.12	21	reviewed	nc	nc
8/11/1985	6:30:24	36.1205	-120.1931667	8.69	3.1	ml	46	97	0.09009	0.1	nc	nc52831	2016-12-03T08:34:13.210Z	12 km SW of Huron, California	earthquake	0.18	0.37		0	reviewed	nc	nc
8/10/1985	21:58:13	36.0206667	-120.0921667	11.102	2.31	md	18	157	0.04234	0.11	nc	nc52695	2016-12-03T08:33:20.025Z	3 km ENE of Avenal, California	earthquake	0.86	0.6	0.13	16	reviewed	nc	nc
8/10/1985	16:14:00	36.0715	-120.0978333	7.86	2.6	md	23	220	0.01441	0.09	nc	nc52830	2016-12-03T08:32:08.960Z	7 km NNE of Avenal, California	earthquake	0.8	0.29	0.07	20	reviewed	nc	nc
8/10/1985	15:43:06	36.1236667	-120.1296667	4.82	2.41	md	24	149	0.06486	0.06	nc	nc52637	2016-12-03T08:32:02.190Z	9 km SSW of Huron, California	earthquake	0.5	0.49	0.08	20	reviewed	nc	nc
8/10/1985	14:30:45	36.0953333	-120.1521667	3.69	2.6	md	31	142	0.04865	0.06	nc	nc52630	2016-12-03T08:31:33.430Z	10 km NNW of Avenal, California	earthquake	0.22	0.21	0.11	20	reviewed	nc	nc
8/10/1985	10:00:58	36.0486667	-120.105	8.494	2.85	md	3	276	0.01261	0	nc	nc54562	2016-12-03T08:30:35.629Z	5 km NNE of Avenal, California	earthquake	2.7	1.29		1	reviewed	nc	nc
8/10/1985	9:19:33	36.0951667	-120.0586667	7.64	2.02	md	18	180	0.05405	0.1	nc	nc52624	2016-12-03T08:30:31.988Z	11 km NNE of Avenal, California	earthquake	0.45	0.31	0.07	11	reviewed	nc	nc
8/10/1985	8:40:47	36.1056667	-120.0348333	8.01	2.47	md	25	197	0.07568	0.06	nc	nc52622	2016-12-03T08:30:16.610Z	12 km SSE of Huron, California	earthquake	0.32	0.25	0.17	25	reviewed	nc	nc
8/10/1985	7:40:46	36.1371667	-120.1398333	5.03	2.1	md	15	140	0.08018	0.08	nc	nc52618	2016-12-03T08:29:55.402Z	7 km SSW of Huron, California	earthquake	0.64	0.9	0.07	15	reviewed	nc	nc
8/10/1985	5:16:26	36.0896667	-120.0941667	7.696	2.1	md	11	246	0.03153	0.02	nc	nc52669	2016-12-03T08:29:22.847Z	9 km NNE of Avenal, California	earthquake	2.48	1	0.1	13	reviewed	nc	nc
8/10/1985	2:13:15	36.082	-120.1468333	4.449	2.05	md	5	211	0.03694	0.02	nc	nc54558	2016-12-03T08:28:57.752Z	8 km N of Avenal, California	earthquake	5.49	5.16	0.52	2	reviewed	nc	nc
8/10/1985	0:25:44	36.0843333	-120.135	4.69	2.38	md	22	148	0.03063	0.08	nc	nc52652	2016-12-03T08:28:36.069Z	8 km N of Avenal, California	earthquake	0.58	0.53	0.09	13	reviewed	nc	nc
8/9/1985	23:51:28	35.4161667	-120.5996667	5.682	2	md	13	265	0.4045	0.03	nc	nc52651	2016-12-03T08:28:28.839Z	0 km ESE of Garden Farms, California	earthquake	1.99	8.38	0.42	8	reviewed	nc	nc
8/9/1985	21:47:41	36.0383333	-120.05	10.841	2.38	md	39	104	0.05315	0.16	nc	nc52646	2016-12-03T08:28:00.870Z	8 km ENE of Avenal, California	earthquake	0.51	0.25	0.14	20	reviewed	nc	nc
8/9/1985	16:19:05	36.0873333	-120.1203333	6.54	2.03	md	17	173	0.02793	0.04	nc	nc52600	2016-12-03T08:27:06.167Z	9 km N of Avenal, California	earthquake	0.93	0.68	0.15	14	reviewed	nc	nc
8/9/1985	14:50:59	36.294	-120.4003333	9.778	2.41	md	36	85	0.04865	0.18	nc	nc52842	2016-12-03T08:26:32.478Z	17 km NNW of Coalinga, California	earthquake	0.36	0.37	0.08	19	reviewed	nc	nc
8/9/1985	14:20:03	36.0821667	-120.1295	5.71	2.28	md	26	130	0.02613	0.07	nc	nc52951	2016-12-03T08:26:19.620Z	8 km N of Avenal, California	earthquake	0.36	0.31	0.13	16	reviewed	nc	nc
8/9/1985	14:14:46	36.0876667	-120.1206667	6.116	2.43	md	21	151	0.02793	0.06	nc	nc52671	2016-12-03T08:26:14.370Z	9 km N of Avenal, California	earthquake	0.56	0.43	0.12	21	reviewed	nc	nc
8/9/1985	13:57:29	36.0876667	-120.1286667	6.15	2.25	md	25	137	0.03063	0.07	nc	nc52590	2016-12-03T08:25:58.630Z	9 km N of Avenal, California	earthquake	0.45	0.42	0.11	21	reviewed	nc	nc
8/9/1985	12:43:03	36.0943333	-120.1148333	10.427	3.55	md	6	160	0.1559	0.02	nc	nc52991	2016-12-03T08:25:26.901Z	10 km N of Avenal, California	earthquake	0.74	2.42	0.14	4	reviewed	nc	nc
8/9/1985	12:42:18	36.0885	-120.1341667	8.918	3.4	ml	43	51	0.03423	0.1	nc	nc52988	2016-12-03T08:25:21.430Z	9 km N of Avenal, California	earthquake	0.18	0.27		0	reviewed	nc	nc
8/9/1985	11:39:56	36.089	-120.0571667	8.14	2.55	md	29	180	0.05135	0.08	nc	nc52579	2016-12-03T08:24:39.240Z	11 km NE of Avenal, California	earthquake	0.27	0.21	0.09	30	reviewed	nc	nc
8/9/1985	11:15:33	36.0768333	-119.9968333	12.616	3	ml	41	166	0.01802	0.29	nc	nc52967	2016-12-03T08:24:18.300Z	8 km NNW of Kettleman City, California	earthquake	0.39	0.39		0	reviewed	nc	nc
8/9/1985	9:55:07	36.033	-120.0555	11.421	3.25	md	49	108	0.05225	0.16	nc	nc52963	2016-12-03T08:23:59.170Z	7 km ENE of Avenal, California	earthquake	0.33	0.44	0.15	43	reviewed	nc	nc
8/9/1985	9:33:08	36.0965	-120.0535	8.69	3.1	ml	36	182	0.05766	0.11	nc	nc53033	2016-12-03T08:23:36.170Z	12 km NNE of Avenal, California	earthquake	0.43	0.15		0	reviewed	nc	nc
8/9/1985	9:31:20	36.1078333	-120.0401667	8.27	3	ml	29	197	0.07297	0.05	nc	nc53032	2016-12-03T08:23:26.650Z	11 km SSE of Huron, California	earthquake	0.26	0.19		0	reviewed	nc	nc
8/9/1985	9:14:08	36.1038333	-120.0505	8.28	2.38	md	31	183	0.06396	0.18	nc	nc52961	2016-12-03T08:23:15.540Z	11 km SSE of Huron, California	earthquake	0.51	0.37	0.13	27	reviewed	nc	nc
8/9/1985	9:00:35	36.1121667	-120.0388333	8.08	3.01	md	30	197	0.07658	0.06	nc	nc52960	2016-12-03T08:22:59.220Z	11 km SSE of Huron, California	earthquake	0.46	0.16	0.16	29	reviewed	nc	nc
8/9/1985	8:47:09	36.0838333	-120.0051667	11.974	3	ml	40	131	0.01441	0.24	nc	nc52959	2016-12-03T08:22:51.630Z	9 km NNW of Kettleman City, California	earthquake	0.31	0.39		0	reviewed	nc	nc
8/9/1985	8:43:31	36.117	-120.1565	8.1	2	md	20	121	0.06757	0.02	nc	nc52502	2016-12-03T08:22:42.893Z	10 km SSW of Huron, California	earthquake	0.27	0.42	0.12	18	reviewed	nc	nc
8/9/1985	7:37:31	36.0343333	-120.0766667	10.311	2.24	md	28	160	0.03784	0.07	nc	nc52499	2016-12-03T08:22:16.560Z	5 km NE of Avenal, California	earthquake	0.26	0.16	0.14	24	reviewed	nc	nc
8/9/1985	5:03:11	36.1168333	-120.1318333	3.507	2.01	md	13	146	0.05856	0.04	nc	nc52496	2016-12-03T08:21:55.830Z	9 km SSW of Huron, California	earthquake	1.6	2.23	0.09	16	reviewed	nc	nc
8/9/1985	5:00:48	36.1196667	-120.0626667	7.4	2.39	md	27	194	0.07027	0.09	nc	nc52495	2016-12-03T08:21:50.660Z	9 km SSE of Huron, California	earthquake	0.48	0.19	0.2	28	reviewed	nc	nc
8/9/1985	3:53:10	36.0771667	-120.1335	5.81	2.17	md	21	116	0.02523	0.06	nc	nc52492	2016-12-03T08:21:30.587Z	8 km N of Avenal, California	earthquake	0.44	0.39	0.18	17	reviewed	nc	nc
8/9/1985	3:30:59	36.0746667	-120.131	4.64	2.02	md	18	163	0.02252	0.06	nc	nc52490	2016-12-03T08:21:19.929Z	7 km N of Avenal, California	earthquake	0.93	0.73	0.13	14	reviewed	nc	nc
8/9/1985	2:51:59	36.1063333	-119.969	13.45	2.47	md	18	246	0.1225	0.07	nc	nc52958	2016-12-03T08:21:01.287Z	10 km N of Kettleman City, California	earthquake	0.68	0.97	0.14	15	reviewed	nc	nc
8/9/1985	2:36:08	36.0843333	-120.0293333	8.24	2.03	md	13	251	0.06937	0.06	nc	nc52486	2016-12-03T08:20:53.309Z	10 km NW of Kettleman City, California	earthquake	1.55	0.31	0.18	11	reviewed	nc	nc
8/9/1985	1:20:59	36.0936667	-120.0565	7.55	2.21	md	14	181	0.05405	0.06	nc	nc52481	2016-12-03T08:20:09.044Z	11 km NNE of Avenal, California	earthquake	0.43	0.32	0.1	15	reviewed	nc	nc
8/9/1985	1:20:26	35.58	-119.754	5.085	2.27	mc	0	224.1		0.404	ci	ci109034	2016-02-03T20:01:28.430Z	33km NW of Buttonwillow, CA	earthquake				7	reviewed	ci	ci
8/8/1985	16:13:09	36.119	-120.1195	7.82	2.41	md	22	157	0.05856	0.06	nc	nc52517	2016-12-03T08:18:20.745Z	9 km S of Huron, California	earthquake	0.5	0.5	0.17	21	reviewed	nc	nc
8/8/1985	16:05:44	36.123	-120.1313333	6.915	2.1	md	15	148	0.06486	0.04	nc	nc52516	2016-12-03T08:18:16.554Z	9 km SSW of Huron, California	earthquake	0.7	0.8	0.18	16	reviewed	nc	nc
8/8/1985	15:17:40	36.0888333	-120.1145	6.636	2.15	md	19	227	0.02793	0.09	nc	nc52513	2016-12-03T08:18:08.522Z	9 km N of Avenal, California	earthquake	1.12	0.44	0.08	18	reviewed	nc	nc
8/8/1985	8:30:11	36.108	-120.0948333	8.08	2.02	md	22	167	0.04865	0.09	nc	nc52440	2016-12-03T08:17:06.613Z	10 km S of Huron, California	earthquake	0.49	0.27	0.12	16	reviewed	nc	nc
8/8/1985	4:58:42	36.0005	-120.5585	4.505	2.01	md	33	65	0.04414	0.05	nc	nc52427	2016-12-03T08:16:28.960Z	15 km NW of Parkfield, California	earthquake	0.23	0.3	0.16	28	reviewed	nc	nc
8/7/1985	18:29:23	36.1708333	-120.1213333	4.157	2.39	md	24	154	0.08288	0.15	nc	nc52544	2016-12-03T08:14:22.581Z	3 km SSW of Huron, California	earthquake	0.67	0.91	0.2	11	reviewed	nc	nc
8/7/1985	17:18:59	36.163	-119.468	5.529	2.35	mc	0	283.8		0.863	ci	ci108860	2016-02-04T04:31:46.050Z	11km NE of Corcoran, CA	earthquake				9	reviewed	ci	ci
8/7/1985	14:31:14	36.0123333	-120.1558333	14.039	2.3	md	28	127	0.06126	0.08	nc	nc52330	2016-12-03T08:13:31.890Z	2 km WNW of Avenal, California	earthquake	0.29	0.55	0.14	24	reviewed	nc	nc
8/7/1985	11:10:46	36.0248333	-120.0496667	10.752	2.03	md	18	120	0.06036	0.04	nc	nc52323	2016-12-03T08:12:49.656Z	7 km ENE of Avenal, California	earthquake	0.41	0.2	0.12	12	reviewed	nc	nc
8/7/1985	11:07:33	36.0248333	-120.153	14.645	2.22	md	23	120	0.05045	0.09	nc	nc52322	2016-12-03T08:12:45.723Z	3 km NW of Avenal, California	earthquake	0.35	0.64	0.15	22	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
8/7/1985	10:55:22	36.1233333	-120.1056667	7.06	3.1	ml	32	162	0.06216	0.05	nc	nc52319	2016-12-03T08:12:35.740Z	8 km S of Huron, California	earthquake	0.23	0.25		0	reviewed	nc	nc
8/7/1985	6:14:14	36.114	-120.1645	5.56	2.13	md	17	185	0.06937	0.06	nc	nc52311	2016-12-03T08:11:27.768Z	11 km SSW of Huron, California	earthquake	0.72	1.11	0.04	25	reviewed	nc	nc
8/7/1985	6:10:25	36.1226667	-120.1498333	7.91	2.37	md	29	130	0.06937	0.05	nc	nc52310	2016-12-03T08:11:22.330Z	9 km SSW of Huron, California	earthquake	0.19	0.33	0.12	26	reviewed	nc	nc
8/7/1985	3:12:33	36.0146667	-120.1555	14.919	2.85	md	33	126	0.05946	0.09	nc	nc53125	2016-12-03T08:10:34.710Z	2 km WNW of Avenal, California	earthquake	0.27	0.5	0.1	24	reviewed	nc	nc
8/7/1985	3:10:13	36.0048333	-120.1575	11.911	2.21	md	10	162	0.06847	0.02	nc	nc54290	2016-12-03T08:10:25.300Z	2 km W of Avenal, California	earthquake	0.7	1.4		1	reviewed	nc	nc
8/7/1985	1:38:05	36.004	-120.1431667	17.752	2.04	md	24	187	0.06306	0.03	nc	nc53121	2016-12-03T08:10:14.579Z	1 km W of Avenal, California	earthquake	0.4	0.63	0.16	18	reviewed	nc	nc
8/7/1985	0:44:54	36.0085	-120.1396667	16.697	2.52	md	32	175	0.05766	0.06	nc	nc53119	2016-12-03T08:09:41.827Z	1 km WNW of Avenal, California	earthquake	0.31	0.45	0.11	30	reviewed	nc	nc
8/7/1985	0:42:19	36.008	-120.1553333	14.504	2.21	md	22	130	0.06486	0.08	nc	nc53118	2016-12-03T08:09:37.787Z	2 km W of Avenal, California	earthquake	0.34	0.62	0.19	20	reviewed	nc	nc
8/7/1985	0:35:12	35.995	-120.1678333	9.729	2.23	md	18	128	0.08108	0.06	nc	nc53117	2016-12-03T08:09:30.001Z	3 km WSW of Avenal, California	earthquake	0.32	0.55	0.12	17	reviewed	nc	nc
8/7/1985	0:33:30	36.013	-120.1473333	12.947	2.28	md	32	133	0.05676	0.08	nc	nc53116	2016-12-03T08:09:24.190Z	1 km WNW of Avenal, California	earthquake	0.3	0.47	0.16	28	reviewed	nc	nc
8/7/1985	0:28:45	36.0061667	-120.148	15.881	3.78	md	12	168	0.06306	0.06	nc	nc53203	2016-12-03T08:09:18.213Z	1 km W of Avenal, California	earthquake	0.81	1.47		1	reviewed	nc	nc
8/7/1985	0:28:12	36	-120.1623333	15.481	3.2	ml	52	52	0.05495	0.15	nc	nc53202	2016-12-03T08:09:12.990Z	3 km W of Avenal, California	earthquake	0.21	0.45		0	reviewed	nc	nc
8/7/1985	0:16:03	36.009	-120.1495	18.056	4.3	ml	61	57	0.06126	0.12	nc	nc53113	2016-12-03T08:08:49.300Z	1 km WNW of Avenal, California	earthquake	0.21	0.42		0	reviewed	nc	nc
8/6/1985	18:11:13	36.0426667	-120.0758333	10.417	3.06	md	56	107	0.03333	0.15	nc	nc53772	2016-12-03T08:06:26.100Z	6 km NE of Avenal, California	earthquake	0.4	0.34	0.11	30	reviewed	nc	nc
8/6/1985	17:34:43	36.0948333	-120.0811667	7.59	2.25	md	30	171	0.04054	0.19	nc	nc53759	2016-12-03T08:05:53.100Z	10 km NNE of Avenal, California	earthquake	0.46	0.3	0.1	18	reviewed	nc	nc
8/6/1985	17:07:54	36.0805	-120.1511667	3.36	2.15	md	12	206	0.03874	0.04	nc	nc53754	2016-12-03T08:05:49.274Z	8 km NNW of Avenal, California	earthquake	1.99	2.03	0.17	14	reviewed	nc	nc
8/6/1985	16:56:59	36.0251667	-120.054	0.807	2.19	md	24	103	0.05766	1.47	nc	nc53750	2016-12-03T08:05:41.959Z	7 km ENE of Avenal, California	earthquake	3.52	16.61	0.13	16	reviewed	nc	nc
8/6/1985	16:27:25	36.037	-120.0635	10.157	2.75	md	38	107	0.04414	0.1	nc	nc53746	2016-12-03T08:05:36.470Z	6 km ENE of Avenal, California	earthquake	0.23	0.22	0.12	28	reviewed	nc	nc
8/6/1985	15:21:01	36.1148333	-120.104	8.57	2.14	md	17	164	0.05405	0.09	nc	nc52477	2016-12-03T08:05:21.095Z	9 km S of Huron, California	earthquake	0.47	0.31	0.12	14	reviewed	nc	nc
8/6/1985	12:51:12	36.121	-120.1493333	8.28	2.21	md	30	129	0.06847	0.04	nc	nc52466	2016-12-03T08:04:48.560Z	9 km SSW of Huron, California	earthquake	0.28	0.41	0.09	29	reviewed	nc	nc
8/6/1985	7:43:21	36.1166667	-120.113	7.45	2.31	md	32	167	0.05586	0.11	nc	nc52453	2016-12-03T08:03:20.430Z	9 km S of Huron, California	earthquake	0.46	0.37	0.11	29	reviewed	nc	nc
8/6/1985	6:55:41	36.1031667	-120.0825	8.196	2.29	md	22	171	0.04775	0.05	nc	nc52558	2016-12-03T08:03:05.266Z	11 km S of Huron, California	earthquake	0.53	0.18	0.1	19	reviewed	nc	nc
8/6/1985	6:55:10	36.1066667	-120.09	7.71	2.15	md	11	199	0.04865	0.02	nc	nc52557	2016-12-03T08:03:01.255Z	10 km S of Huron, California	earthquake	1.6	0.69	0.09	6	reviewed	nc	nc
8/6/1985	6:54:30	36.0613333	-120.0615	13.276	2.23	md	29	165	0.03874	0.09	nc	nc52555	2016-12-03T08:02:54.108Z	8 km NE of Avenal, California	earthquake	0.65	0.33	0.1	27	reviewed	nc	nc
8/6/1985	4:22:13	36.0298333	-120.0156667	-0.183	2.43	md	44	109	0.08198	0.3	nc	nc52302	2016-12-03T08:02:38.470Z	5 km WNW of Kettleman City, California	earthquake	0.97	7.53	0.18	22	reviewed	nc	nc
8/5/1985	18:42:42	36.1796667	-119.978	7.3	2.1	md	21	247	0.1099	0.08	nc	nc52283	2016-12-03T08:01:12.940Z	11 km SW of Lemoore Station, California	earthquake	1.34	0.4	0.12	17	reviewed	nc	nc
8/5/1985	17:21:09	36.0911667	-120.0121667	7.946	2.74	md	25	201	0.08468	0.05	nc	nc52333	2016-12-03T08:00:54.200Z	10 km NNW of Kettleman City, California	earthquake	0.74	0.15	0.27	17	reviewed	nc	nc
8/5/1985	17:20:47	36.079	-120.0371667	8.316	2.48	md	32	220	0.06126	0.07	nc	nc52279	2016-12-03T08:00:48.950Z	10 km NW of Kettleman City, California	earthquake	0.38	0.13	0.29	23	reviewed	nc	nc
8/5/1985	16:39:37	35.9585	-120.0448333	13.416	2.08	md	30	105	0.1153	0.09	nc	nc52274	2016-12-03T08:00:30.009Z	9 km ESE of Avenal, California	earthquake	0.31	0.59	0.15	19	reviewed	nc	nc
8/5/1985	16:38:28	36.1081667	-120.0161667	7.192	2.28	md	7	263	0.08919	0.03	nc	nc52273	2016-12-03T08:00:25.918Z	12 km NNW of Kettleman City, California	earthquake	2.4	0.38	0.08	3	reviewed	nc	nc
8/5/1985	15:22:24	36.1093333	-120.0765	9.377	3.7	ml	41	101	0.002703	0.09	nc	nc54184	2016-12-03T08:00:17.490Z	10 km SSE of Huron, California	earthquake	0.23	0.17		0	reviewed	nc	nc
8/5/1985	14:45:37	36.1183333	-120.0876667	8.607	4.3	ml	40	123	0.01351	0.11	nc	nc54180	2016-12-03T07:59:54.630Z	Central California	earthquake	0.34	0.25		0	reviewed	nc	nc
8/5/1985	13:56:10	36.14	-120.1075	5.67	2.23	md	27	173	0.07928	0.11	nc	nc52269	2016-12-03T07:59:44.426Z	6 km S of Huron, California	earthquake	0.88	0.76	0.12	21	reviewed	nc	nc
8/5/1985	13:17:08	36.068	-120.1255	9.875	2.14	md	28	108	0.01441	0.03	nc	nc52268	2016-12-03T07:59:36.745Z	7 km N of Avenal, California	earthquake	0.38	0.24	0.09	23	reviewed	nc	nc
8/5/1985	12:10:29	36.1185	-120.1378333	5.965	2.41	md	22	140	0.06216	0.09	nc	nc52266	2016-12-03T07:59:09.430Z	Central California	earthquake	0.49	0.6	0.21	30	reviewed	nc	nc
8/5/1985	10:14:18	36.0385	-120.0628333	9.367	2.1	md	22	118	0.04414	0.03	nc	nc53990	2016-12-03T07:58:46.515Z	7 km ENE of Avenal, California	earthquake	0.33	0.14	0.15	18	reviewed	nc	nc
8/5/1985	9:31:11	36.0525	-120.071	12.876	2.49	md	25	163	0.03243	0.09	nc	nc53776	2016-12-03T07:58:38.060Z	7 km NE of Avenal, California	earthquake	0.52	0.27	0.15	28	reviewed	nc	nc
8/5/1985	8:15:10	36.0515	-120.1023333	9.605	2.01	md	22	197	0.01081	0.06	nc	nc52254	2016-12-03T07:58:19.967Z	5 km NNE of Avenal, California	earthquake	0.72	0.26	0.13	21	reviewed	nc	nc
8/5/1985	8:07:30	36.1148333	-120.0508333	7.41	2.44	md	30	195	0.07207	0.06	nc	nc52252	2016-12-03T07:58:10.820Z	10 km SSE of Huron, California	earthquake	0.56	0.17	0.17	27	reviewed	nc	nc
8/5/1985	6:31:05	36.0911667	-120.0853333	7.306	2.3	md	27	171	0.03604	0.13	nc	nc54019	2016-12-03T07:57:41.420Z	10 km NNE of Avenal, California	earthquake	0.43	0.23	0.11	17	reviewed	nc	nc
8/5/1985	6:11:56	35.973	-119.933	5.23	2.26	mc	0	178.1	0.3913	0.409	ci	ci108547	2016-02-03T22:00:18.920Z	5km SSE of Kettleman City, CA	earthquake				11	reviewed	ci	ci
8/5/1985	5:59:29	36.016	-120.0465	11.287	2.74	md	55	103	0.06847	0.16	nc	nc54015	2016-12-03T07:57:34.330Z	7 km E of Avenal, California	earthquake	0.34	0.29	0.11	24	reviewed	nc	nc
8/5/1985	5:14:55	35.9681667	-120.0633333	-0.058	2.37	md	31	114	0.1	0.33	nc	nc54008	2016-12-03T07:57:04.540Z	7 km SE of Avenal, California	earthquake	0.54	5.04	0.23	22	reviewed	nc	nc
8/5/1985	5:08:12	36.11	-120.0995	7.74	2.33	md	33	165	0.04955	0.05	nc	nc52245	2016-12-03T07:56:57.720Z	10 km S of Huron, California	earthquake	0.2	0.12	0.14	27	reviewed	nc	nc
8/5/1985	4:33:50	36.0406667	-120.077	9.721	2.07	md	23	115	0.03333	0.05	nc	nc52243	2016-12-03T07:56:38.690Z	6 km NE of Avenal, California	earthquake	0.2	0.24	0.08	15	reviewed	nc	nc
8/5/1985	4:32:36	36.0493333	-120.0238333	-0.29	2.22	md	13	136	0.3162	0.22	nc	nc1130236	2016-12-03T07:56:34.800Z	7 km NW of Kettleman City, California	earthquake	1.45	5.96	0.09	7	reviewed	nc	nc
8/5/1985	4:32:31	36.0418333	-120.072	10.087	2.51	md	11	116	0.03604	0.04	nc	nc52242	2016-12-03T07:56:30.793Z	6 km NE of Avenal, California	earthquake	0.6	0.31	0.19	9	reviewed	nc	nc
8/5/1985	3:42:20	36.0251667	-120.1346667	5.378	2.06	md	6	161	0.04144	0.02	nc	nc54146	2016-12-03T07:56:19.741Z	2 km NNW of Avenal, California	earthquake	1.82	2.28		1	reviewed	nc	nc
8/5/1985	3:13:54	36.0378333	-120.065	9.597	2.69	md	46	142	0.04324	0.14	nc	nc52239	2016-12-03T07:56:14.690Z	6 km ENE of Avenal, California	earthquake	0.27	0.36	0.15	32	reviewed	nc	nc
8/5/1985	3:03:13	36.0223333	-120.0658333	9.987	2.83	md	50	102	0.05225	0.11	nc	nc52238	2016-12-03T07:56:06.940Z	6 km ENE of Avenal, California	earthquake	0.23	0.19	0.09	38	reviewed	nc	nc
8/5/1985	1:56:26	36.0495	-120.0676667	10.233	2.15	md	25	174	0.03604	0.18	nc	nc52231	2016-12-03T07:55:38.934Z	7 km NE of Avenal, California	earthquake	0.67	0.36	0.13	19	reviewed	nc	nc
8/4/1985	23:45:51	36.016	-120.0568333	9.156	3.2	ml	72	98	0.2333	0.19	nc	nc52226	2016-12-03T07:55:12.140Z	6 km ENE of Avenal, California	earthquake	0.31	0.47		0	reviewed	nc	nc
8/4/1985	23:42:39	36.1345	-120.0853333	11.475	2.06	md	18	159	0.1144	0.11	nc	nc52225	2016-12-03T07:55:03.323Z	7 km SSE of Huron, California	earthquake	0.74	1.21	0.18	14	reviewed	nc	nc
8/4/1985	23:39:30	36.0161667	-120.0231667	12.275	2.92	md	47	85	0.2378	0.18	nc	nc52224	2016-12-03T07:54:58.250Z	5 km W of Kettleman City, California	earthquake	0.31	0.61	0.12	28	reviewed	nc	nc
8/4/1985	22:48:56	36.0915	-120.0775	6.923	2.11	md	23	117	0.1568	0.05	nc	nc54341	2016-12-03T07:54:37.240Z	10 km NNE of Avenal, California	earthquake	0.23	0.69	0.11	17	reviewed	nc	nc
8/4/1985	22:17:47	36.1396667	-120.1366667	11.443	2.19	md	26	147	0.1171	0.11	nc	nc52223	2016-12-03T07:54:24.400Z	7 km SSW of Huron, California	earthquake	0.32	0.43	0.15	26	reviewed	nc	nc
8/4/1985	22:15:00	36.035	-120.0613333	12.206	3.25	md	59	103	0.2144	0.21	nc	nc52222	2016-12-03T07:54:15.130Z	6 km ENE of Avenal, California	earthquake	0.41	0.61	0.1	41	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
8/4/1985	21:44:18	36.1335	-120.0773333	8.5	2.53	md	39	192	0.1153	0.15	nc	nc1130226	2016-12-03T07:53:47.210Z	8 km SSE of Huron, California	earthquake	0.54	0.87	0.12	31	reviewed	nc	nc
8/4/1985	21:35:25	36.0188333	-120.063	17.305	2	md	10	216	0.2306	0.05	nc	nc54138	2016-12-03T07:53:37.858Z	6 km ENE of Avenal, California	earthquake	1.06	2.59	0.32	4	reviewed	nc	nc
8/4/1985	21:33:05	36.024	-120.0531667	8.405	2.08	md	17	178	0.2261	0.08	nc	nc52217	2016-12-03T07:53:34.341Z	7 km ENE of Avenal, California	earthquake	0.45	1.12	0.25	8	reviewed	nc	nc
8/4/1985	20:31:16	36.0355	-120.035	15.534	2.04	md	20	221	0.2162	0.15	nc	nc54224	2016-12-03T07:53:19.431Z	7 km WNW of Kettleman City, California	earthquake	0.96	1.95	0.11	16	reviewed	nc	nc
8/4/1985	20:25:03	36.0096667	-119.969	6.753	2.78	md	45	65	0.2559	0.3	nc	nc54223	2016-12-03T07:53:10.880Z	0 km WNW of Kettleman City, California	earthquake	0.76	2.14	0.14	21	reviewed	nc	nc
8/4/1985	20:16:52	36.0168333	-120.0846667	2.225	2.34	md	33	170	0.2234	0.26	nc	nc52216	2016-12-03T07:52:59.680Z	4 km ENE of Avenal, California	earthquake	0.68	1.37	0.11	24	reviewed	nc	nc
8/4/1985	20:10:59	36.1666667	-119.9551667	30.795	2.45	md	26	158	0.1324	0.85	nc	nc52215	2016-12-03T07:52:53.996Z	11 km SSW of Lemoore Station, California	earthquake	1.66	4.13	0.13	20	reviewed	nc	nc
8/4/1985	19:43:25	36.0303333	-120.1128333	-0.433	2.76	md	9	260	0.2081	0.36	nc	nc1130224	2016-12-03T07:52:38.330Z	3 km NNE of Avenal, California	earthquake	3.45	16.91	0.08	3	reviewed	nc	nc
8/4/1985	19:32:51	36.0355	-120.122	7.024	2.4	md	18	177	0.2045	0.06	nc	nc54298	2016-12-03T07:52:20.585Z	3 km N of Avenal, California	earthquake	0.34	0.97	0.14	11	reviewed	nc	nc
8/4/1985	19:17:22	36.1198333	-120.144	9.385	2.48	md	32	147	0.1378	0.17	nc	nc1130223	2016-12-03T07:52:12.370Z	9 km SSW of Huron, California	earthquake	0.5	1.06	0.13	28	reviewed	nc	nc
8/4/1985	18:23:56	36.1323333	-120.086	13.264	2.1	md	23	159	0.1162	0.09	nc	nc54370	2016-12-03T07:51:34.195Z	7 km S of Huron, California	earthquake	0.51	0.92	0.2	15	reviewed	nc	nc
8/4/1985	18:21:13	36.0581667	-119.9898333	5.689	2.16	md	26	79	0.3099	0.08	nc	nc54369	2016-12-03T07:51:28.940Z	6 km NNW of Kettleman City, California	earthquake	0.41	1.48	0.23	16	reviewed	nc	nc
8/4/1985	18:13:14	36.112	-120.1151667	10.053	2.82	md	57	103	0.1387	0.21	nc	nc52207	2016-12-03T07:51:22.010Z	10 km S of Huron, California	earthquake	0.38	0.47	0.24	44	reviewed	nc	nc
8/4/1985	18:08:06	36.0276667	-120.0688333	7.015	2.25	md	38	106	0.2207	0.18	nc	nc54368	2016-12-03T07:51:11.080Z	6 km ENE of Avenal, California	earthquake	0.45	0.87	0.12	28	reviewed	nc	nc
8/4/1985	17:53:42	36.0235	-120.0851667	11.245	2.68	md	55	102	0.2252	0.16	nc	nc54367	2016-12-03T07:51:01.770Z	4 km ENE of Avenal, California	earthquake	0.44	0.6	0.17	29	reviewed	nc	nc
8/4/1985	17:40:05	36.1093333	-120.0466667	9.473	2.28	md	24	185	0.1423	0.18	nc	nc54364	2016-12-03T07:50:55.911Z	11 km SSE of Huron, California	earthquake	0.5	0.8	0.15	18	reviewed	nc	nc
8/4/1985	17:37:52	36.1198333	-120.1196667	4.553	2.31	md	22	184	0.1315	0.09	nc	nc52205	2016-12-03T07:50:52.165Z	9 km S of Huron, California	earthquake	0.56	0.94	0.13	17	reviewed	nc	nc
8/4/1985	17:36:00	36.0286667	-120.0865	7.554	2.51	md	52	137	0.2198	0.29	nc	nc54483	2016-12-03T07:50:46.770Z	4 km NE of Avenal, California	earthquake	0.56	0.79	0.13	29	reviewed	nc	nc
8/4/1985	17:34:41	36.0368333	-120.0576667	8.444	3.12	md	72	104	0.2126	0.18	nc	nc54363	2016-12-03T07:50:39.440Z	Central California	earthquake	0.31	0.6	0.13	63	reviewed	nc	nc
8/4/1985	17:11:13	36.084	-120.0683333	6.943	2.51	md	49	90	0.1649	0.14	nc	nc54360	2016-12-03T07:50:21.450Z	10 km NNE of Avenal, California	earthquake	0.59	0.8	0.18	31	reviewed	nc	nc
8/4/1985	17:04:36	36.0303333	-120.0636667	9.164	2.46	md	51	106	0.2189	0.2	nc	nc54359	2016-12-03T07:50:10.960Z	6 km ENE of Avenal, California	earthquake	0.4	0.69	0.12	26	reviewed	nc	nc
8/4/1985	17:02:21	36.012	-120.0418333	10.975	2.14	md	26	181	0.2387	0.06	nc	nc54358	2016-12-03T07:49:50.067Z	7 km W of Kettleman City, California	earthquake	0.26	0.45	0.1	20	reviewed	nc	nc
8/4/1985	16:59:03	36.1025	-120.076	9.863	2.06	md	26	159	0.1459	0.07	nc	nc54482	2016-12-03T07:49:40.891Z	11 km SSE of Huron, California	earthquake	0.31	0.56	0.17	15	reviewed	nc	nc
8/4/1985	16:56:20	36.0848333	-120.0858333	-0.331	2.14	md	18	201	0.164	0.36	nc	nc54356	2016-12-03T07:49:33.278Z	9 km NNE of Avenal, California	earthquake	1.84	5.24	0.13	12	reviewed	nc	nc
8/4/1985	16:46:46	36.1186667	-120.096	9.243	2.33	md	36	156	0.1297	0.23	nc	nc54354	2016-12-03T07:49:24.170Z	9 km S of Huron, California	earthquake	0.54	0.67	0.06	18	reviewed	nc	nc
8/4/1985	16:40:13	36.1043333	-120.1	7.933	2.39	md	37	111	0.145	0.21	nc	nc52204	2016-12-03T07:49:04.160Z	10 km S of Huron, California	earthquake	0.57	0.74	0.15	26	reviewed	nc	nc
8/4/1985	16:30:01	36.0241667	-120.0566667	9.685	2.25	md	21	118	0.2252	0.14	nc	nc52203	2016-12-03T07:48:55.908Z	6 km ENE of Avenal, California	earthquake	0.72	0.59	0.11	19	reviewed	nc	nc
8/4/1985	16:10:51	36.0776667	-120.1188333	6.289	2.12	md	25	210	0.173	0.08	nc	nc54704	2016-12-03T07:48:31.390Z	8 km N of Avenal, California	earthquake	0.47	0.91	0.1	23	reviewed	nc	nc
8/4/1985	16:00:50	36.111	-120.0871667	9.736	2	md	15	115	0.1378	0.13	nc	nc54700	2016-12-03T07:48:22.251Z	10 km S of Huron, California	earthquake	0.81	1.23	0.14	8	reviewed	nc	nc
8/4/1985	15:52:48	36.1253333	-120.1096667	7.223	2.31	md	24	188	0.1252	0.12	nc	nc54831	2016-12-03T07:48:18.453Z	8 km S of Huron, California	earthquake	0.64	0.85	0.12	17	reviewed	nc	nc
8/4/1985	15:51:50	36.0243333	-120.0615	10.536	3.33	md	59	93	0.2252	0.16	nc	nc54699	2016-12-03T07:48:13.100Z	6 km ENE of Avenal, California	earthquake	0.28	0.63	0.22	40	reviewed	nc	nc
8/4/1985	15:34:13	36.098	-120.1031667	9.813	2.71	md	52	104	0.1514	0.14	nc	nc54695	2016-12-03T07:47:49.120Z	10 km NNE of Avenal, California	earthquake	0.35	0.51	0.16	33	reviewed	nc	nc
8/4/1985	15:15:39	36.0333333	-120.0683333	14.134	4.1	ml	100	83	0.2153	0.2	nc	nc54694	2016-12-03T07:47:34.530Z	6 km ENE of Avenal, California	earthquake	0.26	0.48		0	reviewed	nc	nc
8/4/1985	15:04:32	36.0296667	-120.077	8.794	2.42	md	36	102	0.2189	0.24	nc	nc54919	2016-12-03T07:47:15.590Z	5 km ENE of Avenal, California	earthquake	0.37	0.9	0.16	24	reviewed	nc	nc
8/4/1985	15:01:43	36.0378333	-120.0615	9.149	2.02	md	17	176	0.2117	0.08	nc	nc55027	2016-12-03T07:47:09.735Z	7 km ENE of Avenal, California	earthquake	0.43	1.47	0.13	14	reviewed	nc	nc
8/4/1985	14:41:45	36.1268333	-120.1233333	13.035	2.07	md	11	199	0.1261	0.02	nc	nc54969	2016-12-03T07:46:40.175Z	8 km SSW of Huron, California	earthquake	1.44	1.17	0.18	8	reviewed	nc	nc
8/4/1985	14:41:17	36.029	-120.0658333	9.665	2.04	md	12	174	0.2198	0.03	nc	nc54869	2016-12-03T07:46:36.503Z	6 km ENE of Avenal, California	earthquake	0.3	0.9	0.15	10	reviewed	nc	nc
8/4/1985	14:36:55	36.1118333	-120.1046667	7.693	2.82	md	50	157	0.1378	0.16	nc	nc54868	2016-12-03T07:46:28.280Z	10 km S of Huron, California	earthquake	0.28	0.45	0.07	29	reviewed	nc	nc
8/4/1985	14:31:27	36.0896667	-120.024	-0.331	2.01	md	27	171	0.1658	1.28	nc	nc54967	2016-12-03T07:46:22.493Z	10 km NNW of Kettleman City, California	earthquake	5.25	25.08	0.12	14	reviewed	nc	nc
8/4/1985	14:30:33	36.098	-120.113	0.443	2.16	md	23	161	0.1523	0.25	nc	nc54866	2016-12-03T07:46:18.531Z	10 km N of Avenal, California	earthquake	0.89	4.87	0.15	16	reviewed	nc	nc
8/4/1985	14:28:18	36.0446667	-120.0673333	15.224	2.21	md	32	153	0.2045	0.14	nc	nc54865	2016-12-03T07:46:09.720Z	7 km NE of Avenal, California	earthquake	0.39	0.68	0.13	22	reviewed	nc	nc
8/4/1985	14:25:11	36.0211667	-120.0406667	13.405	2.06	md	22	121	0.2297	0.04	nc	nc52687	2016-12-03T07:46:04.353Z	7 km WNW of Kettleman City, California	earthquake	0.22	0.65	0.16	14	reviewed	nc	nc
8/4/1985	14:21:50	36.1286667	-120.1091667	7.84	2.47	md	30	157	0.1216	0.13	nc	nc52685	2016-12-03T07:45:59.200Z	Central California	earthquake	0.47	1.03	0.14	19	reviewed	nc	nc
8/4/1985	14:10:25	36.046	-120.058	15.794	2.24	md	12	177	0.2036	0.11	nc	nc52790	2016-12-03T07:45:49.789Z	7 km NE of Avenal, California	earthquake	0.51	1.02	0.06	9	reviewed	nc	nc
8/4/1985	14:07:12	35.9391667	-120.0885	7.445	2.48	md	9	213	0.1964	0.03	nc	nc52678	2016-12-03T07:45:41.731Z	8 km SSE of Avenal, California	earthquake	1.34	1.38	0.18	2	reviewed	nc	nc
8/4/1985	14:02:11	35.9183333	-120.0286667	9.254	2.43	md	19	125	0.2144	0.07	nc	nc52677	2016-12-03T07:45:38.087Z	11 km SSW of Kettleman City, California	earthquake	0.34	0.95	0.13	17	reviewed	nc	nc
8/4/1985	13:42:19	36.1095	-120.0776667	3.554	2.14	md	12	174	0.1387	0.1	nc	nc52577	2016-12-03T07:45:11.930Z	10 km SSE of Huron, California	earthquake	0.92	2.07	0.06	7	reviewed	nc	nc
8/4/1985	13:38:31	36.1446667	-120.1053333	10.853	2.03	md	18	157	0.1054	0.09	nc	nc52576	2016-12-03T07:45:07.913Z	6 km S of Huron, California	earthquake	0.48	0.74	0.11	11	reviewed	nc	nc
8/4/1985	13:34:37	36.007	-120.0386667	10.735	3.35	md	52	73	0.2441	0.27	nc	nc52621	2016-12-03T07:45:02.270Z	6 km W of Kettleman City, California	earthquake	0.64	0.94	0.2	26	reviewed	nc	nc
8/4/1985	13:33:53	36.0983333	-120.076	6.543	2.82	md	46	57	0.1505	0.3	nc	nc52575	2016-12-03T07:44:55.000Z	11 km NNE of Avenal, California	earthquake	0.63	1.28	0.33	24	reviewed	nc	nc
8/4/1985	13:32:10	35.8906667	-120.0651667	13.184	2.4	md	16	248	0.1757	0.05	nc	nc54263	2016-12-03T07:44:49.378Z	13 km SSE of Avenal, California	earthquake	1.18	0.88	0.16	20	reviewed	nc	nc
8/4/1985	13:31:35	36.1193333	-120.1298333	6.503	2.02	md	19	191	0.1342	0.06	nc	nc54175	2016-12-03T07:44:45.462Z	9 km SSW of Huron, California	earthquake	0.72	0.62	0.13	13	reviewed	nc	nc
8/4/1985	13:28:47	36.0445	-120.067	10.326	2.31	md	25	160	0.2045	0.15	nc	nc52574	2016-12-03T07:44:37.814Z	7 km NE of Avenal, California	earthquake	0.4	0.84	0.24	11	reviewed	nc	nc
8/4/1985	13:28:43	35.946	-119.873	5.093	2.15	mc	0	179.3		0.332	ci	ci108334	2016-02-03T20:41:04.940Z	11km SE of Kettleman City, CA	earthquake				6	reviewed	ci	ci
8/4/1985	13:22:51	36.0273333	-120.0663333	12.405	2.76	md	47	102	0.2216	0.16	nc	nc52572	2016-12-03T07:44:25.120Z	6 km ENE of Avenal, California	earthquake	0.4	0.6	0.14	25	reviewed	nc	nc
8/4/1985	13:18:38	36.116	-120.1013333	11.733	3.3	ml	55	147	0.1333	0.22	nc	nc52571	2016-12-03T07:44:13.480Z	9 km S of Huron, California	earthquake	0.43	0.72		0	reviewed	nc	nc
8/4/1985	13:15:06	36.0406667	-120.0705	15.389	2.7	md	29	128	0.2081	0.1	nc	nc52608	2016-12-03T07:43:54.530Z	Central California	earthquake	0.4	0.45	0.11	10	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
8/4/1985	13:14:24	36.0928333	-120.0826667	11.455	2.72	md	53	104	0.1559	0.21	nc	nc52607	2016-12-03T07:43:47.210Z	10 km NNE of Avenal, California	earthquake	0.36	0.54	0.13	21	reviewed	nc	nc
8/4/1985	13:12:31	36.1176667	-120.0716667	11.653	2.49	md	40	105	0.1315	0.15	nc	nc52569	2016-12-03T07:43:37.150Z	9 km SSE of Huron, California	earthquake	0.35	0.48	0.12	11	reviewed	nc	nc
8/4/1985	13:09:18	36.1406667	-120.1395	11.833	3.3	ml	62	137	0.1171	0.13	nc	nc52568	2016-12-03T07:43:28.360Z	7 km SSW of Huron, California	earthquake	0.24	0.38		0	reviewed	nc	nc
8/4/1985	13:06:53	36.1355	-120.076	17.023	2.17	md	10	160	0.1135	0.04	nc	nc52567	2016-12-03T07:43:17.902Z	7 km SSE of Huron, California	earthquake	0.78	0.41	0.1	8	reviewed	nc	nc
8/4/1985	13:04:29	35.9086667	-120.042	8.994	2.37	md	16	113	0.2009	0.05	nc	nc52358	2016-12-03T07:43:10.340Z	13 km SE of Avenal, California	earthquake	0.25	0.87	0.11	15	reviewed	nc	nc
8/4/1985	13:00:43	36.1045	-120.088	10.723	2.3	md	27	104	0.1441	0.08	nc	nc52357	2016-12-03T07:43:06.507Z	10 km S of Huron, California	earthquake	0.26	0.58	0.13	13	reviewed	nc	nc
8/4/1985	12:55:53	36.0331667	-120.0636667	9.774	2.74	md	49	102	0.2162	0.17	nc	nc52392	2016-12-03T07:42:57.680Z	6 km ENE of Avenal, California	earthquake	0.33	0.61	0.14	29	reviewed	nc	nc
8/4/1985	12:54:43	36.0536667	-120.1055	10.163	2.3	md	33	157	0.1955	0.14	nc	nc52356	2016-12-03T07:42:48.240Z	5 km NNE of Avenal, California	earthquake	0.87	0.61	0.12	27	reviewed	nc	nc
8/4/1985	12:52:54	36.0266667	-120.0471667	12.495	2.6	md	37	88	0.2234	0.13	nc	nc52355	2016-12-03T07:42:42.753Z	7 km ENE of Avenal, California	earthquake	0.32	0.47	0.17	23	reviewed	nc	nc
8/4/1985	12:50:06	36.07	-119.9	5.093	2.8	mc	0	185.1		0.45	ci	ci108322	2016-02-03T23:18:19.770Z	9km NE of Kettleman City, CA	earthquake				13	reviewed	ci	ci
8/4/1985	12:49:56	36.1106667	-120.141	13.193	2.91	md	38	194	0.145	0.22	nc	nc52394	2016-12-03T07:42:37.510Z	10 km SSW of Huron, California	earthquake	0.5	0.63	0.21	23	reviewed	nc	nc
8/4/1985	12:48:27	36.0165	-120.0351667	13.447	2.43	md	33	202	0.2351	0.11	nc	nc52354	2016-12-03T07:42:26.002Z	6 km W of Kettleman City, California	earthquake	0.65	0.48	0.14	15	reviewed	nc	nc
8/4/1985	12:47:28	36.0206667	-120.0303333	9.219	2.19	md	15	104	0.2315	0.35	nc	nc1130216	2016-12-03T07:42:22.053Z	6 km WNW of Kettleman City, California	earthquake	1.04	2.91	0.09	5	reviewed	nc	nc
8/4/1985	12:44:54	36.1225	-120.1045	13.87	2.08	md	19	163	0.127	0.05	nc	nc52368	2016-12-03T07:42:18.120Z	8 km S of Huron, California	earthquake	0.55	0.33	0.13	18	reviewed	nc	nc
8/4/1985	12:43:38	36.0276667	-120.0541667	7.714	2.28	md	33	107	0.2225	0.09	nc	nc52366	2016-12-03T07:42:10.750Z	7 km ENE of Avenal, California	earthquake	0.27	0.81	0.15	27	reviewed	nc	nc
8/4/1985	12:38:48	36.0331667	-120.0788333	7.244	2.02	md	15	206	0.2153	0.06	nc	nc52351	2016-12-03T07:41:59.897Z	5 km NE of Avenal, California	earthquake	0.67	1.52	0.12	16	reviewed	nc	nc
8/4/1985	12:30:23	35.9066667	-120.0073333	17.771	2.41	md	13	224	0.2234	0.15	nc	nc52363	2016-12-03T07:41:48.998Z	12 km SSW of Kettleman City, California	earthquake	1.48	0.85	0.14	18	reviewed	nc	nc
8/4/1985	12:29:41	36.102	-120.0905	10.893	2.46	md	52	104	0.1468	0.18	nc	nc52349	2016-12-03T07:41:43.720Z	11 km S of Huron, California	earthquake	0.35	0.36	0.16	35	reviewed	nc	nc
8/4/1985	12:27:31	36.1055	-120.0758333	10.12	2.24	md	31	75	0.1432	0.1	nc	nc54173	2016-12-03T07:41:38.040Z	11 km SSE of Huron, California	earthquake	0.4	0.33	0.21	22	reviewed	nc	nc
8/4/1985	12:20:57	36.1501667	-120.1621667	10.607	2.73	md	7	209	0.1171	0.01	nc	nc54260	2016-12-03T07:41:30.056Z	7 km SW of Huron, California	earthquake	0.7	0.68	0.6	3	reviewed	nc	nc
8/4/1985	12:20:36	36.0231667	-119.8696667	2.571	2.59	md	12	291	0.373	0.15	nc	nc54170	2016-12-03T07:41:26.146Z	8 km E of Kettleman City, California	earthquake	7.66	4.67	0.41	5	reviewed	nc	nc
8/4/1985	12:18:54	36.1385	-120.1368333	9.633	2.84	md	54	138	0.118	0.18	nc	nc54169	2016-12-03T07:41:21.240Z	7 km SSW of Huron, California	earthquake	0.26	0.37	0.16	53	reviewed	nc	nc
8/4/1985	12:15:37	36.11	-120.0766667	10.25	2.43	md	26	173	0.1387	0.06	nc	nc54168	2016-12-03T07:41:15.132Z	10 km SSE of Huron, California	earthquake	0.22	0.32	0.32	19	reviewed	nc	nc
8/4/1985	12:12:02	36.0236667	-120.0443333	9.962	2.77	md	9	201	0.227	0.14	nc	nc1130215	2016-12-03T07:41:11.312Z	7 km WNW of Kettleman City, California	earthquake	1.54	2.09		1	reviewed	nc	nc
8/4/1985	12:08:41	36.1053333	-120.0636667	10.183	4	ml	106	57	0.1441	0.22	nc	nc54167	2016-12-03T07:41:06.560Z	11 km SSE of Huron, California	earthquake	0.27	0.42		0	reviewed	nc	nc
8/4/1985	12:07:17	35.988	-119.887	4.962	3.38	mc	0	256.1	0.5534	0.056	ci	ci108315	2016-02-04T01:17:24.100Z	7km ESE of Kettleman City, CA	earthquake				1	reviewed	ci	ci
8/4/1985	12:01:55	36.143	-120.1563333	15.89	5.6	ml	45	163	0.09009	0.08	nc	nc52348	2022-04-27T22:38:43.744Z	8 km SW of Huron, California	earthquake	0.27	0.55		0	reviewed	nc	nc
8/4/1985	11:37:54	36.1433333	-120.1436667	10.823	2.45	md	48	135	0.1153	0.1	nc	nc52345	2016-12-03T07:40:47.430Z	7 km SSW of Huron, California	earthquake	0.3	0.53	0.1	42	reviewed	nc	nc
8/4/1985	11:35:18	36.1485	-120.1661667	10.223	2.24	md	43	152	0.1198	0.11	nc	nc52344	2016-12-03T07:40:37.620Z	8 km SW of Huron, California	earthquake	0.48	0.8	0.18	34	reviewed	nc	nc
8/4/1985	11:30:42	36.1295	-120.1398333	10.083	3.68	md	23	138	0.127	0.07	nc	nc52227	2016-12-03T07:40:31.731Z	8 km SSW of Huron, California	earthquake	0.57	0.78	0.08	4	reviewed	nc	nc
8/4/1985	11:29:24	36.091	-120.208	5.127	4.31	ml	0	293.3	1.472	0.573	ci	ci127289	2021-02-18T19:02:21.521Z	12km NW of Avenal, CA	earthquake				9	reviewed	ci	ci
8/4/1985	11:29:15	36.1385	-120.159	13.183	4.7	ml	67	130	0.1252	0.08	nc	nc52202	2021-07-09T20:03:38.162Z	8 km SW of Huron, California	earthquake	0.19	0.32		0	reviewed	nc	nc
8/3/1985	20:05:45	36.1275	-120.1665	10.433	2.47	md	46	138	0.1378	0.09	nc	nc52150	2016-12-03T07:38:07.950Z	10 km SW of Huron, California	earthquake	0.24	0.47	0.12	25	reviewed	nc	nc
8/3/1985	13:57:10	36.1341667	-120.1606667	12.763	3.8	ml	67	125	0.1297	0.1	nc	nc52141	2016-12-03T07:37:31.950Z	9 km SW of Huron, California	earthquake	0.25	0.42		0	reviewed	nc	nc
7/28/1985	1:11:33	36.2153333	-120.3065	9.467	2.2	md	24	107	0.04505	0.03	nc	nc51849	2016-12-03T07:19:28.222Z	9 km NNE of Coalinga, California	earthquake	0.14	0.23	0.11	20	reviewed	nc	nc
7/26/1985	6:02:53	36.1951667	-120.2553333	10.467	3	ml	49	70	0.08919	0.08	nc	nc51762	2016-12-03T07:15:10.020Z	11 km ENE of Coalinga, California	earthquake	0.12	0.34		0	reviewed	nc	nc
7/24/1985	15:45:42	36.192	-120.3125	10.527	3	ml	49	56	0.06216	0.05	nc	nc51686	2016-12-03T07:08:18.270Z	7 km NE of Coalinga, California	earthquake	0.16	0.29		0	reviewed	nc	nc
7/22/1985	0:13:04	36.2433333	-120.3461667	8.777	2.09	md	14	90	0.006306	0.02	nc	nc51519	2016-12-03T07:00:08.552Z	11 km N of Coalinga, California	earthquake	0.56	0.25	0.19	17	reviewed	nc	nc
7/20/1985	18:26:28	36.1796667	-120.3061667	7.177	2.14	md	17	67	0.07568	0.16	nc	nc51480	2016-12-03T06:55:33.250Z	6 km NE of Coalinga, California	earthquake	0.49	0.97	0.15	14	reviewed	nc	nc
7/20/1985	2:06:57	36.2178333	-120.2793333	11.647	2.41	md	41	64	0.06036	0.08	nc	nc51488	2016-12-03T06:53:33.540Z	11 km NE of Coalinga, California	earthquake	0.17	0.28	0.09	22	reviewed	nc	nc
7/19/1985	0:49:27	35.9036667	-119.7956667	16.523	2.42	md	26	92	0.3	0.09	nc	nc51381	2016-12-03T06:50:40.129Z	18 km SE of Kettleman City, California	earthquake	0.33	0.6	0.17	36	reviewed	nc	nc
7/12/1985	7:54:36	36.1178333	-120.0531667	7.13	2.05	md	20	252	0.07297	0.09	nc	nc50974	2016-12-03T06:28:38.003Z	10 km SSE of Huron, California	earthquake	1.14	0.36	0.12	17	reviewed	nc	nc
7/12/1985	6:31:14	35.122	-119.088	21.174	2.2	mc	0	111.9		0.277	ci	ci70267	2016-02-03T19:20:45.000Z	22km SW of Lamont, CA	earthquake		1.612		24	reviewed	ci	ci
7/12/1985	5:52:38	36.268	-120.392	8.868	2.29	md	39	67	0.04414	0.08	nc	nc50946	2016-12-03T06:28:07.540Z	14 km NNW of Coalinga, California	earthquake	0.2	0.22	0.17	33	reviewed	nc	nc
7/12/1985	0:47:21	35.9965	-120.5546667	3.971	3.1	ml	41	66	0.05766	0.05	nc	nc50967	2016-12-03T06:26:40.730Z	15 km NW of Parkfield, California	earthquake	0.2	0.32		0	reviewed	nc	nc
7/9/1985	0:53:19	36.1453333	-120.2605	8.237	2.6	md	31	85	0.1234	0.04	nc	nc50801	2016-12-03T06:18:06.990Z	8 km E of Coalinga, California	earthquake	0.24	0.75	0.13	32	reviewed	nc	nc
7/5/1985	3:23:54	36.1363333	-120.1555	11.5	2.63	md	31	126	0.08378	0.1	nc	nc50614	2016-12-03T06:05:24.480Z	8 km SSW of Huron, California	earthquake	0.44	0.61	0.13	26	reviewed	nc	nc
7/4/1985	19:51:27	36.0136667	-119.9706667	-0.023	2.34	md	20	243	0.3829	1.2	nc	nc50606	2016-12-03T06:03:53.419Z	0 km NW of Kettleman City, California	earthquake	6.08	44.71	0.41	14	reviewed	nc	nc
6/30/1985	23:19:00	35.4	-119.432	5.097	2.28	mc	0	161.9		0.46	ci	ci69303	2016-02-03T23:54:24.410Z	3km E of Buttonwillow, CA	earthquake				14	reviewed	ci	ci
6/27/1985	2:49:22	36.0945	-120.1965	-0.327	2.13	md	30	133	0.1793	0.25	nc	nc50237	2016-12-03T05:39:14.430Z	11 km NNW of Avenal, California	earthquake	0.45	5.28	0.13	18	reviewed	nc	nc
6/26/1985	18:52:40	36.014	-120.4058333	0.232	2.39	md	5	199	0.08378	0.05	nc	nc1129272	2016-12-03T05:38:35.569Z	12 km N of Parkfield, California	earthquake	1.58	7.29	0.1	4	reviewed	nc	nc
6/24/1985	21:24:38	35.004	-119.077	9.866	2.38	mc	0	106.7		0.262	ci	ci68905	2016-02-04T02:34:10.070Z	15km WNW of Grapevine, CA	earthquake		1.337		33	reviewed	ci	ci
6/24/1985	20:38:52	34.989	-119.073	10.194	2.49	mc	0	92.8		0.277	ci	ci69018	2016-02-03T20:00:02.000Z	14km WNW of Grapevine, CA	earthquake		1.136		44	reviewed	ci	ci
6/21/1985	2:37:35	36.1993333	-120.309	9.837	2.33	md	36	56	0.05676	0.06	nc	nc49910	2016-12-03T05:20:53.340Z	8 km NE of Coalinga, California	earthquake	0.13	0.17	0.17	35	reviewed	nc	nc
6/18/1985	3:15:23	35.316	-119.496	5.097	2.57	mc	0	121		0.489	ci	ci68491	2016-02-03T21:58:49.940Z	10km SSW of Buttonwillow, CA	earthquake				33	reviewed	ci	ci
6/15/1985	22:33:11	36.2383333	-120.3616667	8.091	2.24	md	4	154	0.01892	0.01	nc	nc49576	2016-12-03T05:07:17.192Z	10 km N of Coalinga, California	earthquake	6.02	3.7	0.13	6	reviewed	nc	nc
6/14/1985	11:41:04	36.1718333	-120.2675	9.08	2	md	21	120	0.0991	0.07	nc	nc49553	2016-12-03T05:02:17.978Z	9 km ENE of Coalinga, California	earthquake	0.46	0.64	0.12	14	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/14/1985	11:24:01	36.1738333	-120.2771667	10.01	3.4	ml	53	65	0.09189	0.08	nc	nc49550	2016-12-03T05:02:05.060Z	8 km ENE of Coalinga, California	earthquake	0.16	0.33		0	reviewed	nc	nc
6/12/1985	22:53:52	36.1908333	-120.2885	9.777	2.32	md	19	164	0.07297	0.06	nc	nc49475	2016-12-03T04:55:29.575Z	Central California	earthquake	0.4	0.52	0.1	19	reviewed	nc	nc
6/12/1985	3:36:01	36.2278333	-120.3305	9.674	2.33	md	25	87	0.02342	0.04	nc	nc49402	2016-12-03T04:53:03.180Z	10 km NNE of Coalinga, California	earthquake	0.15	0.12	0.27	22	reviewed	nc	nc
6/9/1985	20:22:02	34.842	-120.459	5.052	2.4	mc	0	231.4		0.513	ci	ci68024	2016-02-04T02:33:38.070Z	3km SW of Orcutt, CA	earthquake				10	reviewed	ci	ci
6/5/1985	9:01:05	36.1936667	-120.3131667	9.814	2.3	md	39	55	0.06036	0.08	nc	nc49008	2016-12-03T04:26:52.040Z	7 km NE of Coalinga, California	earthquake	0.23	0.33	0.15	33	reviewed	nc	nc
6/4/1985	14:09:39	36.0065	-120.559	4.631	2.07	md	30	64	0.06396	0.04	nc	nc48973	2016-12-03T04:24:34.470Z	16 km NW of Parkfield, California	earthquake	0.21	0.28	0.17	25	reviewed	nc	nc
6/2/1985	6:52:31	36.1643333	-120.2753333	9.907	2.25	md	28	66	0.1009	0.08	nc	nc48864	2016-12-03T04:16:32.890Z	8 km ENE of Coalinga, California	earthquake	0.24	0.56	0.08	17	reviewed	nc	nc
5/31/1985	15:39:26	36.2215	-120.419	6.645	2.64	md	42	57	0.06757	0.11	nc	nc48815	2016-12-03T04:12:08.910Z	10 km NNW of Coalinga, California	earthquake	0.15	0.32	0.14	32	reviewed	nc	nc
5/26/1985	12:33:42	36.251	-120.387	10.991	2.64	md	49	75	0.03604	0.13	nc	nc48409	2016-12-03T03:53:05.920Z	12 km N of Coalinga, California	earthquake	0.21	0.4	0.15	35	reviewed	nc	nc
5/25/1985	11:57:35	35.449	-118.887	5.166	2.34	mc	0	149.4		0.182	ci	ci67122	2016-02-03T21:58:09.240Z	12km ENE of Oildale, CA	earthquake				45	reviewed	ci	ci
5/25/1985	4:19:38	35.9403333	-120.487	9.64	3.3	md	48	34		0.06	nc	nc48490	2022-02-13T07:39:09.020Z	7km NW of Parkfield, CA	earthquake	0.17	0.26	0.147	118	reviewed	nc	nc
5/24/1985	4:17:16	36.2276667	-120.3286667	9.397	2.07	md	21	100	0.02432	0.05	nc	nc48369	2016-12-03T03:46:45.415Z	10 km NNE of Coalinga, California	earthquake	0.19	0.22	0.25	13	reviewed	nc	nc
5/22/1985	15:49:10	34.923	-119.053	14.918	2.03	mc	0	46.2		0.471	ci	ci66974	2016-02-04T01:15:21.270Z	11km WSW of Grapevine, CA	earthquake		0.877		22	reviewed	ci	ci
5/21/1985	13:24:20	35.7936667	-120.3441667	9.282	3.12	md	34	89	0.03784	0.03	nc	nc48133	2016-12-03T03:36:59.240Z	14 km SE of Parkfield, California	earthquake	0.18	0.32	0.1	34	reviewed	nc	nc
5/13/1985	21:09:56	36.2338333	-120.3623333	9.331	2.37	md	37	49	0.02252	0.07	nc	nc47821	2016-12-03T03:03:42.740Z	10 km N of Coalinga, California	earthquake	0.27	0.26	0.18	37	reviewed	nc	nc
5/11/1985	8:59:22	36.1795	-120.2908333	10.677	4.3	ml	53	61	0.08198	0.06	nc	nc47590	2016-12-03T02:53:49.130Z	7 km NE of Coalinga, California	earthquake	0.16	0.34		0	reviewed	nc	nc
5/9/1985	14:49:10	36.1566667	-120.3036667	12.197	2.1	md	32	59	0.0982	0.04	nc	nc47505	2016-12-03T02:47:05.886Z	5 km ENE of Coalinga, California	earthquake	0.21	0.33	0.1	31	reviewed	nc	nc
5/8/1985	9:44:09	35.289	-119.349	25.733	2.42	mc	0	117.5		0.281	ci	ci65970	2016-02-04T00:33:08.870Z	16km SE of Buttonwillow, CA	earthquake		6.398		26	reviewed	ci	ci
5/8/1985	7:47:45	36.23	-120.3538333	9.467	2.53	md	44	56	0.02162	0.08	nc	nc47448	2016-12-03T02:43:24.720Z	10 km N of Coalinga, California	earthquake	0.15	0.16	0.12	35	reviewed	nc	nc
5/7/1985	7:30:37	35.308	-119.326	4.883	2.32	mc	0	131.3		0.404	ci	ci64623	2016-02-03T21:57:23.070Z	17km SE of Buttonwillow, CA	earthquake				27	reviewed	ci	ci
5/6/1985	23:14:33	35.297	-119.346	23.617	4.41	ml	0	54		0.363	ci	ci64604	2016-02-04T04:28:59.140Z	16km SE of Buttonwillow, CA	earthquake		1.032		12	reviewed	ci	ci
5/6/1985	14:31:43	36.1831667	-120.2871667	7.497	2.14	md	38	62	0.08018	0.16	nc	nc47557	2016-12-03T02:38:05.090Z	8 km NE of Coalinga, California	earthquake	0.23	0.53	0.16	13	reviewed	nc	nc
5/4/1985	18:38:03	36.0301667	-120.5885	3.945	2.24	md	40	68	0.03964	0.07	nc	nc47252	2016-12-03T02:30:29.140Z	20 km NW of Parkfield, California	earthquake	0.19	0.29	0.15	30	reviewed	nc	nc
4/29/1985	12:45:56	36.1225	-120.1626667	1.82	2.24	md	21	118	0.07477	0.04	nc	nc46769	2016-12-03T02:05:30.070Z	10 km SSW of Huron, California	earthquake	0.24	0.56	0.14	17	reviewed	nc	nc
4/29/1985	7:50:25	35.438	-120.8873333	3.997	2.44	md	36	162	0.1216	0.05	nc	nc46758	2016-12-03T02:04:31.060Z	0 km SE of Cayucos, California	earthquake	0.2	0.53	0.09	35	reviewed	nc	nc
4/27/1985	1:17:19	34.736	-120.159	0.134	2.89	mc	0	128.4		0.115	ci	ci65145	2016-02-04T01:14:34.120Z	9km NNW of Los Olivos, CA	earthquake		3.059		30	reviewed	ci	ci
4/26/1985	13:45:41	36.1301667	-120.3658333	11.143	2.1	md	24	100	0.06757	0.11	nc	nc46736	2016-12-03T01:50:51.408Z	1 km SSW of Coalinga, California	earthquake	0.31	0.6	0.11	18	reviewed	nc	nc
4/24/1985	19:47:56	36.1916667	-120.2681667	8.267	2.02	md	22	66	0.08378	0.07	nc	nc46662	2016-12-03T01:44:29.465Z	10 km NE of Coalinga, California	earthquake	0.3	0.57	0.17	10	reviewed	nc	nc
4/19/1985	20:42:42	35.747	-120.5643333	11.616	2.09	md	36	33	0.08018	0.05	nc	nc46387	2016-12-03T01:27:30.400Z	11 km NNW of Whitley Gardens, California	earthquake	0.17	0.58	0.15	31	reviewed	nc	nc
4/17/1985	5:30:21	35.01	-118.997	16.457	2.49	mc	0	92.4		0.264	ci	ci64493	2016-02-03T19:18:24.520Z	10km NW of Grapevine, CA	earthquake		0.713		45	reviewed	ci	ci
4/16/1985	5:34:11	36.2546667	-120.3111667	9.257	2.45	md	46	67	0.02613	0.08	nc	nc46169	2016-12-03T01:12:15.830Z	Central California	earthquake	0.14	0.22	0.1	30	reviewed	nc	nc
4/16/1985	3:41:25	36.2095	-120.3053333	8.797	2.17	md	36	59	0.05045	0.1	nc	nc46214	2016-12-03T01:11:43.820Z	9 km NNE of Coalinga, California	earthquake	0.19	0.28	0.13	24	reviewed	nc	nc
4/13/1985	5:04:08	35.4066667	-120.685	4.247	2.08	md	25	90	0.04775	0.05	nc	nc46087	2016-12-03T01:01:06.037Z	7 km WNW of Santa Margarita, California	earthquake	0.21	0.4	0.1	20	reviewed	nc	nc
4/12/1985	16:14:48	35.4086667	-120.6858333	4.027	2.26	md	31	89	0.04685	0.07	nc	nc46019	2016-12-03T00:59:21.970Z	7 km WNW of Santa Margarita, California	earthquake	0.22	0.45	0.12	26	reviewed	nc	nc
4/10/1985	23:00:54	35.356	-118.8	5.035	2.13	mc	0	167.2		0.27	ci	ci64158	2016-02-03T23:15:19.430Z	15km NE of Lamont, CA	earthquake				14	reviewed	ci	ci
4/10/1985	16:09:31	35.833	-120.0668333	11.547	2.82	md	5	296	0.1468	0.03	nc	nc46625	2016-12-03T00:53:01.955Z	19 km SSE of Avenal, California	earthquake	3.28	2.1		1	reviewed	nc	nc
4/9/1985	7:51:17	36.2163333	-120.2771667	6.277	2.23	md	25	65	0.06216	0.12	nc	nc45699	2016-12-03T00:45:33.860Z	11 km NE of Coalinga, California	earthquake	0.21	0.51	0.08	16	reviewed	nc	nc
4/9/1985	7:30:50	36.2105	-120.2883333	7.577	2.41	md	33	62	0.05856	0.08	nc	nc45698	2016-12-03T00:45:26.950Z	10 km NE of Coalinga, California	earthquake	0.16	0.31	0.09	18	reviewed	nc	nc
4/9/1985	3:42:27	36.2113333	-120.2891667	8.147	3.2	ml	54	62	0.05766	0.06	nc	nc45692	2016-12-03T00:44:23.190Z	10 km NE of Coalinga, California	earthquake	0.12	0.23		0	reviewed	nc	nc
4/9/1985	3:25:32	36.2138333	-120.2803333	7.127	2.87	md	10	104	0.06216	0.02	nc	nc46616	2016-12-03T00:44:14.352Z	10 km NE of Coalinga, California	earthquake	0.31	0.48	0.35	5	reviewed	nc	nc
4/9/1985	3:23:23	36.2156667	-120.2911667	8.817	3.7	ml	56	62	0.05405	0.07	nc	nc45691	2016-12-03T00:44:08.960Z	10 km NE of Coalinga, California	earthquake	0.12	0.29		0	reviewed	nc	nc
4/4/1985	20:52:59	36.2391667	-120.3525	8.381	2.35	md	44	95	0.01261	0.07	nc	nc45418	2016-12-03T00:27:08.080Z	11 km N of Coalinga, California	earthquake	0.25	0.13	0.13	34	reviewed	nc	nc
4/2/1985	22:47:17	36.0825	-119.8725	17.086	2.03	md	24	232	0.1937	0.1	nc	nc45270	2016-12-03T00:19:14.508Z	11 km NE of Kettleman City, California	earthquake	1.07	0.67	0.17	9	reviewed	nc	nc
3/30/1985	15:06:39	36.176	-120.3621667	14.275	2.17	md	30	49	0.07477	0.08	nc	nc44977	2016-12-03T00:01:18.340Z	4 km N of Coalinga, California	earthquake	0.21	0.45	0.09	18	reviewed	nc	nc
3/28/1985	22:29:39	36.146	-120.264	9.257	3.04	md	40	70	0.1216	0.07	nc	nc44915	2016-12-02T23:54:27.980Z	8 km E of Coalinga, California	earthquake	0.19	0.43	0.13	31	reviewed	nc	nc
3/27/1985	22:45:23	36.2796667	-120.3323333	7.988	2	md	20	83	0.03153	0.05	nc	nc44834	2016-12-02T23:51:28.723Z	15 km N of Coalinga, California	earthquake	0.34	0.14	0.19	17	reviewed	nc	nc
3/27/1985	9:28:53	36.182	-120.237	10.954	2.31	md	16	78	0.109	0.07	nc	nc44815	2016-12-02T23:49:54.625Z	12 km ENE of Coalinga, California	earthquake	0.43	0.98	0.12	15	reviewed	nc	nc
3/27/1985	8:33:43	36.2546667	-120.4363333	7.696	3.23	md	53	72	0	0.09	nc	nc44773	2016-12-02T23:49:38.840Z	14 km NNW of Coalinga, California	earthquake	0.16	0.35	0.14	52	reviewed	nc	nc
3/23/1985	22:20:54	36.1993333	-120.3453333	10.528	2.17	md	28	52	0.05045	0.05	nc	nc44591	2016-12-02T23:32:11.210Z	6 km NNE of Coalinga, California	earthquake	0.2	0.25	0.12	25	reviewed	nc	nc
3/16/1985	18:34:09	35.173	-119.02	13.658	2.03	mc	0	135.9	0.2079	0.19	ci	ci62632	2016-02-04T02:31:19.050Z	14km SW of Lamont, CA	earthquake		2.299		13	reviewed	ci	ci
3/7/1985	19:16:14	36.198	-120.2613333	9.614	2.18	md	32	122	0.08378	0.05	nc	nc43170	2016-12-02T22:30:38.028Z	10 km NE of Coalinga, California	earthquake	0.19	0.24	0.16	30	reviewed	nc	nc
3/5/1985	15:15:42	35.066	-119.027	13.769	2.13	mc	0	101.4		0.272	ci	ci62046	2016-02-04T04:27:16.680Z	16km NNW of Grapevine, CA	earthquake		0.993		24	reviewed	ci	ci
3/5/1985	14:18:13	36.2778333	-120.3425	8.428	2.65	md	53	68	0.02883	0.1	nc	nc42861	2016-12-02T22:21:45.120Z	15 km N of Coalinga, California	earthquake	0.2	0.33	0.11	19	reviewed	nc	nc
3/5/1985	12:28:06	35.073	-119.033	10.779	2.57	ml	0	92.6		0.305	ci	ci62040	2016-02-03T21:55:47.110Z	17km NNW of Grapevine, CA	earthquake		0.961		8	reviewed	ci	ci
2/26/1985	23:46:07	35.869	-119.577	5.32	2.42	mc	0	141.4		0.315	ci	ci61695	2016-02-04T02:30:55.560Z	8km WSW of Alpaugh, CA	earthquake				20	reviewed	ci	ci
2/26/1985	23:35:53	35.8078333	-119.7291667	8.558	3.5	ml	99	86	0.4	0.33	nc	nc42158	2016-12-02T21:56:58.300Z	21 km N of Lost Hills, California	earthquake	0.35	0.88		0	reviewed	nc	nc
2/25/1985	13:36:07	34.896	-120.507	5.052	2.31	mc	0	244.9		0.375	ci	ci61608	2016-02-04T02:30:53.780Z	7km WNW of Orcutt, CA	earthquake				10	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
2/22/1985	10:44:07	36.106	-120.0386667	7.946	2.42	md	37	197	0.07297	0.07	nc	nc41802	2016-12-02T21:36:45.520Z	12 km SSE of Huron, California	earthquake	0.44	0.29	0.15	27	reviewed	nc	nc
2/22/1985	9:29:58	34.927	-120.194	4.894	2.19	mc	0	166.6		0.529	ci	ci61433	2016-02-04T00:30:53.170Z	22km NNE of Los Alamos, CA	earthquake				12	reviewed	ci	ci
2/20/1985	23:47:50	36.0951667	-120.1203333	5.64	2.4	md	27	208	0.03514	0.09	nc	nc41624	2016-12-02T21:30:34.400Z	10 km N of Avenal, California	earthquake	0.43	0.22	0.09	13	reviewed	nc	nc
2/19/1985	22:34:09	35.234	-118.995	20.817	2.1	mc	0	124.2		0.24	ci	ci61229	2016-02-04T00:30:50.080Z	8km WSW of Lamont, CA	earthquake		2.341		19	reviewed	ci	ci
2/19/1985	13:38:25	36.1121667	-120.0423333	8.03	3.5	ml	37	197	0.07477	0.06	nc	nc41311	2016-12-02T21:24:27.410Z	11 km SSE of Huron, California	earthquake	0.35	0.18		0	reviewed	nc	nc
2/17/1985	9:33:06	36.2211667	-120.2735	12.604	2.13	md	38	66	0.06306	0.07	nc	nc41224	2016-12-02T21:11:59.970Z	11 km NE of Coalinga, California	earthquake	0.19	0.27	0.16	30	reviewed	nc	nc
2/16/1985	20:28:32	35.718	-119.374	4.762	2.95	ml	0	123.2		0.37	ci	ci61033	2016-02-03T23:50:39.770Z	13km WSW of Delano, CA	earthquake				4	reviewed	ci	ci
2/14/1985	15:05:49	36.2796667	-120.419	7.068	2.25	md	36	95	0.06847	0.15	nc	nc40902	2016-12-02T20:57:39.830Z	16 km NNW of Coalinga, California	earthquake	0.32	0.41	0.17	22	reviewed	nc	nc
2/14/1985	13:29:18	36.0056667	-120.5653333	4.555	2.64	md	47	75	0.04234	0.06	nc	nc40899	2016-12-02T20:57:28.760Z	16 km NW of Parkfield, California	earthquake	0.17	0.27	0.13	37	reviewed	nc	nc
2/9/1985	22:22:03	36.168	-120.2745	11.107	2.51	md	37	86	0.0982	0.05	nc	nc40538	2016-12-02T20:34:29.850Z	8 km ENE of Coalinga, California	earthquake	0.16	0.37	0.11	46	reviewed	nc	nc
2/9/1985	1:44:38	35.458	-118.899	5.041	2.47	mc	0	125.4		0.264	ci	ci60447	2016-02-04T05:05:05.060Z	12km ENE of Oildale, CA	earthquake				28	reviewed	ci	ci
2/8/1985	16:21:29	36.1648333	-120.2826667	8.427	2.48	md	44	64	0.0973	0.1	nc	nc40349	2016-12-02T20:27:15.300Z	7 km ENE of Coalinga, California	earthquake	0.14	0.44	0.15	32	reviewed	nc	nc
2/8/1985	8:51:40	36.1668333	-120.2721667	10.627	3.2	md	57	67	0.1	0.05	nc	nc40338	2016-12-02T20:26:17.750Z	8 km ENE of Coalinga, California	earthquake	0.11	0.24	0.1	75	reviewed	nc	nc
2/8/1985	7:14:55	36.2128333	-120.3426667	7.978	2.11	md	20	103	0.03604	0.03	nc	nc40333	2016-12-02T20:26:00.128Z	8 km N of Coalinga, California	earthquake	0.52	0.22	0.16	22	reviewed	nc	nc
2/8/1985	6:58:16	35.457	-118.906	5.041	4.61	ml	0	90.1		0.304	ci	ci58486	2020-07-09T21:45:34.518Z	11km ENE of Oildale, CA	earthquake				11	reviewed	ci	ci
2/7/1985	3:54:19	36.1751667	-120.2945	9.097	2.03	md	26	61	0.08378	0.07	nc	nc40104	2016-12-02T20:21:18.770Z	7 km ENE of Coalinga, California	earthquake	0.2	0.46	0.23	18	reviewed	nc	nc
2/4/1985	11:04:10	36.2563333	-120.4365	2.905	2.47	md	33	60	0.07658	0.13	nc	nc39789	2016-12-02T20:07:19.348Z	14 km NNW of Coalinga, California	earthquake	0.21	0.44	0.15	22	reviewed	nc	nc
2/3/1985	12:48:23	36.176	-120.3003333	8.647	2.06	md	27	59	0.08108	0.11	nc	nc39812	2016-12-02T20:04:02.638Z	6 km NE of Coalinga, California	earthquake	0.26	0.5	0.19	14	reviewed	nc	nc
1/30/1985	20:23:49	36.0786667	-120.642	3.899	2.83	md	53	79	0.03874	0.05	nc	nc39333	2016-12-02T19:47:28.330Z	24 km ENE of San Ardo, California	earthquake	0.17	0.27	0.18	42	reviewed	nc	nc
1/29/1985	22:58:03	36.12	-120.1353333	3.627	2.28	md	34	143	0.06216	0.19	nc	nc39202	2016-12-02T19:42:47.260Z	9 km SSW of Huron, California	earthquake	0.51	0.66	0.1	27	reviewed	nc	nc
1/28/1985	4:32:09	35.899	-119.18	4.924	2.28	mc	0	175.9		0.286	ci	ci59677	2016-02-04T02:30:02.410Z	13km SE of Pixley, CA	earthquake				11	reviewed	ci	ci
1/25/1985	8:13:53	35.8413333	-120.1538333	12.344	2.07	md	27	162	0.08829	0.11	nc	nc38745	2016-12-02T19:17:43.190Z	18 km S of Avenal, California	earthquake	0.97	0.44	0.18	30	reviewed	nc	nc
1/24/1985	11:07:17	34.904	-120.364	-0.458	2.53	mc	0	171.6		0.648	ci	ci59409	2016-02-04T03:47:42.850Z	8km ENE of Orcutt, CA	earthquake		1.12		20	reviewed	ci	ci
1/23/1985	20:37:48	35.5338333	-120.8366667	4.91	2.08	md	35	109	0.109	0.04	nc	nc38485	2016-12-02T19:06:55.950Z	Central California	earthquake	0.19	0.61	0.16	31	reviewed	nc	nc
1/22/1985	14:18:50	35.432	-118.915	5.166	2.31	mc	0	149.3		0.274	ci	ci59299	2016-02-04T04:26:00.990Z	10km E of Oildale, CA	earthquake				41	reviewed	ci	ci
1/21/1985	23:02:47	35.425	-119.472	5.085	2.36	mc	0	154.2		0.453	ci	ci59173	2016-02-04T01:50:41.930Z	3km N of Buttonwillow, CA	earthquake				27	reviewed	ci	ci
1/16/1985	21:31:54	35.038	-119.151	12.586	2.21	mc	0	150.6		0.212	ci	ci58629	2016-02-03T22:34:09.050Z	21km N of Pine Mountain Club, CA	earthquake		2.211		19	reviewed	ci	ci
1/16/1985	17:26:25	36.2165	-120.4573333	2.495	2.14	md	30	88	0.0982	0.26	nc	nc37698	2016-12-02T18:32:00.684Z	12 km NW of Coalinga, California	earthquake	0.26	0.68	0.1	15	reviewed	nc	nc
1/14/1985	21:07:11	36.2445	-120.4721667	2.205	2.18	md	15	101	0.1045	0.18	nc	nc37551	2016-12-02T18:24:18.784Z	15 km NW of Coalinga, California	earthquake	0.39	0.9	0.06	6	reviewed	nc	nc
1/14/1985	20:13:41	36.2328333	-120.4681667	3.645	2.4	md	36	70	0.1027	0.08	nc	nc38693	2016-12-02T18:24:02.190Z	14 km NW of Coalinga, California	earthquake	0.11	0.25	0.13	34	reviewed	nc	nc
1/12/1985	17:42:36	34.731	-120.163	-0.959	2	mh	0	129.2		0.224	ci	ci58376	2016-04-02T18:32:08.052Z	8km NNW of Los Olivos, CA	earthquake		1.634		0	reviewed	ci	ci
1/11/1985	4:47:50	36.2565	-120.4378333	2.137	2.39	md	42	72	0.07748	0.2	nc	nc37050	2016-12-02T18:02:21.620Z	14 km NNW of Coalinga, California	earthquake	0.21	0.48	0.12	21	reviewed	nc	nc
1/9/1985	22:29:40	36.1535	-120.2545	9.52	2.37	md	40	73	0.1198	0.07	nc	nc36903	2016-12-02T17:56:53.510Z	Central California	earthquake	0.18	0.42	0.11	20	reviewed	nc	nc
1/9/1985	21:25:45	36.1275	-120.2163333	7.42	2.65	md	49	86	0.109	0.09	nc	nc36899	2016-12-02T17:56:37.240Z	Central California	earthquake	0.16	0.38	0.09	17	reviewed	nc	nc
1/7/1985	17:25:50	34.895	-120.132	-0.938	2.36	mc	0	110.3		0.296	ci	ci58076	2016-02-03T21:13:49.530Z	21km NE of Los Alamos, CA	earthquake		1.73		8	reviewed	ci	ci
1/4/1985	7:12:36	35.8975	-120.4408333	5.29	3	ml	52	39	0.02523	0.07	nc	nc36296	2016-12-02T17:19:02.710Z	0 km WSW of Parkfield, California	earthquake	0.15	0.23		0	reviewed	nc	nc
1/3/1985	11:41:45	36.1821667	-120.3011667	9.56	2.38	md	39	58	0.07477	0.08	nc	nc36146	2016-12-02T17:11:50.610Z	7 km NE of Coalinga, California	earthquake	0.25	0.33	0.1	26	reviewed	nc	nc
1/3/1985	11:22:26	36.1928333	-120.3098333	11.044	3.8	ml	55	56	0.06216	0.06	nc	nc36982	2016-12-02T17:11:09.930Z	7 km NE of Coalinga, California	earthquake	0.15	0.32		0	reviewed	nc	nc
1/3/1985	11:03:17	36.1901667	-120.3111667	10.314	3.07	md	54	56	0.06396	0.06	nc	nc37215	2016-12-02T17:10:52.020Z	7 km NE of Coalinga, California	earthquake	0.16	0.3	0.12	30	reviewed	nc	nc
1/3/1985	10:45:21	36.19	-120.3103333	10.524	3.3	ml	51	56	0.06486	0.07	nc	nc36976	2016-12-02T17:10:00.520Z	7 km NE of Coalinga, California	earthquake	0.17	0.36		0	reviewed	nc	nc
12/29/1984	11:46:41	34.913	-119.016	12.648	2.16	mc	0	72		0.234	ci	ci57617	2016-02-02T20:39:16.960Z	8km WSW of Grapevine, CA	earthquake		0.532		31	reviewed	ci	ci
12/29/1984	10:47:14	34.894	-120.133	-0.938	2.14	mc	0	110.9		0.291	ci	ci57615	2016-02-03T01:59:08.900Z	21km NE of Los Alamos, CA	earthquake		1.967		14	reviewed	ci	ci
12/29/1984	6:49:34	36.2161667	-120.448	5.465	2.58	md	42	115	0.09099	0.08	nc	nc35681	2016-12-02T06:09:12.692Z	11 km NW of Coalinga, California	earthquake	0.15	0.29	0.07	12	reviewed	nc	nc
12/28/1984	19:15:24	36.2671667	-120.3575	8.658	2.09	md	37	67	0.02162	0.12	nc	nc35714	2016-12-02T06:08:31.700Z	14 km N of Coalinga, California	earthquake	0.2	0.24	0.1	17	reviewed	nc	nc
12/26/1984	0:56:45	34.963	-119.07	14.63	2.81	ml	0	85.1		0.312	ci	ci57419	2016-02-02T18:00:20.420Z	13km W of Grapevine, CA	earthquake		3.93		6	reviewed	ci	ci
12/25/1984	18:31:53	36.2021667	-120.2978333	8.234	2.08	md	32	58	0.05946	0.08	nc	nc37628	2016-12-02T06:03:08.492Z	8 km NE of Coalinga, California	earthquake	0.17	0.3	0.05	22	reviewed	nc	nc
12/25/1984	0:01:20	36.2063333	-120.374	10.091	2.18	md	32	58	0.04955	0.06	nc	nc38906	2016-12-02T06:01:23.879Z	Central California	earthquake	0.22	0.27	0.11	27	reviewed	nc	nc
12/24/1984	6:06:42	36.0901667	-119.8645	19.418	2.09	md	19	142	0.2009	0.14	nc	nc35291	2016-12-02T05:59:45.088Z	11 km SSW of Stratford, California	earthquake	0.81	1.32	0.1	8	reviewed	nc	nc
12/21/1984	22:09:18	35.457	-119.782	-0.571	3.13	ml	0	146.6		0.237	ci	ci57150	2016-02-02T19:20:01.460Z	23km ENE of Simmler, CA	earthquake		3.347		6	reviewed	ci	ci
12/20/1984	18:52:54	35.432	-119.99	6.316	2.12	mc	0	120		0.074	ci	ci57091	2016-02-03T03:20:16.820Z	9km N of Simmler, CA	earthquake		2.136		10	reviewed	ci	ci
12/20/1984	10:11:54	35.013	-118.981	10.537	2.12	mc	0	137.8		0.192	ci	ci57058	2016-02-03T00:35:50.800Z	9km NNW of Grapevine, CA	earthquake		2.668		25	reviewed	ci	ci
12/16/1984	1:16:43	36.248	-120.3685	8.761	2.01	md	26	83	0.02072	0.07	nc	nc34431	2016-12-02T05:44:41.563Z	12 km N of Coalinga, California	earthquake	0.34	0.24	0.07	14	reviewed	nc	nc
12/8/1984	9:10:41	35.572	-119.224	5.023	2.15	mc	0	154.2		0.27	ci	ci56412	2016-02-02T19:19:24.780Z	9km NNE of Shafter, CA	earthquake				11	reviewed	ci	ci
12/8/1984	8:13:27	35.149	-119.077	10.942	2.1	mh	0	150.8		0.213	ci	ci56471	2016-02-02T19:45:18.290Z	19km SW of Lamont, CA	earthquake		13.65		0	reviewed	ci	ci
12/8/1984	8:13:19	35.125	-119.059	13.166	2.1	mh	0	166.8		0.173	ci	ci56470	2016-02-02T22:23:01.960Z	20km SW of Lamont, CA	earthquake		8.01		0	reviewed	ci	ci
12/7/1984	12:43:51	35.124	-119.047	13.779	2	mc	0	165		0.189	ci	ci56349	2016-02-02T21:57:24.700Z	19km SW of Lamont, CA	earthquake		3.488		10	reviewed	ci	ci
12/7/1984	11:50:26	36.233	-120.3673333	10.434	2.45	md	45	43	0.02523	0.08	nc	nc33696	2016-12-02T05:27:40.613Z	10 km N of Coalinga, California	earthquake	0.2	0.32	0.1	24	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/7/1984	1:20:19	36.1726667	-120.2468333	11.787	2.38	md	38	75	0.109	0.09	nc	nc33502	2016-12-02T05:26:42.496Z	10 km ENE of Coalinga, California	earthquake	0.26	0.52	0.13	26	reviewed	nc	nc
12/7/1984	0:58:14	36.1711667	-120.2491667	11.287	2	md	28	75	0.109	0.07	nc	nc33500	2016-12-02T05:26:39.673Z	10 km ENE of Coalinga, California	earthquake	0.32	0.69	0.1	23	reviewed	nc	nc
12/5/1984	7:56:32	34.723	-120.141	12.315	2.58	mc	0	120.7		0.257	ci	ci56221	2016-02-03T00:35:08.610Z	7km NNW of Los Olivos, CA	earthquake		5.138		10	reviewed	ci	ci
12/4/1984	12:17:39	35.435	-119.47	5.085	2.1	mc	0	142.1		0.422	ci	ci56124	2016-02-03T03:19:29.690Z	4km N of Buttonwillow, CA	earthquake				6	reviewed	ci	ci
12/4/1984	10:07:20	35.122	-119.045	13.442	2.2	mh	0	164.2		0.13	ci	ci56157	2016-02-03T02:24:54.080Z	19km SW of Lamont, CA	earthquake		5.43		0	reviewed	ci	ci
12/4/1984	7:02:07	35.128	-118.863	6.359	2	mc	0	93		0.222	ci	ci56155	2016-02-02T20:38:01.530Z	10km SSW of Arvin, CA	earthquake		1.429		26	reviewed	ci	ci
12/3/1984	9:20:04	36.171	-120.2448333	11.807	2.3	md	34	76	0.1117	0.07	nc	nc33156	2016-12-02T05:18:00.157Z	10 km ENE of Coalinga, California	earthquake	0.2	0.44	0.11	26	reviewed	nc	nc
11/29/1984	10:51:41	36.103	-120.0786667	-0.044	2.2	md	15	259	0.2595	0.07	nc	nc1122742	2016-12-02T05:03:17.514Z	11 km S of Huron, California	earthquake	1.16	7.25	0.14	15	reviewed	nc	nc
11/29/1984	10:37:16	36.0953333	-120.0985	2.974	2.03	md	33	237	0.2505	0.11	nc	nc35053	2016-12-02T05:03:11.842Z	10 km NNE of Avenal, California	earthquake	0.66	1.36	0.12	17	reviewed	nc	nc
11/26/1984	9:45:44	36.1028333	-120.1018333	7.04	2.75	md	46	165	0.04234	0.06	nc	nc34879	2016-12-02T04:51:30.304Z	11 km S of Huron, California	earthquake	0.48	0.21	0.14	40	reviewed	nc	nc
11/25/1984	19:19:16	36.109	-120.0973333	7.07	2.95	md	17	188	0.04865	0.03	nc	nc41779	2016-12-02T04:49:29.571Z	10 km S of Huron, California	earthquake	0.95	0.35	0.16	16	reviewed	nc	nc
11/25/1984	12:54:56	35.048	-119.14	13.266	2.25	mc	0	131.5		0.217	ci	ci54927	2016-02-02T20:36:50.520Z	22km WNW of Grapevine, CA	earthquake		1.144		24	reviewed	ci	ci
11/25/1984	4:50:54	36.1078333	-120.1325	4.15	2.15	md	30	143	0.05045	0.16	nc	nc41761	2016-12-02T04:47:21.333Z	10 km SSW of Huron, California	earthquake	0.44	0.43	0.15	10	reviewed	nc	nc
11/25/1984	4:46:23	36.1158333	-120.1265	4.13	2.43	md	33	151	0.05676	0.19	nc	nc32476	2016-12-02T04:47:20.376Z	9 km SSW of Huron, California	earthquake	0.54	0.56	0.14	16	reviewed	nc	nc
11/25/1984	2:46:59	36.1111667	-120.115	6.27	3.33	md	41	159	0.05045	0.1	nc	nc32563	2016-12-02T04:46:55.889Z	10 km S of Huron, California	earthquake	0.25	0.28	0.19	22	reviewed	nc	nc
11/24/1984	19:30:41	36.1431667	-120.0496667	5.205	2.11	md	6	295	0.0955	0.02	nc	nc42516	2016-12-02T04:45:29.794Z	8 km SE of Huron, California	earthquake	5.81	1.26	0.14	11	reviewed	nc	nc
11/24/1984	19:22:10	36.1086667	-120.1086667	6.66	3.01	md	20	174	0.04775	0.09	nc	nc42515	2016-12-02T04:45:27.927Z	10 km S of Huron, California	earthquake	0.5	0.45	0.11	18	reviewed	nc	nc
11/24/1984	15:42:56	36.106	-120.1076667	7.24	2.91	md	39	162	0.04505	0.08	nc	nc32449	2016-12-02T04:44:45.832Z	10 km S of Huron, California	earthquake	0.26	0.37	0.1	26	reviewed	nc	nc
11/24/1984	3:33:14	36.1651667	-120.3176667	11.707	2.04	md	34	55	0.08649	0.04	nc	nc42739	2016-12-02T04:41:15.756Z	4 km NE of Coalinga, California	earthquake	0.26	0.39	0.12	22	reviewed	nc	nc
11/23/1984	14:04:00	34.745	-120.164	9.301	2.56	mc	0	131.4		0.124	ci	ci54506	2016-02-03T00:33:41.290Z	10km NNW of Los Olivos, CA	earthquake		116.1		23	reviewed	ci	ci
11/23/1984	13:35:19	35.131	-119.048	5.301	2.19	mc	0	189.3		0.219	ci	ci54505	2016-02-02T21:56:01.070Z	19km SW of Lamont, CA	earthquake				24	reviewed	ci	ci
11/22/1984	14:53:32	36.0968333	-120.2015	5.9	2.28	md	44	83	0.08288	0.09	nc	nc32331	2016-12-02T04:33:28.052Z	12 km NNW of Avenal, California	earthquake	0.19	0.47	0.17	15	reviewed	nc	nc
11/21/1984	6:11:42	36.1346667	-120.229	9.33	2.2	md	27	82	0.1216	0.08	nc	nc32235	2016-12-02T04:32:00.044Z	11 km E of Coalinga, California	earthquake	0.27	0.54	0.19	18	reviewed	nc	nc
11/20/1984	6:55:58	36.1481667	-120.2513333	9.797	2.22	md	34	182	0.1252	0.11	nc	nc32173	2016-12-02T04:30:55.000Z	9 km E of Coalinga, California	earthquake	0.36	0.54	0.14	22	reviewed	nc	nc
11/18/1984	3:52:23	36.0548333	-120.6021667	8.638	2.4	md	44	46	0.01441	0.06	nc	nc32056	2016-12-02T04:29:16.488Z	23 km NW of Parkfield, California	earthquake	0.19	0.39	0.13	32	reviewed	nc	nc
11/18/1984	2:13:07	36.3201667	-120.2918333	6.651	2.13	md	25	178	0.06486	0.16	nc	nc32054	2016-12-02T04:29:15.573Z	20 km S of Cantua Creek, California	earthquake	0.59	0.47	0.12	11	reviewed	nc	nc
11/14/1984	4:02:18	36.2413333	-120.379	8.456	2.38	md	45	104	0.03063	0.09	nc	nc31879	2016-12-02T04:25:41.127Z	11 km N of Coalinga, California	earthquake	0.29	0.2	0.12	21	reviewed	nc	nc
11/13/1984	4:23:16	36.2878333	-120.4185	7.055	2.3	md	30	160	0.07207	0.14	nc	nc31807	2016-12-02T04:25:01.016Z	17 km NNW of Coalinga, California	earthquake	0.4	0.34	0.14	10	reviewed	nc	nc
11/13/1984	0:04:13	36.2886667	-120.4168333	9.045	3.31	md	50	68	0.06126	0.08	nc	nc31835	2016-12-02T04:24:53.532Z	17 km NNW of Coalinga, California	earthquake	0.2	0.27	0.16	34	reviewed	nc	nc
11/11/1984	4:00:21	36.221	-120.2745	7.287	2.26	md	39	112	0.06216	0.06	nc	nc31743	2016-12-02T04:23:16.702Z	11 km NE of Coalinga, California	earthquake	0.13	0.23	0.13	27	reviewed	nc	nc
11/8/1984	23:58:06	36.1081667	-120.0953333	6.99	2.23	md	34	238	0.04865	0.05	nc	nc31508	2016-12-02T04:21:32.071Z	10 km S of Huron, California	earthquake	0.43	0.16	0.2	29	reviewed	nc	nc
11/7/1984	7:10:38	34.726	-120.151	2.521	2.62	mc	0	124.2		0.162	ci	ci53748	2016-02-03T00:33:01.170Z	7km NNW of Los Olivos, CA	earthquake		3.285		26	reviewed	ci	ci
11/5/1984	2:29:13	36.0683333	-120.6298333	2.176	2.05	md	29	47	0.02703	0.07	nc	nc31254	2016-12-02T04:18:32.943Z	25 km ENE of San Ardo, California	earthquake	0.2	0.55	0.16	27	reviewed	nc	nc
11/4/1984	4:59:25	36.1973333	-120.3136667	10.007	2.38	md	43	92	0.05676	0.07	nc	nc31232	2016-12-02T04:17:37.677Z	7 km NNE of Coalinga, California	earthquake	0.14	0.27	0.12	51	reviewed	nc	nc
11/3/1984	13:17:36	36.174	-120.3053333	8.747	2.1	md	39	58	0.08108	0.11	nc	nc31279	2016-12-02T04:17:04.946Z	6 km NE of Coalinga, California	earthquake	0.31	0.36	0.15	30	reviewed	nc	nc
11/2/1984	9:24:16	34.743	-120.172	11.041	2.42	mc	0	134.3		0.249	ci	ci53492	2016-02-02T20:35:42.820Z	10km E of Los Alamos, CA	earthquake				19	reviewed	ci	ci
11/2/1984	2:38:20	36.2645	-120.3618333	8.937	2.02	md	49	58	0.02162	0.09	nc	nc31122	2016-12-02T04:16:03.630Z	13 km N of Coalinga, California	earthquake	0.19	0.15	0.19	49	reviewed	nc	nc
10/31/1984	21:16:18	35.041	-119.06	12.209	2.13	mc	0	234.9		0.102	ci	ci53393	2016-02-03T01:55:02.700Z	16km NW of Grapevine, CA	earthquake		4.568		15	reviewed	ci	ci
10/31/1984	5:33:02	36.2815	-120.3326667	8.171	2.22	md	34	127	0.03333	0.07	nc	nc31003	2016-12-02T04:14:36.168Z	15 km N of Coalinga, California	earthquake	0.15	0.12	0.12	42	reviewed	nc	nc
10/30/1984	19:38:54	34.723	-120.145	1.241	2.29	mc	0	122		0.268	ci	ci53338	2016-02-02T17:57:05.650Z	7km NNW of Los Olivos, CA	earthquake		2.215		8	reviewed	ci	ci
10/30/1984	17:17:15	36.0123333	-120.2188333	16.936	2.17	md	25	123	0.1009	0.08	nc	nc30982	2016-12-02T04:14:05.283Z	8 km W of Avenal, California	earthquake	0.31	0.57	0.16	23	reviewed	nc	nc
10/30/1984	4:07:15	36.122	-120.2378333	7.28	2.47	md	35	76	0.1207	0.07	nc	nc30932	2016-12-02T04:13:36.913Z	Central California	earthquake	0.2	0.57	0.16	53	reviewed	nc	nc
10/30/1984	2:09:55	36.123	-120.235	6.53	2.44	md	36	77	0.1189	0.11	nc	nc30971	2016-12-02T04:13:32.238Z	11 km E of Coalinga, California	earthquake	0.26	0.57	0.13	42	reviewed	nc	nc
10/27/1984	21:19:17	34.739	-120.16	10.721	2.24	mc	0	129.2		0.177	ci	ci53198	2016-02-03T01:54:55.360Z	9km NNW of Los Olivos, CA	earthquake		5.987		8	reviewed	ci	ci
10/27/1984	20:13:56	34.734	-120.153	1.541	2.58	mc	0	120.3		0.196	ci	ci53193	2016-02-02T23:13:31.700Z	8km NNW of Los Olivos, CA	earthquake		3.114		31	reviewed	ci	ci
10/27/1984	19:11:46	36.1808333	-120.2853333	10.527	2.03	md	25	63	0.08288	0.05	nc	nc30786	2016-12-02T04:11:41.160Z	8 km NE of Coalinga, California	earthquake	0.19	0.36	0.11	30	reviewed	nc	nc
10/26/1984	1:43:38	34.742	-120.15	11.041	2.37	mc	0	126.3		0.127	ci	ci53091	2016-02-02T21:54:43.060Z	9km NNW of Los Olivos, CA	earthquake				14	reviewed	ci	ci
10/25/1984	23:10:46	36.3238333	-120.3388333	4.484	2.59	md	39	79	0.02793	0.11	nc	nc30720	2016-12-02T04:10:33.706Z	19 km S of Cantua Creek, California	earthquake	0.2	0.13	0.13	56	reviewed	nc	nc
10/25/1984	20:29:33	34.729	-120.158	9.371	3.11	ml	0	116.5		0.301	ci	ci53080	2016-02-02T17:56:43.010Z	8km NNW of Los Olivos, CA	earthquake		3.229		8	reviewed	ci	ci
10/25/1984	17:58:57	34.726	-120.148	11.041	2.3	mc	0	123.3		0.286	ci	ci53072	2016-02-02T23:13:27.290Z	7km NNW of Los Olivos, CA	earthquake				5	reviewed	ci	ci
10/25/1984	11:58:13	34.74	-120.151	12.011	2.37	mc	0	116.9		0.294	ci	ci52471	2016-02-02T23:12:54.700Z	9km NNW of Los Olivos, CA	earthquake		2.556		8	reviewed	ci	ci
10/25/1984	11:43:56	34.728	-120.143	9.061	2.49	mc	0	113.8		0.297	ci	ci52470	2016-02-02T19:16:01.670Z	7km NNW of Los Olivos, CA	earthquake		9.369		14	reviewed	ci	ci
10/25/1984	10:36:02	34.737	-120.147	5.041	4.53	ml	0	88.9		0.288	ci	ci52453	2020-07-09T21:45:16.483Z	8km NNW of Los Olivos, CA	earthquake				9	reviewed	ci	ci
10/24/1984	4:36:35	36.1735	-120.2635	5.187	2.04	md	44	113	0.0991	0.24	nc	nc30590	2016-12-02T04:09:15.725Z	9 km ENE of Coalinga, California	earthquake	0.32	0.49	0.11	39	reviewed	nc	nc
10/24/1984	4:23:34	36.189	-120.2773333	9.857	2.52	md	38	64	0.08018	0.06	nc	nc30589	2016-12-02T04:09:14.796Z	9 km NE of Coalinga, California	earthquake	0.17	0.24	0.14	58	reviewed	nc	nc
10/22/1984	9:03:27	35.117	-119.042	12.399	2.09	mc	0	172.4		0.214	ci	ci53048	2016-02-03T03:16:42.800Z	20km SW of Lamont, CA	earthquake		1.772		19	reviewed	ci	ci
10/20/1984	4:09:35	36.0583333	-120.0596667	22.806	2.08	md	34	165	0.04054	0.17	nc	nc30371	2016-12-02T04:05:47.800Z	8 km NE of Avenal, California	earthquake	0.72	0.39	0.156	41	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
10/19/1984	8:01:24	35.8338333	-119.997	8.65	2.81	md	52	168	0.2018	0.21	nc	nc30323	2016-12-02T04:04:58.127Z	19 km S of Kettleman City, California	earthquake	0.57	1	0.15	57	reviewed	nc	nc
10/17/1984	12:28:34	36.1565	-120.2126667	8.427	2.72	md	38	90	0.127	0.07	nc	nc30200	2016-12-02T04:03:47.330Z	11 km WSW of Huron, California	earthquake	0.2	0.43	0.14	58	reviewed	nc	nc
10/15/1984	8:49:28	35.7316667	-120.1956667	43.924	2.27	md	28	180	0.04414	2.8	nc	nc30068	2016-12-02T04:02:27.684Z	18 km ENE of Shandon, California	earthquake	19.06	20.57	0.14	26	reviewed	nc	nc
10/15/1984	8:12:33	35.9758333	-120.1361667	11.853	2.81	md	10	187	0.08829	0.04	nc	nc30077	2016-12-02T04:02:24.902Z	3 km SSW of Avenal, California	earthquake	0.75	2.28	0.15	14	reviewed	nc	nc
10/15/1984	8:12:21	35.998	-120.174	15.597	3.08	md	35	123	0.08198	0.1	nc	nc30076	2016-12-02T04:02:23.960Z	4 km W of Avenal, California	earthquake	0.31	0.43	0.19	46	reviewed	nc	nc
10/10/1984	17:48:00	36.2505	-120.3325	4.677	2.5	md	20	142	0.008108	0.04	nc	nc29786	2016-12-02T03:58:30.471Z	12 km NNE of Coalinga, California	earthquake	0.34	0.12	0.21	41	reviewed	nc	nc
10/8/1984	22:54:56	35.117	-119.038	13.691	2.11	mc	0	161.9		0.172	ci	ci51927	2016-02-02T23:12:31.140Z	19km SW of Lamont, CA	earthquake		5.356		19	reviewed	ci	ci
10/8/1984	20:30:54	36.3016667	-120.3818333	10.798	2.47	md	36	57	0.03604	0.08	nc	nc29687	2016-12-02T03:56:36.182Z	18 km N of Coalinga, California	earthquake	0.15	0.22	0.21	50	reviewed	nc	nc
10/7/1984	16:54:54	34.677	-119.963	-1.276	2.14	mc	0	142.1		0.172	ci	ci51847	2016-02-03T00:31:19.250Z	13km ENE of Santa Ynez, CA	earthquake		3.501		9	reviewed	ci	ci
10/2/1984	13:24:13	36.2426667	-120.3783333	8.758	2.74	md	57	53	0.02973	0.08	nc	nc29129	2016-12-02T03:50:56.632Z	11 km N of Coalinga, California	earthquake	0.13	0.16	0.15	73	reviewed	nc	nc
10/1/1984	19:29:22	36.261	-120.4348333	9.851	2.44	md	38	63	0.07568	0.11	nc	nc29057	2016-12-02T03:50:16.357Z	15 km NNW of Coalinga, California	earthquake	0.16	0.34	0.13	54	reviewed	nc	nc
10/1/1984	14:37:57	35.038	-119.073	20.574	3.3	ml	0	98.7		0.213	ci	ci51515	2016-02-02T19:14:49.410Z	17km NW of Grapevine, CA	earthquake		1.198		9	reviewed	ci	ci
9/30/1984	7:29:31	36.0923333	-120.2146667	2.087	2.15	md	22	76	0.09099	0.17	nc	nc28969	2016-12-02T03:49:09.615Z	12 km NW of Avenal, California	earthquake	0.35	0.88	0.21	20	reviewed	nc	nc
9/28/1984	15:11:05	35.9933333	-120.1788333	16.638	3.37	md	41	123	0.08739	0.09	nc	nc28831	2016-12-02T03:47:46.319Z	4 km WSW of Avenal, California	earthquake	0.26	0.41	0.17	95	reviewed	nc	nc
9/28/1984	14:34:17	35.9938333	-120.1753333	13.108	2.47	md	12	156	0.08559	0.05	nc	nc28867	2016-12-02T03:47:42.562Z	4 km WSW of Avenal, California	earthquake	0.61	1.06	0.24	14	reviewed	nc	nc
9/28/1984	5:02:49	34.919	-119.128	13.084	2.07	mc	0	101.2		0.182	ci	ci51356	2016-02-03T00:30:24.140Z	8km NNE of Pine Mountain Club, CA	earthquake		1.23		17	reviewed	ci	ci
9/26/1984	17:29:33	36.1963333	-120.2885	8.117	2.04	md	27	101	0.06847	0.13	nc	nc28678	2016-12-02T03:45:26.617Z	9 km NE of Coalinga, California	earthquake	0.52	0.32	0.19	27	reviewed	nc	nc
9/26/1984	16:48:05	36.215	-120.2183333	5.777	2.14	md	22	111	0.1063	0.07	nc	nc28675	2016-12-02T03:45:23.825Z	10 km W of Huron, California	earthquake	0.24	0.43	0.15	27	reviewed	nc	nc
9/25/1984	11:14:18	36.3146667	-120.2888333	7.397	2.5	md	44	84	0.06937	0.05	nc	nc28578	2016-12-02T03:44:22.649Z	20 km NNE of Coalinga, California	earthquake	0.08	0.09	0.13	55	reviewed	nc	nc
9/23/1984	11:51:11	35.068	-119.075	17.399	2.03	mc	0	119.2	0.09932	0.183	ci	ci52804	2016-02-02T17:54:38.050Z	19km NW of Grapevine, CA	earthquake		2.079		21	reviewed	ci	ci
9/23/1984	10:58:03	35.081	-119.088	16.693	2.14	mc	0	176		0.129	ci	ci51122	2016-02-02T21:52:17.220Z	21km NW of Grapevine, CA	earthquake		4.086		30	reviewed	ci	ci
9/23/1984	8:29:58	35.081	-119.069	14.574	2.26	mc	0	96.2		0.215	ci	ci52825	2016-02-02T20:33:44.920Z	20km NW of Grapevine, CA	earthquake		0.508		34	reviewed	ci	ci
9/22/1984	18:52:54	36.2078333	-120.3261667	10.037	2.75	md	18	61	0.04324	0.03	nc	nc28541	2016-12-02T03:41:11.183Z	8 km NNE of Coalinga, California	earthquake	0.19	0.29	0.19	17	reviewed	nc	nc
9/22/1984	18:50:41	36.2078333	-120.3236667	9.737	3.1	md	45	57	0.04414	0.05	nc	nc28540	2016-12-02T03:41:09.301Z	8 km NNE of Coalinga, California	earthquake	0.16	0.17	0.13	89	reviewed	nc	nc
9/20/1984	11:31:17	34.675	-119.972	-0.959	2.3	mc	0	76		0.193	ci	ci50953	2016-02-02T17:53:48.820Z	12km NE of Santa Ynez, CA	earthquake		2.297		13	reviewed	ci	ci
9/19/1984	21:11:18	34.661	-119.968	0.431	3.48	ml	0	74.7		0.215	ci	ci50930	2016-02-03T00:29:42.970Z	12km ENE of Santa Ynez, CA	earthquake		1.139		8	reviewed	ci	ci
9/19/1984	20:42:55	36.1426667	-120.2396667	5.487	2.17	md	34	113	0.1333	0.11	nc	nc28247	2016-12-02T03:37:43.176Z	10 km E of Coalinga, California	earthquake	0.26	0.42	0.15	39	reviewed	nc	nc
9/17/1984	22:40:53	36.207	-120.3355	8.748	2.22	md	13	135	0.04234	0.02	nc	nc28030	2016-12-02T03:35:56.359Z	7 km NNE of Coalinga, California	earthquake	0.48	0.39	0.19	13	reviewed	nc	nc
9/13/1984	7:20:55	36.2058333	-120.2715	8.587	2.03	md	33	159	0.07207	0.09	nc	nc27847	2016-12-02T03:32:32.360Z	10 km NE of Coalinga, California	earthquake	0.45	0.23	0.13	34	reviewed	nc	nc
9/11/1984	5:24:32	36.1231667	-120.105	7.44	2.39	md	36	163	0.06216	0.37	nc	nc27717	2016-12-02T03:31:04.824Z	8 km S of Huron, California	earthquake	1.52	0.8	0.17	32	reviewed	nc	nc
9/9/1984	6:03:57	36.1151667	-120.195	8.31	2.61	md	45	95	0.08829	0.05	nc	nc27562	2016-12-02T03:28:59.479Z	12 km SW of Huron, California	earthquake	0.17	0.34	0.15	60	reviewed	nc	nc
9/8/1984	10:57:06	36.0891667	-120.0273333	6.566	2.14	md	37	191	0.07207	0.25	nc	nc27516	2016-12-02T03:28:21.061Z	10 km NNW of Kettleman City, California	earthquake	1.24	0.31	0.15	24	reviewed	nc	nc
9/7/1984	21:48:25	36.0093333	-120.5828333	2.989	2.45	md	19	117	0.06036	0.07	nc	nc27685	2016-12-02T03:27:57.684Z	18 km NW of Parkfield, California	earthquake	0.31	0.84	0.24	21	reviewed	nc	nc
9/7/1984	21:48:09	36.0171667	-120.5705	4.529	2.31	md	32	60	0.05586	0.04	nc	nc27631	2016-12-02T03:27:56.730Z	18 km NW of Parkfield, California	earthquake	0.17	0.36	0.54	26	reviewed	nc	nc
9/7/1984	20:54:57	36.1838333	-119.805	19.037	2.44	md	34	107	0.2351	0.38	nc	nc27626	2016-12-02T03:27:52.040Z	1 km ESE of Stratford, California	earthquake	0.78	1.19	0.18	31	reviewed	nc	nc
9/7/1984	7:06:30	36.114	-120.0476667	7.135	2.09	md	31	222	0.07297	0.11	nc	nc27466	2016-12-02T03:27:19.046Z	11 km SSE of Huron, California	earthquake	0.73	0.26	0.11	20	reviewed	nc	nc
9/7/1984	4:20:54	36.1043333	-120.0856667	7.02	2.06	md	31	171	0.04775	0.07	nc	nc27462	2016-12-02T03:27:14.329Z	11 km S of Huron, California	earthquake	0.6	0.19	0.2	22	reviewed	nc	nc
9/7/1984	2:52:18	36.1035	-120.0606667	8.21	3.5	ml	36	179	0.05856	0.06	nc	nc27459	2016-12-02T03:27:11.534Z	11 km SSE of Huron, California	earthquake	0.31	0.23		0	reviewed	nc	nc
9/5/1984	5:56:04	36.2981667	-120.3343333	6.128	3.1	md	66	71	0.04955	0.09	nc	nc27283	2016-12-02T03:25:54.643Z	17 km N of Coalinga, California	earthquake	0.15	0.07	0.24	118	reviewed	nc	nc
9/2/1984	4:12:52	36.1808333	-120.3066667	1.787	2.36	md	15	87	0.07477	0.13	nc	nc26956	2016-12-02T03:23:11.782Z	6 km NE of Coalinga, California	earthquake	0.26	0.71	0.17	39	reviewed	nc	nc
9/1/1984	22:36:06	35.7705	-120.3415	1.49	2.59	md	40	50	0.05135	0.39	nc	nc26942	2016-12-02T03:22:56.872Z	13 km NNE of Shandon, California	earthquake	0.43	3.71	0.13	48	reviewed	nc	nc
8/30/1984	20:41:21	36.1235	-120.2951667	15.34	3	ml	45	59	0.118	0.08	nc	nc26754	2016-12-02T03:21:26.748Z	6 km ESE of Coalinga, California	earthquake	0.21	0.53		0	reviewed	nc	nc
8/30/1984	20:20:37	36.2515	-120.3225	8.707	2.88	md	47	64	0.01622	0.12	nc	nc26753	2016-12-02T03:21:25.794Z	12 km NNE of Coalinga, California	earthquake	0.16	0.26	0.11	80	reviewed	nc	nc
8/29/1984	0:00:56	36.2335	-120.3431667	5.308	2.12	md	10	171	0.01622	0.02	nc	nc26585	2016-12-02T03:19:32.895Z	10 km N of Coalinga, California	earthquake	1.49	0.35	0.18	13	reviewed	nc	nc
8/28/1984	23:12:16	36.3031667	-120.3665	13.837	2.27	md	25	65	0.03333	0.1	nc	nc26583	2016-12-02T03:19:28.259Z	18 km N of Coalinga, California	earthquake	0.28	0.32	0.13	31	reviewed	nc	nc
8/27/1984	14:21:22	36.0923333	-120.2398333	10.71	2.31	md	31	68	0.1099	0.07	nc	nc26467	2016-12-02T03:18:20.674Z	12 km ESE of Coalinga, California	earthquake	0.22	0.42	0.18	41	reviewed	nc	nc
8/23/1984	9:35:09	36.114	-120.186	8.74	3.24	md	48	99	0.08108	0.04	nc	nc26166	2016-12-02T03:14:37.390Z	12 km SW of Huron, California	earthquake	0.2	0.27	0.17	105	reviewed	nc	nc
8/22/1984	21:34:23	35.7671667	-120.6175	4.566	2.28	md	4	183	0.1369	0.1	nc	nc1119581	2016-12-02T03:14:06.500Z	7 km ENE of San Miguel, California	earthquake	2.31	7.19		1	reviewed	nc	nc
8/18/1984	10:59:36	36.2761667	-120.3213333	7.937	2.02	md	17	77	0.03243	0.07	nc	nc25854	2016-12-02T03:09:42.075Z	15 km NNE of Coalinga, California	earthquake	0.18	0.17	0.15	18	reviewed	nc	nc
8/18/1984	3:19:32	36.263	-120.4471667	10.185	2.14	md	21	74	0.08559	0.09	nc	nc25844	2016-12-02T03:09:24.929Z	15 km NNW of Coalinga, California	earthquake	0.46	0.66	0.19	23	reviewed	nc	nc
8/16/1984	20:19:45	36.2743333	-120.3768333	8.968	2.58	md	35	57	0.03694	0.11	nc	nc25772	2016-12-02T03:08:09.603Z	15 km N of Coalinga, California	earthquake	0.3	0.27	0.2	38	reviewed	nc	nc
8/16/1984	11:27:40	36.1208333	-120.2045	5.14	2.48	md	48	90	0.0973	0.15	nc	nc25750	2016-12-02T03:07:49.923Z	12 km SW of Huron, California	earthquake	0.27	0.47	0.16	47	reviewed	nc	nc
8/16/1984	11:24:43	36.1268333	-120.1888333	9.47	3.1	ml	51	138	0.09189	0.05	nc	nc25746	2016-12-02T03:07:48.014Z	11 km SW of Huron, California	earthquake	0.1	0.21		0	reviewed	nc	nc
8/16/1984	1:30:52	36.1235	-120.201	8.61	3.2	ml	49	93	0.0973	0.08	nc	nc25726	2016-12-02T03:07:23.425Z	12 km SW of Huron, California	earthquake	0.16	0.35		4	reviewed	nc	nc
8/14/1984	11:32:42	36.251	-120.3743333	8.411	2.13	md	36	91	0.02523	0.12	nc	nc25589	2016-12-02T03:05:16.624Z	12 km N of Coalinga, California	earthquake	0.57	0.46	0.2	33	reviewed	nc	nc
8/13/1984	16:53:40	36.1528333	-120.2508333	8.507	2.55	md	43	74	0.1216	0.16	nc	nc25530	2016-12-02T03:04:20.078Z	9 km E of Coalinga, California	earthquake	0.29	0.55	0.12	48	reviewed	nc	nc
8/9/1984	15:57:50	35.9806667	-120.5276667	11.042	2.1	md	38	74	0.05135	0.04	nc	nc25265	2016-12-02T03:00:02.219Z	12 km NW of Parkfield, California	earthquake	0.15	0.34	0.23	44	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
8/9/1984	4:07:11	35.086	-119.058	14.371	2.13	mc	0	109.1		0.235	ci	ci47061	2016-02-02T19:11:20.430Z	20km NW of Grapevine, CA	earthquake		0.681		18	reviewed	ci	ci
8/5/1984	19:20:07	35.1998333	-120.6875	2.406	2.18	md	22	189	0.05135	0.08	nc	nc24987	2016-12-02T02:55:11.081Z	4 km ENE of Avila Beach, California	earthquake	0.69	0.96	0.21	27	reviewed	nc	nc
8/5/1984	13:56:12	36.2036667	-120.3086667	9.977	2.21	md	32	96	0.05315	0.07	nc	nc24981	2016-12-02T02:54:57.700Z	8 km NNE of Coalinga, California	earthquake	0.16	0.24	0.19	38	reviewed	nc	nc
8/5/1984	11:21:02	36.0358333	-120.5951667	3.719	2.25	md	42	51	0.03333	0.08	nc	nc24979	2016-12-02T02:54:53.991Z	21 km NW of Parkfield, California	earthquake	0.17	0.38	0.12	36	reviewed	nc	nc
8/4/1984	8:19:04	35.072	-119.088	17.294	2.57	mc	0	151.7		0.191	ci	ci46600	2016-02-03T00:27:02.680Z	20km NW of Grapevine, CA	earthquake		1.652		33	reviewed	ci	ci
8/4/1984	7:09:18	35.04	-119.076	15.861	2.57	mc	0	240.3		0.117	ci	ci46598	2016-02-02T19:11:04.480Z	17km NW of Grapevine, CA	earthquake		3.472		40	reviewed	ci	ci
8/4/1984	7:09:03	35.064	-119.08	19.786	2.4	mc	0	132.1		0.165	ci	ci46650	2016-02-02T20:29:55.870Z	19km NW of Grapevine, CA	earthquake		4.059		38	reviewed	ci	ci
8/1/1984	10:08:25	34.688	-119.978	-1.196	2	mc	0	100.1	0.1599	0.298	ci	ci46464	2016-02-02T21:49:17.290Z	12km NE of Santa Ynez, CA	earthquake		1.974		5	reviewed	ci	ci
8/1/1984	7:06:07	36.2356667	-120.2578333	8.507	2.72	md	44	74	0.07027	0.07	nc	nc24663	2016-12-02T02:50:29.892Z	14 km NE of Coalinga, California	earthquake	0.15	0.26	0.12	69	reviewed	nc	nc
8/1/1984	1:12:11	36.2188333	-120.3746667	9.995	2.08	md	26	67	0.03964	0.1	nc	nc24644	2016-12-02T02:50:09.817Z	8 km N of Coalinga, California	earthquake	0.25	0.4	0.12	23	reviewed	nc	nc
7/24/1984	16:14:57	36.1806667	-120.275	6.487	2.14	md	29	92	0.08829	0.15	nc	nc23819	2016-12-02T02:35:46.696Z	8 km ENE of Coalinga, California	earthquake	0.22	0.33	0.18	29	reviewed	nc	nc
7/23/1984	11:15:40	34.843	-120.416	4.933	2.95	mc	0	158		0.332	ci	ci45357	2016-02-02T17:50:23.730Z	3km SE of Orcutt, CA	earthquake				27	reviewed	ci	ci
7/20/1984	15:08:23	35.7668333	-120.4116667	1.678	2.23	md	4	173	0.07027	0.07	nc	nc1117967	2016-12-02T02:29:19.342Z	12 km NNW of Shandon, California	earthquake	1	8.12	0.03	2	reviewed	nc	nc
7/19/1984	14:51:07	36.265	-120.3743333	10.894	2.22	md	20	93	0.02973	0.08	nc	nc23349	2016-12-02T02:27:53.634Z	13 km N of Coalinga, California	earthquake	0.74	1	0.23	19	reviewed	nc	nc
7/18/1984	8:48:52	36.2411667	-120.2868333	4.167	2.2	md	12	122	0.04595	0.09	nc	nc23211	2016-12-02T02:24:58.500Z	13 km NNE of Coalinga, California	earthquake	0.55	0.65	0.23	15	reviewed	nc	nc
7/18/1984	7:38:49	35.074	-119.083	16.366	2.38	mc	0	155.3		0.114	ci	ci45475	2016-02-02T21:48:45.190Z	20km NW of Grapevine, CA	earthquake		3.652		32	reviewed	ci	ci
7/18/1984	7:38:48	35.053	-119.081	19.526	2.21	mc	0	0		0.083	ci	ci45525	2016-02-03T01:48:42.080Z	18km NW of Grapevine, CA	earthquake				1	reviewed	ci	ci
7/18/1984	7:08:16	35.073	-119.076	13.826	2.49	mc	0	104.6		0.215	ci	ci45472	2016-02-03T00:26:21.090Z	20km NW of Grapevine, CA	earthquake		0.372		39	reviewed	ci	ci
7/18/1984	2:20:57	35.089	-119.08	13.036	2.01	mc	0	0	0.1205	0.237	ci	ci45441	2016-02-02T23:07:33.020Z	21km NW of Grapevine, CA	earthquake				11	reviewed	ci	ci
7/18/1984	2:13:54	35.077	-119.078	13.566	3.19	ml	0	119		0.182	ci	ci45440	2016-02-03T01:48:40.430Z	20km NW of Grapevine, CA	earthquake		0.656		11	reviewed	ci	ci
7/15/1984	11:49:59	36.2805	-120.4326667	5.608	2.11	md	19	71	0.07568	0.09	nc	nc22748	2016-12-02T02:16:37.710Z	16 km NNW of Coalinga, California	earthquake	0.33	0.64	0.18	17	reviewed	nc	nc
7/14/1984	5:36:07	36.2165	-120.3195	9.037	2	md	21	60	0.03784	0.07	nc	nc22699	2016-12-02T02:15:33.246Z	9 km NNE of Coalinga, California	earthquake	0.49	0.28	0.2	22	reviewed	nc	nc
7/10/1984	20:05:54	36.1071667	-120.5378333	4.788	2.24	md	31	149	0.06036	1.19	nc	nc22489	2016-12-02T02:12:05.848Z	16 km WSW of Coalinga, California	earthquake	3.65	6.6	0.23	27	reviewed	nc	nc
7/6/1984	17:07:37	36.244	-120.39	6.448	2.62	md	31	86	0.03874	0.09	nc	nc22252	2016-12-02T02:08:18.287Z	11 km NNW of Coalinga, California	earthquake	0.27	0.31	0.14	43	reviewed	nc	nc
7/5/1984	13:57:59	35.115	-118.923	13.533	2.11	mc	0	0		0.205	ci	ci44203	2016-02-03T00:25:43.370Z	14km SW of Arvin, CA	earthquake				22	reviewed	ci	ci
7/3/1984	11:48:04	34.968	-119.047	17.898	2.37	mc	0	111.7		0.225	ci	ci44100	2016-02-02T19:09:44.520Z	11km WNW of Grapevine, CA	earthquake		1.267		33	reviewed	ci	ci
7/1/1984	3:49:15	35.251	-118.906	13.102	2.41	mc	0	119.6		0.289	ci	ci43817	2016-02-02T23:06:53.280Z	1km SE of Lamont, CA	earthquake		0.838		34	reviewed	ci	ci
6/30/1984	17:35:38	34.829	-120.375	4.947	2.46	mc	0	0		0.34	ci	ci43795	2016-02-02T20:28:30.910Z	7km SE of Orcutt, CA	earthquake				10	reviewed	ci	ci
6/30/1984	5:10:49	35.176	-119.021	14.298	2.15	mc	0	0		0.197	ci	ci43767	2016-02-03T03:09:31.840Z	13km SW of Lamont, CA	earthquake				20	reviewed	ci	ci
6/29/1984	5:55:35	36.156	-120.269	9.867	3.05	md	37	68	0.1108	0.08	nc	nc21756	2016-12-02T02:00:26.608Z	8 km ENE of Coalinga, California	earthquake	0.14	0.33	0.14	85	reviewed	nc	nc
6/29/1984	2:34:38	36.1533333	-120.2841667	3.487	2.38	md	29	64	0.1072	0.11	nc	nc21776	2016-12-02T02:00:05.491Z	7 km ENE of Coalinga, California	earthquake	0.19	0.57	0.13	32	reviewed	nc	nc
6/23/1984	13:11:51	36.2563333	-120.3303333	9.197	2.12	md	30	64	0.01261	0.12	nc	nc21400	2016-12-02T01:53:40.993Z	13 km NNE of Coalinga, California	earthquake	0.47	0.51	0.15	27	reviewed	nc	nc
6/23/1984	12:00:48	36.2718333	-120.4283333	6.561	2.25	md	33	65	0.07297	0.06	nc	nc21395	2016-12-02T01:53:38.069Z	15 km NNW of Coalinga, California	earthquake	0.29	0.38	0.18	29	reviewed	nc	nc
6/23/1984	5:31:34	36.1625	-120.2325	10.887	2.19	md	25	81	0.1243	0.06	nc	nc21382	2016-12-02T01:53:21.201Z	11 km ENE of Coalinga, California	earthquake	0.16	0.36	0.22	22	reviewed	nc	nc
6/22/1984	8:10:59	36.1595	-120.2365	10.177	3.4	ml	44	85	0.1243	0.04	nc	nc21318	2016-12-02T01:52:22.731Z	11 km E of Coalinga, California	earthquake	0.1	0.3		0	reviewed	nc	nc
6/21/1984	23:33:50	36.0168333	-120.6126667	2.379	2.3	md	40	27	0.05405	0.46	nc	nc21305	2016-12-02T01:51:58.430Z	20 km NW of Parkfield, California	earthquake	0.57	2.22	0.13	43	reviewed	nc	nc
6/20/1984	10:30:01	36.2573333	-120.3468333	8.337	2.12	md	27	105	0.009009	0.08	nc	nc21197	2016-12-02T01:50:37.823Z	13 km N of Coalinga, California	earthquake	0.36	0.16	0.13	28	reviewed	nc	nc
6/18/1984	3:59:59	36.282	-120.351	7.027	2.08	md	19	70	0.03333	0.08	nc	nc21073	2016-12-02T01:48:37.950Z	15 km N of Coalinga, California	earthquake	0.37	0.17	0.17	19	reviewed	nc	nc
6/18/1984	3:44:57	35.9351667	-120.0088333	10.916	2.77	md	54	87	0.1505	0.18	nc	nc21072	2016-12-02T01:48:36.035Z	9 km SSW of Kettleman City, California	earthquake	0.27	0.54	0.15	51	reviewed	nc	nc
6/17/1984	10:03:57	36.2646667	-120.3938333	9.757	2.45	md	37	52	0.04414	0.09	nc	nc21039	2016-12-02T01:48:06.106Z	14 km NNW of Coalinga, California	earthquake	0.25	0.29	0.17	46	reviewed	nc	nc
6/14/1984	17:10:26	36.1918333	-120.316	9.217	2.24	md	28	108	0.06126	0.08	nc	nc20856	2016-12-02T01:45:04.971Z	7 km NE of Coalinga, California	earthquake	0.29	0.25	0.12	31	reviewed	nc	nc
6/14/1984	12:28:32	36.22	-120.4063333	6.925	2.46	md	40	42	0.05946	0.07	nc	nc20836	2016-12-02T01:44:54.065Z	9 km NNW of Coalinga, California	earthquake	0.17	0.28	0.17	53	reviewed	nc	nc
6/11/1984	4:19:39	36.1885	-120.2521667	11.257	2.32	md	31	71	0.0955	0.06	nc	nc20617	2016-12-02T01:41:44.194Z	11 km ENE of Coalinga, California	earthquake	0.17	0.43	0.12	40	reviewed	nc	nc
6/10/1984	20:01:13	36.1895	-120.118	8.19	2.91	md	34	153	0.06486	0.07	nc	nc20595	2016-12-02T01:41:25.105Z	Central California	earthquake	0.57	0.56	0.18	78	reviewed	nc	nc
6/10/1984	18:48:57	36.1725	-120.2468333	8.637	2.06	md	24	119	0.109	0.08	nc	nc20588	2016-12-02T01:41:21.182Z	Central California	earthquake	0.24	0.44	0.11	25	reviewed	nc	nc
6/8/1984	6:31:21	36.2641667	-120.3276667	7.967	2.45	md	34	119	0.01892	0.09	nc	nc1116321	2016-12-02T01:38:04.393Z	14 km NNE of Coalinga, California	earthquake	0.24	0.26	0.16	45	reviewed	nc	nc
6/6/1984	18:57:36	36.1978333	-120.2605	8.38	2.54	md	46	68	0.08468	0.11	nc	nc20263	2016-12-02T01:36:02.455Z	11 km NE of Coalinga, California	earthquake	0.13	0.22	0.14	57	reviewed	nc	nc
6/2/1984	13:41:47	36.248	-120.3996667	7.475	2.13	md	27	78	0.04595	0.03	nc	nc19978	2016-12-02T01:30:17.677Z	Central California	earthquake	0.16	0.2	0.25	26	reviewed	nc	nc
5/31/1984	21:38:32	36.1301667	-120.228	2.41	2.21	md	27	179	0.118	0.1	nc	nc19837	2016-12-02T01:27:55.539Z	11 km E of Coalinga, California	earthquake	0.31	0.75	0.2	27	reviewed	nc	nc
5/25/1984	21:39:26	36.0933333	-120.1896667	5.74	2	md	27	88	0.07297	0.2	nc	nc19396	2016-12-02T01:19:57.112Z	11 km NNW of Avenal, California	earthquake	0.5	0.77	0.15	20	reviewed	nc	nc
5/25/1984	14:50:00	36.216	-120.4083333	7.361	3.16	md	50	43	0.06306	0.1	nc	nc19378	2016-12-02T01:19:34.440Z	9 km NNW of Coalinga, California	earthquake	0.16	0.29	0.15	106	reviewed	nc	nc
5/21/1984	23:22:56	36.0501667	-120.623	-0.211	2.36	md	32	51	0.02883	0.1	nc	nc19158	2016-12-02T01:15:33.425Z	23 km NW of Parkfield, California	earthquake	0.22	3.53	0.24	28	reviewed	nc	nc
5/20/1984	18:05:07	36.179	-120.2653333	8.327	2.14	md	36	211	0.09459	0.07	nc	nc19025	2016-12-02T01:14:08.774Z	9 km ENE of Coalinga, California	earthquake	0.38	0.24	0.14	32	reviewed	nc	nc
5/20/1984	15:49:41	36.2943333	-120.407	10.598	2.69	md	50	66	0.05135	0.11	nc	nc19022	2016-12-02T01:14:03.102Z	17 km NNW of Coalinga, California	earthquake	0.15	0.23	0.16	73	reviewed	nc	nc
5/19/1984	12:52:25	36.1905	-120.2965	9.537	2.02	md	17	93	0.06937	0.16	nc	nc18933	2016-12-02T01:12:40.490Z	8 km NE of Coalinga, California	earthquake	0.7	0.96	0.08	14	reviewed	nc	nc
5/17/1984	21:23:35	36.0831667	-120.2093333	8.91	3	ml	56	76	0.08378	0.11	nc	nc18760	2016-12-02T01:09:29.626Z	11 km NW of Avenal, California	earthquake	0.15	0.25		0	reviewed	nc	nc
5/16/1984	17:30:14	34.802	-120.372	5.154	3.54	ml	0	0		0.278	ci	ci39894	2016-02-03T00:23:13.730Z	9km SE of Orcutt, CA	earthquake				12	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/16/1984	16:50:52	36.2603333	-120.309	8.507	2.15	md	32	79	0.02973	0.08	nc	nc18607	2016-12-02T01:07:28.953Z	14 km NNE of Coalinga, California	earthquake	0.27	0.14	0.16	28	reviewed	nc	nc
5/16/1984	11:15:34	36.1771667	-120.2921667	9.107	2.12	md	28	61	0.08288	0.06	nc	nc18584	2016-12-02T01:07:08.979Z	7 km NE of Coalinga, California	earthquake	0.29	0.44	0.12	28	reviewed	nc	nc
5/16/1984	3:58:19	36.233	-120.2681667	12.357	3.12	md	45	72	0.06306	0.09	nc	nc18543	2016-12-02T01:06:46.239Z	13 km NE of Coalinga, California	earthquake	0.18	0.34	0.12	103	reviewed	nc	nc
5/15/1984	17:44:23	36.1048333	-120.1471667	4.62	2.39	md	29	182	0.05315	0.1	nc	nc18504	2016-12-02T01:06:05.682Z	11 km N of Avenal, California	earthquake	0.7	0.61	0.22	27	reviewed	nc	nc
5/15/1984	10:47:56	36.1903333	-120.2525	9.997	2.38	md	42	72	0.09369	0.19	nc	nc18484	2016-12-02T01:05:45.024Z	11 km ENE of Coalinga, California	earthquake	0.32	0.43	0.13	44	reviewed	nc	nc
5/15/1984	10:24:14	36.191	-120.2598333	11.177	2.09	md	19	69	0.08919	0.06	nc	nc18481	2016-12-02T01:05:41.269Z	10 km ENE of Coalinga, California	earthquake	0.39	0.52	0.16	20	reviewed	nc	nc
5/14/1984	16:19:13	36.2836667	-120.3798333	6.838	2.08	md	15	130	0.04505	0.06	nc	nc18395	2016-12-02T01:04:43.919Z	16 km N of Coalinga, California	earthquake	0.68	0.47	0.11	20	reviewed	nc	nc
5/11/1984	18:39:27	36.272	-120.3358333	9.511	2.2	md	32	119	0.02342	0.1	nc	nc18229	2016-12-02T01:01:34.081Z	14 km N of Coalinga, California	earthquake	0.56	0.31	0.19	32	reviewed	nc	nc
5/11/1984	16:38:59	36.1706667	-120.2956667	6.317	2.32	md	38	60	0.08739	0.17	nc	nc18221	2016-12-02T01:01:26.395Z	6 km ENE of Coalinga, California	earthquake	0.37	0.6	0.13	37	reviewed	nc	nc
5/10/1984	13:04:03	36.2271667	-120.2685	10.577	2.39	md	31	94	0.06396	0.07	nc	nc18018	2016-12-02T00:59:30.204Z	12 km NE of Coalinga, California	earthquake	0.2	0.34	0.15	36	reviewed	nc	nc
5/9/1984	21:59:49	36.1881667	-120.2808333	7.657	2.72	md	21	74	0.07928	0.06	nc	nc18166	2016-12-02T00:58:21.543Z	8 km NE of Coalinga, California	earthquake	0.31	0.51	0.19	27	reviewed	nc	nc
5/9/1984	3:24:35	34.666	-119.96	8.761	2.6	mc	0	0		0.282	ci	ci39147	2016-02-03T00:22:50.360Z	12km ENE of Santa Ynez, CA	earthquake				30	reviewed	ci	ci
5/9/1984	2:11:20	36.18	-120.2833333	6.917	2.4	md	39	64	0.08468	0.13	nc	nc17911	2016-12-02T00:56:54.900Z	8 km ENE of Coalinga, California	earthquake	0.27	0.4	0.13	40	reviewed	nc	nc
5/8/1984	23:18:05	35.16	-119.026	16.407	2.01	mc	0	0		0.348	ci	ci39114	2016-02-02T21:45:17.420Z	15km SW of Lamont, CA	earthquake				11	reviewed	ci	ci
5/8/1984	22:16:10	36.1721667	-120.2718333	8.587	2.36	md	43	67	0.0964	0.13	nc	nc17895	2016-12-02T00:56:33.530Z	8 km ENE of Coalinga, California	earthquake	0.27	0.26	0.14	40	reviewed	nc	nc
5/8/1984	22:07:18	36.1816667	-120.2968333	7.42	2.31	md	35	113	0.07748	0.16	nc	nc17892	2016-12-02T00:56:30.715Z	7 km NE of Coalinga, California	earthquake	0.23	0.44	0.13	35	reviewed	nc	nc
5/8/1984	19:21:12	36.179	-120.2906667	9.767	4.4	ml	44	61	0.08198	0.08	nc	nc1115045	2016-12-02T00:56:19.418Z	7 km NE of Coalinga, California	earthquake	0.18	0.39		0	reviewed	nc	nc
5/8/1984	11:30:53	36.1691667	-120.2905	6.527	2.29	md	30	62	0.09099	0.17	nc	nc17856	2016-12-02T00:56:00.281Z	7 km ENE of Coalinga, California	earthquake	0.31	0.67	0.16	31	reviewed	nc	nc
5/8/1984	5:50:26	36.2921667	-120.3841667	11.108	3	ml	54	56	0.04595	0.1	nc	nc17833	2016-12-02T00:55:44.777Z	17 km N of Coalinga, California	earthquake	0.13	0.2		0	reviewed	nc	nc
5/8/1984	5:07:45	34.679	-119.958	0.131	2.55	mc	0	0		0.237	ci	ci39038	2016-02-03T03:06:49.010Z	13km ENE of Santa Ynez, CA	earthquake				27	reviewed	ci	ci
5/8/1984	0:44:35	34.689	-119.959	0.421	2.08	mc	0	0		0.281	ci	ci39026	2016-02-02T19:06:57.090Z	14km NE of Santa Ynez, CA	earthquake				9	reviewed	ci	ci
5/7/1984	23:04:13	34.68	-119.969	-0.009	2.19	mc	0	0	0.1521	0.22	ci	ci39022	2016-02-02T20:25:46.990Z	12km NE of Santa Ynez, CA	earthquake				9	reviewed	ci	ci
5/7/1984	21:41:39	34.684	-119.98	0.581	2.19	mc	0	0		0.28	ci	ci39018	2016-02-02T20:25:46.500Z	12km NE of Santa Ynez, CA	earthquake				12	reviewed	ci	ci
5/7/1984	21:02:14	34.669	-119.973	0.021	3.25	ml	0	0		0.211	ci	ci39016	2016-02-03T00:22:46.500Z	12km ENE of Santa Ynez, CA	earthquake				10	reviewed	ci	ci
5/7/1984	19:49:45	34.674	-119.964	1.061	2.34	mc	0	0		0.188	ci	ci39008	2016-02-02T21:45:10.780Z	12km ENE of Santa Ynez, CA	earthquake				11	reviewed	ci	ci
5/7/1984	19:38:57	34.678	-119.963	-0.749	2.41	mc	0	0		0.184	ci	ci39007	2016-02-02T20:25:46.000Z	13km ENE of Santa Ynez, CA	earthquake				11	reviewed	ci	ci
5/7/1984	19:32:32	34.661	-119.973	8.921	4.26	ml	0	0		0.285	ci	ci39006	2016-02-02T17:46:56.000Z	11km ENE of Santa Ynez, CA	earthquake				12	reviewed	ci	ci
5/6/1984	15:48:47	36.2863333	-120.4185	8.477	2.65	md	43	73	0.06306	0.19	nc	nc17623	2016-12-02T00:53:23.929Z	17 km NNW of Coalinga, California	earthquake	0.34	0.42	0.14	53	reviewed	nc	nc
5/6/1984	8:20:55	36.2566667	-120.3613333	8.738	2.16	md	31	60	0.01622	0.08	nc	nc17598	2016-12-02T00:52:37.585Z	12 km N of Coalinga, California	earthquake	0.25	0.23	0.2	29	reviewed	nc	nc
5/6/1984	7:20:25	36.2516667	-120.3513333	9.057	2.35	md	39	59	0.007207	0.08	nc	nc17791	2016-12-02T00:52:31.655Z	12 km N of Coalinga, California	earthquake	0.31	0.19	0.15	42	reviewed	nc	nc
5/4/1984	15:37:33	36.1691667	-120.2708333	10.377	2.14	md	24	67	0.0991	0.08	nc	nc17715	2016-12-02T00:49:33.019Z	8 km ENE of Coalinga, California	earthquake	0.34	0.5	0.12	22	reviewed	nc	nc
5/4/1984	5:37:15	36.2631667	-120.3355	8.747	2	md	20	78	0.01532	0.3	nc	nc17691	2016-12-02T00:48:52.970Z	13 km N of Coalinga, California	earthquake	1.54	0.51	0.19	16	reviewed	nc	nc
5/3/1984	15:46:53	36.1596667	-120.2588333	8.62	2.22	md	31	201	0.1126	0.09	nc	nc17418	2016-12-02T00:47:46.922Z	9 km ENE of Coalinga, California	earthquake	0.53	0.36	0.11	29	reviewed	nc	nc
5/2/1984	4:32:15	36.2211667	-120.3151667	9.087	3	ml	53	60	0.03604	0.06	nc	nc5000040	2016-12-02T00:44:57.994Z	9 km NNE of Coalinga, California	earthquake	0.12	0.23		0	reviewed	nc	nc
4/28/1984	21:41:35	36.1546667	-120.2705	7.107	2.11	md	27	67	0.1117	0.14	nc	nc16895	2016-12-02T00:36:13.712Z	8 km ENE of Coalinga, California	earthquake	0.34	0.81	0.13	24	reviewed	nc	nc
4/27/1984	17:53:47	36.2596667	-120.3446667	9.017	2.15	md	30	61	0.01081	0.06	nc	nc16798	2016-12-02T00:33:42.588Z	13 km N of Coalinga, California	earthquake	0.34	0.14	0.13	29	reviewed	nc	nc
4/24/1984	11:46:53	36.1583333	-120.223	8.967	2.05	md	20	135	0.1333	0.05	nc	nc16319	2016-12-02T00:22:54.460Z	11 km WSW of Huron, California	earthquake	0.37	0.43	0.18	21	reviewed	nc	nc
4/24/1984	5:23:42	36.1703333	-120.3008333	7.407	2.31	md	40	143	0.08559	0.18	nc	nc16298	2016-12-02T00:22:25.358Z	6 km ENE of Coalinga, California	earthquake	0.27	0.24	0.14	43	reviewed	nc	nc
4/24/1984	4:52:50	36.1793333	-120.2951667	11.657	4	ml	48	61	0.08018	0.04	nc	nc16295	2016-12-02T00:22:20.907Z	7 km NE of Coalinga, California	earthquake	0.13	0.27		0	reviewed	nc	nc
4/22/1984	18:10:28	36.1905	-120.3248333	7.607	2.36	md	28	53	0.06036	0.09	nc	nc16151	2016-12-02T00:20:44.495Z	6 km NNE of Coalinga, California	earthquake	0.16	0.31	0.19	27	reviewed	nc	nc
4/22/1984	9:20:06	36.2198333	-120.5153333	7.724	2.03	md	30	89	0.1414	0.11	nc	nc16117	2016-12-02T00:20:05.600Z	16 km WNW of Coalinga, California	earthquake	0.19	0.48	0.16	22	reviewed	nc	nc
4/22/1984	2:21:50	36.2536667	-120.3426667	9.207	2.42	md	44	78	0.004505	0.13	nc	nc16091	2016-12-02T00:19:33.268Z	12 km N of Coalinga, California	earthquake	0.2	0.19	0.12	45	reviewed	nc	nc
4/14/1984	21:06:17	36.1725	-120.2481667	0.307	2.24	md	27	128	0.109	0.2	nc	nc15428	2016-12-02T00:11:01.274Z	10 km ENE of Coalinga, California	earthquake	0.64	3.55	0.2	20	reviewed	nc	nc
4/13/1984	7:57:32	36.1923333	-119.645	10.12	3.08	md	80	70	0.3604	0.27	nc	nc15248	2016-12-02T00:09:19.321Z	12 km S of Home Garden, California	earthquake	0.51	1.07	0.13	79	reviewed	nc	nc
4/12/1984	3:58:46	36.0656667	-120.6258333	1.639	2.43	md	35	63	0.02432	0.08	nc	nc15082	2016-12-02T00:07:18.606Z	Central California	earthquake	0.17	0.48	0.12	39	reviewed	nc	nc
4/12/1984	1:58:21	36.2371667	-120.3736667	9.848	2.62	md	45	42	0.02793	0.11	nc	nc15071	2016-12-02T00:07:07.101Z	10 km N of Coalinga, California	earthquake	0.17	0.34	0.14	59	reviewed	nc	nc
4/11/1984	9:41:53	36.2346667	-120.2571667	7.207	2.09	md	33	74	0.07117	0.12	nc	nc14956	2016-12-02T00:06:29.317Z	14 km NE of Coalinga, California	earthquake	0.21	0.4	0.2	26	reviewed	nc	nc
4/11/1984	8:15:59	36.2795	-120.4011667	9.167	3	ml	50	54	0.05586	0.08	nc	nc14943	2016-12-02T00:06:14.417Z	15 km NNW of Coalinga, California	earthquake	0.15	0.15		0	reviewed	nc	nc
4/11/1984	4:13:44	36.2711667	-120.4216667	6.171	2.29	md	41	76	0.06757	0.06	nc	nc14924	2016-12-02T00:05:54.829Z	15 km NNW of Coalinga, California	earthquake	0.32	0.35	0.2	44	reviewed	nc	nc
4/11/1984	4:10:31	36.277	-120.399	8.168	2.26	md	36	52	0.05315	0.12	nc	nc14922	2016-12-02T00:05:53.827Z	15 km NNW of Coalinga, California	earthquake	0.16	0.22	0.18	31	reviewed	nc	nc
4/10/1984	18:47:09	36.2331667	-120.2558333	8.307	3.3	ml	48	93	0.07207	0.07	nc	nc14826	2016-12-02T00:05:14.545Z	13 km NE of Coalinga, California	earthquake	0.15	0.31		0	reviewed	nc	nc
4/10/1984	18:32:47	35.7306667	-120.53	4.517	2.52	md	5	127	0.1297	0.19	nc	nc1113675	2016-12-02T00:05:08.620Z	8 km NNW of Whitley Gardens, California	earthquake	2.48	5.38	0.41	2	reviewed	nc	nc
4/10/1984	18:12:10	36.234	-120.2585	9.117	3.7	ml	49	135	0.07027	0.04	nc	nc14817	2016-12-02T00:05:05.409Z	13 km NE of Coalinga, California	earthquake	0.11	0.16		0	reviewed	nc	nc
4/10/1984	9:23:53	36.2361667	-120.2451667	5.94	2.02	md	14	77	0.08018	0.04	nc	nc14796	2016-12-02T00:04:47.998Z	13 km WNW of Huron, California	earthquake	0.2	0.52	0.11	15	reviewed	nc	nc
4/10/1984	9:16:39	36.1793333	-119.6731667	18.303	2.91	md	47	69	0.3396	0.3	nc	nc14793	2016-12-02T00:04:46.105Z	13 km E of Stratford, California	earthquake	0.52	5.05	0.09	31	reviewed	nc	nc
4/8/1984	14:38:29	36.117	-119.459	4.922	2.35	mc	0	0		0.406	ci	ci36234	2016-02-02T21:43:24.720Z	9km ENE of Corcoran, CA	earthquake				8	reviewed	ci	ci
4/8/1984	6:20:11	36.2791667	-120.368	7.397	3.08	md	49	58	0.03604	0.08	nc	nc14394	2016-12-02T00:02:17.199Z	15 km N of Coalinga, California	earthquake	0.17	0.2	0.13	35	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
4/7/1984	2:08:55	36.2193333	-120.4535	1.795	2.32	md	38	54	0.09459	0.18	nc	nc14215	2016-12-02T00:00:47.761Z	12 km NW of Coalinga, California	earthquake	0.17	0.63	0.23	11	reviewed	nc	nc
4/5/1984	17:14:43	36.1848333	-120.26	11.087	2.49	md	47	70	0.09279	0.12	nc	nc14012	2016-12-01T23:58:46.404Z	10 km ENE of Coalinga, California	earthquake	0.29	0.52	0.16	16	reviewed	nc	nc
4/5/1984	14:22:57	36.1843333	-120.2511667	10.487	2.3	md	40	96	0.0991	0.11	nc	nc13999	2016-12-01T23:58:38.723Z	10 km ENE of Coalinga, California	earthquake	0.19	0.49	0.15	12	reviewed	nc	nc
4/5/1984	7:10:48	35.838	-119.535	5.167	3.12	ml	0	0		0.474	ci	ci35897	2016-02-03T03:04:50.890Z	7km SW of Alpaugh, CA	earthquake				10	reviewed	ci	ci
4/3/1984	23:09:44	36.207	-120.2975	11.274	2.49	md	42	117	0.05586	0.12	nc	nc13603	2016-12-01T23:56:11.516Z	9 km NE of Coalinga, California	earthquake	0.45	0.26	0.14	21	reviewed	nc	nc
4/1/1984	14:42:19	36.2188333	-120.2816667	4.797	2.2	md	13	65	0.05856	0.05	nc	nc13280	2016-12-01T23:53:18.312Z	11 km NE of Coalinga, California	earthquake	0.35	0.59	0.09	8	reviewed	nc	nc
3/31/1984	16:47:39	36.1913333	-120.2615	10.907	2.05	md	23	99	0.08739	0.21	nc	nc13121	2016-12-01T23:52:09.776Z	10 km ENE of Coalinga, California	earthquake	0.76	0.83	0.12	8	reviewed	nc	nc
3/29/1984	18:24:57	35.85	-119.521	5.113	2.62	mc	0	0		0.434	ci	ci35215	2016-02-02T17:55:37.800Z	5km SW of Alpaugh, CA	earthquake				24	reviewed	ci	ci
3/29/1984	18:21:37	35.86	-119.521	5.202	2.8	mc	0	0		0.565	ci	ci35214	2016-02-02T17:55:37.280Z	4km SW of Alpaugh, CA	earthquake				37	reviewed	ci	ci
3/28/1984	1:05:10	36.277	-120.3625	9.678	2.41	md	40	60	0.03153	0.09	nc	nc12561	2016-12-01T23:47:38.531Z	15 km N of Coalinga, California	earthquake	0.3	0.22	0.15	19	reviewed	nc	nc
3/26/1984	3:08:09	34.967	-119.177	9.528	2.3	mc	0	0	0.08872	0.308	ci	ci34862	2016-02-03T03:15:11.780Z	14km N of Pine Mountain Club, CA	earthquake				23	reviewed	ci	ci
3/25/1984	8:54:08	34.844	-120.303	-0.938	2.32	mc	0	0	0.1441	0.291	ci	ci34811	2016-02-03T01:53:13.370Z	11km NNW of Los Alamos, CA	earthquake				11	reviewed	ci	ci
3/24/1984	19:53:17	36.1975	-120.2686667	7.957	3.12	md	44	65	0.07928	0.08	nc	nc12011	2016-12-01T23:42:27.291Z	10 km NE of Coalinga, California	earthquake	0.14	0.28	0.17	31	reviewed	nc	nc
3/24/1984	14:50:33	36.3138333	-120.2871667	6.378	2.44	md	36	124	0.07117	0.13	nc	nc11982	2016-12-01T23:42:02.200Z	20 km NNE of Coalinga, California	earthquake	0.21	0.25	0.15	12	reviewed	nc	nc
3/20/1984	22:56:54	36.1808333	-120.3063333	8.13	2.07	md	23	110	0.07477	0.15	nc	nc11326	2016-12-01T23:34:15.336Z	6 km NE of Coalinga, California	earthquake	0.38	0.72	0.12	16	reviewed	nc	nc
3/18/1984	22:09:41	36.2388333	-120.3843333	8.088	2.02	md	15	66	0.03514	0.1	nc	nc11052	2016-12-01T23:30:29.023Z	11 km N of Coalinga, California	earthquake	0.35	0.45	0.17	10	reviewed	nc	nc
3/17/1984	23:44:48	36.2465	-120.3378333	8.787	2.27	md	34	61	0.005405	0.09	nc	nc10914	2016-12-01T23:28:41.408Z	12 km N of Coalinga, California	earthquake	0.18	0.23	0.16	12	reviewed	nc	nc
3/16/1984	17:42:33	36.2005	-120.3478333	10.305	2.09	md	24	142	0.04865	0.11	nc	nc10795	2016-12-01T23:26:24.693Z	6 km N of Coalinga, California	earthquake	0.31	0.4	0.14	11	reviewed	nc	nc
3/16/1984	7:35:05	36.14	-120.174	6.99	2.17	md	26	113	0.09459	0.11	nc	nc10755	2016-12-01T23:25:33.208Z	9 km SW of Huron, California	earthquake	0.27	0.53	0.14	12	reviewed	nc	nc
3/15/1984	12:45:54	35.8056667	-119.7211667	11.496	3.23	md	74	177	0.4063	0.35	nc	nc10623	2016-12-01T23:24:08.092Z	21 km N of Lost Hills, California	earthquake	0.72	1.14	0.16	48	reviewed	nc	nc
3/14/1984	10:59:38	35.009	-119.082	11.576	2.29	mc	0	0		0.254	ci	ci33670	2016-02-02T20:23:09.480Z	16km WNW of Grapevine, CA	earthquake				36	reviewed	ci	ci
3/12/1984	10:17:51	34.91	-119.02	11.641	3.51	ml	0	0		0.279	ci	ci33443	2016-02-02T21:42:26.720Z	9km WSW of Grapevine, CA	earthquake				11	reviewed	ci	ci
3/12/1984	4:57:39	36.1801667	-120.3031667	8.367	2.03	md	41	59	0.07658	0.1	nc	nc10113	2016-12-01T23:17:16.640Z	6 km NE of Coalinga, California	earthquake	0.16	0.41	0.12	38	reviewed	nc	nc
3/12/1984	4:00:32	36.1548333	-120.2508333	5.177	3.2	md	42	74	0.1207	0.13	nc	nc10105	2016-12-01T23:17:09.011Z	9 km E of Coalinga, California	earthquake	0.2	0.67	0.12	31	reviewed	nc	nc
3/8/1984	13:15:43	36.1408333	-120.197	6.12	2.16	md	40	98	0.1063	0.18	nc	nc9499	2016-12-01T23:07:42.144Z	10 km SW of Huron, California	earthquake	0.32	0.75	0.09	15	reviewed	nc	nc
3/4/1984	11:18:28	36.2641667	-120.429	11.335	2.73	md	48	61	0.07117	0.1	nc	nc8823	2016-12-01T22:57:31.877Z	15 km NNW of Coalinga, California	earthquake	0.17	0.33	0.19	29	reviewed	nc	nc
3/1/1984	20:04:24	36.0203333	-120.5775	5.31	2.75	md	47	34	0.1027	0.07	nc	nc8443	2016-12-01T22:52:24.756Z	18 km NW of Parkfield, California	earthquake	0.15	0.56	0.12	57	reviewed	nc	nc
3/1/1984	11:54:04	36.2146667	-120.2658333	10.527	2.3	md	31	66	0.07117	0.1	nc	nc8406	2016-12-01T22:51:57.145Z	11 km NE of Coalinga, California	earthquake	0.22	0.48	0.1	13	reviewed	nc	nc
2/29/1984	10:22:34	36.2873333	-120.3736667	8.958	2.19	md	27	64	0.04505	0.09	nc	nc8269	2016-12-01T22:50:07.527Z	16 km N of Coalinga, California	earthquake	0.2	0.27	0.09	7	reviewed	nc	nc
2/29/1984	1:02:23	36.1825	-120.2448333	6.517	2.2	md	21	74	0.1036	0.11	nc	nc8199	2016-12-01T22:49:22.029Z	11 km ENE of Coalinga, California	earthquake	0.25	0.52	0.13	12	reviewed	nc	nc
2/27/1984	22:35:05	36.2616667	-120.3068333	9.527	2.37	md	31	78	0.03153	0.09	nc	nc7973	2016-12-01T22:47:52.669Z	14 km NNE of Coalinga, California	earthquake	0.23	0.23	0.17	27	reviewed	nc	nc
2/24/1984	2:57:01	36.278	-120.4138333	8.258	2.54	md	43	69	0.06396	0.08	nc	nc7562	2016-12-01T22:41:12.714Z	16 km NNW of Coalinga, California	earthquake	0.13	0.22	0.16	23	reviewed	nc	nc
2/22/1984	22:17:16	36.154	-120.2626667	5.487	2.05	md	20	70	0.1153	0.07	nc	nc7245	2016-12-01T22:38:53.256Z	8 km E of Coalinga, California	earthquake	0.24	0.53	0.17	13	reviewed	nc	nc
2/22/1984	19:18:06	36.2766667	-120.3825	9.215	2.17	md	13	121	0.04234	0.08	nc	nc1111675	2016-12-01T22:38:49.786Z	15 km N of Coalinga, California	earthquake	0.46	0.51	0.1	14	reviewed	nc	nc
2/21/1984	5:04:09	36.1661667	-120.2763333	9.287	2.33	md	40	65	0.0991	0.12	nc	nc7114	2016-12-01T22:36:18.766Z	8 km ENE of Coalinga, California	earthquake	0.23	0.41	0.13	22	reviewed	nc	nc
2/21/1984	0:53:50	36.2783333	-120.3316667	9.777	2.32	md	45	139	0.03063	0.08	nc	nc7098	2016-12-01T22:36:12.454Z	15 km N of Coalinga, California	earthquake	0.17	0.17	0.11	31	reviewed	nc	nc
2/19/1984	9:43:09	36.2815	-120.3283333	10.587	4.1	ml	52	68	0.03423	0.07	nc	nc1111515	2016-12-01T22:33:30.063Z	15 km N of Coalinga, California	earthquake	0.16	0.28		0	reviewed	nc	nc
2/19/1984	9:37:45	36.2766667	-120.3268333	9.947	2.43	md	45	73	0.02973	0.09	nc	nc6907	2016-12-01T22:33:28.737Z	15 km N of Coalinga, California	earthquake	0.15	0.22	0.14	33	reviewed	nc	nc
2/19/1984	1:46:38	36.332	-120.3241667	4.294	2.39	md	46	79	0.03694	0.19	nc	nc6897	2016-12-01T22:33:09.834Z	18 km S of Cantua Creek, California	earthquake	0.19	0.26	0.14	29	reviewed	nc	nc
2/18/1984	22:24:14	36.2248333	-120.2811667	10.947	2.07	md	27	67	0.05586	0.1	nc	nc6828	2016-12-01T22:33:01.736Z	11 km NE of Coalinga, California	earthquake	0.22	0.38	0.15	25	reviewed	nc	nc
2/18/1984	13:54:45	36.1741667	-120.2801667	10.497	2.17	md	29	65	0.09099	0.1	nc	nc6806	2016-12-01T22:32:44.696Z	8 km ENE of Coalinga, California	earthquake	0.22	0.49	0.09	18	reviewed	nc	nc
2/18/1984	3:08:24	36.174	-120.1605	9.337	2.6	md	39	120	0.0973	0.07	nc	nc6766	2016-12-01T22:31:56.934Z	6 km WSW of Huron, California	earthquake	0.25	0.36	0.09	27	reviewed	nc	nc
2/17/1984	19:05:58	36.29	-120.411	6.508	2.16	md	25	78	0.05676	0.13	nc	nc6659	2016-12-01T22:30:57.016Z	17 km NNW of Coalinga, California	earthquake	0.3	0.41	0.19	16	reviewed	nc	nc
2/17/1984	15:58:06	36.1305	-120.2086667	8.11	2.59	md	40	90	0.1063	0.12	nc	nc6632	2016-12-01T22:30:46.988Z	Central California	earthquake	0.23	0.48	0.15	18	reviewed	nc	nc
2/17/1984	1:23:02	36.1896667	-120.2678333	8.937	2.99	md	52	67	0.08559	0.1	nc	nc6560	2016-12-01T22:29:58.128Z	9 km ENE of Coalinga, California	earthquake	0.16	0.38	0.16	46	reviewed	nc	nc
2/16/1984	6:16:51	36.0191667	-120.1761667	9.839	2.49	md	28	140	0.06847	0.16	nc	nc6427	2016-12-01T22:28:56.220Z	4 km WNW of Avenal, California	earthquake	0.33	0.56	0.18	16	reviewed	nc	nc
2/15/1984	13:59:52	36.1481667	-120.2123333	10.107	2.35	md	27	91	0.1207	0.06	nc	nc6292	2016-12-01T22:28:11.233Z	11 km WSW of Huron, California	earthquake	0.2	0.48	0.17	25	reviewed	nc	nc
2/14/1984	5:36:43	35.045	-118.975	12.256	2.84	ml	0	0		0.159	ci	ci31682	2016-02-03T03:03:12.570Z	12km NNW of Grapevine, CA	earthquake				9	reviewed	ci	ci
2/12/1984	21:03:38	36.2345	-120.3593333	9.151	2.22	md	31	81	0.01982	0.07	nc	nc5931	2016-12-01T22:25:16.721Z	10 km N of Coalinga, California	earthquake	0.21	0.29	0.2	22	reviewed	nc	nc
2/11/1984	0:31:56	36.278	-120.3466667	12.437	2.12	md	26	75	0.02883	0.09	nc	nc5781	2016-12-01T22:23:19.466Z	15 km N of Coalinga, California	earthquake	0.26	0.34	0.19	27	reviewed	nc	nc
2/10/1984	11:53:58	36.1125	-120.2166667	12.88	2.7	md	36	82	0.1009	0.07	nc	nc5662	2016-12-01T22:22:28.761Z	13 km ESE of Coalinga, California	earthquake	0.2	0.5	0.2	26	reviewed	nc	nc
2/10/1984	8:49:24	36.2191667	-120.4035	6.605	2.01	md	32	67	0.05766	0.12	nc	nc5652	2016-12-01T22:22:22.133Z	9 km NNW of Coalinga, California	earthquake	0.17	0.3	0.18	19	reviewed	nc	nc
2/10/1984	6:33:14	36.1095	-120.213	13.61	3.09	md	39	84	0.0964	0.08	nc	nc5636	2016-12-01T22:22:09.862Z	13 km ESE of Coalinga, California	earthquake	0.23	0.5	0.17	37	reviewed	nc	nc
2/9/1984	16:42:01	36.2535	-120.3066667	5.137	2.52	md	36	122	0.02973	0.1	nc	nc5478	2016-12-01T22:21:22.389Z	13 km NNE of Coalinga, California	earthquake	0.28	0.24	0.14	25	reviewed	nc	nc
2/9/1984	0:32:33	35.493	-119.355	5.121	2.17	mc	0	0	0.4309	0.408	ci	ci31315	2016-02-02T23:00:02.100Z	8km W of Shafter, CA	earthquake				15	reviewed	ci	ci
2/7/1984	19:29:07	35.628	-119.525	5.161	2.02	mc	0	0	0.5396	0.475	ci	ci31189	2016-02-03T01:40:48.600Z	17km WNW of Wasco, CA	earthquake				11	reviewed	ci	ci
2/7/1984	1:00:29	36.2571667	-120.298	6.077	2.12	md	22	85	0.03694	0.12	nc	nc4989	2016-12-01T22:17:46.435Z	14 km NNE of Coalinga, California	earthquake	0.25	0.28	0.16	12	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
2/6/1984	12:45:57	36.2178333	-120.2845	8.187	2.12	md	25	64	0.05676	0.18	nc	nc4873	2016-12-01T22:17:02.313Z	11 km NE of Coalinga, California	earthquake	0.31	0.56	0.11	8	reviewed	nc	nc
2/5/1984	19:31:45	35.9448333	-120.104	20.852	2.27	md	31	175	0.1162	0.2	nc	nc4773	2016-12-01T22:16:02.503Z	6 km SSE of Avenal, California	earthquake	0.7	0.59	0.14	20	reviewed	nc	nc
2/1/1984	5:36:38	36.2461667	-120.4625	-0.505	2.19	md	24	64	0.0973	0.34	nc	nc4262	2016-12-01T22:10:19.914Z	14 km NW of Coalinga, California	earthquake	0.37	5.5	0.16	14	reviewed	nc	nc
1/30/1984	10:18:48	36.295	-120.2351667	2.402	2.08	md	17	235	0.0982	0.07	nc	nc4020	2016-12-01T22:08:30.534Z	15 km NW of Huron, California	earthquake	1.48	0.99	0.18	6	reviewed	nc	nc
1/30/1984	3:26:16	35.86	-119.588	5.396	2.35	mc	0	0	0.5485	0.343	ci	ci30473	2016-02-02T20:31:57.150Z	10km WSW of Alpaugh, CA	earthquake				27	reviewed	ci	ci
1/29/1984	4:21:41	35.9718333	-120.1556667	11.842	2.14	md	24	248	0.0964	0.04	nc	nc3940	2016-12-01T22:07:22.095Z	4 km SW of Avenal, California	earthquake	0.98	0.48	0.12	23	reviewed	nc	nc
1/28/1984	23:02:31	36.2363333	-120.3156667	5.654	2.03	md	15	113	0.02523	0.13	nc	nc3922	2016-12-01T22:07:06.498Z	11 km NNE of Coalinga, California	earthquake	0.39	0.5	0.1	12	reviewed	nc	nc
1/28/1984	10:11:54	36.2076667	-120.3086667	6.544	2.99	md	45	113	0.05045	0.11	nc	nc3802	2016-12-01T22:06:23.000Z	8 km NNE of Coalinga, California	earthquake	0.25	0.32	0.13	19	reviewed	nc	nc
1/27/1984	15:41:54	35.944	-120.158	11.412	3.34	md	34	171	0.1234	0.09	nc	nc3574	2016-12-01T22:05:24.004Z	7 km SSW of Avenal, California	earthquake	0.33	0.49	0.15	55	reviewed	nc	nc
1/27/1984	9:44:10	36.2655	-120.4098333	6.698	2.13	md	25	87	0.05676	0.06	nc	nc3548	2016-12-01T22:05:05.435Z	14 km NNW of Coalinga, California	earthquake	0.19	0.33	0.18	17	reviewed	nc	nc
1/27/1984	4:44:34	36.2685	-120.4163333	6.858	3.8	ml	50	62	0.06216	0.08	nc	nc3528	2016-12-01T22:04:50.612Z	15 km NNW of Coalinga, California	earthquake	0.15	0.32		0	reviewed	nc	nc
1/26/1984	20:37:12	36.1458333	-120.2513333	4.872	2.65	md	44	120	0.1423	0.22	nc	nc3426	2016-12-01T22:04:24.015Z	9 km E of Coalinga, California	earthquake	0.39	0.6	0.19	24	reviewed	nc	nc
1/26/1984	6:07:16	36.1278333	-120.1888333	8.465	3.2	ml	52	139	0.09279	0.1	nc	nc3380	2016-12-01T22:03:45.850Z	11 km SW of Huron, California	earthquake	0.24	0.4		0	reviewed	nc	nc
1/26/1984	5:52:29	36.191	-120.2893333	7.962	2.27	md	28	117	0.1532	0.1	nc	nc3375	2016-12-01T22:03:41.034Z	8 km NE of Coalinga, California	earthquake	0.24	0.55	0.08	17	reviewed	nc	nc
1/25/1984	19:30:41	36.2791667	-120.4183333	6.627	2.18	md	19	107	0.06937	0.08	nc	nc3274	2016-12-01T22:03:13.668Z	16 km NNW of Coalinga, California	earthquake	0.26	0.48	0.15	15	reviewed	nc	nc
1/25/1984	19:04:01	36.1323333	-120.2183333	7.065	2.62	md	48	128	0.1135	0.17	nc	nc3269	2016-12-01T22:03:09.514Z	12 km E of Coalinga, California	earthquake	0.27	0.64	0.14	16	reviewed	nc	nc
1/25/1984	13:01:46	36.2463333	-120.3266667	8.679	2.45	md	47	110	0.0964	0.08	nc	nc3261	2016-12-01T22:02:56.873Z	12 km NNE of Coalinga, California	earthquake	0.26	0.38	0.14	28	reviewed	nc	nc
1/23/1984	6:13:54	35.771	-119.565	5.292	2.11	mc	0	0	0.5403	0.296	ci	ci30185	2016-02-02T23:09:47.240Z	15km SSW of Alpaugh, CA	earthquake				16	reviewed	ci	ci
1/23/1984	1:05:38	36.2835	-120.4105	5.587	2.19	md	30	117	0.06216	0.15	nc	nc2889	2016-12-01T21:59:43.666Z	16 km NNW of Coalinga, California	earthquake	0.28	0.48	0.16	14	reviewed	nc	nc
1/19/1984	14:33:07	36.2688333	-120.3745	8.588	2.13	md	27	89	0.03243	0.06	nc	nc2464	2016-12-01T21:56:22.594Z	14 km N of Coalinga, California	earthquake	0.22	0.24	0.2	22	reviewed	nc	nc
1/18/1984	19:08:00	35.3935	-120.5126667	4.682	2.44	md	4	192	0.2541	0.04	nc	nc1110129	2016-12-01T21:55:30.618Z	8 km E of Santa Margarita, California	earthquake	1	9.05	0.07	4	reviewed	nc	nc
1/18/1984	17:37:31	35.729	-120.6456667	7.136	2.03	md	20	48	0.09279	0.05	nc	nc2356	2016-12-01T21:55:24.972Z	5 km ESE of San Miguel, California	earthquake	0.21	0.86	0.15	17	reviewed	nc	nc
1/17/1984	21:29:02	35.9011667	-119.8753333	0.134	2.7	md	13	241	0.3324	1.47	nc	nc1110093	2016-12-01T21:54:38.385Z	14 km SSE of Kettleman City, California	earthquake	12.04	80.8	0.2	10	reviewed	nc	nc
1/17/1984	17:18:47	36.337	-119.9606667	18.429	2.53	md	10	178	0.2252	0.19	nc	nc1110086	2016-12-01T21:54:26.873Z	9 km NNW of Lemoore Station, California	earthquake	3.43	0.85	0.14	5	reviewed	nc	nc
1/17/1984	12:14:44	36.133	-120.3066667	12.72	2.11	md	20	100	0.1117	0.07	nc	nc1110078	2016-12-01T21:54:16.160Z	4 km E of Coalinga, California	earthquake	0.31	0.63	0.13	23	reviewed	nc	nc
1/16/1984	17:46:39	36.217	-120.3201667	9.104	2.03	md	15	110	0.03694	0.04	nc	nc2127	2016-12-01T21:53:33.961Z	9 km NNE of Coalinga, California	earthquake	0.53	0.27	0.16	21	reviewed	nc	nc
1/16/1984	2:48:06	36.0915	-120.2168333	11.772	3.17	md	48	109	0.09189	0.07	nc	nc2075	2016-12-01T21:52:45.544Z	12 km NW of Avenal, California	earthquake	0.16	0.3	0.18	89	reviewed	nc	nc
1/15/1984	18:02:34	35.072	-119.205	7.66	2.34	mc	0	0	0.1308	0.288	ci	ci29354	2016-02-02T21:40:49.760Z	18km E of Maricopa, CA	earthquake				24	reviewed	ci	ci
1/15/1984	15:51:32	36.0898333	-120.2138333	11.582	3.23	md	47	108	0.08919	0.09	nc	nc1986	2016-12-01T21:52:15.682Z	12 km NW of Avenal, California	earthquake	0.21	0.38	0.13	91	reviewed	nc	nc
1/15/1984	11:38:40	36.0901667	-120.2118333	11.022	2.55	md	37	109	0.08829	0.09	nc	nc1971	2016-12-01T21:52:00.403Z	12 km NW of Avenal, California	earthquake	0.23	0.42	0.16	49	reviewed	nc	nc
1/15/1984	7:44:45	36.2766667	-120.3913333	8.238	2.12	md	32	82	0.04775	0.12	nc	nc1955	2016-12-01T21:51:45.029Z	15 km N of Coalinga, California	earthquake	0.27	0.31	0.18	16	reviewed	nc	nc
1/13/1984	1:50:56	36.0881667	-120.2008333	11.73	2.1	md	41	111	0.07838	0.14	nc	nc1679	2016-12-01T21:48:37.426Z	11 km NW of Avenal, California	earthquake	0.26	0.55	0.1	25	reviewed	nc	nc
1/12/1984	22:45:49	36.263	-120.4178333	5.178	2.84	md	49	58	0.06216	0.16	nc	nc1629	2016-12-01T21:48:31.739Z	14 km NNW of Coalinga, California	earthquake	0.17	0.37	0.11	52	reviewed	nc	nc
1/12/1984	7:56:10	34.86	-120.308	5.214	2.69	mc	0	0	0.1373	0.608	ci	ci29282	2016-02-03T03:02:35.960Z	12km E of Orcutt, CA	earthquake				12	reviewed	ci	ci
1/12/1984	4:22:39	36.2528333	-120.4146667	10.495	2.76	md	37	59	0.05856	0.11	nc	nc1633	2016-12-01T21:47:54.340Z	13 km NNW of Coalinga, California	earthquake	0.2	0.34	0.14	51	reviewed	nc	nc
1/11/1984	12:14:53	36.2538333	-120.3543333	8.788	2.11	md	20	84	0.01081	0.07	nc	nc1109785	2016-12-01T21:47:07.463Z	12 km N of Coalinga, California	earthquake	0.24	0.18	0.19	22	reviewed	nc	nc
1/9/1984	20:18:11	35.509	-119.377	5.029	2.07	mc	0	0	0.4403	0.332	ci	ci28754	2016-02-03T01:40:09.650Z	10km W of Shafter, CA	earthquake				7	reviewed	ci	ci
1/9/1984	18:03:24	36.234	-120.4575	5.185	2.22	md	12	111	0.09369	0.05	nc	nc1258	2016-12-01T21:45:09.036Z	13 km NW of Coalinga, California	earthquake	0.29	0.77	0.16	13	reviewed	nc	nc
1/7/1984	17:34:18	36.2793333	-120.4146667	6.499	2.01	md	17	85	0.06577	0.11	nc	nc1109652	2016-12-01T21:43:01.667Z	16 km NNW of Coalinga, California	earthquake	0.37	0.58	0.13	15	reviewed	nc	nc
1/7/1984	11:30:26	36.2375	-120.3506667	6.298	2.26	md	38	140	0.01351	0.11	nc	nc985	2016-12-01T21:42:39.228Z	10 km N of Coalinga, California	earthquake	0.29	0.22	0.14	41	reviewed	nc	nc
1/7/1984	6:17:06	36.0776667	-120.2166667	7.842	2.09	md	24	157	0.08829	0.06	nc	nc971	2016-12-01T21:42:27.181Z	11 km NW of Avenal, California	earthquake	0.36	0.44	0.13	23	reviewed	nc	nc
1/6/1984	23:17:59	36.0906667	-120.1855	7.242	2.51	md	42	118	0.06847	0.11	nc	nc1109626	2016-12-01T21:42:05.332Z	10 km NNW of Avenal, California	earthquake	0.27	0.41	0.11	43	reviewed	nc	nc
1/3/1984	7:40:39	36.1761667	-120.2511667	6.4	2.78	md	23	129	0.1622	0.2	nc	nc1109503	2016-12-01T21:38:05.920Z	10 km ENE of Coalinga, California	earthquake	0.62	1.44	0.1	20	reviewed	nc	nc
1/3/1984	7:40:33	36.1841667	-120.2488333	11.404	2.87	md	32	131	0.1	0.14	nc	nc1109502	2016-12-01T21:38:04.768Z	11 km ENE of Coalinga, California	earthquake	0.46	0.73	0.14	24	reviewed	nc	nc
1/3/1984	7:17:48	36.188	-120.2565	11.884	2.14	md	41	128	0.09279	0.12	nc	nc1109495	2016-12-01T21:37:55.818Z	Central California	earthquake	0.32	0.64	0.14	44	reviewed	nc	nc
1/3/1984	6:37:11	35.241	-119.265	5.066	2.41	mc	0	0		0.477	ci	ci28354	2016-02-03T03:02:17.920Z	19km SW of Rosedale, CA	earthquake				30	reviewed	ci	ci
1/2/1984	23:29:17	36.249	-120.4638333	3.975	2.16	md	28	65	0.0982	0.18	nc	nc1109475	2016-12-01T21:37:33.845Z	15 km NW of Coalinga, California	earthquake	0.24	0.55	0.12	26	reviewed	nc	nc
1/2/1984	15:21:07	35.166	-120.7086667	6.342	2.87	md	27	159	0.06306	0.06	nc	nc1109459	2016-12-01T21:37:14.975Z	2 km SE of Avila Beach, California	earthquake	0.29	0.4	0.15	56	reviewed	nc	nc
1/1/1984	20:19:47	35.18	-119.016	13.819	2.02	mc	0	0		0.177	ci	ci28284	2016-02-03T00:17:53.310Z	13km SW of Lamont, CA	earthquake				17	reviewed	ci	ci
1/1/1984	18:27:55	36.25	-120.4191667	11.135	2.79	md	44	52	0.06216	0.09	nc	nc383	2016-12-01T21:36:24.287Z	13 km NNW of Coalinga, California	earthquake	0.14	0.29	0.13	71	reviewed	nc	nc
12/31/1983	20:47:58	36.208	-120.2806667	7.794	2.47	md	39	123	0.06486	0.13	nc	nc1109375	2016-12-11T22:41:38.850Z	10 km NE of Coalinga, California	earthquake	0.23	0.39	0.12	44	reviewed	nc	nc
12/31/1983	13:30:27	36.107	-120.0001667	4.525	2.47	md	17	187	0.3261	1.52	nc	nc1109363	2016-12-11T22:40:48.037Z	11 km NNW of Kettleman City, California	earthquake	8.95	17.08	0.22	5	reviewed	nc	nc
12/29/1983	19:01:43	35.1755	-119.026	14.193	2.01	mc	14	187	0.1677	0.21	ci	ci28063	2016-02-03T02:46:59.210Z	14km SW of Lamont, CA	earthquake	0.9	1.03		17	reviewed	ci	ci
12/29/1983	6:42:59	36.084	-120.2155	6.7	2.07	md	26	131	0.08919	0.16	nc	nc1109263	2016-12-11T22:34:15.210Z	11 km NW of Avenal, California	earthquake	0.37	0.78	0.13	29	reviewed	nc	nc
12/28/1983	20:25:48	36.0776667	-120.2205	6.98	2.57	md	37	129	0.09099	0.1	nc	nc1109227	2016-12-11T22:31:43.030Z	11 km NW of Avenal, California	earthquake	0.26	0.45	0.14	41	reviewed	nc	nc
12/27/1983	7:21:46	36.093	-120.2281667	11.93	2.94	md	41	106	0.1018	0.1	nc	nc1109139	2016-12-11T22:25:35.780Z	12 km ESE of Coalinga, California	earthquake	0.27	0.53	0.12	51	reviewed	nc	nc
12/26/1983	6:36:34	36.2003333	-120.335	8.238	2.6	md	33	104	0.04955	0.11	nc	nc1109071	2016-12-11T22:21:02.740Z	7 km NNE of Coalinga, California	earthquake	0.24	0.42	0.14	44	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/25/1983	2:53:51	36.1903333	-120.301	7.484	2.43	md	35	149	0.06847	0.08	nc	nc1109010	2016-12-11T22:16:49.410Z	7 km NE of Coalinga, California	earthquake	0.27	0.33	0.13	41	reviewed	nc	nc
12/24/1983	21:52:55	36.1071667	-120.0346667	7.431	2.11	md	18	197	0.07658	0.06	nc	nc1108998	2016-12-11T22:15:59.445Z	12 km SSE of Huron, California	earthquake	0.67	0.31	0.1	18	reviewed	nc	nc
12/24/1983	10:09:07	34.9378333	-119.0085	9.576	2.34	mc	23	97		0.17	ci	ci27703	2016-02-02T21:24:17.700Z	7km W of Grapevine, CA	earthquake	0.48	1.1		30	reviewed	ci	ci
12/24/1983	9:35:24	36.2616667	-120.42	4.128	2.11	md	14	63	0.06396	0.08	nc	nc1108962	2016-12-11T22:13:36.930Z	14 km NNW of Coalinga, California	earthquake	0.27	0.67	0.13	11	reviewed	nc	nc
12/23/1983	2:03:05	36.0953333	-120.213	9.34	3.31	md	52	99	0.09099	0.09	nc	nc1108880	2016-12-11T22:08:16.170Z	12 km NW of Avenal, California	earthquake	0.2	0.37	0.14	83	reviewed	nc	nc
12/22/1983	18:07:16	36.2126667	-120.2715	10.734	2.15	md	23	164	0.06847	0.09	nc	nc1108866	2016-12-11T22:07:15.268Z	11 km NE of Coalinga, California	earthquake	0.36	0.49	0.17	24	reviewed	nc	nc
12/21/1983	20:12:22	35.3618333	-120.615	4.682	2.27	md	4	179	0.1694	0.2	nc	nc1108825	2016-12-11T22:04:25.117Z	3 km S of Santa Margarita, California	earthquake	3.76	15.39	0.1	3	reviewed	nc	nc
12/21/1983	18:04:07	36.095	-120.2085	9.97	4.32	md	51	112	0.08739	0.09	nc	nc1108815	2016-12-11T22:03:42.870Z	12 km NW of Avenal, California	earthquake	0.25	0.41	0.2	107	reviewed	nc	nc
12/21/1983	11:53:42	36.142	-120.1963333	9.714	2.93	md	38	141	0.1072	0.09	nc	nc1108805	2016-12-11T22:02:54.770Z	10 km SW of Huron, California	earthquake	0.29	0.52	0.14	60	reviewed	nc	nc
12/20/1983	1:03:31	36.2801667	-120.4191667	7.348	3.63	md	51	69	0.06847	0.09	nc	nc1108729	2016-12-11T21:57:27.560Z	16 km NNW of Coalinga, California	earthquake	0.14	0.28	0.13	100	reviewed	nc	nc
12/19/1983	6:14:48	35.1038333	-119.1971667	18.608	2.18	mc	14	132	0.1548	0.1	ci	ci27357	2016-02-02T18:46:52.150Z	19km ENE of Maricopa, CA	earthquake	0.63	2.26		13	reviewed	ci	ci
12/17/1983	11:19:58	36.2811667	-120.4065	7.775	2.09	md	29	93	0.06036	0.09	nc	nc1108601	2016-12-11T21:48:23.000Z	16 km NNW of Coalinga, California	earthquake	0.36	0.34	0.14	30	reviewed	nc	nc
12/17/1983	7:54:46	36.2556667	-120.0461667	19.857	2.42	md	40	212	0.2018	0.18	nc	nc1108592	2016-12-11T21:47:39.330Z	7 km NE of Huron, California	earthquake	1.15	0.57	0.1	32	reviewed	nc	nc
12/16/1983	2:08:24	36.2778333	-120.429	6.305	2.98	md	42	76	0.07568	0.18	nc	nc1108507	2016-12-11T21:41:49.750Z	16 km NNW of Coalinga, California	earthquake	0.29	0.45	0.14	57	reviewed	nc	nc
12/16/1983	1:41:35	36.2443333	-120.3316667	8.525	2.49	md	25	188	0.01081	0.06	nc	nc1108504	2016-12-11T21:41:32.319Z	11 km NNE of Coalinga, California	earthquake	0.38	0.26	0.14	23	reviewed	nc	nc
12/15/1983	21:35:28	36.1791667	-120.295	7.4	2.23	md	31	149	0.08018	0.21	nc	nc1108492	2016-12-11T21:40:45.458Z	7 km NE of Coalinga, California	earthquake	0.58	0.68	0.17	28	reviewed	nc	nc
12/15/1983	20:01:04	35.331	-120.5953333	4.65	2.02	md	4	196	0.1631	0.3	nc	nc1108490	2016-12-11T21:40:37.193Z	6 km S of Santa Margarita, California	earthquake	5	17.39	0.27	4	reviewed	nc	nc
12/14/1983	9:45:51	36.1831667	-120.299	8.93	2.4	md	40	157	0.07477	0.1	nc	nc1108415	2016-12-11T21:35:27.920Z	7 km NE of Coalinga, California	earthquake	0.26	0.36	0.11	44	reviewed	nc	nc
12/12/1983	22:28:07	35.9615	-119.5466667	33.989	2.56	md	10	315	0.4676	0.18	nc	nc1108342	2016-12-11T21:29:58.704Z	9 km NNW of Alpaugh, California	earthquake	12.88	7.33	0.39	7	reviewed	nc	nc
12/11/1983	10:17:57	36.2553333	-120.3653333	7.938	2.07	md	25	140	0.01892	0.09	nc	nc1108293	2016-12-11T21:26:38.350Z	12 km N of Coalinga, California	earthquake	0.59	0.44	0.13	24	reviewed	nc	nc
12/9/1983	18:09:28	36.176	-120.284	9.26	3.54	md	27	117	0.08739	0.08	nc	nc1108221	2016-12-11T21:21:05.290Z	7 km ENE of Coalinga, California	earthquake	0.32	0.57	0.15	30	reviewed	nc	nc
12/8/1983	21:05:08	36.2633333	-120.3588333	9.738	2.01	md	20	103	0.01892	0.1	nc	nc1108176	2016-12-11T21:17:49.100Z	13 km N of Coalinga, California	earthquake	0.28	0.35	0.16	12	reviewed	nc	nc
12/8/1983	14:38:20	36.2761667	-120.4176667	7.378	2	md	23	105	0.06667	0.08	nc	nc1108174	2016-12-11T21:17:44.823Z	16 km NNW of Coalinga, California	earthquake	0.25	0.39	0.13	22	reviewed	nc	nc
12/7/1983	12:59:09	35.893	-119.75	27.63	3.06	md	15	302	0.4108	0.65	nc	nc1108128	2016-12-11T21:14:27.759Z	22 km SE of Kettleman City, California	earthquake	23.72	31.19	0.41	3	reviewed	nc	nc
12/6/1983	15:55:11	36.2858333	-120.4	9.238	2.18	md	27	90	0.05586	0.11	nc	nc1108080	2016-12-11T21:10:55.788Z	16 km NNW of Coalinga, California	earthquake	0.29	0.4	0.18	26	reviewed	nc	nc
12/6/1983	6:37:52	36.2253333	-120.3308333	9.658	2.15	md	33	108	0.02613	0.12	nc	nc1108067	2016-12-11T21:09:59.650Z	9 km NNE of Coalinga, California	earthquake	0.29	0.39	0.11	31	reviewed	nc	nc
12/6/1983	3:31:58	35.8581667	-119.8561667	4.274	2.82	md	13	257	0.3189	1.86	nc	nc1108053	2016-12-11T21:08:51.113Z	19 km SSE of Kettleman City, California	earthquake	35.12	34.97	0.31	2	reviewed	nc	nc
12/5/1983	18:41:43	36.0336667	-120.1638333	22.769	2.99	md	11	281	0.1748	0.32	nc	nc1108023	2016-12-11T21:06:45.075Z	4 km NW of Avenal, California	earthquake	5.96	1.54	0.18	8	reviewed	nc	nc
12/5/1983	12:20:46	36.2663333	-120.4375	4.215	2.02	md	21	65	0.07838	0.1	nc	nc1108008	2016-12-11T21:05:43.446Z	15 km NNW of Coalinga, California	earthquake	0.24	0.63	0.09	21	reviewed	nc	nc
12/3/1983	22:08:34	36.1718333	-120.3531667	11.808	2.01	md	18	163	0.07748	0.06	nc	nc1107948	2016-12-11T21:01:42.730Z	3 km N of Coalinga, California	earthquake	0.58	0.49	0.19	9	reviewed	nc	nc
12/2/1983	20:28:05	36.1763333	-120.349	12.355	2.59	md	35	143	0.07297	0.08	nc	nc1107896	2016-12-11T20:58:04.150Z	4 km NNE of Coalinga, California	earthquake	0.27	0.47	0.17	50	reviewed	nc	nc
12/1/1983	11:33:52	36.095	-120.2061667	16.32	2.2	md	21	148	0.08559	0.08	nc	nc1107803	2016-12-11T20:51:30.161Z	12 km NW of Avenal, California	earthquake	0.75	1.02	0.14	19	reviewed	nc	nc
12/1/1983	10:56:09	36.084	-120.2113333	14.51	2.93	md	42	137	0.08559	0.12	nc	nc1107794	2016-12-11T20:50:51.740Z	11 km NW of Avenal, California	earthquake	0.31	0.48	0.16	55	reviewed	nc	nc
11/30/1983	21:49:18	36.2803333	-120.4056667	9.875	2.2	md	7	195	0.05946	0.07	nc	nc1107761	2016-12-11T20:48:34.423Z	16 km NNW of Coalinga, California	earthquake	0.94	0.72	0.15	9	reviewed	nc	nc
11/30/1983	21:48:50	36.165	-120.2821667	11.218	2.05	md	19	204	0.0973	0.11	nc	nc1107760	2016-12-11T20:48:30.664Z	7 km ENE of Coalinga, California	earthquake	0.57	0.78	0.18	19	reviewed	nc	nc
11/24/1983	19:28:24	36.205	-120.2703333	7.188	2.29	md	12	210	0.07387	0.08	nc	nc1107432	2016-12-11T20:25:38.790Z	10 km NE of Coalinga, California	earthquake	0.83	1.35	0.15	13	reviewed	nc	nc
11/24/1983	9:20:05	35.485	-119.348	5.228	2.5	mc	0	0	0.4255	0.339	ci	ci25266	2016-02-02T23:21:39.240Z	7km WSW of Shafter, CA	earthquake				24	reviewed	ci	ci
11/24/1983	8:20:53	36.1785	-120.2908333	9.978	2.43	md	31	189	0.08198	0.11	nc	nc1107410	2016-12-11T20:24:04.520Z	7 km NE of Coalinga, California	earthquake	0.42	0.46	0.12	48	reviewed	nc	nc
11/23/1983	5:13:47	34.9903333	-118.9983333	17.599	2.49	mc	24	100	0.06195	0.24	ci	ci25164	2016-02-02T23:59:26.630Z	8km NW of Grapevine, CA	earthquake	0.72	1.16		26	reviewed	ci	ci
11/21/1983	17:07:05	36.2146667	-120.4485	5.315	2.02	md	10	108	0.09189	0.05	nc	nc1107277	2016-12-11T20:14:31.639Z	11 km NW of Coalinga, California	earthquake	0.21	1.05	0.11	9	reviewed	nc	nc
11/21/1983	16:09:28	34.958	-119.012	12.609	2.11	mc	0	0	0.04798	0.388	ci	ci25059	2016-02-03T00:41:03.480Z	8km WNW of Grapevine, CA	earthquake		0.533		14	reviewed	ci	ci
11/20/1983	22:02:35	36.2126667	-120.4401667	6.315	4.06	md	50	80	0.08739	0.1	nc	nc1107237	2016-12-11T20:11:33.490Z	10 km NW of Coalinga, California	earthquake	0.19	0.37	0.19	106	reviewed	nc	nc
11/20/1983	10:46:12	36.178	-120.2983333	7.94	2	md	16	162	0.08018	0.13	nc	nc1107197	2016-12-11T20:08:43.312Z	7 km NE of Coalinga, California	earthquake	0.56	0.78	0.15	16	reviewed	nc	nc
11/20/1983	7:11:30	35.569	-118.713	12.811	2.75	mc	0	134	0.03348	0.174	ci	ci23193	2016-02-03T02:03:40.250Z	20km W of Bodfish, CA	earthquake		0.366		43	reviewed	ci	ci
11/19/1983	2:21:24	36.1246667	-120.2311667	9.48	2.47	md	42	120	0.1171	0.11	nc	nc1107106	2016-12-11T20:01:57.890Z	11 km E of Coalinga, California	earthquake	0.24	0.42	0.11	48	reviewed	nc	nc
11/17/1983	0:37:00	36.1636667	-120.2413333	7.98	2.08	md	23	164	0.1189	0.11	nc	nc1106999	2016-12-11T19:54:25.164Z	11 km ENE of Coalinga, California	earthquake	0.49	0.76	0.14	20	reviewed	nc	nc
11/16/1983	4:30:40	36.0211667	-120.5811667	3.989	2.32	md	40	56	0.04955	0.07	nc	nc1106951	2016-12-11T19:51:04.770Z	19 km NW of Parkfield, California	earthquake	0.18	0.45	0.13	37	reviewed	nc	nc
11/15/1983	23:46:51	36.0711667	-120.1616667	5.757	2.53	md	39	135	0.04324	0.12	nc	nc1106938	2016-12-11T19:50:01.310Z	8 km NNW of Avenal, California	earthquake	0.39	0.5	0.12	35	reviewed	nc	nc
11/15/1983	7:08:11	35.301	-119.065	4.764	2.04	mc	0	0	0.3157	0.313	ci	ci22237	2016-02-03T03:24:36.800Z	7km SSW of Bakersfield, CA	earthquake				17	reviewed	ci	ci
11/14/1983	15:54:49	36.2178333	-120.3685	11.305	2.79	md	40	93	0.03784	0.11	nc	nc1106820	2016-12-11T19:41:27.200Z	8 km N of Coalinga, California	earthquake	0.24	0.46	0.18	52	reviewed	nc	nc
11/11/1983	10:28:46	35.1621667	-119.0861667	17.449	2.53	mc	17	137	0.1937	0.22	ci	ci24718	2016-04-02T15:44:25.761Z	19km SW of Lamont, CA	earthquake	0.89	2.5		30	reviewed	ci	ci
11/11/1983	7:13:20	35.1786667	-119.0891667	13.061	2.32	mc	15	167	0.2103	0.2	ci	ci24674	2016-02-03T02:43:41.500Z	18km WSW of Lamont, CA	earthquake	0.77	1.6		22	reviewed	ci	ci
11/11/1983	0:45:13	36.2696667	-120.3603333	7.058	2.04	md	13	109	0.02523	0.05	nc	nc1106620	2016-12-11T19:27:34.312Z	14 km N of Coalinga, California	earthquake	0.42	0.36	0.19	12	reviewed	nc	nc
11/10/1983	10:24:50	36.2433333	-120.3936667	10.888	2.56	md	40	83	0.04144	0.08	nc	nc1106594	2016-12-11T19:25:53.860Z	11 km NNW of Coalinga, California	earthquake	0.2	0.33	0.11	54	reviewed	nc	nc
11/8/1983	17:36:08	36.1426667	-120.2351667	5.47	2.44	md	27	125	0.1306	0.16	nc	nc1106480	2016-12-11T19:17:58.630Z	11 km E of Coalinga, California	earthquake	0.38	0.79	0.17	30	reviewed	nc	nc
11/8/1983	3:58:21	35.8288333	-119.9686667	28.968	3.21	md	7	330	0.2225	0.23	nc	nc1106454	2016-12-11T19:15:58.820Z	19 km S of Kettleman City, California	earthquake	15.86	2.81		1	reviewed	nc	nc
11/7/1983	13:57:33	35.0735	-119.0931667	8.689	2.9	ml	23	120	0.1066	0.29	ci	ci21171	2016-04-02T09:22:08.001Z	21km NW of Grapevine, CA	earthquake	0.92	1.85		7	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/6/1983	13:06:10	35.8863333	-119.8343333	34.205	3.18	md	11	289	0.3432	0.51	nc	nc1106338	2016-12-11T19:08:18.882Z	17 km SE of Kettleman City, California	earthquake	18.43	9.39	0.17	3	reviewed	nc	nc
11/5/1983	17:40:26	36.1021667	-120.2208333	6.89	2.75	md	38	113	0.0991	0.11	nc	nc1106279	2016-12-11T19:04:11.930Z	13 km ESE of Coalinga, California	earthquake	0.25	0.49	0.08	45	reviewed	nc	nc
11/5/1983	10:11:40	36.2798333	-120.4286667	5.675	2.03	md	18	73	0.07387	0.09	nc	nc1106262	2016-12-11T19:02:54.615Z	16 km NNW of Coalinga, California	earthquake	0.3	0.55	0.14	15	reviewed	nc	nc
11/4/1983	21:49:57	36.2456667	-120.3401667	8.148	2.17	md	20	106	0.004505	0.08	nc	nc1106242	2016-12-11T19:01:29.478Z	11 km N of Coalinga, California	earthquake	0.32	0.26	0.17	23	reviewed	nc	nc
11/4/1983	17:57:46	35.0668333	-119.0915	10.7	3.02	mc	23	95		0.25	ci	ci24017	2016-02-02T20:02:28.030Z	20km NW of Grapevine, CA	earthquake	0.71	1.28		42	reviewed	ci	ci
11/4/1983	13:57:52	36.2638333	-120.3473333	11.559	2.26	md	22	133	0.01532	0.09	nc	nc1106218	2016-12-11T18:59:38.839Z	13 km N of Coalinga, California	earthquake	0.33	0.71	0.12	15	reviewed	nc	nc
11/4/1983	13:53:08	36.2166667	-120.3436667	9.538	2.18	md	27	103	0.03243	0.09	nc	nc1106217	2016-12-11T18:59:34.759Z	8 km N of Coalinga, California	earthquake	0.28	0.61	0.11	18	reviewed	nc	nc
11/4/1983	11:30:32	36.245	-120.3405	8.548	2.84	md	41	106	0.004505	0.07	nc	nc1106205	2016-12-11T18:58:43.840Z	11 km N of Coalinga, California	earthquake	0.16	0.24	0.1	65	reviewed	nc	nc
11/2/1983	4:38:29	35.9526667	-118.9998333	4.715	2.22	mc	17	282	0.4186	0.13	ci	ci23788	2016-02-02T18:43:07.120Z	13km S of Porterville, CA	earthquake	2.03	31.61		18	reviewed	ci	ci
10/31/1983	12:15:10	36.1956667	-120.3156667	8.884	2.53	md	44	109	0.05766	0.08	nc	nc1105968	2016-12-11T18:42:26.340Z	7 km NNE of Coalinga, California	earthquake	0.19	0.33	0.13	57	reviewed	nc	nc
10/31/1983	6:10:10	36.2106667	-120.316	8.874	2.33	md	36	111	0.04414	0.09	nc	nc1105949	2016-12-11T18:41:13.500Z	8 km NNE of Coalinga, California	earthquake	0.21	0.29	0.15	43	reviewed	nc	nc
10/30/1983	8:13:10	36.2716667	-120.3938333	9.238	3.17	md	54	102	0.04685	0.07	nc	nc1105900	2016-12-11T18:37:59.540Z	14 km NNW of Coalinga, California	earthquake	0.18	0.23	0.13	90	reviewed	nc	nc
10/30/1983	5:19:12	35.9081667	-119.7301667	4.405	2.69	md	26	284	0.4306	1.14	nc	nc1105890	2016-12-11T18:37:13.609Z	22 km W of Alpaugh, California	earthquake	20.92	10.67	0.23	13	reviewed	nc	nc
10/29/1983	21:07:10	36.2136667	-120.2508333	6.33	2.42	md	39	179	0.08288	0.13	nc	nc1105874	2016-12-11T18:36:16.650Z	12 km NE of Coalinga, California	earthquake	0.3	0.36	0.16	34	reviewed	nc	nc
10/28/1983	4:12:46	35.5703333	-119.0206667	4.831	2.24	mc	14	230	0.2529	0.32	ci	ci23228	2016-02-02T22:42:43.140Z	17km N of Oildale, CA	earthquake	2.22	26.75		21	reviewed	ci	ci
10/27/1983	16:26:39	35.561	-119.01	13.241	2.72	mc	0	153.2	0.2431	0.283	ci	ci23185	2016-02-02T23:20:39.440Z	16km N of Oildale, CA	earthquake		2.375		32	reviewed	ci	ci
10/27/1983	2:40:24	35.6726667	-119.9265	3.307	2.04	md	13	230	0.2342	0.11	nc	nc1105686	2016-12-11T18:24:29.343Z	21 km WNW of Lost Hills, California	earthquake	1.37	2.39	0.12	10	reviewed	nc	nc
10/26/1983	23:02:41	36.2188333	-120.418	7.305	3.11	md	49	98	0.06847	0.1	nc	nc1105675	2016-12-11T18:23:47.540Z	10 km NNW of Coalinga, California	earthquake	0.19	0.37	0.15	90	reviewed	nc	nc
10/26/1983	6:49:55	35.0561667	-119.0468333	10.494	2.34	mc	20	110	0.08927	0.31	ci	ci22904	2016-02-02T18:45:49.930Z	16km NW of Grapevine, CA	earthquake	0.89	1.48		26	reviewed	ci	ci
10/25/1983	22:12:32	36.2735	-120.3141667	9.928	2.02	md	23	114	0.03333	0.13	nc	nc1105603	2016-12-11T18:19:15.444Z	15 km NNE of Coalinga, California	earthquake	0.42	0.66	0.15	21	reviewed	nc	nc
10/25/1983	11:22:50	36.2581667	-120.2963333	6.104	2.37	md	23	121	0.03874	0.2	nc	nc1105575	2016-12-11T18:17:39.535Z	14 km NNE of Coalinga, California	earthquake	0.77	0.37	0.13	24	reviewed	nc	nc
10/24/1983	9:29:47	36.2598333	-120.3938333	8.058	2.1	md	22	127	0.04234	0.08	nc	nc1105514	2016-12-11T18:14:16.509Z	13 km NNW of Coalinga, California	earthquake	0.29	0.5	0.15	21	reviewed	nc	nc
10/23/1983	23:35:44	35.071	-119.033	10.664	3.17	ml	0	82.1		0.274	ci	ci19358	2016-02-02T23:20:23.270Z	17km NNW of Grapevine, CA	earthquake		2.054		11	reviewed	ci	ci
10/23/1983	15:16:53	36.2183333	-120.2961667	7.094	2.58	md	27	119	0.04865	0.07	nc	nc1105472	2016-12-11T18:11:42.730Z	10 km NNE of Coalinga, California	earthquake	0.22	0.33	0.09	42	reviewed	nc	nc
10/21/1983	11:13:14	34.9058333	-120.4026667	5.227	3.13	ml	23	154		0.35	ci	ci18961	2016-04-01T20:27:48.481Z	5km NE of Orcutt, CA	earthquake	0.91	31.61		11	reviewed	ci	ci
10/21/1983	9:33:39	36.2225	-120.3011667	7.375	2.08	md	15	203	0.04324	0.13	nc	nc1105329	2016-12-11T18:02:44.453Z	10 km NNE of Coalinga, California	earthquake	1.05	0.67	0.16	13	reviewed	nc	nc
10/20/1983	18:12:27	36.2753333	-120.3703333	8.918	2.07	md	20	100	0.03423	0.06	nc	nc1105294	2016-12-11T18:00:36.806Z	15 km N of Coalinga, California	earthquake	0.25	0.32	0.16	23	reviewed	nc	nc
10/19/1983	11:51:59	36.2665	-120.3343333	7.938	2.09	md	31	142	0.01892	0.09	nc	nc1105216	2016-12-11T17:56:17.220Z	14 km N of Coalinga, California	earthquake	0.3	0.22	0.13	31	reviewed	nc	nc
10/19/1983	6:22:12	36.2288333	-120.3055	5.028	2.03	md	13	152	0.03694	0.06	nc	nc1105197	2016-12-11T17:55:00.193Z	11 km NNE of Coalinga, California	earthquake	0.51	0.4	0.11	12	reviewed	nc	nc
10/19/1983	2:16:48	36.1486667	-120.241	8.672	2.35	md	44	125	0.1378	0.15	nc	nc1105181	2016-12-11T17:54:04.800Z	10 km E of Coalinga, California	earthquake	0.32	0.68	0.11	42	reviewed	nc	nc
10/18/1983	20:45:06	36.2203333	-120.3065	6.864	2.27	md	22	153	0.04144	0.13	nc	nc1105157	2016-12-11T17:52:24.690Z	10 km NNE of Coalinga, California	earthquake	0.44	0.53	0.12	26	reviewed	nc	nc
10/17/1983	20:57:43	36.1435	-120.2548333	8.61	2.3	md	36	118	0.1279	0.07	nc	nc1105103	2016-12-11T17:49:07.930Z	Central California	earthquake	0.19	0.46	0.17	39	reviewed	nc	nc
10/17/1983	0:08:57	35.9258333	-120.4751667	4.889	2.16	md	26	77	0.03243	0.08	nc	nc1105051	2016-12-11T17:45:43.120Z	4 km NW of Parkfield, California	earthquake	0.25	0.41	0.16	24	reviewed	nc	nc
10/16/1983	11:52:25	36.254	-120.3701667	9.618	3.07	md	50	101	0.02252	0.09	nc	nc1105020	2016-12-11T17:43:38.790Z	12 km N of Coalinga, California	earthquake	0.21	0.25	0.11	85	reviewed	nc	nc
10/16/1983	10:22:35	36.2496667	-120.3846667	7.488	2.02	md	14	77	0.03423	0.09	nc	nc1105017	2016-12-11T17:43:22.643Z	12 km N of Coalinga, California	earthquake	0.35	0.47	0.11	15	reviewed	nc	nc
10/16/1983	5:07:19	36.2581667	-120.3665	8.728	2.35	md	40	79	0.02072	0.09	nc	nc1105000	2016-12-11T17:42:21.950Z	13 km N of Coalinga, California	earthquake	0.17	0.25	0.12	46	reviewed	nc	nc
10/15/1983	17:06:35	36.1288333	-120.2188333	6.99	2.44	md	22	157	0.1117	0.21	nc	nc1104973	2016-12-11T17:40:36.091Z	12 km E of Coalinga, California	earthquake	0.51	0.92	0.13	18	reviewed	nc	nc
10/15/1983	5:20:55	36.2215	-120.328	9.348	2.25	md	37	109	0.03063	0.08	nc	nc1104949	2016-12-11T17:39:07.530Z	9 km NNE of Coalinga, California	earthquake	0.2	0.31	0.13	40	reviewed	nc	nc
10/14/1983	19:52:52	36.2116667	-120.3648333	11.719	2.84	md	43	96	0.04144	0.1	nc	nc1104923	2016-12-11T17:37:25.010Z	7 km N of Coalinga, California	earthquake	0.2	0.47	0.12	65	reviewed	nc	nc
10/14/1983	19:34:21	36.2131667	-120.3625	10.895	2.09	md	35	98	0.03964	0.12	nc	nc1104921	2016-12-11T17:37:12.790Z	8 km N of Coalinga, California	earthquake	0.21	0.39	0.13	29	reviewed	nc	nc
10/14/1983	12:25:18	36.142	-120.223	9.43	2.89	md	38	130	0.1225	0.09	nc	nc1104906	2016-12-11T17:36:12.370Z	12 km E of Coalinga, California	earthquake	0.25	0.58	0.14	64	reviewed	nc	nc
10/13/1983	15:15:48	36.1526667	-120.2068333	10.75	2.18	md	13	174	0.1207	0.05	nc	nc1104857	2016-12-11T17:32:49.430Z	10 km WSW of Huron, California	earthquake	0.51	0.86	0.17	19	reviewed	nc	nc
10/13/1983	6:10:55	35.0391667	-119.0191667	18.021	2.69	ml	41	88		0.29	ci	ci18265	2016-04-02T18:54:08.960Z	13km NW of Grapevine, CA	earthquake	0.52	1.42		4	reviewed	ci	ci
10/12/1983	21:30:11	36.2165	-120.4518333	4.045	2.5	md	32	88	0.09459	0.14	nc	nc1104831	2016-12-11T17:30:57.110Z	11 km NW of Coalinga, California	earthquake	0.21	0.55	0.19	37	reviewed	nc	nc
10/12/1983	17:30:29	36.2733333	-120.4	8.288	2.1	md	21	74	0.05225	0.1	nc	nc1104814	2016-12-11T17:29:52.330Z	15 km NNW of Coalinga, California	earthquake	0.26	0.43	0.12	24	reviewed	nc	nc
10/11/1983	15:48:28	36.1596667	-120.2733333	9.25	3.06	md	36	116	0.1054	0.09	nc	nc1104759	2016-12-11T17:26:16.470Z	8 km ENE of Coalinga, California	earthquake	0.24	0.44	0.14	61	reviewed	nc	nc
10/10/1983	17:17:03	36.2585	-120.444	4.245	2.05	md	11	106	0.08198	0.08	nc	nc1104707	2016-12-11T17:22:58.874Z	15 km NNW of Coalinga, California	earthquake	0.33	1.16	0.09	14	reviewed	nc	nc
10/10/1983	8:12:47	36.2756667	-120.4223333	6.548	2.54	md	42	65	0.06937	0.09	nc	nc1104680	2016-12-11T17:21:03.930Z	16 km NNW of Coalinga, California	earthquake	0.19	0.37	0.13	53	reviewed	nc	nc
10/9/1983	23:28:57	36.2401667	-120.3436667	8.568	2.31	md	35	141	0.009009	0.08	nc	nc1104648	2016-12-11T17:19:01.910Z	11 km N of Coalinga, California	earthquake	0.17	0.2	0.14	43	reviewed	nc	nc
10/7/1983	18:05:34	36.2265	-120.2906667	6.424	3.76	md	38	121	0.04775	0.08	nc	nc1104517	2016-12-11T17:10:58.840Z	11 km NNE of Coalinga, California	earthquake	0.18	0.29	0.19	89	reviewed	nc	nc
10/7/1983	16:35:18	36.16	-120.202	8.564	2.06	md	15	143	0.1243	0.09	nc	nc1104511	2016-12-11T17:10:33.218Z	10 km WSW of Huron, California	earthquake	0.43	1.02	0.17	15	reviewed	nc	nc
10/6/1983	18:08:01	36.216	-120.4196667	6.695	2.38	md	39	99	0.07027	0.09	nc	nc1104441	2016-12-11T17:06:12.660Z	10 km NNW of Coalinga, California	earthquake	0.23	0.44	0.17	48	reviewed	nc	nc
10/5/1983	17:00:05	36.2528333	-120.3741667	9.648	2.27	md	39	55	0.02523	0.09	nc	nc1104385	2016-12-11T17:02:36.580Z	12 km N of Coalinga, California	earthquake	0.17	0.32	0.2	43	reviewed	nc	nc
10/3/1983	18:00:04	35.9225	-120.4708333	4.464	2.02	md	29	76	0.03694	0.15	nc	nc1104237	2016-12-11T16:53:12.191Z	4 km NW of Parkfield, California	earthquake	0.32	0.56	0.17	19	reviewed	nc	nc
10/3/1983	9:15:59	35.3255	-118.9351667	16.707	2.2	mc	12	170	0.216	0.12	ci	ci16998	2016-02-03T04:03:25.820Z	8km NNW of Lamont, CA	earthquake	0.84	1.71		16	reviewed	ci	ci
10/3/1983	4:46:48	36.291	-120.4151667	6.658	2.14	md	20	98	0.05856	0.09	nc	nc1104204	2016-12-11T16:51:11.488Z	17 km NNW of Coalinga, California	earthquake	0.28	0.5	0.1	21	reviewed	nc	nc
10/2/1983	12:56:57	35.911	-120.489	8.916	2.66	mc	0	0		0.093	ci	ci17004	2016-02-02T18:44:56.650Z	5km WNW of Parkfield, CA	earthquake		20.57		5	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
10/2/1983	12:56:52	35.9241667	-120.4701667	4.974	2.13	md	13	77	0.03694	0.08	nc	nc1104163	2016-12-11T16:48:40.303Z	4 km NW of Parkfield, California	earthquake	0.35	0.77	0.08	13	reviewed	nc	nc
10/2/1983	2:40:55	36.2256667	-120.3043333	6.627	2.26	md	28	63	0.03874	0.12	nc	nc1104142	2016-12-11T16:47:21.640Z	10 km NNE of Coalinga, California	earthquake	0.26	0.41	0.14	34	reviewed	nc	nc
10/2/1983	2:35:28	35.9226667	-120.4711667	5.012	2.1	md	32	76	0.04775	0.08	nc	nc1104141	2016-12-11T16:47:11.460Z	4 km NW of Parkfield, California	earthquake	0.22	0.48	0.13	30	reviewed	nc	nc
10/1/1983	4:54:24	36.1968333	-120.2553333	6.757	2.08	md	21	110	0.08829	0.09	nc	nc1104083	2016-12-11T16:43:31.031Z	11 km NE of Coalinga, California	earthquake	0.29	0.61	0.15	23	reviewed	nc	nc
10/1/1983	0:20:19	36.163	-120.209	15.008	2.41	md	27	232	0.1387	0.17	nc	nc1104078	2016-12-11T16:43:12.513Z	10 km WSW of Huron, California	earthquake	1.37	0.94	0.09	23	reviewed	nc	nc
10/1/1983	0:19:20	36.16	-120.151	11.144	2.69	mc	0	0		0.391	ci	ci16710	2016-02-03T00:00:17.020Z	6km SW of Huron, CA	earthquake				16	reviewed	ci	ci
9/30/1983	9:15:18	36.2585	-120.4568333	3.013	2.7	md	46	68	0.1045	0.17	nc	nc1104014	2016-12-11T16:38:55.030Z	15 km NNW of Coalinga, California	earthquake	0.18	0.56	0.11	66	reviewed	nc	nc
9/28/1983	18:54:54	36.2465	-120.3753333	8.248	2.02	md	22	79	0.02613	0.11	nc	nc1103896	2016-12-11T16:30:19.024Z	11 km N of Coalinga, California	earthquake	0.29	0.43	0.12	19	reviewed	nc	nc
9/28/1983	9:48:37	35.0896667	-119.0031667	17.749	2.33	mh	18	136		0.21	ci	ci16036	2016-02-03T00:08:05.920Z	18km NNW of Grapevine, CA	earthquake	0.95	1.93	0.241	2	reviewed	ci	ci
9/27/1983	20:20:59	36.2196667	-120.451	4.485	3.22	md	52	54	0.09279	0.17	nc	nc1103834	2016-12-11T16:26:08.740Z	12 km NW of Coalinga, California	earthquake	0.21	0.52	0.12	89	reviewed	nc	nc
9/27/1983	10:47:53	36.2793333	-120.419	7.108	2.72	md	30	72	0.06847	0.11	nc	nc1103794	2016-12-11T16:23:18.455Z	16 km NNW of Coalinga, California	earthquake	0.23	0.42	0.16	17	reviewed	nc	nc
9/27/1983	8:11:55	36.2576667	-120.3643333	8.278	2.12	md	24	80	0.01892	0.07	nc	nc1103786	2016-12-11T16:22:47.351Z	13 km N of Coalinga, California	earthquake	0.24	0.27	0.1	14	reviewed	nc	nc
9/27/1983	3:39:55	36.2755	-120.4205	6.598	3.02	md	51	62	0.06847	0.08	nc	nc1103760	2016-12-11T16:21:02.290Z	16 km NNW of Coalinga, California	earthquake	0.13	0.29	0.13	84	reviewed	nc	nc
9/26/1983	22:32:26	35.0893333	-119.0071667	16.293	2.02	mc	8	150	0.1307	0.11	ci	ci15898	2016-02-03T02:44:59.600Z	18km NNW of Grapevine, CA	earthquake	1.09	1.64		15	reviewed	ci	ci
9/26/1983	14:46:38	36.2483333	-120.3831667	7.878	2.14	md	27	79	0.03243	0.07	nc	nc1103712	2016-12-11T16:17:33.253Z	12 km N of Coalinga, California	earthquake	0.21	0.38	0.12	26	reviewed	nc	nc
9/26/1983	12:15:26	36.1623333	-120.3156667	12.987	2.29	md	32	56	0.09009	0.08	nc	nc1103698	2016-12-11T16:16:33.700Z	4 km ENE of Coalinga, California	earthquake	0.24	0.75	0.09	40	reviewed	nc	nc
9/25/1983	5:13:09	34.8326667	-120.2008333	-0.777	2.8	mc	17	116		0.3	ci	ci15660	2016-04-02T09:25:00.717Z	12km NE of Los Alamos, CA	earthquake	0.89	1.52		31	reviewed	ci	ci
9/25/1983	5:12:14	34.8485	-120.233	2.853	2.25	mh	14	174		0.28	ci	ci15810	2016-04-02T04:10:45.645Z	12km NNE of Los Alamos, CA	earthquake	1.01	1.37	0.073	3	reviewed	ci	ci
9/24/1983	12:03:25	36.1858333	-120.2495	11.327	2.03	md	20	73	0.0991	0.07	nc	nc1103471	2016-12-11T15:59:49.110Z	11 km ENE of Coalinga, California	earthquake	0.27	0.7	0.14	20	reviewed	nc	nc
9/24/1983	5:46:02	36.1663333	-120.2803333	9.237	2.18	md	28	65	0.0973	0.08	nc	nc1103440	2016-12-11T15:57:41.430Z	7 km ENE of Coalinga, California	earthquake	0.22	0.49	0.16	31	reviewed	nc	nc
9/22/1983	18:20:11	36.2686667	-120.4246667	5.268	2.33	md	39	62	0.06937	0.16	nc	nc1103323	2016-12-11T15:49:19.970Z	15 km NNW of Coalinga, California	earthquake	0.21	0.49	0.13	37	reviewed	nc	nc
9/21/1983	19:06:30	36.1923333	-120.289	8.257	2.36	md	32	118	0.07207	0.14	nc	nc1103248	2016-12-11T15:43:59.450Z	8 km NE of Coalinga, California	earthquake	0.37	0.55	0.13	43	reviewed	nc	nc
9/21/1983	4:09:18	34.8821667	-119.2368333	11.123	2.11	mc	11	144		0.43	ci	ci14923	2016-02-02T21:21:58.720Z	9km WNW of Pine Mountain Club, CA	earthquake	1.37	2.07		5	reviewed	ci	ci
9/20/1983	23:35:29	35.104	-119.119	18.951	2.22	mc	0	0	0.1412	0.11	ci	ci14904	2016-02-02T23:19:52.760Z	25km NW of Grapevine, CA	earthquake				8	reviewed	ci	ci
9/20/1983	4:13:28	36.1101667	-120.2335	5.845	2.03	md	27	170	0.1117	0.12	nc	nc1103133	2016-12-11T15:35:58.780Z	11 km ESE of Coalinga, California	earthquake	0.41	0.69	0.15	25	reviewed	nc	nc
9/19/1983	15:51:43	36.2238333	-120.3976667	7.285	2.01	md	24	79	0.05135	0.07	nc	nc1103099	2016-12-11T15:33:13.562Z	9 km NNW of Coalinga, California	earthquake	0.21	0.47	0.17	23	reviewed	nc	nc
9/19/1983	10:14:08	35.08	-119.1125	21.303	2.11	mc	14	88		0.14	ci	ci14735	2016-02-02T23:59:59.300Z	22km NW of Grapevine, CA	earthquake	0.74	1.43		11	reviewed	ci	ci
9/19/1983	9:39:03	36.0641667	-120.6281667	2.635	2.18	md	31	47	0.09009	0.07	nc	nc1103081	2016-12-11T15:31:52.040Z	25 km NW of Parkfield, California	earthquake	0.18	0.68	0.13	25	reviewed	nc	nc
9/18/1983	17:34:50	36.2761667	-120.4095	7.858	2.13	md	16	65	0.06036	0.09	nc	nc1103052	2016-12-11T15:29:47.100Z	Central California	earthquake	0.32	0.48	0.08	14	reviewed	nc	nc
9/18/1983	14:34:32	36.2705	-120.3495	9.017	3.38	md	52	61	0.02162	0.07	nc	nc1103041	2016-12-11T15:29:00.380Z	14 km N of Coalinga, California	earthquake	0.13	0.23	0.15	102	reviewed	nc	nc
9/18/1983	14:11:43	36.212	-120.448	5.835	3.08	md	51	76	0.09279	0.12	nc	nc1103040	2016-12-11T15:28:48.470Z	11 km NW of Coalinga, California	earthquake	0.18	0.42	0.18	82	reviewed	nc	nc
9/18/1983	2:04:06	36.175	-120.2805	8.587	2.13	md	29	64	0.09009	0.09	nc	nc1103016	2016-12-11T15:27:07.490Z	8 km ENE of Coalinga, California	earthquake	0.3	0.42	0.11	34	reviewed	nc	nc
9/18/1983	1:05:01	36.206	-120.2616667	10.347	2.22	md	35	106	0.07838	0.12	nc	nc1103014	2016-12-11T15:26:55.570Z	11 km NE of Coalinga, California	earthquake	0.36	0.9	0.16	33	reviewed	nc	nc
9/17/1983	17:35:28	36.2036667	-120.3126667	9.497	3.2	md	48	57	0.05135	0.08	nc	nc1102992	2016-12-11T15:25:17.910Z	8 km NNE of Coalinga, California	earthquake	0.17	0.34	0.16	96	reviewed	nc	nc
9/17/1983	12:04:52	36.1698333	-120.3071667	7.207	2.74	md	45	58	0.08468	0.08	nc	nc1102977	2016-12-11T15:24:10.020Z	5 km NE of Coalinga, California	earthquake	0.15	0.57	0.12	69	reviewed	nc	nc
9/17/1983	4:55:07	36.1203333	-120.1995	7.09	2.13	md	34	93	0.09369	0.14	nc	nc1102956	2016-12-11T15:22:29.970Z	12 km SW of Huron, California	earthquake	0.24	0.65	0.12	37	reviewed	nc	nc
9/16/1983	22:17:58	36.171	-120.2843333	6.43	2.06	md	27	196	0.09189	0.13	nc	nc1102911	2016-12-11T15:19:06.560Z	7 km ENE of Coalinga, California	earthquake	0.48	0.73	0.1	22	reviewed	nc	nc
9/16/1983	16:01:32	36.182	-120.2461667	8.647	2.13	md	25	118	0.1036	0.13	nc	nc1102885	2016-12-11T15:17:12.280Z	11 km ENE of Coalinga, California	earthquake	0.34	0.7	0.21	23	reviewed	nc	nc
9/16/1983	0:06:10	36.224	-120.2806667	6.297	2.47	md	30	113	0.05676	0.11	nc	nc1102827	2016-12-11T15:12:56.130Z	11 km NE of Coalinga, California	earthquake	0.23	0.37	0.14	40	reviewed	nc	nc
9/15/1983	23:17:57	36.0603333	-120.2471667	8.26	2.93	md	48	70	0.1117	0.15	nc	nc1102822	2016-12-11T15:12:22.310Z	12 km WNW of Avenal, California	earthquake	0.25	0.55	0.11	69	reviewed	nc	nc
9/15/1983	8:20:58	36.2111667	-120.2925	7.507	2.15	md	25	61	0.05586	0.12	nc	nc1102773	2016-12-11T15:08:56.550Z	9 km NE of Coalinga, California	earthquake	0.27	0.5	0.11	23	reviewed	nc	nc
9/15/1983	1:38:11	36.2583333	-120.274	7.017	2.36	md	20	98	0.05676	0.1	nc	nc1102757	2016-12-11T15:07:52.284Z	15 km NNE of Coalinga, California	earthquake	0.25	0.38	0.15	21	reviewed	nc	nc
9/14/1983	23:16:51	36.2588333	-120.4451667	2.285	2.51	md	36	65	0.08378	0.19	nc	nc1102753	2016-12-11T15:07:34.200Z	15 km NNW of Coalinga, California	earthquake	0.25	0.7	0.15	35	reviewed	nc	nc
9/14/1983	21:57:23	36.2091667	-120.2211667	2.764	2.04	md	18	187	0.1063	0.09	nc	nc1102750	2016-12-11T15:07:15.045Z	10 km W of Huron, California	earthquake	0.4	1.24	0.18	16	reviewed	nc	nc
9/14/1983	6:10:04	36.2101667	-120.262	8.497	2.23	md	32	65	0.07658	0.11	nc	nc1102710	2016-12-11T15:04:33.060Z	11 km NE of Coalinga, California	earthquake	0.23	0.43	0.12	30	reviewed	nc	nc
9/14/1983	1:36:16	36.2196667	-120.302	6.727	2.64	md	23	62	0.04414	0.09	nc	nc1102702	2016-12-11T15:03:58.109Z	10 km NNE of Coalinga, California	earthquake	0.25	0.48	0.1	24	reviewed	nc	nc
9/13/1983	16:47:20	36.2235	-120.2523333	6.908	2.27	md	22	170	0.07748	0.11	nc	nc1102679	2016-12-11T15:02:23.430Z	13 km NE of Coalinga, California	earthquake	0.4	0.58	0.12	24	reviewed	nc	nc
9/13/1983	12:11:38	36.3091667	-120.304	6.077	2.31	md	28	93	0.06036	0.08	nc	nc1102666	2016-12-11T15:01:21.580Z	19 km NNE of Coalinga, California	earthquake	0.21	0.3	0.15	32	reviewed	nc	nc
9/13/1983	7:10:35	36.214	-120.264	6.077	2.2	md	31	130	0.07297	0.1	nc	nc1102655	2016-12-11T15:00:30.170Z	11 km NE of Coalinga, California	earthquake	0.34	0.45	0.1	31	reviewed	nc	nc
9/13/1983	6:53:00	36.217	-120.4528333	4.695	2.95	md	51	60	0.09459	0.15	nc	nc1102652	2016-12-11T15:00:02.750Z	11 km NW of Coalinga, California	earthquake	0.21	0.49	0.16	67	reviewed	nc	nc
9/13/1983	4:25:50	36.286	-120.417	6.778	2.44	md	35	67	0.06306	0.08	nc	nc1102636	2016-12-11T14:58:53.910Z	17 km NNW of Coalinga, California	earthquake	0.17	0.3	0.17	36	reviewed	nc	nc
9/12/1983	21:45:56	36.1526667	-120.2176667	10.587	2.38	md	31	88	0.127	0.06	nc	nc1102614	2016-12-11T14:57:26.420Z	11 km WSW of Huron, California	earthquake	0.2	0.49	0.14	39	reviewed	nc	nc
9/12/1983	19:53:22	36.2745	-120.4103333	7.598	2.58	md	48	69	0.06036	0.1	nc	nc1102601	2016-12-11T14:56:28.380Z	15 km NNW of Coalinga, California	earthquake	0.15	0.28	0.13	56	reviewed	nc	nc
9/12/1983	16:38:07	36.2228333	-120.3126667	5.297	2.15	md	19	104	0.03604	0.19	nc	nc1102591	2016-12-11T14:55:49.206Z	10 km NNE of Coalinga, California	earthquake	0.54	0.86	0.12	19	reviewed	nc	nc
9/12/1983	11:49:08	36.2235	-120.2593333	4.417	2.26	md	35	115	0.07207	0.16	nc	nc1102571	2016-12-11T14:54:33.460Z	12 km NE of Coalinga, California	earthquake	0.29	0.69	0.21	30	reviewed	nc	nc
9/11/1983	11:48:06	36.2371667	-120.3871667	9.345	4.76	md	52	40	0.03784	0.08	nc	nc1102488	2018-06-04T20:43:45.000Z	11 km NNW of Coalinga, California	earthquake	0.16	0.32	0.23	100	reviewed	nc	nc
9/10/1983	18:34:59	36.135	-120.2461667	6.8	2.23	md	37	74	0.1333	0.16	nc	nc1102414	2016-12-11T14:44:36.240Z	10 km E of Coalinga, California	earthquake	0.3	0.69	0.12	37	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/10/1983	18:09:57	36.227	-120.3063333	6.547	2.86	md	37	63	0.03694	0.15	nc	nc1102412	2016-12-11T14:44:24.980Z	10 km NNE of Coalinga, California	earthquake	0.23	0.4	0.12	52	reviewed	nc	nc
9/10/1983	17:30:33	36.2081667	-120.455	5.885	3.26	md	51	76	0.1	0.13	nc	nc1102410	2016-12-11T14:44:09.360Z	11 km NW of Coalinga, California	earthquake	0.21	0.41	0.13	83	reviewed	nc	nc
9/10/1983	15:57:20	36.1118333	-119.9988333	35.844	2	md	8	250	0.1036	0.26	nc	nc1102397	2016-12-11T14:43:10.891Z	11 km NNW of Kettleman City, California	earthquake	4.78	4.73	0.16	10	reviewed	nc	nc
9/10/1983	14:23:18	36.2061667	-120.2693333	8.407	2.99	md	54	64	0.07387	0.11	nc	nc1102390	2016-12-11T14:42:42.920Z	11 km NE of Coalinga, California	earthquake	0.19	0.37	0.16	84	reviewed	nc	nc
9/10/1983	9:10:20	36.2151667	-120.2975	6.607	2.1	md	14	98	0.05045	0.06	nc	nc1102371	2016-12-11T14:41:23.583Z	10 km NE of Coalinga, California	earthquake	0.26	0.51	0.16	17	reviewed	nc	nc
9/10/1983	7:19:31	36.2573333	-120.4685	3.845	3.61	md	24	77	0.1018	0.15	nc	nc1102360	2016-12-11T14:40:35.120Z	16 km NW of Coalinga, California	earthquake	0.31	0.79	0.18	28	reviewed	nc	nc
9/9/1983	22:20:10	36.2185	-120.2898333	5.677	2.38	md	19	121	0.05315	0.11	nc	nc1102326	2016-12-11T14:38:17.697Z	10 km NE of Coalinga, California	earthquake	0.37	0.56	0.18	21	reviewed	nc	nc
9/9/1983	21:31:03	36.2128333	-120.2348333	6.207	2.23	md	24	73	0.09459	0.14	nc	nc1102320	2016-12-11T14:37:55.296Z	11 km W of Huron, California	earthquake	0.24	0.8	0.23	20	reviewed	nc	nc
9/9/1983	21:04:00	36.2206667	-120.2381667	7.507	3.85	md	46	113	0.08919	0.07	nc	nc1102318	2016-12-11T14:37:46.170Z	12 km W of Huron, California	earthquake	0.19	0.36	0.14	107	reviewed	nc	nc
9/9/1983	19:56:05	36.2176667	-120.288	5.557	2.4	md	22	64	0.05405	0.14	nc	nc1102314	2016-12-11T14:37:28.011Z	10 km NE of Coalinga, California	earthquake	0.33	0.98	0.12	20	reviewed	nc	nc
9/9/1983	15:57:02	36.26	-120.3486667	8.318	2.02	md	26	137	0.01171	0.07	nc	nc1102304	2016-12-11T14:36:51.290Z	13 km N of Coalinga, California	earthquake	0.29	0.53	0.13	24	reviewed	nc	nc
9/9/1983	15:53:29	36.2248333	-120.2771667	4.897	2.35	md	20	114	0.05856	0.1	nc	nc1102303	2016-12-11T14:36:45.988Z	12 km NE of Coalinga, California	earthquake	0.23	0.53	0.17	21	reviewed	nc	nc
9/9/1983	13:02:55	36.2115	-120.2715	3.127	2.22	md	24	101	0.06937	0.14	nc	nc1102287	2016-12-11T14:35:39.740Z	11 km NE of Coalinga, California	earthquake	0.3	0.82	0.09	25	reviewed	nc	nc
9/9/1983	12:35:23	36.24	-120.359	8.781	2.15	md	24	80	0.01622	0.1	nc	nc1102284	2016-12-11T14:35:25.300Z	11 km N of Coalinga, California	earthquake	0.27	0.38	0.14	27	reviewed	nc	nc
9/9/1983	12:32:26	36.2155	-120.268	2.697	2.06	md	18	99	0.06937	0.19	nc	nc1102283	2016-12-11T14:35:19.767Z	11 km NE of Coalinga, California	earthquake	0.42	1.12	0.15	17	reviewed	nc	nc
9/9/1983	11:45:10	36.2288333	-120.2446667	6.21	2.08	md	22	74	0.08198	0.16	nc	nc1102273	2016-12-11T14:34:42.469Z	13 km WNW of Huron, California	earthquake	0.31	0.69	0.2	19	reviewed	nc	nc
9/9/1983	10:57:28	36.2326667	-120.279	6.217	2	md	9	97	0.05405	0.16	nc	nc1102261	2016-12-11T14:33:57.815Z	12 km NE of Coalinga, California	earthquake	0.8	0.89	0.03	2	reviewed	nc	nc
9/9/1983	10:33:09	36.2153333	-120.252	5.127	2.13	md	35	100	0.08108	0.09	nc	nc1102259	2016-12-11T14:33:49.230Z	12 km NE of Coalinga, California	earthquake	0.21	0.42	0.15	26	reviewed	nc	nc
9/9/1983	10:26:02	36.2168333	-120.2588333	7.847	3.19	md	54	133	0.07568	0.07	nc	nc1102255	2016-12-11T14:33:30.310Z	12 km NE of Coalinga, California	earthquake	0.2	0.32	0.13	101	reviewed	nc	nc
9/9/1983	10:21:36	36.1926667	-120.261	10.077	2.86	md	18	68	0.08739	0.05	nc	nc1102253	2016-12-11T14:33:19.722Z	10 km ENE of Coalinga, California	earthquake	0.27	0.66	0.12	18	reviewed	nc	nc
9/9/1983	10:18:26	36.195	-120.2623333	9.097	2.4	md	33	68	0.08468	0.08	nc	nc1102251	2016-12-11T14:33:10.660Z	10 km NE of Coalinga, California	earthquake	0.23	0.51	0.15	44	reviewed	nc	nc
9/9/1983	9:53:36	36.2205	-120.2815	5.017	2.57	md	37	66	0.05766	0.15	nc	nc1102244	2016-12-11T14:32:40.610Z	11 km NE of Coalinga, California	earthquake	0.22	0.47	0.14	46	reviewed	nc	nc
9/9/1983	9:44:55	36.223	-120.2775	4.757	2.34	md	38	66	0.05946	0.13	nc	nc1102238	2016-12-11T14:32:11.430Z	11 km NE of Coalinga, California	earthquake	0.21	0.44	0.21	34	reviewed	nc	nc
9/9/1983	9:43:11	36.2175	-120.235	1.817	2.17	md	12	106	0.09279	0.08	nc	nc1102237	2016-12-11T14:32:02.805Z	11 km W of Huron, California	earthquake	0.42	2.42	0.11	14	reviewed	nc	nc
9/9/1983	9:41:31	36.2338333	-120.2978333	6.247	3.19	md	45	119	0.03964	0.08	nc	nc1102236	2016-12-11T14:31:57.740Z	11 km NNE of Coalinga, California	earthquake	0.19	0.26	0.13	97	reviewed	nc	nc
9/9/1983	9:35:21	36.2333333	-120.2276667	5.206	2.09	md	8	184	0.155	0.13	nc	nc1102234	2016-12-11T14:31:47.095Z	11 km WNW of Huron, California	earthquake	0.94	1.58	0.31	2	reviewed	nc	nc
9/9/1983	9:26:45	36.2285	-120.2131667	6.365	2.15	md	9	110	0.1063	0.12	nc	nc1102227	2016-12-11T14:31:20.188Z	10 km WNW of Huron, California	earthquake	0.77	1.53	0.06	3	reviewed	nc	nc
9/9/1983	9:24:14	36.2253333	-120.2631667	2.291	2.19	md	6	117	0.06847	0.02	nc	nc1102225	2016-12-11T14:31:12.776Z	12 km NE of Coalinga, California	earthquake	0.49	1.53	0.13	6	reviewed	nc	nc
9/9/1983	9:21:31	36.2321667	-120.2853333	6.847	4.09	md	53	68	0.04955	0.1	nc	nc1102224	2016-12-11T14:31:07.770Z	12 km NNE of Coalinga, California	earthquake	0.15	0.38	0.27	59	reviewed	nc	nc
9/9/1983	9:16:13	36.2198333	-120.2796667	6.887	5.47	md	53	125	0.05946	0.05	nc	nc1102223	2022-04-27T23:50:05.615Z	11 km NE of Coalinga, California	earthquake	0.17	0.27	0.35	21	reviewed	nc	nc
9/9/1983	9:09:30	36.215	-120.2675	4.737	2.15	md	23	101	0.07027	0.15	nc	nc1102222	2016-12-11T14:30:50.520Z	Central California	earthquake	0.33	0.74	0.14	20	reviewed	nc	nc
9/9/1983	3:25:09	36.2215	-120.3713333	11.391	2.63	md	51	44	0.03604	0.1	nc	nc1102205	2016-12-11T14:29:43.970Z	9 km N of Coalinga, California	earthquake	0.17	0.36	0.13	63	reviewed	nc	nc
9/8/1983	16:19:31	36.1723333	-120.1808333	3.6	2.18	md	20	195	0.1252	0.14	nc	nc1102176	2016-12-11T14:27:46.321Z	7 km WSW of Huron, California	earthquake	0.73	0.89	0.24	18	reviewed	nc	nc
9/7/1983	1:15:22	36.1901667	-120.2773333	8.667	2.48	md	41	64	0.07928	0.13	nc	nc1102107	2016-12-11T14:23:19.820Z	9 km NE of Coalinga, California	earthquake	0.23	0.46	0.16	46	reviewed	nc	nc
9/6/1983	12:55:15	36.2323333	-120.3098333	6.617	2.04	md	20	63	0.03153	0.2	nc	nc1102076	2016-12-11T14:21:23.468Z	11 km NNE of Coalinga, California	earthquake	0.39	0.89	0.1	18	reviewed	nc	nc
9/6/1983	8:55:30	36.261	-120.3638333	8.947	2.37	md	36	58	0.02072	0.08	nc	nc1102064	2016-12-11T14:20:33.710Z	13 km N of Coalinga, California	earthquake	0.18	0.31	0.16	47	reviewed	nc	nc
9/5/1983	6:47:41	36.2645	-120.4175	3.881	2	md	16	81	0.06216	0.1	nc	nc1101983	2016-12-11T14:15:16.290Z	14 km NNW of Coalinga, California	earthquake	0.28	0.7	0.11	17	reviewed	nc	nc
9/4/1983	22:40:27	36.179	-120.3091667	8.44	3.25	md	37	57	0.07568	0.08	nc	nc1101958	2016-12-11T14:13:48.800Z	6 km NE of Coalinga, California	earthquake	0.19	0.42	0.14	77	reviewed	nc	nc
9/3/1983	10:22:47	36.1698333	-120.1825	4.142	2.49	md	47	156	0.1234	0.13	nc	nc1101871	2016-12-11T14:08:03.320Z	8 km WSW of Huron, California	earthquake	0.35	0.65	0.15	49	reviewed	nc	nc
9/3/1983	8:34:31	36.1526667	-120.275	6.7	3.01	md	45	66	0.1108	0.09	nc	nc1101866	2016-12-11T14:07:40.630Z	7 km E of Coalinga, California	earthquake	0.17	0.62	0.1	87	reviewed	nc	nc
9/2/1983	16:53:18	36.2368333	-120.3815	6.912	2.08	md	19	139	0.03333	0.07	nc	nc1101814	2016-12-11T14:04:16.863Z	10 km N of Coalinga, California	earthquake	0.38	0.56	0.11	18	reviewed	nc	nc
9/1/1983	23:04:07	36.287	-120.3835	9.218	3.28	md	73	75	0.04955	0.1	nc	nc1101757	2016-12-11T14:00:22.690Z	16 km N of Coalinga, California	earthquake	0.23	0.34	0.16	87	reviewed	nc	nc
9/1/1983	14:42:01	36.2438333	-120.3773333	7.948	2.13	md	21	83	0.02883	0.1	nc	nc1101718	2016-12-11T13:57:52.770Z	11 km N of Coalinga, California	earthquake	0.29	0.58	0.15	20	reviewed	nc	nc
8/31/1983	0:48:38	36.2335	-120.3151667	8.66	2.34	md	32	63	0.02703	0.08	nc	nc1101594	2016-12-11T13:49:58.840Z	11 km NNE of Coalinga, California	earthquake	0.19	0.37	0.13	36	reviewed	nc	nc
8/30/1983	10:46:45	36.2748333	-120.3963333	9.587	2.24	md	47	52	0.05045	0.1	nc	nc1101556	2016-12-11T13:47:24.550Z	15 km NNW of Coalinga, California	earthquake	0.16	0.33	0.14	44	reviewed	nc	nc
8/29/1983	5:24:35	36.129	-120.2285	5.96	2.13	md	27	81	0.118	0.14	nc	nc1101416	2016-12-11T13:37:46.130Z	11 km E of Coalinga, California	earthquake	0.31	0.75	0.11	23	reviewed	nc	nc
8/28/1983	12:50:57	36.1515	-120.2613333	9.734	2.48	md	35	71	0.118	0.07	nc	nc1101376	2016-12-11T13:34:53.170Z	8 km E of Coalinga, California	earthquake	0.2	0.43	0.11	48	reviewed	nc	nc
8/27/1983	21:28:19	36.0936667	-120.185	6.4	2.81	md	43	91	0.06937	0.12	nc	nc1101326	2016-12-11T13:31:39.920Z	11 km NNW of Avenal, California	earthquake	0.23	0.5	0.11	51	reviewed	nc	nc
8/27/1983	5:24:57	36.1733333	-120.2866667	8.107	2.14	md	38	62	0.08829	0.1	nc	nc1101294	2016-12-11T13:29:33.020Z	7 km ENE of Coalinga, California	earthquake	0.21	0.38	0.13	29	reviewed	nc	nc
8/26/1983	20:21:23	35.2183333	-120.7336667	4.456	2.13	md	17	155	0.03694	0.08	nc	nc1101272	2016-12-11T13:27:54.613Z	4 km N of Avila Beach, California	earthquake	0.36	0.42	0.16	19	reviewed	nc	nc
8/26/1983	19:57:40	36.207	-120.377	10.955	3.73	md	54	47	0.05045	0.08	nc	nc1101270	2016-12-11T13:27:45.630Z	7 km NNW of Coalinga, California	earthquake	0.17	0.34	0.08	62	reviewed	nc	nc
8/26/1983	17:51:40	36.2891667	-120.4138333	6.369	2.06	md	27	67	0.05856	0.09	nc	nc1101263	2016-12-11T13:27:15.766Z	17 km NNW of Coalinga, California	earthquake	0.22	0.47	0.2	19	reviewed	nc	nc
8/26/1983	13:00:51	36.2408333	-120.296	11.81	2.32	md	28	68	0.03874	0.09	nc	nc1101253	2016-12-11T13:26:38.092Z	12 km NNE of Coalinga, California	earthquake	0.24	0.66	0.14	21	reviewed	nc	nc
8/26/1983	6:40:36	36.129	-120.202	7.805	2.32	md	40	94	0.1009	0.12	nc	nc1101232	2016-12-11T13:25:18.320Z	12 km SW of Huron, California	earthquake	0.18	0.44	0.12	27	reviewed	nc	nc
8/26/1983	2:11:03	36.1861667	-120.2535	4.857	2.15	md	23	71	0.0964	0.15	nc	nc1101194	2016-12-11T13:22:30.438Z	10 km ENE of Coalinga, California	earthquake	0.43	1.12	0.22	14	reviewed	nc	nc
8/25/1983	23:23:50	36.2045	-120.2803333	8.447	2.61	md	23	61	0.06757	0.09	nc	nc1101184	2016-12-11T13:21:57.245Z	10 km NE of Coalinga, California	earthquake	0.25	0.46	0.09	14	reviewed	nc	nc
8/25/1983	23:18:41	36.2063333	-120.284	9.087	3.31	md	28	61	0.06396	0.08	nc	nc1101182	2016-12-11T13:21:49.905Z	10 km NE of Coalinga, California	earthquake	0.24	0.39	0.09	16	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
8/25/1983	20:59:34	36.222	-120.2721667	13.247	2.34	md	24	164	0.06306	0.07	nc	nc1101175	2016-12-11T13:21:23.868Z	12 km NE of Coalinga, California	earthquake	0.37	0.49	0.12	16	reviewed	nc	nc
8/25/1983	15:13:47	36.2838333	-120.3763333	8.958	2.32	md	22	57	0.04414	0.13	nc	nc1101153	2016-12-11T13:20:02.252Z	16 km N of Coalinga, California	earthquake	0.41	0.43	0.06	13	reviewed	nc	nc
8/25/1983	4:13:14	36.3063333	-120.3028333	3.757	2.33	md	18	91	0.06216	0.13	nc	nc1101097	2016-12-11T13:16:33.219Z	19 km NNE of Coalinga, California	earthquake	0.32	0.49	0.07	12	reviewed	nc	nc
8/24/1983	19:24:34	36.2118333	-120.2853333	6.037	2.13	md	25	63	0.05946	0.09	nc	nc1101043	2016-12-11T13:13:15.370Z	10 km NE of Coalinga, California	earthquake	0.22	0.56	0.1	20	reviewed	nc	nc
8/24/1983	18:37:01	36.2111667	-120.2816667	6.787	2.46	md	16	69	0.06216	0.06	nc	nc1101039	2016-12-11T13:13:00.264Z	10 km NE of Coalinga, California	earthquake	0.25	0.52	0.11	13	reviewed	nc	nc
8/24/1983	15:59:10	36.221	-120.264	11.824	2.66	mc	0	171.9		0.115	ci	ci20341	2016-02-02T22:01:09.980Z	12km NE of Coalinga, CA	earthquake		1.677		9	reviewed	ci	ci
8/24/1983	15:58:09	36.2471667	-120.2981667	13.527	2.63	md	22	84	0.03604	0.13	nc	nc1101021	2016-12-11T13:11:49.751Z	13 km NNE of Coalinga, California	earthquake	0.44	0.72	0.09	13	reviewed	nc	nc
8/24/1983	15:31:53	36.2255	-120.3038333	8.317	2.62	md	19	63	0.03964	0.14	nc	nc1101017	2016-12-11T13:11:35.145Z	10 km NNE of Coalinga, California	earthquake	0.38	0.48	0.07	10	reviewed	nc	nc
8/24/1983	13:33:02	36.2338333	-120.4303333	5.714	2.28	md	10	83	0.07297	0.05	nc	nc1100969	2016-12-11T13:08:38.363Z	12 km NNW of Coalinga, California	earthquake	0.32	0.73	0.18	5	reviewed	nc	nc
8/24/1983	11:49:00	36.2735	-120.3961667	7.987	2.65	md	23	91	0.04955	0.07	nc	nc1100964	2016-12-11T13:08:19.379Z	Central California	earthquake	0.22	0.35	0.06	17	reviewed	nc	nc
8/24/1983	4:06:35	36.265	-120.416	1.944	3.42	mc	0	0		0.192	ci	ci16524	2016-02-03T00:38:54.180Z	15km NNW of Coalinga, CA	earthquake		0.921		24	reviewed	ci	ci
8/23/1983	10:22:47	36.1735	-120.3035	7.377	2.25	md	29	58	0.08198	0.15	nc	nc1100894	2016-12-11T13:03:57.290Z	6 km NE of Coalinga, California	earthquake	0.28	0.61	0.09	22	reviewed	nc	nc
8/22/1983	17:50:20	36.281	-120.4218333	7.678	2.19	md	20	96	0.06937	0.05	nc	nc1100858	2016-12-11T13:01:40.841Z	16 km NNW of Coalinga, California	earthquake	0.19	0.37	0.1	14	reviewed	nc	nc
8/22/1983	14:09:39	36.2493333	-120.373	9.758	2.14	md	12	89	0.02432	0.06	nc	nc1100852	2016-12-11T13:01:18.742Z	12 km N of Coalinga, California	earthquake	0.4	0.47	0.08	10	reviewed	nc	nc
8/22/1983	7:36:04	36.2851667	-120.395	7.978	2.2	md	20	96	0.05495	0.09	nc	nc1100833	2016-12-11T12:59:54.409Z	16 km N of Coalinga, California	earthquake	0.25	0.31	0.14	18	reviewed	nc	nc
8/21/1983	11:06:26	36.2845	-120.428	8.068	2.68	md	43	71	0.07027	0.08	nc	nc1100798	2016-12-11T12:57:16.670Z	17 km NNW of Coalinga, California	earthquake	0.15	0.3	0.11	50	reviewed	nc	nc
8/21/1983	4:24:55	35.303	-119.314	5.03	2.01	mh	0	137.8	0.5166	0.328	ci	ci20206	2016-02-02T21:30:03.150Z	18km WSW of Rosedale, CA	earthquake			0.22	4	reviewed	ci	ci
8/20/1983	1:56:39	36.2845	-120.3905	8.788	2.58	md	40	57	0.05225	0.11	nc	nc1100718	2016-12-11T12:52:01.050Z	16 km N of Coalinga, California	earthquake	0.28	0.3	0.12	43	reviewed	nc	nc
8/19/1983	19:59:56	36.2885	-120.3963333	8.188	2.38	md	20	110	0.05225	0.09	nc	nc1100709	2016-12-11T12:51:24.727Z	16 km N of Coalinga, California	earthquake	0.24	0.33	0.09	11	reviewed	nc	nc
8/19/1983	18:37:39	36.1716667	-120.1175	7.067	2.52	md	19	157	0.08198	0.07	nc	nc1100704	2016-12-11T12:51:05.909Z	3 km SSW of Huron, California	earthquake	0.38	0.52	0.1	16	reviewed	nc	nc
8/19/1983	14:21:19	36.2198333	-120.4038333	7.198	2.17	md	10	133	0.05766	0.11	nc	nc1100701	2016-12-11T12:50:54.556Z	9 km NNW of Coalinga, California	earthquake	0.68	1.08	0.12	8	reviewed	nc	nc
8/19/1983	4:39:22	36.1235	-120.2283333	13.36	2.21	md	15	135	0.1144	0.08	nc	nc1100671	2016-12-11T12:48:57.554Z	12 km E of Coalinga, California	earthquake	0.41	1.22	0.02	11	reviewed	nc	nc
8/19/1983	3:24:38	36.173	-120.294	9.223	2.41	md	25	107	0.08559	0.07	nc	nc1100668	2016-12-11T12:48:46.065Z	7 km ENE of Coalinga, California	earthquake	0.22	0.47	0.08	14	reviewed	nc	nc
8/19/1983	3:16:45	36.1763333	-120.2951667	9.057	2.48	md	25	60	0.08288	0.09	nc	nc1100662	2016-12-11T12:48:14.096Z	7 km NE of Coalinga, California	earthquake	0.22	0.45	0.1	12	reviewed	nc	nc
8/19/1983	3:09:53	36.178	-120.2968333	10.507	2.84	md	16	60	0.08018	0.09	nc	nc1100661	2016-12-11T12:48:10.022Z	7 km NE of Coalinga, California	earthquake	0.32	0.62	0.09	9	reviewed	nc	nc
8/19/1983	2:36:46	36.0976667	-120.1996667	6.66	2.6	md	45	85	0.08198	0.14	nc	nc1100658	2016-12-11T12:47:57.430Z	12 km NNW of Avenal, California	earthquake	0.28	0.51	0.2	33	reviewed	nc	nc
8/19/1983	1:55:18	36.0981667	-120.2041667	7.933	2.59	md	38	149	0.1793	0.15	nc	nc1100656	2016-12-11T12:47:44.120Z	12 km NNW of Avenal, California	earthquake	0.41	0.69	0.24	25	reviewed	nc	nc
8/18/1983	22:42:10	36.1555	-120.2215	10.877	2.69	md	18	86	0.1306	0.08	nc	nc1100647	2016-12-11T12:47:07.847Z	11 km WSW of Huron, California	earthquake	0.45	0.77	0.14	15	reviewed	nc	nc
8/18/1983	12:20:35	36.1641667	-120.1241667	6.595	2.24	md	7	152	0.09009	0.06	nc	nc1100629	2016-12-11T12:46:04.412Z	4 km SSW of Huron, California	earthquake	0.79	1.09	0.12	3	reviewed	nc	nc
8/18/1983	9:09:45	36.2351667	-120.319	9.634	2.17	md	25	157	0.02432	0.12	nc	nc1100623	2016-12-11T12:45:37.841Z	11 km NNE of Coalinga, California	earthquake	0.33	0.37	0.12	22	reviewed	nc	nc
8/18/1983	9:02:10	36.1301667	-120.229	6.43	2.86	md	27	162	0.1189	0.16	nc	nc1100622	2016-12-11T12:45:34.014Z	11 km E of Coalinga, California	earthquake	0.57	1.12	0.1	19	reviewed	nc	nc
8/18/1983	8:52:52	36.2591667	-120.4246667	6.298	2.36	md	12	99	0.06667	0.1	nc	nc1100619	2016-12-11T12:45:11.932Z	14 km NNW of Coalinga, California	earthquake	0.4	0.79	0.21	9	reviewed	nc	nc
8/16/1983	17:46:01	36.2755	-120.4166667	8.078	2.16	md	18	104	0.06486	0.07	nc	nc1100542	2016-12-11T12:40:28.325Z	15 km NNW of Coalinga, California	earthquake	0.33	0.51	0.09	12	reviewed	nc	nc
8/16/1983	4:09:53	36.2258333	-120.4323333	4.395	2.12	md	10	111	0.07658	0.03	nc	nc1100500	2016-12-11T12:37:50.481Z	11 km NW of Coalinga, California	earthquake	0.32	1.25	0.13	8	reviewed	nc	nc
8/14/1983	12:43:35	36.2828333	-120.4175	8.378	4.27	md	48	65	0.06577	0.09	nc	nc1100415	2016-12-11T12:32:26.630Z	16 km NNW of Coalinga, California	earthquake	0.16	0.36	0.13	31	reviewed	nc	nc
8/14/1983	5:58:01	36.1876667	-120.2721667	9.165	2.6	md	17	114	0.08378	0.06	nc	nc1100399	2016-12-11T12:31:24.728Z	9 km NE of Coalinga, California	earthquake	0.32	0.56	0.15	18	reviewed	nc	nc
8/14/1983	0:31:14	36.1313333	-120.1985	9.073	2.97	md	40	118	0.1495	0.1	nc	nc1100387	2016-12-11T12:30:39.080Z	11 km SW of Huron, California	earthquake	0.25	0.54	0.1	63	reviewed	nc	nc
8/13/1983	23:10:42	36.2351667	-120.3138333	9.197	2.28	md	15	150	0.02703	0.1	nc	nc1100384	2016-12-11T12:30:25.043Z	11 km NNE of Coalinga, California	earthquake	0.39	0.41	0.1	11	reviewed	nc	nc
8/13/1983	17:47:23	36.2621667	-120.4206667	4.781	2.65	md	22	64	0.06396	0.12	nc	nc1100368	2016-12-11T12:29:26.338Z	14 km NNW of Coalinga, California	earthquake	0.36	0.7	0.13	13	reviewed	nc	nc
8/13/1983	17:00:24	36.1758333	-120.1331667	5.867	2.1	md	18	165	0.08288	0.16	nc	nc1100367	2016-12-11T12:29:22.696Z	4 km SW of Huron, California	earthquake	0.75	1.11	0.14	12	reviewed	nc	nc
8/13/1983	5:52:22	36.2361667	-120.3911667	8.345	2.47	md	24	95	0.04144	0.08	nc	nc1100336	2016-12-11T12:27:31.803Z	11 km NNW of Coalinga, California	earthquake	0.24	0.4	0.12	20	reviewed	nc	nc
8/13/1983	5:48:35	36.1933333	-120.3056667	4.264	2.02	md	11	192	0.06396	0.07	nc	nc1100335	2016-12-11T12:27:28.037Z	7 km NE of Coalinga, California	earthquake	0.44	1.76	0.25	9	reviewed	nc	nc
8/13/1983	5:35:19	36.2366667	-120.3838333	9.038	2.47	md	26	78	0.03514	0.07	nc	nc1100334	2016-12-11T12:27:24.105Z	10 km N of Coalinga, California	earthquake	0.21	0.33	0.11	18	reviewed	nc	nc
8/13/1983	4:06:33	36.2831667	-120.4091667	8.748	3.46	md	41	60	0.06216	0.11	nc	nc1100328	2016-12-11T12:27:00.980Z	16 km NNW of Coalinga, California	earthquake	0.19	0.37	0.13	28	reviewed	nc	nc
8/13/1983	0:16:51	36.1735	-120.1335	6.945	2.55	md	19	165	0.08468	0.1	nc	nc1100317	2016-12-11T12:26:15.604Z	4 km SW of Huron, California	earthquake	0.6	1.03	0.11	14	reviewed	nc	nc
8/13/1983	0:11:17	36.1806667	-120.1453333	6.228	2.2	md	21	155	0.08378	0.19	nc	nc1100316	2016-12-11T12:26:11.572Z	4 km WSW of Huron, California	earthquake	0.67	1.18	0.1	14	reviewed	nc	nc
8/12/1983	23:07:56	36.1783333	-120.1415	7.227	3.01	md	28	159	0.08378	0.1	nc	nc1100314	2016-12-11T12:26:04.108Z	4 km SW of Huron, California	earthquake	0.37	0.74	0.07	17	reviewed	nc	nc
8/12/1983	23:04:48	36.1726667	-120.1353333	5.47	2.3	md	16	165	0.08649	0.09	nc	nc1100313	2016-12-11T12:26:00.182Z	4 km SW of Huron, California	earthquake	0.47	1	0.07	14	reviewed	nc	nc
8/12/1983	22:16:08	36.1571667	-120.1423333	4.132	2	md	17	260	0.2459	0.12	nc	nc1100309	2016-12-11T12:25:45.789Z	6 km SW of Huron, California	earthquake	1.97	1.73	0.05	13	reviewed	nc	nc
8/12/1983	22:02:34	36.1821667	-120.132	10.137	4.13	md	64	130	0.07658	0.1	nc	nc1100307	2016-12-11T12:25:37.020Z	3 km SW of Huron, California	earthquake	0.22	0.38	0.14	29	reviewed	nc	nc
8/12/1983	19:13:23	36.231	-120.4305	1.985	2.17	md	10	104	0.07297	0.11	nc	nc1100304	2016-12-11T12:25:21.974Z	11 km NNW of Coalinga, California	earthquake	0.37	1.97	0.15	10	reviewed	nc	nc
8/12/1983	16:09:32	36.1126667	-120.238	8.753	2.45	md	14	146	0.1604	0.17	nc	nc1100299	2016-12-11T12:25:03.995Z	11 km ESE of Coalinga, California	earthquake	0.62	1.53	0.01	8	reviewed	nc	nc
8/12/1983	15:48:05	36.1223333	-120.212	10.203	2.45	md	14	222	0.1631	0.07	nc	nc1100297	2016-12-11T12:24:56.268Z	13 km SW of Huron, California	earthquake	0.77	0.97	0.06	14	reviewed	nc	nc
8/12/1983	11:28:55	36.2808333	-120.4063333	8.478	2.91	md	30	66	0.06036	0.08	nc	nc1100287	2016-12-11T12:24:19.811Z	16 km NNW of Coalinga, California	earthquake	0.19	0.35	0.14	20	reviewed	nc	nc
8/12/1983	11:04:31	36.282	-120.4131667	7.905	3.2	md	46	87	0.06486	0.08	nc	nc1100283	2016-12-11T12:24:04.030Z	16 km NNW of Coalinga, California	earthquake	0.21	0.28	0.1	85	reviewed	nc	nc
8/12/1983	7:24:58	36.2305	-120.2543333	6.241	2.13	md	12	259	0.07387	0.05	nc	nc1100269	2016-12-11T12:23:06.940Z	13 km NE of Coalinga, California	earthquake	0.87	0.49	0.07	10	reviewed	nc	nc
8/12/1983	5:42:15	36.2125	-120.3196667	8.628	2.91	md	39	153	0.04144	0.07	nc	nc1100265	2016-12-11T12:22:50.500Z	8 km NNE of Coalinga, California	earthquake	0.19	0.26	0.12	59	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
8/12/1983	1:26:58	36.2828333	-120.4041667	8.758	2.91	md	29	66	0.05946	0.08	nc	nc1100251	2016-12-11T12:21:55.916Z	16 km NNW of Coalinga, California	earthquake	0.2	0.33	0.14	20	reviewed	nc	nc
8/12/1983	1:14:41	36.281	-120.4093333	8.628	4.2	md	53	59	0.06216	0.09	nc	nc1100249	2016-12-11T12:21:47.180Z	16 km NNW of Coalinga, California	earthquake	0.14	0.28	0.12	22	reviewed	nc	nc
8/11/1983	21:45:05	36.2301667	-120.4418333	5.284	2.52	md	21	61	0.08198	0.13	nc	nc1100240	2016-12-11T12:21:09.662Z	12 km NW of Coalinga, California	earthquake	0.31	0.74	0.21	10	reviewed	nc	nc
8/11/1983	19:06:42	35.097	-118.995	15.137	2.29	mc	0	0	0.2381	0.264	ci	ci16354	2016-02-03T00:38:50.420Z	18km NNW of Grapevine, CA	earthquake		9.13		14	reviewed	ci	ci
8/11/1983	11:32:14	36.187	-120.48	5.329	3.25	mc	0	0		0.566	ci	ci16342	2016-02-03T03:22:58.610Z	12km WNW of Coalinga, CA	earthquake				22	reviewed	ci	ci
8/11/1983	11:31:12	36.2111667	-120.4693333	4.628	2.95	md	45	73	0.1207	0.11	nc	nc1100224	2016-12-11T12:20:08.500Z	12 km NW of Coalinga, California	earthquake	0.25	0.57	0.13	53	reviewed	nc	nc
8/11/1983	10:31:00	36.2433333	-120.2735	7.947	2.68	md	25	87	0.05676	0.14	nc	nc1100221	2016-12-11T12:19:53.751Z	13 km NE of Coalinga, California	earthquake	0.42	0.47	0.13	17	reviewed	nc	nc
8/11/1983	8:46:39	36.2421667	-120.2783333	7.617	2.12	md	17	160	0.05225	0.15	nc	nc1100216	2016-12-11T12:19:34.795Z	13 km NNE of Coalinga, California	earthquake	0.7	0.58	0.08	10	reviewed	nc	nc
8/10/1983	22:12:13	36.2265	-120.442	4.785	2.78	md	20	91	0.08378	0.11	nc	nc1100194	2016-12-11T12:18:12.427Z	12 km NW of Coalinga, California	earthquake	0.23	0.56	0.13	13	reviewed	nc	nc
8/10/1983	14:19:20	36.1286667	-120.1985	6.81	2.04	md	21	149	0.0991	0.08	nc	nc1100174	2016-12-11T12:16:46.825Z	11 km SW of Huron, California	earthquake	0.37	0.81	0.1	17	reviewed	nc	nc
8/10/1983	14:11:25	36.1365	-120.1998333	8.58	3.3	md	32	96	0.1054	0.11	nc	nc1100173	2016-12-11T12:16:42.921Z	11 km SW of Huron, California	earthquake	0.2	0.49	0.1	19	reviewed	nc	nc
8/10/1983	8:45:23	36.2291667	-120.3053333	6.857	2.3	md	14	93	0.03694	0.11	nc	nc1100164	2016-12-11T12:16:12.670Z	11 km NNE of Coalinga, California	earthquake	0.28	0.5	0.09	9	reviewed	nc	nc
8/10/1983	7:41:35	36.1328333	-120.1985	9.83	2.42	md	37	96	0.1018	0.14	nc	nc1100159	2016-12-11T12:15:53.220Z	11 km SW of Huron, California	earthquake	0.25	0.57	0.24	24	reviewed	nc	nc
8/9/1983	17:03:48	36.2183333	-120.2953333	7.427	2.55	md	25	62	0.04955	0.12	nc	nc1100130	2016-12-11T12:13:46.972Z	10 km NE of Coalinga, California	earthquake	0.34	0.48	0.12	24	reviewed	nc	nc
8/9/1983	13:28:59	36.1855	-120.2816667	8.348	2.61	md	40	63	0.1667	0.08	nc	nc1100123	2016-12-11T12:13:20.428Z	8 km NE of Coalinga, California	earthquake	0.17	0.57	0.08	33	reviewed	nc	nc
8/9/1983	12:16:18	36.1926667	-120.275	7.218	2.01	md	11	66	0.1631	0.05	nc	nc1100116	2016-12-11T12:12:53.935Z	9 km NE of Coalinga, California	earthquake	0.24	0.94	0.02	2	reviewed	nc	nc
8/9/1983	12:15:44	36.189	-120.2783333	7.798	2.43	md	33	64	0.1649	0.09	nc	nc1100115	2016-12-11T12:12:49.964Z	Central California	earthquake	0.25	0.8	0.2	10	reviewed	nc	nc
8/9/1983	2:51:16	36.2386667	-120.3778333	7.639	2.23	md	42	53	0.0982	0.15	nc	nc1100093	2016-12-11T12:11:21.390Z	11 km N of Coalinga, California	earthquake	0.3	0.75	0.14	30	reviewed	nc	nc
8/8/1983	16:40:15	36.1668333	-120.2361667	8.476	2.21	md	32	88	0.1477	0.14	nc	nc1100064	2016-12-11T12:09:17.000Z	11 km ENE of Coalinga, California	earthquake	0.34	0.67	0.15	23	reviewed	nc	nc
8/8/1983	12:10:00	36.2318333	-120.425	8.163	2.38	md	19	77	0.1135	0.05	nc	nc1100057	2016-12-11T12:08:43.683Z	11 km NNW of Coalinga, California	earthquake	0.26	0.45	0.1	17	reviewed	nc	nc
8/8/1983	9:54:59	36.3201667	-120.3118333	4.717	2.17	md	32	76	0.04955	0.09	nc	nc1100043	2016-12-11T12:07:43.740Z	20 km S of Cantua Creek, California	earthquake	0.2	0.28	0.16	31	reviewed	nc	nc
8/8/1983	0:22:33	36.1131667	-120.2816667	18.05	2.27	md	19	101	0.127	0.05	nc	nc1100021	2016-12-11T12:06:16.391Z	7 km ESE of Coalinga, California	earthquake	0.33	0.79	0.17	14	reviewed	nc	nc
8/7/1983	8:40:50	36.2723333	-120.3596667	9.258	2.35	md	22	113	0.02703	0.1	nc	nc1099990	2016-12-11T12:04:17.298Z	14 km N of Coalinga, California	earthquake	0.3	0.38	0.15	18	reviewed	nc	nc
8/7/1983	7:09:59	36.1378333	-120.2011667	8.11	2.23	md	20	95	0.1072	0.11	nc	nc1099985	2016-12-11T12:04:02.029Z	11 km SW of Huron, California	earthquake	0.25	0.64	0.12	21	reviewed	nc	nc
8/7/1983	1:59:33	36.241	-120.4413333	2.375	2.06	md	9	95	0.08018	0.06	nc	nc1099973	2016-12-11T12:03:16.797Z	13 km NNW of Coalinga, California	earthquake	0.64	2.32	0.1	8	reviewed	nc	nc
8/7/1983	0:47:04	36.2366667	-120.2313333	7.09	2.09	md	13	132	0.09099	0.07	nc	nc1099970	2016-12-11T12:03:05.768Z	12 km WNW of Huron, California	earthquake	0.43	0.75	0.11	10	reviewed	nc	nc
8/6/1983	18:30:56	36.1561667	-120.2536667	9.637	3.57	md	31	73	0.118	0.07	nc	nc1099960	2016-12-11T12:02:27.540Z	9 km E of Coalinga, California	earthquake	0.27	0.36	0.08	14	reviewed	nc	nc
8/6/1983	18:24:27	36.274	-120.3748333	8.854	2.19	md	13	94	0.03604	0.07	nc	nc1099959	2016-12-11T12:02:21.565Z	14 km N of Coalinga, California	earthquake	0.53	0.4	0.11	10	reviewed	nc	nc
8/6/1983	0:17:16	36.235	-120.384	9.115	2.97	md	29	74	0.03604	0.07	nc	nc1099916	2016-12-11T11:59:42.481Z	10 km NNW of Coalinga, California	earthquake	0.18	0.32	0.15	16	reviewed	nc	nc
8/5/1983	22:34:08	36.1578333	-120.2136667	7.47	2.11	md	9	173	0.1288	0.04	nc	nc1099911	2016-12-11T11:59:23.879Z	11 km WSW of Huron, California	earthquake	0.27	0.56	0.06	13	reviewed	nc	nc
8/5/1983	21:48:31	36.2871667	-120.382	8.757	2.01	md	13	56	0.04955	0.05	nc	nc1099910	2016-12-11T11:59:20.137Z	16 km N of Coalinga, California	earthquake	0.27	0.35	0.13	8	reviewed	nc	nc
8/5/1983	13:31:12	36.2818333	-120.4086667	8.868	2.06	md	18	75	0.06216	0.1	nc	nc1099890	2016-12-11T11:58:09.229Z	16 km NNW of Coalinga, California	earthquake	0.33	0.43	0.08	18	reviewed	nc	nc
8/5/1983	10:06:01	36.2296667	-120.4421667	5.155	3.4	md	56	54	0.08288	0.12	nc	nc1099883	2016-12-11T11:57:45.470Z	12 km NW of Coalinga, California	earthquake	0.16	0.38	0.16	65	reviewed	nc	nc
8/5/1983	10:01:57	36.2268333	-120.4436667	3.365	2.59	md	38	54	0.08468	0.17	nc	nc1099882	2016-12-11T11:57:37.170Z	12 km NW of Coalinga, California	earthquake	0.21	0.57	0.15	22	reviewed	nc	nc
8/5/1983	5:08:06	36.1756667	-120.1258333	8.144	2.41	md	21	149	0.08018	0.12	nc	nc1099872	2016-12-11T11:56:57.744Z	3 km SW of Huron, California	earthquake	0.42	0.61	0.13	20	reviewed	nc	nc
8/5/1983	1:39:44	36.2475	-120.426	5.981	2.2	md	18	73	0.06757	0.04	nc	nc1099866	2016-12-11T11:56:35.664Z	13 km NNW of Coalinga, California	earthquake	0.21	0.38	0.11	12	reviewed	nc	nc
8/4/1983	20:29:15	36.0383333	-120.5915	4.092	2.31	md	33	71	0.03063	0.05	nc	nc1099847	2016-12-11T11:55:22.800Z	21 km NW of Parkfield, California	earthquake	0.18	0.42	0.13	29	reviewed	nc	nc
8/3/1983	18:18:37	36.308	-120.3063333	5.731	2.16	md	17	145	0.05856	0.08	nc	nc1099786	2016-12-11T11:51:31.671Z	19 km NNE of Coalinga, California	earthquake	0.43	0.23	0.08	19	reviewed	nc	nc
8/3/1983	17:06:50	36.1913333	-120.3068333	9.107	2.22	md	28	91	0.06486	0.09	nc	nc1099785	2016-12-11T11:51:26.530Z	7 km NE of Coalinga, California	earthquake	0.29	0.46	0.08	27	reviewed	nc	nc
8/3/1983	13:54:35	36.2031667	-120.2683333	11.977	2.26	md	31	64	0.07568	0.08	nc	nc1099778	2016-12-11T11:50:43.200Z	10 km NE of Coalinga, California	earthquake	0.28	0.62	0.13	32	reviewed	nc	nc
8/2/1983	18:27:32	36.1618333	-120.3095	14.483	2.78	md	38	107	0.09189	0.07	nc	nc1099730	2016-12-11T11:47:38.370Z	5 km ENE of Coalinga, California	earthquake	0.24	0.59	0.12	51	reviewed	nc	nc
8/2/1983	8:53:40	36.2248333	-120.263	7.857	2.19	md	38	69	0.06937	0.11	nc	nc1099710	2016-12-11T11:46:17.360Z	12 km NE of Coalinga, California	earthquake	0.2	0.38	0.12	35	reviewed	nc	nc
8/2/1983	1:54:51	36.2098333	-120.4313333	6.151	3.02	md	45	77	0.08198	0.11	nc	nc1099687	2016-12-11T11:44:36.370Z	10 km NW of Coalinga, California	earthquake	0.18	0.45	0.12	57	reviewed	nc	nc
8/1/1983	3:28:27	36.0858333	-120.1991667	6.51	2.22	md	27	79	0.07658	0.08	nc	nc1099645	2016-12-11T11:41:42.730Z	11 km NW of Avenal, California	earthquake	0.21	0.47	0.1	26	reviewed	nc	nc
7/31/1983	22:39:56	36.2246667	-120.2601667	7.617	2.11	md	29	70	0.07117	0.1	nc	nc1099637	2016-12-11T11:41:06.390Z	13 km NE of Coalinga, California	earthquake	0.24	0.45	0.09	24	reviewed	nc	nc
7/31/1983	18:10:51	36.2655	-120.3211667	7.883	2.06	md	25	68	0.1892	0.07	nc	nc1099632	2016-12-11T11:40:36.120Z	14 km NNE of Coalinga, California	earthquake	0.24	0.81	0.17	17	reviewed	nc	nc
7/31/1983	17:56:41	36.2223333	-120.2565	7.547	2.13	md	30	98	0.07477	0.09	nc	nc1099630	2016-12-11T11:40:24.940Z	13 km NE of Coalinga, California	earthquake	0.23	0.44	0.14	21	reviewed	nc	nc
7/31/1983	17:54:20	36.2253333	-120.2686667	9.687	3.32	md	50	129	0.06486	0.08	nc	nc1099629	2016-12-11T11:40:17.580Z	12 km NE of Coalinga, California	earthquake	0.2	0.31	0.13	62	reviewed	nc	nc
7/31/1983	17:24:10	36.1535	-120.2333333	10.333	3.42	md	56	111	0.1306	0.09	nc	nc1099628	2016-12-11T11:40:08.940Z	Central California	earthquake	0.19	0.46	0.1	61	reviewed	nc	nc
7/31/1983	17:20:25	36.2261667	-120.2711667	7.377	2.29	md	35	95	0.06216	0.13	nc	nc1099626	2016-12-11T11:39:54.540Z	12 km NE of Coalinga, California	earthquake	0.24	0.39	0.16	18	reviewed	nc	nc
7/31/1983	17:19:24	36.2258333	-120.2671667	7.707	2.58	md	42	95	0.06577	0.09	nc	nc1099625	2016-12-11T11:39:46.930Z	12 km NE of Coalinga, California	earthquake	0.19	0.31	0.14	42	reviewed	nc	nc
7/31/1983	16:50:24	36.2261667	-120.2728333	8.027	2.41	md	35	68	0.06126	0.12	nc	nc1099624	2016-12-11T11:39:36.730Z	12 km NE of Coalinga, California	earthquake	0.23	0.41	0.16	38	reviewed	nc	nc
7/31/1983	16:47:01	36.2251667	-120.2621667	8.387	2.84	md	42	70	0.06937	0.11	nc	nc1099623	2016-12-11T11:39:29.330Z	13 km NE of Coalinga, CA	earthquake	0.18	0.34	0.11	48	reviewed	nc	nc
7/31/1983	16:43:52	36.2248333	-120.2733333	9.667	3.55	md	47	127	0.06126	0.08	nc	nc1099622	2016-12-11T11:39:18.850Z	12 km NE of Coalinga, California	earthquake	0.2	0.32	0.11	61	reviewed	nc	nc
7/31/1983	5:10:51	36.1893333	-120.275	8.657	2.6	md	41	64	0.08108	0.08	nc	nc1099599	2016-12-11T11:37:42.550Z	9 km NE of Coalinga, California	earthquake	0.19	0.38	0.08	52	reviewed	nc	nc
7/31/1983	3:24:01	36.2045	-120.3086667	8.117	2.45	md	39	95	0.05315	0.12	nc	nc1099595	2016-12-11T11:37:23.860Z	8 km NNE of Coalinga, California	earthquake	0.22	0.5	0.12	40	reviewed	nc	nc
7/31/1983	0:34:35	36.2803333	-120.4135	6.368	2.27	md	5	130	0.06486	0.01	nc	nc1099584	2016-12-11T11:36:33.104Z	16 km NNW of Coalinga, California	earthquake	0.4	0.73	0.06	4	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
7/30/1983	20:02:02	36.19	-120.2766667	9.017	2.18	md	21	64	0.08018	0.09	nc	nc1099573	2016-12-11T11:35:51.810Z	9 km NE of Coalinga, California	earthquake	0.31	0.61	0.12	16	reviewed	nc	nc
7/30/1983	12:26:17	36.2841667	-120.3748333	8.788	2.88	md	49	57	0.04324	0.08	nc	nc1099561	2016-12-11T11:35:00.890Z	16 km N of Coalinga, California	earthquake	0.14	0.25	0.11	67	reviewed	nc	nc
7/30/1983	11:24:29	36.2333333	-120.3963333	7.765	2.23	md	30	96	0.04595	0.07	nc	nc1099555	2016-12-11T11:34:33.770Z	10 km NNW of Coalinga, California	earthquake	0.17	0.29	0.14	30	reviewed	nc	nc
7/30/1983	4:26:18	36.246	-120.299	18.201	2.04	md	4	121	0.03604	0	nc	nc1099540	2016-12-11T11:33:32.701Z	Central California	earthquake	1.97	2.25	0.12	6	reviewed	nc	nc
7/29/1983	11:43:42	36.1935	-120.2653333	8.427	2.48	md	42	107	0.08378	0.1	nc	nc1099506	2016-12-11T11:30:59.970Z	10 km NE of Coalinga, California	earthquake	0.21	0.39	0.13	50	reviewed	nc	nc
7/29/1983	11:19:10	36.269	-120.4258333	11.178	2.17	md	31	90	0.07027	0.09	nc	nc1099503	2016-12-11T11:30:44.940Z	15 km NNW of Coalinga, California	earthquake	0.19	0.37	0.17	29	reviewed	nc	nc
7/29/1983	10:13:52	36.2385	-120.4433333	5.225	3	md	40	77	0.08198	0.11	nc	nc1099498	2016-12-11T11:30:22.480Z	13 km NW of Coalinga, California	earthquake	0.18	0.42	0.1	57	reviewed	nc	nc
7/29/1983	2:08:51	36.2581667	-120.4306667	3.237	2.54	md	26	60	0.09189	0.15	nc	nc1099475	2016-12-11T11:28:47.378Z	14 km NNW of Coalinga, California	earthquake	0.23	0.67	0.11	24	reviewed	nc	nc
7/29/1983	0:22:25	35.267	-120.5465	7.551	2.04	md	17	84	0.1063	0.13	nc	nc1099465	2016-12-11T11:28:04.576Z	9 km NE of Edna, California	earthquake	0.36	1.08	0.14	12	reviewed	nc	nc
7/28/1983	21:14:04	36.136	-120.221	1.245	2.64	mc	0	0		0.271	ci	ci12864	2016-02-03T02:42:55.080Z	12km E of Coalinga, CA	earthquake		2.497		13	reviewed	ci	ci
7/28/1983	11:35:52	36.1771667	-120.2906667	8.467	2.18	md	26	62	0.08378	0.07	nc	nc1099433	2016-12-11T11:25:58.880Z	7 km ENE of Coalinga, California	earthquake	0.19	0.55	0.14	29	reviewed	nc	nc
7/27/1983	17:23:39	36.2968333	-120.3428333	5.332	2.59	mh	6	156		0.89	ci	ci12784	2016-04-02T19:44:00.661Z	17km N of Coalinga, CA	earthquake	5.79	31.61	0.367	13	reviewed	ci	ci
7/27/1983	17:10:00	36.155	-120.2415	9.197	2.85	md	31	78	0.1252	0.08	nc	nc1099394	2016-12-11T11:23:16.100Z	10 km E of Coalinga, California	earthquake	0.21	0.48	0.1	33	reviewed	nc	nc
7/27/1983	16:26:38	36.155	-120.178	-0.556	2.89	mc	0	0		0.377	ci	ci12778	2016-02-02T20:02:02.100Z	9km SW of Huron, CA	earthquake		4.193		22	reviewed	ci	ci
7/27/1983	16:22:05	36.138	-120.266	1.832	2.6	mc	0	0		0.167	ci	ci12764	2016-02-02T20:02:01.600Z	8km E of Coalinga, CA	earthquake		6.263		8	reviewed	ci	ci
7/26/1983	19:11:49	36.2166667	-120.2671667	11.03	2	md	13	99	0.06937	0.06	nc	nc1099354	2016-12-11T11:20:50.136Z	11 km NE of Coalinga, California	earthquake	0.41	1.29	0.09	10	reviewed	nc	nc
7/26/1983	18:38:03	36.2758333	-120.4121667	7.501	2.54	md	41	59	0.06216	0.08	nc	nc1099351	2016-12-11T11:20:38.010Z	15 km NNW of Coalinga, California	earthquake	0.14	0.27	0.15	47	reviewed	nc	nc
7/26/1983	17:25:30	36.2825	-120.4166667	7.828	2.31	md	22	72	0.06577	0.07	nc	nc1099349	2016-12-11T11:20:27.860Z	16 km NNW of Coalinga, California	earthquake	0.24	0.44	0.16	17	reviewed	nc	nc
7/26/1983	16:53:44	36.218	-120.4	0.044	2.8	mc	0	0		0.201	ci	ci11995	2016-02-02T23:58:21.060Z	9km NNW of Coalinga, CA	earthquake		2.476		11	reviewed	ci	ci
7/26/1983	13:27:42	36.2501667	-120.466	6.324	2.7	md	15	98	0.1	2.39	nc	nc1099339	2016-12-11T11:19:39.331Z	15 km NW of Coalinga, California	earthquake	19.17	20.71	0.14	12	reviewed	nc	nc
7/26/1983	11:50:08	36.22	-120.4511667	4.024	2.49	md	32	74	0.09279	0.12	nc	nc1099332	2016-12-11T11:19:11.750Z	12 km NW of Coalinga, California	earthquake	0.18	0.54	0.12	32	reviewed	nc	nc
7/26/1983	7:54:24	36.2473333	-120.4336667	5.958	2.05	md	17	91	0.07387	0.08	nc	nc1099325	2016-12-11T11:18:40.893Z	13 km NNW of Coalinga, California	earthquake	0.26	0.5	0.15	16	reviewed	nc	nc
7/26/1983	7:48:08	36.2185	-120.4075	7.005	2.24	md	40	79	0.06036	0.11	nc	nc1099323	2016-12-11T11:18:31.940Z	9 km NNW of Coalinga, California	earthquake	0.19	0.35	0.1	37	reviewed	nc	nc
7/26/1983	4:48:30	36.251	-120.459	4.905	2.11	md	12	107	0.09369	0.07	nc	nc1099313	2016-12-11T11:17:48.350Z	15 km NW of Coalinga, California	earthquake	0.29	0.66	0.16	9	reviewed	nc	nc
7/26/1983	2:28:33	36.276	-120.4148333	6.458	2.52	md	38	83	0.06396	0.08	nc	nc1099307	2016-12-11T11:17:24.520Z	15 km NNW of Coalinga, California	earthquake	0.14	0.31	0.1	41	reviewed	nc	nc
7/26/1983	2:04:19	36.2208333	-120.4321667	1.984	2.2	md	9	103	0.07748	0.1	nc	nc1099306	2016-12-11T11:17:17.726Z	11 km NW of Coalinga, California	earthquake	0.38	1.67	0.08	7	reviewed	nc	nc
7/26/1983	1:20:30	36.2243333	-120.4373333	4.695	2.99	md	22	74	0.08018	0.11	nc	nc1099303	2016-12-11T11:17:05.220Z	11 km NW of Coalinga, California	earthquake	0.24	0.48	0.16	21	reviewed	nc	nc
7/26/1983	1:00:28	36.2045	-120.391	7.925	2.62	md	37	84	0.05946	0.07	nc	nc1099300	2016-12-11T11:16:50.530Z	7 km NNW of Coalinga, California	earthquake	0.19	0.43	0.12	45	reviewed	nc	nc
7/26/1983	0:48:44	36.2245	-120.4025	7.195	2.29	md	32	48	0.05405	0.1	nc	nc1099298	2016-12-11T11:16:38.750Z	10 km NNW of Coalinga, California	earthquake	0.19	0.39	0.12	28	reviewed	nc	nc
7/26/1983	0:08:37	36.2091667	-120.4261667	6.335	2.06	md	13	125	0.07838	0.08	nc	nc1099296	2016-12-11T11:16:28.937Z	9 km NW of Coalinga, California	earthquake	0.28	0.65	0.21	9	reviewed	nc	nc
7/25/1983	22:48:30	36.2255	-120.4095	6.675	2.04	md	26	67	0.05946	0.08	nc	nc1099290	2016-12-11T11:16:05.700Z	10 km NNW of Coalinga, California	earthquake	0.22	0.43	0.16	14	reviewed	nc	nc
7/25/1983	22:41:13	36.2193333	-120.4006667	7.334	2.32	md	5	173	0.05586	0.01	nc	nc1099289	2016-12-11T11:16:00.157Z	9 km NNW of Coalinga, California	earthquake	2.53	2.2	0.07	2	reviewed	nc	nc
7/25/1983	22:31:39	36.2245	-120.4023333	8.215	5.04	md	48	41	0.05405	0.08	nc	nc1099288	2022-04-27T23:56:03.177Z	10 km NNW of Coalinga, California	earthquake	0.14	0.3	0.18	8	reviewed	nc	nc
7/25/1983	22:28:58	36.219	-120.407	7.045	2.79	md	38	103	0.06036	0.08	nc	nc1099286	2016-12-11T11:15:41.730Z	9 km NNW of Coalinga, California	earthquake	0.19	0.39	0.13	44	reviewed	nc	nc
7/25/1983	20:51:17	36.091	-120.256	1.026	2.57	mc	0	0		0.149	ci	ci11791	2016-02-03T02:42:47.200Z	11km ESE of Coalinga, CA	earthquake		3.007		10	reviewed	ci	ci
7/25/1983	20:50:16	36.0926667	-120.2451667	6.934	2.08	md	14	139	0.155	0.1	nc	nc1099280	2016-12-11T11:15:14.013Z	11 km ESE of Coalinga, California	earthquake	0.37	1.1	0.13	10	reviewed	nc	nc
7/25/1983	5:30:36	36.2685	-120.3465	11.337	2.06	md	13	77	0.01892	0.1	nc	nc1099246	2016-12-11T11:13:07.068Z	14 km N of Coalinga, California	earthquake	0.45	0.5	0.16	15	reviewed	nc	nc
7/25/1983	0:25:21	36.214	-120.4515	3.145	2.06	md	13	105	0.09459	0.13	nc	nc1099227	2016-12-11T11:11:56.192Z	11 km NW of Coalinga, California	earthquake	0.37	1.17	0.13	10	reviewed	nc	nc
7/24/1983	13:09:52	36.258	-120.4258333	4.026	2.7	md	42	70	0.09009	0.14	nc	nc1099201	2016-12-11T11:10:14.770Z	14 km NNW of Coalinga, California	earthquake	0.22	0.62	0.11	48	reviewed	nc	nc
7/24/1983	11:41:31	36.2205	-120.2966667	7.337	2.1	md	14	124	0.04685	0.11	nc	nc1099198	2016-12-11T11:10:00.339Z	10 km NNE of Coalinga, California	earthquake	0.33	0.43	0.13	15	reviewed	nc	nc
7/24/1983	10:11:07	36.2131667	-120.2998333	7.487	2.99	md	32	95	0.05045	0.08	nc	nc1099197	2016-12-11T11:09:55.310Z	9 km NNE of Coalinga, California	earthquake	0.2	0.28	0.11	61	reviewed	nc	nc
7/24/1983	7:51:15	36.2566667	-120.4433333	5.831	2.47	md	33	65	0.08198	0.09	nc	nc1099190	2016-12-11T11:09:22.690Z	14 km NNW of Coalinga, California	earthquake	0.17	0.41	0.09	42	reviewed	nc	nc
7/24/1983	5:45:15	36.2371667	-120.4441667	3.724	2.77	md	42	72	0.08288	0.14	nc	nc1099184	2016-12-11T11:08:53.900Z	13 km NW of Coalinga, California	earthquake	0.17	0.51	0.16	50	reviewed	nc	nc
7/24/1983	5:25:49	36.196	-120.358	2.272	2.68	mc	0	0		0.113	ci	ci11504	2016-02-03T02:42:43.430Z	6km N of Coalinga, CA	earthquake		1.665		6	reviewed	ci	ci
7/24/1983	2:58:52	36.1536667	-120.2101667	10.162	2.79	md	31	173	0.1234	0.06	nc	nc1099180	2016-12-11T11:08:34.610Z	11 km WSW of Huron, California	earthquake	0.25	0.39	0.1	49	reviewed	nc	nc
7/24/1983	2:16:55	36.1791667	-120.2921667	9.177	2.31	md	15	122	0.08108	0.07	nc	nc1099172	2016-12-11T11:08:01.844Z	7 km NE of Coalinga, California	earthquake	0.37	0.54	0.13	17	reviewed	nc	nc
7/23/1983	19:10:37	36.2441667	-120.382	8.507	2.26	md	34	44	0.03243	0.11	nc	nc1099151	2016-12-11T11:06:37.190Z	11 km N of Coalinga, California	earthquake	0.19	0.35	0.15	35	reviewed	nc	nc
7/23/1983	14:27:21	35.5828333	-120.7011667	4	2.02	md	11	71	0.1604	0.07	nc	nc1099146	2016-12-11T11:06:16.699Z	3 km N of Templeton, California	earthquake	0.53	2.96	0.19	9	reviewed	nc	nc
7/23/1983	14:19:09	36.2806667	-120.4198333	6.281	2.02	md	16	108	0.06847	0.08	nc	nc1099144	2016-12-11T11:06:09.485Z	16 km NNW of Coalinga, California	earthquake	0.29	0.54	0.11	13	reviewed	nc	nc
7/23/1983	11:58:42	36.3196667	-120.3008333	5.089	2.43	md	40	223	0.05856	0.13	nc	nc1099138	2016-12-11T11:05:45.630Z	20 km S of Cantua Creek, California	earthquake	0.72	0.44	0.1	39	reviewed	nc	nc
7/23/1983	9:23:02	36.2578333	-120.453	1.401	2.02	md	14	101	0.08919	0.05	nc	nc1099131	2016-12-11T11:05:16.844Z	15 km NNW of Coalinga, California	earthquake	0.25	1.24	0.15	11	reviewed	nc	nc
7/23/1983	8:34:04	36.22	-120.398	1.832	2.51	mc	0	0		0.226	ci	ci11397	2016-02-03T02:42:42.480Z	10km NNW of Coalinga, CA	earthquake		1.714		7	reviewed	ci	ci
7/23/1983	6:35:24	36.1626667	-120.399	17.512	3.28	ml	13	157		0.45	ci	ci11386	2016-04-02T10:24:00.561Z	4km NW of Coalinga, CA	earthquake	13.65	22.71	0.193	4	reviewed	ci	ci
7/23/1983	4:08:37	36.3183333	-120.3095	4.738	2.36	md	19	151	0.05225	0.1	nc	nc1099114	2016-12-11T11:04:15.815Z	20 km S of Cantua Creek, California	earthquake	0.3	0.26	0.17	19	reviewed	nc	nc
7/23/1983	0:47:22	36.2346667	-120.3795	8.748	2.04	md	14	108	0.03333	0.08	nc	nc1099108	2016-12-11T11:03:53.556Z	10 km N of Coalinga, California	earthquake	0.31	0.57	0.15	12	reviewed	nc	nc
7/22/1983	22:25:03	36.2415	-120.3933333	7.721	2.2	md	23	42	0.04144	0.1	nc	nc1099102	2016-12-11T11:03:30.280Z	11 km NNW of Coalinga, California	earthquake	0.25	0.38	0.13	19	reviewed	nc	nc
7/22/1983	21:52:32	36.2583333	-120.4036667	7.838	3.23	md	50	51	0.05045	0.1	nc	nc1099101	2016-12-11T11:03:24.770Z	13 km NNW of Coalinga, California	earthquake	0.13	0.28	0.13	62	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
7/22/1983	19:15:38	36.2428333	-120.4335	4.211	2.03	md	14	89	0.07387	0.08	nc	nc1099091	2016-12-11T11:02:40.645Z	13 km NNW of Coalinga, California	earthquake	0.34	0.74	0.14	10	reviewed	nc	nc
7/22/1983	16:47:02	36.3331667	-120.3233333	5.254	2.26	md	21	80	0.03784	0.1	nc	nc1099088	2016-12-11T11:02:26.450Z	18 km S of Cantua Creek, California	earthquake	0.27	0.37	0.1	22	reviewed	nc	nc
7/22/1983	11:46:27	36.2573333	-120.4433333	4.031	2.94	md	46	63	0.08198	0.22	nc	nc1099072	2016-12-11T11:01:11.390Z	15 km NNW of Coalinga, California	earthquake	0.22	0.65	0.16	53	reviewed	nc	nc
7/22/1983	11:11:46	36.2343333	-120.4308333	6.366	2.42	md	39	119	0.1135	0.09	nc	nc1099067	2016-12-11T11:00:45.840Z	12 km NNW of Coalinga, California	earthquake	0.18	0.44	0.14	48	reviewed	nc	nc
7/22/1983	10:38:19	36.2365	-120.4068333	7.605	2.88	md	44	75	0.05315	0.07	nc	nc1099063	2016-12-11T11:00:27.810Z	11 km NNW of Coalinga, California	earthquake	0.17	0.36	0.12	67	reviewed	nc	nc
7/22/1983	8:48:53	36.249	-120.4398333	4.457	2.89	md	38	70	0.07838	0.09	nc	nc1099056	2016-12-11T10:59:56.980Z	14 km NNW of Coalinga, California	earthquake	0.14	0.43	0.15	51	reviewed	nc	nc
7/22/1983	8:17:59	36.3221667	-120.2861667	4.935	2.81	md	45	153	0.06937	0.12	nc	nc1099053	2016-12-11T10:59:42.020Z	20 km S of Cantua Creek, California	earthquake	0.46	0.5	0.07	25	reviewed	nc	nc
7/22/1983	8:17:03	36.2381667	-120.3821667	8.668	2.75	md	44	41	0.03423	0.09	nc	nc1099052	2016-12-11T10:59:34.290Z	11 km N of Coalinga, California	earthquake	0.15	0.35	0.1	46	reviewed	nc	nc
7/22/1983	7:35:57	36.2191667	-120.417	6.725	2.87	md	42	98	0.06757	0.07	nc	nc1099047	2016-12-11T10:59:07.340Z	10 km NNW of Coalinga, California	earthquake	0.16	0.32	0.12	64	reviewed	nc	nc
7/22/1983	7:16:14	36.2706667	-120.4123333	6.042	2.16	md	23	77	0.06036	0.14	nc	nc1099041	2016-12-11T10:58:34.414Z	15 km NNW of Coalinga, California	earthquake	0.33	0.62	0.12	11	reviewed	nc	nc
7/22/1983	7:12:55	36.264	-120.409	-0.076	3.19	mc	0	0		0.236	ci	ci11726	2016-02-03T01:18:25.830Z	14km NNW of Coalinga, CA	earthquake		2.595		15	reviewed	ci	ci
7/22/1983	7:12:10	36.2701667	-120.4088333	7.498	3.49	md	49	55	0.05766	0.09	nc	nc1099040	2016-12-11T10:58:29.200Z	15 km NNW of Coalinga, California	earthquake	0.14	0.29	0.11	56	reviewed	nc	nc
7/22/1983	7:09:11	36.2678333	-120.4175	5.738	2.69	md	39	61	0.06306	0.09	nc	nc1099039	2016-12-11T10:58:20.430Z	15 km NNW of Coalinga, California	earthquake	0.17	0.36	0.13	49	reviewed	nc	nc
7/22/1983	7:04:40	36.2743333	-120.4138333	7.441	2.71	md	41	59	0.06306	0.1	nc	nc1099037	2016-12-11T10:58:06.420Z	15 km NNW of Coalinga, California	earthquake	0.16	0.34	0.11	51	reviewed	nc	nc
7/22/1983	6:59:33	36.2425	-120.3908333	8.211	2.52	md	35	76	0.03964	0.09	nc	nc1099036	2016-12-11T10:57:56.130Z	11 km NNW of Coalinga, California	earthquake	0.19	0.36	0.14	39	reviewed	nc	nc
7/22/1983	6:58:45	36.2145	-120.4593333	2.544	2.33	md	15	91	0.1009	0.13	nc	nc1099035	2016-12-11T10:57:49.771Z	12 km NW of Coalinga, California	earthquake	0.31	1.04	0.1	12	reviewed	nc	nc
7/22/1983	6:39:51	36.2836667	-120.3915	8.198	2.61	md	41	53	0.05225	0.1	nc	nc1099031	2016-12-11T10:57:33.500Z	16 km N of Coalinga, California	earthquake	0.16	0.32	0.14	51	reviewed	nc	nc
7/22/1983	6:33:21	36.259	-120.431	2.925	2.21	md	22	85	0.07207	0.15	nc	nc1099030	2016-12-11T10:57:27.050Z	15 km NNW of Coalinga, CA	earthquake	0.3	0.77	0.12	13	reviewed	nc	nc
7/22/1983	6:16:16	36.2301667	-120.4265	7.125	2.07	md	17	98	0.07027	0.06	nc	nc1099029	2016-12-11T10:57:22.826Z	11 km NNW of Coalinga, California	earthquake	0.26	0.55	0.15	19	reviewed	nc	nc
7/22/1983	6:13:02	36.2416667	-120.4443333	5.075	2.11	md	31	71	0.08288	0.07	nc	nc1099028	2016-12-11T10:57:17.570Z	14 km NW of Coalinga, CA	earthquake	0.16	0.42	0.2	20	reviewed	nc	nc
7/22/1983	5:36:35	36.2468333	-120.4255	5.905	2.1	md	33	74	0.06667	0.1	nc	nc1099024	2016-12-11T10:56:58.470Z	13 km NNW of Coalinga, California	earthquake	0.19	0.37	0.16	25	reviewed	nc	nc
7/22/1983	5:09:24	36.2411667	-120.451	5.641	2.99	md	38	71	0.08829	0.11	nc	nc1099018	2016-12-11T10:56:29.440Z	13 km NW of Coalinga, California	earthquake	0.19	0.5	0.13	47	reviewed	nc	nc
7/22/1983	4:49:30	36.3241667	-120.3453333	3.088	2.88	md	45	80	0.07477	0.15	nc	nc1099014	2016-12-11T10:56:08.470Z	19 km S of Cantua Creek, California	earthquake	0.23	0.56	0.16	50	reviewed	nc	nc
7/22/1983	4:41:57	36.2035	-120.363	10.431	2.77	md	40	51	0.04865	0.06	nc	nc1099012	2016-12-11T10:55:56.300Z	7 km N of Coalinga, California	earthquake	0.15	0.29	0.12	56	reviewed	nc	nc
7/22/1983	4:34:22	36.2503333	-120.4336667	5.156	2.49	md	47	71	0.1495	0.13	nc	nc1099010	2016-12-11T10:55:42.400Z	13 km NNW of Coalinga, California	earthquake	0.23	0.71	0.13	45	reviewed	nc	nc
7/22/1983	4:26:14	36.3263333	-120.3208333	4.628	2.57	md	28	133	0.04144	0.11	nc	nc1099004	2016-12-11T10:55:00.460Z	19 km S of Cantua Creek, California	earthquake	0.23	0.27	0.12	30	reviewed	nc	nc
7/22/1983	4:21:25	36.262	-120.4438333	5.87	2.11	md	10	139	0.0955	0.04	nc	nc1099000	2016-12-11T10:54:42.085Z	15 km NNW of Coalinga, California	earthquake	0.34	0.9	0.09	11	reviewed	nc	nc
7/22/1983	4:15:06	36.2605	-120.444	4.821	2.27	md	13	85	0.08288	0.04	nc	nc1098999	2016-12-11T10:54:38.284Z	15 km NNW of Coalinga, California	earthquake	0.25	1.17	0.04	9	reviewed	nc	nc
7/22/1983	3:52:58	36.255	-120.287	5.332	3.24	ml	0	0		0.34	ci	ci11074	2016-02-02T18:52:02.150Z	14km NNE of Coalinga, CA	earthquake		12.09	0.213	4	reviewed	ci	ci
7/22/1983	3:43:00	36.2178333	-120.41	7.985	4.82	md	48	42	0.06306	0.08	nc	nc1098996	2022-04-27T23:55:54.093Z	9 km NNW of Coalinga, California	earthquake	0.15	0.32	0.05	7	reviewed	nc	nc
7/22/1983	3:41:12	36.207	-120.28	1.814	2.59	mc	0	0		0.48	ci	ci11071	2016-02-03T01:18:23.130Z	10km NE of Coalinga, CA	earthquake		1.127		5	reviewed	ci	ci
7/22/1983	3:29:02	36.233	-120.432	6	4.1	ml					us	usp0001x0t	2016-04-02T13:33:31.305Z	12 km NNW of Coalinga, California	earthquake					reviewed	brk	pas
7/22/1983	3:20:55	36.275	-120.377	7.662	3.32	mc	0	0		0.313	ci	ci11067	2016-02-02T22:39:16.170Z	15km N of Coalinga, CA	earthquake		1.78		23	reviewed	ci	ci
7/22/1983	3:19:56	35.9828333	-120.4076667	4.813	3.48	ml	4	208	0.2619	0.63	ci	ci12328303	2016-02-03T04:10:34.610Z	10km NNE of Parkfield, CA	earthquake	4.98	31.61	0.166	5	reviewed	ci	ci
7/22/1983	3:15:04	36.26	-120.373	10	3	ml				1	us	usp0001x0r	2016-02-03T04:10:34.130Z	13 km N of Coalinga, California	earthquake					reviewed	us	pas
7/22/1983	3:13:16	36.3248333	-120.3175	4.867	2.68	md	32	76	0.04414	0.12	nc	nc1098995	2016-12-11T10:54:16.570Z	19 km S of Cantua Creek, California	earthquake	0.21	0.29	0.08	12	reviewed	nc	nc
7/22/1983	3:08:10	36.319	-120.261	-0.535	2	mh	0	0		0.298	ci	ci11134	2016-04-02T03:54:59.154Z	19km NW of Huron, CA	earthquake				0	reviewed	ci	ci
7/22/1983	3:03:41	36.2205	-120.4068333	7.955	3.11	md	48	42	0.05946	0.09	nc	nc1098991	2016-12-11T10:53:48.280Z	9 km NNW of Coalinga, California	earthquake	0.14	0.3	0.15	53	reviewed	nc	nc
7/22/1983	3:01:15	36.3273333	-120.3245	5.184	2.9	md	41	77	0.03784	0.1	nc	nc1098989	2016-12-11T10:53:34.100Z	19 km S of Cantua Creek, California	earthquake	0.19	0.27	0.11	39	reviewed	nc	nc
7/22/1983	2:57:21	36.2771667	-120.3961667	8.817	2.6	md	39	53	0.05135	0.09	nc	nc1098986	2016-12-11T10:53:13.400Z	15 km NNW of Coalinga, California	earthquake	0.17	0.43	0.09	31	reviewed	nc	nc
7/22/1983	2:53:56	36.2541667	-120.4215	0.204	2	md	6	146	0.06396	0.05	nc	nc1098984	2016-12-11T10:53:03.236Z	13 km NNW of Coalinga, California	earthquake	0.44	6.99		1	reviewed	nc	nc
7/22/1983	2:50:51	36.3273333	-120.333	3.314	3.7	ml	6	122		0.65	ci	ci11105	2016-04-02T07:06:49.850Z	21km N of Coalinga, CA	earthquake	2.27	31.61	0.159	9	reviewed	ci	ci
7/22/1983	2:49:09	36.2158333	-120.4156667	6.905	3.36	md	48	44	0.06757	0.1	nc	nc1098983	2016-12-11T10:52:58.380Z	9 km NNW of Coalinga, California	earthquake	0.16	0.34	0.13	18	reviewed	nc	nc
7/22/1983	2:39:53	36.2356667	-120.4138333	7.265	5.37	ma	50	47	0.05946	0.09	nc	nc1098982	2022-04-27T23:55:51.683Z	11 km NNW of Coalinga, California	earthquake	0.14	0.33	0.23	4	reviewed	nc	nc
7/22/1983	2:33:50	36.234	-120.424	5.761	2.48	md	40	50	0.06757	0.11	nc	nc1098981	2016-12-11T10:52:41.080Z	11 km NNW of Coalinga, California	earthquake	0.2	0.44	0.15	43	reviewed	nc	nc
7/22/1983	0:42:10	36.2726667	-120.4196667	6.101	2.02	md	20	75	0.06667	0.08	nc	nc1098974	2016-12-11T10:52:11.937Z	15 km NNW of Coalinga, California	earthquake	0.24	0.48	0.15	17	reviewed	nc	nc
7/22/1983	0:07:03	35.212	-119.3101667	13.515	2.65	mh	13	116	0.4781	0.21	ci	ci11026	2016-04-02T16:44:50.705Z	15km ENE of Taft, CA	earthquake	0.65	2.13	0.275	10	reviewed	ci	ci
7/21/1983	20:39:01	36.2446667	-120.4313333	5.081	2.29	md	29	75	0.07207	0.09	nc	nc1098961	2016-12-11T10:51:32.980Z	13 km NNW of Coalinga, California	earthquake	0.2	0.46	0.22	27	reviewed	nc	nc
7/21/1983	5:27:10	36.2345	-120.339	8.937	2.32	md	28	83	0.01532	0.08	nc	nc1098924	2016-12-11T10:49:00.180Z	10 km N of Coalinga, California	earthquake	0.26	0.35	0.12	28	reviewed	nc	nc
7/20/1983	16:31:18	36.1721667	-120.2538333	9.957	2.07	md	17	133	0.1054	0.08	nc	nc1098880	2016-12-11T10:46:09.428Z	10 km ENE of Coalinga, California	earthquake	0.34	0.71	0.13	16	reviewed	nc	nc
7/19/1983	18:23:45	36.242	-120.4171667	6.855	2.54	md	38	74	0.06036	0.09	nc	nc1098834	2016-12-11T10:43:06.360Z	Central California	earthquake	0.17	0.35	0.12	45	reviewed	nc	nc
7/19/1983	16:19:55	36.2601667	-120.3955	7.157	2.96	md	17	99	0.1694	0.09	nc	nc1098832	2016-12-11T10:42:54.379Z	13 km NNW of Coalinga, California	earthquake	0.25	0.71	0.15	8	reviewed	nc	nc
7/19/1983	2:26:21	36.2646667	-120.4065	7.196	2.91	md	48	70	0.07748	0.09	nc	nc1098793	2016-12-11T10:40:31.390Z	14 km NNW of Coalinga, California	earthquake	0.17	0.47	0.14	58	reviewed	nc	nc
7/19/1983	0:22:53	36.262	-120.4061667	6.758	2.57	md	41	60	0.05315	0.12	nc	nc1098789	2016-12-11T10:40:10.330Z	14 km NNW of Coalinga, California	earthquake	0.17	0.35	0.13	43	reviewed	nc	nc
7/18/1983	21:04:48	36.1825	-120.3278333	8.345	2.19	md	16	114	0.06757	0.17	nc	nc1098785	2016-12-11T10:39:50.543Z	5 km NNE of Coalinga, California	earthquake	0.72	0.61	0.12	11	reviewed	nc	nc
7/18/1983	19:28:05	36.1778333	-120.2823333	10.897	4.18	md	52	63	0.08649	0.07	nc	nc1098780	2016-12-11T10:39:30.930Z	8 km ENE of Coalinga, California	earthquake	0.17	0.32	0.14	17	reviewed	nc	nc
7/18/1983	18:59:09	36.2595	-120.414	5.422	2.79	md	55	72	0.05856	0.18	nc	nc1098777	2016-12-11T10:39:16.040Z	14 km NNW of Coalinga, California	earthquake	0.26	0.54	0.18	43	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
7/18/1983	18:41:06	36.1691667	-120.2841667	8.949	3.29	md	27	203	0.09279	0.11	nc	nc1098775	2016-12-11T10:39:05.661Z	7 km ENE of Coalinga, California	earthquake	0.45	0.42	0.12	15	reviewed	nc	nc
7/17/1983	21:58:08	36.2763333	-120.3306667	10.317	3.85	md	47	66	0.02883	0.1	nc	nc1098740	2016-12-11T10:36:54.920Z	15 km N of Coalinga, California	earthquake	0.16	0.29	0.13	22	reviewed	nc	nc
7/17/1983	19:15:36	36.1748333	-120.2886667	9.299	2.79	md	22	219	0.08649	0.12	nc	nc1098732	2016-12-11T10:36:19.774Z	7 km ENE of Coalinga, California	earthquake	0.44	0.42	0.1	16	reviewed	nc	nc
7/17/1983	1:35:21	36.2711667	-120.3815	8.775	2.24	md	18	218	0.03784	0.07	nc	nc1098692	2016-12-11T10:34:14.097Z	14 km N of Coalinga, California	earthquake	0.71	0.42	0.12	16	reviewed	nc	nc
7/16/1983	17:47:38	36.267	-120.412	7.348	2.33	md	34	63	0.05856	0.11	nc	nc1098682	2016-12-11T10:33:38.920Z	14 km NNW of Coalinga, California	earthquake	0.19	0.36	0.12	28	reviewed	nc	nc
7/15/1983	23:18:35	36.2606667	-120.4148333	6.265	2	md	9	95	0.05946	0.06	nc	nc1098633	2016-12-11T10:30:53.083Z	14 km NNW of Coalinga, California	earthquake	0.67	1.32	0.15	8	reviewed	nc	nc
7/15/1983	8:42:39	36.1605	-120.2768333	7.871	2.07	md	20	66	0.1036	0.18	nc	nc1098598	2016-12-11T10:28:49.542Z	7 km ENE of Coalinga, California	earthquake	0.68	1.05	0.11	8	reviewed	nc	nc
7/15/1983	6:05:42	36.153	-120.2733333	8.091	2.35	md	28	66	0.1117	0.07	nc	nc1098585	2016-12-11T10:27:55.600Z	7 km E of Coalinga, California	earthquake	0.16	0.35	0.18	24	reviewed	nc	nc
7/14/1983	18:46:41	36.16	-120.08	14.254	2.75	mc	0	0		0.392	ci	ci10231	2016-02-02T21:19:49.330Z	5km SSE of Huron, CA	earthquake		13.35		10	reviewed	ci	ci
7/14/1983	16:02:47	36.2053333	-120.3055	7.827	2.12	md	20	96	0.05315	0.08	nc	nc1098556	2016-12-11T10:25:45.512Z	8 km NE of Coalinga, California	earthquake	0.28	0.6	0.16	16	reviewed	nc	nc
7/14/1983	15:25:41	36.2158333	-120.303	6.244	3.89	md	66	113	0.1631	0.14	nc	nc1098554	2021-02-18T19:01:02.522Z	9 km NNE of Coalinga, California	earthquake	0.28	0.69	0.04	5	reviewed	nc	nc
7/14/1983	15:25:35	36.2128333	-120.3156667	9.237	3.75	md	44	59	0.04234	0.07	nc	nc1098553	2021-02-18T19:01:00.351Z	9 km NNE of Coalinga, California	earthquake	0.17	0.23	0.09	37	reviewed	nc	nc
7/14/1983	11:01:17	36.151	-120.326	9.226	2.45	mc	0	0		0.219	ci	ci10178	2016-02-02T23:57:45.420Z	3km ENE of Coalinga, CA	earthquake		4.61		6	reviewed	ci	ci
7/13/1983	21:42:06	36.0731667	-120.3535	5.743	2.02	md	4	315	0.1937	0.07	nc	nc1098521	2016-12-11T10:23:21.405Z	7 km S of Coalinga, California	earthquake	5.79	8.47	0.15	7	reviewed	nc	nc
7/13/1983	20:16:43	36.266	-120.411	1.814	3.17	mc	0	0		0.284	ci	ci10064	2016-02-03T01:18:09.760Z	15km NNW of Coalinga, CA	earthquake		1.365		20	reviewed	ci	ci
7/12/1983	11:37:49	36.244	-120.3536667	8.661	2.19	md	41	120	0.00991	0.13	nc	nc1098441	2016-12-11T10:18:18.730Z	11 km N of Coalinga, California	earthquake	0.24	0.59	0.2	31	reviewed	nc	nc
7/12/1983	0:07:38	36.2756667	-120.4168333	6.466	2.11	md	29	142	0.06577	0.13	nc	nc1098423	2016-12-11T10:17:09.174Z	15 km NNW of Coalinga, California	earthquake	0.48	0.91	0.17	22	reviewed	nc	nc
7/11/1983	19:50:04	35.3998333	-120.8785	6.15	2.41	md	5	304	0.2405	0.05	nc	nc1098417	2016-12-11T10:16:45.231Z	4 km NW of Morro Bay, California	earthquake	4.38	7.34	0.11	4	reviewed	nc	nc
7/10/1983	23:30:42	36.1488333	-120.3113333	9.26	2.02	md	9	222	0.1153	0.04	nc	nc1098396	2016-12-11T10:15:21.088Z	4 km ENE of Coalinga, California	earthquake	1.33	0.4	0.21	7	reviewed	nc	nc
7/10/1983	19:04:17	36.0933333	-120.2098333	6.842	2.57	md	21	111	0.08739	0.09	nc	nc1098386	2016-12-11T10:14:47.519Z	12 km NW of Avenal, California	earthquake	0.31	0.6	0.18	27	reviewed	nc	nc
7/9/1983	23:59:34	36.3	-120.283	5	3	ml					us	usp0001wpk	2016-04-02T12:36:11.702Z	19 km NNE of Coalinga, California	earthquake					reviewed	pas	pas
7/9/1983	23:15:28	36.118	-120.3828333	4.813	3.32	ml	3	171	0.2297	0.29	ci	ci12328151	2016-02-03T04:10:21.580Z	3km SW of Coalinga, CA	earthquake	4.49	31.61	0.344	7	reviewed	ci	ci
7/9/1983	12:25:42	36.283	-120.267	5	3.1	ml					us	usp0001wp9	2016-04-02T09:24:34.240Z	17 km WNW of Huron, California	earthquake					reviewed	pas	pas
7/9/1983	10:24:40	36.263	-120.427	8	3.5	ml					us	usp0001wp5	2016-04-02T06:11:59.797Z	14 km NNW of Coalinga, California	earthquake					reviewed	brk	pas
7/9/1983	7:59:52	36.233	-120.413	6	3.3	ml					us	usp0001wp4	2016-02-03T04:10:21.060Z	11 km NNW of Coalinga, California	earthquake					reviewed	brk	pas
7/9/1983	7:40:51	36.245	-120.4051667	8.025	4.72	md	49	46	0.05045	0.08	nc	nc1098304	2022-04-27T23:54:47.449Z	12 km NNW of Coalinga, California	earthquake	0.15	0.31	0.1	5	reviewed	nc	nc
7/8/1983	5:45:10	36.1631667	-120.2471667	7.597	2.64	md	26	121	0.1162	0.1	nc	nc1098263	2016-12-11T10:06:45.760Z	10 km ENE of Coalinga, California	earthquake	0.32	0.84	0.13	33	reviewed	nc	nc
7/8/1983	0:52:05	36.2346667	-120.3711667	4.995	2.16	md	15	214	0.02703	0.08	nc	nc1098253	2016-12-11T10:06:02.822Z	10 km N of Coalinga, California	earthquake	1.33	1.09	0.12	16	reviewed	nc	nc
7/7/1983	14:21:02	36.2298333	-120.3916667	6.005	2.4	md	35	101	0.04414	0.09	nc	nc1098233	2016-12-11T10:04:49.030Z	Central California	earthquake	0.19	0.32	0.11	34	reviewed	nc	nc
7/7/1983	8:36:24	35.71	-120.4815	18.885	3.73	md	5	285	0.1072	0.07	nc	nc1098216	2016-12-11T10:03:37.621Z	6 km NNE of Whitley Gardens, California	earthquake	4.14	6.66		1	reviewed	nc	nc
7/7/1983	0:40:01	36.2168333	-120.2685	10.284	2.31	md	35	211	0.06847	0.13	nc	nc1098193	2016-12-11T10:02:06.740Z	11 km NE of Coalinga, California	earthquake	0.64	0.76	0.13	22	reviewed	nc	nc
7/7/1983	0:30:33	36.2188333	-120.2836667	12.159	3.84	md	63	205	0.05676	0.09	nc	nc1098192	2016-12-11T10:01:57.640Z	11 km NE of Coalinga, California	earthquake	0.35	0.32	0.08	55	reviewed	nc	nc
7/7/1983	0:16:00	36.2508333	-120.4501667	4.348	3.12	md	43	133	0.1577	0.15	nc	nc1098190	2016-12-11T10:01:45.730Z	14 km NNW of Coalinga, California	earthquake	0.52	1.06	0.12	40	reviewed	nc	nc
7/6/1983	19:45:08	36.2241667	-120.2956667	6.478	2.2	md	18	156	0.04595	0.11	nc	nc1098180	2016-12-11T10:01:02.289Z	11 km NNE of Coalinga, California	earthquake	0.36	0.69	0.13	15	reviewed	nc	nc
7/6/1983	17:09:18	36.2558333	-120.3225	8.977	3.18	md	43	79	0.01802	0.07	nc	nc1098171	2016-12-11T10:00:27.010Z	13 km NNE of Coalinga, California	earthquake	0.15	0.22	0.1	50	reviewed	nc	nc
7/6/1983	13:31:10	36.2321667	-120.357	9.395	2.91	md	37	52	0.02072	0.07	nc	nc1098167	2016-12-11T10:00:04.220Z	10 km N of Coalinga, California	earthquake	0.15	0.26	0.12	50	reviewed	nc	nc
7/6/1983	4:24:26	36.1391667	-120.2305	6.429	3	md	45	207	0.1432	0.16	nc	nc1098150	2016-12-11T09:58:56.440Z	11 km E of Coalinga, California	earthquake	0.51	0.61	0.15	47	reviewed	nc	nc
7/5/1983	23:00:58	36.1753333	-120.2993333	8.165	2.25	md	21	121	0.08198	0.07	nc	nc1098143	2016-12-11T09:58:24.990Z	6 km NE of Coalinga, California	earthquake	0.27	0.51	0.14	24	reviewed	nc	nc
7/5/1983	22:54:59	35.784	-119.8281667	-0.117	2.31	md	10	274	0.5162	0.51	nc	nc1098142	2016-12-11T09:58:16.746Z	22 km NNW of Lost Hills, California	earthquake	9.44	32.2	0.06	13	reviewed	nc	nc
7/5/1983	2:30:14	36.1353333	-120.234	6.882	2.02	md	22	178	0.1441	0.07	nc	nc1098098	2016-12-11T09:55:12.195Z	11 km E of Coalinga, California	earthquake	0.4	0.55	0.17	16	reviewed	nc	nc
7/4/1983	23:29:54	36.2563333	-120.4045	11.588	2.45	md	29	73	0.05045	0.09	nc	nc1098095	2016-12-11T09:54:59.240Z	13 km NNW of Coalinga, California	earthquake	0.22	0.48	0.16	33	reviewed	nc	nc
7/4/1983	17:45:51	36.2735	-120.3615	9.318	2.8	md	41	59	0.02883	0.09	nc	nc1098081	2016-12-11T09:53:59.290Z	14 km N of Coalinga, California	earthquake	0.16	0.24	0.13	41	reviewed	nc	nc
7/4/1983	10:38:21	36.1368333	-120.2113333	7.73	2.67	md	38	90	0.1117	0.18	nc	nc1098066	2016-12-11T09:52:47.540Z	12 km SW of Huron, California	earthquake	0.3	0.77	0.12	42	reviewed	nc	nc
7/3/1983	23:49:12	36.1326667	-120.1656667	9.335	2.14	md	21	118	0.08468	0.11	nc	nc1098035	2016-12-11T09:50:38.961Z	9 km SW of Huron, California	earthquake	0.3	0.53	0.1	25	reviewed	nc	nc
7/3/1983	15:28:09	35.5921667	-120.837	4.572	2.56	md	29	83	0.05315	0.11	nc	nc1097990	2016-12-11T09:47:29.971Z	12 km WNW of Templeton, California	earthquake	0.31	0.69	0.13	27	reviewed	nc	nc
7/2/1983	20:21:39	34.9823333	-119.0565	11.458	2.96	ml	24	92		0.25	ci	ci3356463	2016-02-02T18:51:48.780Z	12km WNW of Grapevine, CA	earthquake	0.52	0.93	0.32	4	reviewed	ci	ci
7/2/1983	20:21:08	36.1858333	-120.2963333	8.257	2.42	md	29	104	0.07387	0.14	nc	nc1097922	2016-12-11T09:42:42.410Z	7 km NE of Coalinga, California	earthquake	0.29	0.47	0.09	22	reviewed	nc	nc
7/2/1983	13:18:22	36.1973333	-120.2713333	8.997	2.16	md	24	105	0.07748	0.09	nc	nc1097914	2016-12-11T09:42:10.213Z	10 km NE of Coalinga, California	earthquake	0.27	0.54	0.05	15	reviewed	nc	nc
7/2/1983	5:53:19	36.1713333	-120.2911667	8.548	2.73	md	37	108	0.08829	0.08	nc	nc1097894	2016-12-11T09:40:47.990Z	7 km ENE of Coalinga, California	earthquake	0.21	0.38	0.11	50	reviewed	nc	nc
7/2/1983	3:12:29	36.2573333	-120.3295	8.847	2.53	md	39	64	0.01351	0.09	nc	nc1097887	2016-12-11T09:40:16.960Z	13 km NNE of Coalinga, California	earthquake	0.17	0.41	0.17	48	reviewed	nc	nc
7/2/1983	1:37:55	36.2036667	-120.2605	11.625	2.32	md	23	105	0.1495	0.08	nc	nc1097883	2016-12-11T09:39:54.240Z	11 km NE of Coalinga, California	earthquake	0.27	0.67	0.15	23	reviewed	nc	nc
7/1/1983	15:43:09	36.2373333	-120.2728333	11.738	2.02	md	22	162	0.05766	0.08	nc	nc1097872	2016-12-11T09:39:08.900Z	13 km NE of Coalinga, California	earthquake	0.38	0.59	0.16	17	reviewed	nc	nc
7/1/1983	7:36:07	36.2031667	-120.3753333	9.955	3.1	md	6	94	0.05315	0.03	nc	nc1097848	2016-12-11T09:37:31.244Z	7 km N of Coalinga, California	earthquake	0.37	1.01	0.12	4	reviewed	nc	nc
7/1/1983	6:01:11	36.2295	-120.3076667	5.967	2.03	md	12	102	0.03514	0.09	nc	nc1097847	2016-12-11T09:37:27.676Z	11 km NNE of Coalinga, California	earthquake	0.29	0.47	0.03	13	reviewed	nc	nc
7/1/1983	1:37:12	35.9983333	-120.557	4.147	2.12	md	22	69	0.07568	0.06	nc	nc1097842	2016-12-11T09:37:03.343Z	15 km NW of Parkfield, California	earthquake	0.29	0.62	0.3	13	reviewed	nc	nc
6/30/1983	23:06:54	36.2448333	-120.374	10.207	3.27	md	40	45	0.02523	0.07	nc	nc1097837	2016-12-11T09:36:42.800Z	11 km N of Coalinga, California	earthquake	0.15	0.36	0.12	54	reviewed	nc	nc
6/30/1983	15:23:52	36.3191667	-120.3273333	3.42	2.01	md	10	210	0.03063	0.09	nc	nc1097818	2016-12-11T09:35:28.091Z	20 km N of Coalinga, California	earthquake	1.16	0.4	0.2	10	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/30/1983	6:45:40	36.1603333	-120.2735	8.798	2.66	md	27	66	0.02252	0.08	nc	nc1097798	2016-12-11T09:34:11.940Z	8 km ENE of Coalinga, California	earthquake	0.25	0.29	0.14	41	reviewed	nc	nc
6/30/1983	2:04:11	36.2835	-120.3935	8	2.58	md	37	53	0.03423	0.11	nc	nc1097788	2016-12-11T09:33:28.900Z	16 km N of Coalinga, California	earthquake	0.18	0.25	0.14	36	reviewed	nc	nc
6/29/1983	8:42:26	36.1926667	-120.2825	8.238	2.11	md	33	177	0.02613	0.12	nc	nc1097751	2016-12-11T09:30:55.850Z	9 km NE of Coalinga, California	earthquake	0.36	0.21	0.18	32	reviewed	nc	nc
6/29/1983	7:54:20	36.182	-120.3078333	8.038	2.49	md	34	84	0.03153	0.12	nc	nc1097747	2016-12-11T09:30:37.340Z	6 km NE of Coalinga, California	earthquake	0.29	0.41	0.17	40	reviewed	nc	nc
6/29/1983	6:41:07	36.1571667	-120.1946667	13.521	3.69	md	50	72	0.05856	0.11	nc	nc1097739	2016-12-11T09:30:02.790Z	9 km WSW of Huron, California	earthquake	0.17	0.25	0.12	69	reviewed	nc	nc
6/29/1983	5:13:09	36.1943333	-120.2666667	7.764	2.53	md	30	108	0.02793	0.07	nc	nc1097724	2016-12-11T09:28:54.820Z	10 km NE of Coalinga, California	earthquake	0.21	0.2	0.12	39	reviewed	nc	nc
6/29/1983	2:54:04	36.2693333	-120.321	8.73	2.19	md	24	68	0.02613	0.08	nc	nc1097712	2016-12-11T09:27:57.240Z	14 km NNE of Coalinga, California	earthquake	0.23	0.25	0.11	23	reviewed	nc	nc
6/29/1983	1:45:41	36.1866667	-120.3275	10.193	2.82	md	23	206	0.2973	0.29	nc	nc1097709	2016-12-11T09:27:38.834Z	5 km NNE of Coalinga, California	earthquake	1.41	3.22	0.13	14	reviewed	nc	nc
6/28/1983	23:11:21	36.1745	-120.323	7.749	2.53	md	37	70	0.02973	0.11	nc	nc1097702	2016-12-11T09:27:14.740Z	5 km NE of Coalinga, California	earthquake	0.19	0.26	0.11	35	reviewed	nc	nc
6/28/1983	22:23:27	36.2695	-120.3221667	8.29	2.21	md	30	68	0.02613	0.11	nc	nc1097701	2016-12-11T09:27:07.030Z	14 km NNE of Coalinga, California	earthquake	0.21	0.25	0.18	31	reviewed	nc	nc
6/28/1983	14:05:35	36.1411667	-120.2041667	11.678	2.01	md	20	108	0.07748	0.05	nc	nc1097681	2016-12-11T09:25:44.749Z	11 km SW of Huron, California	earthquake	0.22	0.41	0.18	23	reviewed	nc	nc
6/28/1983	8:51:46	35.5043333	-120.8128333	6.07	2.39	md	29	115	0.0991	0.13	nc	nc1097667	2016-12-11T09:24:56.334Z	9 km NE of Cayucos, California	earthquake	0.35	1.16	0.15	30	reviewed	nc	nc
6/28/1983	3:16:01	36.2416667	-120.3548333	9	2.15	md	24	42	0.01261	0.08	nc	nc1097656	2016-12-11T09:24:17.050Z	11 km N of Coalinga, California	earthquake	0.22	0.27	0.22	29	reviewed	nc	nc
6/27/1983	22:13:15	36.291	-120.2736667	6.318	2.1	md	19	86	0.02703	0.08	nc	nc1097643	2016-12-11T09:23:21.711Z	18 km WNW of Huron, California	earthquake	0.45	0.25	0.16	13	reviewed	nc	nc
6/27/1983	20:36:07	36.2963333	-120.268	6.587	2.55	md	33	89	0.07658	0.09	nc	nc1097638	2016-12-11T09:23:01.380Z	Central California	earthquake	0.2	0.32	0.08	35	reviewed	nc	nc
6/27/1983	18:07:22	36.2171667	-120.2875	4.544	2.35	md	14	159	0.05495	0.07	nc	nc1097631	2016-12-11T09:22:28.597Z	10 km NE of Coalinga, California	earthquake	0.72	1.13	0.09	9	reviewed	nc	nc
6/27/1983	16:00:27	36.2378333	-120.339	7.237	2.09	md	19	100	0.01171	0.06	nc	nc1097630	2016-12-11T09:22:24.824Z	11 km N of Coalinga, California	earthquake	0.27	0.59	0.13	12	reviewed	nc	nc
6/27/1983	15:42:14	36.1558333	-120.2633333	7.176	2.02	md	15	119	0.1532	0.33	nc	nc1097627	2016-12-11T09:22:13.366Z	8 km ENE of Coalinga, California	earthquake	0.92	1.78	0.06	9	reviewed	nc	nc
6/27/1983	11:02:28	36.2763333	-120.3445	11.012	2.17	md	29	63	0.02703	0.12	nc	nc1097619	2016-12-11T09:21:42.970Z	15 km N of Coalinga, California	earthquake	0.27	0.34	0.13	26	reviewed	nc	nc
6/27/1983	9:16:00	36.1935	-120.2886667	4.548	2.4	md	38	151	0.2784	0.22	nc	nc1097616	2016-12-11T09:21:30.270Z	8 km NE of Coalinga, California	earthquake	1.31	2.25	0.11	32	reviewed	nc	nc
6/27/1983	7:50:46	36.1673333	-120.2703333	8.286	2.34	md	28	131	0.05225	0.11	nc	nc1097615	2016-12-11T09:21:22.660Z	8 km ENE of Coalinga, California	earthquake	0.23	0.49	0.15	39	reviewed	nc	nc
6/27/1983	7:20:23	36.2701667	-120.3246667	8.945	2.03	md	20	124	0.02523	0.06	nc	nc1097613	2016-12-11T09:21:11.290Z	14 km NNE of Coalinga, California	earthquake	0.27	0.18	0.18	20	reviewed	nc	nc
6/27/1983	5:18:14	36.2613333	-120.3425	9.835	2.63	md	29	64	0.01171	0.06	nc	nc1097607	2016-12-11T09:20:43.650Z	13 km N of Coalinga, California	earthquake	0.23	0.25	0.12	32	reviewed	nc	nc
6/26/1983	18:48:48	36.1535	-120.2621667	9.31	2.86	md	30	70	0.1162	0.11	nc	nc1097587	2016-12-11T09:19:17.230Z	8 km E of Coalinga, California	earthquake	0.21	0.51	0.16	48	reviewed	nc	nc
6/26/1983	17:44:53	36.2803333	-120.3571667	13.522	2.07	md	22	61	0.03333	0.11	nc	nc1097585	2016-12-11T09:19:07.044Z	15 km N of Coalinga, California	earthquake	0.29	0.5	0.17	21	reviewed	nc	nc
6/26/1983	14:17:39	36.1151667	-120.1711667	7.993	2.21	md	31	110	0.07387	0.13	nc	nc1097580	2016-12-11T09:18:46.910Z	11 km SSW of Huron, California	earthquake	0.28	0.5	0.21	26	reviewed	nc	nc
6/26/1983	9:18:20	36.2815	-120.377	10.15	2.16	md	19	56	0.03243	0.08	nc	nc1097570	2016-12-11T09:18:02.259Z	15 km N of Coalinga, California	earthquake	0.25	0.38	0.17	23	reviewed	nc	nc
6/26/1983	5:40:49	36.2693333	-120.3246667	5.445	2.42	md	20	124	0.02523	0.07	nc	nc1097563	2016-12-11T09:17:39.844Z	14 km NNE of Coalinga, California	earthquake	0.26	0.21	0.11	22	reviewed	nc	nc
6/26/1983	1:57:39	36.237	-120.3393333	-0.271	2.13	md	8	126	0.01261	0.13	nc	nc1097556	2016-12-11T09:17:13.259Z	10 km N of Coalinga, California	earthquake	0.64	5.71	0.25	9	reviewed	nc	nc
6/25/1983	4:19:03	36.2601667	-120.4266667	1.988	2.8	md	30	162	0.2351	0.11	nc	nc1097496	2016-12-11T09:12:42.700Z	14 km NNW of Coalinga, California	earthquake	0.51	1.38	0.17	31	reviewed	nc	nc
6/24/1983	20:32:07	36.1778333	-120.3133333	8.167	2.42	md	28	127	0.02883	0.06	nc	nc1097484	2016-12-11T09:11:46.790Z	5 km NE of Coalinga, California	earthquake	0.25	0.24	0.17	38	reviewed	nc	nc
6/24/1983	19:46:22	36.202	-120.3258333	9.434	2.33	md	24	93	0.03694	0.1	nc	nc1097479	2016-12-11T09:11:20.860Z	7 km NNE of Coalinga, California	earthquake	0.45	0.42	0.26	21	reviewed	nc	nc
6/24/1983	15:26:53	36.2786667	-120.414	7.924	2.23	md	36	70	0.03784	0.1	nc	nc1097466	2016-12-11T09:10:19.250Z	16 km NNW of Coalinga, California	earthquake	0.19	0.31	0.15	26	reviewed	nc	nc
6/24/1983	8:19:39	36.2098333	-120.2868333	13.124	2.65	md	44	61	0.009009	0.08	nc	nc1097453	2016-12-11T09:09:13.240Z	10 km NE of Coalinga, California	earthquake	0.18	0.27	0.15	52	reviewed	nc	nc
6/24/1983	5:58:38	36.21	-120.2881667	12.864	2.47	md	41	59	0.009009	0.08	nc	nc1097449	2016-12-11T09:08:53.880Z	10 km NE of Coalinga, California	earthquake	0.16	0.29	0.14	52	reviewed	nc	nc
6/24/1983	5:31:50	36.2091667	-120.2853333	13.084	2.69	md	40	62	0.00991	0.07	nc	nc1097448	2016-12-11T09:08:45.860Z	10 km NE of Coalinga, California	earthquake	0.19	0.31	0.16	55	reviewed	nc	nc
6/24/1983	0:38:57	36.2056667	-120.2795	11.734	2.02	md	21	115	0.01351	0.05	nc	nc1097438	2016-12-11T09:08:05.688Z	10 km NE of Coalinga, California	earthquake	0.25	0.31	0.15	19	reviewed	nc	nc
6/23/1983	13:58:33	36.1195	-120.225	9.112	2.74	md	37	98	0.06847	0.06	nc	nc1097423	2016-12-11T09:07:07.860Z	12 km E of Coalinga, California	earthquake	0.18	0.44	0.16	51	reviewed	nc	nc
6/23/1983	6:01:25	36.1388333	-120.2056667	11.318	2.17	md	27	64	0.07658	0.06	nc	nc1097397	2016-12-11T09:04:49.170Z	11 km SW of Huron, California	earthquake	0.21	0.37	0.29	23	reviewed	nc	nc
6/23/1983	5:30:04	36.1383333	-120.2051667	11.707	2.25	md	26	106	0.07748	0.06	nc	nc1097396	2016-12-11T09:04:42.280Z	11 km SW of Huron, California	earthquake	0.22	0.31	0.17	24	reviewed	nc	nc
6/23/1983	2:20:40	36.287	-120.3591667	15.023	2.08	md	20	85	0.04234	0.07	nc	nc1097384	2016-12-11T09:03:49.377Z	16 km N of Coalinga, California	earthquake	0.36	0.67	0.27	18	reviewed	nc	nc
6/22/1983	17:00:15	36.2493333	-120.3333333	7.969	2.39	md	6	115	0.04054	0.09	nc	nc1097364	2016-12-11T09:02:34.996Z	12 km N of Coalinga, California	earthquake	0.77	1.05	0.16	6	reviewed	nc	nc
6/22/1983	14:26:54	36.2025	-120.2766667	8.288	2.42	md	28	127	0.01712	0.11	nc	nc1097356	2016-12-11T09:02:02.810Z	10 km NE of Coalinga, California	earthquake	0.39	0.21	0.17	29	reviewed	nc	nc
6/22/1983	5:46:04	36.2861667	-120.3805	10.84	2.36	md	28	48	0.03604	0.07	nc	nc1097340	2016-12-11T09:00:43.240Z	16 km N of Coalinga, California	earthquake	0.23	0.31	0.17	34	reviewed	nc	nc
6/22/1983	4:13:41	36.2833333	-120.2985	5.69	2.41	md	20	140	0.01171	0.09	nc	nc1097337	2016-12-11T09:00:26.919Z	16 km NNE of Coalinga, California	earthquake	0.24	0.17	0.15	21	reviewed	nc	nc
6/22/1983	2:54:03	36.147	-120.2346667	10.708	3.03	md	28	108	0.08198	0.09	nc	nc1097335	2016-12-11T09:00:18.330Z	11 km E of Coalinga, California	earthquake	0.26	0.51	0.13	34	reviewed	nc	nc
6/21/1983	22:16:59	36.271	-120.3475	9.452	2.42	md	26	91	0.02162	0.08	nc	nc1097331	2016-12-11T08:59:56.670Z	14 km N of Coalinga, California	earthquake	0.3	0.3	0.15	22	reviewed	nc	nc
6/21/1983	19:34:12	36.2026667	-120.2811667	8.108	2.59	md	27	109	0.01622	0.19	nc	nc1097323	2016-12-11T08:59:23.330Z	9 km NE of Coalinga, California	earthquake	0.43	0.3	0.24	27	reviewed	nc	nc
6/21/1983	17:01:15	36.141	-120.1986667	11.023	2.34	md	20	117	0.08198	0.14	nc	nc1097319	2016-12-11T08:59:00.520Z	11 km SW of Huron, California	earthquake	0.4	0.7	0.27	25	reviewed	nc	nc
6/21/1983	15:55:33	36.2786667	-120.3225	8.08	2.14	md	18	111	0.01892	0.1	nc	nc1097316	2016-12-11T08:58:39.380Z	15 km NNE of Coalinga, California	earthquake	0.41	0.24	0.23	19	reviewed	nc	nc
6/21/1983	13:58:51	36.1745	-120.3048333	10.026	2.28	md	23	95	0.02342	0.11	nc	nc1097311	2016-12-11T08:58:19.350Z	6 km NE of Coalinga, California	earthquake	0.44	0.61	0.21	19	reviewed	nc	nc
6/21/1983	9:26:01	36.1758333	-120.2956667	9.108	2.62	md	29	115	0.02432	0.09	nc	nc1097296	2016-12-11T08:57:19.300Z	7 km NE of Coalinga, California	earthquake	0.23	0.28	0.16	46	reviewed	nc	nc
6/20/1983	23:12:03	36.1241667	-120.1616667	10.748	2.81	md	21	109	0.07207	0.13	nc	nc1097260	2016-12-11T08:54:46.600Z	10 km SSW of Huron, California	earthquake	0.56	0.71	0.13	30	reviewed	nc	nc
6/20/1983	15:18:25	35.08	-119.115	1.96	2.06	mc	0	119.6		0.234	ci	ci2217754	2016-02-02T21:59:50.630Z	23km NW of Grapevine, CA	earthquake		102.6		12	reviewed	ci	ci
6/20/1983	15:00:37	36.1135	-120.1603333	9.478	2.37	md	39	69	0.06667	0.06	nc	nc1097219	2016-12-11T08:51:48.380Z	11 km SSW of Huron, California	earthquake	0.17	0.28	0.16	48	reviewed	nc	nc
6/20/1983	13:49:19	36.1155	-120.1731667	8.34	2.9	md	31	66	0.07477	0.08	nc	nc1097214	2016-12-11T08:51:25.030Z	11 km SSW of Huron, California	earthquake	0.24	0.45	0.16	47	reviewed	nc	nc
6/20/1983	13:47:07	36.0956667	-120.1788333	8.098	2.07	md	21	68	0.06577	0.13	nc	nc1097213	2016-12-11T08:51:18.159Z	11 km NNW of Avenal, California	earthquake	0.33	0.59	0.18	21	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/20/1983	12:52:49	36.2493333	-120.399	6.36	2.16	md	32	79	0.01171	0.09	nc	nc1097207	2016-12-11T08:50:53.650Z	12 km NNW of Coalinga, California	earthquake	0.2	0.29	0.1	28	reviewed	nc	nc
6/20/1983	10:33:44	36.218	-120.2348333	5.936	3.32	md	40	71	0.04054	0.11	nc	nc1097201	2016-12-11T08:50:27.930Z	11 km W of Huron, California	earthquake	0.17	0.25	0.18	59	reviewed	nc	nc
6/20/1983	9:07:42	36.1481667	-120.2458333	10.608	2.06	md	26	66	0.04324	0.08	nc	nc1097194	2016-12-11T08:49:46.337Z	10 km E of Coalinga, California	earthquake	0.26	0.35	0.18	33	reviewed	nc	nc
6/20/1983	8:23:06	36.2171667	-120.3115	8.828	2	md	28	80	0.02162	0.09	nc	nc1097191	2016-12-11T08:49:34.302Z	9 km NNE of Coalinga, California	earthquake	0.22	0.25	0.13	26	reviewed	nc	nc
6/20/1983	6:11:26	36.0903333	-120.1876667	7.088	2.33	md	29	74	0.06937	0.13	nc	nc1097178	2016-12-11T08:48:43.730Z	10 km NNW of Avenal, California	earthquake	0.26	0.55	0.14	35	reviewed	nc	nc
6/20/1983	3:39:55	36.1453333	-120.2511667	6.014	2.8	md	7	176	0.03964	0.05	nc	nc1097172	2016-12-11T08:48:19.178Z	9 km E of Coalinga, California	earthquake	0.52	0.83	0.24	7	reviewed	nc	nc
6/19/1983	21:40:54	36.207	-120.2646667	13.253	2.03	md	19	95	0.01982	0.06	nc	nc1097156	2016-12-11T08:47:10.309Z	11 km NE of Coalinga, California	earthquake	0.29	0.46	0.17	18	reviewed	nc	nc
6/19/1983	20:07:35	36.1571667	-120.2286667	11.851	2.47	md	22	71	0.05766	0.08	nc	nc1097152	2016-12-11T08:46:55.187Z	11 km E of Coalinga, California	earthquake	0.3	0.5	0.2	21	reviewed	nc	nc
6/19/1983	13:29:06	36.1641667	-120.2798333	9.413	2.63	md	21	55	0.01982	0.19	nc	nc1097130	2016-12-11T08:45:09.000Z	7 km ENE of Coalinga, California	earthquake	0.32	0.47	0.15	23	reviewed	nc	nc
6/19/1983	13:28:20	36.1601667	-120.2701667	10.044	3.33	md	33	48	0.02523	0.09	nc	nc1097129	2016-12-11T08:45:01.250Z	8 km ENE of Coalinga, California	earthquake	0.19	0.32	0.2	34	reviewed	nc	nc
6/19/1983	13:25:27	36.1815	-120.2441667	9.706	2.36	md	27	56	0.04955	0.07	nc	nc1097128	2016-12-11T08:44:53.430Z	11 km ENE of Coalinga, California	earthquake	0.22	0.33	0.19	43	reviewed	nc	nc
6/19/1983	13:23:16	36.2065	-120.269	12.516	2.08	md	23	63	0.01712	0.06	nc	nc1097127	2016-12-11T08:44:45.151Z	11 km NE of Coalinga, California	earthquake	0.24	0.35	0.27	21	reviewed	nc	nc
6/19/1983	11:05:20	36.2051667	-120.3648333	10.138	2.1	md	37	46	0.04775	0.09	nc	nc1097118	2016-12-11T08:44:08.770Z	7 km N of Coalinga, California	earthquake	0.18	0.26	0.19	35	reviewed	nc	nc
6/19/1983	9:21:54	36.1355	-120.192	10.258	2.06	md	27	68	0.07928	0.09	nc	nc1097115	2016-12-11T08:43:55.639Z	10 km SW of Huron, California	earthquake	0.2	0.39	0.26	28	reviewed	nc	nc
6/19/1983	1:23:55	36.2258333	-120.3603333	11.023	2.38	md	7	176	0.03063	0.01	nc	nc1097092	2016-12-11T08:42:15.450Z	9 km N of Coalinga, California	earthquake	0.94	0.98	0.1	7	reviewed	nc	nc
6/18/1983	1:37:00	36.217	-120.4483333	3.989	3.09	md	42	52	0.06126	0.13	nc	nc1097047	2016-12-11T08:39:07.240Z	11 km NW of Coalinga, California	earthquake	0.16	0.42	0.17	42	reviewed	nc	nc
6/17/1983	23:56:32	36.2903333	-120.4085	7.454	2.27	md	29	65	0.04505	0.11	nc	nc1097043	2016-12-11T08:38:48.995Z	17 km NNW of Coalinga, California	earthquake	0.22	0.33	0.09	23	reviewed	nc	nc
6/17/1983	20:40:55	34.9141667	-119.0646667	11.628	2.51	mh	21	83		0.18	ci	ci2217536	2016-02-02T22:48:40.440Z	11km NE of Pine Mountain Club, CA	earthquake	0.67	0.92	0.088	11	reviewed	ci	ci
6/17/1983	20:20:44	36.1041667	-120.2531667	8.055	2.13	md	16	89	0.06036	0.07	nc	nc1097028	2016-12-11T08:37:38.130Z	10 km ESE of Coalinga, California	earthquake	0.28	0.7	0.19	19	reviewed	nc	nc
6/17/1983	13:09:57	36.1226667	-120.3006667	13.505	2.29	md	28	75	0.02883	0.06	nc	nc1097003	2016-12-11T08:35:55.900Z	5 km ESE of Coalinga, California	earthquake	0.24	0.51	0.24	25	reviewed	nc	nc
6/17/1983	7:40:52	36.2353333	-120.2996667	4.878	2.18	md	23	66	0.02072	0.13	nc	nc1096990	2016-12-11T08:35:01.633Z	11 km NNE of Coalinga, California	earthquake	0.22	0.3	0.15	18	reviewed	nc	nc
6/17/1983	7:13:13	36.1978333	-120.2746667	8.093	2	md	6	97	0.02252	0.03	nc	nc1096985	2016-12-11T08:34:32.518Z	10 km NE of Coalinga, California	earthquake	0.47	0.94	0.01	6	reviewed	nc	nc
6/16/1983	19:23:45	36.1806667	-120.2731667	9.663	2.63	md	22	65	0.03604	0.09	nc	nc1096958	2016-12-11T08:32:42.730Z	9 km ENE of Coalinga, California	earthquake	0.3	0.42	0.13	37	reviewed	nc	nc
6/16/1983	17:37:23	36.239	-120.3605	10.38	3.6	md	60	45	0.01802	0.07	nc	nc1096952	2016-12-11T08:32:16.400Z	11 km N of Coalinga, California	earthquake	0.13	0.18	0.12	45	reviewed	nc	nc
6/16/1983	17:02:55	36.1955	-120.314	10.178	2.08	md	20	90	0.03333	0.07	nc	nc1096951	2016-12-11T08:32:09.126Z	7 km NE of Coalinga, California	earthquake	0.27	0.26	0.13	17	reviewed	nc	nc
6/16/1983	15:10:44	36.2661667	-120.3765	9.438	2	md	20	69	0.01712	0.05	nc	nc1096945	2016-12-11T08:31:42.292Z	14 km N of Coalinga, California	earthquake	0.23	0.17	0.15	17	reviewed	nc	nc
6/16/1983	9:09:09	36.2323333	-120.348	9.198	2.02	md	28	57	0.01802	0.07	nc	nc1096934	2016-12-11T08:30:55.220Z	10 km N of Coalinga, California	earthquake	0.2	0.22	0.14	18	reviewed	nc	nc
6/16/1983	1:38:17	36.263	-120.2995	4.255	2.21	md	23	105	0.03063	0.14	nc	nc1096922	2016-12-11T08:30:00.867Z	14 km NNE of Coalinga, California	earthquake	0.36	0.26	0.2	19	reviewed	nc	nc
6/15/1983	17:34:02	36.2553333	-120.4278333	-0.32	2.34	md	20	81	0.03604	0.22	nc	nc1096898	2016-12-11T08:28:17.957Z	14 km NNW of Coalinga, California	earthquake	0.45	2.17	0.11	14	reviewed	nc	nc
6/15/1983	9:02:10	35.776	-120.3473333	3.392	3.49	md	39	78	0.05405	0.19	nc	nc1096869	2016-12-11T08:26:27.790Z	13 km N of Shandon, California	earthquake	0.35	0.74	0.18	40	reviewed	nc	nc
6/15/1983	6:57:02	36.1736667	-120.2943333	7.649	2.13	md	19	107	0.02252	0.11	nc	nc1096860	2016-12-11T08:25:43.827Z	7 km ENE of Coalinga, California	earthquake	0.32	0.38	0.21	17	reviewed	nc	nc
6/15/1983	0:44:15	36.2448333	-120.3985	9.71	3.24	md	37	43	0.01261	0.12	nc	nc1096848	2016-12-11T08:24:57.770Z	12 km NNW of Coalinga, California	earthquake	0.22	0.35	0.15	45	reviewed	nc	nc
6/15/1983	0:22:58	36.186	-120.2921667	9.684	2.45	md	27	100	0.03333	0.1	nc	nc1096847	2016-12-11T08:24:50.630Z	7 km NE of Coalinga, California	earthquake	0.27	0.37	0.22	32	reviewed	nc	nc
6/14/1983	20:56:56	36.115	-120.2303333	9.468	2.02	md	10	89	0.06667	0.04	nc	nc1096838	2016-12-11T08:24:11.819Z	Central California	earthquake	0.29	0.54	0.05	9	reviewed	nc	nc
6/14/1983	18:18:04	36.2011667	-120.3268333	10.153	2.28	md	32	45	0.03874	0.1	nc	nc1096828	2016-12-11T08:23:32.400Z	7 km NNE of Coalinga, California	earthquake	0.22	0.31	0.14	34	reviewed	nc	nc
6/14/1983	18:15:15	36.28	-120.334	7.98	2.32	md	25	59	0.02523	0.08	nc	nc1096827	2016-12-11T08:23:23.020Z	15 km N of Coalinga, California	earthquake	0.21	0.22	0.14	20	reviewed	nc	nc
6/14/1983	14:10:26	36.2841667	-120.4288333	11.186	3.35	md	45	71	0.04955	0.1	nc	nc1096822	2016-12-11T08:23:00.200Z	17 km NNW of Coalinga, California	earthquake	0.18	0.38	0.15	63	reviewed	nc	nc
6/14/1983	7:12:37	36.2813333	-120.3616667	9.713	2.37	md	6	224	0.03604	0.03	nc	nc1096793	2016-12-11T08:21:02.479Z	15 km N of Coalinga, California	earthquake	1.25	1.06	0.1	6	reviewed	nc	nc
6/14/1983	5:36:29	36.18	-120.2476667	11.796	2.22	md	28	74	0.04865	0.08	nc	nc1096789	2016-12-11T08:20:46.330Z	11 km ENE of Coalinga, California	earthquake	0.29	0.38	0.24	29	reviewed	nc	nc
6/14/1983	3:39:48	36.117	-120.1843333	8.288	2.06	md	24	101	0.08288	0.12	nc	nc1096779	2016-12-11T08:20:03.900Z	12 km SW of Huron, California	earthquake	0.3	0.55	0.23	26	reviewed	nc	nc
6/14/1983	1:19:11	36.1678333	-120.2973333	8.126	2.12	md	21	108	0.01622	0.08	nc	nc1096772	2016-12-11T08:19:32.129Z	6 km ENE of Coalinga, California	earthquake	0.28	0.36	0.12	20	reviewed	nc	nc
6/13/1983	14:31:36	36.2283333	-120.2886667	4.597	2.03	md	17	144	0.00991	0.23	nc	nc1096751	2016-12-11T08:18:06.081Z	11 km NNE of Coalinga, California	earthquake	0.71	0.53	0.21	16	reviewed	nc	nc
6/13/1983	12:50:39	36.2073333	-120.3451667	-0.488	2.4	md	28	90	0.04234	0.26	nc	nc1096746	2016-12-11T08:17:47.730Z	7 km N of Coalinga, California	earthquake	0.42	2.98	0.17	37	reviewed	nc	nc
6/13/1983	12:17:50	36.2036667	-120.2671667	14.027	2.41	md	38	92	0.02072	0.2	nc	nc1096745	2016-12-11T08:17:42.390Z	10 km NE of Coalinga, California	earthquake	0.39	0.73	0.14	38	reviewed	nc	nc
6/12/1983	22:28:41	36.1623333	-120.1956667	10.136	2.16	md	21	99	0.08468	0.12	nc	nc1096707	2016-12-11T08:15:19.223Z	9 km WSW of Huron, California	earthquake	0.4	0.56	0.2	15	reviewed	nc	nc
6/12/1983	21:27:55	36.1216667	-120.2316667	9.981	2.69	md	31	78	0.06216	0.09	nc	nc1096704	2016-12-11T08:15:06.340Z	11 km E of Coalinga, California	earthquake	0.24	0.41	0.15	49	reviewed	nc	nc
6/12/1983	21:06:13	36.23	-120.3311667	9.068	2.67	md	36	59	0.02162	0.08	nc	nc1096703	2016-12-11T08:14:58.570Z	10 km NNE of Coalinga, California	earthquake	0.14	0.19	0.14	51	reviewed	nc	nc
6/12/1983	20:53:44	36.1298333	-120.2148333	9.268	2.56	md	28	87	0.07207	0.07	nc	nc1096702	2016-12-11T08:14:50.950Z	12 km SW of Huron, California	earthquake	0.2	0.36	0.21	42	reviewed	nc	nc
6/12/1983	18:46:04	36.088	-120.1811667	7.936	2.51	md	29	88	0.06396	0.14	nc	nc1096698	2016-12-11T08:14:23.100Z	10 km NNW of Avenal, California	earthquake	0.27	0.55	0.18	33	reviewed	nc	nc
6/12/1983	15:29:52	36.2328333	-120.4418333	-0.219	2.16	md	11	89	0.08198	0.19	nc	nc1096692	2016-12-11T08:13:50.600Z	12 km NW of Coalinga, California	earthquake	0.51	6.98	0.19	11	reviewed	nc	nc
6/12/1983	9:48:59	36.25	-120.4333333	1.91	2.23	md	20	57	0.03964	0.14	nc	nc1096681	2016-12-11T08:13:09.508Z	13 km NNW of Coalinga, California	earthquake	0.26	0.89	0.1	20	reviewed	nc	nc
6/12/1983	7:11:47	36.1996667	-120.322	8.736	2.19	md	36	83	0.05135	0.12	nc	nc1096674	2016-12-11T08:12:40.890Z	7 km NNE of Coalinga, California	earthquake	0.22	0.26	0.16	37	reviewed	nc	nc
6/12/1983	7:00:51	36.2011667	-120.327	8.476	2.24	md	31	79	0.03874	0.1	nc	nc1096673	2016-12-11T08:12:33.200Z	7 km NNE of Coalinga, California	earthquake	0.22	0.29	0.17	26	reviewed	nc	nc
6/12/1983	6:58:53	36.1923333	-120.3246667	8.778	3.11	md	44	80	0.04144	0.1	nc	nc1096671	2016-12-11T08:12:19.630Z	6 km NNE of Coalinga, California	earthquake	0.19	0.26	0.13	57	reviewed	nc	nc
6/12/1983	5:26:01	36.2785	-120.4103333	7.88	2.2	md	33	59	0.03604	0.09	nc	nc1096667	2016-12-11T08:11:54.320Z	16 km NNW of Coalinga, California	earthquake	0.22	0.33	0.16	32	reviewed	nc	nc
6/12/1983	4:10:09	36.1181667	-120.2446667	10.377	2.32	md	23	134	0.05495	0.08	nc	nc1096664	2016-12-11T08:11:39.350Z	10 km ESE of Coalinga, California	earthquake	0.34	0.48	0.17	31	reviewed	nc	nc
6/12/1983	2:59:51	36.0978333	-120.173	8.648	2.11	md	25	100	0.06306	0.16	nc	nc1096648	2016-12-11T08:10:35.300Z	11 km NNW of Avenal, California	earthquake	0.61	0.71	0.11	14	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/12/1983	1:31:27	36.1231667	-120.3	14.067	3.53	md	53	57	0.02883	0.14	nc	nc1096644	2016-12-11T08:10:10.260Z	5 km ESE of Coalinga, California	earthquake	0.21	0.5	0.07	5	reviewed	nc	nc
6/11/1983	23:29:36	36.0956667	-120.1746667	8.428	2.85	md	32	98	0.06306	0.1	nc	nc1096643	2016-12-11T08:10:01.220Z	10 km NNW of Avenal, California	earthquake	0.3	0.43	0.15	43	reviewed	nc	nc
6/11/1983	23:02:19	36.255	-120.4398333	5.16	3.62	md	57	61	0.04595	0.13	nc	nc1096640	2016-12-11T08:09:45.820Z	14 km NNW of Coalinga, California	earthquake	0.15	0.37	0.14	44	reviewed	nc	nc
6/11/1983	22:55:19	36.2003333	-120.2756667	7.834	2.26	md	24	63	0.01982	0.11	nc	nc1096639	2016-12-11T08:09:35.470Z	10 km NE of Coalinga, California	earthquake	0.26	0.3	0.17	33	reviewed	nc	nc
6/11/1983	20:35:58	36.2001667	-120.2611667	8.104	2.17	md	34	106	0.02613	0.16	nc	nc1096627	2016-12-11T08:08:41.360Z	11 km NE of Coalinga, California	earthquake	0.29	0.32	0.25	31	reviewed	nc	nc
6/11/1983	19:48:20	36.1061667	-120.2315	8.171	2.23	md	17	83	0.109	0.04	nc	nc1096624	2016-12-11T08:08:27.687Z	12 km ESE of Coalinga, California	earthquake	0.27	0.65	0.18	18	reviewed	nc	nc
6/11/1983	19:08:09	36.226	-120.4505	2.489	2.13	md	19	55	0.05946	0.16	nc	nc1096622	2016-12-11T08:08:19.854Z	12 km NW of Coalinga, California	earthquake	0.3	0.95	0.2	13	reviewed	nc	nc
6/11/1983	17:11:58	36.2566667	-120.4395	3.376	2.43	md	32	62	0.04505	0.14	nc	nc1096616	2016-12-11T08:07:55.840Z	14 km NNW of Coalinga, California	earthquake	0.21	0.6	0.16	29	reviewed	nc	nc
6/11/1983	14:27:05	36.2375	-120.4476667	4.99	3.34	md	62	58	0.05315	0.15	nc	nc1096606	2016-12-11T08:07:13.280Z	13 km NW of Coalinga, California	earthquake	0.16	0.4	0.14	58	reviewed	nc	nc
6/11/1983	14:03:03	36.173	-120.2885	8.957	2.74	md	26	62	0.02342	0.09	nc	nc1096604	2016-12-11T08:06:58.720Z	7 km ENE of Coalinga, California	earthquake	0.26	0.31	0.18	36	reviewed	nc	nc
6/11/1983	13:13:05	36.1386667	-120.2071667	11.308	2.59	md	40	92	0.07568	0.08	nc	nc1096601	2016-12-11T08:06:38.860Z	11 km SW of Huron, California	earthquake	0.2	0.34	0.12	49	reviewed	nc	nc
6/11/1983	12:13:17	36.2491667	-120.4405	1.244	2.2	md	28	60	0.04595	0.15	nc	nc1096596	2016-12-11T08:06:14.114Z	14 km NNW of Coalinga, California	earthquake	0.24	1.4	0.12	21	reviewed	nc	nc
6/11/1983	8:51:02	36.1825	-120.2975	8.717	2	md	27	103	0.03153	0.11	nc	nc1096589	2016-12-11T08:05:44.080Z	7 km NE of Coalinga, California	earthquake	0.27	0.31	0.24	21	reviewed	nc	nc
6/11/1983	5:48:31	36.2501667	-120.4438333	2.444	3.27	md	44	61	0.04865	0.16	nc	nc1096575	2016-12-11T08:04:39.680Z	14 km NNW of Coalinga, California	earthquake	0.2	0.55	0.1	53	reviewed	nc	nc
6/11/1983	5:25:18	36.2215	-120.4521667	5.205	3.22	md	50	74	0.09279	0.11	nc	nc1096572	2016-12-11T08:04:19.360Z	12 km NW of Coalinga, California	earthquake	0.17	0.37	0.04	7	reviewed	nc	nc
6/11/1983	5:06:49	36.0975	-120.19	9.894	2.8	md	30	158	0.1036	0.1	nc	nc1096571	2016-12-11T08:04:09.510Z	11 km NNW of Avenal, California	earthquake	0.38	0.62	0.17	54	reviewed	nc	nc
6/11/1983	4:36:17	36.2275	-120.4453333	-0.32	2.14	md	16	55	0.05495	0.29	nc	nc1096570	2016-12-11T08:04:02.323Z	12 km NW of Coalinga, California	earthquake	0.59	8.42	0.15	16	reviewed	nc	nc
6/11/1983	4:06:33	36.2343333	-120.4426667	4.014	3.03	md	46	55	0.118	0.17	nc	nc1096566	2016-12-11T08:03:45.430Z	12 km NW of Coalinga, California	earthquake	0.2	0.51	0.15	50	reviewed	nc	nc
6/11/1983	3:54:30	36.2268333	-120.451	3.058	2.19	md	29	55	0.05856	0.15	nc	nc1096565	2016-12-11T08:03:33.932Z	12 km NW of Coalinga, California	earthquake	0.24	0.59	0.18	19	reviewed	nc	nc
6/11/1983	3:09:52	36.2503333	-120.457	4.987	4.53	ma	58	65	0.09279	0.13	nc	nc1096559	2022-04-27T23:57:18.588Z	15 km NW of Coalinga, California	earthquake	0.19	0.46	0.14	50	reviewed	nc	nc
6/10/1983	23:52:29	36.1743333	-120.2546667	11.496	2.34	md	20	161	0.05045	0.1	nc	nc1096549	2016-12-11T08:02:23.610Z	10 km ENE of Coalinga, California	earthquake	1.5	1.48	0.26	20	reviewed	nc	nc
6/10/1983	23:14:37	36.2486667	-120.4	7.424	2.17	md	20	70	0.01261	0.09	nc	nc1096547	2016-12-11T08:02:14.841Z	12 km NNW of Coalinga, California	earthquake	0.26	0.34	0.11	25	reviewed	nc	nc
6/10/1983	21:08:32	36.1558333	-120.237	10.112	2.65	md	37	79	0.05045	0.09	nc	nc1096544	2016-12-11T08:02:00.660Z	11 km E of Coalinga, California	earthquake	0.2	0.31	0.16	50	reviewed	nc	nc
6/10/1983	20:59:48	36.167	-120.2551667	10.148	2.61	md	33	72	0.03874	0.08	nc	nc1096542	2016-12-11T08:01:42.770Z	9 km ENE of Coalinga, California	earthquake	0.28	0.35	0.15	40	reviewed	nc	nc
6/10/1983	20:53:13	36.1838333	-120.2435	12.345	2.01	md	22	116	0.04775	0.09	nc	nc1096541	2016-12-11T08:01:36.002Z	11 km ENE of Coalinga, California	earthquake	0.3	0.51	0.23	21	reviewed	nc	nc
6/10/1983	16:25:24	36.245	-120.3928333	10.57	2.96	md	45	44	0.009009	0.13	nc	nc1096531	2016-12-11T08:00:49.750Z	12 km NNW of Coalinga, California	earthquake	0.22	0.35	0.12	57	reviewed	nc	nc
6/10/1983	14:51:17	36.3196667	-120.3088333	4.09	2.63	md	42	72	0.02703	0.13	nc	nc1096527	2016-12-11T08:00:27.480Z	20 km S of Cantua Creek, California	earthquake	0.17	0.2	0.18	42	reviewed	nc	nc
6/10/1983	9:53:25	36.1358333	-120.2206667	10.274	2.25	md	25	135	0.06577	0.07	nc	nc1096509	2016-12-11T07:58:55.840Z	12 km E of Coalinga, California	earthquake	0.31	0.5	0.2	24	reviewed	nc	nc
6/10/1983	2:41:47	36.2493333	-120.3691667	8.748	2.11	md	8	111	0.01171	0.05	nc	nc1096484	2016-12-11T07:56:51.849Z	12 km N of Coalinga, California	earthquake	0.75	0.62		3	reviewed	nc	nc
6/9/1983	8:42:55	36.189	-120.2538333	6.874	2.91	md	39	71	0.03874	0.13	nc	nc1096445	2016-12-11T07:54:08.600Z	11 km ENE of Coalinga, California	earthquake	0.22	0.3	0.14	58	reviewed	nc	nc
6/9/1983	6:32:51	36.259	-120.3586667	10.244	2.11	md	10	98	0.01622	0.04	nc	nc1096436	2016-12-11T07:53:25.338Z	13 km N of Coalinga, California	earthquake	0.38	0.37	0.21	9	reviewed	nc	nc
6/8/1983	23:26:48	36.2375	-120.3273333	8.195	2.06	md	22	119	0.01712	0.1	nc	nc1096417	2016-12-11T07:51:53.473Z	11 km NNE of Coalinga, California	earthquake	0.3	0.29	0.11	21	reviewed	nc	nc
6/8/1983	22:52:09	36.2821667	-120.3945	7.895	2.42	md	29	67	0.03333	0.11	nc	nc1096414	2016-12-11T07:51:40.336Z	16 km N of Coalinga, California	earthquake	0.21	0.26	0.17	24	reviewed	nc	nc
6/8/1983	21:15:40	36.2746667	-120.3958333	9.616	2.68	md	46	52	0.02613	0.1	nc	nc1096408	2016-12-11T07:51:13.850Z	15 km NNW of Coalinga, California	earthquake	0.19	0.31	0.14	45	reviewed	nc	nc
6/8/1983	17:16:32	35.9735	-120.5288333	4.655	2.82	md	38	73	0.04414	0.06	nc	nc1096397	2016-12-11T07:50:21.880Z	11 km NW of Parkfield, California	earthquake	0.16	0.4	0.12	34	reviewed	nc	nc
6/8/1983	13:44:35	36.1531667	-120.2251667	10.559	2.57	md	32	84	0.07207	0.12	nc	nc1096394	2016-12-11T07:50:04.920Z	12 km E of Coalinga, California	earthquake	0.28	0.55	0.13	40	reviewed	nc	nc
6/8/1983	6:06:18	36.1751667	-120.278	10.264	2.19	md	26	113	0.02883	0.08	nc	nc1096368	2016-12-11T07:48:10.960Z	Central California	earthquake	0.25	0.4	0.15	32	reviewed	nc	nc
6/8/1983	5:54:51	36.265	-120.327	5.069	2.72	md	35	119	0.04865	0.1	nc	nc1096367	2016-12-11T07:48:03.120Z	14 km NNE of Coalinga, California	earthquake	0.2	0.23	0.15	32	reviewed	nc	nc
6/8/1983	3:52:27	36.2153333	-120.2831667	8.044	2.3	md	30	84	0.003604	0.14	nc	nc1096361	2016-12-11T07:47:33.100Z	10 km NE of Coalinga, California	earthquake	0.27	0.32	0.16	28	reviewed	nc	nc
6/7/1983	23:47:04	36.2193333	-120.3056667	8.104	2.77	md	39	61	0.01712	0.1	nc	nc1096354	2016-12-11T07:46:59.840Z	10 km NNE of Coalinga, California	earthquake	0.19	0.25	0.16	44	reviewed	nc	nc
6/7/1983	22:57:04	36.296	-120.373	10.705	2.18	md	22	76	0.04685	0.21	nc	nc1096351	2016-12-11T07:46:39.132Z	17 km N of Coalinga, California	earthquake	0.42	0.61	0.21	19	reviewed	nc	nc
6/7/1983	21:56:36	36.1931667	-120.2436667	7.854	2.88	md	32	104	0.04144	0.13	nc	nc1096349	2016-12-11T07:46:29.490Z	12 km ENE of Coalinga, California	earthquake	0.32	0.33	0.15	41	reviewed	nc	nc
6/7/1983	21:42:47	36.1896667	-120.2406667	6.864	2.72	md	29	128	0.04595	0.17	nc	nc1096348	2016-12-11T07:46:21.220Z	12 km ENE of Coalinga, California	earthquake	0.29	0.35	0.18	38	reviewed	nc	nc
6/7/1983	21:16:13	36.2133333	-120.2935	11.949	2.03	md	25	86	0.009009	0.09	nc	nc1096346	2016-12-11T07:46:05.315Z	10 km NE of Coalinga, California	earthquake	0.31	0.4	0.2	23	reviewed	nc	nc
6/7/1983	18:27:15	36.2086667	-120.2906667	12.224	3.25	md	40	87	0.01081	0.07	nc	nc1096343	2016-12-11T07:45:50.930Z	9 km NE of Coalinga, California	earthquake	0.21	0.31	0.12	56	reviewed	nc	nc
6/7/1983	17:56:43	36.1498333	-120.2261667	9.828	3.03	md	38	84	0.05946	0.1	nc	nc1096341	2016-12-11T07:45:38.090Z	12 km E of Coalinga, California	earthquake	0.23	0.46	0.11	58	reviewed	nc	nc
6/7/1983	17:00:21	36.2831667	-120.3741667	8.864	2.47	md	33	72	0.03423	0.12	nc	nc1096336	2016-12-11T07:45:11.650Z	15 km N of Coalinga, California	earthquake	0.25	0.27	0.16	35	reviewed	nc	nc
6/7/1983	6:20:27	36.205	-120.285	9.584	2.68	md	35	89	0.01351	0.09	nc	nc1096307	2016-12-11T07:42:56.970Z	9 km NE of Coalinga, California	earthquake	0.24	0.35	0.15	47	reviewed	nc	nc
6/7/1983	5:18:37	36.1568333	-120.2255	11.508	4.16	md	53	84	0.06036	0.07	nc	nc1096303	2016-12-11T07:42:36.390Z	12 km WSW of Huron, California	earthquake	0.16	0.26	0.21	14	reviewed	nc	nc
6/7/1983	5:16:36	36.151	-120.2258333	10.428	3.05	md	35	84	0.05946	0.08	nc	nc1096302	2016-12-11T07:42:27.380Z	12 km E of Coalinga, California	earthquake	0.22	0.44	0.15	62	reviewed	nc	nc
6/7/1983	0:52:46	36.1148333	-120.1898333	7.873	2.79	md	39	97	0.08468	0.09	nc	nc1096291	2016-12-11T07:41:37.670Z	12 km SW of Huron, California	earthquake	0.25	0.47	0.16	53	reviewed	nc	nc
6/6/1983	16:06:48	36.1775	-120.217	9.278	3.55	md	40	87	0.06847	0.11	nc	nc1096264	2016-12-11T07:39:34.710Z	10 km WSW of Huron, California	earthquake	0.22	0.41	0.13	57	reviewed	nc	nc
6/6/1983	14:42:39	36.2556667	-120.3928333	9.344	2.1	md	34	86	0.009009	0.12	nc	nc1096259	2016-12-11T07:39:09.280Z	13 km NNW of Coalinga, California	earthquake	0.3	0.34	0.18	26	reviewed	nc	nc
6/6/1983	12:14:51	36.1855	-120.3166667	7.192	2.35	md	31	51	0.03694	0.1	nc	nc1096253	2016-12-11T07:38:37.980Z	6 km NE of Coalinga, California	earthquake	0.22	0.37	0.13	38	reviewed	nc	nc
6/6/1983	12:13:33	36.187	-120.3203333	7.539	2.53	md	27	50	0.03964	0.1	nc	nc1096252	2016-12-11T07:38:29.640Z	6 km NE of Coalinga, California	earthquake	0.25	0.36	0.09	30	reviewed	nc	nc
6/6/1983	11:54:01	36.1806667	-120.2128333	9.373	2.19	md	24	88	0.04414	0.17	nc	nc1096250	2016-12-11T07:38:18.010Z	10 km WSW of Huron, California	earthquake	0.35	0.5	0.17	26	reviewed	nc	nc
6/6/1983	8:51:03	36.1041667	-120.1635	11.883	2.46	md	32	110	0.06126	0.14	nc	nc1096246	2016-12-11T07:37:55.480Z	11 km NNW of Avenal, California	earthquake	0.33	0.47	0.12	50	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/6/1983	2:50:48	36.2771667	-120.3816667	10.852	2.2	md	38	142	0.02703	0.13	nc	nc1096229	2016-12-11T07:36:32.140Z	15 km N of Coalinga, California	earthquake	0.31	0.44	0.13	30	reviewed	nc	nc
6/5/1983	22:55:38	36.1756667	-120.2838333	9.781	2.34	md	36	62	0.02703	0.08	nc	nc1096220	2016-12-11T07:35:41.060Z	7 km ENE of Coalinga, California	earthquake	0.21	0.41	0.14	43	reviewed	nc	nc
6/5/1983	22:35:40	36.2561667	-120.3233333	10.902	2.05	md	28	83	0.03874	0.13	nc	nc1096219	2016-12-11T07:35:32.890Z	13 km NNE of Coalinga, California	earthquake	0.34	0.56	0.2	20	reviewed	nc	nc
6/5/1983	18:43:00	36.2868333	-120.2985	5.654	2.26	md	23	161	0.009009	0.09	nc	nc1096216	2016-12-11T07:35:15.804Z	17 km NNE of Coalinga, California	earthquake	0.3	0.21	0.14	21	reviewed	nc	nc
6/5/1983	18:27:36	36.2843333	-120.296	5.786	2.41	md	25	85	0.01261	0.09	nc	nc1096215	2016-12-11T07:35:09.650Z	17 km NNE of Coalinga, California	earthquake	0.21	0.2	0.17	23	reviewed	nc	nc
6/5/1983	17:40:18	36.1806667	-120.2433333	7.797	2.96	md	35	75	0.05405	0.11	nc	nc1096212	2016-12-11T07:34:53.270Z	11 km ENE of Coalinga, California	earthquake	0.24	0.36	0.16	59	reviewed	nc	nc
6/5/1983	16:43:23	36.2345	-120.265	7.183	2.57	md	33	72	0.06486	0.1	nc	nc1096210	2016-12-11T07:34:40.990Z	13 km NE of Coalinga, California	earthquake	0.18	0.3	0.2	40	reviewed	nc	nc
6/5/1983	15:36:19	36.1115	-120.1886667	8.636	2.45	md	31	123	0.08198	0.16	nc	nc1096205	2016-12-11T07:34:12.970Z	12 km SW of Huron, California	earthquake	0.41	0.62	0.14	31	reviewed	nc	nc
6/5/1983	13:58:25	36.2426667	-120.1341667	8.262	2.17	md	35	99	0.04144	0.15	nc	nc1096200	2016-12-11T07:33:47.610Z	5 km NNW of Huron, California	earthquake	0.42	0.31	0.19	27	reviewed	nc	nc
6/5/1983	12:02:53	36.2191667	-120.277	6.238	3.01	md	37	66	0.06126	0.14	nc	nc1096194	2016-12-11T07:33:07.540Z	11 km NE of Coalinga, California	earthquake	0.22	0.32	0.17	54	reviewed	nc	nc
6/4/1983	21:43:10	36.1841667	-120.322	7.263	2.08	md	21	75	0.03784	0.08	nc	nc1096142	2016-12-11T07:29:12.479Z	6 km NE of Coalinga, California	earthquake	0.22	0.37	0.22	20	reviewed	nc	nc
6/4/1983	20:37:07	36.1845	-120.3205	8.033	2.49	md	24	64	0.03694	0.06	nc	nc1096138	2016-12-11T07:28:54.440Z	6 km NE of Coalinga, California	earthquake	0.19	0.31	0.13	32	reviewed	nc	nc
6/4/1983	20:08:17	36.1733333	-120.2903333	9.798	2.7	md	30	61	0.08739	0.09	nc	nc1096136	2016-12-11T07:28:41.980Z	7 km ENE of Coalinga, California	earthquake	0.27	0.49	0.13	46	reviewed	nc	nc
6/4/1983	18:38:00	36.1793333	-120.2516667	8.983	2.51	md	32	72	0.04775	0.08	nc	nc1096122	2016-12-11T07:27:38.960Z	10 km ENE of Coalinga, California	earthquake	0.23	0.33	0.12	49	reviewed	nc	nc
6/4/1983	16:59:06	36.2126667	-120.3081667	10.753	2.37	md	25	83	0.04595	0.06	nc	nc1096114	2016-12-11T07:26:56.380Z	9 km NNE of Coalinga, California	earthquake	0.25	0.3	0.22	30	reviewed	nc	nc
6/4/1983	13:22:09	36.1085	-120.1796667	8.425	2.07	md	20	101	0.07387	0.2	nc	nc1096091	2016-12-11T07:24:57.427Z	12 km NNW of Avenal, California	earthquake	0.54	0.94	0.15	15	reviewed	nc	nc
6/4/1983	12:19:29	36.1085	-120.2513333	8.786	2.31	md	29	68	0.05766	0.08	nc	nc1096088	2016-12-11T07:24:39.330Z	10 km ESE of Coalinga, California	earthquake	0.26	0.46	0.21	33	reviewed	nc	nc
6/4/1983	8:13:38	36.224	-120.2963333	7.253	2.06	md	22	108	0.04505	0.08	nc	nc1096078	2016-12-11T07:23:44.684Z	10 km NNE of Coalinga, California	earthquake	0.19	0.33	0.16	28	reviewed	nc	nc
6/4/1983	0:21:28	36.0953333	-120.2573333	7.58	2.48	md	12	266	0.145	0.04	nc	nc1096065	2016-12-11T07:22:33.924Z	10 km ESE of Coalinga, California	earthquake	1.54	0.98	0.14	9	reviewed	nc	nc
6/4/1983	0:07:53	36.1058333	-120.255	7.503	2.45	md	25	67	0.1261	0.07	nc	nc1096063	2016-12-11T07:22:23.890Z	10 km ESE of Coalinga, California	earthquake	0.25	0.55	0.15	28	reviewed	nc	nc
6/3/1983	16:09:45	36.3105	-120.3136667	4.473	2.64	md	32	145	0.01802	0.09	nc	nc1096050	2016-12-11T07:21:22.530Z	19 km NNE of Coalinga, California	earthquake	0.26	0.16	0.17	35	reviewed	nc	nc
6/3/1983	16:01:54	36.229	-120.401	10.692	2.62	md	31	69	0.02523	0.1	nc	nc1096049	2016-12-11T07:21:14.370Z	10 km NNW of Coalinga, California	earthquake	0.43	0.41	0.18	38	reviewed	nc	nc
6/3/1983	13:54:12	36.2255	-120.3483333	10.252	2.63	md	47	56	0.02432	0.09	nc	nc1096041	2016-12-11T07:20:33.220Z	9 km N of Coalinga, California	earthquake	0.14	0.22	0.12	45	reviewed	nc	nc
6/3/1983	13:27:51	36.1003333	-120.1786667	6.903	2.63	md	26	157	0.06847	0.09	nc	nc1096040	2016-12-11T07:20:24.730Z	11 km NNW of Avenal, California	earthquake	0.32	0.52	0.14	35	reviewed	nc	nc
6/3/1983	10:26:33	36.1601667	-120.252	10.625	2.7	md	26	89	0.03874	0.09	nc	nc1096031	2016-12-11T07:19:34.950Z	9 km ENE of Coalinga, California	earthquake	0.27	0.48	0.15	49	reviewed	nc	nc
6/3/1983	9:38:22	36.1573333	-120.2481667	10.035	2.28	md	33	75	0.04144	0.11	nc	nc1096028	2016-12-11T07:19:15.320Z	10 km E of Coalinga, California	earthquake	0.28	0.41	0.13	38	reviewed	nc	nc
6/3/1983	8:13:49	36.2451667	-120.26	5.816	2.32	md	36	125	0.0991	0.15	nc	nc1096025	2016-12-11T07:18:55.920Z	14 km NE of Coalinga, California	earthquake	0.29	0.42	0.13	26	reviewed	nc	nc
6/3/1983	6:08:54	36.1811667	-120.2985	8.912	2.22	md	30	71	0.0973	0.15	nc	nc1096020	2016-12-11T07:18:27.850Z	7 km NE of Coalinga, California	earthquake	0.25	0.54	0.16	32	reviewed	nc	nc
6/3/1983	3:12:34	36.1603333	-120.257	9.729	2.94	md	40	72	0.03514	0.12	nc	nc1096006	2016-12-11T07:17:16.550Z	9 km ENE of Coalinga, California	earthquake	0.26	0.33	0.16	50	reviewed	nc	nc
6/3/1983	2:19:09	36.2653333	-120.3288333	7.933	2.36	md	37	77	0.01982	0.1	nc	nc1096004	2016-12-11T07:17:03.240Z	14 km NNE of Coalinga, California	earthquake	0.2	0.2	0.16	37	reviewed	nc	nc
6/3/1983	1:18:17	36.2343333	-120.3563333	9.213	2.16	md	34	50	0.01892	0.09	nc	nc1096003	2016-12-11T07:16:54.970Z	10 km N of Coalinga, California	earthquake	0.22	0.24	0.14	31	reviewed	nc	nc
6/3/1983	1:01:20	36.2341667	-120.3556667	9.343	2.35	md	37	65	0.01802	0.08	nc	nc1096002	2016-12-11T07:16:43.710Z	10 km N of Coalinga, California	earthquake	0.17	0.22	0.11	35	reviewed	nc	nc
6/2/1983	22:59:08	36.1086667	-120.2683333	8.032	2.26	md	11	227	0.04955	0.16	nc	nc1096000	2016-12-11T07:16:32.328Z	8 km ESE of Coalinga, California	earthquake	1.18	0.74	0.18	12	reviewed	nc	nc
6/2/1983	18:39:53	36.1938333	-120.3	9.521	2.59	md	33	75	0.04234	0.09	nc	nc1095986	2016-12-11T07:15:31.300Z	8 km NE of Coalinga, California	earthquake	0.18	0.37	0.16	34	reviewed	nc	nc
6/2/1983	18:28:26	36.2726667	-120.351	8.003	2.32	md	35	68	0.02432	0.1	nc	nc1095985	2016-12-11T07:15:22.560Z	14 km N of Coalinga, California	earthquake	0.19	0.24	0.16	36	reviewed	nc	nc
6/2/1983	17:37:38	36.2343333	-120.3796667	11.583	2.04	md	25	78	0.01622	0.09	nc	nc1095984	2016-12-11T07:15:13.514Z	10 km N of Coalinga, California	earthquake	0.27	0.41	0.15	19	reviewed	nc	nc
6/2/1983	17:18:01	36.2413333	-120.283	12.423	2.6	md	38	90	0.04865	0.08	nc	nc1095982	2016-12-11T07:15:03.190Z	13 km NNE of Coalinga, California	earthquake	0.2	0.36	0.14	42	reviewed	nc	nc
6/2/1983	15:29:51	36.2888333	-120.384	4.675	2.49	md	27	45	0.03874	0.11	nc	nc1095974	2016-12-11T07:14:19.180Z	16 km N of Coalinga, California	earthquake	0.18	0.29	0.15	27	reviewed	nc	nc
6/2/1983	13:27:30	36.1231667	-120.223	10.443	2.22	md	23	83	0.06757	0.1	nc	nc1095968	2016-12-11T07:13:49.520Z	12 km E of Coalinga, California	earthquake	0.31	0.44	0.18	25	reviewed	nc	nc
6/2/1983	11:35:28	36.2123333	-120.3798333	10.162	2.96	md	41	43	0.03784	0.07	nc	nc1095964	2016-12-11T07:13:28.880Z	8 km NNW of Coalinga, California	earthquake	0.17	0.3	0.16	56	reviewed	nc	nc
6/2/1983	10:27:11	36.1051667	-120.2505	7.064	2.08	md	16	200	0.06126	0.13	nc	nc1095960	2016-12-11T07:13:08.408Z	10 km ESE of Coalinga, California	earthquake	0.87	0.77	0.12	17	reviewed	nc	nc
6/2/1983	10:16:22	36.1771667	-120.3046667	9.396	2.14	md	22	102	0.02613	0.08	nc	nc1095959	2016-12-11T07:13:04.081Z	6 km NE of Coalinga, California	earthquake	0.25	0.37	0.14	23	reviewed	nc	nc
6/2/1983	5:19:56	36.2995	-120.3266667	5.18	2.07	md	9	207	0.06757	0.14	nc	nc1095950	2016-12-11T07:12:24.369Z	17 km N of Coalinga, California	earthquake	1.15	0.56	0.19	11	reviewed	nc	nc
6/2/1983	4:54:45	36.2133333	-120.3101667	9.152	2.63	md	36	92	0.04505	0.08	nc	nc1095948	2016-12-11T07:12:14.770Z	9 km NNE of Coalinga, California	earthquake	0.16	0.24	0.13	45	reviewed	nc	nc
6/2/1983	2:35:46	36.2668333	-120.3465	2.699	2.24	md	11	122	0.03514	0.52	nc	nc1095943	2016-12-11T07:11:47.717Z	14 km N of Coalinga, California	earthquake	1.48	1.82	0.27	7	reviewed	nc	nc
6/1/1983	20:08:39	36.2773333	-120.4161667	7.733	2.1	md	31	62	0.03784	0.09	nc	nc1095931	2016-12-11T07:10:50.800Z	16 km NNW of Coalinga, California	earthquake	0.22	0.31	0.08	28	reviewed	nc	nc
6/1/1983	18:34:59	36.2451667	-120.3348333	7.743	2.8	md	39	61	0.008108	0.08	nc	nc1095926	2016-12-11T07:10:25.530Z	11 km N of Coalinga, California	earthquake	0.17	0.18	0.17	27	reviewed	nc	nc
6/1/1983	18:13:53	36.3198333	-120.3131667	4.551	2.55	md	28	75	0.02703	0.12	nc	nc1095923	2016-12-11T07:10:06.760Z	20 km S of Cantua Creek, California	earthquake	0.2	0.24	0.22	27	reviewed	nc	nc
6/1/1983	16:08:58	36.1965	-120.2598333	8.243	3.04	md	39	62	0.05495	0.09	nc	nc1095918	2016-12-11T07:09:38.850Z	11 km NE of Coalinga, California	earthquake	0.19	0.29	0.17	46	reviewed	nc	nc
6/1/1983	15:08:45	36.1846667	-120.3003333	8.836	2.06	md	22	103	0.03333	0.12	nc	nc1095914	2016-12-11T07:09:18.496Z	7 km NE of Coalinga, California	earthquake	0.41	0.34	0.13	19	reviewed	nc	nc
6/1/1983	13:40:01	36.172	-120.3006667	7.436	2.76	md	29	58	0.02072	0.1	nc	nc1095912	2016-12-11T07:09:08.430Z	6 km NE of Coalinga, California	earthquake	0.24	0.4	0.16	32	reviewed	nc	nc
6/1/1983	8:42:04	36.1413333	-120.2591667	6.964	2.06	md	14	132	0.03423	0.14	nc	nc1095895	2016-12-11T07:07:56.539Z	9 km E of Coalinga, California	earthquake	0.46	0.86	0.36	14	reviewed	nc	nc
6/1/1983	6:10:32	36.2026667	-120.2658333	12.405	2.02	md	17	101	0.05766	0.08	nc	nc1095887	2016-12-11T07:07:16.370Z	10 km NE of Coalinga, California	earthquake	0.31	0.53	0.14	19	reviewed	nc	nc
6/1/1983	5:06:39	36.1556667	-120.3301667	12.502	3.21	md	40	51	0.02523	0.08	nc	nc1095885	2016-12-11T07:07:05.920Z	3 km ENE of Coalinga, California	earthquake	0.2	0.41	0.21	55	reviewed	nc	nc
5/31/1983	23:02:45	36.1728333	-120.3131667	8.585	2.57	md	11	82	0.02432	0.16	nc	nc1095873	2016-12-11T07:06:05.287Z	5 km NE of Coalinga, California	earthquake	0.87	0.91	0.12	19	reviewed	nc	nc
5/31/1983	14:46:53	36.2253333	-120.2826667	4.922	2.14	md	13	92	0.05405	0.15	nc	nc1095856	2016-12-11T07:04:52.065Z	11 km NE of Coalinga, California	earthquake	0.38	0.74	0.15	12	reviewed	nc	nc
5/31/1983	12:35:19	36.1798333	-120.1711667	6.853	2.27	md	21	112	0.03423	0.16	nc	nc1095851	2016-12-11T07:04:30.517Z	6 km WSW of Huron, California	earthquake	0.39	0.54	0.08	21	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/31/1983	11:47:00	36.285	-120.3288333	8.422	2.53	md	31	75	0.03784	0.1	nc	nc1095845	2016-12-11T07:04:03.200Z	16 km N of Coalinga, California	earthquake	0.28	0.44	0.11	35	reviewed	nc	nc
5/31/1983	9:05:48	36.1471667	-120.3226667	7.491	2.22	md	22	67	0.01982	0.12	nc	nc1095837	2016-12-11T07:03:17.810Z	3 km ENE of Coalinga, California	earthquake	0.34	0.45	0.16	22	reviewed	nc	nc
5/31/1983	7:55:15	36.101	-120.265	6.58	2.33	md	21	68	0.05766	0.13	nc	nc1095834	2016-12-11T07:02:58.570Z	9 km ESE of Coalinga, California	earthquake	0.32	0.62	0.14	20	reviewed	nc	nc
5/31/1983	7:18:34	36.107	-120.2215	9.29	2.4	md	14	78	0.07748	0.07	nc	nc1095833	2016-12-11T07:02:52.007Z	12 km ESE of Coalinga, California	earthquake	0.41	0.89	0.14	20	reviewed	nc	nc
5/31/1983	6:59:51	36.1533333	-120.2016667	10.48	2.25	md	9	113	0.06396	0.05	nc	nc1095832	2016-12-11T07:02:47.437Z	10 km WSW of Huron, California	earthquake	0.42	0.64	0.22	15	reviewed	nc	nc
5/31/1983	6:07:04	36.0966667	-120.2126667	6.32	2.95	md	20	150	0.08919	0.12	nc	nc1095829	2016-12-11T07:02:32.760Z	12 km NW of Avenal, California	earthquake	0.4	0.74	0.16	28	reviewed	nc	nc
5/31/1983	4:43:09	36.0986667	-120.2175	4.3	2.8	md	20	78	0.08468	0.11	nc	nc1095824	2016-12-11T07:02:06.545Z	13 km NW of Avenal, California	earthquake	0.22	0.73	0.16	18	reviewed	nc	nc
5/31/1983	4:41:01	36.1083333	-120.253	7.234	3.7	md	17	156	0.05676	0.05	nc	nc1095823	2016-12-11T07:02:01.836Z	10 km ESE of Coalinga, California	earthquake	0.33	0.57	0.12	10	reviewed	nc	nc
5/31/1983	4:16:02	36.0955	-120.2525	6.27	2.5	md	25	71	0.06757	0.06	nc	nc1095821	2016-12-11T07:01:52.130Z	10 km ESE of Coalinga, California	earthquake	0.25	0.55	0.15	23	reviewed	nc	nc
5/31/1983	4:00:42	36.1046667	-120.0991667	5.881	2.93	ml	6	235		0.4	ci	ci1108820	2016-04-01T23:46:39.625Z	11km S of Huron, CA	earthquake	3.04	31.61	0.044	4	reviewed	ci	ci
5/31/1983	3:57:03	36.1018333	-120.2608333	6.657	2.56	md	19	132	0.05856	0.06	nc	nc1095820	2016-12-11T07:01:45.845Z	9 km ESE of Coalinga, California	earthquake	0.24	0.44	0.08	16	reviewed	nc	nc
5/31/1983	2:31:44	36.1026667	-120.2613333	8.94	3.5	md	25	208	0.05766	0.07	nc	nc1095815	2016-12-11T07:01:16.300Z	9 km ESE of Coalinga, California	earthquake	0.49	0.31	0.11	40	reviewed	nc	nc
5/31/1983	2:30:34	36.1678333	-120.2566667	10.06	2.72	md	34	194	0.03784	0.21	nc	nc1095814	2016-12-11T07:01:05.920Z	9 km ENE of Coalinga, California	earthquake	1.03	0.72	0.11	18	reviewed	nc	nc
5/30/1983	18:30:48	36.1501667	-120.1961667	6.308	2.09	md	17	99	0.1135	0.09	nc	nc1095799	2016-12-11T06:59:58.438Z	10 km SW of Huron, California	earthquake	0.27	0.77	0.18	14	reviewed	nc	nc
5/30/1983	16:01:16	36.1825	-120.2445	11.711	3.11	md	36	74	0.1459	0.08	nc	nc1095794	2016-12-11T06:59:35.130Z	11 km ENE of Coalinga, California	earthquake	0.31	0.85	0.17	33	reviewed	nc	nc
5/30/1983	14:14:32	36.1466667	-120.1816667	10.765	2.33	md	17	108	0.1036	0.09	nc	nc1095789	2016-12-11T06:59:07.655Z	9 km SW of Huron, California	earthquake	0.8	1.43	0.16	18	reviewed	nc	nc
5/30/1983	13:08:08	36.1463333	-120.3353333	11.441	3.2	md	38	53	0.0973	0.09	nc	nc1095786	2016-12-11T06:58:53.890Z	2 km ENE of Coalinga, California	earthquake	0.21	0.5	0.14	43	reviewed	nc	nc
5/30/1983	12:09:38	36.1213333	-120.2181667	8.691	2.85	md	34	84	0.1063	0.08	nc	nc1095780	2016-12-11T06:58:24.240Z	12 km E of Coalinga, California	earthquake	0.22	0.51	0.16	44	reviewed	nc	nc
5/30/1983	6:02:22	36.1631667	-120.2793333	7.384	2.47	md	31	113	0.1441	0.14	nc	nc1095763	2016-12-11T06:57:02.910Z	7 km ENE of Coalinga, California	earthquake	0.32	0.74	0.13	22	reviewed	nc	nc
5/30/1983	3:21:52	36.2471667	-120.3811667	10.968	3.46	md	54	41	0.003604	0.08	nc	nc1095751	2016-12-11T06:56:08.440Z	12 km N of Coalinga, California	earthquake	0.13	0.23	0.13	44	reviewed	nc	nc
5/30/1983	1:31:16	36.1801667	-120.2455	11.367	3.23	md	37	75	0.1045	0.12	nc	nc1095747	2016-12-11T06:55:46.590Z	11 km ENE of Coalinga, California	earthquake	0.26	0.71	0.14	46	reviewed	nc	nc
5/30/1983	0:58:57	36.1408333	-120.2598333	8.535	2.91	md	36	71	0.1459	0.08	nc	nc1095746	2016-12-11T06:55:35.900Z	9 km E of Coalinga, California	earthquake	0.2	0.46	0.14	37	reviewed	nc	nc
5/30/1983	0:24:49	36.2038333	-120.3248333	7.427	2.38	md	33	56	0.04775	0.18	nc	nc1095744	2016-12-11T06:55:23.430Z	7 km NNE of Coalinga, California	earthquake	0.27	0.67	0.09	24	reviewed	nc	nc
5/29/1983	23:01:27	36.1838333	-120.2563333	7.321	2.13	md	10	141	0.1541	0.04	nc	nc1095741	2016-12-11T06:55:08.001Z	10 km ENE of Coalinga, California	earthquake	0.94	3.36	0.16	5	reviewed	nc	nc
5/29/1983	18:43:18	36.1791667	-120.2855	8.877	2.82	md	31	63	0.08378	0.1	nc	nc1095735	2016-12-11T06:54:41.610Z	8 km ENE of Coalinga, California	earthquake	0.22	0.52	0.19	42	reviewed	nc	nc
5/29/1983	5:40:07	36.1878333	-120.2966667	8.039	2.18	md	24	105	0.1468	0.12	nc	nc1095706	2016-12-11T06:52:38.018Z	7 km NE of Coalinga, California	earthquake	0.34	0.82	0.08	20	reviewed	nc	nc
5/29/1983	4:29:19	36.2583333	-120.3481667	8.927	2.14	md	25	62	0.00991	0.1	nc	nc1095695	2016-12-11T06:51:51.471Z	13 km N of Coalinga, California	earthquake	0.26	0.68	0.14	10	reviewed	nc	nc
5/29/1983	3:41:51	36.278	-120.392	4.382	2.62	md	36	68	0.04865	0.14	nc	nc1095692	2016-12-11T06:51:36.800Z	15 km N of Coalinga, California	earthquake	0.22	0.48	0.16	36	reviewed	nc	nc
5/29/1983	1:24:03	36.2378333	-120.3796667	12.573	3.62	md	53	41	0.01261	0.08	nc	nc1095684	2016-12-11T06:50:49.790Z	11 km N of Coalinga, California	earthquake	0.15	0.28	0.12	47	reviewed	nc	nc
5/28/1983	23:56:00	36.2498333	-120.3358333	8.301	2.31	md	19	80	0.005405	0.1	nc	nc1095680	2016-12-11T06:50:29.223Z	12 km N of Coalinga, California	earthquake	0.32	0.6	0.24	17	reviewed	nc	nc
5/28/1983	22:37:57	36.2656667	-120.3413333	8.303	2.31	md	26	54	0.01622	0.1	nc	nc1095676	2016-12-11T06:50:11.180Z	14 km N of Coalinga, California	earthquake	0.25	0.46	0.09	28	reviewed	nc	nc
5/28/1983	16:03:36	36.2763333	-120.3961667	1.953	2.44	md	6	313	0.6649	0.09	nc	nc1095660	2016-12-11T06:48:50.861Z	15 km NNW of Coalinga, California	earthquake	5.69	9.16	0.04	6	reviewed	nc	nc
5/28/1983	10:31:06	36.1176667	-120.234	8.066	2.04	md	13	191	0.1658	0.05	nc	nc1095651	2016-12-11T06:48:11.868Z	11 km ESE of Coalinga, California	earthquake	0.57	1.09	0.12	15	reviewed	nc	nc
5/28/1983	9:19:40	36.1835	-120.2181667	6.948	2.09	md	18	130	0.127	0.1	nc	nc1095648	2016-12-11T06:47:57.970Z	10 km WSW of Huron, California	earthquake	0.35	1.07	0.16	17	reviewed	nc	nc
5/28/1983	3:38:32	36.2203333	-120.274	10.282	2.14	md	23	97	0.1369	0.09	nc	nc1095635	2016-12-11T06:47:02.282Z	Central California	earthquake	0.24	0.71	0.14	20	reviewed	nc	nc
5/28/1983	1:53:06	36.3008333	-120.3008333	4.817	2.1	md	12	79	0.06577	0.1	nc	nc1095627	2016-12-11T06:46:28.420Z	18 km NNE of Coalinga, California	earthquake	0.28	0.66	0.12	13	reviewed	nc	nc
5/27/1983	22:44:44	36.2548333	-120.3943333	6.203	2.11	md	23	69	0.04234	0.16	nc	nc1095621	2016-12-11T06:46:03.472Z	13 km NNW of Coalinga, California	earthquake	0.32	0.8	0.12	15	reviewed	nc	nc
5/27/1983	21:16:28	36.1591667	-120.2685	9.127	2.66	md	29	49	0.1505	0.08	nc	nc1095618	2016-12-11T06:45:48.670Z	8 km ENE of Coalinga, California	earthquake	0.22	0.67	0.15	23	reviewed	nc	nc
5/27/1983	20:51:04	36.2305	-120.3538333	5.881	3.23	ml	7	241		0.69	ci	ci1108646	2016-04-02T09:26:29.999Z	10km N of Coalinga, CA	earthquake	4.19	31.61	0.258	5	reviewed	ci	ci
5/27/1983	20:40:49	36.2403333	-120.3808333	12.573	3.92	md	56	30	0.00991	0.09	nc	nc1095617	2016-12-11T06:45:40.250Z	11 km N of Coalinga, California	earthquake	0.13	0.24	0.09	35	reviewed	nc	nc
5/27/1983	20:02:06	36.1546667	-120.2688333	8.577	2.37	md	33	50	0.1486	0.09	nc	nc1095614	2016-12-11T06:45:23.310Z	8 km ENE of Coalinga, California	earthquake	0.19	0.61	0.13	36	reviewed	nc	nc
5/27/1983	19:29:24	36.1376667	-120.239	7.111	2.22	md	24	75	0.1297	0.15	nc	nc1095613	2016-12-11T06:45:15.160Z	10 km E of Coalinga, California	earthquake	0.28	0.99	0.16	24	reviewed	nc	nc
5/27/1983	17:00:00	35.059	-119.191	2.345	2.44	mh	28	146		0.24	ci	ci1108624	2016-04-02T00:44:07.805Z	19km E of Maricopa, CA	earthquake	0.63	1.22	0.109	14	reviewed	ci	ci
5/27/1983	13:03:05	36.2408333	-120.353	8.253	2.34	md	30	62	0.01171	0.1	nc	nc1095600	2016-12-11T06:44:16.120Z	11 km N of Coalinga, California	earthquake	0.23	0.32	0.12	30	reviewed	nc	nc
5/27/1983	5:38:14	36.2736667	-120.3996667	3.47	2.52	md	6	109	0.05225	0.02	nc	nc1095582	2016-12-11T06:42:50.114Z	15 km NNW of Coalinga, California	earthquake	0.37	0.77	0.31	3	reviewed	nc	nc
5/27/1983	4:54:27	36.155	-120.265	8.623	2.41	md	43	50	0.1135	0.14	nc	nc1095578	2016-12-11T06:42:33.820Z	8 km E of Coalinga, California	earthquake	0.22	0.55	0.19	41	reviewed	nc	nc
5/26/1983	18:59:50	36.1135	-120.1858333	5.575	2.01	md	23	99	0.08108	0.11	nc	nc1095564	2016-12-11T06:41:35.824Z	12 km SW of Huron, California	earthquake	0.25	0.7	0.23	24	reviewed	nc	nc
5/26/1983	16:43:54	36.1786667	-120.3116667	7.395	2.33	md	19	128	0.04595	0.21	nc	nc1095561	2016-12-11T06:41:22.720Z	6 km NE of Coalinga, California	earthquake	0.48	0.69	0.12	26	reviewed	nc	nc
5/26/1983	16:43:18	36.1933333	-120.2758333	6.972	2.29	md	28	77	0.02613	0.18	nc	nc1095560	2016-12-11T06:41:16.327Z	9 km NE of Coalinga, California	earthquake	0.3	0.48	0.11	19	reviewed	nc	nc
5/26/1983	14:29:31	36.292	-120.3526667	4.126	2.04	md	14	69	0.04955	0.31	nc	nc1095555	2016-12-11T06:40:56.690Z	16 km N of Coalinga, California	earthquake	0.6	1.19	0.19	14	reviewed	nc	nc
5/26/1983	11:25:11	36.1141667	-120.1965	4.305	2.72	md	11	89	0.0991	0.16	nc	nc1095539	2016-12-11T06:39:52.362Z	12 km SW of Huron, California	earthquake	0.5	1.55	0.19	10	reviewed	nc	nc
5/26/1983	11:22:34	36.1191667	-120.179	7.215	2.93	md	32	66	0.08108	0.1	nc	nc1095538	2016-12-11T06:39:47.180Z	11 km SW of Huron, California	earthquake	0.26	0.54	0.19	55	reviewed	nc	nc
5/26/1983	11:18:28	36.1203333	-120.1773333	7.335	2.48	md	34	67	0.08108	0.1	nc	nc1095537	2016-12-11T06:39:38.940Z	11 km SW of Huron, California	earthquake	0.27	0.54	0.19	42	reviewed	nc	nc
5/26/1983	10:25:55	36.318	-120.3095	4.632	2.17	md	32	58	0.05225	0.1	nc	nc1095533	2016-12-11T06:39:16.260Z	20 km NNE of Coalinga, California	earthquake	0.19	0.33	0.16	29	reviewed	nc	nc
5/26/1983	9:52:01	36.1133333	-120.19	5.035	3.03	md	36	60	0.08378	0.11	nc	nc1095528	2016-12-11T06:38:52.090Z	12 km SW of Huron, California	earthquake	0.2	0.61	0.17	56	reviewed	nc	nc
5/26/1983	9:16:45	36.1135	-120.184	7.473	2.07	md	18	62	0.08018	0.08	nc	nc1095526	2016-12-11T06:38:41.935Z	12 km SW of Huron, California	earthquake	0.39	0.81	0.27	20	reviewed	nc	nc
5/26/1983	8:54:54	36.2356667	-120.2795	8.892	3.3	md	55	42	0.01712	0.1	nc	nc1095525	2016-12-11T06:38:36.140Z	12 km NE of Coalinga, California	earthquake	0.14	0.21	0.12	59	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/26/1983	2:44:19	36.2178333	-120.3071667	8.172	2.15	md	26	85	0.01802	0.11	nc	nc1095511	2016-12-11T06:37:38.960Z	9 km NNE of Coalinga, California	earthquake	0.24	0.27	0.2	22	reviewed	nc	nc
5/25/1983	23:52:06	36.1621667	-120.2573333	8.758	2.29	md	32	54	0.06036	0.12	nc	nc1095506	2016-12-11T06:37:18.280Z	9 km ENE of Coalinga, California	earthquake	0.2	0.41	0.28	19	reviewed	nc	nc
5/25/1983	18:05:07	36.1823333	-120.3003333	8.782	2.35	md	36	59	0.03874	0.12	nc	nc1095492	2016-12-11T06:36:13.950Z	7 km NE of Coalinga, California	earthquake	0.25	0.37	0.22	30	reviewed	nc	nc
5/25/1983	17:52:56	36.1795	-120.2971667	8.219	2.53	md	33	104	0.04054	0.13	nc	nc1095490	2016-12-11T06:36:02.290Z	7 km NE of Coalinga, California	earthquake	0.23	0.42	0.18	35	reviewed	nc	nc
5/25/1983	17:31:15	36.3086667	-120.2896667	4.862	2.03	md	20	66	0.07027	0.12	nc	nc1095489	2016-12-11T06:35:55.910Z	19 km NNE of Coalinga, California	earthquake	0.31	0.48	0.18	17	reviewed	nc	nc
5/25/1983	16:50:11	36.1553333	-120.2383333	9.822	2.6	md	36	76	0.07387	0.15	nc	nc1095487	2016-12-11T06:35:45.930Z	11 km E of Coalinga, California	earthquake	0.26	0.52	0.12	19	reviewed	nc	nc
5/25/1983	16:45:14	36.1558333	-120.2308333	10.515	3.37	md	36	54	0.06126	0.09	nc	nc1095485	2016-12-11T06:35:28.350Z	11 km E of Coalinga, California	earthquake	0.21	0.46	0.16	61	reviewed	nc	nc
5/25/1983	14:06:53	36.2096667	-120.3275	8.399	2.34	md	30	94	0.01171	0.1	nc	nc1095481	2016-12-11T06:35:07.430Z	8 km NNE of Coalinga, California	earthquake	0.21	0.16	0.17	33	reviewed	nc	nc
5/25/1983	13:55:43	36.2103333	-120.3278333	8.569	2.54	md	41	91	0.03604	0.12	nc	nc1095480	2016-12-11T06:34:59.790Z	8 km NNE of Coalinga, California	earthquake	0.2	0.3	0.11	43	reviewed	nc	nc
5/25/1983	13:34:20	36.2495	-120.3818333	9.092	2.49	md	48	35	0.001802	0.09	nc	nc1095478	2016-12-11T06:34:47.680Z	12 km N of Coalinga, California	earthquake	0.14	0.23	0.17	53	reviewed	nc	nc
5/25/1983	9:03:45	36.1771667	-120.2625	6.123	2.32	md	7	120	0.03964	0.02	nc	nc1095465	2016-12-11T06:33:51.958Z	9 km ENE of Coalinga, California	earthquake	0.6	0.43	0.23	9	reviewed	nc	nc
5/24/1983	18:46:48	36.2696667	-120.2923333	-0.212	2.08	md	16	75	0.01351	0.92	nc	nc1095437	2016-12-11T06:31:52.304Z	15 km NNE of Coalinga, California	earthquake	1.22	4.12	0.29	15	reviewed	nc	nc
5/24/1983	16:57:44	36.2353333	-120.34	8.615	2.35	md	40	41	0.01441	0.15	nc	nc1095433	2016-12-11T06:31:35.060Z	10 km N of Coalinga, California	earthquake	0.23	0.29	0.14	39	reviewed	nc	nc
5/24/1983	16:31:01	36.229	-120.3673333	10.988	2.46	md	22	80	0.02523	0.07	nc	nc1095432	2016-12-11T06:31:26.305Z	9 km N of Coalinga, California	earthquake	0.26	0.31	0.18	16	reviewed	nc	nc
5/24/1983	16:19:19	36.1446667	-120.2703333	7.867	2.52	md	31	73	0.02432	0.11	nc	nc1095431	2016-12-11T06:31:20.730Z	8 km E of Coalinga, California	earthquake	0.24	0.39	0.22	24	reviewed	nc	nc
5/24/1983	14:53:55	36.2395	-120.3023333	11.374	2.02	md	21	125	0.02523	0.06	nc	nc1095428	2016-12-11T06:31:05.440Z	12 km NNE of Coalinga, California	earthquake	0.34	0.24	0.16	20	reviewed	nc	nc
5/24/1983	12:26:07	36.189	-120.297	11.182	3.3	md	57	46	0.02523	0.07	nc	nc1095415	2016-12-11T06:30:11.770Z	7 km NE of Coalinga, California	earthquake	0.13	0.13	0.13	69	reviewed	nc	nc
5/24/1983	12:02:14	36.2301667	-120.2618333	8.118	2.36	md	36	49	0.02162	0.12	nc	nc1095414	2016-12-11T06:30:02.930Z	13 km NE of Coalinga, California	earthquake	0.22	0.29	0.17	36	reviewed	nc	nc
5/24/1983	11:47:41	36.229	-120.2676667	9.914	3.46	md	35	48	0.01712	0.17	nc	nc1095412	2016-12-11T06:29:51.450Z	12 km NE of Coalinga, California	earthquake	0.27	0.32	0.12	58	reviewed	nc	nc
5/24/1983	11:47:21	36.232	-120.2616667	8.083	3.38	md	13	118	0.02252	0.16	nc	nc1095411	2016-12-11T06:29:42.680Z	13 km NE of Coalinga, California	earthquake	0.46	0.67	0.52	11	reviewed	nc	nc
5/24/1983	11:46:25	36.233	-120.261	8.784	2.68	md	45	47	0.02252	0.13	nc	nc1095410	2016-12-11T06:29:37.380Z	13 km NE of Coalinga, California	earthquake	0.23	0.13	0.24	56	reviewed	nc	nc
5/24/1983	10:54:29	36.2451667	-120.3491667	8.685	2.67	md	50	57	0.006306	0.14	nc	nc1095406	2016-12-11T06:29:14.890Z	11 km N of Coalinga, California	earthquake	0.21	0.22	0.14	54	reviewed	nc	nc
5/24/1983	9:02:17	36.2503333	-120.3196667	9.175	3.77	md	60	37	0.01892	0.07	nc	nc1095393	2018-06-04T20:43:45.000Z	12 km NNE of Coalinga, California	earthquake	0.13	0.19	0.06	8	reviewed	nc	nc
5/24/1983	8:33:01	36.0883333	-120.2166667	6.028	2.08	md	21	105	0.09189	0.1	nc	nc1095389	2016-12-11T06:27:53.298Z	12 km NW of Avenal, California	earthquake	0.3	0.87	0.18	26	reviewed	nc	nc
5/24/1983	7:00:58	36.1146667	-120.1925	10.225	2.04	md	29	103	0.09369	0.1	nc	nc1095381	2016-12-11T06:27:20.720Z	12 km SW of Huron, California	earthquake	0.29	0.49	0.2	28	reviewed	nc	nc
5/24/1983	1:03:19	36.2451667	-120.3968333	10.168	2.01	md	24	58	0.01171	0.08	nc	nc1095364	2016-12-11T06:26:10.898Z	12 km NNW of Coalinga, California	earthquake	0.24	0.32	0.15	22	reviewed	nc	nc
5/23/1983	23:26:39	36.2155	-120.2706667	11.578	2.28	md	33	63	0.01171	0.08	nc	nc1095357	2016-12-11T06:25:35.150Z	11 km NE of Coalinga, California	earthquake	0.21	0.28	0.15	33	reviewed	nc	nc
5/23/1983	17:26:04	36.2193333	-120.2706667	9.032	2.89	md	36	97	0.00991	0.13	nc	nc1095343	2016-12-11T06:24:36.160Z	11 km NE of Coalinga, California	earthquake	0.29	0.16	0.15	41	reviewed	nc	nc
5/23/1983	15:03:19	36.1375	-120.203	11.078	2.11	md	22	88	0.07928	0.1	nc	nc1095333	2016-12-11T06:23:52.870Z	11 km SW of Huron, California	earthquake	0.31	0.53	0.24	26	reviewed	nc	nc
5/23/1983	13:27:10	36.2048333	-120.2945	9.442	3.12	md	56	43	0.01622	0.15	nc	nc1095327	2016-12-11T06:23:19.470Z	Central California	earthquake	0.22	0.26	0.14	61	reviewed	nc	nc
5/23/1983	12:02:11	36.2646667	-120.3733333	10.232	2.19	md	37	82	0.01712	0.11	nc	nc1095323	2016-12-11T06:22:59.200Z	13 km N of Coalinga, California	earthquake	0.2	0.28	0.09	32	reviewed	nc	nc
5/23/1983	9:25:51	36.2198333	-120.3123333	8.872	2.38	md	52	43	0.009009	0.12	nc	nc1095316	2016-12-11T06:22:27.680Z	9 km NNE of Coalinga, California	earthquake	0.14	0.16	0.14	49	reviewed	nc	nc
5/23/1983	7:27:46	36.2285	-120.3075	6.098	2.43	md	32	51	0.02072	0.19	nc	nc1095304	2016-12-11T06:21:37.176Z	10 km NNE of Coalinga, California	earthquake	0.26	0.31	0.15	29	reviewed	nc	nc
5/23/1983	7:21:59	36.201	-120.3668333	12.518	2.27	md	34	57	0.05045	0.09	nc	nc1095303	2016-12-11T06:21:31.210Z	6 km N of Coalinga, California	earthquake	0.28	0.38	0.14	31	reviewed	nc	nc
5/23/1983	6:57:37	36.2261667	-120.3016667	6.438	2.53	md	36	53	0.01622	0.1	nc	nc1095301	2016-12-11T06:21:12.830Z	10 km NNE of Coalinga, California	earthquake	0.16	0.21	0.16	41	reviewed	nc	nc
5/23/1983	4:13:25	36.2481667	-120.3593333	9.523	2.09	md	31	64	0.01351	0.14	nc	nc1095294	2016-12-11T06:20:40.530Z	12 km N of Coalinga, California	earthquake	0.25	0.34	0.18	25	reviewed	nc	nc
5/22/1983	21:54:37	36.295	-120.3193333	5.266	2.39	md	33	65	0.00991	0.14	nc	nc1095271	2016-12-11T06:19:00.950Z	17 km NNE of Coalinga, California	earthquake	0.19	0.24	0.21	35	reviewed	nc	nc
5/22/1983	21:06:22	36.275	-120.3685	11.17	2.4	md	38	33	0.05315	0.09	nc	nc1095265	2016-12-11T06:18:33.300Z	15 km N of Coalinga, California	earthquake	0.2	0.37	0.11	46	reviewed	nc	nc
5/22/1983	21:03:36	36.2325	-120.3608333	9.338	2.78	md	57	34	0.02252	0.1	nc	nc1095264	2016-12-11T06:18:24.990Z	10 km N of Coalinga, California	earthquake	0.13	0.18	0.14	62	reviewed	nc	nc
5/22/1983	19:46:47	36.1841667	-120.2393333	7.645	2.64	md	32	55	0.05045	0.1	nc	nc1095250	2016-12-11T06:17:25.760Z	Central California	earthquake	0.2	0.32	0.18	49	reviewed	nc	nc
5/22/1983	18:01:29	36.1121667	-120.1746667	7.478	2.11	md	31	55	0.07297	0.14	nc	nc1095223	2016-12-11T06:15:26.490Z	11 km SSW of Huron, California	earthquake	0.24	0.54	0.19	32	reviewed	nc	nc
5/22/1983	17:49:48	36.199	-120.2703333	7.699	2.02	md	23	67	0.02252	0.12	nc	nc1095218	2016-12-11T06:15:04.793Z	10 km NE of Coalinga, California	earthquake	0.27	0.31	0.12	24	reviewed	nc	nc
5/22/1983	10:55:57	36.187	-120.2973333	9.138	2.1	md	32	103	0.03333	0.13	nc	nc1095162	2016-12-11T06:11:25.890Z	7 km NE of Coalinga, California	earthquake	0.24	0.3	0.19	30	reviewed	nc	nc
5/22/1983	9:50:35	36.1893333	-120.3251667	7.132	2.37	md	40	39	0.02342	0.14	nc	nc1095158	2016-12-11T06:11:04.440Z	6 km NNE of Coalinga, California	earthquake	0.21	0.23	0.17	33	reviewed	nc	nc
5/22/1983	8:39:21	36.1483333	-120.2025	11.823	4.04	md	65	60	0.07838	0.13	nc	nc1095152	2016-12-11T06:10:37.210Z	10 km SW of Huron, California	earthquake	0.17	0.29	0.19	22	reviewed	nc	nc
5/22/1983	7:53:03	36.0943333	-120.2208333	6.132	2.33	md	35	73	0.08559	0.09	nc	nc1095149	2016-12-11T06:10:20.460Z	12 km NW of Avenal, California	earthquake	0.19	0.58	0.15	41	reviewed	nc	nc
5/22/1983	6:36:53	36.1355	-120.1996667	10.558	2.23	md	30	58	0.08198	0.08	nc	nc1095147	2016-12-11T06:10:09.030Z	11 km SW of Huron, California	earthquake	0.23	0.41	0.19	38	reviewed	nc	nc
5/22/1983	6:36:10	36.2443333	-120.3743333	8.606	2.01	md	34	37	0.02613	0.07	nc	nc1095146	2016-12-11T06:09:58.900Z	11 km N of Coalinga, California	earthquake	0.16	0.25	0.18	28	reviewed	nc	nc
5/22/1983	3:26:53	36.2478333	-120.334	8.533	2.31	md	41	53	0.007207	0.1	nc	nc1095136	2016-12-11T06:09:13.780Z	12 km N of Coalinga, California	earthquake	0.19	0.19	0.12	41	reviewed	nc	nc
5/22/1983	2:03:06	36.0936667	-120.17	9.589	2.2	md	33	112	0.07928	0.16	nc	nc1095134	2016-12-11T06:09:02.390Z	10 km NNW of Avenal, California	earthquake	0.34	0.61	0.26	31	reviewed	nc	nc
5/22/1983	1:47:55	36.178	-120.2343333	8.002	2.07	md	21	69	0.05766	0.13	nc	nc1095132	2016-12-11T06:08:52.417Z	12 km ENE of Coalinga, California	earthquake	0.36	0.7	0.17	18	reviewed	nc	nc
5/21/1983	21:11:02	36.2783333	-120.4011667	6.113	2.26	md	39	35	0.03153	0.12	nc	nc1095123	2016-12-11T06:08:09.320Z	15 km NNW of Coalinga, California	earthquake	0.17	0.28	0.16	33	reviewed	nc	nc
5/21/1983	20:00:23	36.179	-120.3015	9.253	3.06	md	45	45	0.02793	0.13	nc	nc1095120	2016-12-11T06:07:54.380Z	6 km NE of Coalinga, California	earthquake	0.19	0.16	0.17	46	reviewed	nc	nc
5/21/1983	17:32:41	36.2263333	-120.2643333	13.111	2.28	md	35	96	0.01532	0.1	nc	nc1095114	2016-12-11T06:07:25.090Z	12 km NE of Coalinga, California	earthquake	0.19	0.26	0.12	30	reviewed	nc	nc
5/21/1983	16:59:48	36.188	-120.2461667	10.035	2.53	md	38	73	0.04324	0.09	nc	nc1095113	2016-12-11T06:07:17.840Z	11 km ENE of Coalinga, California	earthquake	0.21	0.31	0.14	51	reviewed	nc	nc
5/21/1983	16:29:21	36.1758333	-120.2863333	10.74	2.55	md	38	62	0.03964	0.1	nc	nc1095111	2016-12-11T06:07:04.020Z	7 km ENE of Coalinga, California	earthquake	0.19	0.15	0.14	45	reviewed	nc	nc
5/21/1983	10:05:41	36.1843333	-120.245	11.513	3.34	md	62	53	0.03063	0.09	nc	nc1095088	2016-12-11T06:05:17.380Z	Central California	earthquake	0.12	0.13	0.14	62	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/21/1983	7:12:24	36.0976667	-120.188	6.246	2.41	md	25	82	0.07297	0.2	nc	nc1095078	2016-12-11T06:04:36.171Z	11 km NNW of Avenal, California	earthquake	0.39	1.04	0.18	20	reviewed	nc	nc
5/21/1983	2:27:28	36.2476667	-120.3303333	7.69	2.04	md	28	41	0.00991	0.1	nc	nc1095060	2016-12-11T06:03:21.704Z	12 km NNE of Coalinga, California	earthquake	0.21	0.24	0.22	20	reviewed	nc	nc
5/20/1983	16:56:02	36.2541667	-120.3161667	5.012	2.21	md	21	84	0.02252	0.09	nc	nc1095031	2016-12-11T06:01:27.365Z	13 km NNE of Coalinga, California	earthquake	0.19	0.3	0.14	19	reviewed	nc	nc
5/20/1983	16:04:24	36.2148333	-120.2923333	8.001	2.1	md	13	65	0.05315	0.07	nc	nc1095028	2016-12-11T06:01:16.269Z	10 km NE of Coalinga, California	earthquake	0.27	0.44	0.09	12	reviewed	nc	nc
5/20/1983	13:05:39	36.2715	-120.3463333	11.435	2.47	md	34	66	0.02252	0.09	nc	nc1095019	2016-12-11T06:00:40.870Z	14 km N of Coalinga, California	earthquake	0.22	0.36	0.16	43	reviewed	nc	nc
5/20/1983	12:22:34	36.1833333	-120.2471667	10.216	3.06	md	49	52	0.03063	0.13	nc	nc1095016	2016-12-11T06:00:25.130Z	11 km ENE of Coalinga, California	earthquake	0.2	0.24	0.13	58	reviewed	nc	nc
5/20/1983	11:50:16	36.2538333	-120.3365	7.444	2.36	md	37	72	0.007207	0.14	nc	nc1095013	2016-12-11T06:00:06.310Z	12 km N of Coalinga, California	earthquake	0.25	0.29	0.16	36	reviewed	nc	nc
5/20/1983	11:30:36	36.2181667	-120.2953333	7.154	2.19	md	15	99	0.04955	0.11	nc	nc1095010	2016-12-11T05:59:50.063Z	10 km NE of Coalinga, California	earthquake	0.34	0.5	0.19	12	reviewed	nc	nc
5/20/1983	11:02:58	36.1578333	-120.2416667	11.043	2.83	md	14	140	0.04685	0.07	nc	nc1095005	2016-12-11T05:59:30.287Z	10 km E of Coalinga, California	earthquake	0.38	0.41	0.17	22	reviewed	nc	nc
5/20/1983	11:01:41	36.2171667	-120.2956667	7.701	3.56	md	36	56	0.02703	0.09	nc	nc1095004	2016-12-11T05:59:24.610Z	10 km NE of Coalinga, California	earthquake	0.17	0.19	0.3	12	reviewed	nc	nc
5/20/1983	8:51:59	36.2016667	-120.329	10.409	2.29	md	36	74	0.04865	0.08	nc	nc1094997	2016-12-11T05:58:53.940Z	7 km NNE of Coalinga, California	earthquake	0.23	0.2	0.16	50	reviewed	nc	nc
5/20/1983	8:20:42	36.1651667	-120.2408333	11.748	2.06	md	24	57	0.04955	0.07	nc	nc1094995	2016-12-11T05:58:42.060Z	11 km ENE of Coalinga, California	earthquake	0.24	0.45	0.26	28	reviewed	nc	nc
5/20/1983	7:47:44	36.2536667	-120.3583333	6.429	2.11	md	26	73	0.1126	0.06	nc	nc1094993	2016-12-11T05:58:31.480Z	12 km N of Coalinga, California	earthquake	0.17	0.46	0.19	27	reviewed	nc	nc
5/20/1983	7:45:28	36.2518333	-120.317	8.074	2.07	md	35	62	0.02072	0.07	nc	nc1094992	2016-12-11T05:58:23.680Z	13 km NNE of Coalinga, California	earthquake	0.18	0.21	0.18	25	reviewed	nc	nc
5/20/1983	7:41:13	36.244	-120.2631667	6.494	2.97	md	43	83	0.06486	0.09	nc	nc1094991	2016-12-11T05:58:14.020Z	14 km NE of Coalinga, California	earthquake	0.17	0.26	0.2	61	reviewed	nc	nc
5/20/1983	7:39:27	36.2493333	-120.3221667	8.343	2.47	md	47	48	0.05045	0.09	nc	nc1094990	2016-12-11T05:58:00.800Z	12 km NNE of Coalinga, California	earthquake	0.16	0.26	0.17	41	reviewed	nc	nc
5/20/1983	4:38:03	36.2175	-120.302	10.318	2.06	md	29	53	0.04595	0.09	nc	nc1094980	2016-12-11T05:57:16.410Z	10 km NNE of Coalinga, California	earthquake	0.21	0.34	0.17	22	reviewed	nc	nc
5/20/1983	3:13:11	36.4363333	-119.8898333	-0.453	2.14	md	9	272	0.4117	0.14	nc	nc1094977	2016-12-11T05:57:02.857Z	2 km WNW of Riverdale, California	earthquake	3.57	7.3	0.52	6	reviewed	nc	nc
5/20/1983	2:44:27	36.0138333	-120.5665	4.919	2.11	md	16	75	0.06036	0.05	nc	nc1094975	2016-12-11T05:56:55.209Z	17 km NW of Parkfield, California	earthquake	0.31	0.55	0.22	13	reviewed	nc	nc
5/20/1983	2:11:16	36.1645	-120.262	9.839	2.05	md	25	51	0.03243	0.09	nc	nc1094974	2016-12-11T05:56:51.115Z	9 km ENE of Coalinga, California	earthquake	0.24	0.35	0.23	27	reviewed	nc	nc
5/20/1983	2:04:07	36.2365	-120.3003333	11.288	2.14	md	31	87	0.03694	0.16	nc	nc1094973	2016-12-11T05:56:46.748Z	12 km NNE of Coalinga, California	earthquake	0.36	0.46	0.16	28	reviewed	nc	nc
5/20/1983	0:46:51	36.1803333	-120.2461667	7.073	2.62	md	34	55	0.05135	0.09	nc	nc1094966	2016-12-11T05:56:16.840Z	11 km ENE of Coalinga, California	earthquake	0.16	0.29	0.18	37	reviewed	nc	nc
5/19/1983	23:26:06	36.2548333	-120.434	3.54	3.6	md	59	32	0.04054	0.13	nc	nc1094961	2016-12-11T05:55:50.870Z	14 km NNW of Coalinga, California	earthquake	0.14	0.37	0.1	38	reviewed	nc	nc
5/19/1983	23:06:39	36.2471667	-120.3606667	9.037	2.59	md	39	49	0.01441	0.1	nc	nc1094959	2016-12-11T05:55:35.160Z	11 km N of Coalinga, California	earthquake	0.2	0.24	0.19	44	reviewed	nc	nc
5/19/1983	21:43:23	36.2818333	-120.3948333	9.507	2.36	md	38	83	0.03333	0.1	nc	nc1094955	2016-12-11T05:55:13.320Z	16 km N of Coalinga, California	earthquake	0.21	0.26	0.16	35	reviewed	nc	nc
5/19/1983	21:12:06	36.0695	-120.1993333	3.105	2.24	md	18	91	0.07297	0.08	nc	nc1094952	2016-12-11T05:54:56.780Z	9 km NW of Avenal, California	earthquake	0.39	1.28	0.21	25	reviewed	nc	nc
5/19/1983	19:54:39	36.2565	-120.3393333	8.339	2.56	md	40	47	0.008108	0.08	nc	nc1094949	2016-12-11T05:54:38.630Z	13 km N of Coalinga, California	earthquake	0.14	0.13	0.26	18	reviewed	nc	nc
5/19/1983	19:52:40	36.1765	-120.2901667	9.519	2.61	md	35	98	0.01802	0.2	nc	nc1094948	2016-12-11T05:54:27.630Z	7 km ENE of Coalinga, California	earthquake	0.38	0.17	0.29	21	reviewed	nc	nc
5/19/1983	18:58:55	36.2621667	-120.3143333	8.696	2.03	md	25	78	0.02613	0.09	nc	nc1094946	2016-12-11T05:54:16.803Z	14 km NNE of Coalinga, California	earthquake	0.23	0.28	0.21	13	reviewed	nc	nc
5/19/1983	18:48:02	36.1791667	-120.2906667	9.559	2.24	md	24	106	0.01982	0.13	nc	nc1094945	2016-12-11T05:54:12.901Z	7 km NE of Coalinga, California	earthquake	0.33	0.27	0.12	19	reviewed	nc	nc
5/19/1983	18:18:24	36.2413333	-120.3446667	8.928	2.03	md	22	73	0.008108	0.1	nc	nc1094944	2016-12-11T05:54:08.414Z	11 km N of Coalinga, California	earthquake	0.28	0.26	0.1	15	reviewed	nc	nc
5/19/1983	17:14:29	36.3201667	-120.311	5.035	2.28	md	21	73	0.05045	0.12	nc	nc1094941	2016-12-11T05:53:56.087Z	20 km S of Cantua Creek, California	earthquake	0.28	0.37	0.16	19	reviewed	nc	nc
5/19/1983	16:53:41	36.2176667	-120.2993333	6.464	2.07	md	15	76	0.01261	0.09	nc	nc1094939	2016-12-11T05:53:48.436Z	10 km NNE of Coalinga, California	earthquake	0.25	0.23	0.19	13	reviewed	nc	nc
5/19/1983	15:57:39	36.1475	-120.2121667	6.286	2.29	md	25	85	0.07027	0.17	nc	nc1094936	2016-12-11T05:53:36.500Z	11 km WSW of Huron, California	earthquake	0.31	0.52	0.2	21	reviewed	nc	nc
5/19/1983	15:39:33	36.0848333	-120.1786667	6.642	2.31	md	24	76	0.06126	0.11	nc	nc1094934	2016-12-11T05:53:26.650Z	10 km NNW of Avenal, California	earthquake	0.35	0.68	0.29	27	reviewed	nc	nc
5/19/1983	11:05:30	36.2278333	-120.274	13.512	4.02	md	63	44	0.01261	0.1	nc	nc1094916	2016-12-11T05:52:09.230Z	12 km NE of Coalinga, California	earthquake	0.14	0.17	0.11	24	reviewed	nc	nc
5/19/1983	10:52:55	36.0291667	-120.5893333	3.873	2.29	md	36	94	0.03964	0.06	nc	nc1094913	2016-12-11T05:51:50.970Z	20 km NW of Parkfield, California	earthquake	0.2	0.41	0.15	23	reviewed	nc	nc
5/19/1983	9:19:26	36.2503333	-120.3425	8.168	2.06	md	22	70	0.0009009	0.19	nc	nc1094907	2016-12-11T05:51:21.981Z	12 km N of Coalinga, California	earthquake	0.37	0.39	0.19	16	reviewed	nc	nc
5/19/1983	9:15:56	36.187	-120.2533333	13.123	2.1	md	21	58	0.05135	0.09	nc	nc1094906	2016-12-11T05:51:17.522Z	10 km ENE of Coalinga, California	earthquake	0.3	0.54	0.22	21	reviewed	nc	nc
5/19/1983	8:49:41	36.2025	-120.261	8.464	2.43	md	37	57	0.008108	0.07	nc	nc1094904	2016-12-11T05:51:08.220Z	11 km NE of Coalinga, California	earthquake	0.15	0.16	0.17	41	reviewed	nc	nc
5/19/1983	8:38:52	36.2598333	-120.3681667	8.563	2.6	md	47	37	0.01622	0.11	nc	nc1094902	2016-12-11T05:50:55.860Z	13 km N of Coalinga, California	earthquake	0.16	0.17	0.17	46	reviewed	nc	nc
5/19/1983	7:23:39	36.2791667	-120.3998333	8.403	3.19	md	50	66	0.01982	0.11	nc	nc1094899	2016-12-11T05:50:38.610Z	15 km NNW of Coalinga, California	earthquake	0.19	0.22	0.14	50	reviewed	nc	nc
5/19/1983	6:43:13	36.2225	-120.2916667	6.844	2.55	md	34	52	0.04955	0.08	nc	nc1094896	2016-12-11T05:50:20.100Z	11 km NE of Coalinga, California	earthquake	0.16	0.26	0.15	39	reviewed	nc	nc
5/19/1983	6:22:31	36.1593333	-120.271	9.532	2.06	md	19	68	0.02432	0.06	nc	nc1094893	2016-12-11T05:50:03.980Z	8 km ENE of Coalinga, California	earthquake	0.25	0.39	0.25	25	reviewed	nc	nc
5/19/1983	6:10:15	36.1636667	-120.2326667	9.044	2.22	md	33	59	0.05315	0.11	nc	nc1094891	2016-12-11T05:49:52.360Z	11 km ENE of Coalinga, California	earthquake	0.19	0.32	0.22	30	reviewed	nc	nc
5/19/1983	4:54:53	36.1528333	-120.3158333	6.676	2.39	md	39	68	0.01441	0.38	nc	nc1094887	2016-12-11T05:49:30.200Z	4 km ENE of Coalinga, California	earthquake	0.51	0.56	0.15	41	reviewed	nc	nc
5/19/1983	4:24:43	36.0708333	-120.1821667	6.475	2.53	md	35	85	0.05946	0.11	nc	nc1094886	2016-12-11T05:49:22.070Z	8 km NNW of Avenal, California	earthquake	0.2	0.41	0.17	37	reviewed	nc	nc
5/19/1983	3:36:02	36.2636667	-120.2955	6.096	2.14	md	6	191	0.04054	0.02	nc	nc1094882	2016-12-11T05:48:59.865Z	14 km NNE of Coalinga, California	earthquake	0.77	0.45	0.12	8	reviewed	nc	nc
5/19/1983	3:12:19	36.1523333	-120.2271667	9.67	2.48	md	33	55	0.05856	0.1	nc	nc1094881	2016-12-11T05:48:54.750Z	12 km E of Coalinga, California	earthquake	0.22	0.4	0.15	34	reviewed	nc	nc
5/19/1983	3:02:05	36.1528333	-120.2281667	9.588	2.65	md	35	54	0.05766	0.11	nc	nc1094879	2016-12-11T05:48:42.470Z	11 km E of Coalinga, California	earthquake	0.19	0.37	0.11	32	reviewed	nc	nc
5/19/1983	1:33:36	36.1073333	-120.1945	10.278	2.5	md	27	64	0.08288	0.12	nc	nc1094876	2016-12-11T05:48:25.820Z	12 km NNW of Avenal, California	earthquake	0.28	0.54	0.2	36	reviewed	nc	nc
5/18/1983	22:03:51	36.2705	-120.359	9.904	2.02	md	20	72	0.02523	0.08	nc	nc1094868	2016-12-11T05:47:49.772Z	14 km N of Coalinga, California	earthquake	0.26	0.23	0.21	19	reviewed	nc	nc
5/18/1983	20:39:32	36.2553333	-120.3546667	7.072	3.49	md	33	69	0.01171	0.14	nc	nc1094865	2016-12-11T05:47:35.590Z	12 km N of Coalinga, California	earthquake	0.23	0.24	0.14	60	reviewed	nc	nc
5/18/1983	20:35:10	36.3413333	-120.2781667	5.81	2.05	md	9	130	0.02883	0.02	nc	nc1094864	2016-12-11T05:47:28.675Z	18 km S of Cantua Creek, California	earthquake	0.54	0.41	0.2	9	reviewed	nc	nc
5/18/1983	18:15:56	36.1116667	-120.1898333	7.632	2.34	md	27	59	0.08288	0.14	nc	nc1094859	2016-12-11T05:47:08.390Z	12 km SW of Huron, California	earthquake	0.23	0.59	0.24	24	reviewed	nc	nc
5/18/1983	18:06:52	36.2471667	-120.3285	8.13	2.62	md	38	41	0.01171	0.08	nc	nc1094858	2016-12-11T05:47:00.610Z	12 km NNE of Coalinga, California	earthquake	0.17	0.19	0.15	36	reviewed	nc	nc
5/18/1983	18:00:48	36.1606667	-120.27	9.718	2.01	md	28	73	0.02523	0.1	nc	nc1094856	2016-12-11T05:46:48.950Z	8 km ENE of Coalinga, California	earthquake	0.21	0.35	0.19	24	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/18/1983	17:23:12	35.251	-119.375	-1.386	2.2	mh	8	128	0.4201	0.16	ci	ci1107989	2016-02-02T20:00:37.160Z	14km NNE of Taft, CA	earthquake	1.21	31.61		0	reviewed	ci	ci
5/18/1983	9:39:11	36.1908333	-120.2545	5.278	2.28	md	23	58	0.03694	0.2	nc	nc1094840	2016-12-11T05:45:43.692Z	11 km ENE of Coalinga, California	earthquake	0.4	0.58	0.1	22	reviewed	nc	nc
5/18/1983	8:13:06	36.0848333	-120.1996667	7.508	2.27	md	30	78	0.07658	0.11	nc	nc1094836	2016-12-11T05:45:26.820Z	10 km NW of Avenal, California	earthquake	0.24	0.54	0.27	21	reviewed	nc	nc
5/18/1983	7:34:19	36.1493333	-120.2278333	9.608	2.02	md	24	54	0.05766	0.09	nc	nc1094834	2016-12-11T05:45:11.620Z	11 km E of Coalinga, California	earthquake	0.25	0.46	0.25	21	reviewed	nc	nc
5/18/1983	6:15:27	36.2686667	-120.4031667	8.408	2.2	md	30	102	0.02432	0.1	nc	nc1094825	2016-12-11T05:44:36.782Z	14 km NNW of Coalinga, California	earthquake	0.31	0.37	0.15	20	reviewed	nc	nc
5/18/1983	5:05:49	36.1728333	-120.2826667	8.133	2.28	md	29	66	0.04595	0.16	nc	nc1094822	2016-12-11T05:44:23.930Z	7 km ENE of Coalinga, California	earthquake	0.35	0.56	0.16	29	reviewed	nc	nc
5/18/1983	4:53:58	36.1535	-120.2533333	6.891	2.1	md	19	87	0.03694	0.08	nc	nc1094820	2016-12-11T05:44:13.998Z	9 km E of Coalinga, California	earthquake	0.36	0.26	0.42	16	reviewed	nc	nc
5/18/1983	4:33:07	36.2416667	-120.3401667	9.398	2.05	md	24	56	0.008108	0.1	nc	nc1094817	2016-12-11T05:44:02.203Z	11 km N of Coalinga, California	earthquake	0.3	0.28	0.29	17	reviewed	nc	nc
5/18/1983	3:40:52	36.2126667	-120.3085	8.844	2.14	md	22	69	0.02072	0.09	nc	nc1094813	2016-12-11T05:43:46.905Z	9 km NNE of Coalinga, California	earthquake	0.19	0.23	0.24	21	reviewed	nc	nc
5/18/1983	3:18:51	36.2051667	-120.2578333	7.814	2.65	md	39	50	0.08198	0.11	nc	nc1094812	2016-12-11T05:43:40.870Z	11 km NE of Coalinga, California	earthquake	0.17	0.39	0.12	38	reviewed	nc	nc
5/18/1983	2:46:49	36.1878333	-120.2508333	8.765	3.41	md	12	64	0.02523	0.18	nc	nc1094809	2016-12-11T05:43:24.019Z	11 km ENE of Coalinga, California	earthquake	0.54	0.7	0.14	8	reviewed	nc	nc
5/18/1983	2:22:27	36.1686667	-120.2906667	8.168	3.04	md	34	65	0.01892	0.11	nc	nc1094807	2016-12-11T05:43:15.400Z	7 km ENE of Coalinga, California	earthquake	0.24	0.34	0.17	49	reviewed	nc	nc
5/18/1983	0:37:08	36.2268333	-120.3306667	8.258	2.01	md	25	59	0.02432	0.09	nc	nc1094801	2016-12-11T05:42:47.202Z	10 km NNE of Coalinga, California	earthquake	0.28	0.26	0.2	22	reviewed	nc	nc
5/17/1983	23:39:24	36.2425	-120.3808333	7.6	2.19	md	31	33	0.008108	0.11	nc	nc1094796	2016-12-11T05:42:19.780Z	11 km N of Coalinga, California	earthquake	0.21	0.24	0.18	25	reviewed	nc	nc
5/17/1983	22:41:45	35.9838333	-120.5456667	2.917	2.16	md	21	68	0.05856	0.08	nc	nc1094791	2016-12-11T05:41:58.088Z	13 km NW of Parkfield, California	earthquake	0.25	0.82	0.14	13	reviewed	nc	nc
5/17/1983	22:22:13	36.2266667	-120.3651667	7.96	3.55	md	57	38	0.02793	0.08	nc	nc1094790	2016-12-11T05:41:52.750Z	9 km N of Coalinga, California	earthquake	0.14	0.21	0.12	56	reviewed	nc	nc
5/17/1983	21:31:51	36.1146667	-120.2165	7.97	2.24	md	19	161	0.118	0.19	nc	nc1094784	2016-12-11T05:41:26.603Z	Central California	earthquake	0.88	1.28	0.28	19	reviewed	nc	nc
5/17/1983	20:59:38	36.1016667	-120.221	2.867	2.15	md	17	77	0.0991	0.14	nc	nc1094779	2016-12-11T05:41:07.226Z	13 km ESE of Coalinga, California	earthquake	0.36	1.02	0.13	12	reviewed	nc	nc
5/17/1983	18:58:42	36.1923333	-120.2756667	8.967	2.14	md	23	105	0.02703	0.13	nc	nc1094771	2016-12-11T05:40:35.967Z	9 km NE of Coalinga, California	earthquake	0.32	0.5	0.12	22	reviewed	nc	nc
5/17/1983	18:16:35	36.2723333	-120.323	9.75	2.12	md	22	117	0.02432	0.12	nc	nc1094766	2016-12-11T05:40:15.712Z	15 km NNE of Coalinga, California	earthquake	0.28	0.24	0.19	19	reviewed	nc	nc
5/17/1983	18:13:06	36.2056667	-120.2795	8.882	2.91	md	36	56	0.01351	0.11	nc	nc1094765	2016-12-11T05:40:10.150Z	10 km NE of Coalinga, California	earthquake	0.21	0.14	0.15	43	reviewed	nc	nc
5/17/1983	16:23:04	36.2131667	-120.2796667	11.47	2.64	md	36	92	0.007207	0.13	nc	nc1094756	2016-12-11T05:39:31.180Z	10 km NE of Coalinga, California	earthquake	0.34	0.45	0.16	36	reviewed	nc	nc
5/17/1983	14:14:47	36.2333333	-120.3291667	9.46	2.13	md	28	59	0.01982	0.13	nc	nc1094744	2016-12-11T05:38:38.240Z	10 km NNE of Coalinga, California	earthquake	0.28	0.33	0.2	22	reviewed	nc	nc
5/17/1983	14:02:44	36.1583333	-120.2105	8.654	2.61	md	32	91	0.08468	0.09	nc	nc1094743	2016-12-11T05:38:30.810Z	10 km WSW of Huron, California	earthquake	0.21	0.42	0.15	42	reviewed	nc	nc
5/17/1983	13:53:49	36.157	-120.2053333	7.868	2.25	md	17	94	0.08919	0.13	nc	nc1094741	2016-12-11T05:38:18.529Z	10 km WSW of Huron, California	earthquake	0.42	0.93	0.09	10	reviewed	nc	nc
5/17/1983	12:24:51	36.2321667	-120.239	5.341	2.02	md	20	104	0.03964	0.1	nc	nc1094736	2016-12-11T05:37:59.502Z	12 km WNW of Huron, California	earthquake	0.23	0.39	0.22	18	reviewed	nc	nc
5/17/1983	11:49:42	36.1076667	-120.1941667	9.471	2.37	md	26	92	0.08288	0.13	nc	nc1094731	2016-12-11T05:37:38.800Z	12 km NNW of Avenal, California	earthquake	0.39	0.76	0.14	28	reviewed	nc	nc
5/17/1983	11:40:52	36.1851667	-120.3091667	9.11	2.68	md	39	84	0.03874	0.09	nc	nc1094729	2016-12-11T05:37:27.110Z	6 km NE of Coalinga, California	earthquake	0.23	0.36	0.14	45	reviewed	nc	nc
5/17/1983	9:21:18	36.1846667	-120.2876667	10.223	2.34	md	30	62	0.03423	0.09	nc	nc1094717	2016-12-11T05:36:34.680Z	8 km NE of Coalinga, California	earthquake	0.27	0.46	0.18	41	reviewed	nc	nc
5/17/1983	7:42:11	36.2616667	-120.3721667	9.32	3.13	md	45	36	0.01532	0.08	nc	nc1094709	2016-12-11T05:35:52.320Z	13 km N of Coalinga, California	earthquake	0.19	0.22	0.17	59	reviewed	nc	nc
5/17/1983	5:54:11	36.2216667	-120.2766667	5.14	2.14	md	27	63	0.007207	0.21	nc	nc1094702	2016-12-11T05:35:21.570Z	11 km NE of Coalinga, California	earthquake	0.35	0.53	0.22	21	reviewed	nc	nc
5/17/1983	4:50:15	36.1885	-120.3115	9.653	2.16	md	9	140	0.03694	0.18	nc	nc1094701	2016-12-11T05:35:15.937Z	6 km NE of Coalinga, California	earthquake	0.97	1.26	0.3	7	reviewed	nc	nc
5/17/1983	4:46:08	36.1386667	-120.2358333	10.989	2.04	md	20	79	0.08919	0.06	nc	nc1094700	2016-12-11T05:35:11.080Z	Central California	earthquake	0.26	0.69	0.22	23	reviewed	nc	nc
5/17/1983	3:36:09	36.172	-120.3038333	8.503	2.21	md	24	110	0.04955	0.1	nc	nc1094697	2016-12-11T05:34:55.323Z	6 km NE of Coalinga, California	earthquake	0.29	0.47	0.17	22	reviewed	nc	nc
5/17/1983	2:34:02	36.2106667	-120.2786667	11.093	2.79	md	37	132	0.009009	0.11	nc	nc1094687	2016-12-11T05:34:15.940Z	10 km NE of Coalinga, California	earthquake	0.24	0.29	0.17	46	reviewed	nc	nc
5/17/1983	1:42:59	36.2348333	-120.3038333	11.868	2.47	md	33	87	0.02252	0.11	nc	nc1094683	2016-12-11T05:33:56.930Z	11 km NNE of Coalinga, California	earthquake	0.35	0.29	0.14	36	reviewed	nc	nc
5/17/1983	1:31:18	36.1816667	-120.296	9.229	2.04	md	21	105	0.03784	0.1	nc	nc1094682	2016-12-11T05:33:50.640Z	7 km NE of Coalinga, California	earthquake	0.33	0.55	0.18	21	reviewed	nc	nc
5/17/1983	0:17:37	36.2731667	-120.3435	12.498	2.49	md	31	82	0.03604	0.13	nc	nc1094680	2016-12-11T05:33:41.740Z	14 km N of Coalinga, California	earthquake	0.32	0.39	0.17	37	reviewed	nc	nc
5/17/1983	0:16:01	36.2148333	-120.3473333	5.751	2.11	md	23	86	0.03423	0.15	nc	nc1094679	2016-12-11T05:33:33.479Z	8 km N of Coalinga, California	earthquake	0.33	0.47	0.18	14	reviewed	nc	nc
5/16/1983	22:47:17	36.2525	-120.284	6.421	2.22	md	14	162	0.03423	0.09	nc	nc1094675	2016-12-11T05:33:17.944Z	14 km NNE of Coalinga, California	earthquake	0.39	0.26	0.23	15	reviewed	nc	nc
5/16/1983	19:47:34	36.0926667	-120.2091667	7.017	2.1	md	17	78	0.08649	0.18	nc	nc1094666	2016-12-11T05:32:44.070Z	12 km NW of Avenal, California	earthquake	0.49	1.17	0.18	15	reviewed	nc	nc
5/16/1983	19:45:38	36.0913333	-120.2038333	7.016	2.81	md	30	112	0.08198	0.08	nc	nc1094665	2016-12-11T05:32:38.970Z	11 km NW of Avenal, California	earthquake	0.26	0.5	0.12	36	reviewed	nc	nc
5/16/1983	19:38:00	36.1791667	-120.2961667	9.109	2.09	md	22	108	0.04054	0.13	nc	nc1094664	2016-12-11T05:32:32.699Z	7 km NE of Coalinga, California	earthquake	0.31	0.49	0.11	17	reviewed	nc	nc
5/16/1983	19:31:38	36.294	-120.3125	4.021	2.17	md	17	71	0.004505	0.07	nc	nc1094662	2016-12-11T05:32:25.041Z	17 km NNE of Coalinga, California	earthquake	0.27	0.22	0.16	11	reviewed	nc	nc
5/16/1983	19:09:37	36.1721667	-120.2975	9.191	3.37	md	43	52	0.04054	0.14	nc	nc1094660	2016-12-11T05:32:16.350Z	6 km ENE of Coalinga, California	earthquake	0.23	0.37	0.12	45	reviewed	nc	nc
5/16/1983	18:40:16	36.1798333	-120.3011667	10.592	3.21	md	39	59	0.01532	0.14	nc	nc1094659	2016-12-11T05:32:06.270Z	6 km NE of Coalinga, California	earthquake	0.3	0.17	0.13	42	reviewed	nc	nc
5/16/1983	18:26:59	36.1766667	-120.2405	10.226	3.23	md	21	143	0.03874	0.15	nc	nc1094657	2016-12-11T05:31:54.286Z	11 km ENE of Coalinga, California	earthquake	0.53	0.2	0.17	37	reviewed	nc	nc
5/16/1983	17:35:30	36.1255	-120.2246667	8.001	2.11	md	19	82	0.1054	0.12	nc	nc1094655	2016-12-11T05:31:46.526Z	12 km E of Coalinga, California	earthquake	0.51	1.32	0.14	16	reviewed	nc	nc
5/16/1983	16:13:25	36.2248333	-120.371	6.66	2.52	md	17	71	0.02703	0.08	nc	nc1094651	2016-12-11T05:31:31.677Z	9 km N of Coalinga, California	earthquake	0.32	0.48	0.09	16	reviewed	nc	nc
5/16/1983	14:52:33	36.155	-120.2768333	9.436	3.06	md	42	65	0.02793	0.12	nc	nc1094644	2016-12-11T05:31:04.410Z	7 km ENE of Coalinga, California	earthquake	0.24	0.18	0.15	37	reviewed	nc	nc
5/16/1983	14:42:45	36.227	-120.3181667	5.001	2.34	md	18	85	0.02883	0.17	nc	nc1094643	2016-12-11T05:30:55.440Z	10 km NNE of Coalinga, California	earthquake	0.38	0.45	0.2	14	reviewed	nc	nc
5/16/1983	14:21:48	36.1596667	-120.2763333	10.959	3.93	md	56	88	0.02072	0.09	nc	nc1094642	2016-12-11T05:30:49.930Z	7 km ENE of Coalinga, California	earthquake	0.15	0.19	0.07	26	reviewed	nc	nc
5/16/1983	14:11:08	36.2136667	-120.2865	6.48	2.13	md	19	102	0.005405	0.06	nc	nc1094640	2016-12-11T05:30:39.205Z	10 km NE of Coalinga, California	earthquake	0.2	0.27	0.29	11	reviewed	nc	nc
5/16/1983	12:44:47	36.1078333	-120.216	5.861	2.15	md	10	102	0.0982	0.08	nc	nc1094634	2016-12-11T05:30:16.643Z	13 km ESE of Coalinga, California	earthquake	0.6	1.33	0.12	11	reviewed	nc	nc
5/16/1983	12:41:31	36.1105	-120.2108333	7.453	2.69	md	34	85	0.0955	0.11	nc	nc1094633	2016-12-11T05:30:11.680Z	13 km ESE of Coalinga, California	earthquake	0.24	0.6	0.09	38	reviewed	nc	nc
5/16/1983	12:17:42	36.117	-120.2133333	9.198	3.37	md	50	58	0.07748	0.11	nc	nc1094631	2016-12-11T05:30:00.200Z	13 km E of Coalinga, California	earthquake	0.19	0.39	0.12	27	reviewed	nc	nc
5/16/1983	10:42:52	36.174	-120.2931667	8.513	2.03	md	16	112	0.04505	0.1	nc	nc1094629	2016-12-11T05:29:49.947Z	7 km ENE of Coalinga, California	earthquake	0.39	0.58	0.18	12	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/16/1983	6:40:29	36.1838333	-120.249	6.5	2.47	md	32	72	0.04505	0.18	nc	nc1094622	2016-12-11T05:29:22.170Z	11 km ENE of Coalinga, California	earthquake	0.31	0.61	0.15	32	reviewed	nc	nc
5/16/1983	6:02:26	36.2663333	-120.3123333	5.41	2.33	md	24	65	0.02703	0.08	nc	nc1094620	2016-12-11T05:29:12.345Z	14 km NNE of Coalinga, California	earthquake	0.23	0.19	0.12	21	reviewed	nc	nc
5/16/1983	4:26:33	36.2111667	-120.3015	8.466	2.72	md	46	53	0.009009	0.13	nc	nc1094615	2016-12-11T05:28:51.800Z	9 km NNE of Coalinga, California	earthquake	0.19	0.16	0.16	43	reviewed	nc	nc
5/16/1983	3:56:55	36.2773333	-120.3845	9.561	2.05	md	24	65	0.04414	0.07	nc	nc1094613	2016-12-11T05:28:39.624Z	15 km N of Coalinga, California	earthquake	0.32	0.4	0.22	18	reviewed	nc	nc
5/16/1983	3:09:20	36.2273333	-120.3013333	4.96	2.12	md	8	86	0.01622	0.05	nc	nc1094610	2016-12-11T05:28:27.698Z	11 km NNE of Coalinga, California	earthquake	0.34	0.51	0.2	7	reviewed	nc	nc
5/16/1983	1:31:37	36.1403333	-120.2543333	12.269	3.78	md	56	47	0.03153	0.1	nc	nc1094601	2016-12-11T05:27:51.630Z	9 km E of Coalinga, California	earthquake	0.14	0.23	0.12	44	reviewed	nc	nc
5/15/1983	23:12:42	36.1831667	-120.3043333	10.175	3.04	md	42	58	0.01802	0.14	nc	nc1094598	2016-12-11T05:27:36.500Z	Central California	earthquake	0.2	0.24	0.15	48	reviewed	nc	nc
5/15/1983	22:45:21	36.202	-120.2486667	20.378	2.07	md	11	130	0.03333	0.25	nc	nc1094597	2016-12-11T05:27:27.778Z	12 km NE of Coalinga, California	earthquake	1.82	3.37	0.33	9	reviewed	nc	nc
5/15/1983	20:26:30	36.182	-120.2706667	9.859	2.71	md	25	103	0.02973	0.1	nc	nc1094590	2016-12-11T05:27:01.296Z	9 km ENE of Coalinga, California	earthquake	0.32	0.25	0.2	24	reviewed	nc	nc
5/15/1983	18:29:39	36.1266667	-120.1976667	9.501	2.14	md	27	88	0.08559	0.11	nc	nc1094584	2016-12-11T05:26:37.250Z	11 km SW of Huron, California	earthquake	0.28	0.47	0.18	27	reviewed	nc	nc
5/15/1983	18:06:42	36.2476667	-120.3233333	4.703	2.12	md	17	64	0.04234	0.13	nc	nc1094583	2016-12-11T05:26:31.157Z	12 km NNE of Coalinga, California	earthquake	0.36	0.49	0.19	18	reviewed	nc	nc
5/15/1983	16:18:38	36.1701667	-120.2386667	10.385	2.24	md	22	79	0.05225	0.08	nc	nc1094579	2016-12-11T05:26:16.131Z	11 km ENE of Coalinga, California	earthquake	0.31	0.36	0.24	18	reviewed	nc	nc
5/15/1983	16:13:39	36.2625	-120.302	3.87	2.19	md	18	105	0.03063	0.09	nc	nc1094578	2016-12-11T05:26:12.087Z	14 km NNE of Coalinga, California	earthquake	0.24	0.26	0.24	16	reviewed	nc	nc
5/15/1983	15:45:24	36.2728333	-120.3473333	9.723	2.18	md	26	74	0.03784	0.08	nc	nc1094573	2016-12-11T05:25:51.760Z	15 km N of Coalinga, CA	earthquake	0.21	0.26	0.25	25	reviewed	nc	nc
5/15/1983	12:08:16	36.2483333	-120.415	11.6	2.47	md	37	59	0.02523	0.08	nc	nc1094557	2016-12-11T05:24:47.220Z	13 km NNW of Coalinga, California	earthquake	0.2	0.3	0.12	39	reviewed	nc	nc
5/15/1983	10:18:22	36.2715	-120.3978333	8.19	2.3	md	30	49	0.02432	0.11	nc	nc1094552	2016-12-11T05:24:20.180Z	15 km NNW of Coalinga, California	earthquake	0.26	0.31	0.12	39	reviewed	nc	nc
5/15/1983	9:59:59	36.177	-120.2706667	10.262	2.1	md	31	66	0.04324	0.09	nc	nc1094549	2016-12-11T05:24:04.780Z	9 km ENE of Coalinga, California	earthquake	0.24	0.4	0.29	36	reviewed	nc	nc
5/15/1983	8:33:02	36.223	-120.28	5.068	2.29	md	31	59	0.005405	0.16	nc	nc1094542	2016-12-11T05:23:35.220Z	11 km NE of Coalinga, California	earthquake	0.27	0.3	0.15	29	reviewed	nc	nc
5/15/1983	8:08:10	36.2183333	-120.2638333	10.548	2.09	md	25	100	0.01712	0.14	nc	nc1094541	2016-12-11T05:23:26.100Z	12 km NE of Coalinga, California	earthquake	0.33	0.38	0.21	27	reviewed	nc	nc
5/15/1983	3:17:09	36.1678333	-120.293	8.794	2.71	md	35	60	0.01712	0.12	nc	nc1094530	2016-12-11T05:22:38.170Z	6 km ENE of Coalinga, California	earthquake	0.26	0.34	0.15	41	reviewed	nc	nc
5/15/1983	3:12:07	36.1835	-120.2285	8.045	2.42	md	24	93	0.05766	0.16	nc	nc1094529	2016-12-11T05:22:29.849Z	11 km W of Huron, California	earthquake	0.37	0.54	0.32	18	reviewed	nc	nc
5/15/1983	2:48:03	36.1315	-120.1773333	5.885	2	md	18	101	0.08919	0.24	nc	nc1094528	2016-12-11T05:22:25.630Z	10 km SW of Huron, California	earthquake	0.5	0.91	0.26	22	reviewed	nc	nc
5/15/1983	2:47:40	36.2651667	-120.3203333	4.41	2.7	md	21	82	0.02432	0.1	nc	nc1094527	2016-12-11T05:22:21.661Z	14 km NNE of Coalinga, California	earthquake	0.22	0.24	0.4	17	reviewed	nc	nc
5/15/1983	1:04:21	36.1395	-120.2053333	10.098	2.84	md	34	64	0.07748	0.22	nc	nc1094518	2016-12-11T05:21:46.540Z	11 km SW of Huron, California	earthquake	0.36	0.73	0.17	32	reviewed	nc	nc
5/15/1983	0:34:29	36.1076667	-120.2088333	7.708	3.01	md	25	65	0.08559	0.13	nc	nc1094517	2016-12-11T05:21:38.710Z	13 km NNW of Avenal, California	earthquake	0.28	0.68	0.3	25	reviewed	nc	nc
5/14/1983	23:36:45	36.27	-120.3181667	3.521	2	md	11	78	0.02523	0.18	nc	nc1094515	2016-12-11T05:21:29.026Z	14 km NNE of Coalinga, California	earthquake	0.38	0.84	0.03	9	reviewed	nc	nc
5/14/1983	22:27:55	36.1746667	-120.2861667	9.042	2.12	md	20	114	0.02523	0.1	nc	nc1094513	2016-12-11T05:21:21.629Z	7 km ENE of Coalinga, California	earthquake	0.3	0.34	0.16	17	reviewed	nc	nc
5/14/1983	22:22:40	36.2615	-120.368	8.88	2.2	md	28	71	0.01712	0.09	nc	nc1094512	2016-12-11T05:21:16.330Z	13 km N of Coalinga, California	earthquake	0.26	0.32	0.15	28	reviewed	nc	nc
5/14/1983	18:27:10	36.1413333	-120.202	7.848	2.19	md	28	88	0.07928	0.14	nc	nc1094501	2016-12-11T05:20:36.300Z	11 km SW of Huron, California	earthquake	0.29	0.58	0.31	27	reviewed	nc	nc
5/14/1983	17:48:43	36.2591667	-120.4126667	6.817	2.83	md	42	53	0.02523	0.13	nc	nc1094498	2016-12-11T05:20:21.490Z	14 km NNW of Coalinga, California	earthquake	0.22	0.32	0.18	50	reviewed	nc	nc
5/14/1983	17:15:35	36.1661667	-120.2835	9.447	3.46	md	39	53	0.01982	0.1	nc	nc1094494	2016-12-11T05:20:02.610Z	7 km ENE of Coalinga, California	earthquake	0.15	0.2	0.14	5	reviewed	nc	nc
5/14/1983	17:15:16	36.1856667	-120.2951667	11.834	3.74	md	50	43	0.02252	0.08	nc	nc1094493	2016-12-11T05:19:54.670Z	7 km NE of Coalinga, California	earthquake	0.14	0.13	0.14	37	reviewed	nc	nc
5/14/1983	17:10:07	36.1695	-120.2848333	9.577	2.11	md	24	114	0.02162	0.06	nc	nc1094492	2016-12-11T05:19:45.648Z	7 km ENE of Coalinga, California	earthquake	0.23	0.28	0.3	20	reviewed	nc	nc
5/14/1983	17:07:21	36.1685	-120.2843333	9.557	2.93	md	43	63	0.02072	0.08	nc	nc1094491	2016-12-11T05:19:40.160Z	7 km ENE of Coalinga, California	earthquake	0.17	0.26	0.18	56	reviewed	nc	nc
5/14/1983	14:01:59	36.1096667	-120.2358333	10.041	2.18	md	31	68	0.06667	0.13	nc	nc1094486	2016-12-11T05:19:11.310Z	11 km ESE of Coalinga, California	earthquake	0.31	0.54	0.21	27	reviewed	nc	nc
5/14/1983	13:59:19	36.1005	-120.2376667	4.238	2.68	md	36	134	0.07117	0.18	nc	nc1094485	2016-12-11T05:19:01.700Z	11 km ESE of Coalinga, California	earthquake	0.31	0.92	0.12	36	reviewed	nc	nc
5/14/1983	13:45:02	36.2048333	-120.3178333	8.874	2.35	md	36	95	0.03063	0.08	nc	nc1094484	2016-12-11T05:18:54.110Z	8 km NNE of Coalinga, California	earthquake	0.17	0.25	0.17	32	reviewed	nc	nc
5/14/1983	13:40:05	36.1898333	-120.314	8.322	2.27	md	23	90	0.03694	0.14	nc	nc1094483	2016-12-11T05:18:45.169Z	6 km NE of Coalinga, California	earthquake	0.34	0.41	0.18	22	reviewed	nc	nc
5/14/1983	12:22:38	36.0746667	-120.2108333	6.801	2.43	md	34	125	0.1054	0.09	nc	nc1094477	2016-12-11T05:18:21.440Z	10 km NW of Avenal, California	earthquake	0.26	0.56	0.16	40	reviewed	nc	nc
5/14/1983	10:30:13	36.2313333	-120.3123333	8.92	2.17	md	26	58	0.02613	0.11	nc	nc1094471	2016-12-11T05:17:55.240Z	11 km NNE of Coalinga, California	earthquake	0.26	0.26	0.21	24	reviewed	nc	nc
5/14/1983	7:33:00	36.2646667	-120.3831667	8.92	2.03	md	39	70	0.01441	0.19	nc	nc1094455	2016-12-11T05:16:45.210Z	14 km N of Coalinga, California	earthquake	0.29	0.38	0.2	27	reviewed	nc	nc
5/14/1983	7:16:18	36.17	-120.272	10.644	2.42	md	36	67	0.02883	0.09	nc	nc1094453	2016-12-11T05:16:33.780Z	8 km ENE of Coalinga, California	earthquake	0.25	0.33	0.16	39	reviewed	nc	nc
5/14/1983	6:04:24	36.1155	-120.2835	8.329	2.13	md	24	123	0.03784	0.08	nc	nc1094445	2016-12-11T05:15:56.770Z	7 km ESE of Coalinga, California	earthquake	0.32	0.47	0.2	20	reviewed	nc	nc
5/14/1983	5:54:45	36.1101667	-120.202	6.438	2.78	md	43	81	0.08919	0.17	nc	nc1094444	2016-12-11T05:15:49.600Z	13 km NNW of Avenal, California	earthquake	0.27	0.65	0.13	53	reviewed	nc	nc
5/14/1983	5:47:47	36.2926667	-120.3691667	7.562	2.16	md	27	57	0.04324	0.1	nc	nc1094442	2016-12-11T05:15:39.859Z	16 km N of Coalinga, California	earthquake	0.23	0.24	0.18	27	reviewed	nc	nc
5/14/1983	5:02:03	36.2735	-120.3098333	11.3	3.98	md	65	47	0.03604	0.09	nc	nc1094438	2016-12-11T05:15:23.150Z	15 km NNE of Coalinga, California	earthquake	0.12	0.15	0.08	35	reviewed	nc	nc
5/14/1983	3:08:48	36.266	-120.423	4.646	2.98	md	34	60	0.03514	0.22	nc	nc1094428	2016-12-11T05:14:37.790Z	15 km NNW of Coalinga, California	earthquake	0.29	0.53	0.18	48	reviewed	nc	nc
5/14/1983	2:20:48	36.2265	-120.2983333	7.543	2.64	md	10	79	0.01982	0.19	nc	nc1094426	2016-12-11T05:14:25.735Z	11 km NNE of Coalinga, California	earthquake	0.41	0.51	0.05	7	reviewed	nc	nc
5/14/1983	1:57:27	36.196	-120.3098333	9.537	2.54	md	41	114	0.03063	0.1	nc	nc1094424	2016-12-11T05:14:16.950Z	7 km NE of Coalinga, California	earthquake	0.19	0.23	0.16	47	reviewed	nc	nc
5/13/1983	22:47:56	36.129	-120.2043333	9.168	2.48	md	40	85	0.08018	0.23	nc	nc1094418	2016-12-11T05:13:50.280Z	12 km SW of Huron, California	earthquake	0.31	0.54	0.16	44	reviewed	nc	nc
5/13/1983	22:16:22	36.1068333	-120.2233333	10.412	2.07	md	19	94	0.07568	0.08	nc	nc1094415	2016-12-11T05:13:34.331Z	12 km ESE of Coalinga, California	earthquake	0.31	0.56	0.24	19	reviewed	nc	nc
5/13/1983	20:17:34	36.2428333	-120.2531667	5.62	2.05	md	30	91	0.03514	0.17	nc	nc1094406	2016-12-11T05:12:55.570Z	14 km WNW of Huron, California	earthquake	0.3	0.41	0.26	19	reviewed	nc	nc
5/13/1983	19:37:56	36.1173333	-120.2461667	8.203	2.45	md	24	85	0.05495	0.1	nc	nc1094403	2016-12-11T05:12:38.280Z	10 km ESE of Coalinga, California	earthquake	0.26	0.48	0.18	22	reviewed	nc	nc
5/13/1983	19:29:36	36.249	-120.3083333	4.274	2.4	md	23	63	0.02793	0.13	nc	nc1094402	2016-12-11T05:12:30.710Z	12 km NNE of Coalinga, California	earthquake	0.25	0.31	0.26	14	reviewed	nc	nc
5/13/1983	18:59:06	36.2073333	-120.2981667	7.334	2.78	md	14	101	0.01622	0.08	nc	nc1094400	2016-12-11T05:12:19.043Z	9 km NE of Coalinga, California	earthquake	0.35	0.26	0.25	21	reviewed	nc	nc
5/13/1983	18:32:32	36.2803333	-120.3993333	8.422	2.52	md	9	144	0.03243	0.08	nc	nc1094397	2016-12-11T05:12:07.601Z	16 km NNW of Coalinga, California	earthquake	0.48	0.38	0.28	8	reviewed	nc	nc
5/13/1983	17:01:51	36.0935	-120.199	6.571	2.31	md	26	76	0.07928	0.06	nc	nc1094390	2016-12-11T05:11:39.810Z	11 km NNW of Avenal, California	earthquake	0.19	0.51	0.22	30	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/13/1983	16:28:18	36.2668333	-120.3136667	4.937	2.78	md	30	59	0.02973	0.11	nc	nc1094387	2016-12-11T05:11:25.360Z	14 km NNE of Coalinga, California	earthquake	0.2	0.21	0.19	38	reviewed	nc	nc
5/13/1983	16:21:37	36.2126667	-120.2701667	8.022	2.1	md	31	99	0.01351	0.14	nc	nc1094386	2016-12-11T05:11:18.290Z	11 km NE of Coalinga, California	earthquake	0.24	0.32	0.19	29	reviewed	nc	nc
5/13/1983	15:45:00	36.2143333	-120.256	7.9	2.54	md	41	86	0.02342	0.19	nc	nc1094380	2016-12-11T05:10:52.040Z	12 km NE of Coalinga, California	earthquake	0.26	0.38	0.17	39	reviewed	nc	nc
5/13/1983	15:01:12	36.1118333	-120.2073333	12.059	3.75	md	19	223	0.03694	0.15	nc	nc1094378	2016-12-11T05:10:40.990Z	13 km SW of Huron, California	earthquake	0.56	0.22	0.07	29	reviewed	nc	nc
5/13/1983	15:00:34	36.2541667	-120.4071667	5.324	2.25	md	36	35	0.01892	0.2	nc	nc1094377	2016-12-11T05:10:31.300Z	13 km NNW of Coalinga, California	earthquake	0.28	0.47	0.11	21	reviewed	nc	nc
5/13/1983	14:57:22	36.1141667	-120.1836667	7.927	2.02	md	23	145	0.1009	0.08	nc	nc1094376	2016-12-11T05:10:24.070Z	12 km SW of Huron, California	earthquake	0.31	0.61	0.14	19	reviewed	nc	nc
5/13/1983	14:40:03	36.142	-120.2446667	10.691	3.46	md	39	72	0.04505	0.08	nc	nc1094374	2016-12-11T05:10:10.810Z	10 km E of Coalinga, California	earthquake	0.21	0.36	0.14	55	reviewed	nc	nc
5/13/1983	14:26:56	36.1201667	-120.2386667	8.227	2.64	md	31	112	0.05856	0.12	nc	nc1094371	2016-12-11T05:09:54.920Z	11 km E of Coalinga, California	earthquake	0.29	0.6	0.12	31	reviewed	nc	nc
5/13/1983	14:22:15	36.1223333	-120.2148333	12.198	3.43	md	55	67	0.07477	0.09	nc	nc1094370	2016-12-11T05:09:47.220Z	13 km E of Coalinga, California	earthquake	0.18	0.33	0.16	60	reviewed	nc	nc
5/13/1983	14:17:04	36.1201667	-120.2063333	10.148	2.81	md	43	82	0.08108	0.13	nc	nc1094369	2016-12-11T05:09:38.800Z	13 km SW of Huron, California	earthquake	0.26	0.43	0.17	57	reviewed	nc	nc
5/13/1983	13:56:45	36.2435	-120.2563333	6.53	2.99	md	37	59	0.03333	0.11	nc	nc1094366	2016-12-11T05:09:22.870Z	14 km WNW of Huron, California	earthquake	0.19	0.28	0.17	56	reviewed	nc	nc
5/13/1983	13:34:35	36.317	-120.291	6.786	2.69	md	35	77	0.06667	0.1	nc	nc1094361	2016-12-11T05:08:58.130Z	20 km S of Cantua Creek, California	earthquake	0.18	0.26	0.15	46	reviewed	nc	nc
5/13/1983	12:17:29	36.2478333	-120.2991667	11.3	2.21	md	23	68	0.03153	0.25	nc	nc1094358	2016-12-11T05:08:44.119Z	13 km NNE of Coalinga, California	earthquake	0.61	0.75	0.18	22	reviewed	nc	nc
5/13/1983	11:22:31	36.2183333	-120.2738333	5.177	2.33	md	27	53	0.009009	0.16	nc	nc1094352	2016-12-11T05:08:19.360Z	11 km NE of Coalinga, California	earthquake	0.32	0.38	0.19	28	reviewed	nc	nc
5/13/1983	10:24:52	36.1041667	-120.1843333	9.117	2.03	md	17	151	0.1045	0.11	nc	nc1094349	2016-12-11T05:08:03.809Z	12 km NNW of Avenal, California	earthquake	0.47	1.38	0.25	16	reviewed	nc	nc
5/13/1983	9:52:23	36.3093333	-120.3095	4.042	2.05	md	24	108	0.05586	0.09	nc	nc1094347	2016-12-11T05:07:56.168Z	19 km NNE of Coalinga, California	earthquake	0.2	0.29	0.21	24	reviewed	nc	nc
5/13/1983	9:31:47	36.0903333	-120.232	7.23	2.13	md	13	144	0.1658	0.08	nc	nc1094345	2016-12-11T05:07:48.591Z	12 km ESE of Coalinga, California	earthquake	0.48	1.18	0.27	10	reviewed	nc	nc
5/13/1983	8:39:18	36.2831667	-120.3841667	8.305	2.31	md	42	31	0.03333	0.13	nc	nc1094343	2016-12-11T05:07:40.450Z	16 km N of Coalinga, California	earthquake	0.2	0.34	0.19	35	reviewed	nc	nc
5/13/1983	8:06:39	36.2053333	-120.3098333	9.144	2.58	md	47	56	0.02432	0.12	nc	nc1094342	2016-12-11T05:07:32.980Z	8 km NNE of Coalinga, California	earthquake	0.18	0.28	0.15	49	reviewed	nc	nc
5/13/1983	7:52:26	36.0761667	-120.2095	6.351	2.13	md	25	85	0.08288	0.09	nc	nc1094338	2016-12-11T05:07:09.810Z	Central California	earthquake	0.23	0.63	0.28	18	reviewed	nc	nc
5/13/1983	6:44:05	36.163	-120.281	8.096	2.61	md	42	67	0.01892	0.17	nc	nc1094335	2016-12-11T05:06:52.490Z	7 km ENE of Coalinga, California	earthquake	0.24	0.36	0.13	43	reviewed	nc	nc
5/13/1983	4:43:33	36.1548333	-120.2796667	8.109	2.14	md	23	71	0.01622	0.12	nc	nc1094330	2016-12-11T05:06:29.172Z	7 km ENE of Coalinga, California	earthquake	0.3	0.4	0.26	22	reviewed	nc	nc
5/13/1983	1:19:20	36.189	-120.2986667	8.918	2.33	md	25	104	0.03153	0.16	nc	nc1094322	2016-12-11T05:05:52.380Z	7 km NE of Coalinga, California	earthquake	0.32	0.37	0.18	31	reviewed	nc	nc
5/12/1983	23:01:13	36.2801667	-120.417	10.153	2.33	md	28	43	0.04054	0.08	nc	nc1094310	2016-12-11T05:05:03.160Z	16 km NNW of Coalinga, California	earthquake	0.21	0.39	0.12	33	reviewed	nc	nc
5/12/1983	22:33:56	36.2868333	-120.3915	8.075	2.93	md	50	36	0.03694	0.12	nc	nc1094308	2016-12-11T05:04:51.760Z	16 km N of Coalinga, California	earthquake	0.15	0.26	0.14	53	reviewed	nc	nc
5/12/1983	21:30:54	36.2101667	-120.286	6.059	2.7	md	45	44	0.008108	0.12	nc	nc1094303	2016-12-11T05:04:29.150Z	10 km NE of Coalinga, California	earthquake	0.17	0.15	0.18	42	reviewed	nc	nc
5/12/1983	19:56:06	36.3208333	-120.2933333	7.641	3.15	md	46	120	0.02973	0.16	nc	nc1094297	2016-12-11T05:04:01.150Z	20 km S of Cantua Creek, California	earthquake	0.35	0.24	0.14	36	reviewed	nc	nc
5/12/1983	18:21:17	36.184	-120.2406667	10.388	2.15	md	35	77	0.04955	0.12	nc	nc1094289	2016-12-11T05:03:26.870Z	11 km ENE of Coalinga, California	earthquake	0.24	0.31	0.19	35	reviewed	nc	nc
5/12/1983	18:15:53	36.2971667	-120.3485	7.681	2	md	16	94	0.03423	0.31	nc	nc1094288	2016-12-11T05:03:18.204Z	17 km N of Coalinga, California	earthquake	0.88	1	0.11	12	reviewed	nc	nc
5/12/1983	18:03:24	36.2113333	-120.2858333	4.287	2.35	md	14	174	0.007207	0.16	nc	nc1094287	2016-12-11T05:03:14.392Z	10 km NE of Coalinga, California	earthquake	0.92	0.34	0.22	12	reviewed	nc	nc
5/12/1983	17:34:44	36.1885	-120.2746667	9.737	2.16	md	27	147	0.03153	0.11	nc	nc1094285	2016-12-11T05:03:05.810Z	9 km NE of Coalinga, California	earthquake	0.35	0.29	0.29	29	reviewed	nc	nc
5/12/1983	16:01:54	36.1395	-120.2456667	6.902	2.01	md	16	186	0.04505	0.09	nc	nc1094280	2016-12-11T05:02:42.182Z	10 km E of Coalinga, California	earthquake	0.53	0.43	0.21	16	reviewed	nc	nc
5/12/1983	15:59:34	36.257	-120.2783333	6.74	2.15	md	15	124	0.03874	0.11	nc	nc1094279	2016-12-11T05:02:38.468Z	14 km NNE of Coalinga, California	earthquake	0.34	0.33	0.15	16	reviewed	nc	nc
5/12/1983	15:13:31	36.3328333	-120.3278333	4.164	2.02	md	25	72	0.02162	0.17	nc	nc1094272	2016-12-11T05:02:11.670Z	18 km S of Cantua Creek, California	earthquake	0.26	0.34	0.17	18	reviewed	nc	nc
5/12/1983	14:34:25	36.2673333	-120.3943333	9.881	3.1	md	53	43	0.01892	0.11	nc	nc1094271	2016-12-11T05:02:06.210Z	14 km NNW of Coalinga, California	earthquake	0.21	0.29	0.18	55	reviewed	nc	nc
5/12/1983	13:58:35	36.1615	-120.2693333	10.038	2.64	md	35	68	0.02613	0.09	nc	nc1094268	2016-12-11T05:01:48.280Z	8 km ENE of Coalinga, California	earthquake	0.21	0.31	0.15	26	reviewed	nc	nc
5/12/1983	13:41:06	36.1656667	-120.2703333	11.665	3.83	md	59	66	0.02703	0.09	nc	nc1094261	2018-06-04T20:43:45.000Z	8 km ENE of Coalinga, California	earthquake	0.16	0.22	0.04	9	reviewed	nc	nc
5/12/1983	12:46:22	36.2513333	-120.4156667	7.261	2.1	md	25	58	0.02613	0.07	nc	nc1094256	2016-12-11T05:00:54.503Z	13 km NNW of Coalinga, California	earthquake	0.21	0.45	0.17	26	reviewed	nc	nc
5/12/1983	11:44:03	36.1991667	-120.3148333	10.008	2.44	md	22	90	0.03153	0.07	nc	nc1094251	2016-12-11T05:00:35.108Z	7 km NNE of Coalinga, California	earthquake	0.27	0.29	0.18	17	reviewed	nc	nc
5/12/1983	11:20:16	36.0955	-120.2271667	0.861	2.03	md	28	73	0.08108	0.18	nc	nc1094248	2016-12-11T05:00:21.900Z	12 km ESE of Coalinga, California	earthquake	0.26	2.4	0.2	28	reviewed	nc	nc
5/12/1983	11:14:34	36.1626667	-120.2648333	9.688	2	md	28	69	0.02973	0.11	nc	nc1094246	2016-12-11T05:00:10.950Z	8 km ENE of Coalinga, California	earthquake	0.32	0.39	0.17	36	reviewed	nc	nc
5/12/1983	10:34:48	36.3025	-120.3071667	3.677	2.14	md	22	125	0.009009	0.14	nc	nc1094244	2016-12-11T04:59:56.143Z	18 km NNE of Coalinga, California	earthquake	0.29	0.44	0.12	22	reviewed	nc	nc
5/12/1983	8:53:32	36.152	-120.2531667	10.661	2.83	md	41	73	0.03694	0.1	nc	nc1094239	2016-12-11T04:59:35.920Z	9 km E of Coalinga, California	earthquake	0.22	0.38	0.18	54	reviewed	nc	nc
5/12/1983	7:28:27	36.1793333	-120.2886667	9.656	2.03	md	13	111	0.02883	0.08	nc	nc1094232	2016-12-11T04:59:07.108Z	7 km NE of Coalinga, California	earthquake	0.51	0.38	0.31	16	reviewed	nc	nc
5/12/1983	7:23:59	36.1818333	-120.2996667	9.248	2.58	md	37	59	0.03063	0.12	nc	nc1094231	2016-12-11T04:59:01.970Z	7 km NE of Coalinga, California	earthquake	0.27	0.35	0.18	52	reviewed	nc	nc
5/12/1983	7:08:00	36.233	-120.4038333	11.28	2.21	md	33	67	0.02342	0.08	nc	nc1094229	2016-12-11T04:58:50.800Z	11 km NNW of Coalinga, California	earthquake	0.21	0.33	0.11	31	reviewed	nc	nc
5/12/1983	6:42:07	36.2556667	-120.3455	8.495	3.18	md	52	36	0.006306	0.13	nc	nc1094228	2016-12-11T04:58:41.290Z	12 km N of Coalinga, California	earthquake	0.18	0.22	0.15	55	reviewed	nc	nc
5/12/1983	6:01:37	36.264	-120.3343333	9.05	2.13	md	37	57	0.01622	0.08	nc	nc1094224	2016-12-11T04:58:20.900Z	13 km N of Coalinga, California	earthquake	0.18	0.17	0.24	31	reviewed	nc	nc
5/12/1983	5:40:11	36.1798333	-120.2446667	9.452	2.19	md	25	174	0.05045	0.1	nc	nc1094223	2016-12-11T04:58:10.920Z	11 km ENE of Coalinga, California	earthquake	0.61	0.38	0.2	29	reviewed	nc	nc
5/12/1983	5:20:25	36.2731667	-120.2838333	5.261	2.12	md	19	155	0.02703	0.06	nc	nc1094221	2016-12-11T04:58:01.219Z	16 km NNE of Coalinga, California	earthquake	0.31	0.23	0.13	23	reviewed	nc	nc
5/12/1983	5:01:22	36.2643333	-120.3658333	8.51	2.61	md	32	60	0.02072	0.09	nc	nc1094220	2016-12-11T04:57:56.080Z	13 km N of Coalinga, California	earthquake	0.2	0.26	0.1	22	reviewed	nc	nc
5/12/1983	4:25:45	36.3116667	-120.3685	10.671	2.81	md	43	38	0.02432	0.11	nc	nc1094214	2016-12-11T04:57:27.680Z	19 km N of Coalinga, California	earthquake	0.2	0.29	0.19	57	reviewed	nc	nc
5/12/1983	4:08:16	36.2778333	-120.4118333	7.751	3.01	md	57	38	0.03604	0.12	nc	nc1094211	2016-12-11T04:57:12.950Z	16 km NNW of Coalinga, California	earthquake	0.16	0.3	0.15	51	reviewed	nc	nc
5/12/1983	3:54:24	36.1655	-120.2551667	10.486	2.2	md	32	72	0.03874	0.11	nc	nc1094210	2016-12-11T04:57:04.930Z	9 km ENE of Coalinga, California	earthquake	0.28	0.45	0.16	35	reviewed	nc	nc
5/12/1983	2:11:48	36.0838333	-120.2133333	7.096	2.48	md	44	73	0.08739	0.23	nc	nc1094202	2016-12-11T04:56:29.450Z	11 km NW of Avenal, California	earthquake	0.35	0.73	0.2	35	reviewed	nc	nc
5/12/1983	1:57:22	36.1233333	-120.2476667	10.625	3.13	md	47	49	0.05045	0.18	nc	nc1094200	2016-12-11T04:56:18.060Z	10 km E of Coalinga, California	earthquake	0.31	0.5	0.14	58	reviewed	nc	nc
5/12/1983	1:54:39	36.1761667	-120.2553333	9.136	2.66	md	36	78	0.04324	0.12	nc	nc1094199	2016-12-11T04:56:09.870Z	10 km ENE of Coalinga, California	earthquake	0.23	0.36	0.14	40	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/12/1983	1:41:23	36.1895	-120.2688333	9.968	2.38	md	12	84	0.08468	0.07	nc	nc1094197	2016-12-11T04:56:00.118Z	9 km NE of Coalinga, California	earthquake	0.36	0.76	0.2	32	reviewed	nc	nc
5/12/1983	1:34:49	36.1761667	-120.234	9.436	2.28	md	41	77	0.05856	0.12	nc	nc1094196	2016-12-11T04:55:54.750Z	12 km ENE of Coalinga, California	earthquake	0.21	0.34	0.17	42	reviewed	nc	nc
5/11/1983	23:48:05	36.2003333	-120.3345	6.227	2.58	md	31	164	0.1387	0.16	nc	nc1094187	2016-12-11T04:55:18.316Z	7 km NNE of Coalinga, California	earthquake	0.54	0.54	0.1	24	reviewed	nc	nc
5/11/1983	23:47:54	36.1938333	-120.3278333	6.295	2.74	md	21	148	0.05676	0.12	nc	nc1094186	2016-12-11T04:55:14.442Z	6 km NNE of Coalinga, California	earthquake	0.39	0.46	0.22	7	reviewed	nc	nc
5/11/1983	23:40:40	36.2013333	-120.3321667	9.315	2.02	md	7	219	0.04865	0.03	nc	nc1094185	2016-12-11T04:55:10.374Z	7 km NNE of Coalinga, California	earthquake	0.84	0.74	0.16	9	reviewed	nc	nc
5/11/1983	23:35:51	36.19	-120.3296667	9.264	3.21	md	51	30	0.02523	0.15	nc	nc1094184	2016-12-11T04:55:05.280Z	6 km NNE of Coalinga, California	earthquake	0.22	0.2	0.17	56	reviewed	nc	nc
5/11/1983	23:05:55	36.2275	-120.2801667	7.936	2.96	md	53	68	0.00991	0.11	nc	nc1094179	2016-12-11T04:54:42.820Z	12 km NE of Coalinga, California	earthquake	0.14	0.19	0.13	38	reviewed	nc	nc
5/11/1983	22:44:35	36.1951667	-120.36	12.379	2.58	md	42	43	0.05586	0.1	nc	nc1094176	2016-12-11T04:54:27.720Z	6 km N of Coalinga, California	earthquake	0.21	0.39	0.2	42	reviewed	nc	nc
5/11/1983	22:34:33	36.1518333	-120.214	7.356	2.21	md	20	111	0.06847	0.09	nc	nc1094173	2016-12-11T04:54:12.196Z	11 km WSW of Huron, California	earthquake	0.24	0.43	0.53	14	reviewed	nc	nc
5/11/1983	22:19:45	36.085	-120.2055	9.346	2.55	md	38	76	0.08108	0.13	nc	nc1094170	2016-12-11T04:53:59.590Z	11 km NW of Avenal, California	earthquake	0.23	0.49	0.19	34	reviewed	nc	nc
5/11/1983	20:49:24	36.2793333	-120.3381667	9.27	3.66	md	48	45	0.02883	0.1	nc	nc1094161	2016-12-11T04:53:23.220Z	15 km N of Coalinga, California	earthquake	0.26	0.25	0.18	28	reviewed	nc	nc
5/11/1983	20:40:12	36.2071667	-120.3018333	10.116	2.02	md	31	47	0.01802	0.08	nc	nc1094159	2016-12-11T04:53:12.103Z	9 km NE of Coalinga, California	earthquake	0.22	0.26	0.09	20	reviewed	nc	nc
5/11/1983	20:37:45	36.176	-120.1875	7.965	2.06	md	11	228	0.1315	0.07	nc	nc1094157	2016-12-11T04:53:04.457Z	8 km WSW of Huron, California	earthquake	0.71	0.73	0.15	9	reviewed	nc	nc
5/11/1983	20:13:51	36.2265	-120.2943333	11.678	2.11	md	15	156	0.04505	0.09	nc	nc1094154	2016-12-11T04:52:53.178Z	11 km NNE of Coalinga, California	earthquake	0.43	0.75	0.11	12	reviewed	nc	nc
5/11/1983	19:17:39	36.1188333	-120.1791667	8.912	2.38	md	26	105	0.08108	0.08	nc	nc1094149	2016-12-11T04:52:32.740Z	11 km SW of Huron, California	earthquake	0.22	0.43	0.15	35	reviewed	nc	nc
5/11/1983	18:54:15	36.2535	-120.255	5.746	2.28	md	22	166	0.05766	0.11	nc	nc1094145	2016-12-11T04:52:13.125Z	14 km WNW of Huron, California	earthquake	0.35	0.3	0.17	22	reviewed	nc	nc
5/11/1983	16:35:42	36.307	-120.2428333	1.375	2.02	md	6	283	0.0991	0.02	nc	nc1094135	2016-12-11T04:51:35.924Z	17 km NW of Huron, California	earthquake	2.36	4	0.23	8	reviewed	nc	nc
5/11/1983	16:25:15	36.2286667	-120.2531667	6.656	2.55	md	24	136	0.02703	0.18	nc	nc1094134	2016-12-11T04:51:32.224Z	13 km NE of Coalinga, California	earthquake	0.41	0.4	0.19	24	reviewed	nc	nc
5/11/1983	16:11:46	36.1561667	-120.2185	10.217	2.3	md	24	136	0.08198	0.11	nc	nc1094132	2016-12-11T04:51:24.367Z	11 km WSW of Huron, California	earthquake	0.39	0.56	0.22	22	reviewed	nc	nc
5/11/1983	16:08:25	36.2445	-120.3125	8.702	2.12	md	36	82	0.02523	0.14	nc	nc1094131	2016-12-11T04:51:20.124Z	12 km NNE of Coalinga, California	earthquake	0.27	0.3	0.18	21	reviewed	nc	nc
5/11/1983	16:03:13	36.158	-120.2448333	11.066	2.47	md	29	76	0.04414	0.11	nc	nc1094130	2016-12-11T04:51:16.080Z	10 km E of Coalinga, California	earthquake	0.32	0.44	0.09	22	reviewed	nc	nc
5/11/1983	15:42:47	36.1841667	-120.3266667	7.846	2.2	md	33	69	0.03964	0.15	nc	nc1094128	2016-12-11T04:51:08.402Z	5 km NNE of Coalinga, California	earthquake	0.22	0.37	0.22	26	reviewed	nc	nc
5/11/1983	15:26:47	36.2018333	-120.2865	10.025	2.93	md	41	50	0.01712	0.14	nc	nc1094125	2016-12-11T04:50:54.680Z	9 km NE of Coalinga, California	earthquake	0.23	0.16	0.17	26	reviewed	nc	nc
5/11/1983	14:27:17	36.2511667	-120.4031667	6.775	2.01	md	13	86	0.04865	0.07	nc	nc1094121	2016-12-11T04:50:36.664Z	12 km NNW of Coalinga, California	earthquake	0.48	0.81	0.09	13	reviewed	nc	nc
5/11/1983	13:11:18	36.0925	-120.1843333	8.433	2.06	md	22	90	0.06847	0.08	nc	nc1094114	2016-12-11T04:50:10.749Z	11 km NNW of Avenal, California	earthquake	0.37	0.6	0.22	21	reviewed	nc	nc
5/11/1983	13:01:28	36.1611667	-120.2741667	11.233	2.21	md	9	133	0.1045	0.05	nc	nc1094113	2016-12-11T04:50:06.558Z	8 km ENE of Coalinga, California	earthquake	0.53	0.89	0.19	12	reviewed	nc	nc
5/11/1983	12:12:38	36.2331667	-120.2925	7.546	2.14	md	27	66	0.01622	0.12	nc	nc1094107	2016-12-11T04:49:43.561Z	12 km NNE of Coalinga, California	earthquake	0.21	0.31	0.21	23	reviewed	nc	nc
5/11/1983	10:49:36	36.2503333	-120.4003333	9.054	2.04	md	23	59	0.04685	0.06	nc	nc1094101	2016-12-11T04:49:19.904Z	12 km NNW of Coalinga, California	earthquake	0.21	0.46	0.16	20	reviewed	nc	nc
5/11/1983	10:20:51	36.1673333	-120.2173333	10.077	2.2	md	29	63	0.05676	0.11	nc	nc1094097	2016-12-11T04:49:03.020Z	11 km WSW of Huron, California	earthquake	0.27	0.46	0.2	36	reviewed	nc	nc
5/11/1983	8:23:52	36.1491667	-120.2466667	11.748	2.55	md	37	65	0.04234	0.23	nc	nc1094078	2016-12-11T04:47:42.190Z	10 km E of Coalinga, California	earthquake	0.38	0.61	0.12	27	reviewed	nc	nc
5/11/1983	8:14:47	36.1521667	-120.2581667	12.399	3.78	md	62	47	0.03333	0.15	nc	nc1094077	2016-12-11T04:47:34.800Z	9 km E of Coalinga, California	earthquake	0.16	0.23	0.19	34	reviewed	nc	nc
5/11/1983	7:50:45	36.193	-120.2736667	8.746	2.36	md	40	43	0.02703	0.15	nc	nc1094070	2016-12-11T04:47:03.850Z	9 km NE of Coalinga, California	earthquake	0.21	0.29	0.19	41	reviewed	nc	nc
5/11/1983	7:16:49	36.194	-120.3118333	10.686	2.63	md	38	49	0.03333	0.08	nc	nc1094066	2016-12-11T04:46:44.350Z	7 km NE of Coalinga, California	earthquake	0.21	0.28	0.14	52	reviewed	nc	nc
5/11/1983	6:53:31	36.172	-120.293	7.496	2.12	md	25	66	0.02072	0.14	nc	nc1094065	2016-12-11T04:46:37.970Z	7 km ENE of Coalinga, California	earthquake	0.24	0.63	0.11	20	reviewed	nc	nc
5/11/1983	6:41:51	36.3	-120.3798333	9.801	2.33	md	24	137	0.03694	0.08	nc	nc1094063	2016-12-11T04:46:29.313Z	17 km N of Coalinga, California	earthquake	0.58	0.47	0.13	17	reviewed	nc	nc
5/11/1983	6:07:50	36.1686667	-120.2633333	5.902	2.12	md	20	205	0.1586	0.07	nc	nc1094059	2016-12-11T04:46:13.573Z	9 km ENE of Coalinga, California	earthquake	0.38	0.66	0.17	11	reviewed	nc	nc
5/11/1983	5:31:29	36.258	-120.4003333	10.092	2.08	md	29	41	0.04775	0.07	nc	nc1094056	2016-12-11T04:46:02.273Z	13 km NNW of Coalinga, California	earthquake	0.17	0.39	0.23	25	reviewed	nc	nc
5/11/1983	5:28:51	36.2301667	-120.328	10.328	2.09	md	26	202	0.02252	0.21	nc	nc1094055	2016-12-11T04:45:58.368Z	10 km NNE of Coalinga, California	earthquake	0.96	0.52	0.18	18	reviewed	nc	nc
5/11/1983	3:19:00	36.3276667	-120.334	4.848	2.41	md	30	124	0.01802	0.1	nc	nc1094039	2016-12-11T04:44:56.700Z	19 km S of Cantua Creek, California	earthquake	0.21	0.16	0.21	19	reviewed	nc	nc
5/11/1983	3:03:34	36.1971667	-120.3551667	11.569	2.27	md	35	34	0.05315	0.08	nc	nc1094037	2016-12-11T04:44:45.970Z	6 km N of Coalinga, California	earthquake	0.2	0.34	0.22	32	reviewed	nc	nc
5/11/1983	2:59:10	36.1898333	-120.2003333	7.531	2.39	md	32	70	0.03063	0.15	nc	nc1094035	2016-12-11T04:44:36.171Z	8 km W of Huron, California	earthquake	0.22	0.36	0.24	19	reviewed	nc	nc
5/11/1983	2:23:13	36.1695	-120.2176667	10.607	2	md	18	64	0.05495	0.09	nc	nc1094032	2016-12-11T04:44:24.569Z	10 km WSW of Huron, California	earthquake	0.31	0.47	0.41	15	reviewed	nc	nc
5/11/1983	2:12:13	35.5191667	-120.07	10.79	2.14	md	21	158	0.1225	0.14	nc	nc1094030	2016-12-11T04:44:16.901Z	31 km ESE of Shandon, California	earthquake	0.5	1.03	0.22	13	reviewed	nc	nc
5/11/1983	1:32:12	36.2633333	-120.3451667	9.604	2.61	md	26	51	0.01441	0.09	nc	nc1094022	2016-12-11T04:43:46.636Z	13 km N of Coalinga, California	earthquake	0.21	0.25	0.35	16	reviewed	nc	nc
5/11/1983	1:14:50	35.5203333	-120.074	9.4	3.21	md	34	147	0.1252	0.16	nc	nc1094018	2016-12-11T04:43:29.680Z	31 km ESE of Shandon, California	earthquake	0.47	1.24	0.1	26	reviewed	nc	nc
5/11/1983	0:52:42	36.1688333	-120.1933333	9.905	2.74	md	22	105	0.04685	0.12	nc	nc1094017	2016-12-11T04:43:21.607Z	8 km WSW of Huron, California	earthquake	0.27	0.37	0.15	20	reviewed	nc	nc
5/11/1983	0:17:11	36.2396667	-120.3271667	8.756	2.26	md	20	71	0.01622	0.06	nc	nc1094011	2016-12-11T04:42:59.726Z	11 km NNE of Coalinga, California	earthquake	0.21	0.3	0.13	17	reviewed	nc	nc
5/11/1983	0:02:04	35.519	-120.0746667	10.704	2.46	md	17	158	0.1243	0.08	nc	nc1094010	2016-12-11T04:42:55.690Z	31 km ESE of Shandon, California	earthquake	0.38	0.63	0.16	13	reviewed	nc	nc
5/10/1983	22:11:13	36.1906667	-120.3536667	11.203	2.64	md	33	55	0.05856	0.08	nc	nc1094004	2016-12-11T04:42:31.780Z	5 km N of Coalinga, California	earthquake	0.22	0.39	0.16	36	reviewed	nc	nc
5/10/1983	21:05:56	36.231	-120.3065	5.687	2.93	md	30	99	0.06216	0.16	nc	nc1094002	2016-12-11T04:42:16.770Z	11 km NNE of Coalinga, California	earthquake	0.27	0.46	0.13	37	reviewed	nc	nc
5/10/1983	20:17:54	36.3096667	-120.3133333	4.19	2.69	md	21	145	0.01712	0.23	nc	nc1093998	2016-12-11T04:41:57.740Z	19 km NNE of Coalinga, California	earthquake	0.5	0.34	0.12	19	reviewed	nc	nc
5/10/1983	19:54:38	36.2615	-120.3748333	9.101	2.3	md	23	91	0.02883	0.09	nc	nc1093996	2016-12-11T04:41:45.615Z	13 km N of Coalinga, California	earthquake	0.28	0.35	0.15	16	reviewed	nc	nc
5/10/1983	19:13:16	36.2386667	-120.2576667	9.155	2.86	md	41	115	0.009009	0.13	nc	nc1093992	2016-12-11T04:41:29.040Z	14 km NE of Coalinga, California	earthquake	0.24	0.16	0.16	40	reviewed	nc	nc
5/10/1983	19:00:28	36.3163333	-120.3161667	4.842	3.33	md	41	74	0.02432	0.11	nc	nc1093991	2016-12-11T04:41:21.350Z	19 km NNE of Coalinga, California	earthquake	0.21	0.19	0.13	45	reviewed	nc	nc
5/10/1983	18:55:25	36.2181667	-120.268	6.26	2.56	md	27	100	0.06847	0.07	nc	nc1093990	2016-12-11T04:41:13.380Z	12 km NE of Coalinga, California	earthquake	0.2	0.32	0.11	31	reviewed	nc	nc
5/10/1983	17:11:49	36.3236667	-120.3108333	4.038	2.99	md	18	99	0.03063	0.05	nc	nc1093983	2016-12-11T04:40:41.311Z	19 km S of Cantua Creek, California	earthquake	0.22	0.28	0.12	20	reviewed	nc	nc
5/10/1983	17:09:18	36.3176667	-120.3136667	4.015	2.54	md	19	147	0.02523	0.08	nc	nc1093982	2016-12-11T04:40:36.859Z	20 km NNE of Coalinga, California	earthquake	0.29	0.23	0.17	17	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/10/1983	16:28:15	36.3333333	-120.3263333	1.308	2.54	md	5	135	0.02252	0.04	nc	nc1093979	2016-12-11T04:40:24.136Z	18 km S of Cantua Creek, California	earthquake	0.39	6.49	0.12	8	reviewed	nc	nc
5/10/1983	16:20:18	36.3231667	-120.337	3.694	3.14	md	41	177	0.03874	0.08	nc	nc1093977	2016-12-11T04:40:15.690Z	19 km S of Cantua Creek, California	earthquake	0.35	0.27	0.17	48	reviewed	nc	nc
5/10/1983	16:18:00	36.3055	-120.332	-0.164	2.09	md	6	137	0.155	0.1	nc	nc1093975	2016-12-11T04:40:03.295Z	18 km N of Coalinga, California	earthquake	0.57	7	0.08	4	reviewed	nc	nc
5/10/1983	16:07:18	36.3285	-120.326	3.161	2.46	md	20	78	0.03874	0.12	nc	nc1093973	2016-12-11T04:39:55.680Z	19 km S of Cantua Creek, California	earthquake	0.43	0.53	0.13	16	reviewed	nc	nc
5/10/1983	16:03:40	36.3231667	-120.346	2.412	2.62	md	22	164	0.04414	0.12	nc	nc1093971	2016-12-11T04:39:48.176Z	19 km S of Cantua Creek, California	earthquake	0.4	0.71	0.26	19	reviewed	nc	nc
5/10/1983	15:22:45	36.3245	-120.3198333	4.427	3.76	md	48	55	0.02973	0.12	nc	nc1093969	2016-12-11T04:39:33.070Z	19 km S of Cantua Creek, California	earthquake	0.15	0.25	0.04	6	reviewed	nc	nc
5/10/1983	15:05:30	36.1628333	-120.2611667	-0.053	2.51	md	8	134	0.1351	0.06	nc	nc1093967	2016-12-11T04:39:16.611Z	9 km ENE of Coalinga, California	earthquake	1.07	4.48	0.13	8	reviewed	nc	nc
5/10/1983	15:04:41	36.1721667	-120.227	11.04	3.48	md	28	77	0.04865	0.13	nc	nc1093966	2016-12-11T04:39:11.690Z	11 km WSW of Huron, California	earthquake	0.38	0.22	0.11	29	reviewed	nc	nc
5/10/1983	14:20:07	36.3255	-120.3205	4.287	3	md	37	76	0.03423	0.12	nc	nc1093965	2016-12-11T04:39:01.660Z	19 km S of Cantua Creek, California	earthquake	0.2	0.3	0.13	48	reviewed	nc	nc
5/10/1983	13:45:47	36.3218333	-120.3256667	4.113	3.22	md	43	168	0.03243	0.11	nc	nc1093964	2016-12-11T04:38:49.650Z	19 km S of Cantua Creek, California	earthquake	0.3	0.22	0.15	36	reviewed	nc	nc
5/10/1983	13:41:49	36.3145	-120.3516667	0.574	2.11	md	9	201	0.04234	0.2	nc	nc1093963	2016-12-11T04:38:43.136Z	19 km N of Coalinga, California	earthquake	1.53	3.85	0.02	3	reviewed	nc	nc
5/10/1983	13:26:29	36.3273333	-120.3225	5.662	4.02	md	63	56	0.02703	0.11	nc	nc1093961	2016-12-11T04:38:34.130Z	19 km S of Cantua Creek, California	earthquake	0.12	0.17	0.06	20	reviewed	nc	nc
5/10/1983	11:35:23	36.2381667	-120.2521667	5.78	2.02	md	24	76	0.06577	0.14	nc	nc1093957	2016-12-11T04:38:16.308Z	13 km WNW of Huron, California	earthquake	0.24	0.39	0.15	20	reviewed	nc	nc
5/10/1983	11:00:47	36.1566667	-120.269	9.146	2	md	25	119	0.02523	0.09	nc	nc1093953	2016-12-11T04:38:01.062Z	8 km ENE of Coalinga, California	earthquake	0.29	0.34	0.17	18	reviewed	nc	nc
5/10/1983	9:46:12	36.2386667	-120.255	5.88	2.11	md	29	53	0.03153	0.24	nc	nc1093947	2016-12-11T04:37:36.800Z	14 km WNW of Huron, California	earthquake	0.34	0.52	0.14	23	reviewed	nc	nc
5/10/1983	9:38:53	36.1571667	-120.2706667	9.724	2.78	md	35	68	0.02342	0.09	nc	nc1093946	2016-12-11T04:37:27.330Z	8 km ENE of Coalinga, California	earthquake	0.21	0.3	0.18	53	reviewed	nc	nc
5/10/1983	9:15:04	36.2595	-120.3648333	9.112	2.9	md	48	38	0.01802	0.09	nc	nc1093942	2016-12-11T04:37:06.260Z	13 km N of Coalinga, California	earthquake	0.19	0.22	0.14	57	reviewed	nc	nc
5/10/1983	8:23:39	36.3081667	-120.3688333	10.61	2.39	md	43	53	0.02973	0.12	nc	nc1093933	2016-12-11T04:36:27.270Z	18 km N of Coalinga, California	earthquake	0.2	0.29	0.18	30	reviewed	nc	nc
5/10/1983	8:18:15	36.2731667	-120.3953333	9.466	2.74	md	52	41	0.02523	0.1	nc	nc1093932	2016-12-11T04:36:17.910Z	15 km NNW of Coalinga, California	earthquake	0.17	0.27	0.17	46	reviewed	nc	nc
5/10/1983	6:45:10	36.304	-120.287	5.251	2.16	md	31	104	0.01982	0.09	nc	nc1093922	2016-12-11T04:35:30.530Z	19 km NNE of Coalinga, California	earthquake	0.17	0.27	0.21	29	reviewed	nc	nc
5/10/1983	4:45:12	36.1606667	-120.2821667	7.148	2.43	md	24	113	0.01622	0.16	nc	nc1093914	2016-12-11T04:34:57.877Z	7 km ENE of Coalinga, California	earthquake	0.38	0.46	0.13	24	reviewed	nc	nc
5/10/1983	3:53:53	36.1463333	-120.211	9.828	2.69	md	27	139	0.07207	0.08	nc	nc1093910	2016-12-11T04:34:40.720Z	11 km WSW of Huron, California	earthquake	0.3	0.46	0.16	44	reviewed	nc	nc
5/10/1983	3:14:44	36.2773333	-120.3638333	8.699	2.18	md	23	104	0.04865	0.07	nc	nc1093908	2016-12-11T04:34:30.283Z	15 km N of Coalinga, California	earthquake	0.21	0.31	0.22	24	reviewed	nc	nc
5/10/1983	3:10:54	36.2033333	-120.289	8.858	2.29	md	25	91	0.05225	0.05	nc	nc1093906	2016-12-11T04:34:22.155Z	9 km NE of Coalinga, California	earthquake	0.25	0.27	0.17	25	reviewed	nc	nc
5/10/1983	3:07:56	36.321	-120.266	7.191	2.14	md	12	235	0.04324	0.11	nc	nc1093905	2016-12-11T04:34:18.021Z	Central California	earthquake	1.43	0.35	0.14	11	reviewed	nc	nc
5/10/1983	1:46:47	36.1125	-120.198	10.191	2.52	md	32	94	0.09099	0.18	nc	nc1093902	2016-12-11T04:34:04.800Z	13 km SW of Huron, California	earthquake	0.37	0.68	0.12	32	reviewed	nc	nc
5/10/1983	0:28:04	36.193	-120.2583333	9.223	2.48	md	32	58	0.03333	0.08	nc	nc1093894	2016-12-11T04:33:26.410Z	Central California	earthquake	0.21	0.3	0.2	29	reviewed	nc	nc
5/10/1983	0:05:08	36.1756667	-120.2758333	9.371	2.25	md	20	143	0.04324	0.07	nc	nc1093893	2016-12-11T04:33:18.620Z	8 km ENE of Coalinga, California	earthquake	0.22	0.24	0.06	8	reviewed	nc	nc
5/9/1983	22:47:40	36.1361667	-120.1998333	8.816	2.02	md	13	81	0.08018	0.07	nc	nc1093891	2016-12-11T04:33:09.141Z	11 km SW of Huron, California	earthquake	0.41	0.96	0.26	14	reviewed	nc	nc
5/9/1983	22:14:58	36.13	-120.2711667	5.771	2.04	md	10	140	0.1135	0.05	nc	nc1093888	2016-12-11T04:32:57.621Z	8 km E of Coalinga, California	earthquake	0.65	2.01	0.2	10	reviewed	nc	nc
5/9/1983	21:26:49	36.2781667	-120.3096667	5.12	2.38	md	13	101	0.06306	0.16	nc	nc1093885	2016-12-11T04:32:45.784Z	16 km NNE of Coalinga, California	earthquake	0.47	0.69	0.46	16	reviewed	nc	nc
5/9/1983	21:08:33	36.1953333	-120.3406667	11.819	2.27	md	27	60	0.05135	0.07	nc	nc1093882	2016-12-11T04:32:32.290Z	6 km NNE of Coalinga, California	earthquake	0.23	0.39	0.16	28	reviewed	nc	nc
5/9/1983	20:14:35	36.2253333	-120.2896667	8.736	3.12	md	34	77	0.008108	0.17	nc	nc1093879	2016-12-11T04:32:16.610Z	11 km NNE of Coalinga, California	earthquake	0.28	0.14	0.13	38	reviewed	nc	nc
5/9/1983	19:56:21	36.1571667	-120.2783333	8.189	2.1	md	18	75	0.06126	0.11	nc	nc1093878	2016-12-11T04:32:10.213Z	7 km ENE of Coalinga, California	earthquake	0.32	0.64	0.18	19	reviewed	nc	nc
5/9/1983	19:52:37	36.1615	-120.2816667	8.756	2.17	md	17	93	0.05676	0.09	nc	nc1093877	2016-12-11T04:32:05.902Z	7 km ENE of Coalinga, California	earthquake	0.38	0.71	0.15	20	reviewed	nc	nc
5/9/1983	19:38:29	36.214	-120.2973333	6.552	2.48	md	24	53	0.01171	0.09	nc	nc1093875	2016-12-11T04:31:56.440Z	9 km NE of Coalinga, California	earthquake	0.26	0.33	0.17	29	reviewed	nc	nc
5/9/1983	19:10:13	36.2285	-120.2975	7.898	2.73	md	35	50	0.01441	0.12	nc	nc1093871	2016-12-11T04:31:36.700Z	11 km NNE of Coalinga, California	earthquake	0.19	0.11	0.15	32	reviewed	nc	nc
5/9/1983	18:27:03	36.1725	-120.2933333	8.603	2.57	md	27	107	0.04685	0.15	nc	nc1093868	2016-12-11T04:31:21.120Z	7 km ENE of Coalinga, California	earthquake	0.31	0.51	0.1	33	reviewed	nc	nc
5/9/1983	18:15:44	36.189	-120.302	10.966	3.11	md	41	40	0.02342	0.16	nc	nc1093867	2016-12-11T04:31:14.060Z	7 km NE of Coalinga, California	earthquake	0.23	0.16	0.22	51	reviewed	nc	nc
5/9/1983	17:32:09	36.1801667	-120.2381667	12.565	2.12	md	23	118	0.05405	0.07	nc	nc1093861	2016-12-11T04:30:46.110Z	11 km ENE of Coalinga, California	earthquake	0.29	0.51	0.21	27	reviewed	nc	nc
5/9/1983	17:01:00	36.227	-120.2605	8.42	2.41	md	38	77	0.02162	0.12	nc	nc1093859	2016-12-11T04:30:34.760Z	13 km NE of Coalinga, California	earthquake	0.2	0.26	0.17	41	reviewed	nc	nc
5/9/1983	16:46:44	36.2836667	-120.3263333	14.206	2.32	md	33	66	0.01802	0.11	nc	nc1093857	2016-12-11T04:30:20.420Z	16 km N of Coalinga, California	earthquake	0.26	0.38	0.14	32	reviewed	nc	nc
5/9/1983	16:38:18	36.2136667	-120.3303333	8.449	2.21	md	28	80	0.03694	0.12	nc	nc1093856	2016-12-11T04:30:10.400Z	8 km NNE of Coalinga, California	earthquake	0.27	0.34	0.16	28	reviewed	nc	nc
5/9/1983	16:35:01	36.2856667	-120.3745	8.256	2.08	md	25	64	0.03604	0.09	nc	nc1093855	2016-12-11T04:30:02.161Z	16 km N of Coalinga, California	earthquake	0.23	0.29	0.15	24	reviewed	nc	nc
5/9/1983	16:29:13	36.2161667	-120.3321667	2.058	2.06	md	19	78	0.03874	0.39	nc	nc1093854	2016-12-11T04:29:58.197Z	8 km NNE of Coalinga, California	earthquake	0.6	2.38	0.11	17	reviewed	nc	nc
5/9/1983	16:05:06	36.2106667	-120.3036667	8.925	2.02	md	13	99	0.01712	0.09	nc	nc1093852	2016-12-11T04:29:50.764Z	9 km NNE of Coalinga, California	earthquake	0.34	0.45	0.23	10	reviewed	nc	nc
5/9/1983	15:37:37	36.1815	-120.2901667	9.563	2.51	md	28	133	0.03694	0.11	nc	nc1093849	2016-12-11T04:29:37.380Z	7 km NE of Coalinga, California	earthquake	0.33	0.45	0.12	35	reviewed	nc	nc
5/9/1983	15:13:05	36.1781667	-120.2543333	9.553	2.7	md	31	144	0.04685	0.12	nc	nc1093847	2016-12-11T04:29:25.390Z	10 km ENE of Coalinga, California	earthquake	0.34	0.45	0.17	40	reviewed	nc	nc
5/9/1983	15:08:46	36.2363333	-120.308	11.503	2.35	md	24	80	0.02613	0.11	nc	nc1093845	2016-12-11T04:29:10.330Z	11 km NNE of Coalinga, California	earthquake	0.3	0.32	0.12	31	reviewed	nc	nc
5/9/1983	13:24:33	36.1996667	-120.2758333	10.166	3.38	md	58	55	0.02072	0.07	nc	nc1093837	2016-12-11T04:28:33.060Z	10 km NE of Coalinga, California	earthquake	0.14	0.15	0.12	62	reviewed	nc	nc
5/9/1983	13:08:15	36.2253333	-120.2866667	9.8	2.11	md	13	153	0.007207	0.12	nc	nc1093835	2016-12-11T04:28:21.657Z	11 km NE of Coalinga, California	earthquake	0.86	0.7	0.16	23	reviewed	nc	nc
5/9/1983	12:41:36	36.244	-120.2585	6.54	2.12	md	15	69	0.03333	0.26	nc	nc1093834	2016-12-11T04:28:17.315Z	14 km WNW of Huron, California	earthquake	0.6	0.8	0.5	10	reviewed	nc	nc
5/9/1983	12:34:15	36.2321667	-120.2858333	12.43	2.3	md	32	99	0.01351	0.08	nc	nc1093833	2016-12-11T04:28:11.770Z	12 km NNE of Coalinga, California	earthquake	0.29	0.39	0.15	34	reviewed	nc	nc
5/9/1983	12:31:01	36.2335	-120.3138333	11.863	2.07	md	23	80	0.02793	0.08	nc	nc1093832	2016-12-11T04:28:04.973Z	11 km NNE of Coalinga, California	earthquake	0.27	0.36	0.2	21	reviewed	nc	nc
5/9/1983	12:21:48	36.262	-120.4233333	6.699	2.23	md	32	71	0.03423	0.19	nc	nc1093830	2016-12-11T04:27:55.280Z	14 km NNW of Coalinga, California	earthquake	0.31	0.48	0.16	30	reviewed	nc	nc
5/9/1983	11:58:11	36.1358333	-120.2586667	4.741	2.43	md	6	144	0.08559	0.07	nc	nc1093829	2016-12-11T04:27:46.695Z	9 km E of Coalinga, California	earthquake	0.75	2.12	0.04	5	reviewed	nc	nc
5/9/1983	11:41:41	36.226	-120.2498333	7.22	2.17	md	7	127	0.02883	0.19	nc	nc1093826	2016-12-11T04:27:34.186Z	13 km W of Huron, California	earthquake	1.16	1.36	0.27	7	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/9/1983	11:32:10	36.2058333	-120.3281667	9	2.24	md	30	96	0.03784	0.09	nc	nc1093825	2016-12-11T04:27:28.840Z	7 km NNE of Coalinga, California	earthquake	0.22	0.31	0.12	38	reviewed	nc	nc
5/9/1983	11:18:23	36.1861667	-120.3065	9.886	3.09	md	48	38	0.02072	0.08	nc	nc1093823	2016-12-11T04:27:14.610Z	7 km NE of Coalinga, California	earthquake	0.14	0.15	0.12	65	reviewed	nc	nc
5/9/1983	11:11:06	36.1596667	-120.2775	9.24	2.6	md	32	74	0.05946	0.12	nc	nc1093822	2016-12-11T04:27:06.480Z	7 km ENE of Coalinga, California	earthquake	0.24	0.52	0.15	40	reviewed	nc	nc
5/9/1983	11:06:01	36.2223333	-120.2511667	17.059	2.31	md	17	197	0.06036	0.13	nc	nc1093821	2016-12-11T04:26:55.455Z	13 km NE of Coalinga, California	earthquake	1.46	1.75	0.25	14	reviewed	nc	nc
5/9/1983	10:34:06	36.1778333	-120.2578333	11.419	2.85	md	43	62	0.04234	0.1	nc	nc1093818	2016-12-11T04:26:42.270Z	10 km ENE of Coalinga, California	earthquake	0.18	0.15	0.12	62	reviewed	nc	nc
5/9/1983	10:11:59	36.2248333	-120.2555	16.75	2.03	md	18	182	0.02432	0.1	nc	nc1093814	2016-12-11T04:26:19.773Z	13 km NE of Coalinga, California	earthquake	0.81	0.87	0.29	18	reviewed	nc	nc
5/9/1983	10:05:44	36.2351667	-120.3775	11.717	2.45	md	20	78	0.01532	0.17	nc	nc1093813	2016-12-11T04:26:16.035Z	10 km N of Coalinga, California	earthquake	0.44	0.64	0.17	14	reviewed	nc	nc
5/9/1983	9:53:48	36.2875	-120.3776667	8.272	2.3	md	32	91	0.03784	0.1	nc	nc1093812	2016-12-11T04:26:10.890Z	16 km N of Coalinga, California	earthquake	0.19	0.34	0.16	36	reviewed	nc	nc
5/9/1983	9:28:53	36.205	-120.3193333	10.418	2.02	md	19	77	0.03153	0.05	nc	nc1093808	2016-12-11T04:25:53.852Z	8 km NNE of Coalinga, California	earthquake	0.24	0.33	0.22	23	reviewed	nc	nc
5/9/1983	9:08:38	36.2606667	-120.37	8.598	2.05	md	35	66	0.01532	0.09	nc	nc1093806	2016-12-11T04:25:44.300Z	13 km N of Coalinga, California	earthquake	0.18	0.24	0.16	33	reviewed	nc	nc
5/9/1983	8:53:40	36.1655	-120.2568333	9.234	2.14	md	27	67	0.03694	0.14	nc	nc1093804	2016-12-11T04:25:32.230Z	9 km ENE of Coalinga, California	earthquake	0.28	0.43	0.19	24	reviewed	nc	nc
5/9/1983	8:39:23	36.0851667	-120.2101667	9.654	2.17	md	25	108	0.0982	0.15	nc	nc1093799	2016-12-11T04:25:08.490Z	11 km NW of Avenal, California	earthquake	0.4	0.94	0.17	24	reviewed	nc	nc
5/9/1983	8:34:51	36.2656667	-120.3801667	9.519	2.06	md	22	68	0.01622	0.1	nc	nc1093798	2016-12-11T04:25:02.092Z	14 km N of Coalinga, California	earthquake	0.27	0.39	0.2	24	reviewed	nc	nc
5/9/1983	8:19:32	36.0783333	-120.2128333	7.034	2.43	md	33	107	0.1009	0.11	nc	nc1093794	2016-12-11T04:24:44.820Z	11 km NW of Avenal, California	earthquake	0.26	0.56	0.15	36	reviewed	nc	nc
5/9/1983	7:58:23	36.2288333	-120.2608333	9.447	2.61	md	28	58	0.01802	0.14	nc	nc1093791	2016-12-11T04:24:29.130Z	13 km NE of Coalinga, California	earthquake	0.28	0.14	0.13	37	reviewed	nc	nc
5/9/1983	7:58:02	36.2513333	-120.2551667	8.263	2.96	md	12	92	0.04054	0.07	nc	nc1093790	2016-12-11T04:24:22.340Z	14 km WNW of Huron, California	earthquake	0.31	0.52	0.19	17	reviewed	nc	nc
5/9/1983	7:11:29	36.2433333	-120.2925	11.608	2.55	md	42	87	0.02523	0.1	nc	nc1093779	2016-12-11T04:23:36.950Z	13 km NNE of Coalinga, California	earthquake	0.17	0.25	0.18	40	reviewed	nc	nc
5/9/1983	7:06:02	36.1428333	-120.3506667	14.486	2.81	md	32	67	0.04234	0.07	nc	nc1093776	2016-12-11T04:23:20.270Z	0 km ENE of Coalinga, California	earthquake	0.23	0.45	0.14	42	reviewed	nc	nc
5/9/1983	7:04:48	36.1436667	-120.3518333	13.947	2.36	md	35	67	0.04324	0.07	nc	nc1093775	2016-12-11T04:23:12.160Z	0 km ENE of Coalinga, California	earthquake	0.19	0.45	0.18	35	reviewed	nc	nc
5/9/1983	6:43:38	36.2895	-120.4003333	8.102	2.06	md	32	101	0.04144	0.14	nc	nc1093773	2016-12-11T04:22:57.720Z	17 km NNW of Coalinga, California	earthquake	0.32	0.39	0.18	29	reviewed	nc	nc
5/9/1983	6:14:30	36.2325	-120.284	12.433	2.12	md	35	83	0.01351	0.09	nc	nc1093767	2016-12-11T04:22:27.400Z	12 km NNE of Coalinga, California	earthquake	0.21	0.33	0.2	38	reviewed	nc	nc
5/9/1983	5:52:32	36.2123333	-120.287	13.338	2.57	md	43	54	0.006306	0.07	nc	nc1093761	2016-12-11T04:21:59.910Z	10 km NE of Coalinga, California	earthquake	0.18	0.31	0.21	43	reviewed	nc	nc
5/9/1983	5:36:56	36.2781667	-120.4023333	8.967	2.99	md	49	70	0.02162	0.14	nc	nc1093760	2016-12-11T04:21:50.870Z	15 km NNW of Coalinga, California	earthquake	0.22	0.25	0.12	54	reviewed	nc	nc
5/9/1983	5:28:09	36.1116667	-120.1821667	8.329	2.12	md	18	97	0.08739	0.08	nc	nc1093755	2016-12-11T04:21:27.307Z	12 km SW of Huron, California	earthquake	0.4	0.79	0.24	25	reviewed	nc	nc
5/9/1983	5:13:23	36.1925	-120.361	12.613	2.91	md	50	37	0.04324	0.09	nc	nc1093753	2016-12-11T04:21:18.190Z	5 km N of Coalinga, California	earthquake	0.17	0.25	0.13	56	reviewed	nc	nc
5/9/1983	4:59:43	36.255	-120.3828333	8.992	2.37	md	36	74	0.005405	0.08	nc	nc1093750	2016-12-11T04:21:01.700Z	12 km N of Coalinga, California	earthquake	0.16	0.33	0.13	43	reviewed	nc	nc
5/9/1983	4:50:57	36.2533333	-120.3311667	9.989	2.76	md	54	65	0.00991	0.19	nc	nc1093749	2016-12-11T04:20:53.790Z	12 km NNE of Coalinga, California	earthquake	0.31	0.16	0.11	53	reviewed	nc	nc
5/9/1983	4:06:55	36.2515	-120.305	11.918	2.15	md	38	56	0.03063	0.1	nc	nc1093740	2016-12-11T04:20:10.820Z	13 km NNE of Coalinga, California	earthquake	0.21	0.3	0.23	34	reviewed	nc	nc
5/9/1983	3:50:46	36.2351667	-120.2833333	11.818	2.03	md	32	67	0.01622	0.09	nc	nc1093737	2016-12-11T04:19:52.770Z	12 km NNE of Coalinga, California	earthquake	0.2	0.28	0.17	13	reviewed	nc	nc
5/9/1983	3:30:40	36.2391667	-120.3001667	12.824	2.81	md	52	57	0.02432	0.08	nc	nc1093728	2016-12-11T04:18:58.660Z	12 km NNE of Coalinga, California	earthquake	0.21	0.14	0.21	9	reviewed	nc	nc
5/9/1983	3:26:37	36.2393333	-120.304	12.834	3.79	md	66	37	0.02613	0.08	nc	nc1093727	2018-06-04T20:43:45.000Z	12 km NNE of Coalinga, California	earthquake	0.12	0.14	0.06	10	reviewed	nc	nc
5/9/1983	3:24:55	36.2366667	-120.2995	13.163	2.25	md	13	83	0.02162	0.1	nc	nc1093726	2016-12-11T04:18:40.132Z	12 km NNE of Coalinga, California	earthquake	0.63	0.32	0.03	7	reviewed	nc	nc
5/9/1983	3:19:11	36.24	-120.2986667	13.064	3.74	md	66	32	0.02432	0.12	nc	nc1093724	2016-12-11T04:18:30.790Z	12 km NNE of Coalinga, California	earthquake	0.12	0.15	0.09	24	reviewed	nc	nc
5/9/1983	3:14:03	36.239	-120.2976667	12.956	2.92	md	22	91	0.03063	0.23	nc	nc1093722	2016-12-11T04:18:18.300Z	12 km NNE of Coalinga, California	earthquake	0.48	0.25	0.34	10	reviewed	nc	nc
5/9/1983	3:12:45	36.2383333	-120.294	12.654	3.36	md	52	35	0.02072	0.11	nc	nc1093721	2016-12-11T04:18:12.860Z	12 km NNE of Coalinga, California	earthquake	0.18	0.16	0.22	17	reviewed	nc	nc
5/9/1983	2:49:11	36.2463333	-120.3008333	12.916	5.2	ml	66	32	0.03063	0.09	nc	nc1093715	2022-04-28T00:00:27.612Z	12 km NNE of Coalinga, California	earthquake	0.13	0.15		0	reviewed	nc	nc
5/9/1983	1:45:23	36.119	-120.2051667	10.071	2.34	md	25	90	0.08288	0.12	nc	nc1093711	2016-12-11T04:17:23.820Z	13 km SW of Huron, California	earthquake	0.42	0.78	0.18	31	reviewed	nc	nc
5/9/1983	1:36:33	36.2565	-120.4021667	5.633	2.31	md	31	101	0.01622	0.16	nc	nc1093710	2016-12-11T04:17:16.320Z	13 km NNW of Coalinga, California	earthquake	0.27	0.53	0.15	22	reviewed	nc	nc
5/9/1983	1:25:58	36.2268333	-120.3465	8.788	2	md	28	74	0.02252	0.15	nc	nc1093708	2016-12-11T04:16:58.260Z	9 km N of Coalinga, California	earthquake	0.36	0.42	0.22	22	reviewed	nc	nc
5/9/1983	1:20:09	36.3186667	-120.3198333	5.57	2.09	md	15	106	0.02793	0.15	nc	nc1093707	2016-12-11T04:16:47.374Z	20 km N of Coalinga, California	earthquake	0.47	0.63	0.23	14	reviewed	nc	nc
5/8/1983	23:26:12	36.1803333	-120.3073333	10.053	2.03	md	20	95	0.02973	0.05	nc	nc1093698	2016-12-11T04:16:11.289Z	6 km NE of Coalinga, California	earthquake	0.25	0.34	0.12	20	reviewed	nc	nc
5/8/1983	23:07:14	36.218	-120.3116667	8.838	2.62	md	36	78	0.02162	0.11	nc	nc1093696	2016-12-11T04:16:02.160Z	9 km NNE of Coalinga, California	earthquake	0.21	0.25	0.23	44	reviewed	nc	nc
5/8/1983	22:54:05	36.2926667	-120.3843333	9.579	2.06	md	19	109	0.04234	0.11	nc	nc1093695	2016-12-11T04:15:55.865Z	Central California	earthquake	0.39	0.39	0.21	21	reviewed	nc	nc
5/8/1983	20:25:39	36.2113333	-120.3036667	9.446	3.72	md	61	39	0.007207	0.1	nc	nc1093683	2016-12-11T04:15:07.160Z	9 km NNE of Coalinga, California	earthquake	0.12	0.14	0.13	46	reviewed	nc	nc
5/8/1983	19:05:21	36.1531667	-120.3251667	14.757	2.09	md	20	71	0.02072	0.07	nc	nc1093673	2016-12-11T04:14:15.853Z	3 km ENE of Coalinga, California	earthquake	0.31	0.68	0.18	21	reviewed	nc	nc
5/8/1983	18:57:30	36.1666667	-120.2623333	11.762	2.25	md	25	118	0.03333	0.12	nc	nc1093672	2016-12-11T04:14:11.942Z	9 km ENE of Coalinga, California	earthquake	0.31	0.41	0.26	26	reviewed	nc	nc
5/8/1983	18:46:20	36.2586667	-120.287	3.42	2.77	md	34	75	0.02252	0.24	nc	nc1093670	2016-12-11T04:14:02.860Z	14 km NNE of Coalinga, California	earthquake	0.31	0.47	0.13	31	reviewed	nc	nc
5/8/1983	18:40:09	36.096	-120.1686667	6.424	2.15	md	21	111	0.07748	0.13	nc	nc1093669	2016-12-11T04:13:56.455Z	11 km NNW of Avenal, CA	earthquake	0.48	0.99	0.24	19	reviewed	nc	nc
5/8/1983	18:34:17	36.0875	-120.2146667	8.115	2.04	md	11	105	0.09369	0.06	nc	nc1093668	2016-12-11T04:13:52.052Z	12 km NW of Avenal, California	earthquake	0.48	1.27	0.16	13	reviewed	nc	nc
5/8/1983	18:21:34	36.242	-120.3381667	9.46	2.39	md	35	62	0.008108	0.08	nc	nc1093665	2016-12-11T04:13:38.590Z	11 km N of Coalinga, California	earthquake	0.26	0.25	0.1	38	reviewed	nc	nc
5/8/1983	16:48:26	36.2668333	-120.3066667	6.616	2.16	md	23	101	0.02613	0.17	nc	nc1093657	2016-12-11T04:13:03.934Z	14 km NNE of Coalinga, California	earthquake	0.32	0.33	0.26	18	reviewed	nc	nc
5/8/1983	16:29:12	36.197	-120.3341667	7.766	2.91	md	17	54	0.04595	0.06	nc	nc1093652	2016-12-11T04:12:44.867Z	6 km NNE of Coalinga, California	earthquake	0.23	0.38	0.14	16	reviewed	nc	nc
5/8/1983	16:19:10	36.2006667	-120.3381667	7.764	2.81	md	23	71	0.04685	0.06	nc	nc1093650	2016-12-11T04:12:36.613Z	7 km NNE of Coalinga, California	earthquake	0.21	0.28	0.11	42	reviewed	nc	nc
5/8/1983	16:08:53	36.1976667	-120.3373333	7.159	2.02	md	13	97	0.04775	0.07	nc	nc1093647	2016-12-11T04:12:24.039Z	6 km NNE of Coalinga, California	earthquake	0.33	0.48	0.12	12	reviewed	nc	nc
5/8/1983	15:42:31	36.1953333	-120.3495	7.065	3.27	md	20	60	0.03333	0.18	nc	nc1093640	2016-12-11T04:11:55.410Z	6 km N of Coalinga, California	earthquake	0.43	0.48	0.14	35	reviewed	nc	nc
5/8/1983	15:42:13	36.233	-120.3015	6.894	3.44	md	23	70	0.01982	0.19	nc	nc1093639	2016-12-11T04:11:49.175Z	11 km NNE of Coalinga, California	earthquake	0.37	0.28	0.15	21	reviewed	nc	nc
5/8/1983	15:23:32	36.1885	-120.3368333	7.389	3.48	md	62	32	0.02973	0.12	nc	nc1093636	2016-12-11T04:11:35.290Z	5 km NNE of Coalinga, California	earthquake	0.12	0.16	0.11	56	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/8/1983	14:59:02	36.2693333	-120.29	5.966	2.16	md	22	69	0.02703	0.12	nc	nc1093633	2016-12-11T04:11:20.116Z	15 km NNE of Coalinga, California	earthquake	0.25	0.3	0.27	24	reviewed	nc	nc
5/8/1983	14:49:33	36.21	-120.2071667	8.111	2.01	md	9	150	0.02432	0.03	nc	nc1093632	2016-12-11T04:11:15.894Z	9 km W of Huron, California	earthquake	0.48	0.43	0.24	11	reviewed	nc	nc
5/8/1983	14:42:41	36.2151667	-120.2921667	12.837	2.15	md	21	84	0.007207	0.12	nc	nc1093630	2016-12-11T04:11:07.598Z	10 km NE of Coalinga, California	earthquake	0.35	0.5	0.16	23	reviewed	nc	nc
5/8/1983	12:54:44	36.112	-120.1725	11.421	2.44	md	33	98	0.07928	0.18	nc	nc1093613	2016-12-11T04:09:59.100Z	11 km SSW of Huron, California	earthquake	0.34	0.66	0.13	38	reviewed	nc	nc
5/8/1983	12:15:04	36.1786667	-120.2881667	9.724	2.12	md	24	63	0.02883	0.12	nc	nc1093608	2016-12-11T04:09:35.740Z	7 km ENE of Coalinga, California	earthquake	0.27	0.43	0.19	26	reviewed	nc	nc
5/8/1983	11:30:59	36.205	-120.2523333	8.676	2.08	md	29	98	0.02973	0.12	nc	nc1093603	2016-12-11T04:09:11.730Z	12 km NE of Coalinga, California	earthquake	0.25	0.34	0.16	22	reviewed	nc	nc
5/8/1983	11:15:15	36.2023333	-120.2968333	9.281	2.93	md	45	55	0.01892	0.1	nc	nc1093601	2016-12-11T04:08:59.400Z	8 km NE of Coalinga, California	earthquake	0.16	0.18	0.15	61	reviewed	nc	nc
5/8/1983	11:14:10	36.2058333	-120.2996667	9.548	2.13	md	32	88	0.01802	0.1	nc	nc1093600	2016-12-11T04:08:48.390Z	9 km NE of Coalinga, California	earthquake	0.23	0.31	0.22	35	reviewed	nc	nc
5/8/1983	10:57:46	36.1473333	-120.2575	7.474	2.24	md	16	97	0.03423	0.07	nc	nc1093599	2016-12-11T04:08:42.071Z	9 km E of Coalinga, California	earthquake	0.28	0.51	0.2	15	reviewed	nc	nc
5/8/1983	10:50:36	36.1995	-120.2555	8.696	2.84	md	44	68	0.01261	0.15	nc	nc1093598	2016-12-11T04:08:36.610Z	11 km NE of Coalinga, California	earthquake	0.19	0.24	0.12	47	reviewed	nc	nc
5/8/1983	10:37:21	36.2161667	-120.3565	11.101	3.28	md	66	30	0.02883	0.09	nc	nc1093597	2016-12-11T04:08:28.800Z	8 km N of Coalinga, California	earthquake	0.12	0.14	0.13	72	reviewed	nc	nc
5/8/1983	10:17:39	36.192	-120.246	9.266	2.85	md	45	66	0.02342	0.11	nc	nc1093594	2016-12-11T04:08:12.370Z	11 km ENE of Coalinga, California	earthquake	0.17	0.12	0.13	56	reviewed	nc	nc
5/8/1983	9:58:46	36.2795	-120.3143333	5.361	2.09	md	14	123	0.01441	0.09	nc	nc1093590	2016-12-11T04:07:50.659Z	16 km NNE of Coalinga, California	earthquake	0.32	0.3	0.18	15	reviewed	nc	nc
5/8/1983	9:04:02	36.1323333	-120.212	12.498	2.35	md	6	210	0.1045	0.02	nc	nc1093585	2016-12-11T04:07:30.144Z	12 km SW of Huron, California	earthquake	1.05	1.72	0.36	7	reviewed	nc	nc
5/8/1983	8:25:54	36.16	-120.2626667	10.994	2.16	md	33	118	0.03063	0.09	nc	nc1093580	2016-12-11T04:07:03.040Z	9 km ENE of Coalinga, California	earthquake	0.26	0.3	0.16	30	reviewed	nc	nc
5/8/1983	8:09:55	36.248	-120.263	5.137	2.33	md	16	82	0.03423	0.17	nc	nc1093577	2016-12-11T04:06:49.325Z	14 km NE of Coalinga, California	earthquake	0.4	0.51	0.22	17	reviewed	nc	nc
5/8/1983	7:46:47	36.1785	-120.2975	9.876	2.7	md	39	62	0.02703	0.1	nc	nc1093574	2016-12-11T04:06:35.570Z	7 km NE of Coalinga, California	earthquake	0.19	0.3	0.14	48	reviewed	nc	nc
5/8/1983	7:38:11	36.2561667	-120.285	5.582	3.55	md	63	39	0.01982	0.15	nc	nc1093573	2016-12-11T04:06:27.960Z	14 km NNE of Coalinga, California	earthquake	0.13	0.12	0.17	52	reviewed	nc	nc
5/8/1983	7:24:03	36.1176667	-120.1613333	10.001	2.35	md	22	104	0.07117	0.12	nc	nc1093572	2016-12-11T04:06:16.780Z	10 km SSW of Huron, California	earthquake	0.32	0.57	0.16	29	reviewed	nc	nc
5/8/1983	6:15:43	36.2103333	-120.2881667	10.458	2.23	md	38	56	0.009009	0.1	nc	nc1093561	2016-12-11T04:05:15.760Z	10 km NE of Coalinga, California	earthquake	0.19	0.26	0.15	38	reviewed	nc	nc
5/8/1983	6:12:43	36.2481667	-120.3603333	9.688	2.22	md	35	64	0.01441	0.1	nc	nc1093560	2016-12-11T04:05:05.520Z	12 km N of Coalinga, California	earthquake	0.19	0.25	0.18	38	reviewed	nc	nc
5/8/1983	5:41:41	36.2076667	-120.2896667	10.266	2.3	md	38	57	0.01171	0.08	nc	nc1093556	2016-12-11T04:04:38.130Z	9 km NE of Coalinga, California	earthquake	0.17	0.22	0.2	45	reviewed	nc	nc
5/8/1983	5:33:36	36.2793333	-120.3616667	8.53	2	md	35	76	0.03423	0.1	nc	nc1093554	2016-12-11T04:04:26.350Z	15 km N of Coalinga, California	earthquake	0.21	0.28	0.23	27	reviewed	nc	nc
5/8/1983	5:24:04	36.1765	-120.3083333	11.124	2.64	md	37	54	0.02613	0.08	nc	nc1093552	2016-12-11T04:04:14.280Z	6 km NE of Coalinga, California	earthquake	0.23	0.32	0.17	46	reviewed	nc	nc
5/8/1983	5:02:51	36.2731667	-120.2908333	6.958	2.8	md	41	130	0.02342	0.11	nc	nc1093551	2016-12-11T04:04:03.770Z	16 km NNE of Coalinga, California	earthquake	0.23	0.11	0.21	51	reviewed	nc	nc
5/8/1983	4:06:45	36.2266667	-120.2971667	7.578	2.65	md	28	62	0.01261	0.09	nc	nc1093545	2016-12-11T04:03:36.360Z	11 km NNE of Coalinga, California	earthquake	0.21	0.26	0.17	38	reviewed	nc	nc
5/8/1983	3:52:21	36.1368333	-120.1965	9.641	2.07	md	24	81	0.07838	0.11	nc	nc1093540	2016-12-11T04:03:14.201Z	11 km SW of Huron, California	earthquake	0.29	0.58	0.22	16	reviewed	nc	nc
5/8/1983	3:45:33	36.26	-120.4406667	-0.551	3.48	md	42	71	0.08018	0.16	nc	nc1093539	2016-12-11T04:03:08.670Z	15 km NNW of Coalinga, California	earthquake	0.35	2.98	0.11	41	reviewed	nc	nc
5/8/1983	3:04:57	36.2511667	-120.3938333	6.557	2.48	md	41	52	0.008108	0.12	nc	nc1093534	2016-12-11T04:02:40.190Z	12 km NNW of Coalinga, California	earthquake	0.21	0.3	0.13	34	reviewed	nc	nc
5/8/1983	2:17:50	36.161	-120.2353333	10.27	2.27	md	27	76	0.07117	0.09	nc	nc1093529	2016-12-11T04:02:15.600Z	Central California	earthquake	0.25	0.54	0.21	34	reviewed	nc	nc
5/8/1983	2:06:31	36.2306667	-120.2686667	8.913	2.85	md	44	65	0.01622	0.13	nc	nc1093527	2016-12-11T04:02:04.480Z	13 km NE of Coalinga, California	earthquake	0.22	0.15	0.21	54	reviewed	nc	nc
5/8/1983	2:05:36	36.2491667	-120.423	11.248	2.22	md	33	56	0.03153	0.12	nc	nc1093526	2016-12-11T04:01:58.022Z	13 km NNW of Coalinga, California	earthquake	0.23	0.47	0.19	26	reviewed	nc	nc
5/8/1983	1:47:25	36.2028333	-120.281	8.856	2.95	md	51	42	0.01622	0.1	nc	nc1093523	2016-12-11T04:01:44.320Z	9 km NE of Coalinga, California	earthquake	0.13	0.12	0.29	22	reviewed	nc	nc
5/8/1983	1:23:04	36.2251667	-120.2893333	12.971	3.31	md	30	67	0.007207	0.09	nc	nc1093519	2016-12-11T04:01:18.620Z	11 km NE of Coalinga, California	earthquake	0.32	0.28	0.1	25	reviewed	nc	nc
5/8/1983	1:20:14	36.2108333	-120.3051667	9.482	3.6	md	61	39	0.006306	0.08	nc	nc1093518	2016-12-11T04:01:10.860Z	Central California	earthquake	0.12	0.13	0.11	50	reviewed	nc	nc
5/8/1983	1:11:03	36.1905	-120.3065	10.533	2.61	md	24	63	0.03333	0.11	nc	nc1093517	2016-12-11T04:01:02.270Z	7 km NE of Coalinga, California	earthquake	0.27	0.36	0.14	26	reviewed	nc	nc
5/8/1983	1:10:42	36.2581667	-120.3085	11.226	2.98	md	18	65	0.02883	0.08	nc	nc1093516	2016-12-11T04:00:55.769Z	13 km NNE of Coalinga, California	earthquake	0.28	0.38	0.26	15	reviewed	nc	nc
5/8/1983	0:37:35	36.1136667	-120.2293333	9.657	2.59	md	31	90	0.06847	0.14	nc	nc1093513	2016-12-11T04:00:42.790Z	12 km ESE of Coalinga, California	earthquake	0.27	0.54	0.14	35	reviewed	nc	nc
5/8/1983	0:33:39	36.2486667	-120.3661667	10.193	2.16	md	28	103	0.01441	0.13	nc	nc1093512	2016-12-11T04:00:32.910Z	12 km N of Coalinga, California	earthquake	0.32	0.32	0.16	33	reviewed	nc	nc
5/7/1983	23:56:46	36.2726667	-120.3296667	8.546	2.04	md	18	72	0.02523	0.08	nc	nc1093510	2016-12-11T04:00:22.439Z	15 km N of Coalinga, California	earthquake	0.29	0.3	0.15	17	reviewed	nc	nc
5/7/1983	23:23:00	35.527	-120.0965	9.922	2.48	md	24	278	0.1586	0.05	nc	nc1093507	2016-12-11T04:00:10.632Z	29 km ESE of Shandon, California	earthquake	1.76	0.9	0.11	17	reviewed	nc	nc
5/7/1983	22:29:56	36.2746667	-120.3585	9.866	2.1	md	29	45	0.02793	0.09	nc	nc1093502	2016-12-11T03:59:49.815Z	14 km N of Coalinga, California	earthquake	0.22	0.27	0.19	28	reviewed	nc	nc
5/7/1983	22:20:27	36.2561667	-120.3851667	9.126	2.28	md	35	154	0.006306	0.1	nc	nc1093501	2016-12-11T03:59:44.210Z	13 km N of Coalinga, California	earthquake	0.37	0.23	0.13	39	reviewed	nc	nc
5/7/1983	21:48:07	36.2056667	-120.2995	9.488	2.84	md	41	55	0.01802	0.1	nc	nc1093499	2016-12-11T03:59:28.570Z	9 km NE of Coalinga, California	earthquake	0.2	0.31	0.17	45	reviewed	nc	nc
5/7/1983	20:44:43	36.186	-120.2193333	8.143	2.35	md	23	83	0.04414	0.2	nc	nc1093489	2016-12-11T03:58:45.330Z	10 km W of Huron, California	earthquake	0.43	0.7	0.13	28	reviewed	nc	nc
5/7/1983	20:00:11	36.2291667	-120.2715	7.812	2.87	md	42	73	0.01532	0.13	nc	nc1093476	2016-12-11T03:57:50.480Z	12 km NE of Coalinga, California	earthquake	0.21	0.29	0.13	55	reviewed	nc	nc
5/7/1983	19:42:53	36.3038333	-120.3025	5.487	2.09	md	16	88	0.01171	0.12	nc	nc1093471	2016-12-11T03:57:23.230Z	18 km NNE of Coalinga, California	earthquake	0.28	0.44	0.26	15	reviewed	nc	nc
5/7/1983	19:33:29	36.3231667	-120.3398333	10.087	2.02	md	18	108	0.01712	0.06	nc	nc1093470	2016-12-11T03:57:18.958Z	19 km S of Cantua Creek, California	earthquake	0.3	0.32	0.33	19	reviewed	nc	nc
5/7/1983	19:17:05	36.2715	-120.3136667	5.757	2.2	md	22	64	0.02252	0.11	nc	nc1093468	2016-12-11T03:57:10.954Z	15 km NNE of Coalinga, California	earthquake	0.22	0.34	0.1	22	reviewed	nc	nc
5/7/1983	19:08:23	36.2466667	-120.405	-0.275	2.12	md	22	74	0.01712	0.6	nc	nc1093465	2016-12-11T03:56:59.113Z	12 km NNW of Coalinga, California	earthquake	0.88	1.99	0.16	27	reviewed	nc	nc
5/7/1983	18:28:50	36.264	-120.3673333	9.735	2.63	md	39	74	0.01982	0.08	nc	nc1093462	2016-12-11T03:56:45.660Z	13 km N of Coalinga, California	earthquake	0.17	0.25	0.16	48	reviewed	nc	nc
5/7/1983	18:02:19	36.2568333	-120.3943333	6.316	2.01	md	23	58	0.01081	0.09	nc	nc1093455	2016-12-11T03:56:09.068Z	13 km NNW of Coalinga, California	earthquake	0.23	0.36	0.19	25	reviewed	nc	nc
5/7/1983	17:25:28	36.2233333	-120.413	12.03	2.13	md	25	38	0.1045	0.08	nc	nc1093451	2016-12-11T03:55:53.140Z	10 km NNW of Coalinga, California	earthquake	0.22	0.53	0.12	24	reviewed	nc	nc
5/7/1983	17:24:13	36.1885	-120.3068333	11.118	2.25	md	27	58	0.03514	0.07	nc	nc1093450	2016-12-11T03:55:48.050Z	7 km NE of Coalinga, California	earthquake	0.21	0.3	0.12	35	reviewed	nc	nc
5/7/1983	17:05:03	36.2808333	-120.2928333	4.471	2.1	md	14	136	0.01622	0.12	nc	nc1093447	2016-12-11T03:55:34.219Z	16 km NNE of Coalinga, California	earthquake	0.37	0.43	0.2	16	reviewed	nc	nc
5/7/1983	16:52:08	36.1721667	-120.2886667	8.806	2.39	md	34	64	0.02252	0.13	nc	nc1093446	2016-12-11T03:55:29.120Z	7 km ENE of Coalinga, California	earthquake	0.24	0.33	0.13	41	reviewed	nc	nc
5/7/1983	15:32:20	36.247	-120.2516667	4.111	2.25	md	27	126	0.06847	0.12	nc	nc1093438	2016-12-11T03:54:53.330Z	14 km WNW of Huron, California	earthquake	0.3	0.54	0.18	16	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/7/1983	15:19:11	36.2915	-120.4103333	9.471	2.9	md	49	130	0.06937	0.1	nc	nc1093436	2016-12-11T03:54:41.760Z	17 km NNW of Coalinga, California	earthquake	0.23	0.39	0.11	51	reviewed	nc	nc
5/7/1983	14:50:44	36.2378333	-120.3533333	6.89	2.05	md	28	130	0.145	0.09	nc	nc1093435	2016-12-11T03:54:34.847Z	10 km N of Coalinga, California	earthquake	0.33	0.54	0.2	23	reviewed	nc	nc
5/7/1983	14:48:42	35.5361667	-120.1208333	8.672	2.24	md	26	262	0.1396	0.08	nc	nc1093434	2016-12-11T03:54:30.997Z	26 km ESE of Shandon, California	earthquake	1.49	0.74	0.15	23	reviewed	nc	nc
5/7/1983	14:37:32	36.1363333	-120.2296667	5.733	2.29	md	25	153	0.08829	0.08	nc	nc1093432	2016-12-11T03:54:21.760Z	11 km E of Coalinga, California	earthquake	0.28	0.62	0.17	24	reviewed	nc	nc
5/7/1983	14:13:28	36.2318333	-120.3095	-0.602	2.28	md	22	209	0.03243	0.19	nc	nc1093428	2016-12-11T03:54:01.124Z	11 km NNE of Coalinga, California	earthquake	0.73	6.61	0.14	21	reviewed	nc	nc
5/7/1983	14:01:38	36.263	-120.361	9.361	2.94	md	53	125	0.01982	0.08	nc	nc1093427	2016-12-11T03:53:55.830Z	13 km N of Coalinga, California	earthquake	0.17	0.27	0.16	58	reviewed	nc	nc
5/7/1983	13:41:05	36.1756667	-120.2956667	8.103	2.01	md	18	109	0.08288	0.15	nc	nc1093425	2016-12-11T03:53:42.904Z	7 km NE of Coalinga, California	earthquake	0.41	0.93	0.19	13	reviewed	nc	nc
5/7/1983	13:31:37	36.2606667	-120.4233333	5.685	2.42	md	32	120	0.06577	0.14	nc	nc1093423	2016-12-11T03:53:33.620Z	14 km NNW of Coalinga, California	earthquake	0.29	0.53	0.1	33	reviewed	nc	nc
5/7/1983	13:14:47	35.5323333	-120.114	8.452	2.4	md	27	263	0.1459	0.09	nc	nc1093422	2016-12-11T03:53:22.628Z	27 km ESE of Shandon, California	earthquake	1.66	0.66	0.22	25	reviewed	nc	nc
5/7/1983	13:13:50	36.198	-120.311	10.568	2.14	md	35	54	0.02973	0.07	nc	nc1093421	2016-12-11T03:53:16.870Z	Central California	earthquake	0.16	0.25	0.2	41	reviewed	nc	nc
5/7/1983	13:05:09	36.1636667	-120.2761667	8.824	2.07	md	29	73	0.02252	0.08	nc	nc1093419	2016-12-11T03:53:02.510Z	8 km ENE of Coalinga, California	earthquake	0.16	0.24	0.15	29	reviewed	nc	nc
5/7/1983	13:03:02	36.326	-120.3275	2.015	2.03	md	20	148	0.07748	0.11	nc	nc1093417	2016-12-11T03:52:52.773Z	19 km S of Cantua Creek, California	earthquake	0.43	1.06	0.11	14	reviewed	nc	nc
5/7/1983	13:00:24	36.32	-120.3281667	3.151	2.2	md	18	146	0.07117	0.11	nc	nc1093416	2016-12-11T03:52:48.779Z	20 km S of Cantua Creek, California	earthquake	0.46	0.72	0.12	16	reviewed	nc	nc
5/7/1983	12:42:23	36.2125	-120.2438333	16.589	3.77	md	14	153	0.05405	0.19	nc	nc1093413	2016-12-11T03:52:29.542Z	12 km W of Huron, California	earthquake	0.92	1.84	0.15	9	reviewed	nc	nc
5/7/1983	12:38:30	36.2373333	-120.273	5.591	2.45	md	14	121	0.05766	0.13	nc	nc1093412	2016-12-11T03:52:25.551Z	13 km NE of Coalinga, California	earthquake	0.65	0.8	0.11	14	reviewed	nc	nc
5/7/1983	12:24:43	36.2345	-120.302	10.092	2.02	md	9	150	0.03604	0.1	nc	nc1093406	2016-12-11T03:52:01.312Z	11 km NNE of Coalinga, California	earthquake	1.02	0.78	0.15	10	reviewed	nc	nc
5/7/1983	12:16:15	36.2193333	-120.2845	9.381	2	md	12	136	0.05586	0.04	nc	nc1093405	2016-12-11T03:51:57.368Z	11 km NE of Coalinga, California	earthquake	0.36	0.48	0.16	13	reviewed	nc	nc
5/7/1983	12:11:50	35.534	-120.1048333	10.572	2.79	md	31	266	0.1495	0.1	nc	nc1093401	2016-12-11T03:51:41.350Z	27 km ESE of Shandon, California	earthquake	1.63	0.51	0.14	36	reviewed	nc	nc
5/7/1983	11:47:29	36.1771667	-120.3046667	7.393	2.06	md	29	101	0.07838	0.15	nc	nc1093397	2016-12-11T03:51:23.230Z	6 km NE of Coalinga, California	earthquake	0.29	0.56	0.19	20	reviewed	nc	nc
5/7/1983	11:43:42	35.5278333	-120.0925	10.772	3.06	md	34	268	0.1604	0.08	nc	nc1093396	2016-12-11T03:51:17.010Z	29 km ESE of Shandon, California	earthquake	1.36	0.45	0.13	41	reviewed	nc	nc
5/7/1983	11:41:48	36.1831667	-120.2528333	9.102	2.01	md	14	125	0.06847	0.2	nc	nc1093395	2016-12-11T03:51:12.436Z	10 km ENE of Coalinga, California	earthquake	0.7	1.35	0.18	11	reviewed	nc	nc
5/7/1983	11:40:55	36.107	-120.1995	-0.298	2.07	md	16	153	0.1081	0.17	nc	nc1093394	2016-12-11T03:51:08.554Z	13 km NNW of Avenal, California	earthquake	0.56	9.12	0.2	14	reviewed	nc	nc
5/7/1983	11:40:36	36.1878333	-120.2481667	11.21	2.58	md	10	142	0.06306	0.1	nc	nc1093393	2016-12-11T03:51:04.763Z	11 km ENE of Coalinga, California	earthquake	1.06	1.59	0.02	5	reviewed	nc	nc
5/7/1983	11:14:55	36.219	-120.2346667	6.311	2.05	md	10	234	0.04685	0.05	nc	nc1093390	2016-12-11T03:50:52.071Z	11 km W of Huron, California	earthquake	2.26	2.16	0.18	17	reviewed	nc	nc
5/7/1983	11:10:49	36.1875	-120.3065	8.773	2.07	md	17	101	0.06847	0.08	nc	nc1093387	2016-12-11T03:50:40.094Z	7 km NE of Coalinga, California	earthquake	0.28	0.5	0.15	23	reviewed	nc	nc
5/7/1983	11:09:51	36.2036667	-120.2868333	9.351	2.31	md	36	118	0.06396	0.13	nc	nc1093386	2016-12-11T03:50:34.550Z	9 km NE of Coalinga, California	earthquake	0.29	0.51	0.17	36	reviewed	nc	nc
5/7/1983	10:46:38	36.2116667	-120.2703333	7.051	2.09	md	23	111	0.06937	0.11	nc	nc1093382	2016-12-11T03:50:15.460Z	Central California	earthquake	0.31	0.62	0.15	20	reviewed	nc	nc
5/7/1983	10:15:42	36.2545	-120.2873333	3.571	2.06	md	7	128	0.04505	0.02	nc	nc1093377	2016-12-11T03:49:54.141Z	14 km NNE of Coalinga, California	earthquake	0.59	0.59	0.02	5	reviewed	nc	nc
5/7/1983	10:14:26	36.2076667	-120.2883333	9.781	2.16	md	17	110	0.06036	0.12	nc	nc1093376	2016-12-11T03:49:48.920Z	9 km NE of Coalinga, California	earthquake	0.5	0.75	0.17	20	reviewed	nc	nc
5/7/1983	10:07:59	36.2641667	-120.2808333	7.121	2.08	md	21	131	0.05225	0.07	nc	nc1093374	2016-12-11T03:49:38.246Z	15 km NNE of Coalinga, California	earthquake	0.42	0.29	0.2	20	reviewed	nc	nc
5/7/1983	9:40:10	36.2576667	-120.283	5.96	2.72	md	29	121	0.03874	0.14	nc	nc1093365	2016-12-11T03:48:59.560Z	14 km NNE of Coalinga, California	earthquake	0.37	0.24	0.15	36	reviewed	nc	nc
5/7/1983	8:08:20	36.1141667	-120.2098333	10.031	2.22	md	33	92	0.08108	0.08	nc	nc1093357	2016-12-11T03:48:25.760Z	13 km SW of Huron, California	earthquake	0.22	0.45	0.16	37	reviewed	nc	nc
5/7/1983	7:32:33	36.2741667	-120.3466667	11.576	3.22	md	51	73	0.02523	0.07	nc	nc1093345	2016-12-11T03:47:32.790Z	14 km N of Coalinga, California	earthquake	0.15	0.21	0.13	68	reviewed	nc	nc
5/7/1983	7:28:32	36.1125	-120.2201667	9.577	3.11	md	37	92	0.07477	0.09	nc	nc1093344	2016-12-11T03:47:24.580Z	12 km ESE of Coalinga, California	earthquake	0.23	0.44	0.15	67	reviewed	nc	nc
5/7/1983	6:43:02	36.2065	-120.3023333	8.838	2.07	md	28	57	0.01892	0.08	nc	nc1093333	2016-12-11T03:46:37.740Z	9 km NE of Coalinga, California	earthquake	0.2	0.3	0.18	30	reviewed	nc	nc
5/7/1983	6:18:34	36.2433333	-120.3576667	9.572	2.82	md	52	37	0.01351	0.09	nc	nc1093328	2016-12-11T03:46:16.740Z	11 km N of Coalinga, California	earthquake	0.15	0.25	0.12	66	reviewed	nc	nc
5/7/1983	5:43:57	36.2316667	-120.2806667	9.142	3.72	md	59	43	0.01351	0.06	nc	nc1093320	2016-12-11T03:45:37.540Z	12 km NE of Coalinga, California	earthquake	0.12	0.09	0.11	57	reviewed	nc	nc
5/7/1983	5:40:59	36.1773333	-120.2915	9.584	2.52	md	37	62	0.02613	0.14	nc	nc1093319	2016-12-11T03:45:28.690Z	7 km NE of Coalinga, California	earthquake	0.23	0.45	0.12	46	reviewed	nc	nc
5/7/1983	5:15:02	36.1563333	-120.2691667	9.333	3.38	md	39	117	0.09369	0.09	nc	nc1093312	2016-12-11T03:44:55.420Z	8 km ENE of Coalinga, California	earthquake	0.2	0.44	0.12	57	reviewed	nc	nc
5/7/1983	4:42:10	36.254	-120.284	5.111	2.17	md	18	173	0.04775	0.14	nc	nc1093304	2016-12-11T03:44:23.588Z	14 km NNE of Coalinga, California	earthquake	0.54	0.41	0.11	21	reviewed	nc	nc
5/7/1983	4:36:31	36.1338333	-120.1553333	3.119	2.07	md	18	165	0.08198	0.24	nc	nc1093302	2016-12-11T03:44:16.093Z	8 km SSW of Huron, California	earthquake	0.7	1.6	0.26	16	reviewed	nc	nc
5/7/1983	4:27:26	36.192	-120.2896667	8.683	2.9	md	36	104	0.07207	0.13	nc	nc1093299	2016-12-11T03:44:03.590Z	8 km NE of Coalinga, California	earthquake	0.23	0.45	0.15	48	reviewed	nc	nc
5/7/1983	4:26:04	36.11	-120.2101667	8.52	2.15	md	26	148	0.1072	0.07	nc	nc1093298	2016-12-11T03:43:57.295Z	13 km NNW of Avenal, California	earthquake	0.29	0.59	0.19	25	reviewed	nc	nc
5/7/1983	3:59:55	35.0505	-118.9486667	3.166	2.32	ml	32	159		0.29	ci	ci1106869	2016-02-03T02:51:21.590Z	12km N of Grapevine, CA	earthquake	0.73	1.45		1	reviewed	ci	ci
5/7/1983	1:24:06	36.1748333	-120.3393333	13.646	2.17	md	32	64	0.06216	0.14	nc	nc1093270	2016-12-11T03:42:03.670Z	4 km NNE of Coalinga, California	earthquake	0.31	0.69	0.19	26	reviewed	nc	nc
5/7/1983	1:21:36	36.2316667	-120.4306667	9.356	2.55	md	38	34	0.04234	0.08	nc	nc1093269	2016-12-11T03:41:52.080Z	12 km NNW of Coalinga, California	earthquake	0.16	0.28	0.18	41	reviewed	nc	nc
5/7/1983	1:09:38	36.3288333	-120.338	3.197	2.38	md	30	107	0.01441	0.18	nc	nc1093267	2016-12-11T03:41:41.300Z	19 km S of Cantua Creek, California	earthquake	0.26	0.32	0.13	27	reviewed	nc	nc
5/7/1983	1:06:04	36.1993333	-120.1763333	18.094	2.6	md	7	271	0.09009	0.02	nc	nc1093266	2016-12-11T03:41:32.987Z	6 km W of Huron, California	earthquake	1.91	1.59	0.23	7	reviewed	nc	nc
5/7/1983	0:50:36	36.1701667	-120.2848333	9.127	2.42	md	29	70	0.04865	0.07	nc	nc1093264	2016-12-11T03:41:24.340Z	7 km ENE of Coalinga, California	earthquake	0.21	0.44	0.14	24	reviewed	nc	nc
5/7/1983	0:48:28	36.1786667	-120.2395	10.342	2.62	md	37	85	0.05405	0.12	nc	nc1093263	2016-12-11T03:41:16.880Z	11 km ENE of Coalinga, California	earthquake	0.27	0.45	0.14	38	reviewed	nc	nc
5/7/1983	0:46:03	36.2623333	-120.348	9.551	2.31	md	19	119	0.01351	0.11	nc	nc1093261	2016-12-11T03:41:04.216Z	13 km N of Coalinga, California	earthquake	0.39	0.37	0.15	20	reviewed	nc	nc
5/7/1983	0:45:44	36.1726667	-120.2203333	6.77	2.89	md	12	264	0.06937	0.06	nc	nc1093260	2016-12-11T03:41:00.455Z	11 km WSW of Huron, California	earthquake	1.26	0.97	0.13	10	reviewed	nc	nc
5/7/1983	0:37:07	36.2675	-120.3171667	6.1	2.54	md	29	77	0.02703	0.12	nc	nc1093259	2016-12-11T03:40:55.090Z	14 km NNE of Coalinga, California	earthquake	0.27	0.24	0.19	29	reviewed	nc	nc
5/7/1983	0:17:15	36.2666667	-120.325	9.635	3.89	md	63	47	0.02252	0.08	nc	nc1093255	2016-12-11T03:40:31.580Z	14 km NNE of Coalinga, California	earthquake	0.12	0.12	0.07	14	reviewed	nc	nc
5/7/1983	0:06:09	36.2673333	-120.324	4.904	2.36	md	10	80	0.02883	0.05	nc	nc1093254	2016-12-11T03:40:25.157Z	14 km NNE of Coalinga, California	earthquake	0.38	0.39	0.27	8	reviewed	nc	nc
5/6/1983	23:28:43	36.148	-120.2115	10.966	3.56	md	35	89	0.03243	0.1	nc	nc1093247	2016-12-11T03:39:57.330Z	11 km WSW of Huron, California	earthquake	0.22	0.3	0.1	55	reviewed	nc	nc
5/6/1983	23:12:24	36.2055	-120.3171667	11.115	2.64	md	12	94	0.04865	0.02	nc	nc1093244	2016-12-11T03:39:41.020Z	8 km NNE of Coalinga, California	earthquake	0.26	0.45	0.19	12	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/6/1983	22:57:05	36.2696667	-120.2978333	6.322	2.23	md	19	117	0.04144	0.11	nc	nc1093243	2016-12-11T03:39:37.363Z	15 km NNE of Coalinga, California	earthquake	0.27	0.29	0.1	21	reviewed	nc	nc
5/6/1983	22:52:50	36.1581667	-120.2611667	9.209	2.37	md	27	119	0.1126	0.11	nc	nc1093241	2016-12-11T03:39:27.940Z	9 km ENE of Coalinga, California	earthquake	0.29	0.66	0.19	36	reviewed	nc	nc
5/6/1983	22:25:54	36.1816667	-120.238	9.611	2.88	md	37	61	0.1081	0.1	nc	nc1093234	2016-12-11T03:38:58.090Z	11 km ENE of Coalinga, California	earthquake	0.21	0.5	0.14	49	reviewed	nc	nc
5/6/1983	22:24:24	36.2401667	-120.2753333	7.392	2.28	md	25	103	0.05495	0.13	nc	nc1093233	2016-12-11T03:38:51.717Z	13 km NE of Coalinga, California	earthquake	0.26	0.5	0.16	27	reviewed	nc	nc
5/6/1983	22:10:10	36.1821667	-120.3113333	8.812	2.21	md	24	105	0.07207	0.09	nc	nc1093229	2016-12-11T03:38:35.950Z	6 km NE of Coalinga, California	earthquake	0.24	0.5	0.25	20	reviewed	nc	nc
5/6/1983	21:42:50	36.2821667	-120.3588333	7.683	3.14	md	33	78	0.1162	0.12	nc	nc1093224	2016-12-11T03:38:15.260Z	15 km N of Coalinga, California	earthquake	0.22	0.71	0.17	24	reviewed	nc	nc
5/6/1983	21:35:11	36.1291667	-120.2576667	5.968	2.02	md	8	279	0.1495	0.09	nc	nc1093223	2016-12-11T03:38:06.800Z	9 km E of Coalinga, California	earthquake	2.64	2.61	0.18	5	reviewed	nc	nc
5/6/1983	21:29:19	36.1401667	-120.21	7.348	2	md	17	135	0.1532	0.05	nc	nc1093222	2016-12-11T03:38:03.064Z	11 km SW of Huron, California	earthquake	0.36	1.02	0.14	7	reviewed	nc	nc
5/6/1983	21:03:03	36.2016667	-120.2765	8.842	2.21	md	22	104	0.07207	0.1	nc	nc1093218	2016-12-11T03:37:48.403Z	10 km NE of Coalinga, California	earthquake	0.26	0.74	0.07	29	reviewed	nc	nc
5/6/1983	20:57:04	36.1856667	-120.3085	8.686	2.58	md	25	101	0.06937	0.12	nc	nc1093217	2016-12-11T03:37:43.270Z	6 km NE of Coalinga, California	earthquake	0.33	0.56	0.11	33	reviewed	nc	nc
5/6/1983	20:45:26	36.2421667	-120.3411667	8.866	2.35	md	34	48	0.007207	0.1	nc	nc1093214	2016-12-11T03:37:27.740Z	11 km N of Coalinga, California	earthquake	0.2	0.29	0.18	23	reviewed	nc	nc
5/6/1983	19:40:08	36.2335	-120.4273333	9.557	2.23	md	28	96	0.03874	0.09	nc	nc1093208	2016-12-11T03:36:59.938Z	12 km NNW of Coalinga, California	earthquake	0.28	0.43	0.18	28	reviewed	nc	nc
5/6/1983	19:30:30	36.2686667	-120.3106667	5.984	2.15	md	11	99	0.06216	0.13	nc	nc1093206	2016-12-11T03:36:51.677Z	14 km NNE of Coalinga, California	earthquake	0.43	0.84	0.17	13	reviewed	nc	nc
5/6/1983	18:31:10	36.2668333	-120.3201667	5.542	3.36	md	49	54	0.05045	0.1	nc	nc1093192	2016-12-11T03:35:50.670Z	14 km NNE of Coalinga, California	earthquake	0.13	0.21	0.15	57	reviewed	nc	nc
5/6/1983	17:37:53	36.229	-120.2915	12.48	2.94	md	44	46	0.02523	0.12	nc	nc1093189	2016-12-11T03:35:34.410Z	11 km NNE of Coalinga, California	earthquake	0.18	0.21	0.1	54	reviewed	nc	nc
5/6/1983	17:30:39	36.1578333	-120.257	9.849	2.01	md	24	80	0.1378	0.19	nc	nc1093188	2016-12-11T03:35:27.546Z	9 km ENE of Coalinga, California	earthquake	0.3	1.27	0.15	18	reviewed	nc	nc
5/6/1983	16:42:22	36.2826667	-120.3536667	11.273	3.02	md	47	50	0.03423	0.1	nc	nc1093185	2016-12-11T03:35:14.460Z	15 km N of Coalinga, California	earthquake	0.16	0.2	0.11	55	reviewed	nc	nc
5/6/1983	16:09:35	36.2175	-120.2756667	11.759	2.2	md	19	106	0.06306	0.08	nc	nc1093183	2016-12-11T03:35:03.600Z	11 km NE of Coalinga, California	earthquake	0.31	0.55	0.16	16	reviewed	nc	nc
5/6/1983	15:52:48	36.166	-120.3185	8.215	2.13	md	19	103	0.08559	0.16	nc	nc1093181	2016-12-11T03:34:55.960Z	4 km NE of Coalinga, California	earthquake	0.55	0.74	0.24	14	reviewed	nc	nc
5/6/1983	15:43:17	36.1923333	-120.2715	0.048	2.47	md	11	93	0.1081	0.6	nc	nc1093179	2016-12-11T03:34:47.974Z	9 km NE of Coalinga, California	earthquake	1.38	18.67	0.14	14	reviewed	nc	nc
5/6/1983	14:54:48	36.052	-120.2845	14.382	2.44	md	28	100	0.1279	0.07	nc	nc1093175	2016-12-11T03:34:18.750Z	11 km SE of Coalinga, California	earthquake	0.26	0.67	0.08	26	reviewed	nc	nc
5/6/1983	14:54:09	36.0443333	-120.2798333	13.65	2.06	md	14	120	0.1225	0.07	nc	nc1093174	2016-12-11T03:34:09.912Z	12 km SE of Coalinga, California	earthquake	0.34	0.85	0.21	11	reviewed	nc	nc
5/6/1983	14:29:26	36.2735	-120.3683333	8.798	2.42	md	28	74	0.02703	0.1	nc	nc1093171	2016-12-11T03:33:56.240Z	14 km N of Coalinga, California	earthquake	0.21	0.3	0.16	30	reviewed	nc	nc
5/6/1983	13:43:10	36.2181667	-120.3098333	9.533	2.58	md	33	58	0.008108	0.12	nc	nc1093160	2016-12-11T03:33:08.500Z	9 km NNE of Coalinga, California	earthquake	0.21	0.14	0.18	38	reviewed	nc	nc
5/6/1983	13:42:18	36.2711667	-120.2905	6.245	2.24	md	20	127	0.04775	0.11	nc	nc1093159	2016-12-11T03:33:02.112Z	15 km NNE of Coalinga, California	earthquake	0.26	0.35	0.21	12	reviewed	nc	nc
5/6/1983	13:34:34	36.3103333	-120.3708333	9.886	2.33	md	38	56	0.02883	0.15	nc	nc1093158	2016-12-11T03:32:56.800Z	18 km N of Coalinga, California	earthquake	0.23	0.3	0.16	45	reviewed	nc	nc
5/6/1983	13:26:42	36.1255	-120.2383333	11.766	2.59	md	39	109	0.05766	0.13	nc	nc1093154	2016-12-11T03:32:37.070Z	11 km E of Coalinga, California	earthquake	0.32	0.41	0.17	46	reviewed	nc	nc
5/6/1983	12:47:56	36.2636667	-120.1655	10.552	2.51	md	38	95	0.06757	0.09	nc	nc1093149	2016-12-11T03:32:13.330Z	8 km NW of Huron, California	earthquake	0.22	0.43	0.18	45	reviewed	nc	nc
5/6/1983	12:09:38	36.309	-120.303	4.422	2.07	md	19	93	0.04955	0.17	nc	nc1093142	2016-12-11T03:31:43.407Z	19 km NNE of Coalinga, California	earthquake	0.27	0.47	0.2	14	reviewed	nc	nc
5/6/1983	12:04:28	36.2285	-120.296	7.699	2.4	md	34	66	0.02252	0.16	nc	nc1093141	2016-12-11T03:31:38.060Z	11 km NNE of Coalinga, California	earthquake	0.27	0.2	0.15	26	reviewed	nc	nc
5/6/1983	11:51:44	36.2743333	-120.3763333	10.665	3.5	md	65	36	0.02523	0.1	nc	nc1093140	2016-12-11T03:31:30.440Z	15 km N of Coalinga, California	earthquake	0.12	0.15	0.15	58	reviewed	nc	nc
5/6/1983	11:48:02	36.1915	-120.3185	8.813	2.3	md	31	50	0.01982	0.1	nc	nc1093139	2016-12-11T03:31:21.360Z	6 km NNE of Coalinga, California	earthquake	0.18	0.14	0.13	28	reviewed	nc	nc
5/6/1983	11:29:31	36.2888333	-120.3751667	8.46	2.86	md	40	42	0.04775	0.09	nc	nc1093137	2016-12-11T03:31:09.490Z	16 km N of Coalinga, California	earthquake	0.16	0.28	0.15	45	reviewed	nc	nc
5/6/1983	11:23:27	36.1395	-120.2473333	4.994	2.14	md	8	153	0.1432	0.05	nc	nc1093136	2016-12-11T03:31:02.723Z	10 km E of Coalinga, California	earthquake	0.45	2.31	0.13	11	reviewed	nc	nc
5/6/1983	10:35:38	36.2528333	-120.3595	9.832	2.02	md	32	50	0.01351	0.11	nc	nc1093126	2016-12-11T03:30:20.920Z	12 km N of Coalinga, California	earthquake	0.21	0.29	0.17	22	reviewed	nc	nc
5/6/1983	10:22:44	36.2061667	-120.3075	7.731	2.09	md	20	91	0.05135	0.13	nc	nc1093121	2016-12-11T03:29:58.057Z	8 km NNE of Coalinga, California	earthquake	0.36	0.57	0.19	22	reviewed	nc	nc
5/6/1983	10:21:12	36.2743333	-120.405	7.842	2.19	md	27	46	0.02973	0.06	nc	nc1093119	2016-12-11T03:29:48.250Z	15 km NNW of Coalinga, California	earthquake	0.19	0.26	0.17	29	reviewed	nc	nc
5/6/1983	10:13:57	36.168	-120.2886667	7.975	2.15	md	27	70	0.09279	0.12	nc	nc1093117	2016-12-11T03:29:34.360Z	7 km ENE of Coalinga, California	earthquake	0.24	0.58	0.11	23	reviewed	nc	nc
5/6/1983	10:07:35	36.2655	-120.3793333	9.746	2.14	md	30	47	0.01622	0.07	nc	nc1093114	2016-12-11T03:29:16.580Z	14 km N of Coalinga, California	earthquake	0.19	0.23	0.12	30	reviewed	nc	nc
5/6/1983	9:43:38	36.1923333	-120.339	13.176	3.85	md	61	37	0.02793	0.09	nc	nc1093109	2016-12-11T03:28:46.830Z	6 km NNE of Coalinga, California	earthquake	0.14	0.19	0.11	54	reviewed	nc	nc
5/6/1983	9:41:12	36.2971667	-120.3701667	8.904	2.19	md	24	85	0.04865	0.08	nc	nc1093107	2016-12-11T03:28:35.308Z	17 km N of Coalinga, California	earthquake	0.21	0.29	0.11	26	reviewed	nc	nc
5/6/1983	8:24:40	36.1095	-120.1801667	7.858	2.64	md	41	99	0.08559	0.14	nc	nc1093087	2016-12-11T03:27:12.060Z	12 km SW of Huron, California	earthquake	0.25	0.61	0.13	54	reviewed	nc	nc
5/6/1983	8:04:36	36.2461667	-120.359	9.531	2.36	md	46	37	0.01351	0.12	nc	nc1093083	2016-12-11T03:26:52.250Z	11 km N of Coalinga, California	earthquake	0.17	0.23	0.17	44	reviewed	nc	nc
5/6/1983	7:56:07	36.2391667	-120.3583333	9.446	2.59	md	43	48	0.01622	0.08	nc	nc1093081	2016-12-11T03:26:39.870Z	11 km N of Coalinga, California	earthquake	0.15	0.28	0.12	50	reviewed	nc	nc
5/6/1983	7:43:29	36.2836667	-120.3036667	6.373	2.42	md	36	70	0.003604	0.12	nc	nc1093079	2016-12-11T03:26:25.140Z	16 km NNE of Coalinga, California	earthquake	0.14	0.15	0.15	42	reviewed	nc	nc
5/6/1983	7:08:56	36.27	-120.4105	10.46	2.26	md	36	53	0.05856	0.08	nc	nc1093071	2016-12-11T03:25:48.880Z	15 km NNW of Coalinga, California	earthquake	0.19	0.34	0.13	39	reviewed	nc	nc
5/6/1983	7:07:11	36.2425	-120.271	9.306	2.15	md	30	47	0.007207	0.13	nc	nc1093070	2016-12-11T03:25:38.590Z	13 km NE of Coalinga, California	earthquake	0.25	0.22	0.2	22	reviewed	nc	nc
5/6/1983	6:32:54	36.1086667	-120.2038333	4.732	2.57	md	33	96	0.1045	0.2	nc	nc1093063	2016-12-11T03:25:04.730Z	13 km NNW of Avenal, California	earthquake	0.36	1.15	0.15	27	reviewed	nc	nc
5/6/1983	5:39:02	36.244	-120.2908333	9.973	2.02	md	13	120	0.04234	0.1	nc	nc1093053	2016-12-11T03:24:22.066Z	13 km NNE of Coalinga, California	earthquake	0.34	0.45	0.29	13	reviewed	nc	nc
5/6/1983	5:38:50	36.1811667	-120.2285	9.294	2.51	md	8	136	0.1351	0.15	nc	nc1093052	2016-12-11T03:24:17.551Z	11 km WSW of Huron, California	earthquake	0.88	1.99	0.15	8	reviewed	nc	nc
5/6/1983	5:35:34	36.2141667	-120.3036667	11.488	3	md	46	50	0.008108	0.11	nc	nc1093051	2016-12-11T03:24:12.420Z	9 km NNE of Coalinga, California	earthquake	0.17	0.16	0.16	54	reviewed	nc	nc
5/6/1983	5:20:37	36.1085	-120.1871667	4.917	2.34	md	13	99	0.09099	0.08	nc	nc1093047	2016-12-11T03:23:53.912Z	12 km NNW of Avenal, California	earthquake	0.43	0.97	0.09	13	reviewed	nc	nc
5/6/1983	4:57:09	36.1996667	-120.2906667	11.175	3.46	md	60	54	0.01982	0.1	nc	nc1093040	2016-12-11T03:23:23.570Z	9 km NE of Coalinga, California	earthquake	0.15	0.18	0.11	63	reviewed	nc	nc
5/6/1983	3:55:51	36.257	-120.4235	9.024	2.24	md	25	59	0.03243	0.09	nc	nc1093031	2016-12-11T03:22:39.790Z	14 km NNW of Coalinga, California	earthquake	0.25	0.47	0.19	26	reviewed	nc	nc
5/6/1983	3:18:20	36.2466667	-120.3348333	9.104	2.3	md	40	42	0.007207	0.1	nc	nc1093024	2016-12-11T03:22:07.760Z	12 km N of Coalinga, California	earthquake	0.17	0.25	0.16	39	reviewed	nc	nc
5/6/1983	3:13:17	36.1386667	-120.2025	10.796	2.94	md	37	80	0.07928	0.12	nc	nc1093023	2016-12-11T03:21:59.670Z	11 km SW of Huron, California	earthquake	0.24	0.43	0.11	53	reviewed	nc	nc
5/6/1983	3:04:28	36.1946667	-120.3033333	9.844	2.45	md	36	59	0.02883	0.1	nc	nc1093022	2016-12-11T03:21:51.960Z	7 km NE of Coalinga, California	earthquake	0.2	0.3	0.13	41	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/6/1983	3:02:14	36.157	-120.2195	8.883	2.11	md	20	85	0.06486	0.16	nc	nc1093021	2016-12-11T03:21:43.138Z	11 km WSW of Huron, California	earthquake	0.36	0.6	0.2	21	reviewed	nc	nc
5/6/1983	3:00:30	36.1115	-120.2663333	6.889	2.19	md	23	93	0.04775	0.06	nc	nc1093019	2016-12-11T03:21:34.300Z	9 km ESE of Coalinga, California	earthquake	0.28	0.53	0.14	23	reviewed	nc	nc
5/6/1983	2:13:25	36.3006667	-120.2818333	7.478	2.05	md	18	75	0.06126	0.09	nc	nc1093012	2016-12-11T03:21:04.173Z	Central California	earthquake	0.25	0.39	0.18	18	reviewed	nc	nc
5/6/1983	2:04:42	36.108	-120.2391667	7.819	2.98	md	35	90	0.06486	0.1	nc	nc1093011	2016-12-11T03:20:58.590Z	11 km ESE of Coalinga, California	earthquake	0.2	0.38	0.13	35	reviewed	nc	nc
5/6/1983	1:44:44	36.2308333	-120.2971667	7.1	2.32	md	27	63	0.01622	0.1	nc	nc1093007	2016-12-11T03:20:38.850Z	11 km NNE of Coalinga, California	earthquake	0.18	0.21	0.12	27	reviewed	nc	nc
5/6/1983	1:29:40	36.1906667	-120.2768333	9.301	2.15	md	21	108	0.02883	0.11	nc	nc1093004	2016-12-11T03:20:23.280Z	9 km NE of Coalinga, California	earthquake	0.36	0.41	0.22	21	reviewed	nc	nc
5/6/1983	1:19:50	36.2755	-120.3146667	3.301	2.28	md	21	96	0.03514	0.1	nc	nc1093001	2016-12-11T03:20:03.553Z	15 km NNE of Coalinga, California	earthquake	0.24	0.35	0.08	19	reviewed	nc	nc
5/6/1983	1:13:17	36.0651667	-120.627	2.335	2.04	md	13	77	0.09009	0.05	nc	nc1093000	2016-12-11T03:19:59.381Z	25 km NW of Parkfield, California	earthquake	0.28	1.42	0.21	6	reviewed	nc	nc
5/6/1983	1:07:07	36.1666667	-120.3231667	7.696	2.01	md	16	141	0.06036	0.13	nc	nc1092999	2016-12-11T03:19:55.510Z	4 km NE of Coalinga, California	earthquake	0.41	0.67	0.19	14	reviewed	nc	nc
5/6/1983	1:05:44	36.2173333	-120.283	5.64	2.28	md	30	53	0.001802	0.12	nc	nc1092998	2016-12-11T03:19:50.470Z	11 km NE of Coalinga, California	earthquake	0.22	0.31	0.2	22	reviewed	nc	nc
5/6/1983	0:59:28	36.1781667	-120.1931667	7.312	2.19	md	12	95	0.08468	0.07	nc	nc1092997	2016-12-11T03:19:41.889Z	8 km WSW of Huron, California	earthquake	0.28	0.49	0.06	14	reviewed	nc	nc
5/6/1983	0:58:12	36.2163333	-120.2773333	4.561	2.36	md	11	114	0.006306	0.06	nc	nc1092996	2016-12-11T03:19:37.944Z	11 km NE of Coalinga, California	earthquake	0.22	0.2	0.34	9	reviewed	nc	nc
5/6/1983	0:56:00	36.1806667	-120.1966667	6.642	2.15	md	14	95	0.08108	0.12	nc	nc1092995	2016-12-11T03:19:33.848Z	8 km WSW of Huron, California	earthquake	0.33	0.65	0.12	14	reviewed	nc	nc
5/6/1983	0:29:24	36.3136667	-120.368	10.992	2.31	md	33	75	0.02523	0.09	nc	nc1092994	2016-12-11T03:19:28.410Z	19 km N of Coalinga, California	earthquake	0.19	0.29	0.17	31	reviewed	nc	nc
5/6/1983	0:27:00	36.2541667	-120.2746667	5.328	2.09	md	24	91	0.03604	0.18	nc	nc1092993	2016-12-11T03:19:22.290Z	14 km NNE of Coalinga, California	earthquake	0.32	0.3	0.19	23	reviewed	nc	nc
5/6/1983	0:21:20	36.2313333	-120.268	8.212	2.35	md	46	86	0.01892	0.14	nc	nc1092992	2016-12-11T03:19:17.030Z	13 km NE of Coalinga, California	earthquake	0.21	0.13	0.14	35	reviewed	nc	nc
5/6/1983	0:19:21	36.2066667	-120.287	9.48	2.81	md	34	136	0.01171	0.1	nc	nc1092991	2016-12-11T03:19:09.400Z	9 km NE of Coalinga, California	earthquake	0.23	0.18	0.12	40	reviewed	nc	nc
5/6/1983	0:13:20	36.2935	-120.4078333	8.932	2.12	md	30	62	0.04775	0.09	nc	nc1092990	2016-12-11T03:18:59.710Z	17 km NNW of Coalinga, California	earthquake	0.18	0.34	0.25	26	reviewed	nc	nc
5/5/1983	23:55:16	36.0443333	-120.2596667	9.008	2.19	md	25	109	0.1117	0.11	nc	nc1092987	2016-12-11T03:18:44.140Z	12 km WNW of Avenal, California	earthquake	0.3	0.66	0.18	30	reviewed	nc	nc
5/5/1983	23:47:10	36.216	-120.318	10.171	2.47	md	42	48	0.03874	0.1	nc	nc1092986	2016-12-11T03:18:36.490Z	9 km NNE of Coalinga, California	earthquake	0.2	0.32	0.17	50	reviewed	nc	nc
5/5/1983	23:33:26	36.1366667	-120.2023333	9.535	2.27	md	25	89	0.08018	0.09	nc	nc1092984	2016-12-11T03:18:24.500Z	11 km SW of Huron, California	earthquake	0.3	0.45	0.14	29	reviewed	nc	nc
5/5/1983	23:06:40	36.2035	-120.3061667	9.205	2	md	10	137	0.02342	0.07	nc	nc1092983	2016-12-11T03:18:15.573Z	8 km NE of Coalinga, California	earthquake	0.8	0.74	0.25	13	reviewed	nc	nc
5/5/1983	22:57:05	36.2175	-120.272	11.82	2.25	md	26	153	0.00991	0.06	nc	nc1092982	2016-12-11T03:18:11.757Z	11 km NE of Coalinga, California	earthquake	0.27	0.25	0.23	33	reviewed	nc	nc
5/5/1983	22:53:58	36.2326667	-120.3551667	9.355	2.23	md	29	68	0.01982	0.09	nc	nc1092980	2016-12-11T03:18:02.910Z	10 km N of Coalinga, California	earthquake	0.28	0.38	0.15	39	reviewed	nc	nc
5/5/1983	22:37:03	36.1355	-120.2153333	5.804	2.14	md	6	321	0.1838	0.06	nc	nc1092978	2016-12-11T03:17:48.457Z	12 km SW of Huron, California	earthquake	6.95	2.88	0.2	8	reviewed	nc	nc
5/5/1983	22:32:45	36.1191667	-120.2253333	4.89	2.06	md	8	232	0.1108	0.05	nc	nc1092977	2016-12-11T03:17:44.468Z	12 km E of Coalinga, California	earthquake	1.23	2.49	0.21	9	reviewed	nc	nc
5/5/1983	22:21:56	36.117	-120.2353333	9.889	2.91	md	36	88	0.06216	0.1	nc	nc1092974	2016-12-11T03:17:31.780Z	11 km ESE of Coalinga, California	earthquake	0.22	0.36	0.13	53	reviewed	nc	nc
5/5/1983	21:48:19	36.2223333	-120.3093333	5.909	2.37	md	26	72	0.02072	0.15	nc	nc1092971	2016-12-11T03:17:15.840Z	10 km NNE of Coalinga, California	earthquake	0.28	0.32	0.18	31	reviewed	nc	nc
5/5/1983	21:44:09	36.182	-120.2961667	9.658	2.45	md	36	137	0.03063	0.14	nc	nc1092970	2016-12-11T03:17:08.130Z	7 km NE of Coalinga, California	earthquake	0.26	0.29	0.16	47	reviewed	nc	nc
5/5/1983	21:38:59	36.259	-120.4003333	5.909	2.47	md	34	42	0.01622	0.16	nc	nc1092969	2016-12-11T03:17:00.950Z	13 km NNW of Coalinga, California	earthquake	0.24	0.41	0.17	36	reviewed	nc	nc
5/5/1983	21:26:03	36.2283333	-120.3528333	10.198	2.23	md	24	51	0.02252	0.07	nc	nc1092968	2016-12-11T03:16:50.780Z	9 km N of Coalinga, California	earthquake	0.26	0.33	0.19	34	reviewed	nc	nc
5/5/1983	19:45:27	36.1533333	-120.2266667	10.93	2	md	9	138	0.05856	0.2	nc	nc1092955	2016-12-11T03:15:57.933Z	12 km E of Coalinga, California	earthquake	0.86	0.93	0.19	13	reviewed	nc	nc
5/5/1983	19:44:02	36.269	-120.344	13.696	3.01	md	47	69	0.01982	0.1	nc	nc1092954	2016-12-11T03:15:52.700Z	14 km N of Coalinga, California	earthquake	0.18	0.29	0.11	62	reviewed	nc	nc
5/5/1983	19:24:26	36.1616667	-120.2736667	10.599	2.12	md	28	113	0.02252	0.12	nc	nc1092951	2016-12-11T03:15:36.700Z	8 km ENE of Coalinga, California	earthquake	0.41	0.52	0.17	31	reviewed	nc	nc
5/5/1983	18:54:26	36.21	-120.2751667	8.586	2.02	md	16	101	0.01171	0.1	nc	nc1092943	2016-12-11T03:15:04.012Z	10 km NE of Coalinga, California	earthquake	0.41	0.5	0.38	18	reviewed	nc	nc
5/5/1983	18:31:10	36.1996667	-120.2938333	10.009	2.15	md	24	103	0.02072	0.07	nc	nc1092934	2016-12-11T03:14:24.330Z	8 km NE of Coalinga, California	earthquake	0.23	0.29	0.17	28	reviewed	nc	nc
5/5/1983	18:10:58	36.11	-120.2431667	7.379	2.65	md	21	89	0.06126	0.07	nc	nc1092927	2016-12-11T03:13:53.970Z	11 km ESE of Coalinga, California	earthquake	0.28	0.58	0.16	33	reviewed	nc	nc
5/5/1983	17:49:04	36.152	-120.2146667	11.161	2.55	md	27	73	0.06847	0.11	nc	nc1092922	2016-12-11T03:13:31.540Z	11 km WSW of Huron, California	earthquake	0.33	0.52	0.16	44	reviewed	nc	nc
5/5/1983	17:33:24	36.1608333	-120.2858333	8.052	2.35	md	28	70	0.01441	0.12	nc	nc1092919	2016-12-11T03:13:08.290Z	7 km ENE of Coalinga, California	earthquake	0.22	0.32	0.17	37	reviewed	nc	nc
5/5/1983	16:50:54	36.2071667	-120.2995	9.858	2.24	md	34	98	0.01712	0.16	nc	nc1092914	2016-12-11T03:12:45.920Z	9 km NE of Coalinga, California	earthquake	0.47	0.42	0.16	38	reviewed	nc	nc
5/5/1983	16:26:40	36.1588333	-120.2278333	10.083	2.63	md	9	183	0.05856	0.06	nc	nc1092911	2016-12-11T03:12:31.746Z	12 km E of Coalinga, California	earthquake	0.58	0.5	0.09	7	reviewed	nc	nc
5/5/1983	15:56:06	36.233	-120.2956667	8.162	2.51	md	13	66	0.01712	0.08	nc	nc1092905	2016-12-11T03:12:08.194Z	11 km NNE of Coalinga, California	earthquake	0.29	0.35	0.13	17	reviewed	nc	nc
5/5/1983	15:50:41	36.276	-120.3258333	9.733	2.29	md	7	83	0.02252	0.02	nc	nc1092904	2016-12-11T03:12:04.533Z	15 km NNE of Coalinga, California	earthquake	0.34	0.83	0.11	8	reviewed	nc	nc
5/5/1983	15:50:09	36.1508333	-120.2296667	8.888	3.51	md	34	73	0.05676	0.12	nc	nc1092903	2016-12-11T03:11:59.680Z	11 km E of Coalinga, California	earthquake	0.26	0.66	0.11	46	reviewed	nc	nc
5/5/1983	15:41:47	36.1275	-120.2553333	6.638	2.43	md	9	111	0.04324	0.07	nc	nc1092899	2016-12-11T03:11:39.527Z	9 km E of Coalinga, California	earthquake	0.62	0.64	0.22	9	reviewed	nc	nc
5/5/1983	15:28:24	36.15	-120.1945	10.261	2.15	md	31	144	0.08468	0.19	nc	nc1092895	2016-12-11T03:11:22.870Z	10 km SW of Huron, California	earthquake	0.5	0.67	0.24	38	reviewed	nc	nc
5/5/1983	15:15:11	36.1528333	-120.2293333	11.691	2.29	md	26	79	0.05676	0.13	nc	nc1092893	2016-12-11T03:11:08.450Z	11 km E of Coalinga, California	earthquake	0.33	0.61	0.38	29	reviewed	nc	nc
5/5/1983	14:47:19	36.1343333	-120.2458333	8.4	2.15	md	23	117	0.04685	0.12	nc	nc1092886	2016-12-11T03:10:35.240Z	10 km E of Coalinga, California	earthquake	0.27	0.46	0.17	30	reviewed	nc	nc
5/5/1983	14:40:08	36.213	-120.2785	6.818	3.52	md	43	53	0.007207	0.1	nc	nc1092885	2016-12-11T03:10:27.540Z	10 km NE of Coalinga, California	earthquake	0.19	0.23	0.14	66	reviewed	nc	nc
5/5/1983	14:00:20	36.1606667	-120.2723333	9.959	2.37	md	11	191	0.02342	0.15	nc	nc1092876	2016-12-11T03:09:49.421Z	8 km ENE of Coalinga, California	earthquake	1.19	0.73	0.24	13	reviewed	nc	nc
5/5/1983	13:51:52	36.1556667	-120.2295	12.249	2	md	21	205	0.05676	0.1	nc	nc1092873	2016-12-11T03:09:37.653Z	11 km E of Coalinga, California	earthquake	0.69	0.54	0.18	22	reviewed	nc	nc
5/5/1983	13:31:41	36.2063333	-120.2616667	9.588	2.87	md	40	105	0.02252	0.12	nc	nc1092870	2016-12-11T03:09:24.810Z	11 km NE of Coalinga, California	earthquake	0.24	0.33	0.12	60	reviewed	nc	nc
5/5/1983	13:27:00	36.1738333	-120.3075	4.568	2.26	md	31	96	0.02342	0.45	nc	nc1092869	2016-12-11T03:09:16.860Z	6 km NE of Coalinga, California	earthquake	0.93	0.6	0.17	39	reviewed	nc	nc
5/5/1983	13:20:19	36.1563333	-120.222	11.728	2.31	md	27	127	0.06306	0.08	nc	nc1092865	2016-12-11T03:08:59.288Z	11 km WSW of Huron, California	earthquake	0.29	0.49	0.16	31	reviewed	nc	nc
5/5/1983	13:19:00	36.1858333	-120.282	9.588	2.25	md	41	71	0.03333	0.16	nc	nc1092864	2016-12-11T03:08:54.160Z	8 km NE of Coalinga, California	earthquake	0.23	0.31	0.14	45	reviewed	nc	nc
5/5/1983	13:14:31	36.157	-120.198	5.972	2.45	md	9	204	0.1622	0.17	nc	nc1092863	2016-12-11T03:08:43.075Z	9 km WSW of Huron, California	earthquake	1.14	1.41	0.17	11	reviewed	nc	nc
5/5/1983	13:08:12	36.2181667	-120.295	8.268	2.83	md	33	62	0.008108	0.09	nc	nc1092860	2016-12-11T03:08:30.370Z	10 km NE of Coalinga, California	earthquake	0.2	0.24	0.12	50	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/5/1983	12:42:14	36.2553333	-120.3793333	2.299	3.96	md	41	186	0.006306	0.31	nc	nc1092854	2016-12-11T03:08:03.310Z	12 km N of Coalinga, California	earthquake	1.02	0.51	0.06	40	reviewed	nc	nc
5/5/1983	12:00:50	36.2808333	-120.3698333	11.255	3.1	md	46	40	0.03874	0.1	nc	nc1092841	2016-12-11T03:07:05.410Z	15 km N of Coalinga, California	earthquake	0.17	0.34	0.15	69	reviewed	nc	nc
5/5/1983	11:50:49	36.178	-120.2835	10.698	3.53	md	52	61	0.02973	0.07	nc	nc1092839	2016-12-11T03:06:54.250Z	8 km ENE of Coalinga, California	earthquake	0.13	0.15	0.13	81	reviewed	nc	nc
5/5/1983	11:45:14	36.1998333	-120.2853333	8.772	2.3	md	40	59	0.01892	0.13	nc	nc1092836	2016-12-11T03:06:34.730Z	9 km NE of Coalinga, California	earthquake	0.21	0.27	0.13	53	reviewed	nc	nc
5/5/1983	11:41:54	36.1583333	-120.2788333	8.898	2.37	md	38	68	0.01802	0.11	nc	nc1092834	2016-12-11T03:06:23.080Z	7 km ENE of Coalinga, California	earthquake	0.23	0.32	0.16	48	reviewed	nc	nc
5/5/1983	11:33:40	36.2536667	-120.3641667	10.602	3.74	md	55	38	0.01802	0.09	nc	nc1092833	2016-12-11T03:06:15.560Z	12 km N of Coalinga, California	earthquake	0.14	0.25	0.12	63	reviewed	nc	nc
5/5/1983	11:31:50	36.1396667	-120.2543333	7.67	2.59	md	43	75	0.03784	0.14	nc	nc1092832	2016-12-11T03:06:06.840Z	9 km E of Coalinga, California	earthquake	0.24	0.38	0.12	53	reviewed	nc	nc
5/5/1983	11:16:55	36.2316667	-120.287	11.628	2.46	md	39	46	0.01351	0.17	nc	nc1092826	2016-12-11T03:05:40.100Z	12 km NNE of Coalinga, California	earthquake	0.35	0.31	0.19	49	reviewed	nc	nc
5/5/1983	10:50:10	36.2328333	-120.3595	9.498	2.05	md	38	44	0.02162	0.18	nc	nc1092819	2016-12-11T03:05:00.700Z	10 km N of Coalinga, California	earthquake	0.26	0.3	0.18	30	reviewed	nc	nc
5/5/1983	10:44:25	36.2736667	-120.3778333	10.996	2.09	md	43	52	0.02432	0.14	nc	nc1092815	2016-12-11T03:04:37.650Z	14 km N of Coalinga, California	earthquake	0.23	0.32	0.19	48	reviewed	nc	nc
5/5/1983	10:40:03	35.5163333	-120.0616667	10.322	2.75	md	34	201	0.1856	0.1	nc	nc1092814	2016-12-11T03:04:27.280Z	32 km ESE of Shandon, California	earthquake	0.66	0.54	0.18	36	reviewed	nc	nc
5/5/1983	10:31:54	36.1826667	-120.2506667	7.208	2.06	md	36	64	0.04505	0.11	nc	nc1092812	2016-12-11T03:04:15.880Z	10 km ENE of Coalinga, California	earthquake	0.22	0.32	0.17	36	reviewed	nc	nc
5/5/1983	10:23:45	36.2735	-120.3735	12.571	2.68	md	27	123	0.2784	0.06	nc	nc1092808	2016-12-11T03:03:47.140Z	14 km N of Coalinga, California	earthquake	0.48	0.84	0.2	51	reviewed	nc	nc
5/5/1983	10:20:44	36.2825	-120.3708333	11.536	3.77	md	58	40	0.03423	0.08	nc	nc1092807	2018-06-04T20:43:45.000Z	15 km N of Coalinga, California	earthquake	0.15	0.28	0.09	12	reviewed	nc	nc
5/5/1983	10:16:10	36.094	-120.2633333	8.232	2.08	md	23	127	0.1261	0.13	nc	nc1092804	2016-12-11T03:03:20.740Z	10 km ESE of Coalinga, California	earthquake	0.38	0.83	0.17	24	reviewed	nc	nc
5/5/1983	10:13:20	36.2403333	-120.3926667	7.069	2.31	md	27	50	0.01171	0.11	nc	nc1092803	2016-12-11T03:03:14.824Z	11 km NNW of Coalinga, California	earthquake	0.22	0.43	0.12	29	reviewed	nc	nc
5/5/1983	9:48:26	35.5218333	-120.0946667	10.962	2.46	md	30	183	0.164	0.09	nc	nc1092798	2016-12-11T03:02:55.021Z	29 km ESE of Shandon, California	earthquake	0.74	0.65	0.13	30	reviewed	nc	nc
5/5/1983	9:39:58	36.1916667	-120.2471667	9.04	2.64	md	33	57	0.04054	0.2	nc	nc1092795	2016-12-11T03:02:40.950Z	11 km ENE of Coalinga, California	earthquake	0.28	0.39	0.15	49	reviewed	nc	nc
5/5/1983	9:39:33	36.1151667	-120.3086667	11.298	3.05	md	16	100	0.03694	0.06	nc	nc1092794	2016-12-11T03:02:34.185Z	5 km ESE of Coalinga, California	earthquake	0.31	0.59	0.19	14	reviewed	nc	nc
5/5/1983	9:10:23	36.2645	-120.3655	12.069	2.21	md	10	112	0.02072	0.11	nc	nc1092780	2016-12-11T03:01:38.528Z	13 km N of Coalinga, California	earthquake	0.86	0.9	0.2	10	reviewed	nc	nc
5/5/1983	9:04:15	36.1591667	-120.259	9.908	2.84	md	26	69	0.03333	0.17	nc	nc1092776	2016-12-11T03:01:21.080Z	9 km ENE of Coalinga, California	earthquake	0.3	0.38	0.15	52	reviewed	nc	nc
5/5/1983	9:03:24	36.2091667	-120.31	8.791	2.48	md	34	54	0.02252	0.09	nc	nc1092775	2016-12-11T03:01:13.250Z	8 km NNE of Coalinga, California	earthquake	0.2	0.25	0.15	36	reviewed	nc	nc
5/5/1983	9:02:00	36.144	-120.2755	7.41	2.02	md	15	107	0.02072	0.11	nc	nc1092774	2016-12-11T03:01:04.551Z	7 km E of Coalinga, California	earthquake	0.29	0.41	0.15	18	reviewed	nc	nc
5/5/1983	8:57:30	36.2653333	-120.3191667	6.257	2.65	md	34	40	0.02973	0.14	nc	nc1092772	2016-12-11T03:00:54.680Z	14 km NNE of Coalinga, California	earthquake	0.18	0.22	0.16	45	reviewed	nc	nc
5/5/1983	8:54:32	36.1606667	-120.2761667	9.681	2.28	md	31	67	0.02072	0.06	nc	nc1092770	2016-12-11T03:00:42.280Z	7 km ENE of Coalinga, California	earthquake	0.18	0.31	0.15	44	reviewed	nc	nc
5/5/1983	8:50:57	36.2628333	-120.3288333	5.046	2.39	md	33	45	0.01802	0.08	nc	nc1092769	2016-12-11T03:00:34.140Z	13 km NNE of Coalinga, California	earthquake	0.19	0.18	0.15	40	reviewed	nc	nc
5/5/1983	8:47:00	36.2016667	-120.4163333	4.857	2.16	md	19	75	0.05495	0.28	nc	nc1092768	2016-12-11T03:00:25.435Z	8 km NW of Coalinga, California	earthquake	0.67	1.1	0.24	12	reviewed	nc	nc
5/5/1983	8:45:14	36.2271667	-120.2653333	12.99	2.43	md	41	67	0.01802	0.14	nc	nc1092767	2016-12-11T03:00:19.980Z	12 km NE of Coalinga, California	earthquake	0.27	0.45	0.15	48	reviewed	nc	nc
5/5/1983	8:38:11	36.114	-120.2385	11.387	2.22	md	8	111	0.1108	0.03	nc	nc1092766	2016-12-11T03:00:13.863Z	11 km ESE of Coalinga, California	earthquake	0.77	1.87	0.12	10	reviewed	nc	nc
5/5/1983	8:06:26	36.1468333	-120.2258333	9.491	3.96	md	49	71	0.05946	0.09	nc	nc1092756	2016-12-11T02:59:20.400Z	12 km E of Coalinga, California	earthquake	0.23	0.32	0.14	37	reviewed	nc	nc
5/5/1983	8:01:25	36.1751667	-120.3015	6.423	2.14	md	25	69	0.08108	0.13	nc	nc1092755	2016-12-11T02:59:13.150Z	6 km NE of Coalinga, California	earthquake	0.3	0.62	0.18	34	reviewed	nc	nc
5/5/1983	7:52:20	36.2126667	-120.2666667	9.358	2.92	md	45	52	0.01532	0.1	nc	nc1092752	2016-12-11T02:58:59.230Z	11 km NE of Coalinga, California	earthquake	0.19	0.27	0.12	66	reviewed	nc	nc
5/5/1983	7:49:57	36.2455	-120.2816667	13.268	2.6	md	44	45	0.02703	0.1	nc	nc1092751	2016-12-11T02:58:51.320Z	13 km NNE of Coalinga, California	earthquake	0.22	0.35	0.18	57	reviewed	nc	nc
5/5/1983	7:31:14	36.2111667	-120.348	5.628	2.04	md	28	64	0.03874	0.15	nc	nc1092746	2016-12-11T02:58:28.933Z	Central California	earthquake	0.24	0.38	0.21	23	reviewed	nc	nc
5/5/1983	7:05:24	36.1916667	-120.2791667	9.842	2.71	md	42	58	0.02703	0.08	nc	nc1092741	2016-12-11T02:58:07.300Z	9 km NE of Coalinga, California	earthquake	0.18	0.29	0.16	61	reviewed	nc	nc
5/5/1983	6:43:32	36.0676667	-120.1353333	22.269	3.57	md	41	139	0.06396	0.14	nc	nc1092737	2016-12-11T02:57:45.740Z	7 km N of Avenal, California	earthquake	0.38	0.46	0.19	68	reviewed	nc	nc
5/5/1983	6:39:11	36.2205	-120.3041667	7.258	2.3	md	33	54	0.01622	0.12	nc	nc1092736	2016-12-11T02:57:35.810Z	10 km NNE of Coalinga, California	earthquake	0.25	0.28	0.32	31	reviewed	nc	nc
5/5/1983	6:22:50	36.2343333	-120.2873333	8.512	2.73	md	42	46	0.01622	0.09	nc	nc1092734	2016-12-11T02:57:22.490Z	12 km NNE of Coalinga, California	earthquake	0.19	0.22	0.22	63	reviewed	nc	nc
5/5/1983	6:08:03	36.1918333	-120.301	8.358	2.17	md	17	63	0.02973	0.41	nc	nc1092733	2016-12-11T02:57:16.129Z	7 km NE of Coalinga, California	earthquake	0.74	1.09	0.24	23	reviewed	nc	nc
5/5/1983	5:54:32	36.2353333	-120.2736667	8.342	3.07	md	40	71	0.01892	0.11	nc	nc1092730	2016-12-11T02:57:02.740Z	13 km NE of Coalinga, California	earthquake	0.18	0.21	0.2	31	reviewed	nc	nc
5/5/1983	5:40:35	36.146	-120.277	5.246	2.26	md	25	71	0.1162	0.21	nc	nc1092726	2016-12-11T02:56:43.871Z	7 km E of Coalinga, California	earthquake	0.43	1.51	0.15	29	reviewed	nc	nc
5/5/1983	5:22:47	36.238	-120.2678333	8.855	2.75	md	10	93	0.02342	0.05	nc	nc1092722	2016-12-11T02:56:26.010Z	13 km NE of Coalinga, California	earthquake	0.21	0.39	0.1	28	reviewed	nc	nc
5/5/1983	5:22:33	36.2395	-120.2771667	8.722	3.02	md	27	47	0.02162	0.08	nc	nc1092721	2016-12-11T02:56:19.395Z	13 km NE of Coalinga, California	earthquake	0.23	0.28	0.19	30	reviewed	nc	nc
5/5/1983	5:08:45	36.1196667	-120.2171667	10.441	2.02	md	26	88	0.07387	0.18	nc	nc1092719	2016-12-11T02:56:11.129Z	13 km E of Coalinga, California	earthquake	0.39	0.76	0.17	29	reviewed	nc	nc
5/5/1983	4:52:34	36.1456667	-120.2126667	8.981	2.93	md	44	73	0.07027	0.09	nc	nc1092714	2016-12-11T02:55:44.860Z	11 km WSW of Huron, California	earthquake	0.19	0.5	0.12	68	reviewed	nc	nc
5/5/1983	4:37:48	36.1353333	-120.2038333	11.631	4.08	md	48	77	0.07928	0.1	nc	nc1092712	2016-12-11T02:55:27.710Z	11 km SW of Huron, California	earthquake	0.21	0.4	0.22	24	reviewed	nc	nc
5/5/1983	4:32:29	36.2336667	-120.3096667	8.812	2.41	md	28	46	0.02523	0.09	nc	nc1092709	2016-12-11T02:55:11.640Z	11 km NNE of Coalinga, California	earthquake	0.24	0.29	0.11	36	reviewed	nc	nc
5/5/1983	4:30:23	36.143	-120.2658333	6.672	2.52	md	33	72	0.02793	0.18	nc	nc1092707	2016-12-11T02:55:00.350Z	8 km E of Coalinga, California	earthquake	0.34	0.51	0.14	38	reviewed	nc	nc
5/5/1983	4:23:07	36.2318333	-120.2711667	8.862	2.04	md	18	105	0.01712	0.1	nc	nc1092703	2016-12-11T02:54:40.075Z	12 km NE of Coalinga, California	earthquake	0.29	0.37	0.27	16	reviewed	nc	nc
5/5/1983	4:13:15	36.2266667	-120.2575	9.202	2.35	md	20	109	0.02342	0.1	nc	nc1092697	2016-12-11T02:54:16.771Z	13 km NE of Coalinga, California	earthquake	0.39	0.32	0.16	21	reviewed	nc	nc
5/5/1983	4:10:13	36.1553333	-120.2713333	8.869	2.69	md	21	115	0.02252	0.21	nc	nc1092696	2016-12-11T02:54:12.645Z	8 km ENE of Coalinga, California	earthquake	0.42	0.59	0.11	27	reviewed	nc	nc
5/5/1983	4:08:05	36.1861667	-120.242	6.558	2.74	md	16	96	0.04775	0.42	nc	nc1092694	2016-12-11T02:54:04.443Z	11 km ENE of Coalinga, California	earthquake	0.9	1.51	0.2	19	reviewed	nc	nc
5/5/1983	3:54:24	36.1998333	-120.3223333	9.402	2.06	md	24	56	0.03604	0.11	nc	nc1092689	2016-12-11T02:53:44.828Z	7 km NNE of Coalinga, California	earthquake	0.35	0.43	0.19	23	reviewed	nc	nc
5/5/1983	3:31:08	36.2081667	-120.2631667	9.293	3.12	md	42	53	0.01982	0.11	nc	nc1092686	2016-12-11T02:53:31.210Z	11 km NE of Coalinga, California	earthquake	0.21	0.32	0.16	63	reviewed	nc	nc
5/5/1983	3:28:05	36.112	-120.2815	7.376	2.13	md	22	92	0.1063	0.06	nc	nc1092684	2016-12-11T02:53:19.863Z	7 km ESE of Coalinga, California	earthquake	0.24	0.63	0.14	22	reviewed	nc	nc
5/5/1983	3:18:55	36.1948333	-120.2656667	7.912	2.16	md	22	87	0.02793	0.14	nc	nc1092681	2016-12-11T02:53:08.190Z	10 km NE of Coalinga, California	earthquake	0.31	0.55	0.17	23	reviewed	nc	nc
5/5/1983	3:01:40	36.127	-120.2023333	8.452	2.98	md	27	140	0.08198	0.11	nc	nc1092675	2016-12-11T02:52:43.900Z	12 km SW of Huron, California	earthquake	0.34	0.57	0.14	51	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/5/1983	2:52:33	36.2233333	-120.2993333	7.3	3.07	md	41	62	0.01261	0.12	nc	nc1092671	2016-12-11T02:52:19.180Z	10 km NNE of Coalinga, California	earthquake	0.19	0.26	0.13	67	reviewed	nc	nc
5/5/1983	2:49:02	36.2145	-120.2691667	9.112	2.54	md	41	55	0.01351	0.11	nc	nc1092670	2016-12-11T02:52:11.110Z	11 km NE of Coalinga, California	earthquake	0.19	0.24	0.16	50	reviewed	nc	nc
5/5/1983	2:47:57	36.1426667	-120.216	11.351	2.22	md	31	77	0.06847	0.09	nc	nc1092669	2016-12-11T02:52:03.320Z	12 km WSW of Huron, California	earthquake	0.21	0.45	0.24	33	reviewed	nc	nc
5/5/1983	2:44:02	36.1396667	-120.2646667	8.799	2.09	md	23	77	0.03063	0.12	nc	nc1092668	2016-12-11T02:51:53.370Z	8 km E of Coalinga, California	earthquake	0.31	0.49	0.21	28	reviewed	nc	nc
5/5/1983	2:37:18	36.1566667	-120.3056667	12.349	2.8	md	25	64	0.007207	0.06	nc	nc1092665	2016-12-11T02:51:38.020Z	5 km ENE of Coalinga, California	earthquake	0.22	0.39	0.18	26	reviewed	nc	nc
5/5/1983	2:35:21	36.2156667	-120.2668333	9.432	2.47	md	17	86	0.01441	0.13	nc	nc1092664	2016-12-11T02:51:32.105Z	11 km NE of Coalinga, California	earthquake	0.38	0.47	0.19	20	reviewed	nc	nc
5/5/1983	2:16:52	36.2065	-120.299	8.659	2.3	md	15	59	0.01712	0.14	nc	nc1092659	2016-12-11T02:51:12.024Z	9 km NE of Coalinga, California	earthquake	0.36	0.49	0.21	11	reviewed	nc	nc
5/5/1983	2:05:35	36.1656667	-120.228	9.742	3.07	md	39	69	0.05946	0.12	nc	nc1092657	2016-12-11T02:51:02.430Z	11 km WSW of Huron, California	earthquake	0.23	0.43	0.16	60	reviewed	nc	nc
5/5/1983	1:56:42	36.217	-120.2871667	8.552	3.64	md	53	51	0.002703	0.07	nc	nc1092655	2016-12-11T02:50:45.420Z	10 km NE of Coalinga, California	earthquake	0.14	0.18	0.11	55	reviewed	nc	nc
5/5/1983	1:45:00	36.2145	-120.2803333	7.692	2.8	md	33	101	0.005405	0.14	nc	nc1092652	2016-12-11T02:50:28.180Z	10 km NE of Coalinga, California	earthquake	0.26	0.26	0.14	38	reviewed	nc	nc
5/5/1983	1:36:20	36.2323333	-120.3628333	11.782	2.49	md	26	78	0.02342	0.1	nc	nc1092650	2016-12-11T02:50:17.006Z	10 km N of Coalinga, California	earthquake	0.33	0.53	0.16	19	reviewed	nc	nc
5/5/1983	1:24:42	36.1003333	-120.2226667	6.324	2	md	15	107	0.08018	0.14	nc	nc1092647	2016-12-11T02:50:04.762Z	13 km ESE of Coalinga, California	earthquake	0.45	1.13	0.16	13	reviewed	nc	nc
5/5/1983	1:19:06	36.2606667	-120.3286667	8.713	2.02	md	27	53	0.03694	0.12	nc	nc1092646	2016-12-11T02:50:00.896Z	13 km NNE of Coalinga, California	earthquake	0.31	0.43	0.19	27	reviewed	nc	nc
5/5/1983	0:32:11	36.2281667	-120.268	9.343	3.55	md	38	49	0.01622	0.09	nc	nc1092636	2016-12-11T02:49:19.150Z	12 km NE of Coalinga, California	earthquake	0.17	0.22	0.1	66	reviewed	nc	nc
5/5/1983	0:27:50	36.2275	-120.2716667	9.422	3.76	md	50	49	0.01351	0.07	nc	nc1092635	2016-12-11T02:49:06.370Z	12 km NE of Coalinga, California	earthquake	0.14	0.19	0.11	57	reviewed	nc	nc
5/5/1983	0:22:11	36.2526667	-120.2633333	7.052	3.01	md	37	79	0.03784	0.12	nc	nc1092632	2016-12-11T02:48:50.020Z	15 km NE of Coalinga, California	earthquake	0.2	0.24	0.15	43	reviewed	nc	nc
5/5/1983	0:16:53	36.209	-120.3528333	6.891	2.17	md	9	106	0.04144	0.04	nc	nc1092631	2016-12-11T02:48:43.657Z	7 km N of Coalinga, California	earthquake	0.65	0.95	0.11	14	reviewed	nc	nc
5/5/1983	0:13:06	36.2296667	-120.2698333	8.962	3.21	md	33	51	0.01622	0.1	nc	nc1092630	2016-12-11T02:48:38.100Z	12 km NE of Coalinga, California	earthquake	0.21	0.26	0.13	42	reviewed	nc	nc
5/5/1983	0:09:34	36.2001667	-120.2746667	7.3	2.15	md	18	103	0.01982	0.12	nc	nc1092629	2016-12-11T02:48:31.453Z	10 km NE of Coalinga, California	earthquake	0.36	0.46	0.18	21	reviewed	nc	nc
5/5/1983	0:02:01	36.2326667	-120.364	12.06	2.37	md	33	45	0.06577	0.13	nc	nc1092628	2016-12-11T02:48:26.060Z	10 km N of Coalinga, California	earthquake	0.28	0.45	0.18	35	reviewed	nc	nc
5/4/1983	23:46:20	36.259	-120.3325	8.347	2.26	md	10	104	0.01261	0.03	nc	nc1092625	2016-12-11T02:48:11.730Z	13 km N of Coalinga, California	earthquake	1.02	0.88	0.26	10	reviewed	nc	nc
5/4/1983	23:33:23	36.1015	-120.2745	5.69	2.05	md	18	95	0.05405	0.12	nc	nc1092621	2016-12-11T02:47:55.591Z	8 km ESE of Coalinga, California	earthquake	0.31	0.76	0.18	16	reviewed	nc	nc
5/4/1983	23:11:10	36.2286667	-120.289	5.682	2.2	md	25	44	0.01081	0.11	nc	nc1092619	2016-12-11T02:47:47.827Z	11 km NNE of Coalinga, California	earthquake	0.24	0.24	0.23	25	reviewed	nc	nc
5/4/1983	22:47:20	36.2135	-120.296	7.592	2.52	md	26	99	0.01081	0.06	nc	nc1092617	2016-12-11T02:47:38.840Z	10 km NE of Coalinga, California	earthquake	0.25	0.28	0.21	34	reviewed	nc	nc
5/4/1983	22:32:00	36.313	-120.3063333	5.02	2.04	md	20	107	0.01982	0.25	nc	nc1092613	2016-12-11T02:47:20.804Z	19 km NNE of Coalinga, California	earthquake	0.46	0.48	0.24	20	reviewed	nc	nc
5/4/1983	22:30:48	36.2751667	-120.4193333	6.054	2.52	md	10	110	0.06667	0.1	nc	nc1092612	2016-12-11T02:47:16.644Z	15 km NNW of Coalinga, California	earthquake	0.53	1.27	0.14	8	reviewed	nc	nc
5/4/1983	22:10:24	36.2183333	-120.3005	8.97	2.12	md	6	220	0.01261	0.03	nc	nc1092607	2016-12-11T02:46:55.942Z	10 km NNE of Coalinga, California	earthquake	1.12	0.77	0.14	7	reviewed	nc	nc
5/4/1983	22:03:42	36.2018333	-120.264	8.389	3.28	md	40	51	0.009009	0.14	nc	nc1092606	2016-12-11T02:46:50.540Z	11 km NE of Coalinga, California	earthquake	0.16	0.25	0.13	56	reviewed	nc	nc
5/4/1983	22:01:05	36.2756667	-120.3418333	12.313	2.06	md	22	82	0.03333	0.12	nc	nc1092605	2016-12-11T02:46:44.254Z	15 km N of Coalinga, California	earthquake	0.58	0.67	0.21	29	reviewed	nc	nc
5/4/1983	21:49:28	36.2066667	-120.338	6.656	2.56	md	44	48	0.04324	0.11	nc	nc1092602	2016-12-11T02:46:30.670Z	7 km NNE of Coalinga, California	earthquake	0.16	0.24	0.11	47	reviewed	nc	nc
5/4/1983	21:47:22	36.2853333	-120.3685	8.46	3.07	md	38	55	0.04144	0.1	nc	nc1092601	2016-12-11T02:46:20.400Z	16 km N of Coalinga, California	earthquake	0.2	0.29	0.15	56	reviewed	nc	nc
5/4/1983	21:40:58	36.2453333	-120.354	8.212	2.19	md	29	69	0.00991	0.06	nc	nc1092600	2016-12-11T02:46:12.150Z	11 km N of Coalinga, California	earthquake	0.18	0.23	0.15	34	reviewed	nc	nc
5/4/1983	21:39:03	36.2221667	-120.2873333	5.292	2.14	md	16	103	0.004505	0.14	nc	nc1092599	2016-12-11T02:46:03.571Z	11 km NE of Coalinga, California	earthquake	0.33	0.36	0.27	15	reviewed	nc	nc
5/4/1983	21:26:14	36.254	-120.3635	8.792	2.14	md	26	82	0.01712	0.11	nc	nc1092598	2016-12-11T02:45:59.389Z	12 km N of Coalinga, California	earthquake	0.3	0.38	0.23	33	reviewed	nc	nc
5/4/1983	21:19:57	36.2363333	-120.4253333	3.992	3.18	md	29	112	0.06847	0.14	nc	nc1092596	2016-12-11T02:45:50.150Z	12 km NNW of Coalinga, California	earthquake	0.28	0.65	0.13	32	reviewed	nc	nc
5/4/1983	21:17:52	36.2176667	-120.2955	7.342	2.07	md	17	92	0.009009	0.17	nc	nc1092594	2016-12-11T02:45:39.731Z	10 km NE of Coalinga, California	earthquake	0.87	0.5	0.24	17	reviewed	nc	nc
5/4/1983	21:13:49	36.2833333	-120.3983333	8.713	2.84	md	16	133	0.06306	0.16	nc	nc1092591	2016-12-11T02:45:27.488Z	16 km NNW of Coalinga, California	earthquake	0.42	0.57	0.1	28	reviewed	nc	nc
5/4/1983	20:54:55	36.2315	-120.2795	6.825	2.05	md	12	165	0.01351	0.04	nc	nc1092585	2016-12-11T02:45:04.031Z	12 km NE of Coalinga, California	earthquake	0.52	0.22	0.31	14	reviewed	nc	nc
5/4/1983	20:51:31	36.2166667	-120.2915	8.232	3	md	41	57	0.006306	0.09	nc	nc1092584	2016-12-11T02:44:58.770Z	10 km NE of Coalinga, California	earthquake	0.25	0.23	0.14	53	reviewed	nc	nc
5/4/1983	20:47:33	36.2483333	-120.3523333	7.912	2.44	md	15	114	0.008108	0.05	nc	nc1092583	2016-12-11T02:44:49.859Z	12 km N of Coalinga, California	earthquake	0.36	0.42	0.22	21	reviewed	nc	nc
5/4/1983	20:28:36	36.2366667	-120.3483333	8.142	2.22	md	22	75	0.01351	0.1	nc	nc1092579	2016-12-11T02:44:34.037Z	10 km N of Coalinga, California	earthquake	0.37	0.44	0.16	27	reviewed	nc	nc
5/4/1983	20:23:14	36.244	-120.3635	9.942	2.1	md	11	90	0.01712	0.12	nc	nc1092578	2016-12-11T02:44:29.613Z	11 km N of Coalinga, California	earthquake	0.5	0.62	0.28	14	reviewed	nc	nc
5/4/1983	20:09:17	36.1905	-120.3596667	3.059	2.56	md	4	271	0.2189	0.02	nc	nc1092574	2016-12-11T02:44:13.832Z	5 km N of Coalinga, California	earthquake	6.98	3.26	0.32	11	reviewed	nc	nc
5/4/1983	20:02:05	36.1541667	-120.2778333	8.209	2.1	md	25	120	0.01712	0.2	nc	nc1092572	2016-12-11T02:44:05.791Z	7 km ENE of Coalinga, California	earthquake	0.59	0.39	0.16	25	reviewed	nc	nc
5/4/1983	19:50:33	36.1706667	-120.3288333	6.669	2.21	md	31	60	0.03063	0.16	nc	nc1092567	2016-12-11T02:43:44.800Z	4 km NE of Coalinga, California	earthquake	0.29	0.44	0.16	41	reviewed	nc	nc
5/4/1983	19:45:02	36.1211667	-120.2741667	8.329	3.84	md	49	120	0.03604	0.1	nc	nc1092566	2016-12-11T02:43:34.950Z	8 km ESE of Coalinga, California	earthquake	0.22	0.33	0.12	35	reviewed	nc	nc
5/4/1983	19:41:11	36.1981667	-120.2631667	7.612	2.58	md	30	108	0.02703	0.1	nc	nc1092565	2016-12-11T02:43:23.520Z	10 km NE of Coalinga, California	earthquake	0.37	0.28	0.19	44	reviewed	nc	nc
5/4/1983	19:29:10	36.2235	-120.3731667	11.972	2.82	md	19	87	0.03604	0.11	nc	nc1092561	2016-12-11T02:43:06.173Z	9 km N of Coalinga, California	earthquake	0.4	0.65	0.19	17	reviewed	nc	nc
5/4/1983	19:16:31	36.2078333	-120.3006667	10.557	2.38	md	23	125	0.01712	0.07	nc	nc1092557	2016-12-11T02:42:49.691Z	9 km NE of Coalinga, California	earthquake	0.33	0.36	0.16	28	reviewed	nc	nc
5/4/1983	19:15:20	36.2056667	-120.2838333	12.212	2.02	md	19	165	0.01261	0.16	nc	nc1092555	2016-12-11T02:42:41.206Z	10 km NE of Coalinga, California	earthquake	0.61	0.56	0.15	21	reviewed	nc	nc
5/4/1983	19:11:31	36.2818333	-120.3623333	6.754	2.42	md	36	61	0.03604	0.12	nc	nc1092554	2016-12-11T02:42:35.160Z	15 km N of Coalinga, California	earthquake	0.2	0.29	0.15	40	reviewed	nc	nc
5/4/1983	18:55:34	36.2011667	-120.2918333	8.772	2.7	md	31	102	0.01802	0.08	nc	nc1092550	2016-12-11T02:42:09.140Z	9 km NE of Coalinga, California	earthquake	0.23	0.31	0.14	52	reviewed	nc	nc
5/4/1983	18:36:35	36.175	-120.274	10.932	3.4	md	33	141	0.03063	0.11	nc	nc1092547	2016-12-11T02:41:53.530Z	8 km ENE of Coalinga, California	earthquake	0.29	0.44	0.11	51	reviewed	nc	nc
5/4/1983	18:36:12	36.1128333	-120.225	10.86	3.5	md	5	288	0.2036	0.01	nc	nc1092546	2016-12-11T02:41:47.130Z	12 km ESE of Coalinga, California	earthquake	3.16	2.23	0.24	6	reviewed	nc	nc
5/4/1983	18:30:14	36.2303333	-120.2693333	8.583	2.35	md	20	97	0.01712	0.14	nc	nc1092544	2016-12-11T02:41:39.445Z	12 km NE of Coalinga, California	earthquake	0.37	0.27	0.13	29	reviewed	nc	nc
5/4/1983	18:29:10	36.172	-120.2925	9.677	2.85	md	26	107	0.04685	0.11	nc	nc1092543	2016-12-11T02:41:33.630Z	7 km ENE of Coalinga, California	earthquake	0.33	0.51	0.16	24	reviewed	nc	nc
5/4/1983	18:18:14	36.2553333	-120.3748333	3.072	2.46	md	20	100	0.02613	0.32	nc	nc1092540	2016-12-11T02:41:19.685Z	12 km N of Coalinga, California	earthquake	0.68	0.87	0.15	34	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/4/1983	18:15:15	36.209	-120.2875	8.223	2.5	md	27	105	0.00991	0.12	nc	nc1092539	2016-12-11T02:41:14.260Z	10 km NE of Coalinga, California	earthquake	0.23	0.3	0.13	27	reviewed	nc	nc
5/4/1983	18:10:06	36.2265	-120.3656667	12.147	2	md	21	82	0.02973	0.11	nc	nc1092537	2016-12-11T02:40:57.119Z	9 km N of Coalinga, California	earthquake	0.66	0.86	0.3	19	reviewed	nc	nc
5/4/1983	18:00:32	36.2153333	-120.2771667	8.512	2.52	md	37	101	0.007207	0.1	nc	nc1092536	2016-12-11T02:40:51.820Z	11 km NE of Coalinga, California	earthquake	0.26	0.18	0.16	44	reviewed	nc	nc
5/4/1983	17:58:52	36.1041667	-120.229	6.748	2.33	md	17	137	0.07387	0.07	nc	nc1092535	2016-12-11T02:40:45.340Z	12 km ESE of Coalinga, California	earthquake	0.34	0.63	0.38	20	reviewed	nc	nc
5/4/1983	17:48:59	36.2955	-120.3306667	8.183	2.14	md	9	184	0.01982	0.07	nc	nc1092531	2016-12-11T02:40:29.218Z	17 km N of Coalinga, California	earthquake	0.66	0.43	0.32	16	reviewed	nc	nc
5/4/1983	17:37:45	36.2203333	-120.3168333	7.192	2.13	md	24	75	0.02613	0.16	nc	nc1092527	2016-12-11T02:40:13.660Z	9 km NNE of Coalinga, California	earthquake	0.35	0.47	0.17	25	reviewed	nc	nc
5/4/1983	17:35:12	36.2355	-120.3705	7.792	2.15	md	21	45	0.02613	0.1	nc	nc1092526	2016-12-11T02:40:09.589Z	10 km N of Coalinga, California	earthquake	0.38	0.53	0.2	21	reviewed	nc	nc
5/4/1983	17:28:23	36.1603333	-120.2671667	9.317	2.55	md	30	117	0.06036	0.08	nc	nc1092522	2016-12-11T02:39:56.110Z	8 km ENE of Coalinga, California	earthquake	0.31	0.62	0.13	40	reviewed	nc	nc
5/4/1983	17:25:52	36.2513333	-120.3413333	10.682	2.26	md	17	92	0.002703	0.11	nc	nc1092521	2016-12-11T02:39:49.964Z	12 km N of Coalinga, California	earthquake	0.67	0.69	0.18	13	reviewed	nc	nc
5/4/1983	17:07:45	36.2328333	-120.3405	8.148	2.59	md	42	62	0.04775	0.1	nc	nc1092519	2016-12-11T02:39:40.740Z	10 km N of Coalinga, California	earthquake	0.18	0.3	0.14	45	reviewed	nc	nc
5/4/1983	16:59:58	36.179	-120.2738333	9.424	2.36	md	10	209	0.03423	0.09	nc	nc1092518	2016-12-11T02:39:31.950Z	8 km ENE of Coalinga, California	earthquake	1.51	0.82	0.16	11	reviewed	nc	nc
5/4/1983	16:55:49	36.199	-120.28	7.622	2.25	md	31	106	0.01982	0.15	nc	nc1092516	2016-12-11T02:39:22.850Z	9 km NE of Coalinga, California	earthquake	0.27	0.29	0.16	30	reviewed	nc	nc
5/4/1983	16:50:10	36.211	-120.2521667	10.992	2.34	md	28	105	0.02703	0.09	nc	nc1092515	2016-12-11T02:39:15.270Z	12 km NE of Coalinga, California	earthquake	0.31	0.45	0.12	28	reviewed	nc	nc
5/4/1983	16:47:13	36.1988333	-120.2871667	8.379	2.16	md	18	107	0.01982	0.14	nc	nc1092514	2016-12-11T02:39:06.931Z	9 km NE of Coalinga, California	earthquake	0.5	0.46	0.17	20	reviewed	nc	nc
5/4/1983	16:42:06	36.2785	-120.388	8.59	2.38	md	17	121	0.04685	0.09	nc	nc1092512	2016-12-11T02:38:59.161Z	15 km N of Coalinga, California	earthquake	0.3	0.53	0.2	18	reviewed	nc	nc
5/4/1983	16:38:27	36.219	-120.2975	11.59	2.2	md	14	178	0.04775	0.08	nc	nc1092511	2016-12-11T02:38:55.105Z	10 km NNE of Coalinga, California	earthquake	0.89	0.76	0.11	15	reviewed	nc	nc
5/4/1983	16:28:01	36.2125	-120.302	7.282	2.21	md	28	98	0.01532	0.13	nc	nc1092507	2016-12-11T02:38:38.680Z	9 km NNE of Coalinga, California	earthquake	0.33	0.32	0.21	35	reviewed	nc	nc
5/4/1983	16:17:47	36.1776667	-120.2285	9.432	3.1	md	30	127	0.06126	0.1	nc	nc1092504	2016-12-11T02:38:23.300Z	11 km WSW of Huron, California	earthquake	0.34	0.41	0.15	62	reviewed	nc	nc
5/4/1983	16:11:19	36.2811667	-120.3506667	11.92	3.91	md	55	50	0.03243	0.08	nc	nc1092502	2016-12-11T02:38:09.120Z	15 km N of Coalinga, California	earthquake	0.16	0.25	0.3	16	reviewed	nc	nc
5/4/1983	16:02:59	36.1391667	-120.1916667	6.984	2.28	md	33	141	0.08829	0.18	nc	nc1092500	2016-12-11T02:37:57.550Z	10 km SW of Huron, California	earthquake	0.33	0.66	0.23	44	reviewed	nc	nc
5/4/1983	15:59:13	36.2403333	-120.2958333	7.652	3.88	md	51	74	0.02342	0.07	nc	nc1092498	2016-12-11T02:37:46.090Z	12 km NNE of Coalinga, California	earthquake	0.14	0.17	0.07	43	reviewed	nc	nc
5/4/1983	15:57:13	36.2178333	-120.3016667	7.333	3	md	27	89	0.01351	0.1	nc	nc1092496	2016-12-11T02:37:34.200Z	10 km NNE of Coalinga, California	earthquake	0.17	0.22	0.21	37	reviewed	nc	nc
5/4/1983	15:51:21	36.0688333	-120.191	14.912	2.23	md	23	155	0.1676	0.14	nc	nc1092494	2016-12-11T02:37:23.871Z	9 km NW of Avenal, California	earthquake	0.47	1.13	0.27	23	reviewed	nc	nc
5/4/1983	15:12:19	36.1313333	-120.2055	8.164	2.56	md	24	139	0.07838	0.2	nc	nc1092483	2016-12-11T02:36:38.840Z	12 km SW of Huron, California	earthquake	0.5	0.87	0.15	39	reviewed	nc	nc
5/4/1983	15:07:44	36.1535	-120.2153333	5.803	2.02	md	15	130	0.06847	0.13	nc	nc1092482	2016-12-11T02:36:32.234Z	11 km WSW of Huron, California	earthquake	0.64	0.89	0.21	14	reviewed	nc	nc
5/4/1983	15:06:58	36.0763333	-120.1958333	13.352	2.53	md	30	152	0.1126	0.14	nc	nc1092481	2016-12-11T02:36:26.630Z	10 km NW of Avenal, California	earthquake	0.44	0.76	0.19	38	reviewed	nc	nc
5/4/1983	15:03:39	36.102	-120.1953333	8.353	2.45	md	18	148	0.0973	0.15	nc	nc1092480	2016-12-11T02:36:17.695Z	12 km NNW of Avenal, California	earthquake	0.49	1.15	0.07	21	reviewed	nc	nc
5/4/1983	15:02:29	36.1151667	-120.2493333	6.406	2.57	md	16	129	0.1072	0.19	nc	nc1092479	2016-12-11T02:36:13.469Z	10 km ESE of Coalinga, California	earthquake	0.53	1.25	0.17	18	reviewed	nc	nc
5/4/1983	14:52:39	36.0846667	-120.2598333	3.069	2.26	md	10	262	0.1432	0.12	nc	nc1092477	2016-12-11T02:36:05.674Z	10 km SE of Coalinga, California	earthquake	2.91	1.03	0.14	11	reviewed	nc	nc
5/4/1983	14:49:50	36.2066667	-120.3293333	7.609	2.08	md	21	145	0.03874	0.1	nc	nc1092476	2016-12-11T02:36:01.600Z	7 km NNE of Coalinga, California	earthquake	0.36	0.38	0.11	15	reviewed	nc	nc
5/4/1983	14:38:17	36.1821667	-120.319	7.35	2	md	21	82	0.03423	0.17	nc	nc1092470	2016-12-11T02:35:38.387Z	5 km NE of Coalinga, California	earthquake	0.37	0.31	0.18	21	reviewed	nc	nc
5/4/1983	14:32:55	36.1065	-120.2235	8.139	2.01	md	18	147	0.07568	0.14	nc	nc1092467	2016-12-11T02:35:26.683Z	12 km ESE of Coalinga, California	earthquake	0.6	0.73	0.15	20	reviewed	nc	nc
5/4/1983	14:26:45	36.2693333	-120.3633333	6.772	2.12	md	28	69	0.02613	0.08	nc	nc1092465	2016-12-11T02:35:18.718Z	14 km N of Coalinga, California	earthquake	0.3	0.29	0.17	36	reviewed	nc	nc
5/4/1983	14:17:02	36.2136667	-120.3783333	10.082	2.5	md	43	55	0.04595	0.1	nc	nc1092459	2016-12-11T02:34:54.800Z	8 km NNW of Coalinga, California	earthquake	0.18	0.32	0.17	47	reviewed	nc	nc
5/4/1983	14:04:56	36.218	-120.289	8.242	2.75	md	38	95	0.003604	0.1	nc	nc1092456	2016-12-11T02:34:36.600Z	10 km NE of Coalinga, California	earthquake	0.21	0.26	0.19	51	reviewed	nc	nc
5/4/1983	13:46:08	36.2131667	-120.3825	4.061	2.87	md	17	114	0.04865	0.19	nc	nc1092449	2016-12-11T02:34:06.857Z	8 km NNW of Coalinga, California	earthquake	0.52	0.82	0.23	23	reviewed	nc	nc
5/4/1983	13:43:09	36.274	-120.3703333	8.473	2.25	md	37	63	0.05495	0.12	nc	nc1092448	2016-12-11T02:34:01.580Z	14 km N of Coalinga, California	earthquake	0.25	0.39	0.17	44	reviewed	nc	nc
5/4/1983	13:41:27	36.1983333	-120.2988333	7.092	2.11	md	25	103	0.02342	0.12	nc	nc1092447	2016-12-11T02:33:55.277Z	8 km NE of Coalinga, California	earthquake	0.42	0.31	0.11	32	reviewed	nc	nc
5/4/1983	13:29:15	36.107	-120.2245	9.129	3.59	md	45	134	0.07477	0.09	nc	nc1092443	2016-12-11T02:33:37.880Z	12 km ESE of Coalinga, California	earthquake	0.22	0.36	0.18	63	reviewed	nc	nc
5/4/1983	13:25:07	36.2765	-120.3306667	11.17	3.04	md	40	66	0.02523	0.11	nc	nc1092442	2016-12-11T02:33:28.670Z	15 km N of Coalinga, California	earthquake	0.19	0.31	0.18	54	reviewed	nc	nc
5/4/1983	13:20:55	36.2066667	-120.3251667	7.312	2.16	md	37	83	0.03514	0.18	nc	nc1092441	2016-12-11T02:33:21.891Z	8 km NNE of Coalinga, California	earthquake	0.3	0.34	0.15	37	reviewed	nc	nc
5/4/1983	13:18:34	36.2201667	-120.284	6.442	2.52	md	32	97	0.001802	0.09	nc	nc1092440	2016-12-11T02:33:15.530Z	11 km NE of Coalinga, California	earthquake	0.2	0.22	0.16	39	reviewed	nc	nc
5/4/1983	13:11:28	36.1371667	-120.21	8.129	2.83	md	40	133	0.07387	0.12	nc	nc1092436	2016-12-11T02:32:56.790Z	12 km SW of Huron, California	earthquake	0.28	0.5	0.13	61	reviewed	nc	nc
5/4/1983	12:53:19	36.2668333	-120.318	5.718	2.6	md	43	45	0.02703	0.1	nc	nc1092432	2016-12-11T02:32:36.590Z	14 km NNE of Coalinga, California	earthquake	0.16	0.19	0.11	53	reviewed	nc	nc
5/4/1983	12:35:36	36.2435	-120.3073333	6.252	2.51	md	37	59	0.02973	0.09	nc	nc1092428	2016-12-11T02:32:16.130Z	12 km NNE of Coalinga, California	earthquake	0.17	0.19	0.14	53	reviewed	nc	nc
5/4/1983	12:32:53	36.2135	-120.2996667	7.672	2.26	md	26	101	0.01351	0.08	nc	nc1092427	2016-12-11T02:32:08.900Z	9 km NNE of Coalinga, California	earthquake	0.31	0.29	0.17	46	reviewed	nc	nc
5/4/1983	12:30:25	36.2128333	-120.3036667	6.553	2.19	md	29	100	0.01622	0.15	nc	nc1092426	2016-12-11T02:32:01.570Z	9 km NNE of Coalinga, California	earthquake	0.28	0.35	0.19	37	reviewed	nc	nc
5/4/1983	12:26:09	36.2031667	-120.3023333	9.066	3.29	md	42	96	0.02162	0.08	nc	nc1092425	2016-12-11T02:31:53.920Z	8 km NE of Coalinga, California	earthquake	0.2	0.22	0.12	64	reviewed	nc	nc
5/4/1983	12:18:14	36.0965	-120.2616667	8.277	2.05	md	19	128	0.1234	0.08	nc	nc1092419	2016-12-11T02:31:24.736Z	10 km ESE of Coalinga, California	earthquake	0.36	0.83	0.2	26	reviewed	nc	nc
5/4/1983	12:12:25	36.279	-120.3766667	8.78	2.54	md	40	49	0.04054	0.1	nc	nc1092416	2016-12-11T02:31:10.480Z	15 km N of Coalinga, California	earthquake	0.18	0.29	0.15	59	reviewed	nc	nc
5/4/1983	12:00:26	36.1991667	-120.3066667	7.912	3.09	md	37	99	0.02613	0.16	nc	nc1092410	2016-12-11T02:30:41.740Z	Central California	earthquake	0.26	0.35	0.24	39	reviewed	nc	nc
5/4/1983	11:52:35	36.1938333	-120.3131667	8.122	2.47	md	38	93	0.03423	0.11	nc	nc1092407	2016-12-11T02:30:24.660Z	7 km NE of Coalinga, California	earthquake	0.18	0.28	0.17	54	reviewed	nc	nc
5/4/1983	11:48:18	36.2908333	-120.4011667	8.989	2.45	md	40	83	0.05856	0.12	nc	nc1092405	2016-12-11T02:30:12.360Z	17 km NNW of Coalinga, California	earthquake	0.21	0.42	0.19	53	reviewed	nc	nc
5/4/1983	11:47:04	36.1501667	-120.2658333	9.039	2.04	md	30	120	0.02703	0.14	nc	nc1092404	2016-12-11T02:30:02.560Z	8 km E of Coalinga, California	earthquake	0.37	0.31	0.18	36	reviewed	nc	nc
5/4/1983	11:45:46	36.232	-120.2833333	13.132	2.67	md	39	95	0.01351	0.08	nc	nc1092403	2016-12-11T02:29:57.000Z	12 km NE of Coalinga, California	earthquake	0.22	0.36	0.17	55	reviewed	nc	nc
5/4/1983	11:44:13	36.2048333	-120.2555	8.322	2.9	md	38	106	0.02703	0.13	nc	nc1092402	2016-12-11T02:29:49.720Z	11 km NE of Coalinga, California	earthquake	0.27	0.38	0.14	61	reviewed	nc	nc
5/4/1983	11:40:16	36.2213333	-120.2695	7.536	2.83	md	47	77	0.01171	0.09	nc	nc1092401	2016-12-11T02:29:39.160Z	12 km NE of Coalinga, California	earthquake	0.17	0.15	0.14	62	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/4/1983	11:35:08	36.2053333	-120.2713333	6.452	2.38	md	35	104	0.01712	0.09	nc	nc1092398	2016-12-11T02:29:22.850Z	10 km NE of Coalinga, California	earthquake	0.21	0.3	0.13	43	reviewed	nc	nc
5/4/1983	11:31:38	36.112	-120.2265	7.688	2.01	md	14	247	0.07117	0.08	nc	nc1092396	2016-12-11T02:29:11.989Z	12 km ESE of Coalinga, California	earthquake	1.46	0.9	0.19	15	reviewed	nc	nc
5/4/1983	11:24:07	36.1731667	-120.2536667	7.769	2.04	md	27	121	0.04234	0.21	nc	nc1092392	2016-12-11T02:28:55.696Z	10 km ENE of Coalinga, California	earthquake	0.52	0.36	0.11	22	reviewed	nc	nc
5/4/1983	11:15:20	36.3131667	-120.2876667	5.703	2.39	md	14	76	0.02523	0.08	nc	nc1092389	2016-12-11T02:28:44.022Z	20 km NNE of Coalinga, California	earthquake	0.22	0.2	0.09	27	reviewed	nc	nc
5/4/1983	11:14:46	36.2493333	-120.3571667	10.379	2.36	md	34	51	0.05946	0.12	nc	nc1092388	2016-12-11T02:28:38.350Z	12 km N of Coalinga, California	earthquake	0.22	0.43	0.1	29	reviewed	nc	nc
5/4/1983	11:10:21	36.212	-120.2691667	8.886	2.93	md	42	46	0.004505	0.12	nc	nc1092386	2016-12-11T02:28:26.730Z	11 km NE of Coalinga, California	earthquake	0.19	0.19	0.17	56	reviewed	nc	nc
5/4/1983	11:07:55	36.2671667	-120.3418333	9.032	2.66	md	42	55	0.01802	0.1	nc	nc1092384	2016-12-11T02:28:14.810Z	14 km N of Coalinga, California	earthquake	0.18	0.22	0.2	52	reviewed	nc	nc
5/4/1983	11:04:50	36.1561667	-120.2663333	5.352	2.34	md	8	196	0.02703	0.05	nc	nc1092382	2016-12-11T02:28:04.214Z	8 km ENE of Coalinga, California	earthquake	0.85	0.42	0.15	10	reviewed	nc	nc
5/4/1983	11:00:04	36.2323333	-120.2806667	5.423	2.31	md	23	94	0.1189	0.17	nc	nc1092381	2016-12-11T02:27:59.891Z	12 km NE of Coalinga, California	earthquake	0.43	1.16	0.17	34	reviewed	nc	nc
5/4/1983	10:20:06	36.1475	-120.2335	5.425	2.18	md	27	127	0.05315	0.16	nc	nc1092369	2016-12-11T02:26:58.820Z	11 km E of Coalinga, California	earthquake	0.31	0.58	0.17	33	reviewed	nc	nc
5/4/1983	10:03:04	36.1815	-120.249	8.642	2.65	md	26	112	0.04685	0.21	nc	nc1092364	2016-12-11T02:26:34.860Z	11 km ENE of Coalinga, California	earthquake	0.39	0.43	0.11	44	reviewed	nc	nc
5/4/1983	10:02:44	36.1358333	-120.2596667	5.697	3.01	md	19	189	0.03604	0.08	nc	nc1092363	2016-12-11T02:26:28.626Z	9 km E of Coalinga, California	earthquake	0.41	0.38	0.2	19	reviewed	nc	nc
5/4/1983	9:53:29	36.219	-120.2898333	7.312	2.61	md	38	96	0.004505	0.1	nc	nc1092362	2016-12-11T02:26:23.000Z	10 km NE of Coalinga, California	earthquake	0.21	0.33	0.17	52	reviewed	nc	nc
5/4/1983	9:51:48	36.1198333	-120.3161667	5.254	2.52	md	18	116	0.1892	0.32	nc	nc1092361	2016-12-11T02:26:16.884Z	4 km ESE of Coalinga, California	earthquake	1.29	4.77	0.22	24	reviewed	nc	nc
5/4/1983	9:43:53	36.1655	-120.3011667	7.42	2.13	md	26	107	0.01441	0.19	nc	nc1092357	2016-12-11T02:26:00.890Z	6 km ENE of Coalinga, California	earthquake	0.45	0.46	0.1	19	reviewed	nc	nc
5/4/1983	9:42:24	36.1138333	-120.2811667	6.268	2.07	md	8	180	0.04054	0.33	nc	nc1092356	2016-12-11T02:25:56.315Z	7 km ESE of Coalinga, California	earthquake	1.43	2.04	0.1	9	reviewed	nc	nc
5/4/1983	9:22:55	36.1595	-120.3053333	10.12	2.05	md	25	95	0.009009	0.1	nc	nc1092352	2016-12-11T02:25:40.371Z	5 km ENE of Coalinga, California	earthquake	0.27	0.36	0.15	30	reviewed	nc	nc
5/4/1983	9:14:49	36.2136667	-120.3616667	11.942	2.2	md	40	81	0.03874	0.1	nc	nc1092347	2016-12-11T02:25:13.970Z	8 km N of Coalinga, California	earthquake	0.19	0.32	0.19	46	reviewed	nc	nc
5/4/1983	9:10:30	36.1693333	-120.2775	8.76	2.79	md	39	110	0.04955	0.11	nc	nc1092345	2016-12-11T02:25:02.180Z	8 km ENE of Coalinga, California	earthquake	0.28	0.47	0.14	66	reviewed	nc	nc
5/4/1983	9:07:40	36.1096667	-120.2081667	6.379	2.78	md	40	143	0.08468	0.14	nc	nc1092341	2016-12-11T02:24:37.060Z	13 km NNW of Avenal, California	earthquake	0.4	0.54	0.17	61	reviewed	nc	nc
5/4/1983	8:59:01	36.1096667	-120.2013333	6.916	3.34	md	39	145	0.1811	0.11	nc	nc1092338	2016-12-11T02:24:18.980Z	13 km NNW of Avenal, California	earthquake	0.41	0.64	0.17	71	reviewed	nc	nc
5/4/1983	8:54:46	36.0988333	-120.2515	5.354	2.28	md	30	130	0.1225	0.22	nc	nc1092336	2016-12-11T02:24:06.720Z	10 km ESE of Coalinga, California	earthquake	0.44	1	0.18	34	reviewed	nc	nc
5/4/1983	8:48:53	36.2225	-120.2813333	13.504	3.55	md	56	90	0.004505	0.14	nc	nc1092334	2016-12-11T02:23:51.420Z	11 km NE of Coalinga, California	earthquake	0.19	0.19	0.09	46	reviewed	nc	nc
5/4/1983	8:48:27	36.1985	-120.3001667	5.934	3.7	md	25	102	0.02342	0.13	nc	nc1092333	2016-12-11T02:23:44.516Z	8 km NE of Coalinga, California	earthquake	0.36	0.33	0.19	16	reviewed	nc	nc
5/4/1983	8:46:36	36.2083333	-120.2733333	9.347	2.97	md	47	54	0.008108	0.14	nc	nc1092332	2016-12-11T02:23:38.790Z	10 km NE of Coalinga, California	earthquake	0.18	0.18	0.13	64	reviewed	nc	nc
5/4/1983	8:43:43	36.1656667	-120.283	7.284	2	md	27	110	0.01892	0.12	nc	nc1092331	2016-12-11T02:23:30.640Z	7 km ENE of Coalinga, California	earthquake	0.28	0.35	0.15	29	reviewed	nc	nc
5/4/1983	8:35:11	36.1936667	-120.3106667	9.29	2.06	md	34	95	0.03243	0.2	nc	nc1092327	2016-12-11T02:23:09.844Z	7 km NE of Coalinga, California	earthquake	0.29	0.26	0.15	37	reviewed	nc	nc
5/4/1983	8:25:46	36.2103333	-120.2746667	9.566	3.15	md	49	54	0.009009	0.2	nc	nc1092324	2016-12-11T02:22:56.110Z	10 km NE of Coalinga, California	earthquake	0.25	0.26	0.11	68	reviewed	nc	nc
5/4/1983	8:19:36	36.2021667	-120.2568333	7.803	2.3	md	15	125	0.02793	0.14	nc	nc1092321	2016-12-11T02:22:41.211Z	11 km NE of Coalinga, California	earthquake	0.42	0.47	0.13	21	reviewed	nc	nc
5/4/1983	8:18:08	36.232	-120.2713333	9.254	3.52	md	53	57	0.01622	0.11	nc	nc1092320	2016-12-11T02:22:35.740Z	12 km NE of Coalinga, California	earthquake	0.15	0.14	0.19	47	reviewed	nc	nc
5/4/1983	8:16:41	36.2503333	-120.308	5.153	2.34	md	17	115	0.03694	0.14	nc	nc1092319	2016-12-11T02:22:27.903Z	13 km NNE of Coalinga, California	earthquake	0.37	0.35	0.16	20	reviewed	nc	nc
5/4/1983	8:15:00	36.141	-120.2676667	7.509	2.43	md	39	118	0.02793	0.17	nc	nc1092317	2016-12-11T02:22:18.720Z	8 km E of Coalinga, California	earthquake	0.33	0.43	0.13	48	reviewed	nc	nc
5/4/1983	7:54:55	36.1771667	-120.3028333	10.537	3.1	md	51	66	0.02613	0.14	nc	nc1092309	2016-12-11T02:21:42.880Z	6 km NE of Coalinga, California	earthquake	0.19	0.26	0.13	75	reviewed	nc	nc
5/4/1983	7:45:01	36.292	-120.3123333	5.75	2.65	md	38	95	0.004505	0.1	nc	nc1092305	2016-12-11T02:21:22.780Z	17 km NNE of Coalinga, California	earthquake	0.18	0.18	0.13	57	reviewed	nc	nc
5/4/1983	7:39:07	36.2901667	-120.31	6.55	3.37	md	49	74	0.003604	0.13	nc	nc1092304	2016-12-11T02:21:12.240Z	17 km NNE of Coalinga, California	earthquake	0.22	0.2	0.11	74	reviewed	nc	nc
5/4/1983	7:35:03	36.1595	-120.2891667	8.988	2.93	md	47	87	0.05495	0.12	nc	nc1092303	2016-12-11T02:21:03.510Z	6 km ENE of Coalinga, California	earthquake	0.24	0.22	0.09	72	reviewed	nc	nc
5/4/1983	7:32:29	36.2351667	-120.3486667	9.822	2.07	md	34	63	0.01532	0.09	nc	nc1092302	2016-12-11T02:20:55.690Z	10 km N of Coalinga, California	earthquake	0.2	0.29	0.27	33	reviewed	nc	nc
5/4/1983	7:28:38	36.2696667	-120.3371667	12.075	3.78	md	55	51	0.03063	0.15	nc	nc1092301	2022-04-27T23:59:31.823Z	14 km N of Coalinga, California	earthquake	0.28	0.31	0.03	7	reviewed	nc	nc
5/4/1983	7:25:04	36.148	-120.2865	6.599	2.32	md	33	119	0.01081	0.21	nc	nc1092300	2016-12-11T02:20:40.330Z	6 km E of Coalinga, California	earthquake	0.4	0.46	0.15	37	reviewed	nc	nc
5/4/1983	7:16:28	36.113	-120.2651667	10.025	2.84	md	12	191	0.1072	0.07	nc	nc1092297	2016-12-11T02:20:25.829Z	9 km ESE of Coalinga, California	earthquake	0.61	0.94	0.12	12	reviewed	nc	nc
5/4/1983	7:08:41	36.1776667	-120.2451667	3.669	2.2	md	28	114	0.1063	0.22	nc	nc1092295	2016-12-11T02:20:18.164Z	11 km ENE of Coalinga, California	earthquake	0.34	1.22	0.21	29	reviewed	nc	nc
5/4/1983	7:04:52	36.1893333	-120.2878333	5.85	2.15	md	19	104	0.03874	0.17	nc	nc1092294	2016-12-11T02:20:14.142Z	8 km NE of Coalinga, California	earthquake	0.71	0.43	0.11	23	reviewed	nc	nc
5/4/1983	7:03:42	36.0443333	-120.1906667	-0.458	2.08	md	5	233	0.1649	0.12	nc	nc1092293	2016-12-11T02:20:10.132Z	7 km NW of Avenal, California	earthquake	1.23	4.18	0.12	8	reviewed	nc	nc
5/4/1983	7:00:22	36.1658333	-120.2343333	5.239	2.1	md	27	122	0.05405	0.19	nc	nc1092291	2016-12-11T02:20:01.110Z	11 km ENE of Coalinga, California	earthquake	0.4	0.63	0.13	29	reviewed	nc	nc
5/4/1983	6:55:59	36.261	-120.3801667	9.832	2.39	md	42	49	0.03243	0.1	nc	nc1092290	2016-12-11T02:19:51.220Z	13 km N of Coalinga, California	earthquake	0.25	0.36	0.11	50	reviewed	nc	nc
5/4/1983	6:53:47	36.1528333	-120.2845	7.269	2.5	md	38	173	0.01171	0.17	nc	nc1092289	2016-12-11T02:19:42.610Z	6 km ENE of Coalinga, California	earthquake	0.36	0.31	0.19	37	reviewed	nc	nc
5/4/1983	6:52:11	36.2158333	-120.275	2.642	2.25	md	12	105	0.008108	0.26	nc	nc1092288	2016-12-11T02:19:33.845Z	11 km NE of Coalinga, California	earthquake	0.63	0.81	0.1	12	reviewed	nc	nc
5/4/1983	6:50:43	36.2291667	-120.3038333	7.212	2.44	md	30	60	0.01892	0.08	nc	nc1092287	2016-12-11T02:19:28.730Z	11 km NNE of Coalinga, California	earthquake	0.25	0.27	0.15	38	reviewed	nc	nc
5/4/1983	6:26:52	36.279	-120.3588333	6.713	2.07	md	18	235	0.1955	0.08	nc	nc1092283	2016-12-11T02:19:10.396Z	15 km N of Coalinga, California	earthquake	0.93	1.49	0.14	18	reviewed	nc	nc
5/4/1983	6:17:08	36.197	-120.2998333	6.812	2.13	md	29	103	0.02523	0.13	nc	nc1092280	2016-12-11T02:18:58.792Z	8 km NE of Coalinga, California	earthquake	0.39	0.31	0.21	30	reviewed	nc	nc
5/4/1983	6:00:20	36.131	-120.2291667	8.229	2.6	md	40	132	0.06036	0.1	nc	nc1092274	2016-12-11T02:18:29.610Z	11 km E of Coalinga, California	earthquake	0.25	0.4	0.18	54	reviewed	nc	nc
5/4/1983	5:58:27	36.1828333	-120.2801667	3.887	2.58	md	6	155	0.08378	0.11	nc	nc1092273	2016-12-11T02:18:22.951Z	8 km ENE of Coalinga, California	earthquake	0.79	1.48	0.29	8	reviewed	nc	nc
5/4/1983	5:56:45	35.9823333	-120.3076667	7.502	2.17	md	14	156	0.05676	0.2	nc	nc1092271	2016-12-11T02:18:14.910Z	14 km NE of Parkfield, California	earthquake	0.95	0.97	0.17	23	reviewed	nc	nc
5/4/1983	5:51:55	36.2118333	-120.3513333	6.859	2.23	md	22	88	0.03784	0.15	nc	nc1092269	2016-12-11T02:18:02.448Z	8 km N of Coalinga, California	earthquake	0.39	0.62	0.1	20	reviewed	nc	nc
5/4/1983	5:41:41	36.2336667	-120.2933333	11.682	3.12	md	22	73	0.01622	0.06	nc	nc1092266	2016-12-11T02:17:50.207Z	12 km NNE of Coalinga, California	earthquake	0.27	0.36	0.18	35	reviewed	nc	nc
5/4/1983	5:41:00	36.2026667	-120.3305	7.089	2.03	md	25	78	0.04054	0.21	nc	nc1092265	2016-12-11T02:17:46.004Z	7 km NNE of Coalinga, California	earthquake	0.39	0.47	0.12	21	reviewed	nc	nc
5/4/1983	5:24:00	36.1905	-120.2578333	7.992	2.13	md	28	198	0.03514	0.11	nc	nc1092257	2016-12-11T02:17:13.570Z	10 km ENE of Coalinga, California	earthquake	0.53	0.31	0.1	28	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/4/1983	5:22:20	36.232	-120.432	8.037	2.27	md	17	112	0.07387	0.08	nc	nc1092256	2016-12-11T02:17:07.811Z	12 km NNW of Coalinga, California	earthquake	0.28	0.67	0.21	12	reviewed	nc	nc
5/4/1983	5:21:23	36.2576667	-120.3778333	9.092	2.04	md	35	44	0.02973	0.08	nc	nc1092255	2016-12-11T02:17:03.787Z	13 km N of Coalinga, California	earthquake	0.18	0.28	0.15	36	reviewed	nc	nc
5/4/1983	5:18:28	36.1635	-120.2803333	6.649	2.59	md	41	110	0.01982	0.14	nc	nc1092254	2016-12-11T02:16:57.780Z	7 km ENE of Coalinga, California	earthquake	0.27	0.28	0.13	57	reviewed	nc	nc
5/4/1983	5:17:24	36.1945	-120.2488333	9.163	2.11	md	17	118	0.03784	0.18	nc	nc1092253	2016-12-11T02:16:51.198Z	11 km ENE of Coalinga, California	earthquake	1.28	0.84	0.23	23	reviewed	nc	nc
5/4/1983	5:05:50	36.276	-120.3285	3.872	2.03	md	19	64	0.02432	0.11	nc	nc1092249	2016-12-11T02:16:35.095Z	15 km N of Coalinga, California	earthquake	0.28	0.27	0.14	17	reviewed	nc	nc
5/4/1983	5:00:40	36.2455	-120.3768333	9.063	2.02	md	33	57	0.07387	0.09	nc	nc1092248	2016-12-11T02:16:29.840Z	11 km N of Coalinga, California	earthquake	0.19	0.32	0.19	33	reviewed	nc	nc
5/4/1983	4:50:55	36.1621667	-120.2503333	14.486	2.15	md	8	141	0.2063	0.27	nc	nc1092243	2016-12-11T02:16:00.868Z	10 km ENE of Coalinga, California	earthquake	1.81	13.89	0.06	10	reviewed	nc	nc
5/4/1983	4:48:18	36.2255	-120.2961667	10.192	2.55	md	39	62	0.01171	0.15	nc	nc1092242	2016-12-11T02:15:55.740Z	11 km NNE of Coalinga, California	earthquake	0.26	0.34	0.15	47	reviewed	nc	nc
5/4/1983	4:45:45	36.1973333	-120.2765	5.84	2.06	md	25	167	0.02252	0.15	nc	nc1092241	2016-12-11T02:15:47.293Z	9 km NE of Coalinga, California	earthquake	0.47	0.29	0.33	23	reviewed	nc	nc
5/4/1983	4:37:56	36.2465	-120.2711667	5.53	2.23	md	13	106	0.02973	0.07	nc	nc1092238	2016-12-11T02:15:36.049Z	14 km NE of Coalinga, California	earthquake	0.22	0.29	0.15	22	reviewed	nc	nc
5/4/1983	4:33:51	36.1618333	-120.2401667	6.231	2.58	md	29	119	0.04865	0.07	nc	nc1092237	2016-12-11T02:15:30.540Z	11 km ENE of Coalinga, California	earthquake	0.2	0.36	0.14	38	reviewed	nc	nc
5/4/1983	4:29:29	36.2346667	-120.3193333	14.94	2.01	md	7	110	0.03243	0.18	nc	nc1092234	2016-12-11T02:15:17.391Z	11 km NNE of Coalinga, California	earthquake	6.6	10.36	0.08	9	reviewed	nc	nc
5/4/1983	4:24:46	36.2166667	-120.2605	11.642	2.88	md	33	101	0.01982	0.21	nc	nc1092232	2016-12-11T02:15:08.550Z	12 km NE of Coalinga, California	earthquake	0.38	0.46	0.17	47	reviewed	nc	nc
5/4/1983	4:24:20	36.2433333	-120.2978333	5.327	3.04	md	11	164	0.02703	0.17	nc	nc1092231	2016-12-11T02:15:02.233Z	12 km NNE of Coalinga, California	earthquake	0.83	0.45	0.17	13	reviewed	nc	nc
5/4/1983	4:21:25	36.243	-120.2958333	11.24	2.56	md	35	75	0.02613	0.09	nc	nc1092230	2016-12-11T02:14:56.900Z	12 km NNE of Coalinga, California	earthquake	0.23	0.29	0.16	50	reviewed	nc	nc
5/4/1983	4:14:42	36.1301667	-120.2671667	-0.253	2.83	md	15	212	0.2748	0.34	nc	nc1092227	2016-12-11T02:14:43.521Z	8 km E of Coalinga, California	earthquake	1.97	11.92	0.09	16	reviewed	nc	nc
5/4/1983	4:14:25	36.2265	-120.183	1.847	2.68	md	5	308	0.08288	0.06	nc	nc1092226	2016-12-11T02:14:39.697Z	7 km WNW of Huron, California	earthquake	6.49	3.89		1	reviewed	nc	nc
5/4/1983	4:12:08	36.1463333	-120.2778333	5.448	2.06	md	13	185	0.01802	0.06	nc	nc1092225	2016-12-11T02:14:35.740Z	7 km E of Coalinga, California	earthquake	0.47	0.4	0.25	15	reviewed	nc	nc
5/4/1983	4:10:21	36.2833333	-120.3703333	-0.112	2.16	md	19	64	0.05225	0.25	nc	nc1092224	2016-12-11T02:14:31.945Z	15 km N of Coalinga, California	earthquake	0.39	4.84	0.13	20	reviewed	nc	nc
5/4/1983	4:09:15	36.1398333	-120.2581667	6.592	3	md	31	122	0.03514	0.13	nc	nc1092223	2016-12-11T02:14:26.910Z	9 km E of Coalinga, California	earthquake	0.36	0.71	0.15	41	reviewed	nc	nc
5/4/1983	4:07:03	36.1965	-120.3246667	-0.213	2.34	md	23	115	0.03964	0.21	nc	nc1092222	2016-12-11T02:14:20.671Z	7 km NNE of Coalinga, California	earthquake	0.57	3.06	0.12	34	reviewed	nc	nc
5/4/1983	4:03:29	36.3138333	-120.299	6.285	2.68	md	40	109	0.02162	0.08	nc	nc1092221	2016-12-11T02:14:15.280Z	20 km NNE of Coalinga, California	earthquake	0.22	0.17	0.17	47	reviewed	nc	nc
5/4/1983	3:50:13	36.0068333	-120.483	-0.021	2	md	6	210	0.08018	0.34	nc	nc1092220	2016-12-11T02:14:08.915Z	12 km NNW of Parkfield, California	earthquake	2.05	16.51	0.16	6	reviewed	nc	nc
5/4/1983	3:42:43	36.3195	-120.236	-0.159	2.27	md	12	222	0.4604	0.43	nc	nc1092217	2016-12-11T02:13:57.576Z	Central California	earthquake	5.46	14.13	0.24	8	reviewed	nc	nc
5/4/1983	3:31:50	36.1803333	-120.3436667	5.666	2.42	md	14	107	0.06126	0.07	nc	nc1092213	2016-12-11T02:13:42.176Z	4 km NNE of Coalinga, California	earthquake	0.35	0.62	0.13	16	reviewed	nc	nc
5/4/1983	3:28:31	36.1801667	-120.248	7.117	2.09	md	23	114	0.04865	0.17	nc	nc1092210	2016-12-11T02:13:26.754Z	11 km ENE of Coalinga, California	earthquake	0.6	1.04	0.2	24	reviewed	nc	nc
5/4/1983	3:23:35	36.252	-120.3351667	7.427	2.25	md	10	100	0.007207	0.05	nc	nc1092209	2016-12-11T02:13:22.900Z	12 km N of Coalinga, California	earthquake	0.44	0.4	0.14	8	reviewed	nc	nc
5/4/1983	3:18:07	36.2761667	-120.344	7.77	2.17	md	17	56	0.02703	0.08	nc	nc1092207	2016-12-11T02:13:15.232Z	15 km N of Coalinga, California	earthquake	0.25	0.22	0.22	19	reviewed	nc	nc
5/4/1983	3:05:08	36.1485	-120.2856667	3.441	2.92	md	32	113	0.145	0.15	nc	nc1092203	2016-12-11T02:12:58.440Z	6 km E of Coalinga, California	earthquake	0.35	0.96	0.16	38	reviewed	nc	nc
5/4/1983	3:04:57	36.1105	-120.3416667	8.394	3.01	md	9	165	0.07838	0.06	nc	nc1092202	2016-12-11T02:12:52.645Z	3 km SSE of Coalinga, California	earthquake	0.5	0.72	0.07	12	reviewed	nc	nc
5/4/1983	3:01:51	36.2031667	-120.2731667	6.05	2.21	md	19	103	0.01802	0.12	nc	nc1092201	2016-12-11T02:12:48.646Z	10 km NE of Coalinga, California	earthquake	0.31	0.43	0.15	20	reviewed	nc	nc
5/4/1983	2:52:00	36.1956667	-120.2671667	7.67	2.48	md	36	106	0.02703	0.11	nc	nc1092198	2016-12-11T02:12:35.550Z	10 km NE of Coalinga, California	earthquake	0.28	0.35	0.16	49	reviewed	nc	nc
5/4/1983	2:50:42	36.2195	-120.3191667	7.457	2.12	md	18	84	0.02793	0.09	nc	nc1092197	2016-12-11T02:12:29.048Z	9 km NNE of Coalinga, California	earthquake	0.41	0.43	0.13	20	reviewed	nc	nc
5/4/1983	2:48:57	36.094	-120.2343333	11.744	2.44	md	9	276	0.1631	0.03	nc	nc1092196	2016-12-11T02:12:24.665Z	12 km ESE of Coalinga, California	earthquake	1.67	1.46	0.18	8	reviewed	nc	nc
5/4/1983	2:46:09	36.2058333	-120.2618333	10.498	3.19	md	43	103	0.005405	0.16	nc	nc1092195	2016-12-11T02:12:18.740Z	11 km NE of Coalinga, California	earthquake	0.29	0.32	0.11	57	reviewed	nc	nc
5/4/1983	2:14:52	36.1653333	-120.2333333	9.225	2.08	md	10	143	0.1405	0.05	nc	nc1092183	2016-12-11T02:11:26.466Z	11 km ENE of Coalinga, California	earthquake	0.57	0.91	0.2	11	reviewed	nc	nc
5/4/1983	2:01:28	36.2178333	-120.3551667	5.094	2.66	md	28	249	0.409	0.13	nc	nc1092177	2016-12-11T02:11:04.090Z	8 km N of Coalinga, California	earthquake	1.29	1.87	0.09	28	reviewed	nc	nc
5/4/1983	1:59:18	36.1688333	-120.2248333	1.754	2.4	md	15	125	0.1847	0.24	nc	nc1092176	2016-12-11T02:11:00.069Z	11 km WSW of Huron, California	earthquake	0.82	4.09	0.19	11	reviewed	nc	nc
5/4/1983	1:57:08	36.191	-120.1831667	0.637	2.19	md	11	258	0.1423	0.1	nc	nc1092175	2016-12-11T02:10:56.358Z	7 km W of Huron, California	earthquake	1.62	2.16	0.16	9	reviewed	nc	nc
5/4/1983	1:48:57	36.25	-120.4005	4.811	2.84	md	32	104	0.08739	0.14	nc	nc1092169	2016-12-11T02:10:26.940Z	12 km NNW of Coalinga, California	earthquake	0.22	0.51	0.11	29	reviewed	nc	nc
5/4/1983	1:46:29	36.2468333	-120.392	8.251	2.24	md	17	108	0.08288	0.06	nc	nc1092168	2016-12-11T02:10:22.608Z	12 km NNW of Coalinga, California	earthquake	0.38	0.67	0.26	16	reviewed	nc	nc
5/4/1983	1:41:29	36.1611667	-120.2143333	7.211	2.16	md	19	152	0.136	0.1	nc	nc1092167	2016-12-11T02:10:18.557Z	11 km WSW of Huron, California	earthquake	0.43	1.06	0.13	23	reviewed	nc	nc
5/4/1983	1:27:31	36.1391667	-120.2698333	0.64	3.17	md	32	136	0.2315	0.12	nc	nc1092159	2016-12-11T02:09:46.260Z	8 km E of Coalinga, California	earthquake	0.5	2.67	0.1	35	reviewed	nc	nc
5/4/1983	1:21:34	36.2608333	-120.4258333	9.701	2.87	md	23	107	0.09459	0.11	nc	nc1092155	2016-12-11T02:09:28.124Z	14 km NNW of Coalinga, California	earthquake	0.51	0.9	0.23	26	reviewed	nc	nc
5/4/1983	1:19:29	36.129	-120.2818333	6.034	2.71	md	29	120	0.1297	0.06	nc	nc1092154	2016-12-11T02:09:22.970Z	7 km E of Coalinga, California	earthquake	0.22	0.55	0.16	45	reviewed	nc	nc
5/4/1983	1:16:09	36.1348333	-120.2586667	9.574	2.62	md	16	130	0.1333	0.08	nc	nc1092152	2016-12-11T02:09:13.440Z	9 km E of Coalinga, California	earthquake	0.45	1.18	0.1	17	reviewed	nc	nc
5/4/1983	1:13:36	36.1315	-120.2546667	6.514	2.35	md	27	124	0.1378	0.15	nc	nc1092151	2016-12-11T02:09:09.711Z	9 km E of Coalinga, California	earthquake	0.34	0.78	0.13	32	reviewed	nc	nc
5/4/1983	0:36:50	36.124	-120.2265	4.813	3.63	ml	11	101		0.73	ci	ci1106208	2016-04-01T20:16:35.819Z	12km E of Coalinga, CA	earthquake	1.88	31.61	0.097	11	reviewed	ci	ci
5/4/1983	0:05:02	36.057	-120.6101667	3.976	2.03	md	32	82	0.01622	0.05	nc	nc1092149	2016-12-11T02:09:00.610Z	23 km NW of Parkfield, California	earthquake	0.19	0.34	0.2	33	reviewed	nc	nc
5/4/1983	0:00:47	36.1288333	-120.21	-0.331	2.21	md	18	241	0.3171	0.22	nc	nc1092147	2016-12-11T02:08:50.606Z	12 km SW of Huron, California	earthquake	1.47	7	0.13	17	reviewed	nc	nc
5/3/1983	23:50:58	36.1418333	-120.2313333	-0.176	2.66	md	32	205	0.1405	0.43	nc	nc1092144	2016-12-11T02:08:37.330Z	11 km E of Coalinga, California	earthquake	1.22	5.96	0.19	49	reviewed	nc	nc
5/3/1983	23:49:25	36.2458333	-120.3303333	8.482	2.6	md	31	148	0.01081	0.09	nc	nc1092143	2016-12-11T02:08:29.710Z	12 km NNE of Coalinga, California	earthquake	0.34	0.36	0.22	39	reviewed	nc	nc
5/3/1983	23:46:04	36.1368333	-120.3251667	9.652	4.07	md	28	131	0.3595	0.17	nc	nc1092141	2016-12-11T02:08:18.160Z	3 km E of Coalinga, California	earthquake	0.46	2.16	0.06	17	reviewed	nc	nc
5/3/1983	23:45:47	36.1291667	-120.2225	8.036	3.93	md	9	250	0.1766	0.06	nc	nc1092139	2016-12-11T02:08:06.472Z	12 km E of Coalinga, California	earthquake	1.59	1.09		1	reviewed	nc	nc
5/3/1983	23:42:54	36.2096667	-120.3465	7.522	2.09	md	20	149	0.03964	0.09	nc	nc1092135	2016-12-11T02:07:51.779Z	7 km N of Coalinga, California	earthquake	0.32	0.41	0.17	20	reviewed	nc	nc
5/3/1983	23:40:40	36.1156667	-120.2238333	10.904	2.24	md	25	215	0.173	0.19	nc	nc1092133	2016-12-11T02:07:43.729Z	12 km ESE of Coalinga, California	earthquake	1.19	1.08	0.19	20	reviewed	nc	nc
5/3/1983	23:38:12	36.2841667	-120.4261667	14.347	2.25	md	4	165	0.07748	0	nc	nc1092129	2016-12-11T02:07:28.344Z	17 km NNW of Coalinga, California	earthquake	1.89	3.53	0.09	4	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/3/1983	23:36:25	36.1008333	-120.2086667	2.078	2.14	md	21	217	0.1838	0.16	nc	nc1092128	2016-12-11T02:07:24.635Z	12 km NW of Avenal, California	earthquake	0.69	1.5	0.16	14	reviewed	nc	nc
5/3/1983	23:36:12	36.1775	-120.279	4.368	2.68	md	5	266	0.2505	0.16	nc	nc1092127	2016-12-11T02:07:20.583Z	8 km ENE of Coalinga, California	earthquake	6.23	6.19	0.14	4	reviewed	nc	nc
5/3/1983	23:30:37	36.3306667	-120.3355	4.268	2.1	md	8	243	0.01622	0.08	nc	nc1092124	2016-12-11T02:07:05.781Z	19 km S of Cantua Creek, California	earthquake	2.03	1.12	0.16	20	reviewed	nc	nc
5/3/1983	23:25:32	36.1186667	-120.2435	10.159	2.76	md	22	190	0.09369	0.12	nc	nc1092121	2016-12-11T02:06:53.705Z	10 km ESE of Coalinga, California	earthquake	0.51	0.67	0.18	36	reviewed	nc	nc
5/3/1983	23:14:01	36.113	-120.2283333	10.635	2.18	md	24	212	0.1649	0.12	nc	nc1092114	2016-12-11T02:06:26.541Z	12 km ESE of Coalinga, California	earthquake	0.91	1.01	0.19	19	reviewed	nc	nc
5/3/1983	23:12:14	36.1901667	-120.218	14.888	2.29	md	21	220	0.1171	0.07	nc	nc1092113	2016-12-11T02:06:22.696Z	10 km W of Huron, California	earthquake	0.86	0.73	0.15	24	reviewed	nc	nc
5/3/1983	23:09:06	36.2028333	-120.2708333	8.621	2.14	md	18	202	0.07477	0.09	nc	nc1092111	2016-12-11T02:06:14.786Z	10 km NE of Coalinga, California	earthquake	0.47	0.55	0.24	25	reviewed	nc	nc
5/3/1983	23:07:13	36.1528333	-120.229	2.874	2.62	md	15	248	0.1775	0.13	nc	nc1092110	2016-12-11T02:06:10.361Z	11 km E of Coalinga, California	earthquake	1.2	1.86	0.16	15	reviewed	nc	nc
5/3/1983	23:06:31	36.2946667	-120.3656667	12.002	2.45	md	33	145	0.04234	0.14	nc	nc1092109	2016-12-11T02:06:04.820Z	17 km N of Coalinga, California	earthquake	0.54	0.47	0.13	35	reviewed	nc	nc
5/3/1983	23:03:47	36.1891667	-120.2591667	9.546	2.06	md	4	229	0.09099	0	nc	nc1092106	2016-12-11T02:05:49.755Z	10 km ENE of Coalinga, California	earthquake	2.1	2.62	0.27	10	reviewed	nc	nc
5/3/1983	23:02:48	36.1993333	-120.2718333	7.141	2.55	md	35	202	0.07658	0.17	nc	nc1092105	2016-12-11T02:05:44.580Z	10 km NE of Coalinga, California	earthquake	0.54	0.46	0.16	28	reviewed	nc	nc
5/3/1983	23:00:42	36.1976667	-120.389	13.542	2.59	md	8	250	0.1946	0.11	nc	nc1092103	2016-12-11T02:05:34.918Z	6 km NNW of Coalinga, California	earthquake	1.71	4.28	0.19	9	reviewed	nc	nc
5/3/1983	22:57:38	36.2343333	-120.3136667	7.302	2.47	md	21	189	0.02793	0.11	nc	nc1092101	2016-12-11T02:05:27.466Z	11 km NNE of Coalinga, California	earthquake	0.41	0.27	0.12	20	reviewed	nc	nc
5/3/1983	22:55:40	36.2551667	-120.3205	8.688	2.04	md	6	207	0.01892	0.02	nc	nc1092099	2016-12-11T02:05:19.464Z	13 km NNE of Coalinga, California	earthquake	0.78	0.4	0.12	9	reviewed	nc	nc
5/3/1983	22:54:55	36.229	-120.392	12.742	2.08	md	9	104	0.04505	0.04	nc	nc1092098	2016-12-11T02:05:15.799Z	10 km NNW of Coalinga, California	earthquake	0.46	1.15	0.12	10	reviewed	nc	nc
5/3/1983	22:51:13	36.248	-120.3706667	9.782	2.37	md	27	80	0.02252	0.09	nc	nc1092097	2016-12-11T02:05:11.998Z	12 km N of Coalinga, California	earthquake	0.3	0.32	0.21	24	reviewed	nc	nc
5/3/1983	22:48:30	36.1908333	-120.2768333	9.675	2.22	md	7	219	0.07928	0.03	nc	nc1092095	2016-12-11T02:05:03.720Z	9 km NE of Coalinga, California	earthquake	1.62	1.04	0.12	7	reviewed	nc	nc
5/3/1983	22:44:26	36.205	-120.3291667	6.982	2.24	md	23	180	0.04595	0.07	nc	nc1092093	2016-12-11T02:04:55.696Z	7 km NNE of Coalinga, California	earthquake	0.24	0.3	0.21	23	reviewed	nc	nc
5/3/1983	22:43:43	36.2025	-120.3436667	8.602	2.2	md	21	168	0.04685	0.11	nc	nc1092092	2016-12-11T02:04:51.623Z	7 km NNE of Coalinga, California	earthquake	0.37	0.46	0.19	15	reviewed	nc	nc
5/3/1983	22:42:53	36.253	-120.3821667	8.462	2.21	md	19	81	0.03243	0.04	nc	nc1092091	2016-12-11T02:04:47.634Z	12 km N of Coalinga, California	earthquake	0.34	0.38	0.18	17	reviewed	nc	nc
5/3/1983	22:33:50	36.176	-120.2353333	2.081	2.1	md	19	209	0.1135	0.3	nc	nc1092088	2016-12-11T02:04:36.588Z	11 km ENE of Coalinga, California	earthquake	1.21	1.72	0.22	12	reviewed	nc	nc
5/3/1983	22:29:44	36.1986667	-120.345	7.908	3.76	md	41	113	0.02883	0.1	nc	nc1092085	2016-12-11T02:04:23.810Z	Central California	earthquake	0.18	0.32	0.14	44	reviewed	nc	nc
5/3/1983	22:26:09	36.1853333	-120.2378333	7.081	2.37	md	22	211	0.1063	0.11	nc	nc1092080	2016-12-11T02:04:01.467Z	12 km ENE of Coalinga, California	earthquake	0.65	0.96	0.16	18	reviewed	nc	nc
5/3/1983	22:23:53	36.2113333	-120.2801667	10.551	2.86	md	21	199	0.06306	0.08	nc	nc1092079	2016-12-11T02:03:57.567Z	10 km NE of Coalinga, California	earthquake	0.45	0.49	0.16	29	reviewed	nc	nc
5/3/1983	22:23:13	36.2643333	-120.2805	6.272	2.02	md	12	265	0.2117	0.16	nc	nc1092078	2016-12-11T02:03:53.649Z	15 km NNE of Coalinga, California	earthquake	3.32	1.99	0.23	11	reviewed	nc	nc
5/3/1983	22:22:24	36.2591667	-120.2655	16.75	2.54	md	19	220	0.06306	0.06	nc	nc1092077	2016-12-11T02:03:49.620Z	15 km NNE of Coalinga, California	earthquake	0.75	0.85	0.15	22	reviewed	nc	nc
5/3/1983	22:20:23	36.2436667	-120.298	4.688	2.62	md	9	221	0.03694	0.05	nc	nc1092076	2016-12-11T02:03:45.361Z	12 km NNE of Coalinga, California	earthquake	0.64	0.26	0.21	11	reviewed	nc	nc
5/3/1983	22:17:13	36.2385	-120.3743333	7.967	2.57	md	24	102	0.02793	0.08	nc	nc1092075	2016-12-11T02:03:41.604Z	11 km N of Coalinga, California	earthquake	0.26	0.31	0.17	23	reviewed	nc	nc
5/3/1983	22:11:47	36.1033333	-120.2141667	7.12	2.91	md	27	204	0.1793	0.1	nc	nc1092073	2016-12-11T02:03:32.300Z	13 km NW of Avenal, California	earthquake	0.54	0.66	0.14	37	reviewed	nc	nc
5/3/1983	22:11:14	36.283	-120.3998333	7.217	2	md	14	92	0.05676	0.08	nc	nc1092072	2016-12-11T02:03:25.783Z	16 km NNW of Coalinga, California	earthquake	0.4	0.59	0.07	12	reviewed	nc	nc
5/3/1983	22:07:44	36.1	-120.26	4.599	2.05	md	13	232	0.1432	0.06	nc	nc1092070	2016-12-11T02:03:17.988Z	10 km ESE of Coalinga, California	earthquake	0.94	1.01	0.17	13	reviewed	nc	nc
5/3/1983	22:06:15	36.1931667	-120.2985	9.741	2.87	md	35	165	0.06667	0.08	nc	nc1092069	2016-12-11T02:03:12.760Z	8 km NE of Coalinga, California	earthquake	0.27	0.29	0.17	45	reviewed	nc	nc
5/3/1983	22:01:11	36.1251667	-120.231	6.714	2.66	md	15	248	0.1694	0.08	nc	nc1092066	2016-12-11T02:02:58.371Z	11 km E of Coalinga, California	earthquake	1.68	1.19	0.09	14	reviewed	nc	nc
5/3/1983	21:57:58	36.1243333	-120.2333333	8.65	2.94	md	19	202	0.1532	0.08	nc	nc1092063	2016-12-11T02:02:45.477Z	Central California	earthquake	0.63	0.92	0.17	21	reviewed	nc	nc
5/3/1983	21:47:21	36.174	-120.2805	8.371	2.81	md	31	193	0.09099	0.12	nc	nc1092057	2016-12-11T02:02:20.850Z	8 km ENE of Coalinga, California	earthquake	0.38	0.52	0.16	45	reviewed	nc	nc
5/3/1983	21:46:48	36.2406667	-120.3031667	7.971	2.04	md	9	196	0.03333	0.06	nc	nc1092056	2016-12-11T02:02:14.487Z	12 km NNE of Coalinga, California	earthquake	0.54	0.29	0.12	9	reviewed	nc	nc
5/3/1983	21:44:14	36.2928333	-120.3706667	8.218	2.69	md	37	127	0.04505	0.1	nc	nc1092055	2016-12-11T02:02:09.410Z	17 km N of Coalinga, California	earthquake	0.2	0.24	0.21	41	reviewed	nc	nc
5/3/1983	21:41:21	36.1743333	-120.2775	9.385	2.78	md	13	212	0.09189	0.05	nc	nc1092054	2016-12-11T02:02:03.060Z	8 km ENE of Coalinga, California	earthquake	0.51	0.57	0.18	5	reviewed	nc	nc
5/3/1983	21:38:45	36.1468333	-120.3175	16.966	3	md	6	263	0.2694	0.03	nc	nc1092052	2016-12-11T02:01:54.857Z	3 km ENE of Coalinga, California	earthquake	2.03	1.09	0.13	7	reviewed	nc	nc
5/3/1983	21:36:57	36.1593333	-120.2718333	10.511	3.89	md	43	172	0.1072	0.09	nc	nc1092051	2016-12-11T02:01:49.030Z	8 km ENE of Coalinga, California	earthquake	0.28	0.4	0.12	17	reviewed	nc	nc
5/3/1983	21:35:18	36.2555	-120.3451667	7.381	2.04	md	12	167	0.006306	0.04	nc	nc1092049	2016-12-11T02:01:38.352Z	Central California	earthquake	0.44	0.34	0.17	20	reviewed	nc	nc
5/3/1983	21:31:23	36.2121667	-120.2923333	8.611	2.81	md	28	194	0.05495	0.05	nc	nc1092047	2016-12-11T02:01:28.610Z	10 km NE of Coalinga, California	earthquake	0.31	0.28	0.19	31	reviewed	nc	nc
5/3/1983	21:29:52	36.2183333	-120.3113333	8.668	2.55	md	25	161	0.04054	0.09	nc	nc1092046	2016-12-11T02:01:21.779Z	9 km NNE of Coalinga, California	earthquake	0.45	0.46	0.19	26	reviewed	nc	nc
5/3/1983	21:28:06	36.1648333	-120.2651667	0.231	2.88	md	31	197	0.1054	0.13	nc	nc1092045	2016-12-11T02:01:17.008Z	8 km ENE of Coalinga, California	earthquake	0.48	2.07	0.21	12	reviewed	nc	nc
5/3/1983	21:24:40	36.2146667	-120.2873333	8.801	2.14	md	20	197	0.05676	0.12	nc	nc1092043	2016-12-11T02:01:09.029Z	10 km NE of Coalinga, California	earthquake	0.53	0.54	0.17	15	reviewed	nc	nc
5/3/1983	21:23:15	36.2146667	-120.2838333	8.298	2.42	md	23	228	0.05946	0.09	nc	nc1092041	2016-12-11T02:01:00.921Z	Central California	earthquake	0.65	0.35	0.53	9	reviewed	nc	nc
5/3/1983	21:19:51	36.192	-120.346	3.728	2.52	md	6	206	0.05766	0.09	nc	nc1092039	2016-12-11T02:00:52.379Z	5 km NNE of Coalinga, California	earthquake	1.26	2	0.15	7	reviewed	nc	nc
5/3/1983	21:17:27	36.2695	-120.366	13.493	2.15	md	4	288	0.02793	0.04	nc	nc1092038	2016-12-11T02:00:48.187Z	14 km N of Coalinga, California	earthquake	6.19	6.03	0.12	5	reviewed	nc	nc
5/3/1983	21:06:20	36.1828333	-120.274	7.845	2.13	md	29	236	0.1586	0.15	nc	nc1092031	2016-12-11T02:00:20.300Z	9 km ENE of Coalinga, California	earthquake	0.94	1.03	0.26	21	reviewed	nc	nc
5/3/1983	21:04:38	36.2561667	-120.2653333	6.145	2.37	md	13	243	0.2135	0.07	nc	nc1092030	2016-12-11T02:00:16.120Z	Central California	earthquake	1.56	1.08	0.13	14	reviewed	nc	nc
5/3/1983	21:00:00	36.2468333	-120.3053333	4.862	2.11	md	27	238	0.1856	0.08	nc	nc1092027	2016-12-11T02:00:03.784Z	12 km NNE of Coalinga, California	earthquake	0.63	1.09	0.18	22	reviewed	nc	nc
5/3/1983	20:59:06	36.1956667	-120.3618333	7.024	2.29	md	32	151	0.05586	0.14	nc	nc1092026	2016-12-11T01:59:59.351Z	6 km N of Coalinga, California	earthquake	0.59	0.81	0.18	31	reviewed	nc	nc
5/3/1983	20:56:52	36.137	-120.2261667	9.175	3.57	md	45	218	0.1468	0.13	nc	nc1092024	2016-12-11T01:59:49.950Z	12 km E of Coalinga, California	earthquake	0.45	0.49	0.12	58	reviewed	nc	nc
5/3/1983	20:54:20	36.181	-120.2788333	8.428	2.32	md	27	211	0.08559	0.06	nc	nc1092022	2016-12-11T01:59:39.311Z	8 km ENE of Coalinga, California	earthquake	0.42	0.36	0.16	28	reviewed	nc	nc
5/3/1983	20:51:48	36.0966667	-120.229	5.725	2.36	md	24	227	0.1874	0.27	nc	nc1092020	2016-12-11T01:59:30.604Z	12 km ESE of Coalinga, California	earthquake	1.3	2.42	0.13	21	reviewed	nc	nc
5/3/1983	20:47:02	36.2496667	-120.216	3.464	2.52	md	19	271	0.1027	0.08	nc	nc1092018	2016-12-11T01:59:22.328Z	11 km WNW of Huron, California	earthquake	1.41	1.21	0.14	22	reviewed	nc	nc
5/3/1983	20:45:44	36.1108333	-120.2811667	15.014	2.92	md	12	270	0.127	0.03	nc	nc1092017	2016-12-11T01:59:18.239Z	7 km ESE of Coalinga, California	earthquake	2.17	1.45	0.17	7	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/3/1983	20:40:26	36.2245	-120.3471667	7.364	2.65	md	32	160	0.02523	0.07	nc	nc1092013	2016-12-11T01:59:02.880Z	9 km N of Coalinga, California	earthquake	0.34	0.2	0.15	29	reviewed	nc	nc
5/3/1983	20:39:32	36.1876667	-120.327	8.438	2.86	md	33	180	0.06306	0.1	nc	nc1092012	2016-12-11T01:58:57.200Z	Central California	earthquake	0.39	0.31	0.12	30	reviewed	nc	nc
5/3/1983	20:36:41	36.1743333	-120.2163333	8.195	3.16	md	46	222	0.127	0.13	nc	nc1092009	2016-12-11T01:58:38.260Z	10 km WSW of Huron, California	earthquake	0.55	1.13	0.14	42	reviewed	nc	nc
5/3/1983	20:34:22	36.1533333	-120.2776667	6.145	2.19	md	30	233	0.1414	0.22	nc	nc1092008	2016-12-11T01:58:31.328Z	7 km ENE of Coalinga, California	earthquake	1.35	1.27	0.21	25	reviewed	nc	nc
5/3/1983	20:28:11	36.118	-120.2406667	7.894	2.43	md	26	227	0.1604	0.17	nc	nc1092004	2016-12-11T01:58:14.696Z	11 km ESE of Coalinga, California	earthquake	1.02	0.85	0.1	27	reviewed	nc	nc
5/3/1983	20:23:25	36.2346667	-120.3581667	8.094	2.64	md	27	127	0.01892	0.08	nc	nc1092002	2016-12-11T01:58:06.380Z	10 km N of Coalinga, California	earthquake	0.39	0.26	0.14	31	reviewed	nc	nc
5/3/1983	20:21:31	36.1271667	-120.218	6.365	2.79	md	35	218	0.1586	0.16	nc	nc1092001	2016-12-11T01:58:00.320Z	12 km E of Coalinga, California	earthquake	0.59	0.69	0.14	41	reviewed	nc	nc
5/3/1983	20:12:30	36.1465	-120.2088333	3.248	3.06	md	24	185	0.3486	0.08	nc	nc1091997	2016-12-11T01:57:38.585Z	11 km WSW of Huron, California	earthquake	0.41	2.1	0.19	28	reviewed	nc	nc
5/3/1983	20:10:23	36.1828333	-120.261	3.803	2.32	md	8	250	0.2982	0.11	nc	nc1091995	2016-12-11T01:57:30.388Z	10 km ENE of Coalinga, California	earthquake	1.93	4.59	0.32	9	reviewed	nc	nc
5/3/1983	20:00:13	36.1945	-120.3275	3.328	2	md	6	243	0.2432	0.02	nc	nc1091987	2016-12-11T01:56:57.402Z	6 km NNE of Coalinga, California	earthquake	1.82	3.07	0.17	7	reviewed	nc	nc
5/3/1983	19:58:25	36.1706667	-120.3161667	3.069	2.3	md	9	251	0.1234	0.02	nc	nc1091986	2016-12-11T01:56:53.745Z	5 km NE of Coalinga, California	earthquake	1.68	1.27	0.13	12	reviewed	nc	nc
5/3/1983	19:56:32	36.1336667	-120.3096667	13.261	2.74	md	9	263	0.1099	0.08	nc	nc1091984	2016-12-11T01:56:46.025Z	4 km E of Coalinga, California	earthquake	2.08	4.52	0.19	12	reviewed	nc	nc
5/3/1983	19:52:56	36.2841667	-120.2275	-0.462	2.03	md	11	276	0.1	0.06	nc	nc1091982	2016-12-11T01:56:37.827Z	14 km NW of Huron, California	earthquake	1.38	6.39	0.26	9	reviewed	nc	nc
5/3/1983	19:48:32	36.1691667	-120.2933333	7.206	3.18	md	41	198	0.09009	0.12	nc	nc1091981	2016-12-11T01:56:32.610Z	6 km ENE of Coalinga, California	earthquake	0.48	0.37	0.16	44	reviewed	nc	nc
5/3/1983	19:47:47	36.1303333	-120.1448333	-0.516	3.31	md	12	254	0.2387	0.12	nc	nc1091980	2016-12-11T01:56:23.831Z	8 km SSW of Huron, California	earthquake	1.85	5.88	0.38	7	reviewed	nc	nc
5/3/1983	19:47:17	36.2528333	-120.3605	5.334	2.16	md	9	173	0.01441	0.07	nc	nc1091979	2016-12-11T01:56:19.719Z	12 km N of Coalinga, California	earthquake	1.24	0.77	0.17	8	reviewed	nc	nc
5/3/1983	19:45:30	36.0968333	-120.2466667	6.845	2.72	md	14	238	0.1532	0.13	nc	nc1091977	2016-12-11T01:56:11.557Z	11 km ESE of Coalinga, California	earthquake	1.24	0.93	0.18	35	reviewed	nc	nc
5/3/1983	19:38:50	36.182	-120.198	2.785	2.37	md	15	245	0.1351	0.1	nc	nc1091972	2016-12-11T01:55:50.716Z	8 km WSW of Huron, California	earthquake	1.11	1.25	0.2	14	reviewed	nc	nc
5/3/1983	19:35:58	36.1985	-120.3158333	6.218	2.46	md	22	194	0.05495	0.14	nc	nc1091969	2016-12-11T01:55:38.850Z	7 km NNE of Coalinga, California	earthquake	0.65	0.53	0.17	17	reviewed	nc	nc
5/3/1983	19:33:57	36.2048333	-120.2756667	8.648	2.1	md	23	225	0.07027	0.12	nc	nc1091967	2016-12-11T01:55:30.767Z	10 km NE of Coalinga, California	earthquake	1.11	0.68	0.17	18	reviewed	nc	nc
5/3/1983	19:31:47	36.2238333	-120.3011667	3.777	2.17	md	12	239	0.04234	0.15	nc	nc1091966	2016-12-11T01:55:26.516Z	10 km NNE of Coalinga, California	earthquake	1.05	0.55	0.11	13	reviewed	nc	nc
5/3/1983	19:25:50	36.1881667	-120.3098333	5.505	2.08	md	15	209	0.06667	0.08	nc	nc1091963	2016-12-11T01:55:14.822Z	7 km NE of Coalinga, California	earthquake	0.78	0.59	0.12	25	reviewed	nc	nc
5/3/1983	19:23:00	36.1925	-120.3231667	9.278	2.72	md	30	185	0.05856	0.11	nc	nc1091961	2016-12-11T01:55:05.170Z	6 km NNE of Coalinga, California	earthquake	0.48	0.37	0.11	43	reviewed	nc	nc
5/3/1983	19:20:44	36.3126667	-120.3031667	4.155	2.23	md	15	256	0.07117	0.12	nc	nc1091960	2016-12-11T01:54:58.869Z	19 km NNE of Coalinga, California	earthquake	1.77	0.68	0.08	15	reviewed	nc	nc
5/3/1983	19:19:02	36.1365	-120.2588333	5.743	2.28	md	12	242	0.1495	0.1	nc	nc1091958	2016-12-11T01:54:50.749Z	9 km E of Coalinga, California	earthquake	1.37	0.82	0.1	11	reviewed	nc	nc
5/3/1983	19:18:02	36.0901667	-120.2595	7.774	2.83	md	31	226	0.1432	0.11	nc	nc1091957	2016-12-11T01:54:45.210Z	10 km ESE of Coalinga, California	earthquake	0.58	0.71	0.14	35	reviewed	nc	nc
5/3/1983	19:15:06	36.1621667	-120.2918333	7.478	2.08	md	22	200	0.0964	0.13	nc	nc1091954	2016-12-11T01:54:27.774Z	6 km ENE of Coalinga, California	earthquake	0.66	0.57	0.18	22	reviewed	nc	nc
5/3/1983	19:09:36	36.2403333	-120.4025	11.894	2.65	md	30	142	0.04955	0.16	nc	nc1091949	2016-12-11T01:54:06.570Z	11 km NNW of Coalinga, California	earthquake	0.67	0.67	0.16	37	reviewed	nc	nc
5/3/1983	19:01:38	36.0933333	-120.2241667	6.215	2.82	md	23	246	0.1721	0.12	nc	nc1091943	2016-12-11T01:53:39.779Z	13 km NW of Avenal, California	earthquake	1.19	0.68	0.17	22	reviewed	nc	nc
5/3/1983	19:00:43	36.1056667	-120.2173333	8.195	2.25	md	16	214	0.1757	0.09	nc	nc1091942	2016-12-11T01:53:35.288Z	13 km ESE of Coalinga, California	earthquake	0.89	0.73	0.23	18	reviewed	nc	nc
5/3/1983	18:54:59	36.229	-120.3951667	6.76	2.43	md	36	102	0.04685	0.23	nc	nc1091941	2016-12-11T01:53:31.162Z	10 km NNW of Coalinga, California	earthquake	0.55	0.64	0.17	39	reviewed	nc	nc
5/3/1983	18:54:07	36.2328333	-120.3256667	6.548	2.41	md	23	210	0.02162	0.11	nc	nc1091940	2016-12-11T01:53:26.852Z	10 km NNE of Coalinga, California	earthquake	0.77	0.37	0.14	30	reviewed	nc	nc
5/3/1983	18:51:12	35.997	-120.2498333	4.268	2.87	md	4	240	0.2009	0.02	nc	nc1091937	2016-12-11T01:53:14.414Z	10 km W of Avenal, California	earthquake	3.59	7.01	0.06	2	reviewed	nc	nc
5/3/1983	18:50:18	36.1725	-120.3063333	8.948	3.55	md	35	192	0.08198	0.12	nc	nc1091936	2016-12-11T01:53:09.130Z	6 km NE of Coalinga, California	earthquake	0.5	0.56	0.13	38	reviewed	nc	nc
5/3/1983	18:47:59	36.1651667	-120.301	5.488	2.42	md	24	193	0.09099	0.12	nc	nc1091935	2016-12-11T01:53:00.930Z	6 km ENE of Coalinga, California	earthquake	0.39	0.48	0.2	33	reviewed	nc	nc
5/3/1983	18:42:55	36.2503333	-120.3111667	5.526	2.8	md	15	245	0.02613	0.06	nc	nc1091933	2016-12-11T01:52:48.155Z	13 km NNE of Coalinga, California	earthquake	0.98	0.35	0.24	17	reviewed	nc	nc
5/3/1983	18:41:53	36.1161667	-120.211	6.665	2.82	ma	24	219	0.1703	0.18	nc	nc1091932	2016-12-11T01:52:42.770Z	13 km SW of Huron, California	earthquake	0.82	0.7	0.23	14	reviewed	nc	nc
5/3/1983	18:41:32	36.093	-120.2246667	7.476	3.72	md	31	224	0.1829	0.11	nc	nc1091931	2016-12-11T01:52:32.600Z	13 km NW of Avenal, California	earthquake	0.87	1.2	0.19	26	reviewed	nc	nc
5/3/1983	18:40:17	36.1098333	-120.2163333	9.898	2.26	md	10	272	0.173	0.06	nc	nc1091929	2016-12-11T01:52:22.151Z	13 km ESE of Coalinga, California	earthquake	1.83	0.79	0.2	8	reviewed	nc	nc
5/3/1983	18:39:36	36.1003333	-120.217	7.368	2.64	md	21	213	0.1775	0.05	nc	nc1091928	2016-12-11T01:52:18.365Z	13 km NW of Avenal, California	earthquake	0.58	0.68	0.14	19	reviewed	nc	nc
5/3/1983	18:38:49	36.1498333	-120.2485	9.715	2.23	md	12	266	0.1622	0.1	nc	nc1091927	2016-12-11T01:52:14.153Z	10 km E of Coalinga, California	earthquake	2.12	1.03	0.22	12	reviewed	nc	nc
5/3/1983	18:36:57	36.1551667	-120.3388333	1.624	2.13	md	18	180	0.09459	0.13	nc	nc1091926	2016-12-11T01:52:10.143Z	2 km NE of Coalinga, California	earthquake	0.4	0.96	0.18	15	reviewed	nc	nc
5/3/1983	18:34:12	36.3331667	-120.2508333	13.034	2.55	md	26	268	0.1126	0.19	nc	nc1091924	2016-12-11T01:52:02.256Z	19 km SSE of Cantua Creek, California	earthquake	2.58	1.08	0.14	25	reviewed	nc	nc
5/3/1983	18:29:26	36.2148333	-120.2931667	5.108	2.2	md	32	214	0.05315	0.19	nc	nc1091922	2016-12-11T01:51:50.109Z	10 km NE of Coalinga, California	earthquake	0.68	0.44	0.18	19	reviewed	nc	nc
5/3/1983	18:26:53	36.2558333	-120.3526667	-0.496	2.18	md	21	228	0.2153	0.21	nc	nc1091919	2016-12-11T01:51:37.685Z	12 km N of Coalinga, California	earthquake	1.13	5.21	0.19	15	reviewed	nc	nc
5/3/1983	18:25:33	36.1721667	-120.2215	-0.649	2.98	md	34	170	0.2586	0.22	nc	nc1091918	2016-12-11T01:51:33.580Z	11 km WSW of Huron, California	earthquake	1.22	4.96	0.13	40	reviewed	nc	nc
5/3/1983	18:23:33	36.0758333	-120.2668333	5.057	2.66	md	9	218	0.255	0.16	nc	nc1091915	2016-12-11T01:51:21.020Z	10 km SE of Coalinga, California	earthquake	1.64	3.59	0.08	14	reviewed	nc	nc
5/3/1983	18:23:20	36.208	-120.2821667	12.188	3.03	md	19	224	0.06396	0.07	nc	nc1091914	2016-12-11T01:51:17.036Z	10 km NE of Coalinga, California	earthquake	1.02	0.85	0.17	19	reviewed	nc	nc
5/3/1983	18:20:42	36.2061667	-120.298	15.888	2.82	md	15	213	0.05676	0.06	nc	nc1091912	2016-12-11T01:51:09.297Z	9 km NE of Coalinga, California	earthquake	0.7	0.51	0.12	24	reviewed	nc	nc
5/3/1983	18:19:46	36.1368333	-120.3073333	9.692	2.96	md	38	216	0.1126	0.25	nc	nc1091911	2016-12-11T01:51:03.700Z	4 km E of Coalinga, California	earthquake	0.92	1.59	0.1	16	reviewed	nc	nc
5/3/1983	18:18:54	35.8873333	-120.2966667	4.39	2.15	md	7	191	0.03423	1.08	nc	nc1091910	2016-12-11T01:50:54.828Z	12 km E of Parkfield, California	earthquake	8.73	4.2	0.07	7	reviewed	nc	nc
5/3/1983	18:17:18	36.1076667	-120.3268333	5.378	2.06	md	6	283	0.1766	0.02	nc	nc1091908	2016-12-11T01:50:46.849Z	4 km SE of Coalinga, California	earthquake	2.42	1.71	0.09	5	reviewed	nc	nc
5/3/1983	18:12:57	36.1918333	-120.3296667	10.854	2.23	md	6	179	0.05856	0.02	nc	nc1091907	2016-12-11T01:50:42.770Z	6 km NNE of Coalinga, California	earthquake	1.06	0.82		1	reviewed	nc	nc
5/3/1983	18:12:33	36.2153333	-120.3268333	8.204	2.02	md	12	205	0.03604	0.08	nc	nc1091906	2016-12-11T01:50:38.834Z	8 km NNE of Coalinga, California	earthquake	0.79	0.5	0.03	5	reviewed	nc	nc
5/3/1983	18:11:54	36.2073333	-120.2948333	6.208	2.32	md	21	215	0.05766	0.08	nc	nc1091905	2016-12-11T01:50:35.061Z	9 km NE of Coalinga, California	earthquake	0.45	0.26	0.14	25	reviewed	nc	nc
5/3/1983	17:57:34	36.1721667	-120.3033333	5.715	2.57	md	19	194	0.08378	0.17	nc	nc1091899	2016-12-11T01:50:11.104Z	6 km NE of Coalinga, California	earthquake	0.69	0.56	0.15	17	reviewed	nc	nc
5/3/1983	17:54:53	36.2255	-120.173	11.322	2.63	md	14	279	0.3622	0.08	nc	nc1091897	2016-12-11T01:50:03.300Z	6 km WNW of Huron, California	earthquake	2.31	4.33	0.27	3	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/3/1983	17:53:28	36.1423333	-120.204	-0.595	2.65	md	39	219	0.155	0.21	nc	nc1091896	2016-12-11T01:49:57.810Z	11 km SW of Huron, California	earthquake	0.86	5.66	0.12	41	reviewed	nc	nc
5/3/1983	17:51:25	36.2543333	-120.3676667	8.464	2.68	md	35	203	0.02072	0.1	nc	nc1091895	2016-12-11T01:49:51.744Z	12 km N of Coalinga, California	earthquake	0.52	0.54	0.13	36	reviewed	nc	nc
5/3/1983	17:50:34	36.2225	-120.3038333	9.038	2.1	md	14	221	0.04144	0.07	nc	nc1091894	2016-12-11T01:49:47.374Z	10 km NNE of Coalinga, California	earthquake	0.69	0.41	0.23	13	reviewed	nc	nc
5/3/1983	17:47:13	36.28	-120.2861667	3.875	2.22	md	5	302	0.05495	0.01	nc	nc1091892	2016-12-11T01:49:39.496Z	16 km NNE of Coalinga, California	earthquake	2.72	0.98	0.18	2	reviewed	nc	nc
5/3/1983	17:44:38	36.2533333	-120.3235	6.384	3.34	md	49	213	0.01622	0.13	nc	nc1091891	2016-12-11T01:49:34.110Z	13 km NNE of Coalinga, California	earthquake	0.48	0.3	0.13	54	reviewed	nc	nc
5/3/1983	17:44:01	36.1933333	-120.3303333	5.068	2.23	md	16	181	0.05676	0.07	nc	nc1091890	2016-12-11T01:49:26.870Z	6 km NNE of Coalinga, California	earthquake	0.49	0.56	0.18	20	reviewed	nc	nc
5/3/1983	17:41:13	36.1363333	-120.2746667	4.855	2.24	md	18	235	0.1261	0.07	nc	nc1091889	2016-12-11T01:49:22.718Z	7 km E of Coalinga, California	earthquake	0.72	1.09	0.19	16	reviewed	nc	nc
5/3/1983	17:35:58	36.177	-120.259	9.676	3.4	md	38	216	0.0991	0.08	nc	nc1091887	2016-12-11T01:49:12.700Z	10 km ENE of Coalinga, California	earthquake	0.48	0.43	0.13	50	reviewed	nc	nc
5/3/1983	17:35:02	36.3198333	-120.301	-0.408	2.03	md	16	277	0.2514	0.14	nc	nc1091886	2016-12-11T01:49:05.565Z	20 km S of Cantua Creek, California	earthquake	1.42	5.78	0.18	11	reviewed	nc	nc
5/3/1983	17:28:59	36.2	-120.2938333	9.588	2.49	md	16	211	0.06306	0.11	nc	nc1091884	2016-12-11T01:48:57.479Z	8 km NE of Coalinga, California	earthquake	0.89	0.64	0.14	10	reviewed	nc	nc
5/3/1983	17:18:02	36.2876667	-120.3838333	8.465	2.37	md	22	193	0.05045	0.13	nc	nc1091879	2016-12-11T01:48:38.702Z	16 km N of Coalinga, California	earthquake	0.65	0.36	0.2	24	reviewed	nc	nc
5/3/1983	17:16:51	36.2785	-120.4126667	8.925	3.14	md	48	155	0.06396	0.12	nc	nc1091878	2016-12-11T01:48:32.730Z	16 km NNW of Coalinga, California	earthquake	0.31	0.42	0.12	46	reviewed	nc	nc
5/3/1983	17:13:18	36.1993333	-120.282	7.618	2.65	md	34	218	0.07027	0.17	nc	nc1091876	2016-12-11T01:48:20.870Z	9 km NE of Coalinga, California	earthquake	0.81	0.53	0.21	32	reviewed	nc	nc
5/3/1983	17:09:36	36.1706667	-120.3203333	6.926	3.33	md	44	183	0.08108	0.18	nc	nc1091874	2016-12-11T01:48:09.220Z	4 km NE of Coalinga, California	earthquake	0.54	0.43	0.18	48	reviewed	nc	nc
5/3/1983	17:08:20	36.1333333	-120.2333333	8.295	2.25	md	35	218	0.2189	0.14	nc	nc1091873	2016-12-11T01:47:58.310Z	11 km E of Coalinga, California	earthquake	0.68	1	0.27	25	reviewed	nc	nc
5/3/1983	17:07:03	36.247	-120.3185	11.108	2.01	md	16	256	0.01982	0.04	nc	nc1091872	2016-12-11T01:47:54.164Z	12 km NNE of Coalinga, California	earthquake	0.61	0.33	0.17	13	reviewed	nc	nc
5/3/1983	17:04:46	36.268	-120.3063333	5.134	3.08	md	42	219	0.03514	0.15	nc	nc1091871	2016-12-11T01:47:48.760Z	15 km NNE of Coalinga, California	earthquake	0.55	0.56	0.22	45	reviewed	nc	nc
5/3/1983	17:01:29	36.2193333	-120.2958333	8.358	3.89	md	46	211	0.04865	0.1	nc	nc1091869	2016-12-11T01:47:36.900Z	10 km NNE of Coalinga, California	earthquake	0.36	0.3	0.17	43	reviewed	nc	nc
5/3/1983	17:00:07	36.2791667	-120.363	6.815	2.01	md	15	222	0.03423	0.06	nc	nc1091868	2016-12-11T01:47:30.086Z	15 km N of Coalinga, California	earthquake	0.56	0.22	0.13	14	reviewed	nc	nc
5/3/1983	16:56:26	36.1833333	-120.294	8.53	2.63	md	20	203	0.07658	0.05	nc	nc1091865	2016-12-11T01:47:18.665Z	7 km NE of Coalinga, California	earthquake	0.53	0.5	0.13	23	reviewed	nc	nc
5/3/1983	16:55:13	36.1728333	-120.3231667	7.318	3.26	md	33	180	0.07838	0.08	nc	nc1091864	2016-12-11T01:47:13.690Z	4 km NE of Coalinga, California	earthquake	0.32	0.42	0.12	35	reviewed	nc	nc
5/3/1983	16:53:07	36.1496667	-120.2813333	8.829	2.65	md	31	199	0.1117	0.09	nc	nc1091863	2016-12-11T01:47:06.330Z	7 km E of Coalinga, California	earthquake	0.54	0.48	0.12	37	reviewed	nc	nc
5/3/1983	16:51:49	36.2401667	-120.291	5.428	2.4	md	32	232	0.04324	0.18	nc	nc1091862	2016-12-11T01:47:00.389Z	12 km NNE of Coalinga, California	earthquake	0.97	0.48	0.16	27	reviewed	nc	nc
5/3/1983	16:44:07	36.1363333	-120.2203333	7.418	2.73	md	37	217	0.1505	0.12	nc	nc1091858	2016-12-11T01:46:39.100Z	12 km E of Coalinga, California	earthquake	0.59	0.5	0.15	41	reviewed	nc	nc
5/3/1983	16:42:23	36.2101667	-120.2513333	6.958	3.04	md	36	226	0.08378	0.09	nc	nc1091857	2016-12-11T01:46:31.490Z	12 km NE of Coalinga, California	earthquake	0.64	0.37	0.11	39	reviewed	nc	nc
5/3/1983	16:41:51	36.1366667	-120.3036667	8.334	2.1	md	14	186	0.1171	0.25	nc	nc1091856	2016-12-11T01:46:25.303Z	5 km E of Coalinga, California	earthquake	2.02	2.35	0.21	13	reviewed	nc	nc
5/3/1983	16:41:21	36.1931667	-120.3953333	4.534	2.09	md	4	164	0.07027	0	nc	nc1091855	2016-12-11T01:46:20.992Z	6 km NNW of Coalinga, California	earthquake	3.06	7.72	0.13	11	reviewed	nc	nc
5/3/1983	16:38:48	36.2148333	-120.3426667	7.888	2.07	md	11	168	0.03423	0.04	nc	nc1091854	2016-12-11T01:46:17.279Z	8 km N of Coalinga, California	earthquake	0.53	0.41	0.13	9	reviewed	nc	nc
5/3/1983	16:37:38	36.2246667	-120.2876667	0.832	2.47	md	27	237	0.1775	0.14	nc	nc1091853	2016-12-11T01:46:13.282Z	11 km NE of Coalinga, California	earthquake	0.73	2.52	0.25	19	reviewed	nc	nc
5/3/1983	16:33:55	36.1445	-120.2173333	3.994	2.7	md	33	220	0.1847	0.14	nc	nc1091850	2016-12-11T01:45:57.841Z	12 km WSW of Huron, California	earthquake	0.69	1.69	0.16	34	reviewed	nc	nc
5/3/1983	16:31:07	36.149	-120.2598333	9.665	2.87	md	33	208	0.1207	0.07	nc	nc1091848	2016-12-11T01:45:48.690Z	9 km E of Coalinga, California	earthquake	0.42	0.41	0.18	41	reviewed	nc	nc
5/3/1983	16:29:58	36.1575	-120.297	12.808	2.14	md	15	193	0.0991	0.06	nc	nc1091847	2016-12-11T01:45:42.022Z	6 km ENE of Coalinga, California	earthquake	0.75	0.95	0.33	16	reviewed	nc	nc
5/3/1983	16:28:02	36.2841667	-120.3378333	10.144	2	md	10	267	0.03514	0.1	nc	nc1091844	2016-12-11T01:45:29.866Z	16 km N of Coalinga, California	earthquake	2.46	4.75	0.19	11	reviewed	nc	nc
5/3/1983	16:24:43	36.1026667	-120.2593333	13.198	3.13	md	22	210	0.1613	0.15	nc	nc1091842	2016-12-11T01:45:21.698Z	9 km ESE of Coalinga, California	earthquake	1.84	0.98	0.22	41	reviewed	nc	nc
5/3/1983	16:24:14	36.1758333	-120.2748333	6.038	2.24	md	33	214	0.09189	0.12	nc	nc1091841	2016-12-11T01:45:17.156Z	8 km ENE of Coalinga, California	earthquake	0.56	0.97	0.13	16	reviewed	nc	nc
5/3/1983	16:22:37	36.2203333	-120.2796667	7.617	3.48	md	46	216	0.05856	0.15	nc	nc1091840	2016-12-11T01:45:11.800Z	11 km NE of Coalinga, California	earthquake	0.37	0.47	0.13	46	reviewed	nc	nc
5/3/1983	16:21:47	36.2541667	-120.2748333	4.668	2.34	md	28	228	0.05495	0.09	nc	nc1091839	2016-12-11T01:45:05.138Z	14 km NNE of Coalinga, California	earthquake	0.57	0.25	0.2	19	reviewed	nc	nc
5/3/1983	16:20:13	35.9141667	-120.3135	6.175	2.08	md	9	189	0.06396	0.17	nc	nc1091838	2016-12-11T01:45:01.177Z	10 km E of Parkfield, California	earthquake	0.77	1.16	0.29	13	reviewed	nc	nc
5/3/1983	16:19:17	36.1951667	-120.3006667	3.484	2.35	md	19	204	0.06396	0.18	nc	nc1091837	2016-12-11T01:44:57.345Z	8 km NE of Coalinga, California	earthquake	0.92	0.59	0.1	10	reviewed	nc	nc
5/3/1983	16:17:02	36.1518333	-120.2778333	9.619	3.93	md	36	201	0.1108	0.16	nc	nc1091836	2018-07-09T17:24:37.915Z	7 km E of Coalinga, California	earthquake	0.49	0.8	0.19	6	reviewed	nc	nc
5/3/1983	16:16:13	36.1861667	-120.2475	12.966	2.19	md	14	228	0.1	0.07	nc	nc1091834	2016-12-11T01:44:38.504Z	11 km ENE of Coalinga, California	earthquake	1.07	1.5	0.37	12	reviewed	nc	nc
5/3/1983	16:15:31	36.2781667	-120.2173333	2.377	2.25	md	23	242	0.1054	0.39	nc	nc1091833	2016-12-11T01:44:34.910Z	13 km NW of Huron, California	earthquake	3.69	3.85	0.21	16	reviewed	nc	nc
5/3/1983	16:11:18	36.2315	-120.3136667	7.028	3.25	md	43	212	0.02973	0.11	nc	nc1091831	2016-12-11T01:44:26.050Z	11 km NNE of Coalinga, California	earthquake	0.46	0.3	0.13	52	reviewed	nc	nc
5/3/1983	16:10:22	36.251	-120.2276667	0.209	2.36	md	5	277	0.09369	0.06	nc	nc1091830	2016-12-11T01:44:20.370Z	12 km WNW of Huron, California	earthquake	2.03	6.76	0.05	3	reviewed	nc	nc
5/3/1983	16:08:15	36.1951667	-120.325	10.205	2.27	md	26	235	0.1351	0.13	nc	nc1091829	2016-12-11T01:44:16.888Z	6 km NNE of Coalinga, California	earthquake	1.18	0.6	0.18	22	reviewed	nc	nc
5/3/1983	16:02:08	36.2121667	-120.2953333	5.718	3.05	md	38	214	0.05315	0.13	nc	nc1091827	2016-12-11T01:44:09.210Z	9 km NE of Coalinga, California	earthquake	0.47	0.29	0.17	40	reviewed	nc	nc
5/3/1983	16:01:36	36.2076667	-120.4568333	4	2.01	md	8	226	0.1153	0.15	nc	nc1091826	2016-12-11T01:44:05.153Z	11 km NW of Coalinga, California	earthquake	1.47	2.49	0.24	10	reviewed	nc	nc
5/3/1983	15:57:50	36.2428333	-120.2713333	5.318	2.73	md	29	248	0.05856	0.11	nc	nc1091824	2016-12-11T01:43:57.560Z	13 km NE of Coalinga, California	earthquake	1.32	0.59	0.29	27	reviewed	nc	nc
5/3/1983	15:57:08	36.2668333	-120.3768333	6.244	2.32	md	5	289	0.1793	0.01	nc	nc1091823	2016-12-11T01:43:53.681Z	14 km N of Coalinga, California	earthquake	6.26	1.66	0.13	8	reviewed	nc	nc
5/3/1983	15:56:05	36.3361667	-120.1286667	0.928	2.11	md	9	291	0.1937	0.05	nc	nc1091822	2016-12-11T01:43:49.998Z	14 km N of Huron, California	earthquake	3.13	4.82	0.22	11	reviewed	nc	nc
5/3/1983	15:54:25	36.129	-120.1516667	-0.513	2.33	md	20	258	0.2486	0.11	nc	nc1091820	2016-12-11T01:43:42.957Z	9 km SSW of Huron, California	earthquake	1.15	5.97	0.27	13	reviewed	nc	nc
5/3/1983	15:53:42	36.275	-120.2838333	5.554	2.16	md	9	282	0.05405	0.04	nc	nc1091819	2016-12-11T01:43:39.163Z	16 km NNE of Coalinga, California	earthquake	1.67	0.52	0.19	9	reviewed	nc	nc
5/3/1983	15:53:08	36.268	-120.3101667	5.984	2.38	md	16	259	0.03243	0.2	nc	nc1091818	2016-12-11T01:43:35.239Z	14 km NNE of Coalinga, California	earthquake	2.22	0.46	0.22	6	reviewed	nc	nc
5/3/1983	15:51:49	36.1393333	-120.2043333	7.125	2.82	md	35	223	0.1568	0.13	nc	nc1091817	2016-12-11T01:43:29.990Z	11 km SW of Huron, California	earthquake	0.71	0.64	0.26	30	reviewed	nc	nc
5/3/1983	15:48:03	36.1165	-120.4055	6.467	2.01	md	9	141	0.03333	0.26	nc	nc1091816	2016-12-11T01:43:23.776Z	4 km WSW of Coalinga, California	earthquake	1.09	0.81	0.2	7	reviewed	nc	nc
5/3/1983	15:41:41	36.2406667	-120.2871667	7.898	4.72	md	61	210	0.04595	0.13	nc	nc1091814	2018-06-04T20:43:45.000Z	12 km NNE of Coalinga, California	earthquake	0.45	0.28	0.11	18	reviewed	nc	nc
5/3/1983	15:40:44	36.2316667	-120.3131667	11.788	2.22	md	20	225	0.02973	0.11	nc	nc1091813	2016-12-11T01:43:08.550Z	11 km NNE of Coalinga, California	earthquake	0.77	0.4	0.07	19	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/3/1983	15:39:53	36.2711667	-120.3053333	6.344	2.61	md	34	228	0.03694	0.2	nc	nc1091812	2016-12-11T01:43:04.782Z	15 km NNE of Coalinga, California	earthquake	1.01	0.45	0.11	26	reviewed	nc	nc
5/3/1983	15:37:10	36.2146667	-120.2463333	10.088	2.45	md	22	222	0.08559	0.15	nc	nc1091809	2016-12-11T01:42:53.468Z	12 km W of Huron, California	earthquake	1.2	0.59	0.17	14	reviewed	nc	nc
5/3/1983	15:36:19	36.1225	-120.2386667	9.715	2.04	md	17	212	0.1523	0.12	nc	nc1091808	2016-12-11T01:42:49.502Z	11 km E of Coalinga, California	earthquake	0.76	0.58	0.15	12	reviewed	nc	nc
5/3/1983	15:35:00	36.215	-120.2985	10.667	2.34	md	16	233	0.04955	0.05	nc	nc1091807	2016-12-11T01:42:45.784Z	10 km NNE of Coalinga, California	earthquake	0.69	0.35	0.16	17	reviewed	nc	nc
5/3/1983	15:32:53	36.2526667	-120.352	6.012	2.49	md	18	225	0.173	0.12	nc	nc1091804	2016-12-11T01:42:34.097Z	12 km N of Coalinga, California	earthquake	0.94	1.35	0.26	17	reviewed	nc	nc
5/3/1983	15:30:15	36.2253333	-120.3218333	6.234	2.08	md	5	244	0.02973	0.02	nc	nc1091803	2016-12-11T01:42:30.388Z	10 km NNE of Coalinga, California	earthquake	2.12	1.37	0.07	3	reviewed	nc	nc
5/3/1983	15:27:54	36.273	-120.3405	6.694	3.33	md	48	213	0.02342	0.15	nc	nc1091802	2016-12-11T01:42:25.580Z	14 km N of Coalinga, California	earthquake	0.57	0.39	0.12	54	reviewed	nc	nc
5/3/1983	15:24:13	36.2401667	-120.307	12.238	2.07	md	13	225	0.03063	0.05	nc	nc1091799	2016-12-11T01:42:12.036Z	12 km NNE of Coalinga, California	earthquake	0.7	0.3	0.25	14	reviewed	nc	nc
5/3/1983	15:20:14	36.1723333	-120.3023333	9.648	2.58	md	21	195	0.08378	0.12	nc	nc1091797	2016-12-11T01:42:04.682Z	6 km NE of Coalinga, California	earthquake	0.49	0.53	0.19	21	reviewed	nc	nc
5/3/1983	15:18:00	36.0973333	-120.2671667	0.638	2.39	md	32	195	0.164	0.33	nc	nc1091796	2016-12-11T01:41:59.700Z	9 km ESE of Coalinga, California	earthquake	1.11	4.02	0.12	26	reviewed	nc	nc
5/3/1983	15:17:33	36.2386667	-120.2283333	6.704	2.26	md	19	261	0.09369	0.09	nc	nc1091795	2016-12-11T01:41:51.921Z	11 km WNW of Huron, California	earthquake	0.9	0.95	0.19	8	reviewed	nc	nc
5/3/1983	15:14:34	36.1961667	-120.2771667	8.478	2.6	md	40	216	0.07477	0.15	nc	nc1091794	2016-12-11T01:41:46.690Z	9 km NE of Coalinga, California	earthquake	0.53	0.42	0.29	28	reviewed	nc	nc
5/3/1983	15:10:35	36.285	-120.343	8.234	4.11	md	65	207	0.03604	0.14	nc	nc1091793	2016-12-11T01:41:39.190Z	16 km N of Coalinga, California	earthquake	0.47	0.37	0.11	35	reviewed	nc	nc
5/3/1983	15:10:10	36.2128333	-120.319	9.238	2.17	md	17	198	0.04144	0.12	nc	nc1091792	2016-12-11T01:41:32.414Z	8 km NNE of Coalinga, California	earthquake	1.46	1	0.12	8	reviewed	nc	nc
5/3/1983	15:06:23	36.1931667	-120.2458333	6.707	2.31	md	20	239	0.0964	0.17	nc	nc1091791	2016-12-11T01:41:28.668Z	11 km ENE of Coalinga, California	earthquake	0.97	0.54	0.29	15	reviewed	nc	nc
5/3/1983	15:04:02	36.238	-120.2931667	7.908	3.71	md	54	212	0.04144	0.14	nc	nc1091790	2016-12-11T01:41:23.690Z	12 km NNE of Coalinga, California	earthquake	0.46	0.36	0.1	51	reviewed	nc	nc
5/3/1983	15:00:43	36.2243333	-120.3006667	7.344	2.18	md	25	215	0.04234	0.15	nc	nc1091789	2016-12-11T01:41:16.977Z	10 km NNE of Coalinga, California	earthquake	0.73	0.31	0.32	11	reviewed	nc	nc
5/3/1983	14:56:43	36.2228333	-120.2985	8.018	2.61	md	36	215	0.04505	0.09	nc	nc1091787	2016-12-11T01:41:08.160Z	10 km NNE of Coalinga, California	earthquake	0.43	0.25	0.18	34	reviewed	nc	nc
5/3/1983	14:55:31	36.2436667	-120.2573333	8.048	2.46	md	20	252	0.06937	0.1	nc	nc1091786	2016-12-11T01:41:01.655Z	14 km WNW of Huron, California	earthquake	1.21	0.52	0.16	12	reviewed	nc	nc
5/3/1983	14:55:05	36.2201667	-120.3371667	7.416	2.03	md	8	208	0.02973	0.08	nc	nc1091785	2016-12-11T01:40:57.546Z	9 km NNE of Coalinga, California	earthquake	1.6	1.2	0.29	10	reviewed	nc	nc
5/3/1983	14:50:46	36.1833333	-120.287	11.578	3.97	md	48	207	0.08018	0.18	nc	nc1091783	2016-12-11T01:40:49.100Z	8 km NE of Coalinga, California	earthquake	0.45	0.44	0.11	53	reviewed	nc	nc
5/3/1983	14:49:36	36.2833333	-120.4086667	6.076	2.16	md	21	175	0.06306	0.13	nc	nc1091782	2016-12-11T01:40:40.032Z	16 km NNW of Coalinga, California	earthquake	0.47	0.56	0.21	20	reviewed	nc	nc
5/3/1983	14:49:07	36.2275	-120.322	6.998	2.06	md	10	220	0.02793	0.02	nc	nc1091781	2016-12-11T01:40:36.290Z	10 km NNE of Coalinga, California	earthquake	0.69	0.44	0.06	3	reviewed	nc	nc
5/3/1983	14:46:44	36.2725	-120.3858333	10.305	2.08	md	12	196	0.04144	0.07	nc	nc1091780	2016-12-11T01:40:32.697Z	14 km N of Coalinga, California	earthquake	1.7	0.98	0.1	6	reviewed	nc	nc
5/3/1983	14:42:08	36.1786667	-120.2751667	9.568	2.53	md	14	214	0.08919	0.1	nc	nc1091777	2016-12-11T01:40:21.343Z	8 km ENE of Coalinga, California	earthquake	0.65	0.47	0.14	15	reviewed	nc	nc
5/3/1983	14:40:58	36.2508333	-120.3595	6.836	2.42	md	28	146	0.01351	0.11	nc	nc1091776	2016-12-11T01:40:17.551Z	12 km N of Coalinga, California	earthquake	0.52	0.28	0.19	25	reviewed	nc	nc
5/3/1983	14:37:41	36.2016667	-120.3243333	7.278	3.27	md	33	189	0.04955	0.12	nc	nc1091774	2016-12-11T01:40:08.890Z	Central California	earthquake	0.39	0.25	0.17	39	reviewed	nc	nc
5/3/1983	14:36:57	36.2288333	-120.3015	7.928	2.39	md	13	233	0.03964	0.08	nc	nc1091772	2016-12-11T01:39:59.058Z	11 km NNE of Coalinga, California	earthquake	1.05	0.51	0.15	16	reviewed	nc	nc
5/3/1983	14:35:57	36.2681667	-120.2308333	-0.675	2.5	md	5	287	0.09279	0.51	nc	nc1091770	2016-12-11T01:39:51.966Z	13 km WNW of Huron, California	earthquake	13.18	26.77	0.16	10	reviewed	nc	nc
5/3/1983	14:33:05	36.1018333	-120.2526667	1.985	2.61	md	26	201	0.1649	0.26	nc	nc1091768	2016-12-11T01:39:44.646Z	10 km ESE of Coalinga, California	earthquake	1.09	1.65	0.2	14	reviewed	nc	nc
5/3/1983	14:29:52	36.2213333	-120.2891667	8.407	2.82	md	48	215	0.05135	0.15	nc	nc1091767	2016-12-11T01:39:39.640Z	11 km NE of Coalinga, California	earthquake	0.53	0.36	0.37	45	reviewed	nc	nc
5/3/1983	14:26:54	36.2753333	-120.3166667	2.362	4.25	md	92	53	0.245	0.2	nc	nc1091766	2016-12-11T01:39:29.600Z	15 km NNE of Coalinga, California	earthquake	0.24	1.06	0.11	10	reviewed	nc	nc
5/3/1983	14:20:22	36.3055	-120.3786667	9.485	3.51	md	54	190	0.06306	0.09	nc	nc1091764	2016-12-11T01:39:16.600Z	18 km N of Coalinga, California	earthquake	0.34	0.46	0.12	52	reviewed	nc	nc
5/3/1983	14:18:57	36.0973333	-120.2198333	8.805	2.21	md	24	216	0.1757	0.09	nc	nc1091763	2016-12-11T01:39:07.437Z	13 km NW of Avenal, California	earthquake	0.56	0.8	0.37	10	reviewed	nc	nc
5/3/1983	14:14:55	36.0325	-120.4753333	7.267	3.8	md	4	224	0.1063	0.03	nc	nc1091761	2016-12-11T01:38:59.748Z	15 km NNW of Parkfield, California	earthquake	2.19	7.29	0.12	8	reviewed	nc	nc
5/3/1983	14:09:19	36.2295	-120.3446667	8.128	2.9	md	33	164	0.01982	0.14	nc	nc1091757	2016-12-11T01:38:43.930Z	10 km N of Coalinga, California	earthquake	0.57	0.46	0.12	42	reviewed	nc	nc
5/3/1983	14:03:30	36.1908333	-120.2683333	7.048	2.41	md	32	217	0.08378	0.13	nc	nc1091752	2016-12-11T01:38:23.697Z	10 km NE of Coalinga, California	earthquake	0.77	0.62	0.15	34	reviewed	nc	nc
5/3/1983	14:00:13	36.1588333	-120.2791667	0.945	2.13	md	32	230	0.1423	0.12	nc	nc1091751	2016-12-11T01:38:19.267Z	7 km ENE of Coalinga, California	earthquake	0.58	1.98	0.21	21	reviewed	nc	nc
5/3/1983	13:56:57	36.17	-120.3016667	4.195	2.5	md	10	243	0.1324	0.04	nc	nc1091749	2016-12-11T01:38:11.962Z	6 km ENE of Coalinga, California	earthquake	1.31	1.71	0.19	3	reviewed	nc	nc
5/3/1983	13:53:20	36.2028333	-120.306	4.856	2.67	md	21	204	0.05495	0.22	nc	nc1091746	2016-12-11T01:38:01.415Z	8 km NE of Coalinga, California	earthquake	1.32	0.96	0.22	28	reviewed	nc	nc
5/3/1983	13:48:52	36.2348333	-120.2583333	8.148	3.75	md	55	212	0.07027	0.13	nc	nc1091743	2016-12-11T01:37:49.020Z	13 km NE of Coalinga, California	earthquake	0.43	0.71	0.13	39	reviewed	nc	nc
5/3/1983	13:47:28	36.2793333	-120.3835	9.805	3.37	md	54	169	0.04414	0.1	nc	nc1091742	2016-12-11T01:37:38.580Z	15 km N of Coalinga, California	earthquake	0.23	0.28	0.08	38	reviewed	nc	nc
5/3/1983	13:44:34	36.153	-120.322	3.991	2.66	md	24	178	0.0973	0.15	nc	nc1091740	2016-12-11T01:37:28.446Z	3 km ENE of Coalinga, California	earthquake	0.65	1.02	0.11	12	reviewed	nc	nc
5/3/1983	13:43:59	36.162	-120.3023333	3.186	3.18	md	38	191	0.09369	0.21	nc	nc1091739	2016-12-11T01:37:24.561Z	5 km ENE of Coalinga, California	earthquake	0.69	0.96	0.45	19	reviewed	nc	nc
5/3/1983	13:40:04	36.1858333	-120.3268333	0.348	2.02	md	13	194	0.06486	0.11	nc	nc1091736	2016-12-11T01:37:13.381Z	5 km NNE of Coalinga, California	earthquake	0.48	4.85	0.17	9	reviewed	nc	nc
5/3/1983	13:37:42	36.313	-120.2803333	0.814	2.53	md	43	217	0.08108	0.22	nc	nc1091735	2016-12-11T01:37:09.658Z	20 km NW of Huron, California	earthquake	0.83	3.2	0.15	36	reviewed	nc	nc
5/3/1983	13:35:10	36.069	-120.2996667	14.854	2.48	md	21	223	0.1135	0.09	nc	nc1091732	2016-12-11T01:36:58.079Z	9 km SE of Coalinga, California	earthquake	0.56	1.07	0.13	23	reviewed	nc	nc
5/3/1983	13:31:58	36.2035	-120.3388333	5.528	2.16	md	11	176	0.04595	0.08	nc	nc1091729	2016-12-11T01:36:46.928Z	7 km NNE of Coalinga, California	earthquake	0.64	0.73	0.22	8	reviewed	nc	nc
5/3/1983	13:20:29	36.2685	-120.3453333	5.272	3.27	md	45	128	0.3703	0.13	nc	nc1091723	2016-12-11T01:36:23.520Z	14 km N of Coalinga, California	earthquake	0.36	1.52	0.12	42	reviewed	nc	nc
5/3/1983	13:20:16	36.195	-120.2686667	8.162	3.21	md	10	259	0.1694	0.04	nc	nc1091722	2016-12-11T01:36:17.871Z	10 km NE of Coalinga, California	earthquake	1.55	0.76	0.17	11	reviewed	nc	nc
5/3/1983	13:16:45	36.2075	-120.3258333	9.308	2.8	md	29	188	0.04414	0.09	nc	nc1091719	2016-12-11T01:36:05.730Z	8 km NNE of Coalinga, California	earthquake	0.62	0.47	0.14	38	reviewed	nc	nc
5/3/1983	13:09:14	36.1768333	-120.2693333	15.228	4.04	md	41	216	0.09369	0.12	nc	nc1091716	2016-12-11T01:35:50.480Z	9 km ENE of Coalinga, California	earthquake	0.5	0.78	0.09	13	reviewed	nc	nc
5/3/1983	13:07:25	36.2635	-120.3835	8.804	2.37	md	42	204	0.1901	0.1	nc	nc1091714	2016-12-11T01:35:37.070Z	13 km N of Coalinga, California	earthquake	0.44	0.89	0.2	49	reviewed	nc	nc
5/3/1983	13:05:36	36.272	-120.2905	3.664	3.02	md	44	219	0.04775	0.14	nc	nc1091713	2016-12-11T01:35:27.440Z	15 km NNE of Coalinga, California	earthquake	0.55	0.93	0.13	50	reviewed	nc	nc
5/3/1983	12:57:05	36.1338333	-120.2065	10.495	3.89	md	48	215	0.1595	0.09	nc	nc1091709	2016-12-11T01:35:06.600Z	12 km SW of Huron, California	earthquake	0.4	0.46	0.14	46	reviewed	nc	nc
5/3/1983	12:55:35	36.0675	-120.2738333	5.796	2.01	md	10	223	0.1342	0.12	nc	nc1091708	2016-12-11T01:34:59.835Z	11 km SE of Coalinga, California	earthquake	1.02	1.46	0.12	12	reviewed	nc	nc
5/3/1983	12:54:16	36.2148333	-120.2843333	8.117	2.87	md	44	216	0.05856	0.1	nc	nc1091707	2016-12-11T01:34:54.580Z	10 km NE of Coalinga, California	earthquake	0.42	0.33	0.14	53	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/3/1983	12:48:05	35.948	-120.3631667	6.716	2.03	md	5	273	0.1153	0.13	nc	nc1091701	2016-12-11T01:34:29.891Z	8 km NE of Parkfield, California	earthquake	8.84	2.68	0.33	9	reviewed	nc	nc
5/3/1983	12:47:22	36.2675	-120.4371667	3.525	2.48	md	34	150	0.07838	0.16	nc	nc1091700	2016-12-11T01:34:25.210Z	15 km NNW of Coalinga, California	earthquake	0.34	0.51	0.12	24	reviewed	nc	nc
5/3/1983	12:46:05	36.0828333	-120.3046667	3.985	2.05	md	15	219	0.1072	0.09	nc	nc1091699	2016-12-11T01:34:19.191Z	8 km SE of Coalinga, California	earthquake	0.6	0.8	0.18	28	reviewed	nc	nc
5/3/1983	12:43:32	36.2973333	-120.2775	-0.352	2	md	23	235	0.2405	0.19	nc	nc1091695	2016-12-11T01:34:04.523Z	18 km WNW of Huron, California	earthquake	1.75	6.9	0.22	12	reviewed	nc	nc
5/3/1983	12:38:20	36.298	-120.3591667	5.416	2.04	md	5	265	0.05045	0.04	nc	nc1091692	2016-12-11T01:33:53.698Z	17 km N of Coalinga, California	earthquake	6.12	1.87	0.11	3	reviewed	nc	nc
5/3/1983	12:37:22	36.2176667	-120.269	7.208	3.08	md	44	218	0.06757	0.12	nc	nc1091691	2016-12-11T01:33:48.650Z	11 km NE of Coalinga, California	earthquake	0.66	0.41	0.17	37	reviewed	nc	nc
5/3/1983	12:34:42	36.1956667	-120.316	6.598	2.51	md	31	195	0.05766	0.1	nc	nc1091689	2016-12-11T01:33:36.580Z	7 km NNE of Coalinga, California	earthquake	0.7	0.53	0.17	35	reviewed	nc	nc
5/3/1983	12:29:03	36.1665	-120.258	10.172	2.98	md	37	216	0.1072	0.13	nc	nc1091686	2016-12-11T01:33:23.990Z	9 km ENE of Coalinga, California	earthquake	0.76	0.56	0.21	44	reviewed	nc	nc
5/3/1983	12:27:02	36.191	-120.3031667	3.871	2.94	md	40	211	0.2613	0.13	nc	nc1091685	2016-12-11T01:33:16.190Z	7 km NE of Coalinga, California	earthquake	0.46	1.07	0.12	47	reviewed	nc	nc
5/3/1983	12:25:34	36.2088333	-120.2811667	10.988	2.92	md	36	225	0.06396	0.08	nc	nc1091684	2016-12-11T01:33:08.610Z	10 km NE of Coalinga, California	earthquake	0.59	0.36	0.16	48	reviewed	nc	nc
5/3/1983	12:23:04	36.0518333	-120.466	4.905	2.3	md	8	257	0.1748	0.53	nc	nc1091681	2016-12-11T01:32:52.842Z	13 km SW of Coalinga, California	earthquake	6	10.86	0.23	11	reviewed	nc	nc
5/3/1983	12:20:28	36.2728333	-120.2671667	3.644	2.76	md	9	292	0.06577	0.06	nc	nc1091679	2016-12-11T01:32:45.352Z	16 km WNW of Huron, California	earthquake	2.98	0.66	0.02	4	reviewed	nc	nc
5/3/1983	12:17:45	36.1991667	-120.3001667	7.582	2.83	md	27	220	0.3432	0.14	nc	nc1091678	2016-12-11T01:32:41.361Z	8 km NE of Coalinga, California	earthquake	0.92	2.19	0.09	28	reviewed	nc	nc
5/3/1983	12:16:57	36.2033333	-120.2905	0.001	2.4	md	39	214	0.2703	0.24	nc	nc1091677	2016-12-11T01:32:36.160Z	9 km NE of Coalinga, California	earthquake	0.95	4.05	0.15	24	reviewed	nc	nc
5/3/1983	12:12:37	36.2053333	-120.29	6.498	2.45	md	29	217	0.06126	0.11	nc	nc1091674	2016-12-11T01:32:22.245Z	9 km NE of Coalinga, California	earthquake	0.55	0.34	0.14	31	reviewed	nc	nc
5/3/1983	12:04:40	36.1223333	-120.2673333	10.936	2.21	md	25	199	0.1396	0.08	nc	nc1091671	2016-12-11T01:32:11.030Z	8 km ESE of Coalinga, California	earthquake	0.41	0.58	0.17	33	reviewed	nc	nc
5/3/1983	11:56:01	36.2295	-120.3113333	10.433	3.34	md	46	213	0.03243	0.11	nc	nc1091667	2016-12-11T01:31:54.770Z	10 km NNE of Coalinga, California	earthquake	0.5	0.4	0.1	49	reviewed	nc	nc
5/3/1983	11:53:43	36.2793333	-120.3108333	9.616	2.04	md	23	233	0.03964	0.27	nc	nc1091665	2016-12-11T01:31:44.746Z	16 km NNE of Coalinga, California	earthquake	1.71	0.53	0.19	25	reviewed	nc	nc
5/3/1983	11:51:16	36.1831667	-120.411	2.343	2.11	md	4	122	0.08649	0	nc	nc1091663	2016-12-11T01:31:37.346Z	6 km NW of Coalinga, California	earthquake	2.07	6.86	0.06	4	reviewed	nc	nc
5/3/1983	11:50:56	36.2176667	-120.3598333	-0.364	2.54	md	6	181	0.03423	0.21	nc	nc1091662	2016-12-11T01:31:33.803Z	8 km N of Coalinga, California	earthquake	2.24	9.17	0.12	5	reviewed	nc	nc
5/3/1983	11:50:07	36.118	-120.2846667	8.485	2.62	md	41	208	0.191	0.14	nc	nc1091661	2016-12-11T01:31:28.810Z	7 km ESE of Coalinga, California	earthquake	0.65	0.78	0.15	38	reviewed	nc	nc
5/3/1983	11:47:24	36.1096667	-120.2973333	5.624	2.46	md	29	216	0.2541	0.27	nc	nc1091658	2016-12-11T01:31:13.970Z	6 km ESE of Coalinga, California	earthquake	1.18	2.64	0.16	39	reviewed	nc	nc
5/3/1983	11:45:16	36.277	-120.3466667	14.344	2.29	md	9	267	0.02793	0.22	nc	nc1091655	2016-12-11T01:30:57.972Z	15 km N of Coalinga, California	earthquake	3.52	2.59	0.12	6	reviewed	nc	nc
5/3/1983	11:40:45	36.1428333	-120.2568333	4.034	2.02	md	29	225	0.1532	0.23	nc	nc1091649	2016-12-11T01:30:35.652Z	9 km E of Coalinga, California	earthquake	1.46	1.53	0.16	26	reviewed	nc	nc
5/3/1983	11:38:34	36.1356667	-120.226	7.505	2.26	md	27	217	0.1477	0.32	nc	nc1091648	2016-12-11T01:30:31.636Z	12 km E of Coalinga, California	earthquake	1.6	1.36	0.13	27	reviewed	nc	nc
5/3/1983	11:35:49	36.1946667	-120.2678333	7.368	3.25	md	44	217	0.08198	0.1	nc	nc1091646	2016-12-11T01:30:22.750Z	10 km NE of Coalinga, California	earthquake	0.5	0.39	0.15	51	reviewed	nc	nc
5/3/1983	11:34:48	36.1695	-120.2431667	11.729	2.37	md	26	222	0.1135	0.13	nc	nc1091645	2016-12-11T01:30:15.982Z	11 km ENE of Coalinga, California	earthquake	0.64	0.83	0.14	35	reviewed	nc	nc
5/3/1983	11:31:18	36.1853333	-120.2583333	12.756	2.78	md	38	217	0.09369	0.12	nc	nc1091641	2016-12-11T01:29:59.860Z	10 km ENE of Coalinga, California	earthquake	0.6	0.79	0.14	48	reviewed	nc	nc
5/3/1983	11:29:59	36.1838333	-120.2808333	9.348	2.84	md	36	211	0.08288	0.08	nc	nc1091640	2016-12-11T01:29:52.670Z	8 km NE of Coalinga, California	earthquake	0.5	0.66	0.13	54	reviewed	nc	nc
5/3/1983	11:27:19	36.2793333	-120.309	5.514	2.43	md	38	229	0.04054	0.12	nc	nc1091639	2016-12-11T01:29:45.220Z	16 km NNE of Coalinga, California	earthquake	0.68	0.33	0.12	36	reviewed	nc	nc
5/3/1983	11:20:21	36.2063333	-120.2715	7.948	3.37	md	34	217	0.07207	0.13	nc	nc1091634	2016-12-11T01:29:23.740Z	10 km NE of Coalinga, California	earthquake	0.51	0.64	0.18	51	reviewed	nc	nc
5/3/1983	11:19:38	36.149	-120.2146667	3.435	2.52	md	43	221	0.1441	0.23	nc	nc1091633	2016-12-11T01:29:16.290Z	11 km WSW of Huron, California	earthquake	0.82	1.52	0.09	32	reviewed	nc	nc
5/3/1983	11:17:09	36.0476667	-120.3935	1.55	2.47	md	8	190	0.05766	0.6	nc	nc1091630	2016-12-11T01:29:03.090Z	10 km SSW of Coalinga, California	earthquake	3.94	11.15	0.35	5	reviewed	nc	nc
5/3/1983	11:11:33	36.1326667	-120.268	7.905	2.29	md	23	202	0.1315	0.08	nc	nc1091625	2016-12-11T01:28:43.510Z	8 km E of Coalinga, California	earthquake	0.62	0.59	0.15	39	reviewed	nc	nc
5/3/1983	11:09:24	36.1453333	-120.2761667	5.406	2.27	md	40	222	0.2198	0.13	nc	nc1091623	2016-12-11T01:28:30.200Z	7 km E of Coalinga, California	earthquake	0.55	1.04	0.15	34	reviewed	nc	nc
5/3/1983	11:07:33	36.1318333	-120.2688333	3.716	2.12	md	12	201	0.1315	0.15	nc	nc1091622	2016-12-11T01:28:24.105Z	8 km E of Coalinga, California	earthquake	0.83	1.33	0.18	10	reviewed	nc	nc
5/3/1983	11:05:09	36.329	-120.0786667	3.445	2.08	md	7	299	0.2279	0.2	nc	nc1091620	2016-12-11T01:28:16.934Z	14 km N of Huron, California	earthquake	8.28	5.42	0.28	9	reviewed	nc	nc
5/3/1983	11:00:57	36.1786667	-120.3443333	4.975	2.52	md	42	202	0.1126	0.13	nc	nc1091615	2016-12-11T01:27:57.270Z	4 km NNE of Coalinga, California	earthquake	0.44	0.95	0.1	46	reviewed	nc	nc
5/3/1983	10:59:25	36.1643333	-120.3005	8.135	2.41	md	16	242	0.1306	0.19	nc	nc1091614	2016-12-11T01:27:51.021Z	6 km ENE of Coalinga, California	earthquake	1.44	1.31	0.16	41	reviewed	nc	nc
5/3/1983	10:55:12	36.0286667	-120.286	7.275	2.2	md	6	219	0.2099	0.07	nc	nc1091609	2016-12-11T01:27:31.858Z	14 km SSE of Coalinga, California	earthquake	1.56	4.22	0.18	4	reviewed	nc	nc
5/3/1983	10:52:32	36.2345	-120.3663333	7.934	2.6	md	26	114	0.02432	0.1	nc	nc1091607	2016-12-11T01:27:23.150Z	10 km N of Coalinga, California	earthquake	0.47	0.33	0.2	32	reviewed	nc	nc
5/3/1983	10:51:37	36.2428333	-120.336	11.128	2.74	md	24	210	0.008108	0.16	nc	nc1091606	2016-12-11T01:27:15.017Z	11 km N of Coalinga, California	earthquake	1.2	0.75	0.2	25	reviewed	nc	nc
5/3/1983	10:50:37	36.1851667	-120.3426667	3.134	2.03	md	21	168	0.06396	0.14	nc	nc1091605	2016-12-11T01:27:11.059Z	5 km NNE of Coalinga, California	earthquake	0.47	1.02	0.16	15	reviewed	nc	nc
5/3/1983	10:47:31	35.9456667	-120.293	8.647	2.43	md	14	171	0.03964	0.17	nc	nc1091604	2016-12-11T01:27:07.191Z	13 km ENE of Parkfield, California	earthquake	0.64	0.88	0.22	30	reviewed	nc	nc
5/3/1983	10:45:22	36.1566667	-120.1855	7.495	2.96	md	39	230	0.1577	0.21	nc	nc1091603	2016-12-11T01:27:02.100Z	9 km SW of Huron, California	earthquake	1.09	0.86	0.17	45	reviewed	nc	nc
5/3/1983	10:42:04	36.204	-120.3136667	6.037	2.85	md	9	212	0.05135	0.03	nc	nc1091601	2016-12-11T01:26:52.554Z	8 km NNE of Coalinga, California	earthquake	1.16	0.57	0.11	13	reviewed	nc	nc
5/3/1983	10:41:29	36.1713333	-120.2805	8.858	3.42	md	39	206	0.09279	0.12	nc	nc1091600	2016-12-11T01:26:47.590Z	7 km ENE of Coalinga, California	earthquake	0.46	0.39	0.15	43	reviewed	nc	nc
5/3/1983	10:35:20	36.1713333	-120.2841667	9.288	3.76	md	44	204	0.09099	0.08	nc	nc1091598	2016-12-11T01:26:36.360Z	7 km ENE of Coalinga, California	earthquake	0.31	0.31	0.13	14	reviewed	nc	nc
5/3/1983	10:32:21	36.2213333	-120.2726667	2.925	2.61	md	33	140	0.06306	0.17	nc	nc1091596	2016-12-11T01:26:24.980Z	12 km NE of Coalinga, California	earthquake	0.95	0.5	0.1	27	reviewed	nc	nc
5/3/1983	10:31:23	36.1401667	-120.2553333	10.795	2.46	md	27	208	0.1297	0.07	nc	nc1091595	2016-12-11T01:26:16.850Z	9 km E of Coalinga, California	earthquake	0.34	0.42	0.14	33	reviewed	nc	nc
5/3/1983	10:25:48	36.1786667	-120.279	6.901	3	md	16	235	0.2856	0.21	nc	nc1091590	2016-12-11T01:25:57.890Z	8 km ENE of Coalinga, California	earthquake	1.66	3.1	0.18	11	reviewed	nc	nc
5/3/1983	10:23:25	36.1848333	-120.3453333	4.348	2.44	md	28	169	0.06486	0.42	nc	nc1091589	2016-12-11T01:25:52.650Z	5 km NNE of Coalinga, California	earthquake	0.89	1.38	0.15	31	reviewed	nc	nc
5/3/1983	10:20:45	36.1883333	-120.3338333	6.056	2.74	md	37	174	0.06126	0.11	nc	nc1091588	2016-12-11T01:25:46.618Z	5 km NNE of Coalinga, California	earthquake	0.43	0.51	0.09	34	reviewed	nc	nc
5/3/1983	10:19:45	36.2338333	-120.3518333	7.474	2.27	md	33	156	0.01712	0.06	nc	nc1091587	2016-12-11T01:25:42.619Z	10 km N of Coalinga, California	earthquake	0.34	0.2	0.15	30	reviewed	nc	nc
5/3/1983	10:19:02	36.1796667	-120.2828333	8.587	2.22	md	13	219	0.2523	0.16	nc	nc1091586	2016-12-11T01:25:38.509Z	8 km ENE of Coalinga, California	earthquake	1.75	2.58	0.15	12	reviewed	nc	nc
5/3/1983	10:08:56	36.0826667	-119.8373333	4.038	2.13	md	12	297	0.4252	0.37	nc	nc1091582	2016-12-11T01:25:23.473Z	11 km S of Stratford, California	earthquake	11.07	9.53	0.17	15	reviewed	nc	nc
5/3/1983	10:08:30	36.2653333	-120.3888333	7.582	2.11	md	31	204	0.1757	0.09	nc	nc1091581	2016-12-11T01:25:18.470Z	14 km N of Coalinga, California	earthquake	0.47	0.66	0.16	25	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/3/1983	10:07:02	36.1308333	-120.2753333	3.304	2.04	md	11	232	0.2054	0.14	nc	nc1091580	2016-12-11T01:25:12.394Z	7 km E of Coalinga, California	earthquake	2.15	2.44	0.17	15	reviewed	nc	nc
5/3/1983	10:05:51	36.0055	-120.296	7.557	2.16	md	7	223	0.08198	0.01	nc	nc1091579	2016-12-11T01:25:08.606Z	15 km W of Avenal, California	earthquake	1.15	0.7	0.17	19	reviewed	nc	nc
5/3/1983	9:58:22	36.2048333	-120.2936667	6.588	2.72	md	31	219	0.05946	0.17	nc	nc1091575	2016-12-11T01:24:51.920Z	9 km NE of Coalinga, California	earthquake	0.67	0.65	0.15	38	reviewed	nc	nc
5/3/1983	9:50:23	36.2268333	-120.3785	8.474	3.05	md	40	115	0.03694	0.13	nc	nc1091570	2016-12-11T01:24:28.070Z	9 km N of Coalinga, California	earthquake	0.36	0.33	0.11	48	reviewed	nc	nc
5/3/1983	9:49:01	36.2003333	-120.347	7.164	2.17	md	23	168	0.04955	0.12	nc	nc1091569	2016-12-11T01:24:21.882Z	Central California	earthquake	0.55	0.46	0.27	20	reviewed	nc	nc
5/3/1983	9:48:04	36.223	-120.4255	10.054	2.52	md	9	146	0.07207	0.04	nc	nc1091568	2016-12-11T01:24:17.726Z	10 km NNW of Coalinga, California	earthquake	0.52	0.66	0.29	4	reviewed	nc	nc
5/3/1983	9:46:05	36.2993333	-120.3581667	6.329	2.4	md	38	209	0.05135	0.19	nc	nc1091566	2016-12-11T01:24:09.680Z	Central California	earthquake	0.62	1.33	0.13	31	reviewed	nc	nc
5/3/1983	9:45:19	36.2418333	-120.2713333	2.894	2.1	md	21	232	0.05856	0.16	nc	nc1091565	2016-12-11T01:24:05.804Z	13 km NE of Coalinga, California	earthquake	1.19	0.47	0.15	18	reviewed	nc	nc
5/3/1983	9:44:30	36.213	-120.3015	11.02	2.39	md	42	213	0.1613	0.14	nc	nc1091564	2016-12-11T01:24:00.610Z	9 km NNE of Coalinga, California	earthquake	0.74	0.9	0.22	31	reviewed	nc	nc
5/3/1983	9:41:12	36.1336667	-120.2383333	-0.642	2.1	md	7	256	0.218	0.18	nc	nc1091563	2016-12-11T01:23:54.531Z	Central California	earthquake	2.76	10.94	0.24	6	reviewed	nc	nc
5/3/1983	9:39:45	36.275	-120.2665	9.828	4.1	md	68	210	0.06667	0.22	nc	nc1091562	2016-12-11T01:23:49.330Z	16 km WNW of Huron, California	earthquake	0.5	0.59	0.08	7	reviewed	nc	nc
5/3/1983	9:38:48	36.1226667	-120.281	-0.051	2.95	md	30	194	0.1288	0.29	nc	nc1091561	2016-12-11T01:23:41.220Z	7 km ESE of Coalinga, California	earthquake	0.78	2.7	0.07	5	reviewed	nc	nc
5/3/1983	9:37:26	36.1521667	-120.2505	8.505	2.62	md	34	215	0.1225	0.09	nc	nc1091560	2016-12-11T01:23:31.620Z	9 km E of Coalinga, California	earthquake	0.57	0.47	0.15	47	reviewed	nc	nc
5/3/1983	9:36:05	36.203	-120.3411667	6.498	2.55	md	34	172	0.04595	0.13	nc	nc1091559	2016-12-11T01:23:25.164Z	7 km NNE of Coalinga, California	earthquake	0.42	0.33	0.13	27	reviewed	nc	nc
5/3/1983	9:30:58	36.1791667	-120.32	8.396	2.92	md	29	184	0.07207	0.12	nc	nc1091554	2016-12-11T01:23:05.980Z	5 km NE of Coalinga, California	earthquake	0.64	0.54	0.11	23	reviewed	nc	nc
5/3/1983	9:28:40	36.1806667	-120.3585	7.884	2.2	md	9	189	0.07027	0.04	nc	nc1091551	2016-12-11T01:22:54.692Z	4 km N of Coalinga, California	earthquake	0.67	0.84	0.73	5	reviewed	nc	nc
5/3/1983	9:24:16	36.2	-120.3085	5.19	3.39	md	43	133	0.3171	0.07	nc	nc1091548	2016-12-11T01:22:41.820Z	Central California	earthquake	0.36	1.07	0.13	57	reviewed	nc	nc
5/3/1983	9:23:35	36.268	-120.3626667	9.454	2.19	md	43	176	0.02432	0.11	nc	nc1091547	2016-12-11T01:22:34.400Z	14 km N of Coalinga, California	earthquake	0.42	0.26	0.23	45	reviewed	nc	nc
5/3/1983	9:21:34	36.1321667	-120.2776667	6.301	3.11	md	47	209	0.2063	0.14	nc	nc1091546	2016-12-11T01:22:27.200Z	7 km E of Coalinga, California	earthquake	0.44	0.74	0.13	53	reviewed	nc	nc
5/3/1983	9:20:59	36.1376667	-120.452	3.619	2.32	md	13	132	0.1423	0.31	nc	nc1091545	2016-12-11T01:22:21.100Z	8 km W of Coalinga, California	earthquake	1.05	2.91	0.13	15	reviewed	nc	nc
5/3/1983	9:20:47	36.1248333	-120.2816667	2.707	2.53	md	17	250	0.1991	0.16	nc	nc1091544	2016-12-11T01:22:17.416Z	Central California	earthquake	1.61	2.23	0.21	17	reviewed	nc	nc
5/3/1983	9:19:16	36.2225	-120.3313333	-0.554	2.21	md	10	257	0.2342	0.21	nc	nc1091542	2016-12-11T01:22:09.963Z	9 km NNE of Coalinga, California	earthquake	2.71	11.3	0.17	11	reviewed	nc	nc
5/3/1983	9:18:36	36.2425	-120.3638333	9.444	2.7	md	33	107	0.01802	0.08	nc	nc1091541	2016-12-11T01:22:04.930Z	11 km N of Coalinga, California	earthquake	0.53	0.32	0.22	33	reviewed	nc	nc
5/3/1983	9:17:27	36.1826667	-120.3231667	10.036	2.34	md	31	182	0.06847	0.09	nc	nc1091540	2016-12-11T01:21:57.820Z	5 km NE of Coalinga, California	earthquake	0.55	0.5	0.14	34	reviewed	nc	nc
5/3/1983	9:14:48	36.1676667	-120.2611667	8.768	2.21	md	40	218	0.1595	0.15	nc	nc1091538	2016-12-11T01:21:47.270Z	9 km ENE of Coalinga, California	earthquake	0.78	1.36	0.22	39	reviewed	nc	nc
5/3/1983	9:14:00	36.2393333	-120.2271667	-0.318	2	md	14	243	0.3171	0.27	nc	nc1091537	2016-12-11T01:21:40.852Z	Central California	earthquake	2.17	12.06	0.12	18	reviewed	nc	nc
5/3/1983	9:11:57	36.1996667	-120.3351667	4.791	2.66	md	40	216	0.236	0.09	nc	nc1091536	2016-12-11T01:21:35.640Z	7 km NNE of Coalinga, California	earthquake	0.42	1.11	0.17	36	reviewed	nc	nc
5/3/1983	9:07:42	36.178	-120.2925	8.936	2.51	md	24	201	0.08198	0.1	nc	nc1091532	2016-12-11T01:21:13.040Z	7 km NE of Coalinga, California	earthquake	0.55	0.48	0.21	39	reviewed	nc	nc
5/3/1983	9:06:34	36.2338333	-120.392	10.474	2.32	md	35	119	0.04234	0.11	nc	nc1091531	2016-12-11T01:21:04.130Z	Central California	earthquake	0.41	0.41	0.19	32	reviewed	nc	nc
5/3/1983	9:04:17	36.1253333	-120.2511667	7.465	2.91	md	37	208	0.1441	0.12	nc	nc1091530	2016-12-11T01:20:54.670Z	9 km E of Coalinga, California	earthquake	0.39	0.44	0.07	35	reviewed	nc	nc
5/3/1983	9:00:06	36.2538333	-120.363	3.679	2.05	md	5	260	0.2063	0.01	nc	nc1091527	2016-12-11T01:20:41.386Z	12 km N of Coalinga, California	earthquake	2.22	4.96	0.12	2	reviewed	nc	nc
5/3/1983	8:57:28	36.243	-120.2795	-0.559	2.99	md	43	136	0.2748	0.26	nc	nc1091526	2016-12-11T01:20:36.660Z	13 km NNE of Coalinga, California	earthquake	0.87	5.19	0.13	42	reviewed	nc	nc
5/3/1983	8:55:01	36.1475	-120.2646667	9.955	4.33	md	47	206	0.1198	0.1	nc	nc1091525	2018-06-04T20:43:45.000Z	8 km E of Coalinga, California	earthquake	0.32	0.4	0.23	7	reviewed	nc	nc
5/3/1983	8:54:26	36.2156667	-120.2883333	5.347	2.44	md	35	223	0.2703	0.17	nc	nc1091524	2016-12-11T01:20:20.374Z	10 km NE of Coalinga, California	earthquake	0.79	1.27	0.12	24	reviewed	nc	nc
5/3/1983	8:52:26	36.2045	-120.2498333	8.927	2.05	md	20	235	0.1874	0.08	nc	nc1091522	2016-12-11T01:20:12.537Z	12 km NE of Coalinga, California	earthquake	0.9	1.56	0.15	23	reviewed	nc	nc
5/3/1983	8:51:23	36.2036667	-120.2156667	0.011	2.09	md	20	238	0.2901	0.24	nc	nc1091521	2016-12-11T01:20:08.586Z	10 km W of Huron, California	earthquake	1.65	7.06	0.15	17	reviewed	nc	nc
5/3/1983	8:50:52	36.195	-120.2743333	9.498	2.34	md	20	219	0.07748	0.09	nc	nc1091520	2016-12-11T01:20:04.718Z	9 km NE of Coalinga, California	earthquake	0.7	0.49	0.09	22	reviewed	nc	nc
5/3/1983	8:46:51	36.1963333	-120.275	3.998	2.54	md	27	215	0.2838	0.15	nc	nc1091518	2016-12-11T01:19:56.898Z	9 km NE of Coalinga, California	earthquake	0.96	1.6	0.14	24	reviewed	nc	nc
5/3/1983	8:46:04	36.1615	-120.3485	11.849	2.75	md	47	201	0.0982	0.15	nc	nc1091517	2016-12-11T01:19:51.500Z	2 km NNE of Coalinga, California	earthquake	0.55	0.56	0.13	40	reviewed	nc	nc
5/3/1983	8:42:35	36.2441667	-120.2893333	6.748	3.37	md	50	217	0.04324	0.18	nc	nc1091515	2016-12-11T01:19:40.180Z	13 km NNE of Coalinga, California	earthquake	0.76	0.54	0.1	30	reviewed	nc	nc
5/3/1983	8:41:15	36.3213333	-120.3285	-0.194	2.69	md	28	133	0.2432	0.29	nc	nc1091514	2016-12-11T01:19:33.658Z	20 km S of Cantua Creek, California	earthquake	0.97	6.73	0.08	29	reviewed	nc	nc
5/3/1983	8:41:03	36.2363333	-120.2776667	26.014	2.89	md	11	251	0.05405	0.04	nc	nc1091513	2016-12-11T01:19:29.799Z	13 km NE of Coalinga, California	earthquake	1.31	1.09	0.17	10	reviewed	nc	nc
5/3/1983	8:39:34	36.1833333	-120.2876667	4.481	2.92	md	45	218	0.255	0.15	nc	nc1091512	2016-12-11T01:19:24.840Z	8 km NE of Coalinga, California	earthquake	0.54	1.18	0.14	44	reviewed	nc	nc
5/3/1983	8:38:30	36.2636667	-120.4245	5.705	2.03	md	4	285	0.1568	0	nc	nc1091510	2016-12-11T01:19:09.811Z	14 km NNW of Coalinga, California	earthquake	2.63	1.51	0.27	3	reviewed	nc	nc
5/3/1983	8:36:05	36.1335	-120.1813333	8.594	2.59	md	10	288	0.2099	0.05	nc	nc1091507	2016-12-11T01:18:58.954Z	10 km SW of Huron, California	earthquake	3.33	1.33	0.25	9	reviewed	nc	nc
5/3/1983	8:32:43	36.21	-120.2655	6.404	2.81	md	22	225	0.1802	0.17	nc	nc1091505	2016-12-11T01:18:51.772Z	11 km NE of Coalinga, California	earthquake	0.92	2.17	0.23	21	reviewed	nc	nc
5/3/1983	8:32:20	36.1596667	-120.2978333	-0.619	2.92	md	24	210	0.2306	0.21	nc	nc1091504	2016-12-11T01:18:47.752Z	6 km ENE of Coalinga, California	earthquake	1.19	6.71	0.36	12	reviewed	nc	nc
5/3/1983	8:31:07	36.1785	-120.2335	-0.615	2.5	md	16	223	0.2613	0.39	nc	nc1091503	2016-12-11T01:18:43.583Z	12 km WSW of Huron, California	earthquake	2.24	10.03	0.13	14	reviewed	nc	nc
5/3/1983	8:30:13	36.2106667	-120.266	-0.504	2.75	md	40	214	0.1802	0.18	nc	nc1091502	2016-12-11T01:18:38.200Z	11 km NE of Coalinga, California	earthquake	0.68	3.55	0.15	31	reviewed	nc	nc
5/3/1983	8:28:12	36.2405	-120.3101667	0.737	2.08	md	11	248	0.3604	0.29	nc	nc1091500	2016-12-11T01:18:25.830Z	12 km NNE of Coalinga, California	earthquake	3.06	11.29	0.06	9	reviewed	nc	nc
5/3/1983	8:26:35	36.0561667	-120.2436667	7.077	3.12	md	36	222	0.1468	0.12	nc	nc1091499	2016-12-11T01:18:20.970Z	11 km WNW of Avenal, California	earthquake	0.51	0.71	0.11	58	reviewed	nc	nc
5/3/1983	8:25:39	36.1608333	-120.2738333	3.537	2.25	md	13	238	0.2351	0.08	nc	nc1091498	2016-12-11T01:18:15.034Z	8 km ENE of Coalinga, California	earthquake	1.06	2.47	0.18	25	reviewed	nc	nc
5/3/1983	8:23:47	36.2293333	-120.4865	2.564	2.15	md	10	216	0.1099	0.09	nc	nc1091497	2016-12-11T01:18:11.274Z	15 km NW of Coalinga, California	earthquake	0.91	1.21	0.24	13	reviewed	nc	nc
5/3/1983	8:21:28	36.3275	-120.2221667	-0.422	2.37	md	17	241	0.3288	0.21	nc	nc1091495	2016-12-11T01:18:03.920Z	17 km NW of Huron, California	earthquake	1.96	7.29	0.11	17	reviewed	nc	nc
5/3/1983	8:14:39	36.2465	-120.3648333	8.409	3.17	md	40	128	0.3216	0.12	nc	nc1091491	2016-12-11T01:17:47.810Z	11 km N of Coalinga, California	earthquake	0.55	1.47	0.13	43	reviewed	nc	nc
5/3/1983	8:13:38	36.0743333	-120.2973333	18.075	2.96	md	15	288	0.1468	0.16	nc	nc1091490	2016-12-11T01:17:41.663Z	9 km SE of Coalinga, California	earthquake	4.12	1.48	0.15	22	reviewed	nc	nc
5/3/1983	8:09:33	36.2623333	-120.371	8.414	3	md	47	159	0.02613	0.14	nc	nc1091487	2016-12-11T01:17:29.360Z	13 km N of Coalinga, California	earthquake	0.49	0.3	0.21	33	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/3/1983	8:08:33	36.1518333	-120.3143333	7.898	2.49	md	27	183	0.1	0.11	nc	nc1091486	2016-12-11T01:17:22.070Z	4 km ENE of Coalinga, California	earthquake	0.33	0.38	0.18	39	reviewed	nc	nc
5/3/1983	8:04:39	36.2188333	-120.2536667	-0.178	2.45	md	32	220	0.1937	0.18	nc	nc1091484	2016-12-11T01:17:09.979Z	12 km NE of Coalinga, California	earthquake	0.75	3.62	0.26	28	reviewed	nc	nc
5/3/1983	7:59:12	35.9841667	-120.0691667	-0.552	3.73	md	17	201	0.6342	0.23	nc	nc1091480	2016-12-11T01:16:55.224Z	5 km ESE of Avenal, California	earthquake	3.03	9.79	0.12	30	reviewed	nc	nc
5/3/1983	7:58:37	36.2915	-120.2688333	3.984	2.5	md	36	223	0.07297	0.15	nc	nc1091479	2016-12-11T01:16:51.475Z	17 km WNW of Huron, California	earthquake	1.24	0.69	0.1	27	reviewed	nc	nc
5/3/1983	7:57:45	36.2065	-120.2501667	1.038	2.7	md	7	276	0.3018	0.19	nc	nc1091478	2016-12-11T01:16:47.285Z	12 km NE of Coalinga, California	earthquake	5.15	5.75	0.12	4	reviewed	nc	nc
5/3/1983	7:57:12	36.129	-120.221	4.083	3.3	md	35	227	0.2766	0.19	nc	nc1091477	2016-12-11T01:16:42.190Z	12 km E of Coalinga, California	earthquake	0.82	2.15	0.11	38	reviewed	nc	nc
5/3/1983	7:55:27	36.2653333	-120.3306667	5.104	2.02	md	21	213	0.01892	0.05	nc	nc1091475	2016-12-11T01:16:32.321Z	14 km N of Coalinga, California	earthquake	0.42	0.13	0.19	31	reviewed	nc	nc
5/3/1983	7:48:51	36.1521667	-120.2585	0.165	2.16	md	27	217	0.1189	0.21	nc	nc1091472	2016-12-11T01:16:21.457Z	9 km E of Coalinga, California	earthquake	0.96	4.41	0.13	22	reviewed	nc	nc
5/3/1983	7:47:37	36.3118333	-120.2495	3.482	2.42	md	20	245	0.2649	0.14	nc	nc1091470	2016-12-11T01:16:13.742Z	17 km NW of Huron, California	earthquake	1.11	2.06	0.2	21	reviewed	nc	nc
5/3/1983	7:40:14	36.1763333	-120.3203333	6.908	2.22	md	27	183	0.07477	0.2	nc	nc1091465	2016-12-11T01:15:54.394Z	Central California	earthquake	0.72	0.91	0.22	13	reviewed	nc	nc
5/3/1983	7:39:19	36.1691667	-120.2915	1.906	2.82	md	35	211	0.09009	0.11	nc	nc1091464	2016-12-11T01:15:48.990Z	6 km ENE of Coalinga, California	earthquake	0.49	0.76	0.16	30	reviewed	nc	nc
5/3/1983	7:35:25	36.1365	-120.2203333	7.825	3.75	md	63	146	0.1505	0.12	nc	nc1091462	2016-12-11T01:15:37.880Z	12 km E of Coalinga, California	earthquake	0.37	0.43	0.12	58	reviewed	nc	nc
5/3/1983	7:33:56	36.2053333	-120.2573333	8.998	3.35	md	32	219	0.08198	0.1	nc	nc1091461	2016-12-11T01:15:31.146Z	11 km NE of Coalinga, California	earthquake	0.7	1.04	0.14	30	reviewed	nc	nc
5/3/1983	7:32:50	36.2688333	-120.2755	8.463	2.42	md	24	251	0.05766	0.09	nc	nc1091460	2016-12-11T01:15:27.143Z	16 km NNE of Coalinga, California	earthquake	1.22	0.37	0.2	24	reviewed	nc	nc
5/3/1983	7:30:18	36.2195	-120.3361667	16.827	2.44	md	5	250	0.2315	0.01	nc	nc1091458	2016-12-11T01:15:19.881Z	9 km NNE of Coalinga, California	earthquake	1.94	1.04	0.05	2	reviewed	nc	nc
5/3/1983	7:28:34	36.1325	-120.2073333	7.305	3.85	md	46	214	0.1604	0.12	nc	nc1091457	2016-12-11T01:15:15.040Z	12 km SW of Huron, California	earthquake	0.51	0.41	0.15	25	reviewed	nc	nc
5/3/1983	7:26:23	35.8705	-120.3415	4.818	2.05	md	6	106	0.04054	0.13	nc	nc1091454	2016-12-11T01:14:55.988Z	8 km ESE of Parkfield, California	earthquake	6.09	9.11	0.08	5	reviewed	nc	nc
5/3/1983	7:25:27	36.2145	-120.2908333	3.789	2.21	md	11	222	0.3667	0.1	nc	nc1091453	2016-12-11T01:14:52.420Z	10 km NE of Coalinga, California	earthquake	1.49	3.96	0.16	14	reviewed	nc	nc
5/3/1983	7:24:09	36.269	-120.3093333	5.904	3.14	md	48	211	0.03333	0.11	nc	nc1091452	2016-12-11T01:14:47.500Z	15 km NNE of Coalinga, California	earthquake	0.5	0.31	0.13	33	reviewed	nc	nc
5/3/1983	7:21:59	36.163	-120.2991667	-0.514	2.29	md	31	138	0.2748	0.24	nc	nc1091451	2016-12-11T01:14:39.500Z	6 km ENE of Coalinga, California	earthquake	1.22	5.77	0.28	20	reviewed	nc	nc
5/3/1983	7:19:51	36.2703333	-120.385	8.015	2.94	md	49	157	0.04054	0.13	nc	nc1091450	2016-12-11T01:14:34.360Z	14 km N of Coalinga, California	earthquake	0.42	0.3	0.16	37	reviewed	nc	nc
5/3/1983	7:15:56	36.2076667	-120.2691667	7.708	2.83	md	41	217	0.07297	0.09	nc	nc1091447	2016-12-11T01:14:17.670Z	11 km NE of Coalinga, California	earthquake	0.47	0.34	0.15	44	reviewed	nc	nc
5/3/1983	7:14:11	36.2175	-120.226	4.124	2.84	md	21	229	0.2099	0.14	nc	nc1091445	2016-12-11T01:14:07.660Z	11 km W of Huron, California	earthquake	1.02	1.69	0.15	37	reviewed	nc	nc
5/3/1983	7:11:56	36.2661667	-120.2615	10.752	2.27	md	18	252	0.2892	0.18	nc	nc1091444	2016-12-11T01:14:03.820Z	15 km WNW of Huron, California	earthquake	1.95	2.72	0.26	17	reviewed	nc	nc
5/3/1983	7:11:53	35.8653333	-120.2873333	1.841	2.27	md	5	218	0.01081	0.01	nc	nc1091443	2016-12-11T01:14:00.074Z	Central California	earthquake	1.58	1.26	0.14	19	reviewed	nc	nc
5/3/1983	7:07:26	36.2533333	-120.3278333	8.264	2.74	md	37	221	0.01261	0.15	nc	nc1091441	2016-12-11T01:13:51.810Z	12 km NNE of Coalinga, California	earthquake	0.78	0.42	0.17	34	reviewed	nc	nc
5/3/1983	7:05:19	36.2653333	-120.3611667	5.255	2.05	md	29	178	0.02162	0.19	nc	nc1091439	2016-12-11T01:13:39.986Z	13 km N of Coalinga, California	earthquake	0.89	0.58	0.16	21	reviewed	nc	nc
5/3/1983	7:02:11	36.1921667	-120.2316667	0.496	2.13	md	12	255	0.2748	0.08	nc	nc1091436	2016-12-11T01:13:28.942Z	Central California	earthquake	1.73	3.2	0.1	10	reviewed	nc	nc
5/3/1983	6:59:08	36.2441667	-120.3456667	8.754	3.26	md	48	146	0.005405	0.11	nc	nc1091434	2016-12-11T01:13:20.120Z	11 km N of Coalinga, California	earthquake	0.45	0.41	0.12	48	reviewed	nc	nc
5/3/1983	6:54:32	36.2205	-120.2968333	13.399	2.46	md	12	249	0.3514	0.09	nc	nc1091429	2016-12-11T01:12:58.849Z	10 km NNE of Coalinga, California	earthquake	1.47	1.04	0.23	15	reviewed	nc	nc
5/3/1983	6:53:46	36.1403333	-120.245	7.815	2.74	md	41	214	0.1351	0.09	nc	nc1091428	2016-12-11T01:12:53.800Z	10 km E of Coalinga, California	earthquake	0.43	0.45	0.08	18	reviewed	nc	nc
5/3/1983	6:51:40	36.148	-120.2983333	6.536	3.07	md	43	191	0.1072	0.15	nc	nc1091427	2016-12-11T01:12:46.200Z	5 km E of Coalinga, California	earthquake	0.64	0.84	0.12	45	reviewed	nc	nc
5/3/1983	6:45:41	36.2828333	-120.4006667	9.454	2.46	md	49	204	0.1784	0.16	nc	nc1091422	2016-12-11T01:12:22.560Z	16 km NNW of Coalinga, California	earthquake	0.55	1.02	0.22	39	reviewed	nc	nc
5/3/1983	6:44:13	36.3106667	-120.374	9.085	2.18	md	29	200	0.06667	0.1	nc	nc1091421	2016-12-11T01:12:14.732Z	19 km N of Coalinga, California	earthquake	0.61	1	0.22	27	reviewed	nc	nc
5/3/1983	6:43:37	36.2635	-120.2398333	3.426	2.24	md	9	269	0.2324	0.08	nc	nc1091420	2016-12-11T01:12:10.819Z	14 km WNW of Huron, California	earthquake	2.18	2.38	0.17	2	reviewed	nc	nc
5/3/1983	6:40:00	36.1763333	-120.2921667	6.432	3.06	md	47	201	0.08378	0.13	nc	nc1091418	2016-12-11T01:12:02.170Z	Central California	earthquake	0.57	0.74	0.18	51	reviewed	nc	nc
5/3/1983	6:35:03	36.2176667	-120.2838333	12.628	4.42	md	60	212	0.05766	0.08	nc	nc1091417	2016-12-11T01:11:52.730Z	11 km NE of Coalinga, California	earthquake	0.31	0.26	0.14	12	reviewed	nc	nc
5/3/1983	6:34:12	36.2328333	-120.3575	9.994	2.24	md	28	132	0.02072	0.1	nc	nc1091416	2016-12-11T01:11:46.069Z	Central California	earthquake	0.65	0.42	0.27	24	reviewed	nc	nc
5/3/1983	6:32:59	36.2255	-120.3078333	6.816	2.64	md	41	213	0.03694	0.09	nc	nc1091415	2016-12-11T01:11:41.170Z	10 km NNE of Coalinga, California	earthquake	0.51	0.32	0.16	39	reviewed	nc	nc
5/3/1983	6:29:35	36.0641667	-120.2935	7.819	2.16	md	4	280	0.1378	0.01	nc	nc1091414	2016-12-11T01:11:34.879Z	10 km SE of Coalinga, California	earthquake	5.88	2.11	0.04	3	reviewed	nc	nc
5/3/1983	6:28:39	36.3143333	-120.112	-0.461	3.23	md	20	271	0.4135	0.24	nc	nc1091413	2016-12-11T01:11:31.371Z	12 km N of Huron, California	earthquake	3.31	11.25	0.3	33	reviewed	nc	nc
5/3/1983	6:26:40	36.2276667	-120.302	4.832	2.46	md	42	214	0.03964	0.14	nc	nc1091412	2016-12-11T01:11:27.317Z	11 km NNE of Coalinga, California	earthquake	0.57	1.66	0.21	37	reviewed	nc	nc
5/3/1983	6:24:56	36.1041667	-120.2176667	8.304	2.03	md	24	218	0.1775	0.06	nc	nc1091411	2016-12-11T01:11:23.263Z	13 km ESE of Coalinga, CA	earthquake	0.69	0.63	0.43	17	reviewed	nc	nc
5/3/1983	6:23:57	36.2906667	-120.366	5.818	2.03	md	32	219	0.2072	0.17	nc	nc1091409	2016-12-11T01:11:15.624Z	16 km N of Coalinga, California	earthquake	0.86	1.48	0.42	21	reviewed	nc	nc
5/3/1983	6:22:58	36.2555	-120.3246667	4.529	2.94	md	31	143	0.2378	0.17	nc	nc1091408	2016-12-11T01:11:11.586Z	13 km NNE of Coalinga, California	earthquake	0.89	1.65	0.18	26	reviewed	nc	nc
5/3/1983	6:21:47	36.2411667	-120.33	8.504	3.1	md	44	211	0.01351	0.15	nc	nc1091407	2016-12-11T01:11:06.360Z	11 km NNE of Coalinga, California	earthquake	0.53	0.87	0.14	33	reviewed	nc	nc
5/3/1983	6:21:40	36.1846667	-120.2696667	7.334	2.87	md	6	255	0.2595	0.04	nc	nc1091406	2016-12-11T01:11:00.371Z	9 km ENE of Coalinga, California	earthquake	1.43	3.6	0.22	4	reviewed	nc	nc
5/3/1983	6:19:46	36.1876667	-120.2838333	9.435	2.34	md	25	248	0.155	0.18	nc	nc1091404	2016-12-11T01:10:49.385Z	8 km NE of Coalinga, California	earthquake	1.5	1.07	0.31	12	reviewed	nc	nc
5/3/1983	6:18:58	36.0808333	-120.3831667	7.255	2.36	md	6	259	0.2865	0.13	nc	nc1091403	2016-12-11T01:10:45.434Z	6 km SSW of Coalinga, California	earthquake	2.99	5.39	0.04	4	reviewed	nc	nc
5/3/1983	6:16:47	36.229	-120.4526667	10.527	2.3	md	11	254	0.1369	0.11	nc	nc1091402	2016-12-11T01:10:41.974Z	Central California	earthquake	1.36	1.21	0.21	8	reviewed	nc	nc
5/3/1983	6:14:59	36.16	-120.3075	3.586	2.41	md	37	188	0.09369	0.16	nc	nc1091401	2016-12-11T01:10:37.200Z	5 km ENE of Coalinga, California	earthquake	0.63	1.13	0.21	38	reviewed	nc	nc
5/3/1983	6:12:50	36.2465	-120.389	7.164	3.48	md	53	122	0.03784	0.12	nc	nc1091400	2016-12-11T01:10:29.530Z	12 km NNW of Coalinga, California	earthquake	0.28	0.3	0.13	59	reviewed	nc	nc
5/3/1983	6:11:31	36.2658333	-120.3763333	7.954	2.58	md	54	158	0.03153	0.13	nc	nc1091399	2016-12-11T01:10:21.690Z	14 km N of Coalinga, California	earthquake	0.4	0.28	0.3	44	reviewed	nc	nc
5/3/1983	6:04:46	36.2631667	-120.406	8.905	4.27	md	66	142	0.05315	0.11	nc	nc1091397	2016-12-11T01:10:10.710Z	14 km NNW of Coalinga, California	earthquake	0.24	0.3	0.28	12	reviewed	nc	nc
5/3/1983	6:04:22	36.2701667	-120.4293333	4.669	4.65	md	25	142	0.07297	0.25	nc	nc1091396	2016-12-11T01:10:04.008Z	15 km NNW of Coalinga, California	earthquake	0.57	1.01		3	reviewed	nc	nc
5/3/1983	6:03:19	36.2118333	-120.3218333	6.607	2.47	md	36	194	0.04144	0.13	nc	nc1091395	2016-12-11T01:09:58.820Z	8 km NNE of Coalinga, California	earthquake	0.68	0.48	0.17	36	reviewed	nc	nc
5/3/1983	5:58:29	36.223	-120.2703333	9.056	3.79	md	54	214	0.06396	0.11	nc	nc1091392	2016-12-11T01:09:44.600Z	12 km NE of Coalinga, California	earthquake	0.47	0.39	0.11	45	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/3/1983	5:54:57	36.0803333	-120.3956667	8.036	2.59	md	4	311	0.3559	0.01	nc	nc1091391	2016-12-11T01:09:38.076Z	7 km SSW of Coalinga, California	earthquake	4.01	6.4	0.02	4	reviewed	nc	nc
5/3/1983	5:54:24	36.274	-120.406	11.585	3.53	md	24	180	0.05676	0.13	nc	nc1091390	2016-12-11T01:09:34.332Z	15 km NNW of Coalinga, California	earthquake	0.89	0.6	0.12	12	reviewed	nc	nc
5/3/1983	5:53:20	36.1588333	-120.3011667	6.668	3.24	md	32	191	0.0964	0.09	nc	nc1091389	2016-12-11T01:09:29.160Z	5 km ENE of Coalinga, California	earthquake	0.38	0.51	0.21	8	reviewed	nc	nc
5/3/1983	5:50:27	36.0903333	-120.2835	2.459	2.45	md	14	219	0.1234	0.07	nc	nc1091387	2016-12-11T01:09:19.477Z	8 km SE of Coalinga, California	earthquake	0.77	0.99	0.17	19	reviewed	nc	nc
5/3/1983	5:50:02	36.225	-120.3858333	9.866	2.08	md	14	232	0.04234	0.03	nc	nc1091386	2016-12-11T01:09:15.839Z	9 km NNW of Coalinga, California	earthquake	0.51	0.65		1	reviewed	nc	nc
5/3/1983	5:49:11	36.183	-120.2633333	6.249	2.02	md	27	217	0.09279	0.17	nc	nc1091385	2016-12-11T01:09:12.072Z	9 km ENE of Coalinga, California	earthquake	1.07	0.88	0.24	23	reviewed	nc	nc
5/3/1983	5:46:27	36.2211667	-120.2818333	7.132	3.32	md	57	212	0.05676	0.16	nc	nc1091383	2016-12-11T01:09:03.060Z	11 km NE of Coalinga, California	earthquake	0.6	0.41	0.12	53	reviewed	nc	nc
5/3/1983	5:44:50	36.2163333	-120.2848333	7.286	3.04	md	38	216	0.05766	0.12	nc	nc1091382	2016-12-11T01:08:51.650Z	10 km NE of Coalinga, California	earthquake	0.59	0.32	0.33	17	reviewed	nc	nc
5/3/1983	5:42:15	36.2468333	-120.369	12.294	3.35	md	41	205	0.02162	0.09	nc	nc1091381	2016-12-11T01:08:42.310Z	11 km N of Coalinga, California	earthquake	0.46	0.74	0.14	53	reviewed	nc	nc
5/3/1983	5:41:34	36.2281667	-120.2791667	8.596	2.12	md	17	242	0.05586	0.08	nc	nc1091380	2016-12-11T01:08:35.877Z	12 km NE of Coalinga, California	earthquake	1.45	0.64	0.33	17	reviewed	nc	nc
5/3/1983	5:33:49	36.2185	-120.2735	7.756	3.98	md	84	63	0.06396	0.15	nc	nc1091375	2016-12-11T01:08:16.200Z	11 km NE of Coalinga, California	earthquake	0.34	0.49	0.08	28	reviewed	nc	nc
5/3/1983	5:32:59	36.2118333	-120.2141667	3.624	2.78	md	21	234	0.2982	0.11	nc	nc1091374	2016-12-11T01:08:09.732Z	10 km W of Huron, California	earthquake	0.91	2.57	0.09	8	reviewed	nc	nc
5/3/1983	5:30:49	36.2506667	-120.3303333	-0.582	2.77	md	21	210	0.1784	0.21	nc	nc1091372	2016-12-11T01:08:02.067Z	12 km NNE of Coalinga, California	earthquake	1.1	6.07	0.22	23	reviewed	nc	nc
5/3/1983	5:28:10	36.2058333	-120.2378333	11.022	2.36	md	14	262	0.0955	0.11	nc	nc1091370	2016-12-11T01:07:54.652Z	12 km W of Huron, California	earthquake	2.62	1.2	0.21	7	reviewed	nc	nc
5/3/1983	5:27:00	36.1193333	-120.2823333	-0.423	2.6	md	23	219	0.1928	0.24	nc	nc1091369	2016-12-11T01:07:50.697Z	7 km ESE of Coalinga, California	earthquake	1.49	6.26	0.15	29	reviewed	nc	nc
5/3/1983	5:21:55	36.1746667	-120.238	4.144	3.16	md	35	215	0.1135	0.25	nc	nc1091365	2016-12-11T01:07:35.979Z	11 km ENE of Coalinga, California	earthquake	0.91	1.29	0.07	29	reviewed	nc	nc
5/3/1983	5:21:35	36.1965	-120.2321667	15.348	3.36	md	23	234	0.318	0.12	nc	nc1091364	2016-12-11T01:07:31.947Z	11 km W of Huron, California	earthquake	0.88	0.86	0.15	26	reviewed	nc	nc
5/3/1983	5:19:16	36.2225	-120.2471667	6.416	2.13	md	33	237	0.08198	0.22	nc	nc1091362	2016-12-11T01:07:24.087Z	13 km W of Huron, California	earthquake	1.42	1.03	0.28	25	reviewed	nc	nc
5/3/1983	5:18:33	36.166	-120.2376667	6.495	2.04	md	20	222	0.1189	0.07	nc	nc1091361	2016-12-11T01:07:20.159Z	11 km ENE of Coalinga, California	earthquake	0.62	0.81	0.25	14	reviewed	nc	nc
5/3/1983	5:17:03	36.1696667	-120.363	5.116	2.01	md	26	154	0.08108	0.2	nc	nc1091360	2016-12-11T01:07:16.460Z	3 km N of Coalinga, California	earthquake	0.62	0.98	0.29	19	reviewed	nc	nc
5/3/1983	5:15:21	36.2506667	-120.4106667	9.885	2.3	md	21	155	0.05495	0.06	nc	nc1091359	2016-12-11T01:07:12.423Z	13 km NNW of Coalinga, California	earthquake	0.66	0.57	0.28	26	reviewed	nc	nc
5/3/1983	5:13:24	36.258	-120.2943333	4.663	3.1	md	40	212	0.04054	0.13	nc	nc1091358	2016-12-11T01:07:07.220Z	14 km NNE of Coalinga, California	earthquake	0.57	1.15	0.16	31	reviewed	nc	nc
5/3/1983	5:12:49	36.213	-120.2268333	0.039	2.48	md	6	260	0.3198	0.03	nc	nc1091357	2016-12-11T01:07:01.178Z	11 km W of Huron, California	earthquake	1.43	6.73	0.06	4	reviewed	nc	nc
5/3/1983	5:11:56	36.2058333	-120.3081667	6.988	2.21	md	33	212	0.05135	0.1	nc	nc1091356	2016-12-11T01:06:57.480Z	8 km NNE of Coalinga, California	earthquake	0.45	0.57	0.4	24	reviewed	nc	nc
5/3/1983	5:08:02	36.189	-120.3255	6.055	2.73	md	47	134	0.06216	0.2	nc	nc1091354	2016-12-11T01:06:48.850Z	6 km NNE of Coalinga, California	earthquake	0.73	0.95	0.18	44	reviewed	nc	nc
5/3/1983	5:02:35	35.8583333	-120.3616667	12.457	2.96	md	4	186	0.02793	0.01	nc	nc1091350	2016-12-11T01:06:31.970Z	7 km SE of Parkfield, California	earthquake	2.37	2.36	0.18	3	reviewed	nc	nc
5/3/1983	5:02:00	36.1656667	-120.2688333	6.476	3.61	md	34	211	0.1027	0.17	nc	nc1091349	2016-12-11T01:06:28.201Z	8 km ENE of Coalinga, California	earthquake	1.06	0.55	0.12	21	reviewed	nc	nc
5/3/1983	5:01:51	36.2141667	-120.2791667	11.498	3.21	ma	48	216	0.06216	0.08	nc	nc1091348	2016-12-11T01:06:22.790Z	11 km NE of Coalinga, California	earthquake	0.43	0.31	0.18	20	reviewed	nc	nc
5/3/1983	5:00:52	36.2088333	-120.292	10.928	3.14	md	38	214	0.05766	0.08	nc	nc1091347	2016-12-11T01:06:12.670Z	9 km NE of Coalinga, California	earthquake	0.51	0.39	0.15	61	reviewed	nc	nc
5/3/1983	4:59:33	36.2253333	-120.3253333	5.074	2.1	md	23	200	0.02793	0.17	nc	nc1091345	2016-12-11T01:06:02.175Z	10 km NNE of Coalinga, California	earthquake	0.88	0.44	0.13	24	reviewed	nc	nc
5/3/1983	4:58:12	36.2236667	-120.2633333	8.577	3.61	md	51	214	0.06937	0.12	nc	nc1091344	2016-12-11T01:05:57.210Z	12 km NE of Coalinga, California	earthquake	0.63	0.36	0.18	45	reviewed	nc	nc
5/3/1983	4:56:23	36.1996667	-120.2863333	6.446	2.55	md	17	231	0.06757	0.13	nc	nc1091343	2016-12-11T01:05:48.575Z	9 km NE of Coalinga, California	earthquake	1.32	0.73	0.2	18	reviewed	nc	nc
5/3/1983	4:55:17	36.2153333	-120.2591667	8.078	3.7	md	57	215	0.07568	0.13	nc	nc1091342	2016-12-11T01:05:43.520Z	12 km NE of Coalinga, California	earthquake	0.53	0.37	0.13	42	reviewed	nc	nc
5/3/1983	4:53:08	36.1883333	-120.3081667	5.611	2.37	md	39	210	0.2577	0.21	nc	nc1091341	2016-12-11T01:05:35.920Z	7 km NE of Coalinga, California	earthquake	0.89	1.94	0.19	29	reviewed	nc	nc
5/3/1983	4:45:53	36.2253333	-120.3118333	6.115	2.65	md	40	212	0.1658	0.11	nc	nc1091338	2016-12-11T01:05:16.910Z	10 km NNE of Coalinga, California	earthquake	0.5	1.02	0.27	36	reviewed	nc	nc
5/3/1983	4:43:29	36.2568333	-120.3571667	8.853	3.35	md	49	205	0.1748	0.09	nc	nc1091336	2016-12-11T01:05:03.530Z	13 km N of Coalinga, California	earthquake	0.36	0.63	0.13	47	reviewed	nc	nc
5/3/1983	4:41:57	36.2458333	-120.3706667	8.532	2.62	md	48	129	0.2009	0.13	nc	nc1091335	2016-12-11T01:04:56.320Z	11 km N of Coalinga, California	earthquake	0.67	0.91	0.2	44	reviewed	nc	nc
5/3/1983	4:36:57	36.2495	-120.3903333	7.019	2.23	md	8	178	0.03874	0.04	nc	nc1091332	2016-12-11T01:04:42.797Z	12 km NNW of Coalinga, California	earthquake	2.22	1.62	0.36	9	reviewed	nc	nc
5/3/1983	4:35:01	36.1766667	-120.3421667	9.089	2.27	md	17	220	0.1126	0.08	nc	nc1091330	2016-12-11T01:04:35.701Z	4 km NNE of Coalinga, California	earthquake	0.98	0.89	0.18	19	reviewed	nc	nc
5/3/1983	4:33:35	36.3076667	-120.377	1.063	3.64	md	20	125	0.2018	0.14	nc	nc1091329	2016-12-11T01:04:31.566Z	18 km N of Coalinga, California	earthquake	0.6	4.47	0.21	18	reviewed	nc	nc
5/3/1983	4:32:32	36.274	-120.375	10.404	4.76	md	48	173	0.03604	0.1	nc	nc1091328	2016-12-11T01:04:26.550Z	14 km N of Coalinga, California	earthquake	0.38	0.3	0.1	6	reviewed	nc	nc
5/3/1983	4:28:24	36.1405	-120.2181667	5.33	3.07	md	50	217	0.1486	0.16	nc	nc1091324	2016-12-11T01:04:01.940Z	12 km WSW of Huron, California	earthquake	0.62	1.15	0.13	59	reviewed	nc	nc
5/3/1983	4:25:12	36.262	-120.3726667	5.873	2.2	md	41	215	0.1991	0.2	nc	nc1091322	2016-12-11T01:03:51.280Z	13 km N of Coalinga, California	earthquake	0.89	1.45	0.17	43	reviewed	nc	nc
5/3/1983	4:23:34	36.1615	-120.2555	-0.609	2.04	md	32	217	0.2396	0.12	nc	nc1091320	2016-12-11T01:03:33.510Z	9 km ENE of Coalinga, California	earthquake	0.65	4.03	0.15	20	reviewed	nc	nc
5/3/1983	4:22:22	36.2115	-120.2495	12.193	2.15	md	26	239	0.3541	0.09	nc	nc1091318	2016-12-11T01:03:24.061Z	12 km NE of Coalinga, California	earthquake	0.85	0.65	0.17	30	reviewed	nc	nc
5/3/1983	4:21:14	36.2775	-120.2655	3.858	2.1	md	34	231	0.06847	0.11	nc	nc1091317	2016-12-11T01:03:20.019Z	16 km WNW of Huron, California	earthquake	0.7	1.67	0.26	35	reviewed	nc	nc
5/3/1983	4:18:48	36.2131667	-120.2943333	7.008	2.23	md	33	225	0.05315	0.08	nc	nc1091313	2016-12-11T01:03:03.470Z	10 km NE of Coalinga, California	earthquake	0.53	0.28	0.21	40	reviewed	nc	nc
5/3/1983	4:16:10	36.2233333	-120.3275	9.268	3.16	md	43	195	0.02883	0.17	nc	nc1091311	2016-12-11T01:02:52.950Z	9 km NNE of Coalinga, California	earthquake	0.62	0.32	0.12	53	reviewed	nc	nc
5/3/1983	4:14:58	36.3383333	-120.2253333	-0.364	2.33	md	33	238	0.1306	0.18	nc	nc1091309	2016-12-11T01:02:43.271Z	18 km NW of Huron, California	earthquake	1.05	4.8	0.2	26	reviewed	nc	nc
5/3/1983	4:13:00	36.1648333	-120.2945	2.621	2.19	md	38	208	0.236	0.18	nc	nc1091308	2016-12-11T01:02:38.170Z	6 km ENE of Coalinga, California	earthquake	0.75	1.49	0.18	34	reviewed	nc	nc
5/3/1983	4:11:54	36.2481667	-120.3936667	5.964	2.46	md	27	150	0.04144	0.1	nc	nc1091307	2016-12-11T01:02:32.088Z	12 km NNW of Coalinga, California	earthquake	0.42	0.4	0.24	19	reviewed	nc	nc
5/3/1983	4:08:14	36.131	-120.2156667	6.854	2.55	md	47	217	0.1829	0.18	nc	nc1091303	2016-12-11T01:02:15.760Z	12 km SW of Huron, California	earthquake	0.72	0.95	0.18	30	reviewed	nc	nc
5/3/1983	4:05:23	36.279	-120.3016667	2.622	2.98	md	9	136	0.3486	0.17	nc	nc1091302	2016-12-11T01:02:09.583Z	16 km NNE of Coalinga, California	earthquake	1.48	8.8	0.19	11	reviewed	nc	nc
5/3/1983	4:04:15	36.2776667	-120.3603333	8.304	2.87	md	51	127	0.2099	0.15	nc	nc1091301	2016-12-11T01:02:04.320Z	15 km N of Coalinga, California	earthquake	0.4	1.01	0.13	27	reviewed	nc	nc
5/3/1983	4:02:47	36.2561667	-120.2931667	3.214	3.06	md	23	134	0.2631	0.13	nc	nc1091300	2016-12-11T01:01:58.244Z	14 km NNE of Coalinga, California	earthquake	0.52	1.73	0.22	29	reviewed	nc	nc
5/3/1983	4:02:24	36.1845	-120.3131667	9.135	3.25	md	35	213	0.2568	0.26	nc	nc1091299	2016-12-11T01:01:53.220Z	6 km NE of Coalinga, California	earthquake	1.11	1.57	0.17	33	reviewed	nc	nc
5/3/1983	4:00:58	36.1896667	-120.34	5.132	2.33	md	32	208	0.2351	0.15	nc	nc1091298	2016-12-11T01:01:45.610Z	5 km NNE of Coalinga, California	earthquake	0.62	1.3	0.21	43	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/3/1983	3:59:04	36.2553333	-120.3245	7.342	3.21	md	44	209	0.1847	0.09	nc	nc1091297	2016-12-11T01:01:36.000Z	13 km NNE of Coalinga, California	earthquake	0.4	0.8	0.16	62	reviewed	nc	nc
5/3/1983	3:58:22	36.2413333	-120.3245	9.461	2.01	md	36	212	0.2378	0.15	nc	nc1091296	2016-12-11T01:01:28.760Z	11 km NNE of Coalinga, California	earthquake	0.65	1.29	0.23	30	reviewed	nc	nc
5/3/1983	3:55:24	36.2515	-120.3365	5.302	2.38	md	31	132	0.2279	0.1	nc	nc1091292	2016-12-11T01:01:10.460Z	12 km N of Coalinga, California	earthquake	0.56	1.67	0.2	38	reviewed	nc	nc
5/3/1983	3:50:40	36.1676667	-120.3006667	6.586	3.02	md	45	208	0.08829	0.08	nc	nc1091288	2016-12-11T01:00:49.620Z	6 km ENE of Coalinga, California	earthquake	0.4	0.75	0.14	60	reviewed	nc	nc
5/3/1983	3:49:38	36.156	-120.2628333	8.327	2.1	md	21	239	0.2324	0.11	nc	nc1091287	2016-12-11T01:00:41.102Z	8 km ENE of Coalinga, California	earthquake	1.15	1.49	0.2	18	reviewed	nc	nc
5/3/1983	3:45:58	36.1791667	-120.3016667	2.955	2.81	md	39	136	0.2676	0.3	nc	nc1091286	2016-12-11T01:00:35.790Z	6 km NE of Coalinga, California	earthquake	0.94	1.95	0.18	33	reviewed	nc	nc
5/3/1983	3:40:34	36.2015	-120.2426667	1.632	3.98	md	42	216	0.09459	0.11	nc	nc1091283	2016-12-11T01:00:21.060Z	12 km W of Huron, California	earthquake	0.38	0.88	0.08	4	reviewed	nc	nc
5/3/1983	3:40:26	36.2018333	-120.2861667	0.679	3.59	md	38	211	0.06577	0.19	nc	nc1091282	2016-12-11T01:00:14.280Z	9 km NE of Coalinga, California	earthquake	0.74	1.66	0.15	46	reviewed	nc	nc
5/3/1983	3:38:52	36.2313333	-120.312	11.304	3.21	md	45	213	0.03063	0.13	nc	nc1091281	2016-12-11T01:00:06.310Z	11 km NNE of Coalinga, California	earthquake	0.54	0.79	0.17	63	reviewed	nc	nc
5/3/1983	3:36:53	36.168	-120.2976667	7.051	3.2	md	44	208	0.2387	0.08	nc	nc1091279	2016-12-11T00:59:54.800Z	6 km ENE of Coalinga, California	earthquake	0.4	0.77	0.14	63	reviewed	nc	nc
5/3/1983	3:32:55	36.2393333	-120.3818333	6.802	2	md	34	215	0.1523	0.13	nc	nc1091276	2016-12-11T00:59:40.190Z	11 km N of Coalinga, California	earthquake	0.62	0.75	0.19	36	reviewed	nc	nc
5/3/1983	3:32:08	36.2566667	-120.3748333	8.084	2.16	md	22	282	0.1973	0.15	nc	nc1091275	2016-12-11T00:59:34.155Z	13 km N of Coalinga, California	earthquake	4.77	2.26	0.36	27	reviewed	nc	nc
5/3/1983	3:28:40	36.2785	-120.318	5.134	3.62	md	57	211	0.03514	0.18	nc	nc1091274	2016-12-11T00:59:29.170Z	15 km NNE of Coalinga, California	earthquake	0.59	0.36	0.13	58	reviewed	nc	nc
5/3/1983	3:22:02	36.232	-120.3555	11.024	3.94	md	48	137	0.01982	0.08	nc	nc1091270	2016-12-11T00:59:04.330Z	10 km N of Coalinga, California	earthquake	0.41	0.52	0.13	38	reviewed	nc	nc
5/3/1983	3:21:24	36.2145	-120.3491667	2.717	2.6	md	16	246	0.2216	0.06	nc	nc1091269	2016-12-11T00:58:57.885Z	8 km N of Coalinga, California	earthquake	1	1.33	0.13	8	reviewed	nc	nc
5/3/1983	3:14:10	36.2328333	-120.3415	8.108	2.67	md	42	172	0.01622	0.13	nc	nc1091263	2016-12-11T00:58:33.660Z	10 km N of Coalinga, California	earthquake	0.49	0.39	0.27	41	reviewed	nc	nc
5/3/1983	3:13:05	36.2103333	-120.4593333	4.631	2.92	md	5	258	0.2369	0.09	nc	nc1091261	2016-12-11T00:58:23.653Z	11 km NW of Coalinga, California	earthquake	4.91	6.16	0.04	7	reviewed	nc	nc
5/3/1983	3:11:08	36.2051667	-120.5171667	9.305	2.84	md	11	194	0.0955	0.12	nc	nc1091259	2016-12-11T00:58:16.346Z	15 km WNW of Coalinga, California	earthquake	2.89	0.48	0.16	29	reviewed	nc	nc
5/3/1983	3:10:15	36.1553333	-120.2918333	2.606	2.65	md	38	195	0.1027	0.15	nc	nc1091258	2016-12-11T00:58:11.010Z	6 km ENE of Coalinga, California	earthquake	0.59	0.79	0.17	28	reviewed	nc	nc
5/3/1983	3:08:33	36.162	-120.2693333	3.677	2.88	md	32	139	0.2369	0.12	nc	nc1091256	2016-12-11T00:57:57.600Z	8 km ENE of Coalinga, California	earthquake	0.72	1.56	0.19	36	reviewed	nc	nc
5/3/1983	3:07:45	36.1663333	-120.3061667	2.201	2.43	md	40	209	0.236	0.13	nc	nc1091255	2016-12-11T00:57:50.240Z	5 km ENE of Coalinga, California	earthquake	0.43	0.93	0.2	47	reviewed	nc	nc
5/3/1983	3:06:21	36.1911667	-120.1446667	0.104	3.16	md	19	262	0.1712	0.2	nc	nc1091254	2016-12-11T00:57:44.131Z	3 km WSW of Huron, California	earthquake	2.55	9.26	0.18	24	reviewed	nc	nc
5/3/1983	3:03:13	36.1205	-120.2578333	12.852	3.45	md	26	183	0.4477	0.26	nc	nc1091250	2016-12-11T00:57:28.880Z	9 km ESE of Coalinga, California	earthquake	1.3	2.1	0.11	30	reviewed	nc	nc
5/3/1983	3:03:04	36.1566667	-120.3056667	-0.674	3.23	md	18	236	0.227	0.2	nc	nc1091249	2016-12-11T00:57:24.896Z	5 km ENE of Coalinga, California	earthquake	1.3	6.55	0.25	13	reviewed	nc	nc
5/3/1983	2:59:31	36.2113333	-120.319	11.997	2.11	md	30	211	0.2459	0.18	nc	nc1091248	2016-12-11T00:57:21.098Z	8 km NNE of Coalinga, California	earthquake	0.68	0.96	0.26	31	reviewed	nc	nc
5/3/1983	2:58:31	36.2061667	-120.4796667	-0.186	2.61	md	4	293	0.1667	0.03	nc	nc1091247	2016-12-11T00:57:17.112Z	13 km NW of Coalinga, California	earthquake	3.85	7.3	0.13	8	reviewed	nc	nc
5/3/1983	2:58:19	36.1561667	-120.3176667	5.575	2.92	md	24	215	0.1144	0.14	nc	nc1091246	2016-12-11T00:57:13.730Z	4 km ENE of Coalinga, California	earthquake	0.73	1.3	0.18	31	reviewed	nc	nc
5/3/1983	2:57:17	36.107	-120.1588333	-0.151	2.91	md	42	228	0.2063	0.12	nc	nc1091245	2016-12-11T00:57:08.560Z	11 km NNW of Avenal, California	earthquake	0.59	2.26	0.1	44	reviewed	nc	nc
5/3/1983	2:56:35	36.2515	-120.4206667	6.355	2.42	md	34	197	0.1604	0.13	nc	nc1091244	2016-12-11T00:56:58.170Z	13 km NNW of Coalinga, California	earthquake	0.75	1.07	0.26	36	reviewed	nc	nc
5/3/1983	2:52:25	36.277	-120.3341667	4.804	3.43	md	42	213	0.02883	0.11	nc	nc1091242	2016-12-11T00:56:49.120Z	15 km N of Coalinga, California	earthquake	0.45	0.36	0.13	40	reviewed	nc	nc
5/3/1983	2:49:08	36.194	-120.2456667	4.145	2.23	md	28	141	0.273	0.14	nc	nc1091238	2016-12-11T00:56:30.286Z	11 km ENE of Coalinga, California	earthquake	0.54	1.92	0.27	26	reviewed	nc	nc
5/3/1983	2:47:50	36.2073333	-120.2556667	-0.435	2.52	md	47	219	0.1847	0.18	nc	nc1091237	2016-12-11T00:56:24.970Z	12 km NE of Coalinga, California	earthquake	0.8	3.33	0.18	39	reviewed	nc	nc
5/3/1983	2:45:01	36.1571667	-120.2056667	0.012	3.23	md	13	240	0.1973	0.21	nc	nc1091234	2016-12-11T00:56:08.879Z	10 km WSW of Huron, California	earthquake	1.55	6.45	0.07	16	reviewed	nc	nc
5/3/1983	2:42:57	36.198	-120.2388333	6.545	3.38	md	20	233	0.2784	0.13	nc	nc1091232	2016-12-11T00:56:00.118Z	12 km W of Huron, California	earthquake	1.02	2.71	0.12	21	reviewed	nc	nc
5/3/1983	2:38:19	36.199	-120.2646667	4.994	2.55	md	43	138	0.2739	0.16	nc	nc1091228	2016-12-11T00:55:44.350Z	10 km NE of Coalinga, California	earthquake	0.81	1.37	0.16	31	reviewed	nc	nc
5/3/1983	2:36:40	36.2035	-120.2535	5.393	2.61	md	28	140	0.2802	0.18	nc	nc1091227	2016-12-11T00:55:36.124Z	11 km NE of Coalinga, California	earthquake	0.96	1.84	0.2	21	reviewed	nc	nc
5/3/1983	2:36:23	36.2395	-120.2041667	13.583	3.19	md	8	274	0.1126	0.04	nc	nc1091226	2016-12-11T00:55:32.308Z	9 km WNW of Huron, California	earthquake	1.6	2.67	0.15	10	reviewed	nc	nc
5/3/1983	2:33:26	36.1873333	-120.3091667	3.456	2.14	md	26	194	0.06757	0.17	nc	nc1091224	2016-12-11T00:55:24.893Z	7 km NE of Coalinga, California	earthquake	0.65	0.55	0.15	26	reviewed	nc	nc
5/3/1983	2:26:08	36.283	-120.3713333	8.775	2.97	md	60	182	0.04054	0.1	nc	nc1091218	2016-12-11T00:55:00.780Z	15 km N of Coalinga, California	earthquake	0.3	0.26	0.18	63	reviewed	nc	nc
5/3/1983	2:24:08	36.2138333	-120.3103333	22.684	2.22	md	17	220	0.273	0.31	nc	nc1091216	2016-12-11T00:54:48.438Z	9 km NNE of Coalinga, California	earthquake	3.28	2.38	0.16	16	reviewed	nc	nc
5/3/1983	2:22:02	36.2745	-120.27	5.354	2.4	md	18	231	0.2829	0.11	nc	nc1091214	2016-12-11T00:54:41.530Z	17 km WNW of Huron, California	earthquake	1.01	1.72	0.16	29	reviewed	nc	nc
5/3/1983	2:18:54	36.2261667	-120.306	10.988	2.84	md	27	224	0.03784	0.15	nc	nc1091210	2016-12-11T00:54:25.300Z	10 km NNE of Coalinga, California	earthquake	0.93	0.41	0.16	37	reviewed	nc	nc
5/3/1983	2:17:40	36.272	-120.2718333	6.444	3.14	md	54	96	0.06216	0.16	nc	nc1091209	2016-12-11T00:54:18.110Z	16 km NNE of Coalinga, California	earthquake	0.56	1.02	0.13	32	reviewed	nc	nc
5/3/1983	2:15:14	36.2395	-120.2808333	8.405	4.14	md	64	213	0.05135	0.12	nc	nc1091208	2016-12-11T00:54:07.990Z	13 km NNE of Coalinga, California	earthquake	0.45	0.31	0.13	16	reviewed	nc	nc
5/3/1983	2:11:50	36.2155	-120.4798333	15.094	2.34	md	23	206	0.1189	0.13	nc	nc1091205	2016-12-11T00:53:54.516Z	13 km NW of Coalinga, California	earthquake	0.78	0.73	0.16	20	reviewed	nc	nc
5/3/1983	2:07:27	36.2001667	-120.3095	5.064	2.02	md	21	199	0.05586	0.21	nc	nc1091201	2016-12-11T00:53:39.172Z	8 km NE of Coalinga, California	earthquake	1.17	0.53	0.19	6	reviewed	nc	nc
5/3/1983	2:03:05	36.266	-120.3198333	0.651	2.93	md	25	179	0.3901	0.14	nc	nc1091200	2016-12-11T00:53:34.060Z	14 km NNE of Coalinga, California	earthquake	0.63	4.27	0.12	34	reviewed	nc	nc
5/3/1983	2:02:48	36.2076667	-120.2738333	8.066	2.94	md	16	250	0.2811	0.1	nc	nc1091199	2016-12-11T00:53:26.466Z	10 km NE of Coalinga, California	earthquake	1.22	2.04	0.15	11	reviewed	nc	nc
5/3/1983	2:01:10	36.2141667	-120.2681667	3.845	2.04	md	32	239	0.182	0.15	nc	nc1091198	2016-12-11T00:53:22.703Z	11 km NE of Coalinga, California	earthquake	1.06	1.27	0.1	15	reviewed	nc	nc
5/3/1983	1:55:46	36.2235	-120.2928333	5.178	3.81	md	58	208	0.04775	0.13	nc	nc1091194	2016-12-11T00:53:05.480Z	11 km NNE of Coalinga, California	earthquake	0.39	0.34	0.15	56	reviewed	nc	nc
5/3/1983	1:54:17	36.1986667	-120.2685	10.373	2.22	md	24	142	0.3739	0.18	nc	nc1091193	2016-12-11T00:52:59.106Z	10 km NE of Coalinga, California	earthquake	0.7	1.89	0.22	15	reviewed	nc	nc
5/3/1983	1:54:11	36.235	-120.3486667	9.086	2.29	md	10	252	0.2189	0.15	nc	nc1091192	2016-12-11T00:52:55.318Z	10 km N of Coalinga, California	earthquake	2.09	3.57	0.15	12	reviewed	nc	nc
5/3/1983	1:47:07	36.1693333	-120.3168333	13.278	2.67	md	29	217	0.2387	0.22	nc	nc1091187	2016-12-11T00:52:36.224Z	5 km NE of Coalinga, California	earthquake	1.35	1.07	0.18	41	reviewed	nc	nc
5/3/1983	1:41:45	36.1393333	-120.2178333	7.505	4.12	ma	53	217	0.1495	0.13	nc	nc1091183	2018-06-04T20:43:45.000Z	12 km SW of Huron, California	earthquake	0.46	0.66	0.11	15	reviewed	nc	nc
5/3/1983	1:38:13	36.0968333	-120.1966667	3.435	2.14	md	33	222	0.1937	0.2	nc	nc1091180	2016-12-11T00:52:01.160Z	11 km NNW of Avenal, California	earthquake	0.85	2.05	0.19	25	reviewed	nc	nc
5/3/1983	1:36:19	36.2373333	-120.2948333	1.911	3.27	md	77	94	0.2622	0.26	nc	nc1091179	2016-12-11T00:51:51.190Z	12 km NNE of Coalinga, California	earthquake	0.31	0.72	0.18	63	reviewed	nc	nc
5/3/1983	1:33:59	36.1671667	-120.1451667	-0.436	3.85	md	22	170	0.4784	0.22	nc	nc1091178	2016-12-11T00:51:43.678Z	5 km SW of Huron, California	earthquake	1.55	5.83	0.14	26	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/3/1983	1:33:06	36.2961667	-120.212	8.299	2.63	md	18	251	0.545	0.17	nc	nc1091176	2016-12-11T00:51:35.270Z	14 km NW of Huron, California	earthquake	1.71	2.7	0.13	26	reviewed	nc	nc
5/3/1983	1:31:46	36.2711667	-120.3685	6.806	2.78	md	47	173	0.02973	0.12	nc	nc1091174	2016-12-11T00:51:25.300Z	14 km N of Coalinga, California	earthquake	0.42	0.49	0.13	46	reviewed	nc	nc
5/3/1983	1:29:05	36.1383333	-120.3205	7.282	2.08	md	26	217	0.2072	0.2	nc	nc1091173	2016-12-11T00:51:18.462Z	3 km E of Coalinga, California	earthquake	1	1.3	0.21	19	reviewed	nc	nc
5/3/1983	1:28:21	36.1021667	-120.2295	-0.465	2.12	md	17	214	0.1739	0.29	nc	nc1091172	2016-12-11T00:51:14.567Z	12 km ESE of Coalinga, California	earthquake	1.65	6.65	0.19	20	reviewed	nc	nc
5/3/1983	1:26:12	36.215	-120.2235	14.917	2.5	md	13	234	0.4306	0.19	nc	nc1091170	2016-12-11T00:51:06.612Z	10 km W of Huron, California	earthquake	1.73	1.71	0.14	16	reviewed	nc	nc
5/3/1983	1:26:02	36.1838333	-120.2946667	-0.429	2.72	md	22	241	0.255	0.2	nc	nc1091169	2016-12-11T00:51:02.991Z	7 km NE of Coalinga, California	earthquake	1.44	6.35	0.14	7	reviewed	nc	nc
5/3/1983	1:23:03	36.1845	-120.2566667	0.701	3.37	md	35	142	0.2613	0.16	nc	nc1091167	2016-12-11T00:50:54.170Z	10 km ENE of Coalinga, California	earthquake	0.67	2.32	0.12	35	reviewed	nc	nc
5/3/1983	1:22:03	36.1578333	-120.2508333	-0.285	2.3	md	38	216	0.1631	0.23	nc	nc1091166	2016-12-11T00:50:45.040Z	10 km ENE of Coalinga, California	earthquake	1.01	4.79	0.15	37	reviewed	nc	nc
5/3/1983	1:18:59	36.237	-120.3011667	9.049	3.78	md	37	133	0.5162	0.28	nc	nc1091164	2016-12-11T00:50:29.830Z	12 km NNE of Coalinga, California	earthquake	0.68	2.9	0.11	55	reviewed	nc	nc
5/3/1983	1:16:40	36.2306667	-120.2756667	7.248	2.8	md	52	213	0.05766	0.16	nc	nc1091163	2016-12-11T00:50:19.050Z	12 km NE of Coalinga, California	earthquake	0.49	0.71	0.14	55	reviewed	nc	nc
5/3/1983	1:13:38	36.1573333	-120.2993333	3.612	2.22	md	29	222	0.1279	0.12	nc	nc1091160	2016-12-11T00:50:03.600Z	5 km ENE of Coalinga, California	earthquake	0.62	1.18	0.15	6	reviewed	nc	nc
5/3/1983	1:12:02	36.136	-120.231	-0.627	2.64	md	29	169	0.2225	0.4	nc	nc1091159	2016-12-11T00:49:56.460Z	11 km E of Coalinga, California	earthquake	2.39	8.31	0.12	29	reviewed	nc	nc
5/3/1983	1:11:05	36.1961667	-120.266	14.755	3.09	md	42	138	0.3658	0.24	nc	nc1091158	2016-12-11T00:49:49.710Z	10 km NE of Coalinga, California	earthquake	0.61	1.94	0.12	33	reviewed	nc	nc
5/3/1983	1:10:04	36.2398333	-120.3965	-1.099	3.48	ml	3	258		0.19	ci	ci1105877	2016-02-03T01:27:11.270Z	12km NNW of Coalinga, CA	earthquake	6.59	31.61	0.201	9	reviewed	ci	ci
5/3/1983	1:08:18	36.2223333	-120.283	-0.488	2.47	md	16	138	0.2937	0.29	nc	nc1091156	2016-12-11T00:49:39.950Z	11 km NE of Coalinga, California	earthquake	1.32	15.44	0.17	13	reviewed	nc	nc
5/3/1983	1:06:56	36.1918333	-120.3215	6.065	2.66	md	48	131	0.2604	0.17	nc	nc1091154	2016-12-11T00:49:30.970Z	6 km NNE of Coalinga, California	earthquake	0.6	1.57	0.18	52	reviewed	nc	nc
5/3/1983	1:04:24	36.1833333	-120.2698333	11.147	2.67	md	26	224	0.2577	0.16	nc	nc1091152	2016-12-11T00:49:20.989Z	9 km ENE of Coalinga, California	earthquake	1.19	2	0.15	22	reviewed	nc	nc
5/3/1983	1:03:41	36.1615	-120.3483333	13.209	2.69	md	27	222	0.2297	0.22	nc	nc1091151	2016-12-11T00:49:17.179Z	2 km NNE of Coalinga, California	earthquake	1.32	1.35	0.07	26	reviewed	nc	nc
5/3/1983	1:02:35	36.2003333	-120.255	6.262	2.19	md	30	142	0.2775	0.1	nc	nc1091149	2016-12-11T00:49:09.293Z	11 km NE of Coalinga, California	earthquake	0.68	1.6	0.22	28	reviewed	nc	nc
5/3/1983	1:00:15	36.265	-120.3325	4.855	2.8	md	9	262	0.2315	0.08	nc	nc1091147	2016-12-11T00:49:01.980Z	Central California	earthquake	1.51	3.07	0.19	9	reviewed	nc	nc
5/3/1983	0:57:44	36.2693333	-120.3356667	7.584	4.38	md	66	207	0.02072	0.08	nc	nc1091146	2022-04-27T23:59:20.021Z	14 km N of Coalinga, California	earthquake	0.36	0.26		1	reviewed	nc	nc
5/3/1983	0:53:05	36.1691667	-120.254	0.742	2.45	md	38	141	0.2468	0.17	nc	nc1091143	2016-12-11T00:48:41.930Z	10 km ENE of Coalinga, California	earthquake	0.71	2.79	0.12	35	reviewed	nc	nc
5/3/1983	0:50:37	35.9521667	-120.3765	17.955	3.32	md	7	272	0.1153	0.17	nc	nc1091142	2016-12-11T00:48:35.949Z	Central California	earthquake	7.46	1.48	0.04	7	reviewed	nc	nc
5/3/1983	0:50:22	36.2141667	-120.3228333	5.555	3.69	md	30	210	0.2423	0.12	nc	nc1091141	2016-12-11T00:48:30.700Z	8 km NNE of Coalinga, California	earthquake	0.55	1.15	0.15	31	reviewed	nc	nc
5/3/1983	0:47:30	36.2076667	-120.2548333	6.958	3.42	md	46	219	0.08288	0.13	nc	nc1091138	2016-12-11T00:48:12.190Z	12 km NE of Coalinga, California	earthquake	0.57	0.69	0.15	54	reviewed	nc	nc
5/3/1983	0:45:24	36.195	-120.3085	1.887	2.36	md	37	210	0.2577	0.19	nc	nc1091136	2016-12-11T00:47:56.130Z	7 km NE of Coalinga, California	earthquake	0.88	2.18	0.12	20	reviewed	nc	nc
5/3/1983	0:43:09	36.0166667	-119.9201667	10.414	2.69	md	21	196	0.3468	0.21	nc	nc1091135	2016-12-11T00:47:48.283Z	3 km ENE of Kettleman City, California	earthquake	1.69	3.08	0.12	39	reviewed	nc	nc
5/3/1983	0:39:46	36.2241667	-120.3526667	10.578	3.99	md	46	151	0.02613	0.11	nc	nc1091134	2016-12-11T00:47:43.030Z	9 km N of Coalinga, California	earthquake	0.39	0.68	0.16	21	reviewed	nc	nc
5/3/1983	0:38:08	36.2126667	-120.2643333	9.802	2.3	md	19	220	0.2874	0.15	nc	nc1091133	2016-12-11T00:47:33.932Z	Central California	earthquake	1.58	3.57	0.15	21	reviewed	nc	nc
5/3/1983	0:36:56	36.224	-120.3528333	9.243	2.77	md	49	150	0.02613	0.13	nc	nc1091132	2016-12-11T00:47:28.590Z	9 km N of Coalinga, California	earthquake	0.44	0.56	0.16	44	reviewed	nc	nc
5/3/1983	0:34:00	36.2116667	-120.379	6.705	2.03	md	29	220	0.3018	0.16	nc	nc1091131	2016-12-11T00:47:20.031Z	8 km NNW of Coalinga, California	earthquake	0.86	1.83	0.12	15	reviewed	nc	nc
5/3/1983	0:30:42	36.3128333	-120.3326667	12.58	2.99	md	30	217	0.3883	0.19	nc	nc1091129	2016-12-11T00:47:12.313Z	19 km N of Coalinga, California	earthquake	1.22	1.09	0.13	24	reviewed	nc	nc
5/3/1983	0:29:05	36.1791667	-120.3266667	2.15	2.35	md	15	253	0.2919	0.16	nc	nc1091127	2016-12-11T00:47:04.092Z	5 km NE of Coalinga, California	earthquake	1.68	2.03	0.18	14	reviewed	nc	nc
5/3/1983	0:28:16	36.2568333	-120.3911667	2.64	2.24	md	24	204	0.3315	0.18	nc	nc1091126	2016-12-11T00:47:00.104Z	13 km NNW of Coalinga, California	earthquake	1.03	2.45	0.09	20	reviewed	nc	nc
5/3/1983	0:27:39	36.2068333	-120.3788333	8.751	2.55	md	33	210	0.5396	0.23	nc	nc1091125	2016-12-11T00:46:54.140Z	7 km NNW of Coalinga, California	earthquake	1.26	2.64	0.11	25	reviewed	nc	nc
5/3/1983	0:27:05	36.1996667	-120.3493333	13.238	2.17	md	15	132	0.3685	0.07	nc	nc1091124	2016-12-11T00:46:44.851Z	6 km N of Coalinga, California	earthquake	0.46	1.43	0.28	14	reviewed	nc	nc
5/3/1983	0:25:49	36.2168333	-120.5281667	21.175	2.63	md	20	190	0.218	0.31	nc	nc1091123	2016-12-11T00:46:39.706Z	17 km WNW of Coalinga, California	earthquake	1.17	1.35	0.17	22	reviewed	nc	nc
5/3/1983	0:22:11	36.267	-120.3518333	3.081	2.62	md	82	52	0.2162	0.19	nc	nc1091121	2016-12-11T00:46:30.800Z	14 km N of Coalinga, California	earthquake	0.24	1.59	0.17	12	reviewed	nc	nc
5/3/1983	0:18:01	36.107	-120.2045	6.758	3.89	md	17	173	0.3018	0.42	nc	nc1091120	2018-06-04T20:43:45.000Z	13 km NNW of Avenal, California	earthquake	2.41	7.56	0.14	22	reviewed	nc	nc
5/3/1983	0:17:08	36.23	-120.29	8	4	ml					us	usp0001uxh	2014-11-07T00:33:06.294Z	11 km NNE of Coalinga, California	earthquake					reviewed	brk	brk
5/3/1983	0:16:49	35.9986667	-120.2663333	5.127	3.8	ml	3	314	1.494	0.44	ci	ci12327447	2016-02-03T01:27:10.340Z	12km W of Avenal, CA	earthquake	4.89	31.61	0.033	6	reviewed	ci	ci
5/3/1983	0:15:35	36.1018333	-120.1923333	4.171	4.2	md	66	88	0.2072	0.38	nc	nc1091119	2016-12-11T00:46:17.960Z	12 km NNW of Avenal, California	earthquake	1.1	1.86	0.04	8	reviewed	nc	nc
5/3/1983	0:14:48	36.2111667	-120.386	9.842	2.87	md	45	198	0.1243	0.1	nc	nc1091118	2016-12-11T00:46:10.130Z	8 km NNW of Coalinga, California	earthquake	0.4	0.82	0.1	34	reviewed	nc	nc
5/3/1983	0:13:19	36.1915	-120.3381667	15.963	2.8	md	15	217	0.3604	0.1	nc	nc1091117	2016-12-11T00:46:03.810Z	6 km NNE of Coalinga, California	earthquake	1.39	0.97	0.09	10	reviewed	nc	nc
5/3/1983	0:12:22	36.185	-120.4278333	12.183	2.2	md	10	224	0.3009	0.08	nc	nc1091116	2016-12-11T00:45:59.898Z	7 km NW of Coalinga, California	earthquake	1.74	1.26	0.18	7	reviewed	nc	nc
5/3/1983	0:09:22	36.157	-120.2825	7.406	3.75	md	72	61	0.2297	0.2	nc	nc1091115	2016-12-11T00:45:54.520Z	7 km ENE of Coalinga, California	earthquake	0.34	0.7	0.14	48	reviewed	nc	nc
5/3/1983	0:08:06	36.1903333	-120.3073333	3.717	3.14	md	36	133	0.309	0.27	nc	nc1091114	2016-12-11T00:45:46.310Z	7 km NE of Coalinga, California	earthquake	0.92	3.03	0.16	35	reviewed	nc	nc
5/3/1983	0:05:38	36.2883333	-120.421	5.942	2.45	md	22	138	0.3135	0.19	nc	nc1091112	2016-12-11T00:45:36.923Z	17 km NNW of Coalinga, California	earthquake	1.13	2.33	0.09	15	reviewed	nc	nc
5/3/1983	0:04:41	36.2581667	-120.277	12.756	2.74	md	14	179	0.2766	0.09	nc	nc1091111	2016-12-11T00:45:32.989Z	15 km NNE of Coalinga, California	earthquake	0.52	1.14	0.12	14	reviewed	nc	nc
5/3/1983	0:04:06	36.0758333	-120.0185	65.556	3.24	md	9	173	0.3414	0.19	nc	nc1091110	2016-12-11T00:45:29.103Z	9 km NW of Kettleman City, California	earthquake	1.19	5.16	0.08	6	reviewed	nc	nc
5/3/1983	0:00:22	36.206	-120.296	7.6	4	ml					us	usp0001uxd	2016-02-02T22:48:09.850Z	9 km NE of Coalinga, California	earthquake					reviewed	brk	pas
5/2/1983	23:59:03	36.2671667	-120.4415	10.847	2.01	md	10	221	0.1432	0.03	nc	nc1091109	2016-12-11T00:45:25.520Z	15 km NNW of Coalinga, California	earthquake	0.74	0.63		1	reviewed	nc	nc
5/2/1983	23:56:31	36.302	-120.0865	3.339	2.29	md	14	252	0.5189	0.31	nc	nc1091107	2016-12-11T00:45:17.803Z	11 km N of Huron, California	earthquake	2.66	7.4	0.36	4	reviewed	nc	nc
5/2/1983	23:55:29	36.1305	-120.2195	9.587	3.39	md	94	55	0.2207	0.45	nc	nc1091106	2016-12-11T00:45:12.590Z	12 km E of Coalinga, California	earthquake	0.57	1.59	0.16	17	reviewed	nc	nc
5/2/1983	23:54:49	36.25	-120.3	6	4.1	ml					ci	ci12327423	2016-04-01T21:43:40.809Z	13km NNE of Coalinga, CA	earthquake			0.084	3	reviewed	ci	ci
5/2/1983	23:50:41	36.0481667	-120.46	4.651	3.09	md	13	197	0.1703	0.75	nc	nc1091104	2016-12-11T00:44:55.996Z	13 km SW of Coalinga, California	earthquake	7.58	5.73	0.29	11	reviewed	nc	nc
5/2/1983	23:46:06	36.23	-120.29	8	5.5	mb					us	usp0001uxb	2021-03-09T23:55:28.978Z	11 km NNE of Coalinga, California	earthquake				3	reviewed	brk	us

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/2/1983	23:42:38	36.2316667	-120.312	9.578	6.7	ml	64	137	0.03063	0.07	nc	nc1091100	2022-09-16T03:43:34.191Z	11 km NNE of Coalinga, California	earthquake	0.28	0.24		0	reviewed	nc	nc
4/28/1983	11:26:49	35.993	-120.5425	4.934	2.01	md	16	96	0.06667	0.03	nc	nc1090961	2016-12-11T00:34:43.271Z	14 km NW of Parkfield, California	earthquake	0.47	0.59	0.23	12	reviewed	nc	nc
4/27/1983	13:16:09	35.9901667	-120.5471667	4.374	2.49	md	36	67	0.06486	0.09	nc	nc1090925	2016-12-11T00:32:09.620Z	14 km NW of Parkfield, California	earthquake	0.2	0.6	0.14	31	reviewed	nc	nc
4/26/1983	8:23:17	35.8508333	-120.0261667	24.546	2.31	md	18	281	0.1838	0.11	nc	nc1090873	2016-12-11T00:28:42.930Z	18 km SSW of Kettleman City, California	earthquake	2.09	0.49	0.18	17	reviewed	nc	nc
4/23/1983	0:15:33	36.2356667	-120.226	9.637	2.19	md	25	229	0.0955	0.12	nc	nc1090758	2016-12-11T00:21:05.879Z	11 km WNW of Huron, California	earthquake	1.11	0.36	0.17	18	reviewed	nc	nc
4/21/1983	11:37:38	36.1793333	-120.125	8.285	3.35	md	77	125	0.1901	0.15	nc	nc1090698	2016-12-11T00:16:45.970Z	3 km SW of Huron, California	earthquake	0.63	0.57	0.13	45	reviewed	nc	nc
4/15/1983	3:35:15	36.0028333	-120.5573333	5.427	2.93	md	46	64	0.07297	0.08	nc	nc1090413	2016-12-10T23:55:51.150Z	16 km NW of Parkfield, California	earthquake	0.17	0.4	0.09	41	reviewed	nc	nc
4/9/1983	16:40:48	36.0721667	-120.2196667	10.289	2.17	md	24	215	0.1703	0.08	nc	nc1090154	2016-12-10T23:38:27.895Z	11 km NW of Avenal, California	earthquake	0.4	0.6	0.12	17	reviewed	nc	nc
4/9/1983	16:39:53	36.0776667	-120.2036667	8.395	2.38	md	32	218	0.1829	0.11	nc	nc1090153	2016-12-10T23:38:22.380Z	10 km NW of Avenal, California	earthquake	0.46	0.75	0.12	25	reviewed	nc	nc
4/6/1983	9:41:46	36.05	-120.606	5.469	2.91	md	33	54	0.02072	0.06	nc	nc1090005	2016-12-10T23:27:50.170Z	22 km NW of Parkfield, California	earthquake	0.23	0.63	0.05	37	reviewed	nc	nc
4/6/1983	2:11:30	35.9851667	-118.8501667	4.722	2.08	mh	14	270	0.3815	0.12	ci	ci1104489	2016-02-02T21:28:44.220Z	17km ESE of Porterville, CA	earthquake	0.8	31.61	0.284	2	reviewed	ci	ci
3/28/1983	17:34:22	35.0941667	-119.1121667	4.686	2.2	mc	7	115	0.2621	0.22	ci	ci1103836	2016-04-02T19:48:29.175Z	24km NW of Grapevine, CA	earthquake	1.06	31.61		8	reviewed	ci	ci
3/28/1983	17:32:25	35.0921667	-119.0963333	4.676	2.36	mc	8	110	0.2651	0.19	ci	ci1103835	2016-02-02T23:55:34.220Z	22km NW of Grapevine, CA	earthquake	0.95	19.2		14	reviewed	ci	ci
3/28/1983	17:16:30	35.1046667	-119.109	-0.974	2.78	mc	20	112		0.29	ci	ci3309883	2016-04-01T21:29:39.073Z	24km NW of Grapevine, CA	earthquake	0.64	1.45		32	reviewed	ci	ci
3/28/1983	5:36:50	35.1141667	-119.1435	2.556	2.29	mc	8	203		0.1	ci	ci1103823	2016-02-02T21:17:36.180Z	24km ENE of Maricopa, CA	earthquake	0.96	1.8		9	reviewed	ci	ci
3/28/1983	2:59:37	35.1178333	-119.1455	4.676	2.3	mc	6	233	0.2766	0.11	ci	ci1103820	2016-02-02T22:36:39.990Z	24km ENE of Maricopa, CA	earthquake	1.34	13.97		11	reviewed	ci	ci
3/28/1983	2:44:02	35.0876667	-119.1193333	4.236	3.17	ml	31	104		0.25	ci	ci1103818	2016-02-02T22:47:59.410Z	24km NW of Grapevine, CA	earthquake	0.6	1.7	0.077	13	reviewed	ci	ci
3/28/1983	2:43:36	35.093	-119.123	2.986	2.63	ml	27	199		0.24	ci	ci3309882	2016-04-02T05:59:23.114Z	24km NW of Grapevine, CA	earthquake	1.1	3.01	0.076	7	reviewed	ci	ci
3/22/1983	10:11:54	34.993	-119.0483333	-0.914	2.57	mc	23	96		0.3	ci	ci1103521	2016-02-02T18:39:44.610Z	12km WNW of Grapevine, CA	earthquake	0.74	2.27		22	reviewed	ci	ci
3/21/1983	6:36:12	35.9346667	-120.0353333	13.054	2.86	md	40	147	0.2144	0.14	nc	nc1089430	2016-12-10T22:49:50.500Z	10 km SW of Kettleman City, California	earthquake	0.61	0.8	0.13	21	reviewed	nc	nc
3/21/1983	0:38:23	36.0728333	-119.81	13.474	2.99	md	30	170	0.4396	0.25	nc	nc1089420	2016-12-10T22:49:06.618Z	12 km S of Stratford, California	earthquake	1.22	1.28	0.18	19	reviewed	nc	nc
3/19/1983	2:39:53	35.361	-120.8795	-0.26	2.52	md	24	220	0.1315	0.11	nc	nc1089354	2016-12-10T22:44:23.784Z	2 km W of Morro Bay, California	earthquake	0.78	3.44	0.18	20	reviewed	nc	nc
3/18/1983	9:50:25	35.0465	-119.035	3.783	2.83	mc	18	207		0.21	ci	ci1103356	2016-02-02T19:59:06.350Z	15km NW of Grapevine, CA	earthquake	1.15	3.04		21	reviewed	ci	ci
3/9/1983	20:12:10	35.516	-119.7536667	-0.12	2.57	mc	9	190	0.1862	0.37	ci	ci1102727	2016-04-02T03:57:07.561Z	29km WNW of Buttonwillow, CA	earthquake	1.15	2.64		14	reviewed	ci	ci
3/8/1983	15:59:28	36.007	-120.562	4.867	2.71	md	34	63	0.06757	0.09	nc	nc1088887	2016-12-10T22:13:56.560Z	16 km NW of Parkfield, California	earthquake	0.19	0.5	0.16	28	reviewed	nc	nc
3/2/1983	19:21:48	36.0196667	-120.5181667	7.762	2.14	md	16	170	0.08018	0.18	nc	nc1088623	2016-12-10T21:56:09.740Z	15 km NNW of Parkfield, California	earthquake	0.78	1.62	0.11	9	reviewed	nc	nc
2/28/1983	22:39:09	36.0565	-120.3661667	6.878	2.1	md	14	155	0.06757	0.09	nc	nc1088558	2016-12-10T21:52:01.447Z	9 km S of Coalinga, California	earthquake	0.38	0.55	0.09	8	reviewed	nc	nc
2/28/1983	16:39:21	36.0595	-120.363	6.918	2.8	md	23	155	0.06847	0.04	nc	nc1088549	2016-12-10T21:51:26.814Z	8 km S of Coalinga, California	earthquake	0.27	0.36	0.2	16	reviewed	nc	nc
2/28/1983	16:31:31	36.0615	-120.362	8.029	3.2	md	30	155	0.06847	0.08	nc	nc1088548	2016-12-10T21:51:21.030Z	8 km S of Coalinga, California	earthquake	0.3	0.38	0.15	29	reviewed	nc	nc
2/28/1983	14:47:32	34.9923333	-119.2831667	-1.462	2.51	mh	23	91		0.23	ci	ci1102067	2016-02-03T04:09:06.430Z	13km SE of Maricopa, CA	earthquake	0.51	1.62	0.147	16	reviewed	ci	ci
2/22/1983	17:06:27	35.5205	-119.3063333	4.864	2.08	mh	23	160		0.28	ci	ci1100634	2016-02-03T00:06:16.330Z	4km NW of Shafter, CA	earthquake	0.85	31.61	0.212	4	reviewed	ci	ci
2/19/1983	17:54:42	35.3278333	-119.224	4.848	2.9	mc	43	132		0.28	ci	ci1100520	2016-04-02T10:21:57.416Z	9km SW of Rosedale, CA	earthquake	0.63	31.61		40	reviewed	ci	ci
2/15/1983	23:51:17	35.0328333	-119.0131667	1.631	2.46	mc	21	110		0.22	ci	ci1100023	2016-04-02T07:01:51.119Z	12km NW of Grapevine, CA	earthquake	0.65	1.24		19	reviewed	ci	ci
2/14/1983	20:13:53	35.0548333	-118.937	8.651	2.28	mc	14	158		0.41	ci	ci1101960	2016-04-01T21:20:29.929Z	12km N of Grapevine, CA	earthquake	1.49	3.17		13	reviewed	ci	ci
2/13/1983	14:23:53	35.0458333	-118.9233333	7.461	2.35	mc	17	100		0.17	ci	ci1101767	2016-02-03T01:13:57.290Z	11km N of Grapevine, CA	earthquake	0.46	2.04		13	reviewed	ci	ci
2/10/1983	21:32:26	35.949	-119.2173333	5.134	2.43	mc	15	292	0.6474	0.18	ci	ci1101031	2016-02-02T23:54:07.460Z	7km ESE of Pixley, CA	earthquake	1.08	31.61		9	reviewed	ci	ci
2/4/1983	15:20:50	36.041	-120.593	2.939	2.14	md	35	72	0.02793	0.15	nc	nc1087349	2016-12-10T20:32:23.410Z	21 km NW of Parkfield, California	earthquake	0.27	0.67	0.16	24	reviewed	nc	nc
2/3/1983	22:22:39	36.0658333	-120.1526667	8.794	2.04	md	20	228	0.2018	0.15	nc	nc1087279	2016-12-10T20:27:57.762Z	7 km NNW of Avenal, California	earthquake	0.8	1.35	0.11	11	reviewed	nc	nc
2/1/1983	13:07:40	35.8058333	-119.9933333	8.137	2.03	md	19	235	0.1991	0.09	nc	nc1087195	2016-12-10T20:22:46.780Z	22 km S of Kettleman City, California	earthquake	0.5	0.8	0.17	15	reviewed	nc	nc
1/29/1983	5:13:14	36.0966667	-120.6653333	-0.576	2	md	18	77	0.04955	0.15	nc	nc1086970	2016-12-10T20:08:59.798Z	23 km ENE of San Ardo, California	earthquake	0.34	2.87	0.11	7	reviewed	nc	nc
1/28/1983	9:11:07	35.6956667	-119.582	5.054	2.54	mc	9	156		0.56	ci	ci500426	2016-02-02T23:53:29.050Z	23km SSW of Alpaugh, CA	earthquake	4.72	31.61		7	reviewed	ci	ci
1/26/1983	22:03:30	36.078	-120.6401667	3.963	2.85	md	31	79	0.03694	0.07	nc	nc1086850	2016-12-10T20:01:33.570Z	24 km ENE of San Ardo, California	earthquake	0.19	0.42	0.19	19	reviewed	nc	nc
1/26/1983	6:58:29	35.9801667	-120.583	8.88	2.22	md	27	108	0.07387	0.41	nc	nc1086822	2016-12-10T19:59:48.463Z	16 km WNW of Parkfield, California	earthquake	0.88	1.77	0.15	26	reviewed	nc	nc
1/26/1983	6:48:48	36.0198333	-120.5585	5.991	2.49	md	14	91	0.0955	0.08	nc	nc1086821	2016-12-10T19:59:44.530Z	17 km NW of Parkfield, California	earthquake	0.46	1.62	0.18	5	reviewed	nc	nc
1/26/1983	6:48:33	36.0181667	-120.5725	5.099	2.96	md	28	63	0.05405	0.07	nc	nc1086820	2016-12-10T19:59:40.615Z	18 km NW of Parkfield, California	earthquake	0.21	0.51	0.17	25	reviewed	nc	nc
1/20/1983	8:24:21	35.962	-120.0963333	12.584	2.36	md	34	190	0.1829	0.09	nc	nc1086331	2016-12-10T19:29:37.030Z	5 km SSE of Avenal, California	earthquake	0.54	0.58	0.06	21	reviewed	nc	nc
1/8/1983	21:56:46	35.005	-118.966	4.842	2.46	mc	15	99		0.27	ci	ci501804	2016-02-03T03:55:40.810Z	8km NNW of Grapevine, CA	earthquake	0.86	17.07		12	reviewed	ci	ci
1/3/1983	9:20:32	35.027	-119.056	4.842	2.09	mc	11	123		0.2	ci	ci501198	2016-02-02T18:36:21.090Z	15km NW of Grapevine, CA	earthquake	0.58	14.98		7	reviewed	ci	ci
1/2/1983	12:53:32	35.9948333	-120.0311667	5.185	2.41	md	28	246	0.2459	0.11	nc	nc1083784	2016-12-10T16:52:42.299Z	6 km WSW of Kettleman City, California	earthquake	0.66	0.98	0.18	20	reviewed	nc	nc
12/23/1982	13:51:59	35.8855	-120.4255	4.985	3.08	md	34	94	0.01081	0.08	nc	nc1083399	2016-12-12T15:27:03.380Z	1 km SSE of Parkfield, California	earthquake	0.2	0.3	0.13	39	reviewed	nc	nc
12/19/1982	20:15:02	35.049	-118.982	-0.32	2.2	mc	0	136.4		0.183	ci	ci500332	2016-02-03T00:57:36.090Z	13km NNW of Grapevine, CA	earthquake		4.175		7	reviewed	ci	ci
12/19/1982	9:38:49	35.8455	-120.3961667	6.321	3.03	md	36	55	0.00991	0.07	nc	nc1083239	2016-12-12T15:14:09.790Z	6 km SSE of Parkfield, California	earthquake	0.18	0.31	0.13	50	reviewed	nc	nc
12/13/1982	23:36:42	35.909	-120.4533333	6.024	2.59	md	33	72	0.04144	0.07	nc	nc1083059	2016-12-12T15:01:31.210Z	2 km WNW of Parkfield, California	earthquake	0.2	0.31	0.13	37	reviewed	nc	nc
12/13/1982	23:16:20	35.915	-120.4528333	7.04	2.14	md	28	75	0.04595	0.19	nc	nc1083058	2016-12-12T15:01:24.794Z	2 km NW of Parkfield, California	earthquake	0.41	0.66	0.15	18	reviewed	nc	nc
12/10/1982	17:47:30	35.026	-119.209	13.337	2.37	mc	0	140.2		0.111	ci	ci503978	2016-02-02T22:19:27.980Z	18km ESE of Maricopa, CA	earthquake		4.76		5	reviewed	ci	ci
12/6/1982	17:54:19	35.288	-119.269	4.738	2.59	mc	0	114.9		0.2	ci	ci503944	2016-02-03T03:41:44.970Z	16km SW of Rosedale, CA	earthquake				15	reviewed	ci	ci
12/6/1982	5:26:08	34.852	-120.447	1.372	2.72	mc	0	221.8		0.349	ci	ci503934	2016-02-02T23:38:01.510Z	2km SW of Orcutt, CA	earthquake		9.936		6	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/5/1982	14:03:40	35.288	-119.324	4.797	2.49	mc	0	135.3		0.361	ci	ci503924	2016-02-03T03:41:43.910Z	18km SE of Buttonwillow, CA	earthquake				16	reviewed	ci	ci
12/3/1982	17:13:09	35.253	-120.277	0.455	2.86	mc	0	226.3		0.167	ci	ci503841	2016-02-03T03:41:40.670Z	27km WSW of Simmler, CA	earthquake		6.662		12	reviewed	ci	ci
11/12/1982	21:57:11	35.3186667	-120.5555	8.211	3	ml	37	101	0.1153	0.08	nc	nc1081804	2016-12-12T13:33:43.750Z	9 km SSE of Santa Margarita, California	earthquake	0.24	0.87		0	reviewed	nc	nc
11/11/1982	23:19:09	35.713	-119.601	4.833	3.09	ml	0	122.5		0.652	ci	ci510172	2016-02-02T22:17:38.670Z	22km SSW of Alpaugh, CA	earthquake				4	reviewed	ci	ci
11/7/1982	8:50:11	36.0585	-120.6145	5.299	2.42	md	41	55	0.01802	0.08	nc	nc1081522	2016-12-12T13:14:34.990Z	24 km NW of Parkfield, California	earthquake	0.18	0.37	0.18	53	reviewed	nc	nc
11/6/1982	22:36:14	34.857	-120.468	5.052	2.78	mc	0	234.3		0.371	ci	ci503381	2016-02-03T00:56:04.200Z	3km WSW of Orcutt, CA	earthquake				8	reviewed	ci	ci
11/6/1982	0:47:22	34.903	-119.038	7.708	2.35	mc	0	116		0.198	ci	ci503355	2016-02-02T20:58:25.430Z	11km WSW of Grapevine, CA	earthquake		9.787		24	reviewed	ci	ci
11/4/1982	18:13:11	35.255	-119.37	0.709	2.19	mc	0	153.1		0.201	ci	ci503286	2016-02-03T03:39:28.130Z	15km NNE of Taft, CA	earthquake		12.71		8	reviewed	ci	ci
11/4/1982	6:15:43	35.576	-119.635	4.833	2.72	mc	0	173		0.662	ci	ci512615	2016-02-02T23:37:22.320Z	25km NW of Buttonwillow, CA	earthquake				16	reviewed	ci	ci
10/29/1982	14:17:03	36.2711667	-120.43	8.925	2.09	md	22	170	0.07387	0.09	nc	nc1081104	2016-12-12T12:47:23.268Z	15 km NNW of Coalinga, California	earthquake	0.45	0.32	0.2	31	reviewed	nc	nc
10/27/1982	0:46:23	35.473	-120.003	5.054	2.51	mc	0	246.3	0.05048	0.336	ci	ci511959	2016-02-02T18:18:57.100Z	14km N of Simmler, CA	earthquake				12	reviewed	ci	ci
10/25/1982	19:12:58	34.913	-119.022	7.1	2.61	mc	0	90.9		0.355	ci	ci511893	2016-02-03T02:18:08.080Z	9km WSW of Grapevine, CA	earthquake		7.56		31	reviewed	ci	ci
10/19/1982	13:44:00	35.036	-119.05	-1.356	2.67	mc	0	109.7		0.256	ci	ci511764	2016-02-03T02:17:49.120Z	15km NW of Grapevine, CA	earthquake		3.606		24	reviewed	ci	ci
10/19/1982	0:49:42	35.523	-119.106	4.738	3.54	ml	0	45.4		0.388	ci	ci511740	2016-02-03T00:54:43.600Z	14km NW of Oildale, CA	earthquake				14	reviewed	ci	ci
10/12/1982	1:42:38	34.965	-119.056	14.174	2.41	mc	0	181.6		0.234	ci	ci508819	2016-02-02T23:30:20.520Z	12km WNW of Grapevine, CA	earthquake		1.553		12	reviewed	ci	ci
10/11/1982	23:22:03	36.001	-120.5625	3.817	2.25	md	38	63	0.07297	0.08	nc	nc1080190	2016-12-12T11:46:17.422Z	16 km NW of Parkfield, California	earthquake	0.19	0.48	0.11	34	reviewed	nc	nc
10/9/1982	19:09:58	34.912	-120.407	5.052	2.81	mc	0	224.9		0.468	ci	ci511229	2016-02-02T22:15:10.350Z	5km SSE of Santa Maria, CA	earthquake				8	reviewed	ci	ci
10/7/1982	12:29:36	36.0381667	-120.59	6.853	2.43	md	43	122	0.03153	0.1	nc	nc1080049	2016-12-12T11:36:58.860Z	20 km NW of Parkfield, California	earthquake	0.24	0.46	0.13	31	reviewed	nc	nc
10/1/1982	8:28:19	35.088	-119.058	4.617	2.05	mc	0	104.2		0.186	ci	ci508633	2016-02-02T23:30:07.410Z	20km NW of Grapevine, CA	earthquake				5	reviewed	ci	ci
9/28/1982	0:39:12	35.7911667	-120.0043333	9.407	2.87	md	36	187	0.1892	0.14	nc	nc1079652	2016-12-12T11:11:28.270Z	24 km S of Kettleman City, California	earthquake	0.61	0.63	0.19	40	reviewed	nc	nc
9/27/1982	23:55:42	34.916	-120.316	5.052	3.3	mc	0	198.3		0.546	ci	ci508315	2016-02-02T22:10:45.490Z	11km ESE of Santa Maria, CA	earthquake				18	reviewed	ci	ci
9/27/1982	23:55:38	35.047	-120.56	5.041	3.07	mc	0	264.8		0.365	ci	ci508313	2016-02-03T00:49:33.260Z	8km SE of Oceano, CA	earthquake				17	reviewed	ci	ci
9/26/1982	12:00:30	35.7911667	-120.0108333	9.869	2.35	md	25	202	0.1847	0.18	nc	nc1079596	2016-12-12T11:07:53.739Z	24 km S of Kettleman City, California	earthquake	0.82	1.29	0.22	25	reviewed	nc	nc
9/26/1982	5:20:41	34.886	-120.319	5.052	3.3	mc	0	196.4		0.398	ci	ci508246	2016-02-03T02:12:19.940Z	11km ENE of Orcutt, CA	earthquake				23	reviewed	ci	ci
9/24/1982	2:43:49	34.876	-120.388	5.052	3.29	ml	0	168.1		0.429	ci	ci508123	2016-02-02T18:12:50.540Z	4km ENE of Orcutt, CA	earthquake				9	reviewed	ci	ci
9/24/1982	1:21:25	34.906	-120.34	5.052	3.07	ml	0	202.2		0.552	ci	ci508119	2016-02-02T23:29:09.700Z	10km ENE of Orcutt, CA	earthquake				6	reviewed	ci	ci
9/23/1982	21:13:41	34.901	-120.349	5.052	2.98	mc	0	210.3		0.399	ci	ci508111	2016-02-02T19:33:09.340Z	9km ENE of Orcutt, CA	earthquake				12	reviewed	ci	ci
9/23/1982	21:09:09	34.894	-120.252	5.052	2.05	mc	0	235.5		0.15	ci	ci508110	2016-02-02T19:33:08.800Z	17km N of Los Alamos, CA	earthquake				6	reviewed	ci	ci
9/23/1982	20:55:07	34.881	-120.478	4.894	2.13	mc	0	266.9		0.489	ci	ci508096	2016-02-02T22:10:22.900Z	4km WNW of Orcutt, CA	earthquake				5	reviewed	ci	ci
9/23/1982	20:51:24	34.905	-120.439	5.052	3.26	mc	0	221.6		0.529	ci	ci508094	2016-02-02T23:29:06.380Z	4km N of Orcutt, CA	earthquake				17	reviewed	ci	ci
9/23/1982	20:42:51	34.881	-120.371	5.052	3.78	ml	0	165.1		0.388	ci	ci508090	2016-02-02T18:12:48.610Z	6km ENE of Orcutt, CA	earthquake				12	reviewed	ci	ci
9/20/1982	17:33:35	35.827	-119.56	4.993	3.11	mc	0	134.2		0.475	ci	ci507942	2016-02-02T23:28:55.800Z	9km SW of Alpaugh, CA	earthquake				20	reviewed	ci	ci
9/18/1982	7:04:47	36.0531667	-120.6068333	7.359	2.41	md	37	46	0.01802	0.1	nc	nc1079088	2016-12-12T10:34:54.160Z	23 km NW of Parkfield, California	earthquake	0.25	0.5	0.13	36	reviewed	nc	nc
9/15/1982	13:42:14	35.069	-119.07	4.614	2.67	mc	0	93.3		0.514	ci	ci507704	2016-02-02T22:09:48.350Z	19km NW of Grapevine, CA	earthquake				26	reviewed	ci	ci
9/4/1982	19:03:02	35.937	-119.195	5.018	2.86	mc	0	161.3		0.336	ci	ci507336	2016-02-02T18:11:25.630Z	9km ESE of Pixley, CA	earthquake				19	reviewed	ci	ci
8/23/1982	22:30:34	35.006	-119.174	4.617	2.78	ml	0	97		0.29	ci	ci506861	2016-02-02T18:09:49.090Z	18km N of Pine Mountain Club, CA	earthquake				6	reviewed	ci	ci
8/17/1982	17:16:01	35.805	-119.491	4.993	2.9	mc	0	212.1		0.34	ci	ci506661	2016-02-03T03:29:31.080Z	9km S of Alpaugh, CA	earthquake				16	reviewed	ci	ci
8/15/1982	16:03:37	35.514	-118.767	4.641	2.34	mc	0	313.4		0.29	ci	ci506578	2016-02-03T03:29:22.520Z	25km ENE of Oildale, CA	earthquake				6	reviewed	ci	ci
8/7/1982	8:37:35	35.03	-119.068	4.614	2.21	mc	0	126.5		0.233	ci	ci506246	2016-02-03T02:08:03.450Z	16km NW of Grapevine, CA	earthquake				5	reviewed	ci	ci
8/5/1982	19:51:15	35.356	-118.838	4.759	2.82	mc	0	128.7		0.114	ci	ci506204	2016-02-02T22:06:27.510Z	13km NNE of Lamont, CA	earthquake				21	reviewed	ci	ci
8/2/1982	15:53:31	36.0396667	-120.5898333	4.979	2	md	31	72	0.02973	0.07	nc	nc1076854	2016-12-12T08:04:32.543Z	21 km NW of Parkfield, California	earthquake	0.19	0.43	0.09	26	reviewed	nc	nc
8/2/1982	11:02:15	36.0386667	-120.5933333	3.899	2.03	md	37	70	0.03063	0.05	nc	nc1076849	2016-12-12T08:04:12.100Z	21 km NW of Parkfield, California	earthquake	0.15	0.34	0.07	30	reviewed	nc	nc
7/29/1982	16:45:43	34.971	-119.12	0.491	2.29	mc	0	130		0.185	ci	ci505858	2016-02-03T03:28:09.560Z	14km N of Pine Mountain Club, CA	earthquake		4.17		6	reviewed	ci	ci
7/28/1982	2:48:44	36.0261667	-119.9856667	17.717	2.19	md	23	262	0.3018	0.16	nc	nc1076676	2016-12-12T07:53:00.326Z	2 km NW of Kettleman City, California	earthquake	2.63	1.1	0.21	26	reviewed	nc	nc
7/22/1982	14:47:50	35.085	-119.135	4.573	2.22	mc	0	155.1		0.36	ci	ci505595	2016-02-03T00:44:15.010Z	24km E of Maricopa, CA	earthquake				10	reviewed	ci	ci
7/21/1982	9:40:47	35.197	-119.069	4.738	2.39	mc	0	127.4		0.198	ci	ci505559	2016-02-02T19:28:09.390Z	16km WSW of Lamont, CA	earthquake				13	reviewed	ci	ci
7/21/1982	9:28:18	35.383	-119.404	4.772	3.18	ml	0	112.4		0.378	ci	ci505543	2016-02-02T18:07:58.950Z	6km ESE of Buttonwillow, CA	earthquake				9	reviewed	ci	ci
7/19/1982	23:21:42	36.0383333	-119.9446667	15.02	2.73	md	39	138	0.3369	0.17	nc	nc1076390	2016-12-12T07:34:10.837Z	3 km NNE of Kettleman City, California	earthquake	0.42	0.83	0.23	35	reviewed	nc	nc
7/15/1982	7:30:02	35.696	-119.399	4.993	2.36	mc	0	190.4		0.158	ci	ci505382	2016-02-02T19:27:48.580Z	12km NNW of Wasco, CA	earthquake				11	reviewed	ci	ci
7/15/1982	6:30:03	35.714	-119.615	4.954	2.7	mc	0	136.8		0.159	ci	ci505375	2016-02-02T23:24:15.620Z	22km SSW of Alpaugh, CA	earthquake				11	reviewed	ci	ci
7/10/1982	1:48:53	35.7778333	-120.3283333	7.668	2.43	md	34	59	0.05676	0.08	nc	nc1076090	2016-12-12T07:14:23.200Z	14 km NNE of Shandon, California	earthquake	0.19	0.31	0.16	29	reviewed	nc	nc
7/6/1982	3:22:55	35.027	-118.995	4.735	2.66	mc	0	102.6		0.257	ci	ci504986	2016-02-02T23:23:42.880Z	11km NNW of Grapevine, CA	earthquake				32	reviewed	ci	ci
7/3/1982	19:08:38	35.171	-118.899	4.756	2.2	mc	0	107.9		0.256	ci	ci504868	2016-02-02T23:23:26.380Z	8km WSW of Arvin, CA	earthquake				6	reviewed	ci	ci
7/3/1982	17:27:26	35.176	-118.889	4.839	2.14	mc	0	119.1		0.234	ci	ci504866	2016-02-02T22:04:33.330Z	7km WSW of Arvin, CA	earthquake				9	reviewed	ci	ci
6/27/1982	5:20:01	35.9668333	-120.5145	8.581	3.3	ml	51	77	0.03604	0.06	nc	nc1075720	2016-12-12T06:49:32.630Z	10 km NW of Parkfield, California	earthquake	0.15	0.36		0	reviewed	nc	nc
6/27/1982	5:09:23	35.9681667	-120.5195	7.649	2.48	md	40	75	0.0964	0.05	nc	nc1075719	2016-12-12T06:49:23.540Z	10 km NW of Parkfield, California	earthquake	0.17	0.53	0.12	44	reviewed	nc	nc
6/25/1982	3:58:23	35.9731667	-120.5211667	7.941	4	ml	53	76	0.04234	0.05	nc	nc1075660	2016-12-12T06:45:27.880Z	11 km NW of Parkfield, California	earthquake	0.15	0.35		0	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/24/1982	12:27:46	35.9726667	-120.5228333	7.742	2.57	md	38	75	0.04234	0.05	nc	nc1075644	2016-12-12T06:44:24.910Z	11 km NW of Parkfield, California	earthquake	0.18	0.41	0.13	28	reviewed	nc	nc
6/22/1982	4:42:48	35.054	-119.067	4.611	2.84	mc	0	111.6		0.234	ci	ci504362	2016-02-02T19:31:13.670Z	18km NW of Grapevine, CA	earthquake				21	reviewed	ci	ci
6/22/1982	4:19:37	34.888	-120.363	5.052	3.26	mc	0	205.8		0.396	ci	ci504357	2016-02-03T00:47:21.640Z	7km ENE of Orcutt, CA	earthquake				25	reviewed	ci	ci
6/10/1982	14:07:26	35.19	-119.414	-0.57	2.45	mc	0	155.4		0.192	ci	ci532313	2016-02-02T22:16:42.840Z	6km NE of Taft, CA	earthquake		4.839		10	reviewed	ci	ci
6/10/1982	4:00:50	36.2153333	-120.2185	9.018	2.13	md	33	229	0.1063	0.12	nc	nc1075210	2016-12-12T06:15:33.920Z	10 km W of Huron, California	earthquake	0.65	0.39	0.17	32	reviewed	nc	nc
6/9/1982	5:27:49	35.049	-119.085	-1.239	2.79	mc	0	100.4		0.194	ci	ci532286	2016-02-02T19:39:31.880Z	18km NW of Grapevine, CA	earthquake		4.832		30	reviewed	ci	ci
6/7/1982	9:45:54	36.2201667	-120.1915	9.354	2.4	md	49	141	0.1261	0.16	nc	nc1075136	2016-12-12T06:11:02.890Z	8 km WNW of Huron, California	earthquake	0.3	0.61	0.2	50	reviewed	nc	nc
6/1/1982	2:49:29	35.079	-119.023	4.735	2.96	ml	0	102.3		0.223	ci	ci531868	2016-02-02T19:38:48.440Z	17km NNW of Grapevine, CA	earthquake				9	reviewed	ci	ci
6/1/1982	2:47:56	35.091	-119.029	4.565	2.84	mc	0	144.9		0.227	ci	ci531867	2016-02-02T23:34:39.960Z	19km NNW of Grapevine, CA	earthquake				10	reviewed	ci	ci
6/1/1982	2:47:25	35.082	-119.024	4.735	2.74	ml	0	102.6		0.28	ci	ci531866	2016-02-02T23:34:39.330Z	18km NNW of Grapevine, CA	earthquake				6	reviewed	ci	ci
5/29/1982	11:14:40	35.374	-118.949	4.798	2.25	mc	0	173.9		0.426	ci	ci531537	2016-02-03T02:16:24.580Z	8km ENE of Bakersfield, CA	earthquake				6	reviewed	ci	ci
5/29/1982	7:23:51	35.032	-118.997	-1.03	2.74	mc	0	90.4		0.163	ci	ci531532	2016-02-03T02:16:23.030Z	12km NNW of Grapevine, CA	earthquake		2.056		20	reviewed	ci	ci
5/16/1982	2:18:12	35.326	-118.957	4.759	2.5	mc	0	130.5		0.237	ci	ci530781	2016-02-03T00:52:40.340Z	8km ESE of Bakersfield, CA	earthquake				8	reviewed	ci	ci
5/11/1982	4:09:22	35.46	-119.232	4.754	2.47	mc	0	135.5		0.358	ci	ci530524	2016-02-02T18:15:36.230Z	6km SE of Shafter, CA	earthquake				9	reviewed	ci	ci
5/8/1982	5:33:14	35.6346667	-120.7588333	4.678	2.18	md	25	67	0.04955	0.07	nc	nc1074276	2016-12-12T05:13:49.871Z	6 km W of Paso Robles, California	earthquake	0.22	0.51	0.2	26	reviewed	nc	nc
5/8/1982	1:20:32	35.112	-119.087	4.611	2.56	mc	0	118.1		0.353	ci	ci530325	2016-02-02T20:54:18.540Z	23km SW of Lamont, CA	earthquake				11	reviewed	ci	ci
5/7/1982	22:26:33	35.6335	-120.7626667	5.958	3.07	md	31	67	0.05225	0.09	nc	nc1074255	2016-12-12T05:12:38.630Z	6 km W of Paso Robles, California	earthquake	0.27	0.87	0.08	31	reviewed	nc	nc
5/7/1982	17:04:19	35.13	-118.859	-0.901	2.66	mc	0	101.4		0.229	ci	ci530296	2016-02-02T19:35:43.280Z	9km SSW of Arvin, CA	earthquake		2.492		32	reviewed	ci	ci
5/7/1982	0:39:00	34.859	-120.481	4.872	2.21	mc	0	285.4		0.415	ci	ci530205	2016-02-02T20:54:11.020Z	4km W of Orcutt, CA	earthquake				6	reviewed	ci	ci
5/2/1982	1:12:39	34.923	-120.467	5.052	2.16	mc	0	238.7		0.456	ci	ci529930	2016-02-02T23:30:39.860Z	4km SW of Santa Maria, CA	earthquake				7	reviewed	ci	ci
4/30/1982	6:43:36	34.92	-120.414	5.052	3.77	ml	0	172.3		0.618	ci	ci529827	2016-02-02T19:34:18.250Z	4km SSE of Santa Maria, CA	earthquake				13	reviewed	ci	ci
4/29/1982	0:03:50	36.0023333	-119.9863333	0.182	2.28	md	17	256	0.2802	0.06	nc	nc1074028	2016-12-12T04:57:57.385Z	2 km WSW of Kettleman City, California	earthquake	1.15	3.39	0.31	17	reviewed	nc	nc
4/22/1982	5:18:10	35.48	-118.723	4.673	2.45	mc	0	120.6		0.158	ci	ci529077	2016-02-03T02:11:40.270Z	24km WSW of Bodfish, CA	earthquake				17	reviewed	ci	ci
4/21/1982	21:19:30	35.02	-119.336	4.617	3.14	ml	0	86.2		0.397	ci	ci529062	2016-02-02T19:32:48.040Z	7km SE of Maricopa, CA	earthquake				7	reviewed	ci	ci
4/19/1982	23:34:41	36.2453333	-120.3465	10.185	2.05	md	13	135	0.005405	0.04	nc	nc1073826	2016-12-12T04:45:12.744Z	11 km N of Coalinga, California	earthquake	0.68	0.53	0.28	13	reviewed	nc	nc
4/19/1982	14:15:46	35.9771667	-119.8193333	19.054	2.31	md	15	282	0.391	0.13	nc	nc1073817	2016-12-12T04:44:41.926Z	13 km ESE of Kettleman City, California	earthquake	4.35	0.89	0.16	7	reviewed	nc	nc
4/7/1982	0:17:54	35.3311667	-120.716	12.386	2.22	md	6	294	0.0955	0.02	nc	nc1073534	2016-12-12T04:25:24.017Z	7 km NW of San Luis Obispo, California	earthquake	4.98	1.75	0.29	7	reviewed	nc	nc
4/6/1982	16:34:06	36.0398333	-120.5986667	-0.142	2	md	18	122	0.02883	0.13	nc	nc1073527	2016-12-12T04:24:58.311Z	21 km NW of Parkfield, California	earthquake	0.32	1.09	0.15	9	reviewed	nc	nc
4/5/1982	19:14:56	35.8323333	-120.5975	13.603	2.04	md	19	64	0.07207	0.06	nc	nc1073508	2016-12-12T04:23:43.756Z	12 km NE of San Miguel, California	earthquake	0.22	0.96	0.34	23	reviewed	nc	nc
4/5/1982	19:12:15	35.8321667	-120.5953333	11	2.32	md	19	88	0.1027	0.03	nc	nc1073507	2016-12-12T04:23:39.977Z	12 km NE of San Miguel, California	earthquake	0.23	0.58	0.2	18	reviewed	nc	nc
4/4/1982	10:43:16	34.958	-119.318	4.516	2.24	mc	0	120.7		0.176	ci	ci528183	2016-02-02T19:31:20.430Z	14km SE of Maricopa, CA	earthquake				6	reviewed	ci	ci
4/4/1982	10:40:35	34.961	-119.335	-0.434	2.18	mc	0	120.7		0.166	ci	ci528184	2016-02-02T19:31:20.920Z	12km SSE of Maricopa, CA	earthquake		0.106		13	reviewed	ci	ci
4/3/1982	14:04:33	36.1203333	-120.4323333	7.399	2.86	md	41	125	0.02613	0.09	nc	nc1073455	2016-12-12T04:20:33.936Z	6 km WSW of Coalinga, California	earthquake	0.18	0.26	0.15	54	reviewed	nc	nc
4/3/1982	0:13:58	35.133	-118.99	4.57	2.07	mc	0	147.4		0.292	ci	ci528117	2016-02-02T18:10:50.700Z	16km SSW of Lamont, CA	earthquake				7	reviewed	ci	ci
4/2/1982	9:02:51	36.0113333	-119.8283333	13.664	2.34	md	22	222	0.3991	0.16	nc	nc1073428	2016-12-12T04:18:50.280Z	12 km E of Kettleman City, California	earthquake	1.76	1.12	0.18	19	reviewed	nc	nc
4/1/1982	13:15:04	35.117	-118.976	-0.43	2.48	mc	0	115.2		0.252	ci	ci528036	2016-02-02T22:08:23.290Z	17km SSW of Lamont, CA	earthquake				14	reviewed	ci	ci
4/1/1982	13:14:20	35.13	-118.979	-0.43	2.44	mc	0	117.1		0.152	ci	ci528037	2016-02-02T23:27:11.080Z	16km SSW of Lamont, CA	earthquake				16	reviewed	ci	ci
4/1/1982	13:14:16	35.137	-118.991	4.57	2.67	mc	0	236.2	0.2752	0.201	ci	ci528038	2016-02-03T03:30:47.720Z	15km SSW of Lamont, CA	earthquake				9	reviewed	ci	ci
3/20/1982	12:25:11	36.0685	-120.6301667	1.559	2.2	md	33	78	0.02793	0.1	nc	nc1073046	2016-12-12T03:52:56.320Z	25 km ENE of San Ardo, California	earthquake	0.2	0.76	0.15	27	reviewed	nc	nc
3/19/1982	0:04:53	35.023	-118.943	9.299	2.46	mc	0	107.6		0.167	ci	ci107558	2016-02-02T20:48:44.290Z	9km N of Grapevine, CA	earthquake		5.045		9	reviewed	ci	ci
3/18/1982	3:26:51	35.126	-119.002	4.57	2.07	mc	0	185.4		0.214	ci	ci107519	2016-02-02T23:26:11.090Z	17km SSW of Lamont, CA	earthquake				9	reviewed	ci	ci
3/16/1982	23:26:10	35.125	-119.001	4.735	2.2	mc	0	133.4		0.192	ci	ci107442	2016-02-02T18:09:35.120Z	17km SSW of Lamont, CA	earthquake				5	reviewed	ci	ci
3/15/1982	19:39:08	35.134	-118.998	4.57	2.42	mc	0	118.5		0.226	ci	ci107385	2016-02-02T20:48:25.070Z	16km SSW of Lamont, CA	earthquake				6	reviewed	ci	ci
3/14/1982	9:58:50	35.1918333	-120.637	-0.344	3.5	ml	29	175	0.1171	0.38	nc	nc1072891	2016-12-12T03:42:31.082Z	2 km WSW of Edna, California	earthquake	0.68	2.99		0	reviewed	nc	nc
3/13/1982	19:39:04	35.123	-118.98	4.57	2.62	mc	0	116.1		0.265	ci	ci107335	2016-02-02T19:29:49.880Z	16km SSW of Lamont, CA	earthquake				23	reviewed	ci	ci
3/13/1982	15:42:10	35.121	-118.985	4.57	2.02	mc	0	115.9		0.31	ci	ci107322	2016-02-02T23:25:53.300Z	17km SSW of Lamont, CA	earthquake				11	reviewed	ci	ci
3/13/1982	12:35:09	35.126	-118.983	4.735	2.37	mc	0	106.2		0.229	ci	ci107320	2016-02-03T00:45:37.020Z	16km SSW of Lamont, CA	earthquake				15	reviewed	ci	ci
3/12/1982	5:55:35	36.0666667	-120.6301667	1.89	2.22	md	30	49	0.02793	0.08	nc	nc1072844	2016-12-12T03:39:21.823Z	25 km ENE of San Ardo, California	earthquake	0.18	0.71	0.1	24	reviewed	nc	nc
3/11/1982	8:47:13	35.1325	-120.6206667	7.411	2.2	md	4	238	0.1234	0.1	nc	nc1072828	2016-12-12T03:38:22.049Z	1 km N of Grover Beach, California	earthquake	3.37	9.6	0.03	3	reviewed	nc	nc
3/11/1982	0:01:49	35.12	-118.987	4.735	2.29	mc	0	115.9		0.239	ci	ci107147	2016-02-02T22:06:54.710Z	17km SSW of Lamont, CA	earthquake				6	reviewed	ci	ci
3/9/1982	0:50:46	35.139	-118.989	4.735	2.04	mc	0	118.8		0.368	ci	ci107041	2016-02-02T23:25:24.880Z	15km SSW of Lamont, CA	earthquake				11	reviewed	ci	ci
3/4/1982	0:40:22	35.9978333	-120.5541667	5.819	2.23	md	28	65	0.07477	0.28	nc	nc1072616	2016-12-12T03:24:51.209Z	15 km NW of Parkfield, CA	earthquake	0.59	1.82	0.16	28	reviewed	nc	nc
3/2/1982	17:15:01	35.124	-118.996	4.57	2.14	mc	0	184.1		0.21	ci	ci106707	2016-02-02T22:06:04.980Z	17km SSW of Lamont, CA	earthquake				5	reviewed	ci	ci
3/1/1982	19:49:41	35.539	-120.114	4.915	2.12	mc	0	304.6		0.211	ci	ci106651	2016-02-03T03:28:14.070Z	23km NNW of Simmler, CA	earthquake				6	reviewed	ci	ci
3/1/1982	16:06:25	35.4728333	-120.769	4.72	2.1	md	23	113	0.05315	0.07	nc	nc1072547	2016-12-12T03:20:34.182Z	9 km WSW of Atascadero, California	earthquake	0.3	0.6	0.2	22	reviewed	nc	nc
3/1/1982	12:42:21	35.534	-120.144	4.785	2.94	mh	0	311	0.1788	0.186	ci	ci3008993	2016-02-03T03:30:01.930Z	24km NNW of Simmler, CA	earthquake				10	reviewed	ci	ci
2/25/1982	14:20:02	36.0043333	-120.5578333	4.056	2.15	md	25	77	0.07207	0.1	nc	nc1072433	2016-12-12T03:13:06.426Z	16 km NW of Parkfield, California	earthquake	0.31	0.65	0.08	26	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
2/18/1982	12:50:30	35.5701667	-120.8523333	3.952	2.34	md	28	94	0.07027	0.07	nc	nc1072248	2016-12-12T03:00:48.558Z	13 km W of Templeton, California	earthquake	0.23	0.61	0.18	25	reviewed	nc	nc
2/16/1982	14:12:57	35.087	-119.098	4.611	2.21	mc	0	196.1		0.277	ci	ci105904	2016-02-02T20:45:14.880Z	22km NW of Grapevine, CA	earthquake				5	reviewed	ci	ci
2/12/1982	3:50:37	35.3418333	-120.8691667	5.206	2.19	md	12	194	0.1288	0.07	nc	nc1072036	2016-12-12T02:46:23.003Z	3 km SSW of Morro Bay, California	earthquake	0.6	1.29	0.3	10	reviewed	nc	nc
2/10/1982	14:35:14	35.023	-119.121	-0.389	2.77	ml	0	67.4		0.177	ci	ci105662	2016-02-03T02:05:50.990Z	20km WNW of Grapevine, CA	earthquake				10	reviewed	ci	ci
2/2/1982	4:56:45	35.011	-118.985	4.405	2.29	mc	0	130.2		0.19	ci	ci105304	2016-02-02T19:26:15.480Z	9km NNW of Grapevine, CA	earthquake				12	reviewed	ci	ci
1/25/1982	12:14:29	36.0313333	-119.8686667	10.287	2.66	md	28	214	0.3883	0.14	nc	nc1071536	2016-12-12T02:15:02.020Z	8 km ENE of Kettleman City, California	earthquake	0.97	1.33	0.17	36	reviewed	nc	nc
1/23/1982	11:53:46	35.0813333	-120.6145	-0.175	3.17	md	12	300	0.2045	0.26	nc	nc1071470	2016-12-12T02:10:47.746Z	1 km S of Oceano, California	earthquake	13.29	9.67	0.27	5	reviewed	nc	nc
1/14/1982	6:56:02	35.063	-119.176	4.611	2.73	mc	0	103.2		0.243	ci	ci104627	2016-02-03T00:41:40.860Z	20km E of Maricopa, CA	earthquake				31	reviewed	ci	ci
1/12/1982	15:09:12	35.02	-119.141	4.611	2.58	mc	0	98.2		0.165	ci	ci104561	2016-02-02T22:03:33.400Z	19km N of Pine Mountain Club, CA	earthquake				24	reviewed	ci	ci
12/31/1981	12:44:19	36.2545	-119.7701667	12.058	2.47	md	24	102	0.5631	0.38	nc	nc1070846	2016-12-13T08:32:27.319Z	5 km SSE of Lemoore, California	earthquake	1.08	1.8	0.25	24	reviewed	nc	nc
12/26/1981	9:58:47	34.9943333	-119.1788333	4.701	2.3	mc	21	128		0.35	ci	ci103912	2016-02-02T21:13:52.830Z	17km N of Pine Mountain Club, CA	earthquake	0.8	3.18		22	reviewed	ci	ci
12/15/1981	1:14:56	36.0383333	-120.5943333	4.428	2.54	md	39	68	0.03063	0.09	nc	nc1070312	2016-12-13T07:56:45.600Z	21 km NW of Parkfield, California	earthquake	0.2	0.46	0.12	39	reviewed	nc	nc
12/9/1981	20:47:35	35.05	-119.0001667	-0.755	2.21	mc	29	97		0.33	ci	ci102810	2016-02-02T23:51:13.360Z	14km NNW of Grapevine, CA	earthquake	0.48	0.95		26	reviewed	ci	ci
12/3/1981	21:45:37	34.9378333	-119.0861667	10.421	2.13	mc	25	88		0.18	ci	ci102567	2016-02-03T02:34:34.080Z	12km NNE of Pine Mountain Club, CA	earthquake	0.45	1.02		18	reviewed	ci	ci
12/3/1981	12:38:25	34.9048333	-119.026	9.328	2.15	mc	23	111		0.2	ci	ci102549	2016-02-02T23:51:03.360Z	10km WSW of Grapevine, CA	earthquake	0.58	0.92		17	reviewed	ci	ci
12/1/1981	13:08:26	35.0136667	-119.1653333	-1.259	2.79	ml	37	87		0.29	ci	ci102456	2016-04-02T09:16:57.288Z	19km N of Pine Mountain Club, CA	earthquake	0.43	1.17	0.132	11	reviewed	ci	ci
11/26/1981	10:58:44	36.0043333	-120.5593333	4.965	2.13	md	40	63	0.07117	0.05	nc	nc1069740	2016-12-13T07:19:51.090Z	16 km NW of Parkfield, California	earthquake	0.17	0.36	0.09	26	reviewed	nc	nc
11/20/1981	16:43:18	35.0213333	-119.1536667	4.651	2.86	ml	30	97		0.23	ci	ci527266	2016-04-02T06:21:04.946Z	20km N of Pine Mountain Club, CA	earthquake	0.49	3.47	0.03	5	reviewed	ci	ci
11/16/1981	19:06:16	35.029	-119.1568333	-1.389	2.89	ml	41	89		0.35	ci	ci527099	2016-04-01T23:53:16.923Z	20km N of Pine Mountain Club, CA	earthquake	0.47	1.42	0.137	9	reviewed	ci	ci
11/16/1981	12:01:45	35.0393333	-119.1473333	0.271	3.1	ml	37	99		0.27	ci	ci527085	2016-04-02T15:55:44.950Z	22km N of Pine Mountain Club, CA	earthquake	0.62	1.77	0.237	11	reviewed	ci	ci
11/14/1981	11:35:40	35.4408333	-119.3835	4.593	2.2	mc	11	163	0.3423	0.25	ci	ci527028	2016-02-02T23:50:39.180Z	9km ENE of Buttonwillow, CA	earthquake	0.98	24.04		11	reviewed	ci	ci
11/12/1981	8:30:56	35.0145	-119.1508333	2.171	2.19	mc	19	104		0.22	ci	ci526889	2016-02-03T03:53:58.430Z	19km N of Pine Mountain Club, CA	earthquake	0.55	1.18		16	reviewed	ci	ci
11/12/1981	8:06:55	35.0261667	-119.1613333	-1.376	2.1	mc	8	133		0.2	ci	ci526885	2016-02-02T19:54:14.810Z	20km N of Pine Mountain Club, CA	earthquake	0.6	1.3		5	reviewed	ci	ci
11/11/1981	21:56:41	35.02	-119.1365	-0.169	2.76	ml	25	97		0.2	ci	ci526913	2016-04-02T19:04:00.380Z	19km N of Pine Mountain Club, CA	earthquake	0.52	1.31	0.154	6	reviewed	ci	ci
11/11/1981	18:51:00	35.0233333	-119.156	4.611	2.68	ml	18	97		0.23	ci	ci526904	2016-04-02T12:49:06.533Z	20km N of Pine Mountain Club, CA	earthquake	0.68	17.08	0.348	5	reviewed	ci	ci
11/11/1981	12:52:42	35.0276667	-119.1233333	0.901	2.32	mc	27	97		0.24	ci	ci526866	2016-04-01T23:56:06.211Z	20km WNW of Grapevine, CA	earthquake	0.52	1.12		32	reviewed	ci	ci
11/11/1981	9:36:09	35.0338333	-119.1411667	-0.269	2.39	mc	34	89		0.27	ci	ci526862	2016-04-02T06:22:58.084Z	21km N of Pine Mountain Club, CA	earthquake	0.42	1.13		31	reviewed	ci	ci
11/11/1981	0:30:56	35.032	-119.1728333	-0.729	3.11	ml	28	89		0.4	ci	ci526840	2016-04-02T06:21:56.637Z	21km N of Pine Mountain Club, CA	earthquake	0.67	1.72	0.075	8	reviewed	ci	ci
11/11/1981	0:29:44	35.0305	-119.1665	-0.209	3.17	ml	51	43		0.4	ci	ci526839	2016-04-02T12:47:39.995Z	20km N of Pine Mountain Club, CA	earthquake	0.47	1.27	0.083	8	reviewed	ci	ci
11/11/1981	0:11:39	35.0176667	-119.1416667	0.021	2.23	mc	25	106		0.23	ci	ci526838	2016-02-03T02:33:59.510Z	19km N of Pine Mountain Club, CA	earthquake	0.53	1.34		26	reviewed	ci	ci
11/10/1981	23:44:18	35.0036667	-119.1695	3.071	2.17	mc	9	136	0.1614	0.22	ci	ci526835	2016-02-03T02:33:58.970Z	18km N of Pine Mountain Club, CA	earthquake	0.73	1.28		5	reviewed	ci	ci
11/10/1981	23:24:26	35.0303333	-119.1518333	-0.849	2.65	ml	42	78		0.29	ci	ci526833	2016-04-02T12:47:38.553Z	20km N of Pine Mountain Club, CA	earthquake	0.39	1.17	0.096	8	reviewed	ci	ci
11/10/1981	22:49:21	35.0413333	-119.149	-1.159	2.61	mc	32	100		0.3	ci	ci526830	2016-04-01T23:54:45.418Z	22km N of Pine Mountain Club, CA	earthquake	0.56	1.53		35	reviewed	ci	ci
11/10/1981	22:42:47	35.0215	-119.1843333	0.711	2.67	mc	30	114		0.28	ci	ci526825	2016-02-02T19:54:07.900Z	20km N of Pine Mountain Club, CA	earthquake	0.6	1.17		16	reviewed	ci	ci
11/10/1981	22:41:18	35.0403333	-119.1345	-0.635	2.65	ml	22	99		0.25	ci	ci526824	2016-02-03T04:12:05.010Z	22km WNW of Grapevine, CA	earthquake	0.63	1.3	0.222	8	reviewed	ci	ci
11/10/1981	22:37:04	35.0128333	-119.1778333	0.301	4.19	mc	59	60		0.47	ci	ci526823	2016-02-03T01:10:40.730Z	19km N of Pine Mountain Club, CA	earthquake	0.83	1.47		65	reviewed	ci	ci
11/10/1981	22:35:09	35.0091667	-119.1315	1.947	2.5	mh	7	173		0.23	ci	ci526985	2016-04-01T23:56:39.638Z	18km N of Pine Mountain Club, CA	earthquake	3.93	31.61		0	reviewed	ci	ci
11/10/1981	22:34:35	35.0106667	-119.1335	6.631	4.71	ml	107	30		0.42	ci	ci526822	2018-06-04T20:43:45.000Z	18km N of Pine Mountain Club, CA	earthquake	0.41	0.87	0.096	11	reviewed	ci	ci
11/4/1981	20:53:25	36.1541667	-120.2148333	7.628	2.35	md	28	230	0.1405	0.09	nc	nc1069194	2016-12-13T06:44:15.230Z	11 km WSW of Huron, California	earthquake	0.49	0.44	0.16	32	reviewed	nc	nc
10/30/1981	11:50:27	35.0276667	-119.2128333	5.281	2.41	mc	21	138	0.5164	0.24	ci	ci526314	2016-02-02T18:34:44.840Z	18km ESE of Maricopa, CA	earthquake	0.67	31.61		25	reviewed	ci	ci
10/28/1981	22:16:11	36.0091667	-120.5643333	5.105	2.75	md	36	62	0.06486	0.07	nc	nc1069009	2016-12-13T06:31:52.960Z	16 km NW of Parkfield, California	earthquake	0.16	0.4	0.1	20	reviewed	nc	nc
10/27/1981	17:52:53	35.795	-120.3461667	9.524	2.2	md	28	94	0.03604	0.06	nc	nc1068981	2016-12-13T06:30:05.556Z	13 km SE of Parkfield, California	earthquake	0.26	0.48	0.19	24	reviewed	nc	nc
10/11/1981	7:40:16	36.0006667	-120.5446667	11.266	2.15	md	36	69	0.07387	0.06	nc	nc1068517	2016-12-13T05:57:44.550Z	Central California	earthquake	0.17	0.41	0.2	25	reviewed	nc	nc
10/10/1981	21:40:50	35.0636667	-120.2231667	10.874	2.38	mc	12	47	0.166	0.37	ci	ci525351	2016-02-03T03:53:08.470Z	23km ENE of Santa Maria, CA	earthquake	1.04	1.26		7	reviewed	ci	ci
10/6/1981	5:57:12	36.2006667	-120.1998333	9.089	2.04	md	26	244	0.1252	0.17	nc	nc1068331	2016-12-13T05:44:11.640Z	8 km W of Huron, California	earthquake	1.21	0.81	0.2	24	reviewed	nc	nc
10/5/1981	21:30:09	35.8761667	-119.9326667	4.852	2.05	mc	8	95		0.38	ci	ci524332	2016-02-03T02:23:13.140Z	15km S of Kettleman City, CA	earthquake	1.31	31.61		7	reviewed	ci	ci
9/26/1981	14:03:53	36.017	-120.2938333	-0.34	2.98	md	16	224	0.09279	0.18	nc	nc1067949	2016-12-13T05:16:46.049Z	14 km SSE of Coalinga, California	earthquake	0.75	6.84	0.19	6	reviewed	nc	nc
9/26/1981	14:03:37	36.053	-120.2646667	8.561	2.13	md	35	192	0.1351	0.05	nc	nc1067948	2016-12-13T05:16:40.880Z	12 km SE of Coalinga, California	earthquake	0.29	0.38	0.05	5	reviewed	nc	nc
9/25/1981	22:23:14	36.2301667	-120.2093333	5.688	2.2	md	25	165	0.1099	0.11	nc	nc1067925	2016-12-13T05:15:03.770Z	Central California	earthquake	0.38	1.22	0.11	14	reviewed	nc	nc
8/30/1981	0:08:08	34.856	-120.4303333	4.933	2.72	mc	18	112		0.25	ci	ci521903	2016-02-02T21:10:27.170Z	1km SSE of Orcutt, CA	earthquake	1.52	31.61		11	reviewed	ci	ci
8/22/1981	13:26:09	36.1046667	-120.6591667	6.566	2.1	md	30	81	0.05315	0.05	nc	nc1067030	2016-12-13T04:12:52.744Z	24 km ENE of San Ardo, California	earthquake	0.15	0.41	0.23	35	reviewed	nc	nc
8/19/1981	19:22:37	35.7616667	-119.3226667	4.987	2.38	mc	13	95		0.24	ci	ci521369	2016-02-02T23:47:53.770Z	7km W of Delano, CA	earthquake	1.25	31.61		10	reviewed	ci	ci
8/14/1981	23:35:51	34.8188333	-120.3186667	-0.067	2.17	mc	14	97		0.19	ci	ci521157	2016-02-02T21:10:03.870Z	9km NNW of Los Alamos, CA	earthquake	0.95	1.27		6	reviewed	ci	ci
8/14/1981	4:15:42	36.1953333	-120.2336667	8.209	2.44	md	38	217	0.1036	0.15	nc	nc1066720	2016-12-13T03:52:24.630Z	11 km W of Huron, California	earthquake	0.73	0.49	0.14	24	reviewed	nc	nc
8/13/1981	15:57:34	36.2033333	-120.2191667	8.849	2.84	md	48	137	0.1099	0.14	nc	nc1066697	2016-12-13T03:50:53.610Z	10 km W of Huron, California	earthquake	0.36	0.44	0.13	43	reviewed	nc	nc
8/8/1981	8:05:13	36.0293333	-120.5835	4.838	2.52	md	41	69	0.04054	0.06	nc	nc1066442	2016-12-13T03:33:48.330Z	19 km NW of Parkfield, California	earthquake	0.17	0.35	0.2	69	reviewed	nc	nc
8/6/1981	11:10:12	34.7861667	-120.2728333	9.163	3.57	ml	27	81		0.44	ci	ci520552	2016-04-01T20:33:00.984Z	5km N of Los Alamos, CA	earthquake	1.41	1.68	0.14	13	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
7/13/1981	22:14:58	35.973	-120.312	4.932	2.39	mc	0	126.9		0.405	ci	ci519434	2016-02-02T19:50:30.340Z	14km NE of Parkfield, CA	earthquake				9	reviewed	ci	ci
7/5/1981	6:04:13	35.0676667	-119.064	-1.43	2.19	mc	16	101		0.3	ci	ci518917	2016-02-02T22:27:43.760Z	18km NW of Grapevine, CA	earthquake	0.66	1.85		19	reviewed	ci	ci
7/4/1981	7:42:18	36.196	-120.2428333	8.519	2.05	md	24	214	0.0973	0.07	nc	nc1065138	2016-12-13T02:05:41.675Z	12 km ENE of Coalinga, California	earthquake	0.48	0.33	0.15	31	reviewed	nc	nc
7/1/1981	17:35:46	35.8913333	-119.8748333	4.938	2.1	mh	6	265	0.459	0.28	ci	ci518567	2016-04-02T15:57:16.815Z	15km SSE of Kettleman City, CA	earthquake	3.4	31.61		0	reviewed	ci	ci
6/30/1981	3:52:30	35.1393333	-118.8941667	4.777	2.16	mc	9	105		0.21	ci	ci518398	2016-02-03T03:50:07.100Z	10km SW of Arvin, CA	earthquake	0.91	16.92		12	reviewed	ci	ci
6/28/1981	19:35:22	34.9798333	-119.1205	11.585	2.05	mc	12	125	0.1567	0.19	ci	ci518418	2016-02-02T21:08:41.900Z	15km N of Pine Mountain Club, CA	earthquake	0.63	1.32		7	reviewed	ci	ci
6/27/1981	16:18:06	35.8275	-120.0078333	13.504	2.14	md	12	223	0.191	0.11	nc	nc1064943	2016-12-13T01:52:08.640Z	20 km SSW of Kettleman City, California	earthquake	1.41	1.89	0.07	6	reviewed	nc	nc
6/19/1981	22:29:53	35.9055	-120.45	5.475	2.21	md	30	70	0.03964	0.06	nc	nc1064697	2016-12-13T01:35:18.380Z	1 km WNW of Parkfield, California	earthquake	0.19	0.31	0.11	27	reviewed	nc	nc
6/13/1981	4:48:23	36.1976667	-120.2311667	8.181	2.65	md	47	217	0.1045	0.11	nc	nc1064507	2016-12-13T01:21:43.990Z	11 km W of Huron, California	earthquake	0.47	0.26	0.06	17	reviewed	nc	nc
6/12/1981	8:36:09	35.9438333	-119.9768333	4.938	2	mh	6	272	0.5063	0.24	ci	ci517529	2016-02-03T02:28:56.830Z	7km S of Kettleman City, CA	earthquake	2.03	31.61		0	reviewed	ci	ci
6/12/1981	4:20:28	35.7096667	-119.8371667	4.781	2	mh	6	149	0.2903	0.36	ci	ci517526	2016-04-02T12:50:18.942Z	35km SSE of Kettleman City, CA	earthquake	1.87	31.61		0	reviewed	ci	ci
6/12/1981	4:18:01	35.858	-119.8648333	4.907	3	mh	13	98		0.58	ci	ci12161107	2016-02-02T21:08:08.720Z	19km SSE of Kettleman City, CA	earthquake	1.38	31.61		0	reviewed	ci	ci
6/12/1981	4:17:58	35.8163333	-119.8693333	4.955	2	mh	9	91		0.26	ci	ci517525	2016-02-03T04:11:39.970Z	23km SSE of Kettleman City, CA	earthquake	1.16	31.61	0.111	6	reviewed	ci	ci
6/12/1981	3:55:41	35.859	-119.9636667	9.144	2.27	md	19	170	0.2342	0.06	nc	nc1064467	2016-12-13T01:19:09.515Z	16 km S of Kettleman City, California	earthquake	1.27	1.08	0.15	10	reviewed	nc	nc
6/12/1981	3:36:32	35.8436667	-119.9028333	4.907	2.3	mh	8	162	0.4089	0.57	ci	ci517523	2016-04-02T19:04:46.798Z	19km SSE of Kettleman City, CA	earthquake	2.03	31.61		0	reviewed	ci	ci
6/8/1981	12:33:31	36.023	-120.5803333	4.33	2.24	md	41	56	0.04775	0.08	nc	nc1064357	2016-12-13T01:11:36.890Z	19 km NW of Parkfield, California	earthquake	0.17	0.41	0.22	51	reviewed	nc	nc
6/7/1981	6:33:06	35.0261667	-119.0558333	-1.199	2.35	mc	32	89		0.53	ci	ci517340	2016-04-01T20:40:09.998Z	15km NW of Grapevine, CA	earthquake	0.75	1.77		26	reviewed	ci	ci
5/30/1981	10:52:05	36.2915	-120.1826667	18.548	2.09	md	25	255	0.136	0.06	nc	nc1064138	2016-12-13T00:55:38.753Z	12 km NW of Huron, California	earthquake	1.07	0.38	0.11	11	reviewed	nc	nc
5/27/1981	12:01:43	35.8226667	-119.9841667	9.029	2.64	md	31	205	0.2351	0.19	nc	nc1064063	2016-12-13T00:49:57.200Z	20 km S of Kettleman City, California	earthquake	0.65	0.92	0.14	17	reviewed	nc	nc
5/24/1981	13:57:24	35.8548333	-120.3988333	4.462	2.05	md	25	57	0.01892	0.04	nc	nc1063959	2016-12-13T00:42:04.800Z	6 km SSE of Parkfield, CA	earthquake	0.19	0.3	0.18	22	reviewed	nc	nc
5/21/1981	9:19:00	35.5008333	-120.6653333	9.456	2.13	md	10	78	0.0964	0.57	nc	nc1063862	2016-12-13T00:34:57.794Z	1 km NNE of Atascadero, California	earthquake	1.2	7.2	0.14	6	reviewed	nc	nc
5/19/1981	19:38:46	35.8131667	-120.1501667	9.114	2.25	md	19	278	0.1144	0.04	nc	nc1063803	2016-12-13T00:30:16.623Z	21 km S of Avenal, California	earthquake	0.95	0.43	0.16	18	reviewed	nc	nc
5/19/1981	15:04:35	35.8793333	-119.9485	4.938	2.18	mc	8	177		0.43	ci	ci516319	2016-02-02T22:26:16.410Z	14km S of Kettleman City, CA	earthquake	2.54	31.61		8	reviewed	ci	ci
5/19/1981	13:40:50	35.7975	-120.0526667	16.149	2.49	md	24	198	0.1739	0.3	nc	nc1063792	2016-12-13T00:29:25.129Z	23 km SSE of Avenal, California	earthquake	1.18	1.71	0.12	12	reviewed	nc	nc
5/19/1981	10:33:10	35.8231667	-120.113	12.394	3	md	25	250	0.1405	0.12	nc	nc1063782	2016-12-13T00:28:36.635Z	20 km S of Avenal, California	earthquake	1.52	0.6	0.1	17	reviewed	nc	nc
5/19/1981	10:25:24	35.8248333	-120.0435	11.534	2.87	md	24	202	0.1919	0.1	nc	nc1063781	2016-12-13T00:28:31.928Z	21 km SSE of Avenal, California	earthquake	1.29	0.73	0.1	13	reviewed	nc	nc
5/19/1981	9:53:22	35.8453333	-120.0116667	16.143	2.22	md	7	304	0.2189	0.04	nc	nc1063780	2016-12-13T00:28:27.791Z	18 km SSW of Kettleman City, California	earthquake	5.63	1.38	0.14	9	reviewed	nc	nc
5/16/1981	18:24:47	35.7976667	-120.349	9.675	2.97	md	36	85	0.03333	0.04	nc	nc1063707	2016-12-13T00:22:28.430Z	13 km SSE of Parkfield, California	earthquake	0.19	0.33	0.15	19	reviewed	nc	nc
5/16/1981	3:41:10	34.9546667	-119.0296667	10.781	2	mc	16	119		0.2	ci	ci516082	2016-02-03T02:28:15.740Z	9km W of Grapevine, CA	earthquake	0.56	1.36		8	reviewed	ci	ci
5/14/1981	22:29:52	35.9885	-119.796	7.694	2.12	md	8	293	0.4126	0.13	nc	nc1063646	2016-12-13T00:17:35.723Z	15 km E of Kettleman City, California	earthquake	6.26	11.25	0.14	12	reviewed	nc	nc
5/14/1981	21:24:41	35.8585	-120.4033333	4.615	2.2	md	36	56	0.02252	0.05	nc	nc1063643	2016-12-13T00:17:22.420Z	5 km SSE of Parkfield, California	earthquake	0.14	0.24	0.2	62	reviewed	nc	nc
5/13/1981	3:44:38	36.2018333	-120.1956667	6.909	2.11	md	45	223	0.1279	0.17	nc	nc1063579	2016-12-13T00:12:15.870Z	8 km W of Huron, California	earthquake	0.73	1.07	0.13	23	reviewed	nc	nc
4/30/1981	8:13:43	35.2448333	-119.4006667	13.78	2.04	mc	10	99		0.21	ci	ci515070	2016-02-03T03:48:32.180Z	12km NNE of Taft, CA	earthquake	0.8	1.35		9	reviewed	ci	ci
4/29/1981	4:28:22	36.205	-120.219	8.159	2.14	md	48	224	0.1099	0.13	nc	nc1063113	2016-12-12T23:36:56.000Z	10 km W of Huron, California	earthquake	0.53	0.32	0.14	30	reviewed	nc	nc
4/25/1981	22:08:47	36.0536667	-120.6151667	3.449	2	md	40	45	0.02162	0.09	nc	nc1063014	2016-12-12T23:29:26.700Z	23 km NW of Parkfield, California	earthquake	0.17	0.42	0.13	23	reviewed	nc	nc
4/25/1981	8:09:21	35.0533333	-119.0903333	-1.314	2	mc	10	104		0.29	ci	ci517605	2016-02-02T18:27:13.610Z	19km NW of Grapevine, CA	earthquake	0.71	1.92		8	reviewed	ci	ci
4/16/1981	7:01:12	34.8671667	-120.0785	0.812	2.07	mh	9	55		0.19	ci	ci514489	2016-04-01T21:16:52.519Z	22km N of Los Olivos, CA	earthquake	0.53	1.5	0.077	2	reviewed	ci	ci
4/15/1981	4:29:57	35.003	-119.1126667	0.917	2	mh	7	136	0.1797	0.18	ci	ci514462	2016-04-01T20:17:43.189Z	18km N of Pine Mountain Club, CA	earthquake	0.76	1.61		0	reviewed	ci	ci
4/12/1981	18:30:04	35.8535	-119.8625	4.907	2.29	mh	9	164	0.4235	0.48	ci	ci514143	2016-04-02T02:48:17.615Z	19km SSE of Kettleman City, CA	earthquake	1.9	31.61	0.301	3	reviewed	ci	ci
4/10/1981	14:24:48	34.9131667	-120.4273333	-0.684	2.17	mh	8	270		0.38	ci	ci514035	2016-04-02T13:25:34.756Z	4km S of Santa Maria, CA	earthquake	1.96	2.32	0.045	3	reviewed	ci	ci
4/7/1981	10:55:10	35.9415	-119.9136667	4.907	2.33	mh	10	173	0.5052	0.61	ci	ci513933	2016-04-02T06:58:12.915Z	9km SSE of Kettleman City, CA	earthquake	2.46	31.61	0.263	3	reviewed	ci	ci
4/5/1981	11:36:53	36.0801667	-120.0986667	7.679	3.04	md	53	230	0.245	0.14	nc	nc1062152	2016-12-12T22:18:28.300Z	8 km NNE of Avenal, California	earthquake	0.64	0.9	0.13	30	reviewed	nc	nc
4/5/1981	7:50:34	36.098	-120.0846667	-0.094	2.31	md	41	232	0.2649	0.16	nc	nc1062143	2016-12-12T22:17:41.967Z	11 km NNE of Avenal, California	earthquake	0.52	4.11	0.15	40	reviewed	nc	nc
4/5/1981	3:00:20	35.9355	-120.485	5.033	2.3	md	42	50	0.01351	0.08	nc	nc1062131	2016-12-12T22:16:40.360Z	6 km NW of Parkfield, California	earthquake	0.18	0.3	0.14	32	reviewed	nc	nc
4/4/1981	17:57:14	35.857	-120.4045	4.705	2.2	md	37	55	0.02162	0.06	nc	nc1062120	2016-12-12T22:15:42.200Z	5 km SSE of Parkfield, California	earthquake	0.16	0.27	0.12	23	reviewed	nc	nc
3/26/1981	6:39:31	35.9765	-120.157	16.677	2.05	md	20	242	0.1541	0.14	nc	nc1061734	2016-12-12T21:47:50.895Z	3 km SW of Avenal, California	earthquake	1.85	0.82	0.17	26	reviewed	nc	nc
3/26/1981	6:29:31	35.9741667	-120.165	16.842	2.07	md	10	261	0.2351	0.1	nc	nc1061733	2016-12-12T21:47:46.695Z	4 km SW of Avenal, California	earthquake	1.99	1.12	0.14	10	reviewed	nc	nc
3/16/1981	10:20:34	35.1613333	-120.7911667	-0.775	2.64	mh	5	283	0.5788	0.54	ci	ci12262003	2016-02-03T01:25:06.270Z	6km WSW of Avila Beach, CA	earthquake	5.28	31.61	0.239	9	reviewed	ci	ci
3/16/1981	10:17:49	35.1831667	-120.7163333	4.957	2.26	mh	4	314	0.517	0.24	ci	ci12261999	2016-02-02T21:26:50.110Z	1km ENE of Avila Beach, CA	earthquake	3.41	31.61	0.155	4	reviewed	ci	ci
3/10/1981	8:41:12	36.047	-120.6036667	5.598	2.15	md	36	48	0.02252	0.08	nc	nc1061209	2016-12-12T21:12:59.110Z	22 km NW of Parkfield, California	earthquake	0.19	0.37	0.14	30	reviewed	nc	nc
3/7/1981	17:31:32	35.1171667	-119.0736667	-1.309	2.45	ml	28	107		0.35	ci	ci531123	2016-02-03T00:04:34.650Z	22km SW of Lamont, CA	earthquake	0.64	1.86	0.449	2	reviewed	ci	ci
3/2/1981	8:48:34	35.822	-120.0815	13.017	2.1	md	18	258	0.1324	0.09	nc	nc1060910	2016-12-12T20:51:21.882Z	20 km SSE of Avenal, California	earthquake	2.91	0.94	0.17	13	reviewed	nc	nc
3/2/1981	8:46:14	35.8085	-120.1275	11.442	2.03	md	10	287	0.1252	0.06	nc	nc1060908	2016-12-12T20:51:13.531Z	21 km S of Avenal, California	earthquake	3.08	1.23	0.08	7	reviewed	nc	nc
3/1/1981	20:38:28	36.1866667	-120.2091667	5.29	2.69	md	14	244	0.1252	0.06	nc	nc1060889	2016-12-12T20:49:47.953Z	9 km W of Huron, California	earthquake	1.42	0.98	0.12	14	reviewed	nc	nc
3/1/1981	3:02:36	34.977	-119.5818333	-1.5	2.9	mh	33	49		0.57	ci	ci531313	2016-04-01T23:36:08.274Z	19km WSW of Maricopa, CA	earthquake	0.77	1.96		0	reviewed	ci	ci
2/27/1981	1:30:56	35.8273333	-120.0698333	12.207	2.4	md	24	242	0.1423	0.09	nc	nc1060791	2016-12-12T20:41:47.150Z	20 km SSE of Avenal, California	earthquake	1.12	0.72	0.17	28	reviewed	nc	nc
2/26/1981	9:59:15	35.7511667	-119.9771667	5.127	2.02	mh	2	332	1.227	0.09	ci	ci12261655	2016-02-02T18:49:08.260Z	29km S of Kettleman City, CA	earthquake	2.14	31.61	0.002	2	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
2/26/1981	2:18:21	35.6963333	-119.9411667	5.127	2.03	mh	2	332	1.195	0.01	ci	ci12261635	2016-02-02T20:08:07.610Z	32km E of Cholame, CA	earthquake	1.71	31.61	0.096	2	reviewed	ci	ci
2/26/1981	2:15:36	35.8276667	-120.041	12.317	2.58	md	24	255	0.1649	0.08	nc	nc1060762	2016-12-12T20:39:46.759Z	21 km SSE of Avenal, California	earthquake	1.18	0.6	0.14	29	reviewed	nc	nc
2/25/1981	8:45:23	36.0138333	-120.572	4.895	3.63	ml	42	59	0.05856	0.08	nc	nc1060742	2016-12-12T20:38:24.000Z	17 km NW of Parkfield, California	earthquake	0.19	0.47		1	reviewed	nc	nc
2/23/1981	13:07:08	36.1161667	-120.4053333	8.26	3	ml	40	137	0.1423	0.07	nc	nc1060690	2016-12-12T20:34:09.490Z	4 km WSW of Coalinga, California	earthquake	0.26	0.38		0	reviewed	nc	nc
2/23/1981	6:12:50	35.181	-120.629	-0.156	3.2	ml	40	158	0.1288	0.12	nc	nc1060677	2016-12-12T20:32:58.440Z	2 km SSW of Edna, California	earthquake	0.35	0.43		0	reviewed	nc	nc
2/20/1981	2:01:43	35.819	-119.8848333	4.93	2.77	mh	8	128	0.3865	0.36	ci	ci12255311	2016-02-02T20:08:00.780Z	22km SSE of Kettleman City, CA	earthquake	1.5	31.61	0.465	4	reviewed	ci	ci
2/18/1981	11:17:48	35.9516667	-120.2276667	14.607	2.09	md	15	274	0.09189	0.06	nc	nc1060508	2016-12-12T20:19:09.684Z	10 km WSW of Avenal, California	earthquake	1.56	0.73	0.24	18	reviewed	nc	nc
2/18/1981	9:50:35	35.8135	-120.1711667	8.315	2.09	md	10	280	0.06126	0.03	nc	nc1060505	2016-12-12T20:18:56.462Z	21 km S of Avenal, California	earthquake	4.67	0.92	0.13	13	reviewed	nc	nc
2/17/1981	22:04:36	35.8126667	-120.1565	9.402	2.37	md	17	272	0.07117	0.07	nc	nc1060489	2016-12-12T20:17:44.581Z	21 km S of Avenal, California	earthquake	1.73	0.44	0.14	24	reviewed	nc	nc
2/17/1981	20:42:11	35.8213333	-119.8908333	4.962	2.34	mh	5	231	0.388	0.5	ci	ci12255087	2016-02-02T20:07:56.090Z	22km SSE of Kettleman City, CA	earthquake	4.49	31.61	0.254	3	reviewed	ci	ci
2/17/1981	20:39:01	35.812	-119.8946667	4.907	2.28	mh	5	231	0.3784	0.61	ci	ci12255083	2016-02-03T01:24:43.700Z	23km SSE of Kettleman City, CA	earthquake	6.79	31.61	0.218	3	reviewed	ci	ci
2/17/1981	4:34:41	35.0426667	-119.0761667	-1.199	2.14	mh	10	121		0.37	ci	ci12255039	2016-02-03T02:48:52.080Z	17km NW of Grapevine, CA	earthquake	0.91	2.62	0.475	3	reviewed	ci	ci
2/17/1981	0:21:32	35.8296667	-119.9041667	4.912	2.08	mh	4	240	0.3949	0.55	ci	ci12255019	2016-02-03T02:48:51.590Z	20km SSE of Kettleman City, CA	earthquake	5.15	31.61	0.137	2	reviewed	ci	ci
2/16/1981	21:53:13	35.8068333	-120.1405	9.682	2.03	md	10	286	0.08198	0.03	nc	nc1060448	2016-12-12T20:14:13.375Z	21 km S of Avenal, California	earthquake	4.89	0.53	0.18	12	reviewed	nc	nc
2/16/1981	21:13:08	35.7018333	-119.9493333	5.127	2.25	mh	2	332	1.202	0.14	ci	ci12254999	2016-02-03T01:24:41.350Z	31km E of Cholame, CA	earthquake	2.51	31.61	0.33	3	reviewed	ci	ci
2/13/1981	5:02:50	35.046	-119.067	4.621	2.18	mh	14	107		0.39	ci	ci3316997	2016-02-02T21:26:19.710Z	17km NW of Grapevine, CA	earthquake	0.85	27.44	0.272	5	reviewed	ci	ci
2/12/1981	15:45:53	35.1038333	-118.8876667	-1.301	2.1	mh	13	109		0.29	ci	ci3316954	2016-02-02T20:07:51.590Z	13km SSW of Arvin, CA	earthquake	0.85	1.36	0.429	8	reviewed	ci	ci
2/11/1981	4:41:05	36.0013333	-120.2783333	8.905	3.5	ml	27	182	0.08468	0.05	nc	nc1060241	2016-12-12T19:58:15.830Z	13 km W of Avenal, California	earthquake	0.45	0.32		6	reviewed	nc	nc
2/11/1981	2:37:49	36.183	-120.2518333	4.953	3.44	ml	4	157		0.36	ci	ci12254559	2016-02-03T00:04:08.360Z	11km ENE of Coalinga, CA	earthquake	2.23	31.61	0.399	3	reviewed	ci	ci
2/10/1981	23:03:44	36.2085	-120.2951667	9.938	2.2	md	23	214	0.05586	0.04	nc	nc1060232	2016-12-12T19:57:27.640Z	9 km NE of Coalinga, California	earthquake	0.35	0.17	0.22	30	reviewed	nc	nc
2/8/1981	10:46:31	35.782	-120.3216667	3.722	3.07	ml	22	72	0.05495	0.05	nc	nc1060144	2016-12-12T19:50:01.520Z	14 km NNE of Shandon, California	earthquake	0.2	0.57		1	reviewed	nc	nc
2/3/1981	11:08:58	36.2048333	-120.2873333	9.84	2.03	md	28	217	0.06306	0.08	nc	nc1059952	2016-12-12T19:33:42.952Z	9 km NE of Coalinga, California	earthquake	0.28	0.29	0.21	36	reviewed	nc	nc
2/3/1981	4:45:16	36.2061667	-120.2845	10.217	2.07	md	25	214	0.06396	0.05	nc	nc1059940	2016-12-12T19:32:47.256Z	10 km NE of Coalinga, California	earthquake	0.4	0.27	0.14	34	reviewed	nc	nc
2/1/1981	20:21:24	35.0296667	-119.0773333	-1.389	2.47	ml	33	89		0.32	ci	ci3302062	2016-02-02T18:48:40.030Z	16km NW of Grapevine, CA	earthquake	0.46	1.36	0.289	5	reviewed	ci	ci
2/1/1981	3:08:52	36.0941667	-120.0508333	4.962	2.48	mh	9	226		0.68	ci	ci3302046	2016-02-03T01:24:12.090Z	12km NE of Avenal, CA	earthquake	4.46	31.61	0.302	7	reviewed	ci	ci
1/31/1981	15:20:30	36.0535	-120.6151667	1.289	3.49	ml	32	45	0.02162	0.07	nc	nc1059808	2016-12-12T19:22:05.490Z	23 km NW of Parkfield, California	earthquake	0.16	0.7		1	reviewed	nc	nc
1/31/1981	9:16:52	36.0651667	-120.6263333	2.549	3.43	ml	28	78	0.02432	0.06	nc	nc1059799	2016-12-12T19:21:42.240Z	25 km NW of Parkfield, California	earthquake	0.2	0.54		2	reviewed	nc	nc
1/31/1981	7:52:11	35.9976667	-120.2361667	5.127	2.44	mh	2	333	1.47	0	ci	ci12253859	2016-02-03T04:06:45.700Z	10km W of Avenal, CA	earthquake	2.05	31.61	0.26	3	reviewed	ci	ci
1/31/1981	7:23:31	36.0251667	-120.266	5.127	2.55	ml	2	333	1.5	0.05	ci	ci12253855	2016-02-02T22:45:23.280Z	12km W of Avenal, CA	earthquake	1.84	31.61	0.163	1	reviewed	ci	ci
1/31/1981	6:18:31	36.1295	-120.151	5.093	3.27	ml	10	237		0.57	ci	ci3302030	2016-02-03T04:06:44.670Z	9km SSW of Huron, CA	earthquake	3.46	31.61	0.074	2	reviewed	ci	ci
1/31/1981	5:23:20	36.2271667	-120.2776667	17.074	3.5	ml	9	225	0.3252	0.24	nc	nc1059794	2016-12-12T19:21:14.257Z	12 km NE of Coalinga, California	earthquake	1.65	2.23		0	reviewed	nc	nc
1/30/1981	14:46:39	36.0641667	-120.6258333	2.49	3.62	ml	39	50	0.02432	0.08	nc	nc1059775	2016-12-12T19:19:34.050Z	25 km NW of Parkfield, California	earthquake	0.16	0.43		2	reviewed	nc	nc
1/29/1981	20:37:52	35.509	-120.8366667	3.506	3.36	ml	23	56	0.06667	0.13	nc	nc1059762	2016-12-12T19:18:24.000Z	8 km NE of Cayucos, California	earthquake	0.27	0.95		1	reviewed	nc	nc
1/18/1981	1:18:32	35.943	-120.4898333	9.773	2.53	md	37	57	0.01261	0.06	nc	nc1059374	2016-12-12T18:47:56.610Z	7 km NW of Parkfield, California	earthquake	0.2	0.38	0.12	26	reviewed	nc	nc
1/17/1981	0:09:36	35.9441667	-120.4895	10.523	3.1	ml	43	62	0.01261	0.06	nc	nc1059357	2016-12-12T18:46:24.710Z	7 km NW of Parkfield, California	earthquake	0.18	0.35		0	reviewed	nc	nc
1/15/1981	3:02:52	35.9841667	-120.543	3.799	2.04	md	30	69	0.05766	0.06	nc	nc1059301	2016-12-12T18:41:21.690Z	13 km NW of Parkfield, California	earthquake	0.19	0.51	0.1	23	reviewed	nc	nc
1/11/1981	4:44:32	35.9563333	-120.5026667	9.473	3.1	ml	40	77	0.02523	0.06	nc	nc1059147	2016-12-12T18:28:44.790Z	8 km NW of Parkfield, California	earthquake	0.18	0.43		4	reviewed	nc	nc
1/11/1981	2:27:42	36.2091667	-120.2211667	8.609	2.45	md	35	216	0.1063	0.08	nc	nc1059143	2016-12-12T18:28:22.396Z	10 km W of Huron, California	earthquake	0.63	0.36	0.12	41	reviewed	nc	nc
1/11/1981	2:24:07	36.1833333	-120.2315	6.363	2.49	md	14	231	0.1117	0.07	nc	nc1059142	2016-12-12T18:28:17.302Z	11 km W of Huron, California	earthquake	0.83	0.42	0.15	23	reviewed	nc	nc
1/11/1981	2:23:35	36.2046667	-120.2048333	10.259	2.83	md	35	226	0.1207	0.11	nc	nc1059141	2016-12-12T18:28:13.210Z	9 km W of Huron, California	earthquake	0.56	1.38	0.29	42	reviewed	nc	nc
1/10/1981	23:19:20	36.2043333	-120.237	9.088	2.44	md	34	213	0.0964	0.07	nc	nc1059136	2016-12-12T18:27:56.632Z	12 km W of Huron, California	earthquake	0.31	0.21	0.11	47	reviewed	nc	nc
1/9/1981	16:32:41	36.0533333	-120.219	5.127	2.17	mh	2	332	1.47	0.01	ci	ci12250299	2016-02-03T00:03:37.420Z	10km NW of Avenal, CA	earthquake	3.38	31.61	0.199	3	reviewed	ci	ci
1/7/1981	14:47:45	35.2658333	-120.5585	4.844	2.11	mh	3	335	0.3957	0.55	ci	ci12250207	2016-02-03T01:23:47.990Z	9km ESE of San Luis Obispo, CA	earthquake	6.35	31.61	0.294	2	reviewed	ci	ci
1/5/1981	1:16:13	36.1446667	-120.464	68.283	2.18	md	5	174	0.1315	0.17	nc	nc1058870	2016-12-12T18:05:48.026Z	9 km W of Coalinga, California	earthquake	8.23	10.2	0.12	5	reviewed	nc	nc
1/3/1981	4:44:14	36.0385	-120.5975	1.348	3.14	ml	27	65	0.03063	0.08	nc	nc1058822	2016-12-12T18:02:39.500Z	21 km NW of Parkfield, California	earthquake	0.22	0.58		2	reviewed	nc	nc
12/30/1980	16:35:21	36.0028333	-120.5576667	3.735	3.25	ml	26	75	0.07297	0.06	nc	nc1058705	2016-12-14T05:04:09.550Z	16 km NW of Parkfield, California	earthquake	0.25	0.54		2	reviewed	nc	nc
12/27/1980	20:22:01	36.2058333	-120.2406667	10.541	2.22	md	26	232	0.09369	0.09	nc	nc1058591	2016-12-14T04:57:58.332Z	12 km W of Huron, California	earthquake	0.71	0.49	0.15	28	reviewed	nc	nc
12/12/1980	21:02:05	35.2475	-119.3906667	6	2.63	ml	6	151	0.1991	0.21	ci	ci9741638	2016-02-03T00:17:29.550Z	13km NNE of Taft, CA	earthquake	1.41	31.61	0.292	4	reviewed	ci	ci
12/2/1980	23:48:50	35.9928333	-120.056	27.69	2.24	md	11	271	0.2279	0.05	nc	nc1057731	2016-12-14T03:59:33.761Z	6 km E of Avenal, California	earthquake	2.92	0.5	0.11	12	reviewed	nc	nc
11/25/1980	20:21:09	35.1518333	-119.148	6	2.21	mh	14	113	0.3092	0.34	ci	ci3300459	2016-04-02T10:51:14.272Z	24km WSW of Lamont, CA	earthquake	0.92	31.61	0.083	5	reviewed	ci	ci
11/23/1980	2:49:35	35.2396667	-119.3913333	6	2.08	mh	8	126	0.1926	0.22	ci	ci3300370	2016-04-02T20:20:20.807Z	12km NNE of Taft, CA	earthquake	1.01	31.61	0.383	3	reviewed	ci	ci
11/22/1980	9:43:55	35.271	-119.3626667	6	2.1	mh	8	235	0.2316	0.49	ci	ci9740406	2016-02-03T04:18:22.620Z	17km NNE of Taft, CA	earthquake	3.69	31.61	0.299	11	reviewed	ci	ci
11/21/1980	11:11:35	35.273	-119.4145	6	2.96	ml	4	209	0.8606	0.34	ci	ci9740298	2016-02-03T02:59:44.920Z	15km NNE of Taft, CA	earthquake	2.28	31.61	0.183	9	reviewed	ci	ci
11/21/1980	11:11:12	35.243	-119.3781667	2.96	3.03	ml	15	127	0.2019	0.33	ci	ci9740294	2016-02-03T01:36:58.680Z	13km NNE of Taft, CA	earthquake	0.81	2.17	0.108	9	reviewed	ci	ci
11/21/1980	11:04:28	35.2398333	-119.3826667	6	2.3	mh	8	127	0.1971	0.17	ci	ci9740290	2016-02-02T20:18:56.080Z	13km NNE of Taft, CA	earthquake	0.97	15.88	0.236	4	reviewed	ci	ci
11/19/1980	4:49:54	36.0503333	-120.606	3.84	2.86	md	36	54	0.01982	0.07	nc	nc1057260	2016-12-14T03:26:28.290Z	22 km NW of Parkfield, California	earthquake	0.19	0.44	0.14	26	reviewed	nc	nc
11/17/1980	17:05:42	36.0068333	-120.5586667	4.988	2.68	md	35	75	0.06937	0.05	nc	nc1057188	2016-12-14T03:21:52.870Z	16 km NW of Parkfield, California	earthquake	0.18	0.51	0.11	31	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/16/1980	0:46:51	35.3768333	-118.744	0	2.03	mh	5	166	0.2683	0.69	ci	ci9739958	2016-02-02T20:18:49.140Z	20km NNE of Arvin, CA	earthquake	3.75	7.15	0.122	7	reviewed	ci	ci
11/7/1980	9:10:17	36.0763333	-120.0046667	17.095	2.62	md	16	268	0.3243	0.08	nc	nc1056761	2016-12-14T02:55:30.268Z	8 km NNW of Kettleman City, California	earthquake	1.56	1.26	0.1	15	reviewed	nc	nc
11/6/1980	15:44:58	36.1108333	-119.9526667	6	2	mh	4	253	0.5775	0.23	ci	ci3299379	2016-02-03T04:18:04.500Z	11km N of Kettleman City, CA	earthquake	2.74	31.61		0	reviewed	ci	ci
11/6/1980	15:44:00	35.9663333	-120.1928333	15.333	2.36	md	15	256	0.1315	0.02	nc	nc1056745	2016-12-14T02:54:29.311Z	7 km SW of Avenal, California	earthquake	2.1	0.62	0.12	12	reviewed	nc	nc
11/2/1980	4:51:33	36.1263333	-119.946	15.715	3.12	md	19	281	0.3441	0.11	nc	nc1056676	2016-12-14T02:49:50.587Z	13 km WSW of Stratford, California	earthquake	2.3	1.12	0.12	16	reviewed	nc	nc
10/31/1980	14:42:54	36.201	-120.2336667	8.98	2.33	md	27	242	0.1009	0.08	nc	nc1056651	2016-12-14T02:48:07.036Z	11 km W of Huron, California	earthquake	0.61	0.39	0.12	16	reviewed	nc	nc
10/30/1980	4:36:53	36.2205	-120.207	10.862	3.03	md	21	158	0.1135	0.1	nc	nc1056628	2016-12-14T02:46:35.254Z	9 km WNW of Huron, California	earthquake	0.5	0.8	0.07	3	reviewed	nc	nc
10/28/1980	18:58:57	36.0155	-120.5721667	4.621	3.16	ml	24	74	0.05676	0.05	nc	nc1056597	2016-12-14T02:44:30.524Z	Central California	earthquake	0.43	0.55		1	reviewed	nc	nc
10/27/1980	16:35:24	35.4711667	-119.1225	6	2.14	mh	6	161	0.5108	0.15	ci	ci9738774	2016-02-02T20:18:27.360Z	10km NNE of Rosedale, CA	earthquake	1.06	31.61	0.6	4	reviewed	ci	ci
10/21/1980	11:02:42	36.2333333	-120.2468333	14.553	2.16	md	8	256	0.07928	0.05	nc	nc1056465	2016-12-14T02:35:23.160Z	13 km WNW of Huron, California	earthquake	1.46	2.01	0.17	5	reviewed	nc	nc
10/21/1980	11:01:04	36.2168333	-120.1998333	10.356	3.4	md	37	98	0.1198	0.07	nc	nc1056464	2016-12-14T02:35:18.290Z	8 km W of Huron, California	earthquake	0.25	0.41		1	reviewed	nc	nc
10/18/1980	7:31:32	34.8651667	-120.4666667	6	2.08	mh	9	266	0.253	0.64	ci	ci3298822	2016-04-02T01:14:23.642Z	3km W of Orcutt, CA	earthquake	5.06	31.61	0.129	8	reviewed	ci	ci
10/17/1980	8:47:05	36.0111667	-120.567	2.948	3.26	ml	25	74	0.06216	0.06	nc	nc1056405	2016-12-14T02:31:14.650Z	17 km NW of Parkfield, California	earthquake	0.17	0.51		2	reviewed	nc	nc
10/7/1980	4:30:40	35.7158333	-120.2395	6	2.53	mh	3	156	0.3599	0.05	ci	ci9737338	2016-02-03T00:14:06.110Z	5km E of Cholame, CA	earthquake	0.59	31.61	0.133	4	reviewed	ci	ci
10/6/1980	16:50:20	36.1003333	-120.092	6	2.65	mh	4	191	0.4658	0.31	ci	ci9737310	2016-02-02T20:18:01.350Z	11km NNE of Avenal, CA	earthquake	2.3	31.61	0.225	8	reviewed	ci	ci
10/6/1980	0:12:32	36.1956667	-120.2221667	8.339	2.08	md	26	240	0.1117	0.08	nc	nc1056223	2016-12-14T02:19:10.591Z	10 km W of Huron, California	earthquake	0.67	0.39	0.04	11	reviewed	nc	nc
10/2/1980	6:23:47	36.2173333	-120.1746667	4.704	3.35	ml	17	266	0.1396	0.09	nc	nc1056152	2016-12-14T02:14:25.502Z	6 km WNW of Huron, California	earthquake	0.65	0.9		1	reviewed	nc	nc
9/30/1980	21:12:15	35.2676667	-119.375	2.03	2.52	mh	8	131	0.2229	0.36	ci	ci9736846	2016-02-03T00:13:51.430Z	16km NNE of Taft, CA	earthquake	1.27	2.77	0.656	7	reviewed	ci	ci
9/29/1980	1:03:05	35.254	-119.377	2.73	2.44	mh	10	128	0.211	0.25	ci	ci9736762	2016-02-03T01:35:46.630Z	14km NNE of Taft, CA	earthquake	0.76	1.79	0.321	9	reviewed	ci	ci
9/26/1980	20:47:12	35.26	-119.3726667	0.9	2.29	mh	10	130	0.2179	0.36	ci	ci9736546	2016-02-02T22:55:29.650Z	15km NNE of Taft, CA	earthquake	1.19	3.09	0.334	13	reviewed	ci	ci
9/26/1980	13:18:41	35.2545	-119.3773333	9.9	4.29	ml	29	109	0.2847	0.37	ci	ci3302524	2016-04-02T17:10:39.723Z	14km NNE of Taft, CA	earthquake	0.82	1.53	0.23	15	reviewed	ci	ci
9/26/1980	10:15:40	35.7595	-120.3076667	3.585	3.59	md	26	123	0.05405	0.08	nc	nc1056037	2016-12-14T02:07:23.970Z	13 km NNE of Shandon, California	earthquake	0.28	0.57	0.25	5	reviewed	nc	nc
9/25/1980	3:38:07	36.2103333	-120.236	9.178	2.2	md	25	246	0.09459	0.11	nc	nc1056013	2016-12-14T02:05:52.047Z	11 km W of Huron, California	earthquake	0.78	0.51	0.11	13	reviewed	nc	nc
9/24/1980	9:53:52	36.2041667	-120.215	9.301	2.73	md	29	249	0.1126	0.11	nc	nc1055998	2016-12-14T02:04:58.478Z	10 km W of Huron, California	earthquake	0.97	0.59	0.13	13	reviewed	nc	nc
9/24/1980	8:59:19	36.2043333	-120.2326667	9.761	2.84	md	21	240	0.1	0.08	nc	nc1055997	2016-12-14T02:04:54.287Z	11 km W of Huron, California	earthquake	0.85	0.54	0.09	22	reviewed	nc	nc
9/24/1980	8:14:33	36.216	-120.133	5	3	ml					us	usp00019ye	2016-02-03T01:35:41.360Z	3 km WNW of Huron, California	earthquake					reviewed	p	pas
9/24/1980	8:13:26	36.208	-120.2185	9.141	2.84	md	30	246	0.109	0.13	nc	nc1055995	2016-12-14T02:04:46.585Z	10 km W of Huron, California	earthquake	0.95	0.69	0.09	20	reviewed	nc	nc
9/24/1980	8:08:38	36.21	-120.2221667	10.896	4.5	ml	21	235	0.1054	0.16	nc	nc1055994	2018-06-04T20:43:45.000Z	10 km W of Huron, California	earthquake	1.24	0.75		0	reviewed	nc	nc
9/23/1980	12:37:13	36.24	-120.1436667	9.106	3.83	ml	25	272	0.1613	0.23	nc	nc1055975	2016-12-14T02:03:30.594Z	5 km NW of Huron, California	earthquake	2.08	1.02		2	reviewed	nc	nc
9/23/1980	11:13:05	36.2065	-120.2255	9.551	3	ml	32	243	0.1045	0.11	nc	nc1055974	2016-12-14T02:03:26.785Z	11 km W of Huron, California	earthquake	0.84	0.53		0	reviewed	nc	nc
9/23/1980	11:12:15	36.2116667	-120.2223333	10.191	2.62	md	27	247	0.1045	0.11	nc	nc1055973	2016-12-14T02:03:23.050Z	10 km W of Huron, California	earthquake	1.05	0.59	0.02	4	reviewed	nc	nc
9/20/1980	10:42:51	36.2113333	-120.2468333	10.108	2.72	md	14	241	0.08649	0.08	nc	nc1055902	2016-12-14T01:59:18.952Z	12 km NE of Coalinga, California	earthquake	0.66	0.38	0.2	7	reviewed	nc	nc
9/18/1980	4:47:07	35.0785	-119.0255	0.01	2.4	mh	9	125	0.2307	0.5	ci	ci9736038	2016-02-02T18:58:29.740Z	17km NNW of Grapevine, CA	earthquake	1.34	2.49	0.095	9	reviewed	ci	ci
9/17/1980	4:35:43	35.6723333	-119.3816667	6	3.09	ml	13	206	0.5125	0.45	ci	ci3303955	2016-04-02T07:42:48.891Z	9km NNW of Wasco, CA	earthquake	2.65	31.61	0.184	8	reviewed	ci	ci
9/1/1980	14:05:41	34.886	-119.1388333	3.76	2.1	mh	17	110	0.08012	0.24	ci	ci3303383	2016-02-02T18:58:06.460Z	4km NNE of Pine Mountain Club, CA	earthquake	0.52	0.7		0	reviewed	ci	ci
8/23/1980	13:36:43	35.6451667	-118.8308333	1.11	2.28	mh	4	219	0.2911	0.19	ci	ci9734730	2016-02-02T19:01:44.610Z	30km NE of Oildale, CA	earthquake	1.29	1.79	0.604	13	reviewed	ci	ci
8/23/1980	8:53:44	35.0933333	-119.0223333	6	2.12	mh	6	183	0.243	0.07	ci	ci9734726	2016-02-03T03:01:41.430Z	19km NNW of Grapevine, CA	earthquake	0.74	31.61	0.241	6	reviewed	ci	ci
8/17/1980	6:32:41	35.4346667	-118.8975	6	2.81	ml	6	212	0.3859	0.4	ci	ci9734542	2016-04-02T14:00:06.899Z	11km E of Oildale, CA	earthquake	3.73	31.61	0.02	6	reviewed	ci	ci
8/15/1980	5:07:11	35.8225	-120.0718333	12.085	2.68	md	18	269	0.1396	0.13	nc	nc1055081	2016-12-14T01:11:58.992Z	20 km SSE of Avenal, California	earthquake	2.12	1.13	0.09	13	reviewed	nc	nc
8/15/1980	4:23:40	35.834	-120.0605	10.575	3.11	md	18	251	0.1523	0.09	nc	nc1055079	2016-12-14T01:11:43.195Z	19 km SSE of Avenal, California	earthquake	1.34	0.9	0.09	12	reviewed	nc	nc
8/13/1980	8:47:10	35.5673333	-120.1415	10.73	3.07	ml	23	257	0.1874	0.04	nc	nc1055052	2016-12-14T01:10:04.329Z	23 km ESE of Shandon, California	earthquake	0.97	0.76		1	reviewed	nc	nc
8/11/1980	0:35:17	35.8285	-120.0596667	12.311	3.35	md	18	244	0.1505	0.07	nc	nc1055019	2016-12-14T01:07:56.684Z	20 km SSE of Avenal, California	earthquake	0.97	0.95	0.21	9	reviewed	nc	nc
8/10/1980	22:03:29	36.022	-120.5771667	4.533	2.57	md	23	65	0.09099	0.05	nc	nc1055015	2016-12-14T01:07:41.385Z	18 km NW of Parkfield, California	earthquake	0.29	0.56	0.13	12	reviewed	nc	nc
8/10/1980	18:34:37	35.2276667	-119.4546667	19.12	2.47	mh	8	124	0.155	0.16	ci	ci9734314	2016-02-03T00:16:55.870Z	10km N of Taft, CA	earthquake	1.17	2.29	0.031	11	reviewed	ci	ci
8/10/1980	18:30:25	35.8358333	-120.0408333	11.895	2.64	md	15	255	0.1676	0.06	nc	nc1055012	2016-12-14T01:07:30.002Z	20 km SSE of Avenal, California	earthquake	2.32	0.77	0.11	8	reviewed	nc	nc
8/9/1980	20:47:50	35.7886667	-120.0126667	12.105	2.17	md	11	260	0.1829	0.04	nc	nc1054996	2016-12-14T01:06:29.555Z	24 km S of Kettleman City, California	earthquake	1.72	0.86	0.02	4	reviewed	nc	nc
8/1/1980	17:51:48	36.1156667	-120.4046667	9.453	2	md	15	141	0.03333	0.1	nc	nc1054774	2016-12-14T00:51:13.153Z	4 km WSW of Coalinga, California	earthquake	0.4	0.43	0.28	9	reviewed	nc	nc
7/28/1980	3:24:52	36.211	-120.0885	6	2.76	mh	8	288	0.7798	0.65	ci	ci3305391	2016-04-02T20:15:11.997Z	2km NE of Huron, CA	earthquake	4.61	31.61	0.041	8	reviewed	ci	ci
7/24/1980	23:09:28	35.8428333	-120.3826667	3.695	2.35	md	25	94	0.01441	0.06	nc	nc1054607	2016-12-14T00:39:27.350Z	7 km SE of Parkfield, California	earthquake	0.22	0.3	0.16	15	reviewed	nc	nc
7/23/1980	4:38:14	35.9275	-120.4768333	4.203	3.14	ml	20	76	0.01802	0.08	nc	nc1054585	2016-12-14T00:37:54.135Z	5 km NW of Parkfield, California	earthquake	0.26	0.34		1	reviewed	nc	nc
7/21/1980	1:50:00	35.7881667	-119.9258333	8.905	2.06	md	10	284	0.2532	0.07	nc	nc1054549	2016-12-14T00:35:20.597Z	24 km S of Kettleman City, California	earthquake	1.59	0.98	0.11	7	reviewed	nc	nc
7/19/1980	16:55:19	36.0811667	-120.0941667	8.23	3	ml	41	138	0.2486	0.09	nc	nc1054531	2016-12-14T00:34:04.840Z	9 km NNE of Avenal, California	earthquake	0.39	0.69		0	reviewed	nc	nc
7/9/1980	18:30:56	35.8581667	-120.4033333	5.235	2.33	md	30	83	0.02252	0.05	nc	nc1054348	2016-12-14T00:21:23.220Z	5 km SSE of Parkfield, California	earthquake	0.18	0.25	0.21	24	reviewed	nc	nc
7/5/1980	9:13:36	36.0803333	-120.6375	4.613	3.1	ml	47	49	0.03514	0.08	nc	nc1054235	2016-12-14T00:13:43.190Z	25 km ENE of San Ardo, California	earthquake	0.17	0.39		0	reviewed	nc	nc
7/4/1980	22:17:26	36.096	-120.1708333	9.861	2.17	md	20	232	0.2072	0.1	nc	nc1054226	2016-12-14T00:13:04.359Z	10 km NNW of Avenal, California	earthquake	0.78	0.73	0.12	20	reviewed	nc	nc
7/4/1980	12:39:31	35.9743333	-120.5263333	5.014	2.55	md	32	74	0.04414	0.06	nc	nc1054210	2016-12-14T00:11:56.206Z	11 km NW of Parkfield, California	earthquake	0.19	0.42	0.2	15	reviewed	nc	nc
7/1/1980	4:44:17	36.0371667	-120.5933333	4.078	2.1	md	34	70	0.03153	0.09	nc	nc1054138	2016-12-14T00:07:08.370Z	21 km NW of Parkfield, California	earthquake	0.21	0.53	0.25	18	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/29/1980	22:12:35	34.8925	-120.3531667	0	2.47	mh	9	203	0.1558	0.34	ci	ci3306256	2016-04-02T07:40:03.140Z	8km ENE of Orcutt, CA	earthquake	2.04	1.84	0.144	10	reviewed	ci	ci
6/29/1980	22:09:49	34.914	-120.3741667	1.13	2.21	mh	6	217	0.1675	0.42	ci	ci3306255	2016-04-02T07:36:12.050Z	7km SE of Santa Maria, CA	earthquake	2.13	3.55	0.021	2	reviewed	ci	ci
6/26/1980	4:08:37	35.07	-118.9533333	6	2.35	mh	2	281	0.7094	0.08	ci	ci12335767	2016-02-03T00:15:50.440Z	14km N of Grapevine, CA	earthquake	1.92	31.61	0.134	10	reviewed	ci	ci
6/24/1980	10:55:29	36.0163333	-118.888	6	2.54	ml	13	223	0.4874	0.41	ci	ci3309814	2016-04-01T21:54:23.463Z	13km ESE of Porterville, CA	earthquake	1.77	31.61	0.167	12	reviewed	ci	ci
6/21/1980	0:43:37	35.2813333	-118.9546667	6	2.27	mh	14	138	0.3265	0.37	ci	ci3309711	2016-04-02T20:10:39.504Z	4km WNW of Lamont, CA	earthquake	0.96	31.61	0.346	3	reviewed	ci	ci
6/19/1980	6:15:50	35.9398333	-119.9551667	6	2.77	mh	7	240	0.5022	0.68	ci	ci12335227	2016-02-03T04:18:58.300Z	8km S of Kettleman City, CA	earthquake	8.72	31.61	0.065	10	reviewed	ci	ci
6/17/1980	1:43:57	35.7818333	-120.3305	3.418	3.18	ml	11	90	0.05225	0.03	nc	nc1053825	2016-12-13T23:45:10.286Z	14 km NNE of Shandon, California	earthquake	0.29	1.13		1	reviewed	nc	nc
6/12/1980	9:27:57	35.9706667	-120.5183333	11.034	2.65	md	35	76	0.03964	0.06	nc	nc1053703	2016-12-13T23:35:30.350Z	11 km NW of Parkfield, California	earthquake	0.21	0.43	0.18	47	reviewed	nc	nc
6/11/1980	11:08:58	34.8466667	-120.3413333	5.98	2.3	mh	8	197	0.1673	0.44	ci	ci3307112	2016-04-02T04:23:37.971Z	9km ESE of Orcutt, CA	earthquake	2.06	31.61		0	reviewed	ci	ci
6/4/1980	23:36:14	36.0086667	-120.5798333	3.482	3.01	ml	13	118	0.06126	0.11	nc	nc1053525	2016-12-13T23:20:20.663Z	17 km NW of Parkfield, California	earthquake	0.63	1.3		1	reviewed	nc	nc
6/4/1980	15:58:16	36.01	-120.5705	4.172	2.33	md	25	75	0.06216	0.08	nc	nc1053516	2016-12-13T23:19:17.717Z	17 km NW of Parkfield, California	earthquake	0.27	0.67	0.07	11	reviewed	nc	nc
5/29/1980	8:40:54	35.1803333	-120.7035	3.953	2.25	md	5	292	0.08198	0.01	nc	nc1053308	2016-12-13T23:00:37.064Z	2 km E of Avila Beach, California	earthquake	6.24	1.65	0.05	3	reviewed	nc	nc
5/28/1980	14:57:26	36.0426667	-120.5808333	6.848	3.11	ml	7	163	0.02883	0.07	nc	nc1053260	2016-12-13T22:55:51.881Z	20 km NW of Parkfield, California	earthquake	1.04	1.65		1	reviewed	nc	nc
5/26/1980	20:31:41	35.7835	-120.3355	7.465	2.55	ml	6	101	0.06486	0.01	nc	nc1053115	2016-12-13T22:42:13.163Z	14 km NNE of Shandon, California	earthquake	0.47	0.65		2	reviewed	nc	nc
5/24/1980	18:30:34	35.9263333	-120.475	5.076	2.06	md	27	95	0.01892	0.07	nc	nc1053035	2016-12-13T22:34:16.730Z	4 km NW of Parkfield, California	earthquake	0.22	0.31	0.11	18	reviewed	nc	nc
5/21/1980	20:59:11	36.2855	-120.0015	4.457	2.48	md	12	294	0.4009	0.37	nc	nc1052974	2016-12-13T22:28:57.384Z	9 km WNW of Lemoore Station, California	earthquake	10.91	15.73	0.13	6	reviewed	nc	nc
5/21/1980	19:27:48	35.9718333	-120.5251667	10.194	2.34	md	30	90	0.04234	0.06	nc	nc1052970	2016-12-13T22:28:39.806Z	11 km NW of Parkfield, California	earthquake	0.24	0.48	0.26	14	reviewed	nc	nc
5/20/1980	1:32:50	35.0595	-119.0496667	1.33	3.15	ml	39	80	0.2242	0.3	ci	ci3309316	2016-04-02T04:24:34.702Z	17km NW of Grapevine, CA	earthquake	0.52	1.57	0.162	28	reviewed	ci	ci
5/20/1980	0:50:32	35.0606667	-119.0381667	0.22	3.86	ml	50	92	0.2201	0.54	ci	ci3309314	2016-04-02T10:56:11.439Z	16km NW of Grapevine, CA	earthquake	0.66	1.88	0.164	30	reviewed	ci	ci
5/19/1980	23:51:37	35.796	-120.351	9.24	3.09	ml	13	78	0.03514	0.03	nc	nc1052927	2016-12-13T22:25:14.477Z	13 km SSE of Parkfield, California	earthquake	0.27	0.48		2	reviewed	nc	nc
5/19/1980	3:03:14	35.9721667	-120.5203333	10.944	3.1	ml	30	91	0.04144	0.06	nc	nc1052900	2016-12-13T22:23:21.110Z	11 km NW of Parkfield, California	earthquake	0.25	0.41		0	reviewed	nc	nc
5/17/1980	3:39:25	34.7056667	-119.488	6	2.21	mh	3	224	0.3239	0.31	ci	ci12330303	2016-02-02T21:34:30.140Z	33km NNE of Montecito, CA	earthquake	2.77	31.61	0.135	9	reviewed	ci	ci
5/5/1980	21:42:33	34.7981667	-119.4023333	2.68	2.06	mh	13	82	0.1543	0.27	ci	ci3328564	2016-04-02T14:07:22.302Z	24km WSW of Pine Mountain Club, CA	earthquake	0.56	1.46	0.14	3	reviewed	ci	ci
4/27/1980	18:09:35	35.0581667	-119.063	18.52	2.2	mh	10	109	0.2293	0.11	ci	ci3328381	2016-04-02T20:12:22.910Z	18km NW of Grapevine, CA	earthquake	0.72	2.26	0.116	5	reviewed	ci	ci
4/24/1980	3:01:32	36.0786667	-120.6406667	2.616	2.77	md	39	49	0.03784	0.07	nc	nc1052374	2016-12-13T21:41:37.700Z	24 km ENE of San Ardo, California	earthquake	0.16	0.47	0.14	42	reviewed	nc	nc
4/23/1980	14:43:24	35.0753333	-119.0745	6	2	mh	10	111	0.2487	0.18	ci	ci3357335	2016-04-02T17:11:04.854Z	20km NW of Grapevine, CA	earthquake	0.96	31.61		0	reviewed	ci	ci
4/21/1980	9:33:46	35.8028333	-119.2743333	6	2.4	mh	10	155	0.666	0.6	ci	ci3357295	2016-04-02T17:17:01.646Z	4km NNW of Delano, CA	earthquake	2.22	31.61	0.185	8	reviewed	ci	ci
4/13/1980	10:35:09	36.0303333	-120.5838333	4.19	3.29	ml	25	69	0.03964	0.08	nc	nc1052128	2016-12-13T21:21:23.475Z	19 km NW of Parkfield, California	earthquake	0.23	0.56		1	reviewed	nc	nc
4/7/1980	5:15:07	35.9973333	-120.5576667	3.398	3.58	ml	23	65	0.07838	0.07	nc	nc1051984	2016-12-13T21:09:53.692Z	15 km NW of Parkfield, California	earthquake	0.25	0.74		1	reviewed	nc	nc
4/7/1980	4:55:12	35.9951667	-120.562	2.438	3.09	ml	20	118	0.07838	0.08	nc	nc1051981	2016-12-13T21:09:40.666Z	15 km NW of Parkfield, California	earthquake	0.28	1		1	reviewed	nc	nc
4/7/1980	4:28:08	35.9985	-120.5551667	3.928	2.59	md	31	65	0.07748	0.07	nc	nc1051980	2016-12-13T21:09:35.796Z	15 km NW of Parkfield, California	earthquake	0.22	0.63	0.26	26	reviewed	nc	nc
4/5/1980	14:44:43	35.1895	-118.8921667	6	2.02	mh	10	124	0.2474	0.28	ci	ci3356844	2016-04-02T17:10:00.358Z	6km WSW of Arvin, CA	earthquake	0.98	31.61	0.052	10	reviewed	ci	ci
3/31/1980	9:14:22	35.7981667	-120.3493333	8.12	2.59	ml	8	84	0.03333	0.03	nc	nc1051838	2016-12-13T20:58:25.881Z	13 km SSE of Parkfield, California	earthquake	0.33	1.15		2	reviewed	nc	nc
3/26/1980	8:13:03	35.7671667	-120.3086667	0.572	3.03	ml	10	105	0.05856	0.03	nc	nc1051749	2016-12-13T20:51:40.894Z	13 km NNE of Shandon, California	earthquake	0.25	2.12		1	reviewed	nc	nc
3/21/1980	2:23:48	35.783	-119.6	5	3.2	ml					us	usp000164a	2016-04-02T01:06:44.783Z	15 km SW of Alpaugh, California	earthquake					reviewed	p	pas
3/21/1980	2:23:42	35.8341667	-119.7605	6	2.95	mh	5	255	0.4287	0.44	ci	ci12332015	2016-02-02T20:14:45.960Z	25km WSW of Alpaugh, CA	earthquake	10.07	31.61	0.077	2	reviewed	ci	ci
3/18/1980	17:57:06	35.9386667	-120.4858333	9.801	2.11	md	20	66	0.01171	0.07	nc	nc1051603	2016-12-13T20:37:46.415Z	6 km NW of Parkfield, California	earthquake	0.33	0.58	0.22	14	reviewed	nc	nc
3/17/1980	6:46:19	35.071	-119.0648333	2.8	2.45	ml	32	93	0.2406	0.35	ci	ci10075026	2016-04-02T17:12:47.635Z	19km NW of Grapevine, CA	earthquake	0.51	1	0.125	16	reviewed	ci	ci
3/10/1980	1:10:45	35.4805	-119.6691667	7.76	3.26	ml	14	136	0.2415	0.4	ci	ci9725114	2016-02-03T00:10:11.420Z	20km WNW of Buttonwillow, CA	earthquake	1.26	1.89	0.198	26	reviewed	ci	ci
2/29/1980	23:58:55	35.3918333	-120.4796667	5.362	2.97	md	7	305	0.05045	0.03	nc	nc1051286	2016-12-13T20:09:26.502Z	11 km E of Santa Margarita, California	earthquake	7.29	2.2	0.04	2	reviewed	nc	nc
2/27/1980	7:26:46	36.079	-120.2345	6	2.62	mh	3	313	1.489	0.06	ci	ci12326731	2016-02-03T02:55:05.070Z	13km NW of Avenal, CA	earthquake	2.18	31.61	0.113	13	reviewed	ci	ci
2/19/1980	16:15:19	36.0315	-120.3643333	17.395	2.25	md	4	310	0.1243	0.06	nc	nc1051123	2016-12-13T19:55:00.752Z	12 km S of Coalinga, California	earthquake	5.82	7.07	0.28	2	reviewed	nc	nc
2/8/1980	5:33:58	34.8705	-120.367	0.01	2.22	mh	7	205	0.1743	0.38	ci	ci3325617	2016-04-02T04:19:37.957Z	6km E of Orcutt, CA	earthquake	2.52	2.94	0.175	2	reviewed	ci	ci
1/30/1980	0:08:58	35.9301667	-120.2035	8.602	2.03	md	7	293	0.1577	0.01	nc	nc1050638	2016-12-13T19:06:26.397Z	10 km SW of Avenal, California	earthquake	5.45	2.25	0.05	2	reviewed	nc	nc
1/23/1980	10:21:22	34.981	-119.1173333	13.73	2.86	ml	32	93		0.26	ci	ci3325427	2016-04-02T04:26:41.851Z	15km N of Pine Mountain Club, CA	earthquake	0.47	0.96	0.188	22	reviewed	ci	ci
1/20/1980	18:03:43	35.3793333	-119.549	31.16	2	mh	9	151	0.1985	0.13	ci	ci12329971	2016-02-03T02:54:15.390Z	8km WSW of Buttonwillow, CA	earthquake	0.79	1.16	0.107	2	reviewed	ci	ci
1/19/1980	20:15:32	35.8763333	-120.4358333	4.997	3.04	ml	22	66	0.01892	0.14	nc	nc1049934	2016-12-13T18:01:06.340Z	2 km S of Parkfield, California	earthquake	0.39	0.5		2	reviewed	nc	nc
1/17/1980	21:41:44	36.0655	-120.4305	7.694	2.56	md	29	135	0.02883	0.07	nc	nc1049894	2016-12-13T17:58:01.550Z	10 km SW of Coalinga, California	earthquake	0.22	0.32	0.16	40	reviewed	nc	nc
1/16/1980	10:07:12	35.9673333	-120.1538333	23.303	2	md	12	227	0.1541	0.45	nc	nc1049871	2016-12-13T17:55:30.604Z	4 km SSW of Avenal, California	earthquake	4.78	2.5	0.23	12	reviewed	nc	nc
1/15/1980	13:07:34	35.1795	-118.8938333	8.03	2.1	mh	9	175	0.2468	0.31	ci	ci3325320	2016-04-02T04:25:55.600Z	7km WSW of Arvin, CA	earthquake	1.26	31.61		0	reviewed	ci	ci
1/10/1980	8:09:16	36.0295	-120.0398333	25.717	2.32	md	11	298	0.2613	0.08	nc	nc1049795	2016-12-13T17:49:33.861Z	7 km WNW of Kettleman City, California	earthquake	5.47	1.95	0.08	7	reviewed	nc	nc
1/9/1980	17:54:03	35.9283333	-120.473	9.475	2.78	md	23	70	0.01712	0.06	nc	nc1049782	2016-12-13T17:48:24.009Z	4 km NW of Parkfield, California	earthquake	0.28	0.4	0.11	18	reviewed	nc	nc
1/1/1980	14:47:52	34.9165	-119.0703333	12.27	2	mh	18	114	0.1441	0.24	ci	ci3301514	2016-02-03T01:25:51.200Z	11km NE of Pine Mountain Club, CA	earthquake	0.55	1.28		0	reviewed	ci	ci
12/29/1979	17:16:03	34.9711667	-119.1371667	5.02	2.32	mh	28	97	0.1421	0.31	ci	ci10068350	2016-04-02T04:19:25.655Z	14km N of Pine Mountain Club, CA	earthquake	0.56	1.52	0.179	4	reviewed	ci	ci
12/23/1979	15:21:08	35.8031667	-120.346	5.05	2.16	ml	9	80	0.02883	0.03	nc	nc1049507	2016-12-16T05:41:31.619Z	13 km SE of Parkfield, California	earthquake	0.21	0.53		1	reviewed	nc	nc
12/20/1979	13:03:07	34.7846667	-120.2658333	6	2.12	mh	8	229	0.2551	0.81	ci	ci10067710	2016-04-02T20:13:26.942Z	5km NNE of Los Alamos, CA	earthquake	3.45	31.61	0.186	9	reviewed	ci	ci
12/15/1979	13:11:22	35.6791667	-120.8001667	5.939	2.95	md	35	95	0.2468	0.12	nc	nc1049363	2016-12-16T05:32:24.932Z	9 km SE of Lake Nacimiento, California	earthquake	0.28	1.13	0.08	15	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/11/1979	2:54:13	36.2466667	-120.336	7.408	2.06	md	12	235	0.006306	0.02	nc	nc1049277	2016-12-16T05:27:03.587Z	12 km N of Coalinga, California	earthquake	1.11	0.36	0.09	6	reviewed	nc	nc
12/5/1979	12:14:49	35.197	-118.8945	0.2	2.46	ml	20	101	0.2509	0.4	ci	ci3354365	2016-04-02T20:11:11.901Z	6km WSW of Arvin, CA	earthquake	0.9	1.89	0.093	4	reviewed	ci	ci
12/5/1979	3:10:20	35.0845	-119.1321667	0	2.79	ml	31	94	0.2475	0.52	ci	ci3354356	2016-04-02T13:59:06.665Z	24km NW of Grapevine, CA	earthquake	0.96	2.93	0.145	6	reviewed	ci	ci
12/2/1979	17:42:34	35.7956667	-120.3508333	9.385	2.49	md	17	123	0.03514	0.03	nc	nc1049129	2016-12-16T05:17:42.730Z	13 km SSE of Parkfield, California	earthquake	0.31	0.47	0.23	14	reviewed	nc	nc
12/2/1979	7:45:06	35.357	-119.4916667	4.41	2.43	mh	17	124	0.2225	0.45	ci	ci3354291	2016-04-02T19:58:37.414Z	5km SSW of Buttonwillow, CA	earthquake	1.25	4.04	0.193	9	reviewed	ci	ci
11/23/1979	6:38:28	35.3093333	-118.9243333	6	2.99	ml	10	130	0.5093	0.27	ci	ci12335479	2016-02-01T23:14:01.760Z	6km N of Lamont, CA	earthquake	1.38	31.61	0.216	10	reviewed	ci	ci
11/22/1979	19:44:28	35.8546667	-119.6845	4.46	3.2	md	12	320	0.5369	0.04	nc	nc1048978	2016-12-16T05:07:10.733Z	18 km WSW of Alpaugh, California	earthquake	7.05	3.68	0.01	4	reviewed	nc	nc
11/21/1979	18:06:43	34.8985	-120.4066667	3.37	2.86	mh	22	216	0.1967	0.52	ci	ci3354088	2016-04-02T20:11:17.506Z	5km NE of Orcutt, CA	earthquake	2.6	1.99	0.132	14	reviewed	ci	ci
11/19/1979	2:02:06	35.8816667	-119.8863333	6	2.45	mh	8	234	0.4482	0.55	ci	ci3308875	2016-04-02T00:56:31.015Z	16km SSE of Kettleman City, CA	earthquake	3.6	31.61	0.086	5	reviewed	ci	ci
10/31/1979	2:10:35	35.4443333	-119.0286667	13.56	2.25	mh	6	167	0.4679	0.13	ci	ci3353496	2016-04-02T04:14:59.583Z	3km NNW of Oildale, CA	earthquake	1.15	2.18	0.062	2	reviewed	ci	ci
10/22/1979	7:23:54	35.586	-120.8746667	3.152	2.24	md	19	234	0.2468	0.03	nc	nc1048436	2016-12-16T04:32:41.584Z	15 km S of Lake Nacimiento, California	earthquake	0.59	3.65	0.19	9	reviewed	nc	nc
10/21/1979	19:07:53	36.1831667	-120.5658333	10.079	2.08	md	15	168	0.1171	0.05	nc	nc1048432	2016-12-16T04:32:27.151Z	19 km WNW of Coalinga, California	earthquake	0.39	0.45	0.09	9	reviewed	nc	nc
10/21/1979	10:56:59	34.9685	-120.139	0.68	2.03	mh	10	145	0.03917	0.33	ci	ci3353099	2016-04-02T01:01:50.785Z	27km E of Santa Maria, CA	earthquake	0.85	1.71	0.133	4	reviewed	ci	ci
10/19/1979	11:06:33	34.9825	-119.1541667	13.35	2.39	ml	30	94	0.1458	0.23	ci	ci3352942	2016-04-02T17:04:51.650Z	15km N of Pine Mountain Club, CA	earthquake	0.43	0.76	0.171	5	reviewed	ci	ci
10/7/1979	7:20:16	35.0281667	-118.9995	2.76	2.63	ml	33	89	0.1763	0.29	ci	ci3351914	2016-04-02T10:44:12.974Z	11km NW of Grapevine, CA	earthquake	0.48	1.19	0.102	4	reviewed	ci	ci
10/4/1979	18:05:13	35.8023333	-120.3483333	9.021	2.04	md	17	128	0.02883	0.04	nc	nc1048138	2016-12-16T04:13:05.712Z	13 km SE of Parkfield, California	earthquake	0.31	0.47	0.12	11	reviewed	nc	nc
10/4/1979	18:01:10	35.8018333	-120.3495	9.001	2.04	md	17	127	0.02883	0.05	nc	nc1048137	2016-12-16T04:13:02.099Z	13 km SE of Parkfield, California	earthquake	0.32	0.5	0.15	11	reviewed	nc	nc
10/4/1979	15:54:31	35.3165	-120.7955	4.401	2.19	md	5	208	0.07568	0.11	nc	nc1048134	2016-12-16T04:12:50.264Z	3 km E of Los Osos, California	earthquake	4.68	11.12	0.22	2	reviewed	nc	nc
10/3/1979	9:38:53	35.4688333	-120.7586667	9.179	2.33	md	17	122	0.1991	0.08	nc	nc1048114	2016-12-16T04:11:34.480Z	8 km WSW of Atascadero, California	earthquake	0.38	2.05	0.23	28	reviewed	nc	nc
9/23/1979	5:13:24	35.2938333	-119.2695	2.79	2.52	mh	15	114	0.2999	0.35	ci	ci3313306	2016-02-01T22:01:23.250Z	15km SW of Rosedale, CA	earthquake	0.82	2.7	0.235	5	reviewed	ci	ci
9/18/1979	1:03:49	36.0326667	-120.573	7.96	2.28	md	19	67	0.04054	0.06	nc	nc1047871	2016-12-16T03:55:45.743Z	19 km NW of Parkfield, California	earthquake	0.3	0.62	0.15	10	reviewed	nc	nc
9/3/1979	1:19:24	36.2633333	-120.0945	32.099	2.13	md	13	248	0.2018	0.11	nc	nc1047574	2016-12-16T03:35:58.233Z	6 km N of Huron, California	earthquake	4.72	2.82	0.12	9	reviewed	nc	nc
9/1/1979	6:32:59	36.0153333	-120.5743333	4.51	2.19	md	16	63	0.05676	0.07	nc	nc1047542	2016-12-16T03:33:55.277Z	18 km NW of Parkfield, California	earthquake	0.38	0.72	0.07	9	reviewed	nc	nc
8/26/1979	12:04:59	36.0685	-120.6303333	2.14	2.14	md	15	85	0.02793	0.08	nc	nc1047428	2016-12-16T03:26:21.751Z	25 km ENE of San Ardo, California	earthquake	0.28	0.82	0.06	6	reviewed	nc	nc
8/20/1979	11:11:57	36.0758333	-120.2793333	9.831	2.14	md	10	210	0.1279	0.06	nc	nc1047335	2016-12-16T03:20:35.020Z	10 km SE of Coalinga, California	earthquake	0.66	0.74	0.18	5	reviewed	nc	nc
8/1/1979	11:26:02	36.1998333	-120.208	10.189	2.01	md	13	253	0.1198	0.04	nc	nc1046867	2016-12-16T02:45:47.403Z	9 km W of Huron, California	earthquake	1.83	0.74	0.16	8	reviewed	nc	nc
8/1/1979	10:48:00	36.2196667	-120.128	10.329	2.31	md	12	283	0.1766	0.02	nc	nc1046863	2016-12-16T02:45:32.185Z	2 km NW of Huron, California	earthquake	1.41	0.64	0.05	6	reviewed	nc	nc
8/1/1979	9:12:52	36.1958333	-120.173	8.659	2.51	md	26	257	0.1477	0.08	nc	nc1046862	2016-12-16T02:45:28.444Z	6 km W of Huron, California	earthquake	0.79	0.44	0.11	13	reviewed	nc	nc
7/31/1979	0:53:29	35.0436667	-119.0793333	0.29	2.22	mh	21	99		0.42	ci	ci10047906	2016-02-01T23:09:55.770Z	18km NW of Grapevine, CA	earthquake	0.73	2.09	0.276	7	reviewed	ci	ci
7/31/1979	0:02:05	35.0323333	-119.085	1.94	2.53	ml	27	98		0.39	ci	ci10047902	2016-02-01T21:26:50.770Z	17km NW of Grapevine, CA	earthquake	0.64	1.47	0.339	3	reviewed	ci	ci
7/30/1979	0:33:06	36.0576667	-120.6051667	9.14	2.48	md	21	59	0.01351	0.07	nc	nc1046831	2016-12-16T02:43:29.339Z	23 km NW of Parkfield, California	earthquake	0.26	0.49	0.12	17	reviewed	nc	nc
7/23/1979	19:12:08	35.7468333	-120.292	9.147	2.53	md	9	327	0.0982	0.03	nc	nc1046723	2016-12-16T02:37:06.603Z	12 km NE of Shandon, California	earthquake	4.6	0.87	0.06	5	reviewed	nc	nc
7/21/1979	14:35:44	36.1081667	-120.208	8.062	2.93	md	16	238	0.1784	0.08	nc	nc1046693	2016-12-16T02:35:13.032Z	13 km NNW of Avenal, California	earthquake	0.65	0.89	0.06	5	reviewed	nc	nc
7/18/1979	1:38:42	36.055	-120.6143333	3.53	2.16	md	17	80	0.01982	0.1	nc	nc1046647	2016-12-16T02:32:45.612Z	23 km NW of Parkfield, California	earthquake	0.31	0.59	0.17	7	reviewed	nc	nc
7/17/1979	17:11:22	36.1058333	-120.192	5.475	2.19	md	15	242	0.1883	0.2	nc	nc1046636	2016-12-16T02:31:59.503Z	12 km NNW of Avenal, California	earthquake	0.96	1.32	0.08	4	reviewed	nc	nc
7/15/1979	9:06:08	35.7801667	-120.1103333	9.085	3.28	md	10	288	0.1234	0.07	nc	nc1046592	2016-12-16T02:28:43.633Z	24 km S of Avenal, California	earthquake	2.69	1.31	0.16	10	reviewed	nc	nc
7/14/1979	6:39:41	36.1211667	-120.1938333	1.392	3.45	md	21	236	0.1757	0.07	nc	nc1046582	2016-12-16T02:27:35.504Z	12 km SW of Huron, California	earthquake	0.48	1.41	0.1	6	reviewed	nc	nc
6/22/1979	6:54:58	34.95	-120.266	4	2.5	ml					us	usp00011fs	2016-04-01T21:43:45.984Z	8 km NNE of Garey, California	earthquake					reviewed	p	pas
6/15/1979	11:11:59	35.26	-119.236	2.26	2.98	ml	33	111		0.3	ci	ci3349832	2016-04-02T01:04:26.105Z	16km SSW of Rosedale, CA	earthquake	0.49	1.71	0.266	4	reviewed	ci	ci
6/15/1979	5:14:04	34.9965	-119.073	8.17	2.85	ml	29	94		0.29	ci	ci3349820	2016-04-02T10:40:46.636Z	14km WNW of Grapevine, CA	earthquake	0.53	1.7	0.297	7	reviewed	ci	ci
5/30/1979	4:12:54	35.6073333	-119.8226667	30.53	2	mh	7	260	0.2039	0.29	ci	ci3349448	2016-02-01T23:25:55.610Z	33km NNE of Simmler, CA	earthquake	2.53	0.97		0	reviewed	ci	ci
5/28/1979	4:47:53	35.8716667	-120.4198333	5.008	2.14	md	19	80	0.01171	0.05	nc	nc1045955	2016-12-16T01:41:36.148Z	3 km SSE of Parkfield, California	earthquake	0.25	0.4	0.13	16	reviewed	nc	nc
5/27/1979	20:00:40	34.9628333	-119.1436667	12.05	2.23	mh	25	91		0.27	ci	ci3349401	2016-04-02T04:16:31.763Z	13km N of Pine Mountain Club, CA	earthquake	0.53	1.17	0.311	4	reviewed	ci	ci
5/22/1979	1:44:46	36.0068333	-120.568	4.946	2.53	md	18	61	0.06577	0.07	nc	nc1045882	2016-12-16T01:37:03.256Z	17 km NW of Parkfield, California	earthquake	0.28	0.86	0.09	6	reviewed	nc	nc
5/15/1979	15:31:14	36.1673333	-119.1013333	6	2.27	ml	5	269	0.7161	0.49	ci	ci3349130	2016-04-02T04:16:29.019Z	4km SSW of Lindsay, CA	earthquake	3.96	31.61	0.109	2	reviewed	ci	ci
5/13/1979	19:36:22	35.4595	-120.7798333	0.889	2.13	md	13	131	0.2144	0.09	nc	nc1045789	2016-12-16T01:31:01.852Z	10 km E of Cayucos, California	earthquake	0.78	8.58	0.08	9	reviewed	nc	nc
5/11/1979	22:56:40	35.6391667	-119.3271667	6	2	mh	8	240		0.24	ci	ci3349044	2016-02-01T21:25:03.370Z	5km NNE of Wasco, CA	earthquake	1.3	31.61		0	reviewed	ci	ci
5/11/1979	7:57:23	35.9328333	-120.4843333	6.338	2.68	md	23	62	0.01532	0.08	nc	nc1045747	2016-12-16T01:28:19.181Z	5 km NW of Parkfield, California	earthquake	0.24	0.44	0.13	16	reviewed	nc	nc
5/1/1979	22:24:11	36.0226667	-120.5841667	4.22	2.28	md	19	56	0.04685	0.06	nc	nc1045631	2016-12-16T01:20:26.007Z	19 km NW of Parkfield, California	earthquake	0.25	0.6	0.1	13	reviewed	nc	nc
4/24/1979	20:49:33	35.1016667	-119.021	0.09	2.41	mh	13	104		0.34	ci	ci3348620	2016-04-01T21:43:34.999Z	20km NNW of Grapevine, CA	earthquake	0.81	1.96	0.239	4	reviewed	ci	ci
4/23/1979	18:12:34	35.2385	-120.7175	0.207	2.46	md	11	240	0.03964	0.26	nc	nc1045531	2016-12-16T01:14:01.130Z	6 km NNE of Avila Beach, California	earthquake	6.29	5.92	0.11	9	reviewed	nc	nc
4/22/1979	14:41:11	35.018	-119.1393333	0.74	2	mh	12	157		0.2	ci	ci3348574	2016-02-01T23:25:05.130Z	19km N of Pine Mountain Club, CA	earthquake	0.74	1.26		0	reviewed	ci	ci
4/18/1979	4:21:16	36.1043333	-120.236	8.68	2.09	md	10	230	0.1622	0.1	nc	nc1045455	2016-12-16T01:08:58.525Z	11 km ESE of Coalinga, California	earthquake	0.99	0.99	0.19	10	reviewed	nc	nc
4/18/1979	4:15:24	36.102	-120.2346667	8.671	2.42	md	12	230	0.1631	0.08	nc	nc1045454	2016-12-16T01:08:54.941Z	12 km ESE of Coalinga, California	earthquake	0.8	0.73	0.13	11	reviewed	nc	nc
4/12/1979	18:28:37	34.829	-120.4136667	12.79	2.79	mh	12	214	0.2272	0.38	ci	ci3348346	2016-04-01T21:47:44.890Z	4km SSE of Orcutt, CA	earthquake	1.52	2.22	0.244	8	reviewed	ci	ci
4/11/1979	21:14:24	34.8413333	-120.4683333	6	2.5	mh	8	226	0.2623	0.53	ci	ci3314710	2016-04-02T10:42:47.503Z	4km SW of Orcutt, CA	earthquake	2.65	31.61		0	reviewed	ci	ci
4/10/1979	9:15:25	36.082	-120.3238333	3.68	2.21	md	4	190	0.1505	0	nc	nc1045339	2016-12-16T01:01:53.534Z	7 km SSE of Coalinga, California	earthquake	3.39	7.61	0.09	2	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
4/10/1979	9:15:09	35.8653333	-118.9575	6	2.74	mh	12	167	0.4421	0.37	ci	ci3314684	2016-04-02T07:22:46.781Z	23km SSE of Porterville, CA	earthquake	0.84	31.61	0.437	5	reviewed	ci	ci
3/22/1979	1:44:09	36.1421667	-120.132	11.563	2.71	md	18	256	0.2018	0.08	nc	nc1045099	2016-12-16T00:46:51.606Z	7 km SSW of Huron, California	earthquake	1.57	0.62	0.11	15	reviewed	nc	nc
3/9/1979	14:11:57	35.8676667	-119.481	6	2.87	ml	16	177		0.48	ci	ci3346531	2016-04-02T07:27:21.949Z	2km SSE of Alpaugh, CA	earthquake	1.64	31.61	0.35	3	reviewed	ci	ci
2/27/1979	18:53:52	36.2041667	-120.3033333	4.807	2.34	md	21	219	0.2604	0.04	nc	nc1044821	2016-12-16T00:28:59.856Z	8 km NE of Coalinga, California	earthquake	0.36	0.74	0.17	2	reviewed	nc	nc
2/27/1979	15:36:30	36.1373333	-120.1258333	9.86	3.12	md	33	184	0.255	0.1	nc	nc1044820	2016-12-16T00:28:56.052Z	7 km SSW of Huron, California	earthquake	0.48	0.86	0.19	6	reviewed	nc	nc
2/20/1979	11:53:22	35.8633333	-120.4128333	5.258	2.01	md	17	83	0.01802	0.06	nc	nc1044744	2016-12-16T00:23:42.499Z	4 km SSE of Parkfield, California	earthquake	0.26	0.4	0.1	7	reviewed	nc	nc
2/18/1979	10:54:04	36.0981667	-120.6585	5.842	2.13	md	16	80	0.1604	0.06	nc	nc1044711	2016-12-16T00:21:36.565Z	23 km ENE of San Ardo, California	earthquake	0.28	0.97	0.03	5	reviewed	nc	nc
2/12/1979	13:16:50	36.0028333	-120.5585	4.583	2.1	md	24	64	0.07297	0.07	nc	nc1044626	2016-12-16T00:15:46.028Z	16 km NW of Parkfield, California	earthquake	0.25	0.54	0.05	5	reviewed	nc	nc
2/7/1979	4:20:38	35.8851667	-120.4036667	8.023	3.56	md	6	144	0.07027	0.47	nc	nc1044563	2016-12-16T00:11:45.361Z	3 km ESE of Parkfield, California	earthquake	0.82	0.68	0.08	17	reviewed	nc	nc
2/4/1979	20:57:32	36.1345	-120.3478333	28.619	2.46	md	10	175	0.08198	0.34	nc	nc1044528	2016-12-16T00:09:18.036Z	1 km ESE of Coalinga, California	earthquake	2.75	3.24	0.12	9	reviewed	nc	nc
2/3/1979	12:37:41	36.0868333	-120.2633333	9.041	2.14	md	10	283	0.1405	0.04	nc	nc1044490	2016-12-16T00:06:59.591Z	10 km SE of Coalinga, California	earthquake	2.01	0.86	0.1	9	reviewed	nc	nc
1/30/1979	17:01:37	36.0156667	-120.5755	4.24	2.07	md	17	63	0.05586	0.07	nc	nc1044405	2016-12-16T00:01:44.486Z	Central California	earthquake	0.31	0.61	0.15	7	reviewed	nc	nc
1/28/1979	6:48:12	35.6101667	-119.1805	18.13	2.47	mh	11	151		0.28	ci	ci3345778	2016-04-02T00:57:20.724Z	9km SSE of McFarland, CA	earthquake	1.06	3.24	0.286	6	reviewed	ci	ci
1/21/1979	1:16:22	35.7826667	-119.3391667	6	2.54	mh	2	317	0.7141	0.04	ci	ci12232975	2016-02-01T23:22:19.510Z	8km W of Delano, CA	earthquake	1.48	31.61	0.461	2	reviewed	ci	ci
1/16/1979	5:59:40	35.0703333	-119.0631667	6.11	2.1	mh	10	125		0.18	ci	ci3345591	2016-02-01T21:55:31.590Z	19km NW of Grapevine, CA	earthquake	0.66	15.4		0	reviewed	ci	ci
1/9/1979	10:53:05	36.1066667	-120.2551667	10.481	2.49	md	22	223	0.1468	0.06	nc	nc1044090	2016-12-15T23:40:52.587Z	10 km ESE of Coalinga, California	earthquake	0.36	0.41	0.18	7	reviewed	nc	nc
1/9/1979	10:47:40	36.1033333	-120.2598333	9.511	2.82	md	27	183	0.1432	0.11	nc	nc1044089	2016-12-15T23:40:48.812Z	9 km ESE of Coalinga, California	earthquake	0.47	0.42	0.15	9	reviewed	nc	nc
1/7/1979	14:27:01	36.095	-120.2568333	9.181	2.08	md	21	221	0.145	0.1	nc	nc1044062	2016-12-15T23:39:04.607Z	10 km ESE of Coalinga, California	earthquake	0.47	0.52	0.09	4	reviewed	nc	nc
1/7/1979	13:42:51	36.1046667	-120.2546667	9.821	2.81	md	27	223	0.1477	0.08	nc	nc1044060	2016-12-15T23:38:57.427Z	10 km ESE of Coalinga, California	earthquake	0.43	0.47	0.15	10	reviewed	nc	nc
1/7/1979	13:23:16	36.1005	-120.2536667	10.111	2.17	md	18	222	0.1477	0.08	nc	nc1044057	2016-12-15T23:38:45.303Z	10 km ESE of Coalinga, California	earthquake	0.6	0.67	0.3	9	reviewed	nc	nc
1/7/1979	12:43:03	36.0901667	-120.2463333	8.661	2.26	md	24	225	0.1541	0.06	nc	nc1044054	2016-12-15T23:38:34.148Z	11 km ESE of Coalinga, California	earthquake	0.4	0.33	0.12	7	reviewed	nc	nc
1/7/1979	11:45:38	36.0958333	-120.253	9.481	2.3	md	23	223	0.1486	0.08	nc	nc1044051	2016-12-15T23:38:23.146Z	10 km ESE of Coalinga, California	earthquake	0.41	0.44	0.03	6	reviewed	nc	nc
1/7/1979	11:37:31	36.1003333	-120.2563333	9.911	3.8	ml	31	184	0.1459	0.1	nc	nc1044050	2016-12-15T23:38:19.568Z	10 km ESE of Coalinga, California	earthquake	0.49	0.53		0	reviewed	nc	nc
1/4/1979	17:46:33	35.9366667	-119.9291667	6	2.39	mh	6	272	0.4996	0.51	ci	ci3345377	2016-04-02T13:48:12.970Z	8km SSE of Kettleman City, CA	earthquake	3	31.61	0.111	4	reviewed	ci	ci
1/4/1979	11:43:25	36.0013333	-120.5583333	4.677	2.75	md	14	141	0.07387	0.06	nc	nc1044019	2016-12-15T23:36:15.910Z	15 km NW of Parkfield, California	earthquake	0.42	0.75	0.16	8	reviewed	nc	nc
1/3/1979	20:00:42	35.0405	-119.1501667	9.44	3.46	ml	44	146		0.45	ci	ci3345347	2016-04-02T07:26:13.937Z	22km N of Pine Mountain Club, CA	earthquake	0.99	1.36	0.282	7	reviewed	ci	ci
1/3/1979	13:36:50	34.9431667	-119.1551667	1.31	3.29	ml	51	83		0.35	ci	ci3345335	2016-04-02T17:03:07.289Z	11km N of Pine Mountain Club, CA	earthquake	0.52	1.13	0.263	8	reviewed	ci	ci
1/2/1979	1:40:15	36.211	-120.013	21.131	2.48	md	16	254	0.2703	0.25	nc	nc1043975	2016-12-15T23:33:34.548Z	8 km E of Huron, California	earthquake	4.53	1.59	0.09	10	reviewed	nc	nc
1/1/1979	20:38:18	34.9356667	-119.1708333	0.02	3.04	ml	35	82		0.37	ci	ci3345168	2016-04-01T21:41:19.874Z	10km N of Pine Mountain Club, CA	earthquake	0.58	1.37	0.292	7	reviewed	ci	ci
12/31/1978	23:29:25	35.9013333	-119.8745	6.48	2.16	md	15	273	0.3784	0.43	nc	nc1043962	2016-12-15T23:32:48.519Z	14 km SSE of Kettleman City, California	earthquake	5.2	14.53	0.17	6	reviewed	nc	nc
12/31/1978	21:04:03	35.3348333	-118.9525	6	2.9	ml	16	114		0.31	ci	ci3345105	2016-02-01T21:55:05.790Z	8km ESE of Bakersfield, CA	earthquake	0.77	31.61	0.307	3	reviewed	ci	ci
12/31/1978	2:30:57	36.0035	-119.9496667	12.42	2.38	md	11	272	0.3243	0.3	nc	nc1043943	2016-12-15T23:31:32.537Z	1 km ESE of Kettleman City, California	earthquake	5.75	16.39	0.15	12	reviewed	nc	nc
12/30/1978	17:24:04	35.0248333	-119.1485	1.16	2.31	mh	16	105		0.32	ci	ci3345093	2016-02-01T21:55:05.400Z	20km N of Pine Mountain Club, CA	earthquake	0.73	1.64	0.196	7	reviewed	ci	ci
12/27/1978	11:31:17	36.0781667	-120.6358333	4.416	2.95	md	31	50	0.03333	0.1	nc	nc1043901	2016-12-15T23:28:41.250Z	25 km ENE of San Ardo, California	earthquake	0.26	0.51	0.14	23	reviewed	nc	nc
12/18/1978	12:48:13	34.9176667	-120.3845	0.09	2.59	mh	10	220	0.1753	0.46	ci	ci3314250	2016-02-01T21:38:15.370Z	6km SE of Santa Maria, CA	earthquake	3.09	2.03	0.176	8	reviewed	ci	ci
12/10/1978	0:25:27	35.2576667	-120.7411667	4.132	2.01	md	7	191	0.02252	0.02	nc	nc1043689	2016-12-15T23:14:45.101Z	7 km WSW of San Luis Obispo, California	earthquake	5.08	4.19	0.38	3	reviewed	nc	nc
11/26/1978	6:57:44	35.2173333	-118.8901667	13.21	2.33	mh	15	112		0.29	ci	ci3343709	2016-02-01T21:20:21.880Z	5km SSE of Lamont, CA	earthquake	0.73	1.96	0.19	7	reviewed	ci	ci
11/19/1978	2:12:11	35.8306667	-119.9876667	7.268	3.39	md	10	262	0.2982	0.14	nc	nc1043423	2016-12-15T22:56:12.748Z	19 km S of Kettleman City, California	earthquake	1.73	3.95	0.15	9	reviewed	nc	nc
11/13/1978	16:49:59	35.4058333	-120.7441667	7.896	2.87	md	6	165	0.1613	0.01	nc	nc1043359	2016-12-15T22:51:20.901Z	10 km ENE of Morro Bay, California	earthquake	2.55	4.14	0.06	4	reviewed	nc	nc
11/8/1978	21:29:06	35.1118333	-118.9245	2.16	2.18	mh	10	101		0.09	ci	ci3343421	2016-02-01T21:54:14.000Z	14km SW of Arvin, CA	earthquake	0.41	0.8	0.209	6	reviewed	ci	ci
11/8/1978	12:48:16	35.3213333	-118.9305	6	2.06	mh	13	128		0.2	ci	ci3343410	2016-02-01T21:37:46.140Z	7km NNW of Lamont, CA	earthquake	0.6	31.61	0.397	6	reviewed	ci	ci
10/27/1978	14:05:30	36.264	-120.3771667	6	2.94	ml	5	275	1.359	0.46	ci	ci3343214	2016-02-01T22:10:45.710Z	14km N of Coalinga, CA	earthquake	4.76	31.61	0.258	2	reviewed	ci	ci
10/26/1978	18:50:01	34.9916667	-119.0735	3.11	2.5	mh	23	94		0.29	ci	ci3343201	2016-02-01T23:20:56.490Z	14km WNW of Grapevine, CA	earthquake	0.57	1.73	0.28	9	reviewed	ci	ci
10/23/1978	3:13:47	35.9598333	-120.5135	5.41	2.06	md	21	76	0.03514	0.06	nc	nc1042970	2016-12-15T22:25:58.054Z	9 km NW of Parkfield, California	earthquake	0.24	0.46	0.1	11	reviewed	nc	nc
10/12/1978	4:11:34	35.7423333	-120.1008333	6	2.32	mh	2	334	1.326	0.11	ci	ci9685770	2016-02-01T23:20:39.850Z	18km E of Cholame, CA	earthquake	2.34	31.61	0.533	3	reviewed	ci	ci
10/10/1978	10:14:24	34.9136667	-120.4063333	0.57	2.17	mh	8	226	0.1937	0.33	ci	ci3342889	2016-02-01T21:19:21.110Z	5km SSE of Santa Maria, CA	earthquake	1.48	1.84	0.2	5	reviewed	ci	ci
10/10/1978	7:11:17	35.3765	-119.1543333	6	2.25	mh	16	123		0.45	ci	ci3342884	2016-02-01T21:53:43.930Z	1km SW of Rosedale, CA	earthquake	1.03	31.61	0.465	7	reviewed	ci	ci
10/5/1978	4:08:20	35.0278333	-119.2795	4.85	2.3	mh	20	98		0.32	ci	ci10082978	2016-02-01T21:37:05.270Z	12km ESE of Maricopa, CA	earthquake	0.59	3.35	0.292	8	reviewed	ci	ci
9/30/1978	4:15:44	35.7726667	-120.317	8.558	2.54	md	18	208	0.06577	0.06	nc	nc1042544	2016-12-15T21:55:27.532Z	14 km NNE of Shandon, California	earthquake	0.45	0.52	0.1	10	reviewed	nc	nc
9/21/1978	7:34:46	36.0548333	-120.6103333	3.089	2.05	md	16	126	0.01802	0.09	nc	nc1042422	2016-12-15T21:47:03.978Z	23 km NW of Parkfield, California	earthquake	0.34	0.48	0.07	6	reviewed	nc	nc
9/20/1978	0:39:08	34.8926667	-120.386	0	2.19	mh	8	210		0.35	ci	ci3341874	2016-02-01T21:18:48.020Z	6km ENE of Orcutt, CA	earthquake	1.52	2.61	0.288	4	reviewed	ci	ci
9/19/1978	23:30:27	36.071	-120.626	2.048	2.12	md	10	150	0.02432	0.08	nc	nc1042399	2016-12-15T21:45:44.954Z	25 km WSW of Coalinga, California	earthquake	0.71	1.1	0.08	11	reviewed	nc	nc
9/14/1978	2:22:43	35.9411667	-120.485	10.208	2.19	md	16	68	0.00991	0.06	nc	nc1042292	2016-12-15T21:38:11.006Z	6 km NW of Parkfield, California	earthquake	0.33	0.67	0.1	11	reviewed	nc	nc
8/29/1978	21:58:09	34.9921667	-119.1648333	3.08	2.56	mh	23	94		0.33	ci	ci3341413	2016-02-01T21:18:26.550Z	16km N of Pine Mountain Club, CA	earthquake	0.63	1.4	0.323	9	reviewed	ci	ci
8/29/1978	6:25:40	36.036	-119.8426667	6	2.69	ml	4	254	1.138	0.44	ci	ci3341387	2016-02-01T21:18:24.150Z	11km ENE of Kettleman City, CA	earthquake	2.94	31.61	0.28	2	reviewed	ci	ci
8/18/1978	14:49:14	36.174	-119.9523333	6	2.88	ml	2	327	1.304	0.06	ci	ci9681610	2016-02-01T22:09:21.170Z	11km SSW of Lemoore Station, CA	earthquake	1.74	31.61	0.168	2	reviewed	ci	ci
8/15/1978	6:26:07	35.9276667	-120.1511667	13.74	2.14	md	11	266	0.1523	0.04	nc	nc1041648	2016-12-15T20:43:24.813Z	8 km SSW of Avenal, California	earthquake	2.36	0.84	0.08	5	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
8/15/1978	1:23:44	35.1078333	-119.0815	1.94	3.14	ml	33	106		0.31	ci	ci10013210	2016-02-01T23:01:52.530Z	23km SW of Lamont, CA	earthquake	0.56	1.49	0.248	6	reviewed	ci	ci
8/5/1978	23:56:06	34.909	-119.0283333	14.2	2.27	mc	10	116		0.2	ci	ci10011802	2016-04-02T07:18:54.421Z	10km WSW of Grapevine, CA	earthquake	0.86	1.33		0	reviewed	ci	ci
8/2/1978	14:59:16	36.0243333	-120.5756667	5.196	2.82	md	23	75	0.04775	0.07	nc	nc1041342	2016-12-15T20:19:07.796Z	18 km NW of Parkfield, California	earthquake	0.25	0.42	0.11	11	reviewed	nc	nc
7/31/1978	15:02:27	35.0905	-119.1331667	0.01	2.97	ml	28	94.3		0.39	ci	ci3341022	2016-02-01T23:01:22.380Z	25km E of Maricopa, CA	earthquake	0.6	1.35	0.391	4	reviewed	ci	ci
7/23/1978	14:38:41	35.9585	-120.5093333	7.158	3.2	ml	36	76	0.03153	0.07	nc	nc1041184	2016-12-15T20:06:59.960Z	9 km NW of Parkfield, California	earthquake	0.19	0.38		0	reviewed	nc	nc
7/21/1978	12:36:15	36.034	-120.5911667	7.82	2.08	md	20	57	0.03514	0.05	nc	nc1041156	2016-12-15T20:05:00.859Z	20 km NW of Parkfield, California	earthquake	0.27	0.51	0.06	6	reviewed	nc	nc
7/21/1978	8:51:03	35.7335	-119.4468333	6	2.32	mh	6	193	0.7554	0.23	ci	ci3340837	2016-02-01T22:25:16.310Z	18km SSE of Alpaugh, CA	earthquake	1.4	31.61	0.417	6	reviewed	ci	ci
7/11/1978	19:05:47	35.032	-119.1571667	0.46	3.17	ml	30	99		0.32	ci	ci3340514	2016-02-01T21:34:33.640Z	21km N of Pine Mountain Club, CA	earthquake	0.65	1.98	0.174	6	reviewed	ci	ci
7/10/1978	9:05:30	35.3278333	-118.9498333	0.36	2.85	ml	26	131		0.29	ci	ci3340486	2016-02-01T22:07:55.570Z	8km ESE of Bakersfield, CA	earthquake	0.52	1.22	0.348	4	reviewed	ci	ci
7/9/1978	5:18:57	35.9841667	-120.5435	4.373	2.04	md	18	69	0.06847	0.06	nc	nc1040963	2016-12-15T19:50:08.868Z	13 km NW of Parkfield, California	earthquake	0.27	0.7	0.08	6	reviewed	nc	nc
7/2/1978	20:00:13	36.0633333	-120.123	6.14	2.27	md	12	251	0.2189	0.06	nc	nc1040889	2016-12-15T19:45:15.067Z	6 km N of Avenal, California	earthquake	1.46	1.11	0.1	8	reviewed	nc	nc
6/21/1978	21:33:29	36.0063333	-120.2521667	9.3	2.48	md	11	260	0.1027	0.07	nc	nc1040740	2016-12-15T19:34:02.192Z	Central California	earthquake	1.62	0.63	0.13	10	reviewed	nc	nc
6/16/1978	5:43:01	35.0426667	-119.1506667	0.01	2.88	ml	26	107		0.32	ci	ci3340020	2016-02-01T22:42:31.380Z	22km N of Pine Mountain Club, CA	earthquake	0.73	1.53	0.258	3	reviewed	ci	ci
6/16/1978	4:21:31	35.041	-119.1288333	11	4.16	ml	54	107		0.37	ci	ci3340018	2016-02-01T23:00:00.120Z	21km WNW of Grapevine, CA	earthquake	0.83	1.06	0.194	8	reviewed	ci	ci
6/10/1978	14:01:54	34.9291667	-119.0566667	6.66	2.6	ml	24	87		0.34	ci	ci3339910	2016-02-01T22:42:27.550Z	12km W of Grapevine, CA	earthquake	0.7	2.72	0.193	3	reviewed	ci	ci
6/10/1978	13:56:35	36.0576667	-120.6136667	5.57	2.42	md	17	75	0.01802	0.08	nc	nc1040626	2016-12-15T19:23:30.429Z	23 km NW of Parkfield, California	earthquake	0.32	0.51	0.11	9	reviewed	nc	nc
6/10/1978	13:44:10	36.0578333	-120.6136667	5.38	2.42	md	18	75	0.01802	0.08	nc	nc1040625	2016-12-15T19:23:26.096Z	23 km NW of Parkfield, California	earthquake	0.31	0.52	0.08	11	reviewed	nc	nc
6/9/1978	19:52:18	34.872	-120.5225	6	2.43	mh	11	229		0.48	ci	ci3339901	2016-02-01T22:24:36.360Z	8km W of Orcutt, CA	earthquake	2.49	31.61	0.181	5	reviewed	ci	ci
6/9/1978	8:57:44	35.3926667	-119.535	23.99	2.41	mh	14	154		0.28	ci	ci3339889	2016-02-01T21:16:07.270Z	6km W of Buttonwillow, CA	earthquake	0.9	1.21	0.276	5	reviewed	ci	ci
6/8/1978	2:47:10	35.1146667	-118.9731667	5.17	2.4	mh	17	207		0.26	ci	ci3339879	2016-02-01T22:59:52.030Z	17km SW of Arvin, CA	earthquake	0.9	3.26	0.24	9	reviewed	ci	ci
6/2/1978	14:39:18	35.2281667	-119.2973333	7.5	2.85	ml	24	124		0.33	ci	ci3339787	2016-02-01T22:24:29.880Z	17km ENE of Taft, CA	earthquake	0.68	2.06	0.484	2	reviewed	ci	ci
5/22/1978	4:56:19	36.0158333	-120.5698333	4.919	2.04	md	15	153	0.05676	0.05	nc	nc1040368	2016-12-15T19:02:23.825Z	17 km NW of Parkfield, California	earthquake	0.34	0.56	0.13	6	reviewed	nc	nc
5/22/1978	4:49:46	36.0173333	-120.5686667	5.009	2.63	md	16	95	0.05586	0.05	nc	nc1040367	2016-12-15T19:02:19.567Z	17 km NW of Parkfield, California	earthquake	0.31	0.5	0.09	7	reviewed	nc	nc
5/22/1978	3:23:52	36.0878333	-120.4478333	9.168	2.69	md	20	136	0.1216	0.06	nc	nc1040365	2016-12-15T19:02:09.760Z	9 km SW of Coalinga, California	earthquake	0.25	0.53	0.1	6	reviewed	nc	nc
5/21/1978	6:40:57	35.4726667	-119.3225	6	2.04	mh	8	167		0.2	ci	ci3339565	2016-02-01T22:59:33.210Z	6km SW of Shafter, CA	earthquake	1.31	31.61	0.116	2	reviewed	ci	ci
5/19/1978	0:36:18	36.0961667	-120.2195	7.243	2.12	md	9	236	0.1829	0.04	nc	nc1040327	2016-12-15T18:58:39.874Z	13 km NW of Avenal, California	earthquake	0.65	1.01	0.19	6	reviewed	nc	nc
5/12/1978	20:58:48	35.6088333	-120.8891667	3.422	2.43	md	13	227	0.2279	0.06	nc	nc1040270	2016-12-15T18:54:25.715Z	13 km S of Lake Nacimiento, California	earthquake	0.77	1.62	0.23	13	reviewed	nc	nc
5/4/1978	22:31:20	34.9116667	-119.5798333	15.3	2.19	mc	12	70		0.29	ci	ci3339248	2016-02-01T22:59:16.780Z	23km SW of Maricopa, CA	earthquake	0.81	1.63		0	reviewed	ci	ci
5/1/1978	11:53:56	35.7718333	-119.3655	6	2.74	ml	2	318	0.7336	0.04	ci	ci9675202	2016-02-01T22:41:44.370Z	11km W of Delano, CA	earthquake	1.89	31.61	0.244	2	reviewed	ci	ci
4/28/1978	6:37:16	36.0336667	-120.585	4.29	2.26	md	19	77	0.03604	0.07	nc	nc1040042	2016-12-15T18:36:13.858Z	20 km NW of Parkfield, California	earthquake	0.24	0.47	0.07	7	reviewed	nc	nc
4/24/1978	12:59:37	36.0065	-120.5541667	5.87	2.56	md	12	88	0.08919	0.05	nc	nc1039977	2016-12-15T18:31:42.886Z	16 km NW of Parkfield, California	earthquake	0.41	1.12	0.18	9	reviewed	nc	nc
4/23/1978	16:56:01	36.1005	-120.295	25.692	2.05	md	8	218	0.1144	0.33	nc	nc1039957	2016-12-15T18:30:31.268Z	7 km SE of Coalinga, California	earthquake	3.88	2.5	0.18	6	reviewed	nc	nc
4/23/1978	7:05:53	35.433	-120.6796667	3.911	2.39	md	11	214	0.4054	0.05	nc	nc1039947	2016-12-15T18:29:46.875Z	6 km S of Atascadero, California	earthquake	1.06	7.64	0.21	8	reviewed	nc	nc
4/14/1978	6:17:06	35.708	-119.7221667	6	3.15	ml	10	185	0.3331	0.48	ci	ci3338842	2016-02-01T21:15:09.360Z	29km SW of Alpaugh, CA	earthquake	1.97	31.61	0.283	3	reviewed	ci	ci
4/12/1978	2:07:39	36.135	-120.1333333	10.462	2.68	md	23	204	0.2045	0.07	nc	nc1039810	2016-12-15T18:20:19.896Z	7 km SSW of Huron, California	earthquake	0.8	0.97	0.12	12	reviewed	nc	nc
3/25/1978	1:38:18	35.2948333	-120.7228333	-0.32	2.38	md	12	289	0.5234	0.33	nc	nc1039456	2016-12-15T17:51:42.868Z	5 km WNW of San Luis Obispo, California	earthquake	8.72	5.48	0.06	4	reviewed	nc	nc
3/23/1978	6:29:19	35.2413333	-118.9411667	6.56	2.72	ml	29	106		0.25	ci	ci3338285	2016-02-01T22:58:26.450Z	3km SW of Lamont, CA	earthquake	0.51	1.35	0.279	3	reviewed	ci	ci
3/20/1978	14:02:37	35.0818333	-119.0251667	5.69	2.4	mh	11	101		0.16	ci	ci3338224	2016-02-01T23:21:43.700Z	18km NNW of Grapevine, CA	earthquake	0.53	18.5		0	reviewed	ci	ci
3/18/1978	14:19:31	35.6873333	-119.7175	6	2.5	mh	2	329	1.013	0	ci	ci9672190	2016-02-01T22:40:43.150Z	30km SW of Alpaugh, CA	earthquake	1.65	31.61	0.127	2	reviewed	ci	ci
3/14/1978	6:32:52	34.9215	-119.0535	12.55	2.61	mh	26	87		0.25	ci	ci3338033	2016-02-01T22:05:59.700Z	12km WSW of Grapevine, CA	earthquake	0.55	1.02	0.26	13	reviewed	ci	ci
3/13/1978	15:49:44	36.2658333	-119.9686667	19.198	2.64	md	16	283	0.4486	0.19	nc	nc1039265	2016-12-15T17:38:08.121Z	5 km W of Lemoore Station, California	earthquake	6.7	1.91	0.19	8	reviewed	nc	nc
3/10/1978	19:47:21	35.5136667	-119.2091667	6	2.52	mh	11	140		0.36	ci	ci3337813	2016-02-01T22:05:44.270Z	6km ENE of Shafter, CA	earthquake	1.29	31.61	0.489	4	reviewed	ci	ci
3/9/1978	21:25:44	35.4493333	-119.2541667	6	2.09	mh	5	162	0.5765	0.09	ci	ci3337794	2016-02-01T22:22:51.740Z	6km SSE of Shafter, CA	earthquake	0.76	31.61	0.22	2	reviewed	ci	ci
3/7/1978	5:13:58	35.8956667	-120.4355	7.217	2.39	md	16	91	0.02252	0.07	nc	nc1039192	2016-12-15T17:32:59.289Z	Central California	earthquake	0.42	0.6	0.06	14	reviewed	nc	nc
3/7/1978	5:04:43	35.8953333	-120.4361667	7.137	2.61	md	16	92	0.02252	0.07	nc	nc1039191	2016-12-15T17:32:55.547Z	0 km SSW of Parkfield, California	earthquake	0.4	0.57	0.07	14	reviewed	nc	nc
3/1/1978	19:35:47	35.8951667	-120.4375	5.538	2.53	md	14	84	0.02342	0.1	nc	nc1039138	2016-12-15T17:29:15.696Z	0 km SW of Parkfield, California	earthquake	0.38	0.71	0.08	5	reviewed	nc	nc
3/1/1978	11:24:02	36.0683333	-120.2348333	9.24	2.02	md	10	250	0.1604	0.02	nc	nc1039131	2016-12-15T17:28:44.776Z	11 km NW of Avenal, California	earthquake	0.52	0.68	0.02	2	reviewed	nc	nc
3/1/1978	10:26:53	36.0843333	-120.2243333	8.783	2.62	md	11	249	0.1721	0.06	nc	nc1039130	2016-12-15T17:28:41.070Z	12 km NW of Avenal, California	earthquake	1.66	0.62	0.17	2	reviewed	nc	nc
2/20/1978	9:57:09	36.124	-120.4578333	10.423	2.24	md	7	129	0.03514	0.04	nc	nc1039028	2016-12-15T17:20:58.416Z	Central California	earthquake	0.52	0.72	0.15	3	reviewed	nc	nc
2/16/1978	14:24:02	36.0661667	-120.627	2.07	2.35	md	19	82	0.02523	0.08	nc	nc1038953	2016-12-15T17:13:52.276Z	25 km WSW of Coalinga, California	earthquake	0.22	0.54	0.12	8	reviewed	nc	nc
2/9/1978	8:59:34	35.925	-120.4763333	3.588	2.14	md	10	78	0.02072	0.05	nc	nc1038890	2016-12-15T17:09:01.967Z	4 km NW of Parkfield, California	earthquake	0.28	0.5	0.16	8	reviewed	nc	nc
2/7/1978	8:47:57	36.0826667	-120.131	14.41	2.03	md	8	276	0.2261	0.15	nc	nc1038866	2016-12-15T17:07:22.260Z	8 km N of Avenal, California	earthquake	1.46	2.49	0.11	9	reviewed	nc	nc
2/6/1978	9:24:27	36.0641667	-120.1565	12.39	2.34	md	11	277	0.1982	0.03	nc	nc1038856	2016-12-15T17:06:18.654Z	7 km NNW of Avenal, California	earthquake	1.07	1.27	0.09	7	reviewed	nc	nc
2/6/1978	2:00:58	36.0645	-120.1448333	12.68	2.1	md	11	257	0.2063	0.02	nc	nc1038852	2016-12-15T17:05:58.646Z	6 km NNW of Avenal, California	earthquake	1.33	1.19	0.09	5	reviewed	nc	nc
2/5/1978	22:58:36	36.1001667	-120.1208333	6	3.13	mh	6	234		1.81	ci	ci9998842	2016-04-02T10:54:14.508Z	11km N of Avenal, CA	earthquake	9.97	31.61	0.356	8	reviewed	ci	ci
1/21/1978	22:32:06	35.0928333	-119.0563333	0	2.31	mh	17	103		0.32	ci	ci9997886	2016-04-02T07:17:45.347Z	20km NW of Grapevine, CA	earthquake	0.88	2.09	0.374	6	reviewed	ci	ci
1/13/1978	9:29:14	36.0903333	-120.6511667	-0.1	2.17	md	12	129	0.04955	0.09	nc	nc1038574	2016-12-15T16:42:58.093Z	24 km ENE of San Ardo, California	earthquake	0.44	2.36	0.15	8	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/28/1977	12:21:03	35.8063333	-120.3538333	7.958	2.99	md	16	255	0.02432	0.04	nc	nc1038300	2016-12-15T16:21:05.810Z	12 km SE of Parkfield, California	earthquake	0.9	0.45	0.08	9	reviewed	nc	nc
12/28/1977	3:06:29	35.841	-120.3875	7.993	2.23	md	13	146	0.02883	0.14	nc	nc1038289	2016-12-15T16:20:22.275Z	7 km SSE of Parkfield, California	earthquake	1.16	1.29	0.07	6	reviewed	nc	nc
12/28/1977	2:59:37	35.8106667	-120.363	8.108	3.4	ml	20	239	0.02162	0.04	nc	nc1038288	2016-12-15T16:20:18.414Z	Central California	earthquake	0.7	0.42		0	reviewed	nc	nc
12/27/1977	18:56:36	35.8215	-120.3713333	7.38	2.5	md	12	245	0.06937	0.04	nc	nc1038283	2016-12-15T16:19:58.932Z	10 km SSE of Parkfield, California	earthquake	0.9	0.52	0.08	8	reviewed	nc	nc
12/26/1977	6:44:56	35.2311667	-120.6971667	17.96	2.1	mh	4	308	0.5032	0.16	ci	ci3337122	2016-02-01T20:01:34.020Z	6km NNE of Avila Beach, CA	earthquake	3.05	15.15		0	reviewed	ci	ci
12/16/1977	15:48:58	35.9745	-120.523	8.063	2.4	md	21	75	0.04955	0.05	nc	nc1038170	2016-12-15T16:12:04.481Z	11 km NW of Parkfield, California	earthquake	0.22	0.53	0.1	10	reviewed	nc	nc
12/16/1977	10:41:47	35.943	-120.489	9.768	3.1	ml	21	57	0.01261	0.05	nc	nc1038168	2016-12-15T16:11:57.029Z	6 km NW of Parkfield, California	earthquake	0.27	0.6		0	reviewed	nc	nc
12/15/1977	9:32:56	34.988	-119.2425	10.34	2.1	mh	11	126		0.18	ci	ci3336931	2016-02-01T20:06:51.820Z	16km ESE of Maricopa, CA	earthquake	0.68	2.82		0	reviewed	ci	ci
12/14/1977	12:28:57	36.0363333	-120.5888333	7.711	2.35	md	21	53	0.03333	0.05	nc	nc1038134	2016-12-15T16:09:20.960Z	20 km NW of Parkfield, California	earthquake	0.25	0.46	0.15	8	reviewed	nc	nc
12/12/1977	13:17:28	35.7556667	-119.6576667	6	2	mh	5	267	0.4026	0.39	ci	ci3336875	2016-02-01T19:50:10.620Z	21km SW of Alpaugh, CA	earthquake	3	31.61		0	reviewed	ci	ci
12/3/1977	20:50:01	36.0236667	-120.5818333	3.7	2.18	md	15	73	0.04685	0.09	nc	nc1037996	2016-12-15T15:59:54.864Z	19 km NW of Parkfield, California	earthquake	0.38	0.87	0.08	3	reviewed	nc	nc
11/30/1977	18:33:27	35.8363333	-120.8026667	6.632	2.72	md	24	152	0.1207	0.09	nc	nc1037949	2016-12-15T15:56:43.729Z	2 km S of Bradley, California	earthquake	0.44	1.12	0.14	8	reviewed	nc	nc
11/30/1977	13:51:25	35.9395	-120.487	10.16	2.08	md	16	126	0.01171	0.06	nc	nc1037943	2016-12-15T15:56:16.417Z	6 km NW of Parkfield, California	earthquake	0.39	0.66	0.11	5	reviewed	nc	nc
11/29/1977	18:22:07	35.9398333	-120.4845	10.078	3	ml	23	56	0.00991	0.05	nc	nc1037934	2016-12-15T15:55:40.438Z	6 km NW of Parkfield, California	earthquake	0.26	0.55		0	reviewed	nc	nc
11/29/1977	16:42:01	35.9411667	-120.4868333	10.528	3.7	ml	25	84	0.01081	0.07	nc	nc1037933	2016-12-15T15:55:34.810Z	6 km NW of Parkfield, California	earthquake	0.31	0.52		0	reviewed	nc	nc
11/24/1977	17:59:01	36.0678333	-120.6196667	6.811	2.33	md	23	81	0.09459	0.06	nc	nc1037848	2016-12-15T15:49:47.396Z	24 km WSW of Coalinga, California	earthquake	0.32	0.66	0.09	12	reviewed	nc	nc
11/24/1977	14:30:48	36.0553333	-120.603	8.731	2.42	md	28	71	0.1117	0.07	nc	nc1037846	2016-12-15T15:49:35.200Z	23 km NW of Parkfield, California	earthquake	0.24	0.63	0.1	21	reviewed	nc	nc
11/12/1977	19:51:50	36.1201667	-120.4345	6.653	2.29	md	22	128	0.02613	0.06	nc	nc1037688	2016-12-15T15:38:21.501Z	7 km WSW of Coalinga, California	earthquake	0.16	0.22	0.09	13	reviewed	nc	nc
11/11/1977	3:38:40	35.0145	-119.1573333	2.39	2	mh	17	132		0.19	ci	ci3335981	2016-02-01T19:43:58.330Z	19km N of Pine Mountain Club, CA	earthquake	0.56	0.97		0	reviewed	ci	ci
11/9/1977	14:14:14	35.9395	-120.4808333	11.807	2.25	md	15	67	0.008108	0.07	nc	nc1037640	2016-12-15T15:34:31.829Z	6 km NW of Parkfield, California	earthquake	0.42	0.87		1	reviewed	nc	nc
11/8/1977	5:08:00	36.0271667	-120.5813333	4.5	2.37	md	23	56	0.04324	0.05	nc	nc1037623	2016-12-15T15:33:37.322Z	19 km NW of Parkfield, California	earthquake	0.23	0.44	0.06	7	reviewed	nc	nc
11/3/1977	18:17:26	34.949	-119.2418333	0	2	mh	13	120	0.1013	0.41	ci	ci3335856	2016-02-01T19:49:18.190Z	14km NW of Pine Mountain Club, CA	earthquake	0.88	1.91		0	reviewed	ci	ci
10/30/1977	23:15:31	36.0396667	-120.5945	3.78	2.48	md	21	50	0.02883	0.09	nc	nc1037479	2016-12-15T15:19:09.990Z	21 km NW of Parkfield, California	earthquake	0.29	0.54	0.02	6	reviewed	nc	nc
10/30/1977	11:22:45	34.9681667	-119.2426667	0.33	2.26	mh	17	92		0.3	ci	ci3335792	2016-02-01T19:43:48.620Z	16km NNW of Pine Mountain Club, CA	earthquake	0.58	1.56	0.243	9	reviewed	ci	ci
10/23/1977	0:29:19	34.8181667	-120.1958333	1.32	2.4	mh	7	155	0.1239	0.27	ci	ci3335567	2016-02-01T20:11:08.690Z	11km NE of Los Alamos, CA	earthquake	0.89	2.66		0	reviewed	ci	ci
10/19/1977	9:03:51	35.4948333	-119.232	6	2.47	ml	18	139		0.42	ci	ci3335298	2016-02-01T19:48:49.200Z	4km E of Shafter, CA	earthquake	1.17	31.61	0.259	3	reviewed	ci	ci
10/6/1977	11:56:49	34.8948333	-120.4663333	15.57	3.1	mh	19	237		0.49	ci	ci3335090	2016-02-01T19:37:25.930Z	4km NW of Orcutt, CA	earthquake	3.9	1.56	0.144	8	reviewed	ci	ci
10/6/1977	11:52:01	34.971	-120.523	12.95	2.65	mh	11	289	0.2891	0.35	ci	ci3335089	2016-02-01T19:59:53.740Z	4km E of Guadalupe, CA	earthquake	1.94	1.31	0.188	11	reviewed	ci	ci
10/6/1977	11:50:54	34.958	-120.5471667	12.67	3.28	ml	15	290		0.47	ci	ci10082166	2016-02-01T20:13:26.540Z	3km SE of Guadalupe, CA	earthquake	2.68	1.81	0.193	3	reviewed	ci	ci
10/1/1977	10:07:40	35.2593333	-119.3541667	10.64	3.36	ml	26	110		0.4	ci	ci3335023	2016-02-01T20:10:46.060Z	16km NE of Taft, CA	earthquake	0.83	1.72	0.264	6	reviewed	ci	ci
9/30/1977	17:46:38	35.041	-119.0286667	8.12	3	ml	28	90		0.28	ci	ci3335008	2016-02-01T20:05:09.380Z	14km NW of Grapevine, CA	earthquake	0.48	1.4	0.192	6	reviewed	ci	ci
9/24/1977	3:48:27	35.0121667	-119.0875	3.65	2	mh	14	96		0.25	ci	ci3334893	2016-02-01T19:48:25.450Z	16km WNW of Grapevine, CA	earthquake	0.72	1.23		0	reviewed	ci	ci
9/17/1977	10:35:10	36.0815	-120.2421667	9.551	2.25	md	10	261	0.1577	0.01	nc	nc1036862	2016-12-15T14:38:01.590Z	12 km ESE of Coalinga, California	earthquake	1.86	0.88	0.15	5	reviewed	nc	nc
9/15/1977	7:12:14	35.0478333	-119.1415	0	2.32	mh	16	137		0.2	ci	ci3334753	2016-02-01T19:37:04.640Z	22km N of Pine Mountain Club, CA	earthquake	0.76	1.58	0.355	8	reviewed	ci	ci
9/10/1977	18:21:53	35.1231667	-119.0063333	2.83	2.62	ml	18	96		0.3	ci	ci3334677	2016-02-01T20:15:31.960Z	17km SSW of Lamont, CA	earthquake	0.5	1.42	0.344	2	reviewed	ci	ci
9/10/1977	17:25:17	36.0645	-120.6193333	4.88	2.14	md	17	91	0.01892	0.06	nc	nc1036736	2016-12-15T14:26:44.328Z	24 km WSW of Coalinga, California	earthquake	0.28	0.41	0.11	5	reviewed	nc	nc
9/5/1977	13:26:49	35.9998333	-120.5568333	4.473	3.2	ml	21	64	0.07568	0.08	nc	nc1036643	2016-12-15T14:18:29.014Z	Central California	earthquake	0.25	0.68		0	reviewed	nc	nc
9/3/1977	21:46:56	35.4255	-119.3726667	2.84	2.92	ml	20	133		0.35	ci	ci3334569	2016-02-01T19:53:49.710Z	9km ENE of Buttonwillow, CA	earthquake	0.88	2.4	0.26	4	reviewed	ci	ci
8/19/1977	8:28:36	35.45	-120.6548333	10.231	2.38	md	10	320	0.3829	0.05	nc	nc1036406	2016-12-15T13:57:52.789Z	Central California	earthquake	6.92	4.01	0.04	5	reviewed	nc	nc
8/17/1977	5:20:31	35.8396667	-120.3828333	9.798	3.1	ml	15	147	0.02523	0.05	nc	nc1036372	2016-12-15T13:55:25.920Z	8 km SE of Parkfield, California	earthquake	0.67	0.73		0	reviewed	nc	nc
8/17/1977	3:21:41	35.1248333	-118.9478333	9.16	3.53	ml	30	150.7		0.32	ci	ci3334336	2016-02-01T19:47:59.080Z	14km SW of Arvin, CA	earthquake	0.98	1.42	0.196	7	reviewed	ci	ci
8/15/1977	16:41:03	35.2811667	-119.4503333	23.5	2.5	mh	12	170		0.25	ci	ci3334301	2016-02-01T19:36:46.580Z	13km S of Buttonwillow, CA	earthquake	1.6	2.17		0	reviewed	ci	ci
8/11/1977	6:59:13	36.0316667	-120.5865	4.17	2.88	md	22	74	0.03784	0.09	nc	nc1036233	2016-12-15T13:42:52.329Z	20 km NW of Parkfield, California	earthquake	0.32	0.55	0.16	8	reviewed	nc	nc
7/30/1977	21:53:59	34.971	-119.0176667	9.52	2	mh	9	160		0.15	ci	ci3334066	2016-02-01T20:04:24.440Z	9km WNW of Grapevine, CA	earthquake	0.88	2.88		0	reviewed	ci	ci
7/26/1977	21:42:15	35.9288333	-120.4783333	6.578	3.5	ml	18	70	0.01712	0.07	nc	nc1035984	2016-12-15T13:26:36.785Z	5 km NW of Parkfield, California	earthquake	0.23	0.43		0	reviewed	nc	nc
7/13/1977	13:29:41	35.0141667	-119.1646667	0.76	2.1	mh	12	131		0.31	ci	ci3333870	2016-02-01T19:47:37.670Z	19km N of Pine Mountain Club, CA	earthquake	0.79	1.59		0	reviewed	ci	ci
7/11/1977	6:50:09	35.0216667	-118.9106667	9.12	2.1	mh	10	188		0.11	ci	ci3333830	2016-02-01T19:47:35.780Z	9km NNE of Grapevine, CA	earthquake	0.68	2.12		0	reviewed	ci	ci
7/9/1977	7:56:12	35.9638333	-120.5163333	8.063	2.61	md	17	107	0.03874	0.05	nc	nc1035756	2016-12-15T13:11:01.847Z	10 km NW of Parkfield, California	earthquake	0.29	0.51	0.05	11	reviewed	nc	nc
7/9/1977	1:32:28	35.964	-120.5155	7.863	2.01	md	13	113	0.03874	0.07	nc	nc1035749	2016-12-15T13:10:36.345Z	10 km NW of Parkfield, California	earthquake	0.46	0.8	0.03	7	reviewed	nc	nc
7/8/1977	9:49:47	35.9246667	-120.4706667	9.728	3.17	md	20	69	0.02072	0.07	nc	nc1035740	2016-12-15T13:10:03.098Z	4 km NW of Parkfield, California	earthquake	0.26	0.53	0.11	6	reviewed	nc	nc
7/5/1977	2:53:06	35.935	-120.4803333	5.078	2.15	md	9	68	0.01171	0.07	nc	nc1035692	2016-12-15T13:06:40.220Z	5 km NW of Parkfield, California	earthquake	0.38	0.66	0.07	3	reviewed	nc	nc
7/4/1977	17:13:50	36.054	-120.164	16.67	2.26	md	9	273	0.1874	0.02	nc	nc1035690	2016-12-15T13:06:27.257Z	6 km NNW of Avenal, California	earthquake	2.78	1.3	0.04	3	reviewed	nc	nc
7/3/1977	20:51:27	35.0801667	-119.0246667	1.75	2.71	ml	21	101		0.3	ci	ci3333765	2016-02-01T20:14:59.010Z	18km NNW of Grapevine, CA	earthquake	0.58	1.37	0.035	2	reviewed	ci	ci
7/1/1977	5:32:50	35.9746667	-120.5268333	5.273	2.85	md	18	106	0.05225	0.07	nc	nc1035640	2016-12-15T13:03:15.451Z	Central California	earthquake	0.27	0.58	0.17	10	reviewed	nc	nc
6/23/1977	17:58:50	35.8111667	-120.3578333	8.268	2.35	md	13	129	0.01982	0.03	nc	nc1035572	2016-12-15T12:58:34.928Z	11 km SE of Parkfield, California	earthquake	0.32	0.4	0.14	7	reviewed	nc	nc
6/13/1977	6:08:55	35.333	-118.9178333	4.43	2.1	mh	11	113		0.18	ci	ci9980750	2016-02-01T20:07:50.640Z	8km N of Lamont, CA	earthquake	0.53	1.72	0.236	6	reviewed	ci	ci
6/8/1977	16:51:43	36.015	-120.5655	5.17	2.53	md	17	80	0.05946	0.04	nc	nc1035408	2016-12-15T12:47:27.011Z	17 km NW of Parkfield, California	earthquake	0.21	0.46	0.06	9	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/8/1977	14:44:40	35.9998333	-120.5455	11.983	2.64	md	12	90	0.07928	0.04	nc	nc1035407	2016-12-15T12:47:23.173Z	15 km NW of Parkfield, California	earthquake	0.33	0.77	0.03	6	reviewed	nc	nc
5/30/1977	15:15:55	35.0603333	-119.0326667	0	2.82	ml	18	92		0.33	ci	ci9980166	2016-02-01T20:02:04.650Z	16km NW of Grapevine, CA	earthquake	0.58	1.25	0.234	5	reviewed	ci	ci
5/20/1977	13:23:48	34.9723333	-119.1368333	4.83	2	mh	16	93		0.25	ci	ci3333501	2016-02-01T19:58:41.120Z	14km N of Pine Mountain Club, CA	earthquake	0.52	1.39		0	reviewed	ci	ci
5/15/1977	2:41:00	35.2158333	-118.9133333	6	2.36	mh	11	183		0.15	ci	ci3333436	2016-02-01T19:52:54.600Z	5km S of Lamont, CA	earthquake	0.69	15.76	0.213	4	reviewed	ci	ci
5/5/1977	7:14:41	35.0471667	-118.9385	3.55	2.2	mh	14	95	0.178	0.2	ci	ci3333303	2016-02-01T19:52:50.200Z	12km N of Grapevine, CA	earthquake	0.64	1.21	0.199	7	reviewed	ci	ci
4/19/1977	17:51:39	34.7368333	-119.4083333	0	2.2	mh	7	117		0.32	ci	ci9978682	2016-02-01T20:01:59.210Z	27km WSW of Pine Mountain Club, CA	earthquake	1.06	2.25		0	reviewed	ci	ci
4/15/1977	9:31:42	36.0695	-120.6341667	0.68	2.3	md	14	107	0.03063	0.05	nc	nc1034826	2016-12-15T12:12:11.688Z	25 km ENE of San Ardo, California	earthquake	0.39	0.99	0.15	4	reviewed	nc	nc
4/5/1977	6:34:16	36.042	-120.1453333	9.39	2	md	9	256	0.1919	0.02	nc	nc1034691	2016-12-15T12:03:27.703Z	4 km NNW of Avenal, California	earthquake	2.18	1.01	0.05	4	reviewed	nc	nc
4/2/1977	9:05:40	36.053	-120.6078333	5.75	2.48	md	11	96	0.01802	0.03	nc	nc1034641	2016-12-15T12:00:31.776Z	23 km NW of Parkfield, California	earthquake	0.27	0.49	0.17	4	reviewed	nc	nc
3/21/1977	11:52:33	36.0178333	-120.5766667	4.079	2.04	md	12	130	0.05315	0.11	nc	nc1034482	2016-12-15T11:50:33.838Z	18 km NW of Parkfield, California	earthquake	0.41	1.34	0.66	4	reviewed	nc	nc
3/16/1977	13:31:27	36.2656667	-120.4028333	11.429	2.22	md	15	138	0.05135	0.07	nc	nc1034397	2016-12-15T11:44:48.607Z	14 km NNW of Coalinga, California	earthquake	0.51	0.56	0.23	4	reviewed	nc	nc
3/5/1977	20:40:13	35.7445	-120.3076667	11.908	2.06	md	9	300	0.09369	0.04	nc	nc1034276	2016-12-15T11:36:43.615Z	11 km NNE of Shandon, California	earthquake	4.03	1.73	0.23	3	reviewed	nc	nc
3/4/1977	16:06:09	35.0083333	-119.3503333	6	2.2	mh	10	184		0.44	ci	ci9863574	2016-04-02T00:52:24.511Z	7km SE of Maricopa, CA	earthquake	3.01	31.61		0	reviewed	ci	ci
3/4/1977	8:51:27	35.0083333	-119.3066667	6	3.17	ml	31	96		0.38	ci	ci9863554	2016-04-02T16:55:21.716Z	10km ESE of Maricopa, CA	earthquake	1.19	31.61	0.4	7	reviewed	ci	ci
2/26/1977	7:00:50	36.1	-120.662	6.502	2.11	md	24	83	0.04144	0.05	nc	nc1034156	2016-12-15T11:29:15.889Z	23 km ENE of San Ardo, California	earthquake	0.26	0.27	0.19	5	reviewed	nc	nc
2/25/1977	23:47:47	35.9825	-120.5436667	1.193	2.16	md	10	74	0.06757	0.06	nc	nc1034144	2016-12-15T11:28:30.746Z	13 km NW of Parkfield, California	earthquake	0.39	8.21	0.54	4	reviewed	nc	nc
2/20/1977	4:38:11	36.0575	-120.6281667	0.45	2.28	md	14	92	0.02883	0.04	nc	nc1034038	2016-12-15T11:21:42.197Z	24 km NW of Parkfield, California	earthquake	0.29	0.78	0.66	4	reviewed	nc	nc
2/18/1977	20:19:25	35.4223333	-118.9278333	5.25	2.53	ml	12	121		0.23	ci	ci3332964	2016-02-01T20:08:35.980Z	8km E of Oildale, CA	earthquake	0.67	2.73	0.127	3	reviewed	ci	ci
2/17/1977	13:22:23	36.1953333	-120.1316667	4.409	2.12	md	16	268	0.2667	0.11	nc	nc1033993	2016-12-15T11:18:55.282Z	2 km WSW of Huron, California	earthquake	0.55	1.16	0.09	3	reviewed	nc	nc
2/15/1977	23:44:48	35.3383333	-118.901	5.67	2.91	ml	17	113		0.38	ci	ci3332921	2016-02-01T20:13:40.250Z	9km N of Lamont, CA	earthquake	0.85	4.5	0.206	7	reviewed	ci	ci
2/15/1977	10:14:45	35.6551667	-119.1898333	6	2.24	mh	10	156		0.37	ci	ci3332909	2016-02-01T19:35:47.680Z	4km SE of McFarland, CA	earthquake	1.3	31.61	0.253	5	reviewed	ci	ci
2/14/1977	15:05:05	36.0798333	-120.6486667	-0.52	3.13	md	18	110	0.04414	0.15	nc	nc1033916	2016-12-15T11:13:37.748Z	24 km ENE of San Ardo, California	earthquake	0.35	2.01	0.29	6	reviewed	nc	nc
2/14/1977	2:13:24	36.0791667	-120.6436667	2.92	3.28	md	29	80	0.03964	0.09	nc	nc1033902	2016-12-15T11:12:31.240Z	24 km ENE of San Ardo, California	earthquake	0.23	0.51	0.53	6	reviewed	nc	nc
2/12/1977	1:02:19	35.447	-120.5975	5.704	2.2	md	9	316	0.4324	0.04	nc	nc1033851	2016-12-15T11:09:00.818Z	3 km NNE of Garden Farms, California	earthquake	6.17	8.44	0.59	3	reviewed	nc	nc
2/11/1977	18:12:54	36.0826667	-120.1816667	7.571	3.2	md	24	244	0.1973	0.11	nc	nc1033844	2016-12-15T11:08:30.831Z	9 km NNW of Avenal, California	earthquake	1.04	0.62	0.41	6	reviewed	nc	nc
2/11/1977	15:24:50	36.0128333	-120.571	4.27	2.1	md	11	87	0.05946	0.06	nc	nc1033843	2016-12-15T11:08:27.273Z	17 km NW of Parkfield, California	earthquake	0.34	0.94	0.69	4	reviewed	nc	nc
2/5/1977	6:42:04	36.0028333	-120.5641667	3.05	2.09	md	9	85	0.07117	0.07	nc	nc1033723	2016-12-15T11:01:08.006Z	16 km NW of Parkfield, California	earthquake	0.42	1.54	0.56	4	reviewed	nc	nc
2/3/1977	15:03:45	34.9741667	-119.1451667	5.89	2	mh	11	93		0.33	ci	ci3332756	2016-02-01T20:14:14.710Z	14km N of Pine Mountain Club, CA	earthquake	0.79	26.64		0	reviewed	ci	ci
2/3/1977	13:29:03	35.0335	-119.0001667	6.03	2	mh	8	177		0.23	ci	ci3332754	2016-02-01T19:52:23.620Z	12km NNW of Grapevine, CA	earthquake	1.14	16.2		0	reviewed	ci	ci
2/1/1977	0:00:14	36.0365	-120.6056667	0.54	2.25	md	11	77	0.03333	0.04	nc	nc1033663	2016-12-15T10:57:26.225Z	Central California	earthquake	0.3	1.06	0.62	4	reviewed	nc	nc
1/28/1977	7:37:23	36.05	-120.6098333	3.19	3.69	md	24	57	0.02162	0.11	nc	nc1033589	2016-12-15T10:52:43.256Z	23 km NW of Parkfield, California	earthquake	0.3	0.58	0.68	6	reviewed	nc	nc
1/26/1977	14:16:40	35.938	-120.4915	4.598	2.12	md	8	125	0.01622	0.08	nc	nc1033555	2016-12-15T10:50:40.573Z	6 km NW of Parkfield, California	earthquake	0.49	0.77	0.49	4	reviewed	nc	nc
1/24/1977	18:05:16	35.8046667	-120.356	7.367	3.7	ml	20	132	0.09009	0.05	nc	nc1033525	2016-12-15T10:48:41.720Z	12 km SSE of Parkfield, California	earthquake	0.28	0.46		0	reviewed	nc	nc
1/22/1977	3:24:35	35.0466667	-119.0005	4.36	2.37	ml	19	150		0.31	ci	ci3332558	2016-04-02T16:54:46.273Z	13km NNW of Grapevine, CA	earthquake	0.83	1.47	0.34	3	reviewed	ci	ci
1/21/1977	7:28:30	36.0126667	-120.544	5.108	3.07	md	13	92	0.08829	0.13	nc	nc1033459	2016-12-15T10:43:56.262Z	16 km NW of Parkfield, California	earthquake	0.44	1.55	0.19	5	reviewed	nc	nc
1/15/1977	3:51:53	36.0191667	-120.5878333	2.94	2.51	md	8	120	0.05045	0.1	nc	nc1033320	2016-12-15T10:34:20.858Z	19 km NW of Parkfield, California	earthquake	0.53	2.48	0.09	3	reviewed	nc	nc
1/14/1977	19:47:27	36.0231667	-120.578	4.82	2.99	md	11	75	0.04775	0.05	nc	nc1033313	2016-12-15T10:33:58.163Z	18 km NW of Parkfield, California	earthquake	0.3	0.8	0.43	3	reviewed	nc	nc
1/13/1977	14:53:47	35.3285	-119.4403333	6	3.03	ml	13	194		0.38	ci	ci3332236	2016-02-01T20:03:02.350Z	8km SSE of Buttonwillow, CA	earthquake	1.34	31.61	0.22	4	reviewed	ci	ci
1/13/1977	7:19:00	35.0428333	-119.0408333	9.86	3.61	ml	46	140		0.49	ci	ci3332234	2016-02-01T19:51:56.860Z	15km NW of Grapevine, CA	earthquake	1.04	1.4	0.186	8	reviewed	ci	ci
1/12/1977	18:59:51	36.211	-120.5105	10.029	2.58	md	7	194	0.1315	0.03	nc	nc1033274	2016-12-15T10:31:33.458Z	Central California	earthquake	0.96	0.77	0.31	3	reviewed	nc	nc
1/6/1977	15:12:16	36.0128333	-120.5755	4.06	2.35	md	17	145	0.05856	0.08	nc	nc1033121	2016-12-15T10:21:27.186Z	17 km NW of Parkfield, California	earthquake	0.31	0.53	0.12	6	reviewed	nc	nc
1/5/1977	8:28:26	36.0505	-120.6035	4.12	2.07	md	14	77	0.01892	0.06	nc	nc1033105	2016-12-15T10:20:19.709Z	22 km NW of Parkfield, California	earthquake	0.25	0.43	0.14	7	reviewed	nc	nc
1/2/1977	7:13:22	35.9941667	-120.5446667	5.559	2.49	md	12	159	0.07477	0.07	nc	nc1033072	2016-12-15T10:18:04.604Z	Central California	earthquake	0.4	0.65	0.29	5	reviewed	nc	nc
12/26/1976	4:39:12	36.0473333	-120.603	5.267	2.75	md	13	70	0.02252	0.04	nc	nc1032962	2016-12-15T10:11:23.123Z	22 km NW of Parkfield, California	earthquake	0.22	0.41	0.42	7	reviewed	nc	nc
12/24/1976	0:59:17	35.14	-118.935	6	2.28	mh	0	116.5		0.226	ci	ci150112	2016-01-29T21:51:17.700Z	12km SW of Arvin, CA	earthquake				9	reviewed	ci	ci
12/23/1976	10:07:20	35.652	-118.948	10	2.33	mh	0	313.5	0.3861	0.057	ci	ci152834	2016-01-29T21:11:32.700Z	26km E of McFarland, CA	earthquake				10	reviewed	ci	ci
12/22/1976	16:24:35	35.1916667	-120.6746667	5.279	3.82	md	41	160	0.482	0.16	nc	nc1032913	2016-12-15T10:08:22.180Z	Central California	earthquake	0.95	1.66	0.72	10	reviewed	nc	nc
12/22/1976	13:18:42	35.9695	-120.516	8.513	2.01	md	13	77	0.04144	0.06	nc	nc1032909	2016-12-15T10:08:05.534Z	10 km NW of Parkfield, California	earthquake	0.34	0.74	0.15	7	reviewed	nc	nc
12/20/1976	18:26:43	36.0348333	-120.5995	3.02	2	md	10	111	0.03423	0.04	nc	nc1032881	2016-12-15T10:06:20.094Z	21 km NW of Parkfield, California	earthquake	0.33	0.84	0.64	4	reviewed	nc	nc
12/19/1976	22:20:13	36.0161667	-120.5743333	4.92	2.65	md	11	73	0.05586	0.06	nc	nc1032860	2016-12-15T10:04:46.270Z	18 km NW of Parkfield, California	earthquake	0.41	0.73	0.09	3	reviewed	nc	nc
12/19/1976	8:32:23	35.969	-120.5168333	10.387	2.39	md	7	105	0.04234	0.04	nc	nc1032849	2016-12-15T10:03:48.037Z	10 km NW of Parkfield, California	earthquake	0.45	1.13	0.3	4	reviewed	nc	nc
12/18/1976	20:01:12	35.9736667	-120.5201667	9.483	2.81	md	22	76	0.04685	0.06	nc	nc1032840	2016-12-15T10:02:59.356Z	11 km NW of Parkfield, California	earthquake	0.24	0.49	0.21	7	reviewed	nc	nc
12/18/1976	19:55:57	35.9761667	-120.5236667	9.073	3.3	ml	23	75	0.05045	0.11	nc	nc1032839	2016-12-15T10:02:52.260Z	11 km NW of Parkfield, California	earthquake	0.3	0.67		0	reviewed	nc	nc
12/10/1976	23:21:31	36.0008333	-120.5618333	3.553	2.75	md	11	69	0.07387	0.07	nc	nc1032718	2016-12-15T09:54:16.292Z	16 km NW of Parkfield, California	earthquake	0.35	1.16	0.07	3	reviewed	nc	nc
12/9/1976	23:25:45	35.8791667	-120.4238333	10.008	2.14	md	11	99	0.009009	0.04	nc	nc1032705	2016-12-15T09:53:21.237Z	2 km SSE of Parkfield, California	earthquake	0.38	0.75	0.47	4	reviewed	nc	nc
12/8/1976	5:46:50	36.0675	-120.2035	8.54	2.5	md	18	185	0.1748	0.05	nc	nc1032680	2016-12-15T09:51:40.241Z	9 km NW of Avenal, California	earthquake	1.41	0.49	0.18	4	reviewed	nc	nc
12/7/1976	11:16:10	36.0168333	-120.5755	4.567	2.16	md	12	130	0.05495	0.05	nc	nc1032670	2016-12-15T09:51:00.924Z	Central California	earthquake	0.29	0.59	0.54	4	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/6/1976	23:49:01	35.739	-118.804	6.75	2.32	mh	0	226.3	0.2791	0.012	ci	ci149832	2016-01-29T21:51:00.660Z	32km W of Wofford Heights, CA	earthquake		209.2		7	reviewed	ci	ci
12/3/1976	2:07:57	36.0106667	-120.5645	4.68	3.5	md	21	62	0.06396	0.07	nc	nc1032592	2016-12-15T09:45:59.574Z	17 km NW of Parkfield, California	earthquake	0.26	0.56	0.48	4	reviewed	nc	nc
12/1/1976	20:08:34	36.036	-120.5878333	4.35	2.72	md	23	75	0.03333	0.07	nc	nc1032569	2016-12-15T09:44:17.730Z	20 km NW of Parkfield, California	earthquake	0.22	0.4	0.61	5	reviewed	nc	nc
11/29/1976	2:45:14	35.756	-120.0243333	5.597	2.03	md	5	214	0.2784	0.06	nc	nc1032536	2016-12-15T09:42:18.100Z	28 km SSW of Kettleman City, California	earthquake	1.01	2.99	0.37	3	reviewed	nc	nc
11/29/1976	1:26:18	36.0076667	-120.5673333	4.57	2.25	md	19	71	0.06577	0.05	nc	nc1032535	2016-12-15T09:42:14.577Z	17 km NW of Parkfield, California	earthquake	0.25	0.58	0.11	6	reviewed	nc	nc
11/29/1976	1:21:00	36.0081667	-120.5681667	4.31	2.62	md	13	71	0.06486	0.04	nc	nc1032534	2016-12-15T09:42:10.880Z	17 km NW of Parkfield, California	earthquake	0.27	0.63	0.02	3	reviewed	nc	nc
11/28/1976	23:57:33	36.0016667	-120.5136667	1.524	2.07	md	4	173	0.06486	0.04	nc	nc1032533	2016-12-15T09:42:07.067Z	13 km NNW of Parkfield, California	earthquake	0.79	7.55	0.03	3	reviewed	nc	nc
11/27/1976	6:56:32	35.307	-118.941	5.5	2.84	mh	0	112.5		0.329	ci	ci149677	2016-01-29T22:01:02.290Z	6km NNW of Lamont, CA	earthquake		22.38		10	reviewed	ci	ci
11/24/1976	15:37:03	36.0168333	-120.5756667	4.29	3.44	md	18	72	0.05495	0.06	nc	nc1032408	2016-12-15T09:34:24.700Z	18 km NW of Parkfield, California	earthquake	0.31	0.54	0.08	5	reviewed	nc	nc
11/24/1976	15:33:11	36.017	-120.5711667	4.46	2.72	md	21	64	0.05586	0.08	nc	nc1032407	2016-12-15T09:34:21.181Z	Central California	earthquake	0.27	0.59	0.18	3	reviewed	nc	nc
11/24/1976	14:50:35	36.0158333	-120.5743333	4.6	2.23	md	15	73	0.05586	0.08	nc	nc1032404	2016-12-15T09:34:10.206Z	18 km NW of Parkfield, California	earthquake	0.33	0.72	0.14	5	reviewed	nc	nc
11/14/1976	23:29:31	36.0486667	-120.6136667	1.99	2.35	md	13	98	0.02432	0.06	nc	nc1032285	2016-12-15T09:26:19.540Z	23 km NW of Parkfield, California	earthquake	0.29	0.82	0.55	4	reviewed	nc	nc
11/14/1976	11:52:50	35.8138333	-120.326	9.888	2.56	md	15	145	0.02883	0.19	nc	nc1032278	2016-12-15T09:25:44.679Z	13 km SE of Parkfield, California	earthquake	1.22	0.9	0.14	6	reviewed	nc	nc
11/8/1976	8:09:12	35.001	-119.08	5.5	2.51	mh	0	102.1		0.188	ci	ci149414	2016-01-29T21:52:30.510Z	15km WNW of Grapevine, CA	earthquake		60.18		19	reviewed	ci	ci
10/31/1976	18:42:03	36.056	-120.124	6	2.69	mh	0	330.6	1.397	0.717	ci	ci149067	2016-01-29T21:42:40.560Z	6km N of Avenal, CA	earthquake				12	reviewed	ci	ci
10/31/1976	5:52:03	36.0328333	-120.6086667	-0.49	2.8	md	13	99	0.03784	0.13	nc	nc1032118	2016-12-15T09:15:51.354Z	21 km NW of Parkfield, California	earthquake	0.43	2.52	0.13	3	reviewed	nc	nc
10/30/1976	16:55:38	36.012	-120.5753333	3.189	2.5	md	10	128	0.05946	0.11	nc	nc1032109	2016-12-15T09:14:53.856Z	17 km NW of Parkfield, California	earthquake	0.49	2.15	0.18	3	reviewed	nc	nc
10/27/1976	15:56:13	34.862	-120.471	0.01	2.26	mh	0	235.5	0.3135	0.142	ci	ci150838	2016-01-29T21:28:44.590Z	3km W of Orcutt, CA	earthquake		0.387		5	reviewed	ci	ci
10/24/1976	12:11:20	36.0625	-120.6341667	-0.53	2.64	md	14	103	0.03153	0.08	nc	nc1032031	2016-12-15T09:10:01.448Z	24 km E of San Ardo, California	earthquake	0.32	1.31	0.66	4	reviewed	nc	nc
10/24/1976	12:09:44	36.0668333	-120.6271667	2.15	2.2	md	19	77	0.02523	0.07	nc	nc1032030	2016-12-15T09:09:57.571Z	25 km WSW of Coalinga, California	earthquake	0.22	0.57	0.22	3	reviewed	nc	nc
10/20/1976	8:30:09	36.0401667	-120.6128333	8.499	2.48	md	18	90	0.03153	0.06	nc	nc1031978	2016-12-15T09:06:41.091Z	22 km NW of Parkfield, California	earthquake	0.51	0.49	0.4	3	reviewed	nc	nc
10/19/1976	19:09:32	35.4801667	-120.59	13.901	2.22	md	9	320	0.3405	0.05	nc	nc1031965	2016-12-15T09:05:54.157Z	7 km NNE of Garden Farms, CA	earthquake	6.61	3.2	0.25	3	reviewed	nc	nc
10/15/1976	17:59:14	36.0041667	-120.5658333	4.5	2.17	md	11	69	0.06937	0.09	nc	nc1031910	2016-12-15T09:02:13.157Z	16 km NW of Parkfield, California	earthquake	0.42	1	0.5	4	reviewed	nc	nc
10/14/1976	12:48:16	36.0395	-120.5995	3.58	2.59	md	10	111	0.02973	0.05	nc	nc1031897	2016-12-15T09:01:20.237Z	21 km NW of Parkfield, California	earthquake	0.35	0.74	0.34	3	reviewed	nc	nc
10/10/1976	13:19:24	36.0003333	-120.5586667	4.403	2.27	md	11	69	0.07477	0.06	nc	nc1031856	2016-12-15T08:59:02.348Z	15 km NW of Parkfield, California	earthquake	0.38	0.95	0.58	4	reviewed	nc	nc
10/8/1976	14:13:34	34.855	-120.459	0.01	2.58	mh	0	224.4	0.3049	0.155	ci	ci148901	2016-01-29T21:26:15.240Z	2km WSW of Orcutt, CA	earthquake		0.288		10	reviewed	ci	ci
10/7/1976	1:57:36	36.0046667	-120.5625	5.16	2.42	md	10	72	0.06937	0.05	nc	nc1031815	2016-12-15T08:56:38.617Z	16 km NW of Parkfield, California	earthquake	0.36	1.2	0.6	4	reviewed	nc	nc
10/4/1976	4:04:37	36.006	-120.5621667	4.81	2.64	md	15	72	0.06847	0.06	nc	nc1031777	2016-12-15T08:54:18.190Z	16 km NW of Parkfield, California	earthquake	0.28	0.65	0.46	4	reviewed	nc	nc
9/28/1976	10:08:44	36.0041667	-120.558	5.113	2.25	md	16	72	0.07207	0.05	nc	nc1031712	2016-12-15T08:50:24.756Z	16 km NW of Parkfield, California	earthquake	0.34	0.64	0.29	6	reviewed	nc	nc
9/22/1976	3:33:16	35.075	-119.096	8.63	2.86	ml	0	103.5		0.172	ci	ci148701	2016-01-29T21:50:14.860Z	21km NW of Grapevine, CA	earthquake		3.89		7	reviewed	ci	ci
9/19/1976	7:25:32	35.828	-120.071	6	2.74	mh	0	313.2	1.31	0.662	ci	ci148673	2016-01-29T21:10:37.110Z	20km SSE of Avenal, CA	earthquake				13	reviewed	ci	ci
9/18/1976	12:55:00	35.023	-118.971	3.62	2.87	ml	0	89.7		0.113	ci	ci148656	2016-01-29T21:34:07.000Z	10km NNW of Grapevine, CA	earthquake		0.164		12	reviewed	ci	ci
9/17/1976	23:02:35	35.5678333	-120.5791667	8.911	2.26	md	8	319	0.2523	0.04	nc	nc1031577	2016-12-15T08:41:56.437Z	7 km NW of Creston, California	earthquake	6.64	3.37	0.74	2	reviewed	nc	nc
9/15/1976	7:02:03	35.7818333	-120.3253333	-0.592	2.77	md	7	287	0.05405	0.03	nc	nc1031536	2016-12-15T08:39:25.289Z	14 km NNE of Shandon, California	earthquake	1.17	3.95	0.51	4	reviewed	nc	nc
9/14/1976	23:59:36	35.786	-120.33	2.338	2.61	md	7	283	0.04865	0.04	nc	nc1031535	2016-12-15T08:39:21.388Z	15 km NNE of Shandon, California	earthquake	2.16	1.58	0.13	3	reviewed	nc	nc
9/14/1976	5:03:02	36.103	-120.6595	7.31	2.1	md	13	136	0.05315	0.06	nc	nc1031519	2016-12-15T08:38:16.018Z	23 km ENE of San Ardo, California	earthquake	0.35	0.53	0.28	4	reviewed	nc	nc
9/4/1976	22:04:57	35.161	-118.851	6	2.08	mh	0	246.6	0.5878	0.192	ci	ci145260	2016-01-29T21:17:55.550Z	6km SSW of Arvin, CA	earthquake				6	reviewed	ci	ci
8/23/1976	8:55:04	35.923	-120.4721667	4.568	3.45	md	25	68	0.02252	0.11	nc	nc1031156	2016-12-15T08:15:38.786Z	4 km NW of Parkfield, California	earthquake	0.26	0.48	0.33	11	reviewed	nc	nc
8/15/1976	21:52:47	36.0298333	-120.594	4.27	3.07	md	16	66	0.03874	0.05	nc	nc1030996	2016-12-15T08:05:17.239Z	20 km NW of Parkfield, California	earthquake	0.29	0.51	0.19	3	reviewed	nc	nc
8/14/1976	23:49:35	35.345	-120.098	6	2.43	mh	0	263	0.8213	0	ci	ci153884	2016-01-29T21:02:11.000Z	9km W of Simmler, CA	earthquake				2	reviewed	ci	ci
8/13/1976	22:48:50	35.893	-120.4356667	10.748	2	md	15	87	0.02072	0.09	nc	nc1030890	2016-12-15T07:58:58.642Z	0 km SSW of Parkfield, California	earthquake	0.42	0.87	0.15	4	reviewed	nc	nc
8/12/1976	21:31:07	36.0456667	-120.6058333	6.24	3.27	md	21	70	0.02432	0.07	nc	nc1030870	2016-12-15T07:57:53.536Z	22 km NW of Parkfield, California	earthquake	0.25	0.4	0.33	8	reviewed	nc	nc
8/10/1976	17:27:22	35.067	-118.972	6	2.34	mh	0	249.8	0.7204	0.319	ci	ci3119415	2016-01-29T21:17:50.920Z	14km NNW of Grapevine, CA	earthquake				8	reviewed	ci	ci
8/10/1976	8:05:04	35.449	-118.764	6	2	mh	0	320.6	0.3184	0.098	ci	ci3119410	2016-01-29T21:41:53.810Z	23km E of Oildale, CA	earthquake				6	reviewed	ci	ci
8/6/1976	16:30:53	36.075	-120.6446667	-0.57	2.68	md	15	108	0.03964	0.22	nc	nc1030796	2016-12-15T07:53:27.105Z	24 km ENE of San Ardo, California	earthquake	0.47	2.61	0.23	4	reviewed	nc	nc
8/6/1976	9:49:33	35.072	-119.057	0.59	2.81	ml	0	102.5		0.251	ci	ci3001476	2016-01-29T21:33:44.050Z	18km NW of Grapevine, CA	earthquake		23.83		8	reviewed	ci	ci
8/5/1976	14:42:52	36.0001667	-120.5616667	3.923	2.01	md	13	69	0.07387	0.06	nc	nc1030778	2016-12-15T07:52:54.577Z	16 km NW of Parkfield, California	earthquake	0.35	0.75	0.19	3	reviewed	nc	nc
7/30/1976	10:22:44	36.0103333	-120.5773333	3.969	2.03	md	12	125	0.06036	0.11	nc	nc1030685	2016-12-15T07:47:42.065Z	17 km NW of Parkfield, California	earthquake	0.41	1.48	0.46	4	reviewed	nc	nc
7/29/1976	13:58:49	36.0986667	-120.2248333	7.532	2.63	md	25	178	0.1784	0.05	nc	nc1030672	2016-12-15T07:47:13.766Z	13 km ESE of Coalinga, California	earthquake	0.55	0.65	0.03	5	reviewed	nc	nc
7/29/1976	3:16:02	36.0021667	-120.558	5.099	3.27	md	18	135	0.07387	0.05	nc	nc1030662	2016-12-15T07:46:44.272Z	16 km NW of Parkfield, California	earthquake	0.3	0.54	0.35	7	reviewed	nc	nc
7/26/1976	18:05:44	35.493	-119.171	6	2.29	mh	0	329.7	0.5929	0	ci	ci153760	2016-01-29T21:20:09.160Z	9km E of Shafter, CA	earthquake				5	reviewed	ci	ci
7/23/1976	0:39:42	35.6101667	-120.8386667	5.752	2.2	md	16	263	0.2667	0.06	nc	nc1030587	2016-12-15T07:41:50.673Z	13 km W of Paso Robles, California	earthquake	2.45	2.4	0.29	4	reviewed	nc	nc
7/22/1976	6:45:44	35.207	-118.892	6	2.66	ml	0	163.7		0.32	ci	ci153711	2016-01-29T21:44:22.050Z	6km W of Arvin, CA	earthquake				6	reviewed	ci	ci
7/19/1976	5:47:29	35.51	-119.209	6	3.29	ml	0	152.5		0.38	ci	ci153678	2016-01-29T22:00:28.140Z	6km E of Shafter, CA	earthquake				9	reviewed	ci	ci
7/15/1976	7:23:22	35.9888333	-120.5488333	5.821	2.04	md	14	133	0.07477	0.06	nc	nc1030476	2016-12-15T07:34:58.155Z	14 km NW of Parkfield, California	earthquake	0.39	0.71	0.03	5	reviewed	nc	nc
7/13/1976	1:02:02	35.8848333	-120.4271667	9.858	2.51	md	13	93	0.01171	0.07	nc	nc1030447	2016-12-15T07:33:12.672Z	1 km SSE of Parkfield, California	earthquake	0.37	0.73	0.62	9	reviewed	nc	nc
7/5/1976	18:18:47	36.0151667	-120.5795	4.839	2.62	md	16	74	0.05495	0.06	nc	nc1030336	2016-12-15T07:26:25.749Z	18 km NW of Parkfield, California	earthquake	0.31	0.56	0.45	9	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
7/5/1976	9:38:53	35.112	-119.317	6	2.56	mh	0	154.7		0.354	ci	ci153500	2016-01-29T21:41:23.530Z	10km NE of Maricopa, CA	earthquake				11	reviewed	ci	ci
7/5/1976	1:16:32	34.813	-120.272	6.61	3.31	ml	0	190.3	0.279	0.095	ci	ci153498	2016-01-29T21:57:37.360Z	8km N of Los Alamos, CA	earthquake		49.55		8	reviewed	ci	ci
7/4/1976	19:46:59	36.0365	-120.6088333	-0.261	2.15	md	13	98	0.03423	0.08	nc	nc1030329	2016-12-15T07:26:04.041Z	21 km NW of Parkfield, California	earthquake	0.43	1.75	0.37	5	reviewed	nc	nc
7/1/1976	17:30:58	36.0005	-120.5643333	4.559	4.05	md	22	130	0.07297	0.06	nc	nc1030291	2016-12-15T07:23:40.736Z	16 km NW of Parkfield, California	earthquake	0.3	0.55	0.31	8	reviewed	nc	nc
6/27/1976	15:49:42	36.002	-120.5625	4.64	2.08	md	11	70	0.07207	0.05	nc	nc1030219	2016-12-15T07:20:08.978Z	16 km NW of Parkfield, California	earthquake	0.34	0.94	0.32	5	reviewed	nc	nc
6/27/1976	12:33:07	36.0018333	-120.561	5.213	2.04	md	12	70	0.07297	0.03	nc	nc1030214	2016-12-15T07:19:50.063Z	16 km NW of Parkfield, California	earthquake	0.28	0.68	0.41	5	reviewed	nc	nc
6/27/1976	1:03:13	35.593	-120.6801667	8.461	2.16	md	17	268	0.2604	0.15	nc	nc1030208	2016-12-15T07:19:32.651Z	3 km SSE of Paso Robles, California	earthquake	3.5	2.54	0.2	4	reviewed	nc	nc
6/20/1976	17:31:09	36.0073333	-120.5713333	6.007	2.27	md	15	139	0.1	0.03	nc	nc1030088	2016-12-15T07:14:25.854Z	17 km NW of Parkfield, California	earthquake	0.47	1.11	0.2	6	reviewed	nc	nc
6/20/1976	6:30:30	36.0066667	-120.5653333	4.087	3.12	md	19	79	0.0964	0.07	nc	nc1030080	2016-12-15T07:13:45.237Z	16 km NW of Parkfield, California	earthquake	0.35	1.34	0.35	12	reviewed	nc	nc
6/19/1976	11:42:04	35.147	-118.899	6	2.94	ml	0	116.5		0.414	ci	ci153348	2016-01-29T21:33:10.160Z	9km SW of Arvin, CA	earthquake				11	reviewed	ci	ci
6/17/1976	21:51:08	36.0393333	-120.597	4.19	3.65	md	17	68	0.02973	0.09	nc	nc1030056	2016-12-15T07:12:21.631Z	21 km NW of Parkfield, California	earthquake	0.36	0.65	0.55	9	reviewed	nc	nc
6/15/1976	22:59:26	36.0408333	-120.6	3.71	2.67	md	13	69	0.02793	0.07	nc	nc1030027	2016-12-15T07:10:29.384Z	21 km NW of Parkfield, California	earthquake	0.32	0.62	0.11	3	reviewed	nc	nc
6/11/1976	18:13:51	35.9595	-120.5088333	8.918	2.34	md	17	78	0.03153	0.06	nc	nc1029965	2016-12-15T07:06:26.557Z	9 km NW of Parkfield, California	earthquake	0.34	0.67	0.14	9	reviewed	nc	nc
6/10/1976	6:32:14	36.2058333	-120.27	12.013	2.47	md	20	233	0.07297	0.07	nc	nc1029953	2016-12-15T07:05:39.179Z	10 km NE of Coalinga, California	earthquake	0.78	0.51	0.53	7	reviewed	nc	nc
6/10/1976	1:32:08	36.209	-120.2675	12.183	2.7	md	25	226	0.07297	0.09	nc	nc1029949	2016-12-15T07:05:24.766Z	11 km NE of Coalinga, California	earthquake	0.62	0.4	0.39	5	reviewed	nc	nc
6/9/1976	15:36:45	36.0246667	-120.58	4.8	2.42	md	14	75	0.04595	0.08	nc	nc1029944	2016-12-15T07:05:07.104Z	19 km NW of Parkfield, California	earthquake	0.35	0.7	0.59	4	reviewed	nc	nc
6/4/1976	23:23:58	35.14	-120.547	6	3.15	ml	0	314.8	0.5978	0.541	ci	ci153214	2016-01-29T21:01:39.470Z	5km ENE of Arroyo Grande, CA	earthquake				6	reviewed	ci	ci
6/4/1976	4:06:34	36.0663333	-120.6316667	1.09	2.3	md	14	121	0.02883	0.07	nc	nc1029888	2016-12-15T07:01:38.776Z	25 km ENE of San Ardo, California	earthquake	0.23	0.7	0.16	5	reviewed	nc	nc
6/3/1976	14:50:23	35.7846667	-120.3291667	10.518	3.48	md	15	263	0.05045	0.06	nc	nc1029882	2016-12-15T07:01:09.902Z	14 km NNE of Shandon, California	earthquake	1.36	0.57	0.22	13	reviewed	nc	nc
5/31/1976	13:24:26	35.9653333	-120.518	7.463	3	md	12	75	0.04054	0.06	nc	nc1029851	2016-12-15T06:58:56.647Z	10 km NW of Parkfield, California	earthquake	0.38	0.86	0.05	3	reviewed	nc	nc
5/31/1976	9:22:53	35.9653333	-120.5178333	7.463	2.07	md	12	76	0.04054	0.06	nc	nc1029849	2016-12-15T06:58:39.102Z	10 km NW of Parkfield, California	earthquake	0.41	0.9	0.17	4	reviewed	nc	nc
5/30/1976	13:27:42	36.0551667	-120.6135	4.07	2.26	md	16	87	0.01982	0.11	nc	nc1029836	2016-12-15T06:57:50.545Z	23 km NW of Parkfield, California	earthquake	0.38	0.65	0.07	7	reviewed	nc	nc
5/23/1976	11:27:52	35.9991667	-120.565	3.19	2.15	md	12	66	0.07387	0.07	nc	nc1029779	2016-12-15T06:54:21.088Z	16 km NW of Parkfield, California	earthquake	0.35	1.22	0.64	4	reviewed	nc	nc
5/18/1976	18:52:50	35.565	-119.222	6	2.29	mh	0	229.5	0.6172	0.133	ci	ci153041	2016-01-29T21:49:17.760Z	8km NNE of Shafter, CA	earthquake				2	reviewed	ci	ci
5/18/1976	1:32:13	36.0238333	-120.5921667	3.76	2.66	md	12	118	0.04505	0.09	nc	nc1029727	2016-12-15T06:51:01.234Z	19 km NW of Parkfield, California	earthquake	0.44	0.88	0.18	3	reviewed	nc	nc
5/16/1976	8:35:11	36.0201667	-120.5748333	5.18	2.34	md	15	75	0.05135	0.08	nc	nc1029706	2016-12-15T06:49:45.096Z	18 km NW of Parkfield, California	earthquake	0.31	0.64	0.62	4	reviewed	nc	nc
5/14/1976	0:00:00	36.0356667	-120.5973333	4.11	3.04	md	13	68	0.03333	0.08	nc	nc1029690	2016-12-15T06:48:47.035Z	21 km NW of Parkfield, California	earthquake	0.32	0.67	0.02	5	reviewed	nc	nc
5/13/1976	9:41:27	35.9266667	-120.4751667	5.108	2.42	md	14	77	0.01892	0.09	nc	nc1029684	2016-12-15T06:48:25.339Z	4 km NW of Parkfield, California	earthquake	0.38	0.65	0.34	5	reviewed	nc	nc
5/10/1976	11:28:11	35.7956667	-120.3448333	9.658	2.95	md	13	276	0.03604	0.04	nc	nc1029648	2016-12-15T06:46:01.282Z	14 km SE of Parkfield, California	earthquake	1.51	0.88	0.58	6	reviewed	nc	nc
5/7/1976	8:05:00	36.0851667	-120.2553333	8.761	2.04	md	18	234	0.1468	0.03	nc	nc1029617	2016-12-15T06:44:28.059Z	11 km ESE of Coalinga, California	earthquake	0.98	0.51	0.48	5	reviewed	nc	nc
5/5/1976	18:01:43	36.1953333	-120.2278333	8.163	3.26	md	31	232	0.1081	0.1	nc	nc1029604	2016-12-15T06:43:41.925Z	11 km W of Huron, California	earthquake	0.66	0.32	0.68	8	reviewed	nc	nc
5/4/1976	3:00:41	36.0631667	-120.6286667	1.3	2.55	md	24	103	0.02703	0.1	nc	nc1029591	2016-12-15T06:43:00.711Z	25 km NW of Parkfield, California	earthquake	0.23	0.72	0.07	6	reviewed	nc	nc
5/4/1976	0:28:12	35.9288333	-120.4745	5.148	3.2	md	16	78	0.01712	0.1	nc	nc1029587	2016-12-15T06:42:46.694Z	4 km NW of Parkfield, California	earthquake	0.33	0.57	0.62	6	reviewed	nc	nc
5/3/1976	21:36:00	36.0625	-120.6321667	0.04	2.28	md	15	120	0.02973	0.05	nc	nc1029583	2016-12-15T06:42:29.110Z	25 km E of San Ardo, California	earthquake	0.16	0.65	0.71	4	reviewed	nc	nc
5/2/1976	1:12:09	35.226	-118.981	6	2.3	mh	0	260.9	0.6011	0.224	ci	ci152864	2016-01-29T21:01:19.720Z	7km WSW of Lamont, CA	earthquake				7	reviewed	ci	ci
4/30/1976	15:01:01	34.898	-120.454	16.45	2.79	mh	0	251.6		0.147	ci	ci3005916	2016-01-29T21:49:06.250Z	4km NNW of Orcutt, CA	earthquake		12.07		7	reviewed	ci	ci
4/30/1976	10:09:16	35.93	-120.4763333	4.508	2.43	md	17	78	0.01532	0.09	nc	nc1029556	2016-12-15T06:40:53.630Z	5 km NW of Parkfield, California	earthquake	0.26	0.47	0.35	5	reviewed	nc	nc
4/26/1976	21:27:45	35.9268333	-120.4733333	10.418	3.19	md	20	69	0.01892	0.07	nc	nc1029530	2016-12-15T06:39:15.191Z	4 km NW of Parkfield, California	earthquake	0.33	0.66	0.16	13	reviewed	nc	nc
4/26/1976	5:20:39	35.925	-120.4706667	5.488	3.87	md	22	77	0.02072	0.1	nc	nc1029523	2016-12-15T06:38:48.975Z	4 km NW of Parkfield, California	earthquake	0.28	0.49	0.61	10	reviewed	nc	nc
4/26/1976	5:18:18	35.9251667	-120.4695	5.408	2.65	md	13	77	0.02072	0.08	nc	nc1029522	2016-12-15T06:38:45.057Z	4 km NW of Parkfield, California	earthquake	0.39	0.63	0.63	4	reviewed	nc	nc
4/25/1976	5:48:48	35.315	-118.845	6	2.76	ml	0	137.4		0.345	ci	ci3005763	2016-01-29T21:24:36.080Z	9km NE of Lamont, CA	earthquake				5	reviewed	ci	ci
4/24/1976	0:31:57	36.072	-120.6238333	4.04	2.02	md	11	125	0.02252	0.07	nc	nc1029502	2016-12-15T06:37:24.863Z	24 km WSW of Coalinga, California	earthquake	0.29	0.51	0.74	6	reviewed	nc	nc
4/16/1976	9:19:02	36.0141667	-120.1506667	10.59	3.37	md	22	271	0.173	0.08	nc	nc1029438	2016-12-15T06:32:55.275Z	2 km WNW of Avenal, California	earthquake	1.3	0.72	0.54	9	reviewed	nc	nc
4/15/1976	21:57:37	36.0368333	-120.1136667	8.79	2.53	md	11	265	0.2108	0.06	nc	nc1029429	2016-12-15T06:32:22.373Z	3 km NNE of Avenal, California	earthquake	1.76	1.1	0.03	3	reviewed	nc	nc
4/14/1976	23:25:39	35.5798333	-120.8713333	6.352	2.68	md	10	236	0.2523	0.02	nc	nc1029418	2016-12-15T06:31:32.582Z	15 km N of Cayucos, California	earthquake	1.82	7.96	0.54	4	reviewed	nc	nc
4/14/1976	18:37:59	36.0006667	-120.5763333	3.2	2.68	md	10	136	0.07027	0.04	nc	nc1029416	2016-12-15T06:31:22.149Z	17 km NW of Parkfield, California	earthquake	0.65	1.1	0.03	3	reviewed	nc	nc
4/5/1976	6:20:43	36.0025	-120.5656667	4.33	2.2	md	12	130	0.07117	0.06	nc	nc1029331	2016-12-15T06:25:46.706Z	16 km NW of Parkfield, California	earthquake	0.37	0.73	0.57	4	reviewed	nc	nc
4/3/1976	21:40:09	36.0295	-120.103	7.67	3.44	md	18	261	0.2144	0.04	nc	nc1029322	2016-12-15T06:25:10.295Z	3 km NE of Avenal, California	earthquake	1.29	0.89	0.25	5	reviewed	nc	nc
4/3/1976	5:47:58	36.0995	-120.6616667	6.74	2.84	md	13	115	0.05135	0.05	nc	nc1029317	2016-12-15T06:24:52.137Z	23 km ENE of San Ardo, California	earthquake	0.36	0.46	0.22	5	reviewed	nc	nc
4/1/1976	21:26:35	35.5883333	-120.853	7.85	3.11	md	13	233	0.2631	0.09	nc	nc1029304	2016-12-15T06:24:05.667Z	13 km WNW of Templeton, California	earthquake	1.13	3.56	0.3	3	reviewed	nc	nc
3/27/1976	1:38:47	35.9838333	-120.548	3.908	2.48	md	17	112	0.07117	0.06	nc	nc1029263	2016-12-15T06:21:26.056Z	13 km NW of Parkfield, California	earthquake	0.28	0.81	0.29	5	reviewed	nc	nc
3/24/1976	18:47:12	35.463	-118.75	6	2.25	mh	0	253.7	0.3006	0.32	ci	ci3002475	2016-01-29T21:16:08.010Z	25km E of Oildale, CA	earthquake				8	reviewed	ci	ci
3/15/1976	11:53:23	36.0918333	-120.2438333	9.65	2.18	md	11	230	0.1559	0.04	nc	nc1029125	2016-12-15T06:12:00.206Z	11 km ESE of Coalinga, California	earthquake	0.82	0.56	0.5	5	reviewed	nc	nc
3/8/1976	23:19:41	35.97	-120.5228333	7.3	2.66	md	21	75	0.04685	0.06	nc	nc1029035	2016-12-15T06:06:07.074Z	11 km NW of Parkfield, California	earthquake	0.27	0.53	0.13	10	reviewed	nc	nc
3/5/1976	2:01:48	35.221	-118.886	6	2.25	mh	0	164.6	0.5545	0.392	ci	ci3002253	2016-01-29T21:08:22.820Z	5km SSE of Lamont, CA	earthquake				8	reviewed	ci	ci
3/4/1976	17:42:54	35.189	-118.916	6	3.44	ml	0	145.2		0.291	ci	ci3002247	2016-01-29T21:00:34.090Z	8km S of Lamont, CA	earthquake				11	reviewed	ci	ci
3/3/1976	14:08:17	36.078	-120.2365	9.651	2	md	14	239	0.1622	0.02	nc	nc1028978	2016-12-15T06:02:38.196Z	12 km NW of Avenal, California	earthquake	1.37	0.62	0.08	4	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
3/1/1976	23:49:49	36.0371667	-120.6026667	3.616	2.05	md	9	115	0.03243	0.06	nc	nc1028964	2016-12-15T06:01:48.000Z	21 km NW of Parkfield, California	earthquake	0.75	0.76	0.66	4	reviewed	nc	nc
2/28/1976	9:27:49	36.079	-120.2165	9.521	2.02	md	18	235	0.1775	0.02	nc	nc1028945	2016-12-15T06:00:34.727Z	11 km NW of Avenal, California	earthquake	0.92	0.52	0.18	4	reviewed	nc	nc
2/28/1976	9:26:10	36.0748333	-120.2301667	10.611	2.01	md	14	230	0.1676	0.02	nc	nc1028944	2016-12-15T06:00:30.296Z	12 km NW of Avenal, California	earthquake	1.39	0.59	0.14	5	reviewed	nc	nc
2/26/1976	8:23:13	36.0751667	-120.6338333	2.589	2.08	md	14	126	0.03153	0.08	nc	nc1028923	2016-12-15T05:59:01.634Z	25 km ENE of San Ardo, California	earthquake	0.43	0.61	0.66	6	reviewed	nc	nc
2/23/1976	8:20:49	35.453	-118.728	0.07	2.18	mh	0	319.8	0.2944	0.252	ci	ci3002154	2016-01-29T21:04:31.800Z	26km SW of Bodfish, CA	earthquake		4.028		5	reviewed	ci	ci
2/21/1976	23:40:11	36.294	-120.392	6	2.89	mh	0	333.4	1.678	0.839	ci	ci3002138	2016-01-29T21:19:59.670Z	17km N of Coalinga, CA	earthquake				7	reviewed	ci	ci
2/21/1976	5:40:12	35.042	-119.103	6	2.29	mh	0	164.8		0.43	ci	ci3002130	2016-01-29T21:44:13.340Z	19km NW of Grapevine, CA	earthquake				5	reviewed	ci	ci
2/17/1976	20:58:45	35.9975	-120.5523333	5.166	2.28	md	11	111	0.07928	0.03	nc	nc1028838	2016-12-15T05:53:49.693Z	15 km NW of Parkfield, California	earthquake	0.45	0.71	0.57	4	reviewed	nc	nc
2/15/1976	7:34:03	35.471	-118.959	6	2.43	mh	0	323.9	0.4393	0.551	ci	ci3002055	2016-01-29T21:56:08.630Z	8km NE of Oildale, CA	earthquake				8	reviewed	ci	ci
2/15/1976	7:33:51	35.6378333	-120.1833333	11.388	2.63	md	18	297	0.2378	0.04	nc	nc1028809	2016-12-15T05:52:09.351Z	17 km E of Shandon, California	earthquake	2.89	0.74	0.2	6	reviewed	nc	nc
2/14/1976	14:01:35	36.0373333	-120.5926667	7.266	2.62	md	18	71	0.03153	0.06	nc	nc1028803	2016-12-15T05:51:42.624Z	21 km NW of Parkfield, California	earthquake	0.3	0.45	0.68	6	reviewed	nc	nc
2/5/1976	17:11:42	35.993	-120.5465	5.273	3.51	md	17	69	0.07568	0.06	nc	nc1028710	2016-12-15T05:45:31.555Z	14 km NW of Parkfield, California	earthquake	0.29	0.65	0.44	5	reviewed	nc	nc
1/24/1976	2:38:48	36.1031667	-120.2365	9.951	2.3	md	14	230	0.1622	0.05	nc	nc1028535	2016-12-15T05:33:57.082Z	11 km ESE of Coalinga, California	earthquake	0.89	0.51	0.34	5	reviewed	nc	nc
1/22/1976	20:43:45	36.0746667	-120.232	9.081	2.17	md	12	240	0.1667	0.02	nc	nc1028515	2016-12-15T05:32:42.562Z	12 km NW of Avenal, California	earthquake	1	0.59	0.15	4	reviewed	nc	nc
1/22/1976	17:05:27	36.0761667	-120.2186667	8.561	2.79	md	16	235	0.1739	0.07	nc	nc1028513	2016-12-15T05:32:35.535Z	11 km NW of Avenal, California	earthquake	0.85	0.62	0.29	6	reviewed	nc	nc
1/21/1976	16:51:32	36.0123333	-120.5726667	4.84	2.22	md	14	71	0.05946	0.06	nc	nc1028499	2016-12-15T05:31:41.433Z	17 km NW of Parkfield, California	earthquake	0.33	0.73	0.12	4	reviewed	nc	nc
1/20/1976	14:27:29	36.094	-120.2313333	9.731	2.13	md	16	231	0.1658	0.06	nc	nc1028486	2016-12-15T05:30:57.575Z	12 km ESE of Coalinga, California	earthquake	0.52	0.58	0.21	5	reviewed	nc	nc
1/20/1976	8:36:29	36.0785	-120.2693333	8.681	2.14	md	13	261	0.136	0.02	nc	nc1028482	2016-12-15T05:30:39.262Z	10 km SE of Coalinga, California	earthquake	1.27	0.56	0.07	5	reviewed	nc	nc
1/19/1976	13:35:44	36.0806667	-120.2595	8.141	2.02	md	12	254	0.1432	0.03	nc	nc1028468	2016-12-15T05:29:42.089Z	11 km SE of Coalinga, California	earthquake	1.46	0.74	0.09	4	reviewed	nc	nc
1/19/1976	11:51:02	36.0775	-120.2741667	9.021	2.18	md	15	244	0.1324	0.01	nc	nc1028467	2016-12-15T05:29:38.594Z	10 km SE of Coalinga, California	earthquake	0.95	0.47	0.13	4	reviewed	nc	nc
1/18/1976	8:05:42	35.9988333	-120.5501667	5.923	2.02	md	16	72	0.07928	0.06	nc	nc1028452	2016-12-15T05:28:34.944Z	15 km NW of Parkfield, California	earthquake	0.33	0.7	0.08	6	reviewed	nc	nc
1/17/1976	0:16:00	36.0923333	-120.2416667	8.991	3.73	md	18	227	0.1577	0.06	nc	nc1028427	2016-12-15T05:26:50.460Z	11 km ESE of Coalinga, California	earthquake	0.69	0.48	0.07	5	reviewed	nc	nc
1/17/1976	0:13:00	36.0813333	-120.2661667	8.781	2.23	md	12	256	0.1378	0.02	nc	nc1028426	2016-12-15T05:26:46.504Z	10 km SE of Coalinga, California	earthquake	1.4	0.69	0.05	5	reviewed	nc	nc
1/16/1976	7:06:54	36.0943333	-120.2355	9.031	3.26	md	28	230	0.1622	0.06	nc	nc1028404	2016-12-15T05:25:26.726Z	12 km ESE of Coalinga, California	earthquake	0.43	0.36	0.38	8	reviewed	nc	nc
1/16/1976	6:17:24	36.104	-120.1986667	5.191	2.64	md	29	239	0.1865	0.15	nc	nc1028403	2016-12-15T05:25:23.034Z	12 km NNW of Avenal, California	earthquake	0.82	0.92	0.29	11	reviewed	nc	nc
1/16/1976	5:15:33	36.0886667	-120.2555	9.241	2.15	md	12	234	0.1468	0.03	nc	nc1028400	2016-12-15T05:25:11.557Z	10 km ESE of Coalinga, California	earthquake	1.21	0.69	0.21	5	reviewed	nc	nc
1/16/1976	5:11:32	36.0955	-120.2311667	8.531	3	md	29	231	0.1658	0.08	nc	nc1028399	2016-12-15T05:25:07.629Z	12 km ESE of Coalinga, California	earthquake	0.47	0.41	0.19	10	reviewed	nc	nc
1/15/1976	18:26:52	35.812	-119.9405	23.218	2.54	md	22	116	0.3369	0.21	nc	nc1028388	2016-12-15T05:24:25.806Z	21 km S of Kettleman City, California	earthquake	2.79	1.08	0.14	4	reviewed	nc	nc
1/15/1976	16:12:58	35.9765	-119.9941667	24.44	2.58	md	8	315	0.2829	0.04	nc	nc1028385	2016-12-15T05:24:14.442Z	4 km SW of Kettleman City, California	earthquake	5.2	1.9	0.12	4	reviewed	nc	nc
1/15/1976	11:55:57	36.0893333	-120.2418333	9.721	2.22	md	13	231	0.1577	0.04	nc	nc1028379	2016-12-15T05:23:47.422Z	12 km ESE of Coalinga, California	earthquake	0.64	0.52	0.17	4	reviewed	nc	nc
1/15/1976	0:09:36	36.0998333	-120.2378333	10.981	3.6	ml	28	229	0.1604	0.1	nc	nc1028370	2016-12-15T05:23:17.060Z	11 km ESE of Coalinga, California	earthquake	0.68	0.49		0	reviewed	nc	nc
1/14/1976	23:53:37	36.0846667	-120.2386667	8.361	2.27	md	11	228	0.1604	0.02	nc	nc1028368	2016-12-15T05:23:07.602Z	12 km ESE of Coalinga, California	earthquake	1.29	0.62	0.55	4	reviewed	nc	nc
1/14/1976	23:40:17	36.0941667	-120.2441667	10.771	3.4	ml	30	226	0.1559	0.08	nc	nc1028367	2016-12-15T05:23:03.040Z	11 km ESE of Coalinga, California	earthquake	0.54	0.42		0	reviewed	nc	nc
1/14/1976	23:18:26	36.0911667	-120.2376667	9.471	3.22	md	26	228	0.1604	0.17	nc	nc1028365	2016-12-15T05:22:53.258Z	12 km ESE of Coalinga, California	earthquake	0.82	0.58	0.6	6	reviewed	nc	nc
1/14/1976	22:36:48	36.0783333	-120.1933333	9.131	2.49	md	20	241	0.1883	0.2	nc	nc1028363	2016-12-15T05:22:45.746Z	10 km NW of Avenal, California	earthquake	1.59	0.99	0.44	5	reviewed	nc	nc
1/14/1976	22:27:53	36.0918333	-120.2363333	8.97	2.63	md	10	233	0.1622	0.03	nc	nc1028362	2016-12-15T05:22:42.078Z	12 km ESE of Coalinga, California	earthquake	0.77	0.56	0.23	3	reviewed	nc	nc
1/14/1976	22:06:55	36.0748333	-120.2606667	9.34	2	md	10	247	0.1432	0.01	nc	nc1028361	2016-12-15T05:22:38.595Z	11 km SE of Coalinga, California	earthquake	1.4	0.68	0.03	4	reviewed	nc	nc
1/14/1976	21:48:53	36.0688333	-120.2515	8.491	2.75	md	14	249	0.1514	0.03	nc	nc1028357	2016-12-15T05:22:24.637Z	12 km SE of Coalinga, California	earthquake	1.07	0.54	0.12	4	reviewed	nc	nc
1/14/1976	21:43:58	36.087	-120.2355	10.471	4.9	ml	42	176	0.1631	0.12	nc	nc1028356	2022-04-27T17:21:16.730Z	12 km ESE of Coalinga, California	earthquake	0.29	0.37		0	reviewed	nc	nc
1/14/1976	21:43:45	36.0793333	-120.2251667	8.351	3	ml	16	232	0.1712	0.04	nc	nc1028355	2021-02-18T18:59:29.027Z	12 km NW of Avenal, California	earthquake	0.77	0.65		0	reviewed	nc	nc
1/14/1976	21:43:11	36.0828333	-120.2358333	9.851	3.8	md	18	228	0.1631	0.04	nc	nc1028354	2016-12-15T05:22:08.735Z	12 km ESE of Coalinga, California	earthquake	0.64	0.46	0.09	3	reviewed	nc	nc
1/14/1976	21:40:43	36.0795	-120.242	8.841	2.82	md	13	226	0.1577	0.06	nc	nc1028353	2016-12-15T05:22:05.127Z	12 km ESE of Coalinga, California	earthquake	0.84	0.66	0.31	6	reviewed	nc	nc
1/14/1976	21:39:12	36.0865	-120.2345	8.881	3.27	md	26	177	0.1631	0.06	nc	nc1028352	2016-12-15T05:22:01.570Z	12 km ESE of Coalinga, California	earthquake	0.47	0.37	0.14	4	reviewed	nc	nc
1/14/1976	17:58:41	36.0821667	-120.2385	8.761	2.78	md	12	227	0.1604	0.04	nc	nc1028345	2016-12-15T05:21:36.589Z	12 km ESE of Coalinga, California	earthquake	0.87	0.63	0.54	4	reviewed	nc	nc
1/14/1976	17:55:39	36.0788333	-120.2465	9.231	2.48	md	15	224	0.1541	0.04	nc	nc1028344	2016-12-15T05:21:32.724Z	12 km ESE of Coalinga, California	earthquake	0.68	0.51	0.42	5	reviewed	nc	nc
1/14/1976	17:53:24	36.0788333	-120.2416667	9.171	2.28	md	14	226	0.1586	0.04	nc	nc1028343	2016-12-15T05:21:29.141Z	12 km ESE of Coalinga, California	earthquake	0.76	0.51	0.01	3	reviewed	nc	nc
1/14/1976	11:01:05	36.088	-120.2196667	8.781	3.61	md	32	235	0.1757	0.07	nc	nc1028331	2016-12-15T05:20:36.210Z	12 km NW of Avenal, California	earthquake	0.41	0.33	0.7	7	reviewed	nc	nc
1/3/1976	3:25:00	36.0476667	-120.6133333	2.99	2.14	md	17	73	0.02523	0.11	nc	nc1028193	2016-12-15T05:11:45.562Z	23 km NW of Parkfield, California	earthquake	0.36	0.76	0.26	7	reviewed	nc	nc
12/25/1975	1:40:24	36.0736667	-120.2516667	9.171	2.86	md	9	281	0.1505	0.02	nc	nc1028062	2016-12-15T05:02:41.588Z	12 km SE of Coalinga, California	earthquake	2.84	0.72	0.18	3	reviewed	nc	nc
12/24/1975	6:08:57	35.9741667	-120.5266667	7.703	2.12	md	13	74	0.05135	0.06	nc	nc1028051	2016-12-15T05:02:05.590Z	11 km NW of Parkfield, California	earthquake	0.42	0.89	0.19	6	reviewed	nc	nc
12/24/1975	2:35:58	36.0755	-120.2485	8.87	2.91	md	8	283	0.1532	0.02	nc	nc1028048	2016-12-15T05:01:55.214Z	12 km SE of Coalinga, California	earthquake	2.1	0.96	0.27	3	reviewed	nc	nc
12/22/1975	3:33:20	35.078	-119.021	6	3.52	ml	0	142.5		0.419	ci	ci3006667	2016-01-29T21:47:53.610Z	17km NNW of Grapevine, CA	earthquake				10	reviewed	ci	ci
12/21/1975	19:31:13	35.9821667	-120.5433333	3.623	2.4	md	8	74	0.06667	0.06	nc	nc1028015	2016-12-15T04:59:36.704Z	13 km NW of Parkfield, California	earthquake	0.42	1.55	0.15	3	reviewed	nc	nc
12/19/1975	6:25:46	36.074	-120.2481667	8.931	4.02	md	11	272	0.1541	0.02	nc	nc1027986	2016-12-15T04:57:49.260Z	12 km SE of Coalinga, California	earthquake	1.86	0.68	0.06	3	reviewed	nc	nc
12/19/1975	2:42:41	36.0243333	-120.5816667	4.19	3.37	md	13	86	0.04595	0.06	nc	nc1027983	2016-12-15T04:57:37.629Z	19 km NW of Parkfield, California	earthquake	0.45	0.74	0.61	4	reviewed	nc	nc
12/19/1975	1:42:50	36.0251667	-120.5803333	4.79	4.15	md	21	75	0.04595	0.09	nc	nc1027981	2016-12-15T04:57:30.625Z	19 km NW of Parkfield, California	earthquake	0.34	0.6	0.14	4	reviewed	nc	nc
12/15/1975	14:29:15	36.0418333	-120.5963333	3.96	2.08	md	14	92	0.02703	0.08	nc	nc1027940	2016-12-15T04:55:03.104Z	21 km NW of Parkfield, California	earthquake	0.34	0.6	0.19	3	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/12/1975	17:32:16	35.9603333	-120.517	4.687	2.82	md	13	75	0.03784	0.04	nc	nc1027914	2016-12-15T04:53:15.557Z	10 km NW of Parkfield, California	earthquake	0.33	0.72	0.68	4	reviewed	nc	nc
12/11/1975	3:27:10	35.9953333	-120.5645	1.423	2.47	md	7	84	0.07748	0.05	nc	nc1027894	2016-12-15T04:51:49.051Z	15 km NW of Parkfield, California	earthquake	0.57	8.55	0.02	3	reviewed	nc	nc
11/20/1975	5:51:43	35.9875	-120.5453333	1.052	2.62	md	10	134	0.07117	0.09	nc	nc1027587	2016-12-15T04:32:52.899Z	14 km NW of Parkfield, California	earthquake	0.37	8.98	0.08	3	reviewed	nc	nc
11/20/1975	2:47:25	35.968	-120.5146667	10.872	2.04	md	11	137	0.03964	0.07	nc	nc1027586	2016-12-15T04:32:49.290Z	10 km NW of Parkfield, California	earthquake	0.6	0.84	0.4	5	reviewed	nc	nc
11/20/1975	1:43:57	35.9688333	-120.5161667	11.412	2.09	md	14	136	0.04144	0.06	nc	nc1027584	2016-12-15T04:32:41.981Z	10 km NW of Parkfield, California	earthquake	0.41	0.67	0.21	5	reviewed	nc	nc
11/19/1975	16:15:29	35.9828333	-120.541	3.031	2.57	md	10	134	0.06577	0.07	nc	nc1027576	2016-12-15T04:32:00.592Z	13 km NW of Parkfield, California	earthquake	0.35	1.57	0.05	3	reviewed	nc	nc
11/19/1975	11:07:12	35.9541667	-120.5028333	12.418	2.35	md	15	78	0.02523	0.05	nc	nc1027570	2016-12-15T04:31:42.891Z	8 km NW of Parkfield, California	earthquake	0.35	0.73	0.59	6	reviewed	nc	nc
11/18/1975	16:52:35	35.9478333	-120.499	7.038	2.17	md	7	78	0.02072	0.02	nc	nc1027558	2016-12-15T04:30:57.987Z	8 km NW of Parkfield, California	earthquake	0.43	6.85	0.18	3	reviewed	nc	nc
11/15/1975	10:56:51	35.9475	-120.4891667	13.108	2.46	md	16	81	0.01261	0.08	nc	nc1027498	2016-12-15T04:26:50.052Z	7 km NW of Parkfield, California	earthquake	0.37	0.73	0.54	7	reviewed	nc	nc
11/14/1975	18:58:22	35.9996667	-120.5695	3.3	2.14	md	13	66	0.07207	0.06	nc	nc1027486	2016-12-15T04:26:06.513Z	16 km NW of Parkfield, California	earthquake	0.3	0.88	0.61	4	reviewed	nc	nc
11/13/1975	9:07:45	36.0403333	-120.6008333	3.59	2.6	md	13	69	0.02883	0.1	nc	nc1027455	2016-12-15T04:24:16.686Z	21 km NW of Parkfield, California	earthquake	0.38	0.72	0.17	3	reviewed	nc	nc
11/8/1975	0:11:26	36.0356667	-120.6058333	-0.51	2.08	md	15	71	0.03423	0.13	nc	nc1027389	2016-12-15T04:20:03.771Z	21 km NW of Parkfield, California	earthquake	0.41	1.93	0.32	6	reviewed	nc	nc
11/2/1975	14:05:10	36.0086667	-120.0718333	16.92	2.73	md	7	306	0.2297	0.02	nc	nc1027291	2016-12-15T04:13:41.239Z	5 km E of Avenal, California	earthquake	3.65	2.47	0.57	4	reviewed	nc	nc
11/2/1975	6:44:44	35.9766667	-120.5205	11.893	2.57	md	14	76	0.04865	0.05	nc	nc1027288	2016-12-15T04:13:30.288Z	11 km NW of Parkfield, California	earthquake	0.39	0.77	0.5	6	reviewed	nc	nc
11/1/1975	17:13:05	36.0201667	-120.5773333	4.77	2.72	md	12	74	0.05135	0.08	nc	nc1027280	2016-12-15T04:13:01.569Z	18 km NW of Parkfield, California	earthquake	0.37	0.76	0.07	3	reviewed	nc	nc
10/31/1975	12:58:41	35.9393333	-120.4833333	10.898	2.9	md	15	68	0.00991	0.07	nc	nc1027267	2016-12-15T04:12:13.034Z	6 km NW of Parkfield, California	earthquake	0.41	0.84	0.57	4	reviewed	nc	nc
10/28/1975	23:04:29	35.9965	-120.5483333	5.713	3.02	md	14	71	0.07928	0.07	nc	nc1027219	2016-12-15T04:09:12.279Z	14 km NW of Parkfield, California	earthquake	0.32	0.71	0.17	5	reviewed	nc	nc
10/27/1975	20:41:14	35.9295	-120.4765	4.278	2.46	md	8	77	0.01622	0.09	nc	nc1027203	2016-12-15T04:08:20.044Z	5 km NW of Parkfield, California	earthquake	0.45	0.86	0.12	3	reviewed	nc	nc
10/24/1975	17:31:46	36.0723333	-120.632	1.14	2.18	md	13	125	0.02973	0.08	nc	nc1027149	2016-12-15T04:04:55.091Z	25 km ENE of San Ardo, California	earthquake	0.31	0.88	0.35	6	reviewed	nc	nc
10/22/1975	23:44:40	36.0281667	-120.5891667	4.25	2.79	md	11	70	0.04144	0.09	nc	nc1027123	2016-12-15T04:03:14.438Z	20 km NW of Parkfield, California	earthquake	0.42	0.74	0.15	3	reviewed	nc	nc
10/22/1975	22:27:05	35.999	-120.577	1.09	2.49	md	7	150	0.07117	0.03	nc	nc1027121	2016-12-15T04:03:10.859Z	17 km NW of Parkfield, California	earthquake	0.63	7.67	0.05	3	reviewed	nc	nc
10/21/1975	13:52:22	35.6063333	-120.7615	5.942	3.46	md	15	238	0.291	0.06	nc	nc1027103	2016-12-15T04:02:03.468Z	6 km WSW of Paso Robles, California	earthquake	0.75	8.47	0.19	5	reviewed	nc	nc
10/21/1975	11:31:23	35.9866667	-120.561	2.923	2.4	md	10	116	0.08198	0.02	nc	nc1027100	2016-12-15T04:01:52.533Z	15 km NW of Parkfield, California	earthquake	0.34	1.4	0.08	3	reviewed	nc	nc
10/17/1975	17:53:33	36.0508333	-120.6066667	8	2.89	md	17	71	0.01982	0.07	nc	nc1027041	2016-12-15T03:58:22.077Z	22 km NW of Parkfield, California	earthquake	0.38	0.73	0.58	8	reviewed	nc	nc
10/14/1975	17:17:50	36.0073333	-120.5663333	4.2	2.8	md	11	89	0.06577	0.08	nc	nc1026998	2016-12-15T03:55:47.185Z	16 km NW of Parkfield, California	earthquake	0.39	0.9	0.03	3	reviewed	nc	nc
10/9/1975	8:14:23	36.002	-120.541	10.981	2.19	md	12	75	0.08018	0.06	nc	nc1026911	2016-12-15T03:50:34.143Z	14 km NW of Parkfield, California	earthquake	0.34	1.14	0.55	6	reviewed	nc	nc
10/8/1975	18:24:46	35.4423333	-120.6975	4.431	2.75	md	13	268	0.4018	0.05	nc	nc1026905	2016-12-15T03:50:12.009Z	5 km SSW of Atascadero, California	earthquake	1.2	7.24	0.42	4	reviewed	nc	nc
10/7/1975	17:36:59	36.0648333	-120.6225	5.18	2.17	md	13	123	0.02162	0.1	nc	nc1026883	2016-12-15T03:48:47.514Z	25 km WSW of Coalinga, California	earthquake	0.39	0.61	0.47	7	reviewed	nc	nc
10/4/1975	3:27:59	35.9786667	-120.5308333	6.973	2.79	md	12	73	0.05676	0.05	nc	nc1026814	2016-12-15T03:44:11.213Z	12 km NW of Parkfield, California	earthquake	0.35	0.77	0.46	4	reviewed	nc	nc
9/30/1975	12:51:40	35.9618333	-120.5088333	9.206	2.04	md	8	114	0.1117	0.06	nc	nc1026735	2016-12-15T03:39:21.967Z	9 km NW of Parkfield, California	earthquake	0.41	1.69	0.64	4	reviewed	nc	nc
9/29/1975	4:00:32	36.0401667	-120.6016667	3.77	2.73	md	12	69	0.02883	0.12	nc	nc1026688	2016-12-15T03:36:14.083Z	21 km NW of Parkfield, California	earthquake	0.39	0.71	0.2	3	reviewed	nc	nc
9/28/1975	3:53:19	35.9705	-120.5125	13.5	2.31	md	11	79	0.03964	0.05	nc	nc1026650	2016-12-15T03:33:49.692Z	10 km NW of Parkfield, California	earthquake	0.33	1.53	0.64	3	reviewed	nc	nc
9/27/1975	4:35:51	35.9716667	-120.5305	8.843	2.32	md	10	72	0.05315	0.07	nc	nc1026616	2016-12-15T03:31:33.568Z	11 km NW of Parkfield, California	earthquake	0.4	1.3	0.06	3	reviewed	nc	nc
9/27/1975	4:35:23	35.973	-120.521	8.951	2.72	md	11	76	0.1135	0.05	nc	nc1026615	2016-12-15T03:31:29.998Z	11 km NW of Parkfield, California	earthquake	0.42	1.18	0.39	4	reviewed	nc	nc
9/25/1975	13:41:49	36.0011667	-120.5401667	10.821	2.73	md	12	70	0.08198	0.05	nc	nc1026572	2016-12-15T03:28:53.196Z	14 km NW of Parkfield, California	earthquake	0.29	1.58	0.39	4	reviewed	nc	nc
9/25/1975	2:36:02	36.0045	-120.5505	11.553	2.68	md	15	75	0.07387	0.06	nc	nc1026562	2016-12-15T03:28:26.535Z	15 km NW of Parkfield, California	earthquake	0.39	0.78	0.66	6	reviewed	nc	nc
9/24/1975	17:58:14	36.0271667	-120.5906667	10.133	2.97	md	20	115	0.1252	0.08	nc	nc1026558	2016-12-15T03:28:11.524Z	20 km NW of Parkfield, California	earthquake	0.32	0.77	0.4	4	reviewed	nc	nc
9/24/1975	17:54:36	36.0325	-120.5855	9.605	2.66	md	10	113	0.1252	0.07	nc	nc1026557	2016-12-15T03:28:07.705Z	20 km NW of Parkfield, California	earthquake	0.38	1.51	0.33	3	reviewed	nc	nc
9/24/1975	8:03:29	36.0323333	-120.5763333	8.635	3.73	md	21	111	0.1198	0.15	nc	nc1026553	2016-12-15T03:27:53.216Z	19 km NW of Parkfield, California	earthquake	0.44	1.18	0.34	8	reviewed	nc	nc
9/24/1975	8:02:21	36.0238333	-120.5796667	11.091	3.59	md	23	74	0.136	0.06	nc	nc1026552	2016-12-15T03:27:49.412Z	19 km NW of Parkfield, California	earthquake	0.3	0.71	0.52	5	reviewed	nc	nc
9/23/1975	8:14:41	35.9853333	-120.5091667	22.517	2.58	md	7	125	0.04865	0.1	nc	nc1026536	2016-12-15T03:26:45.997Z	11 km NW of Parkfield, California	earthquake	1.05	3	0.52	5	reviewed	nc	nc
9/23/1975	8:13:06	36.034	-120.5838333	10.955	2.51	md	9	112	0.1252	0.05	nc	nc1026535	2016-12-15T03:26:42.218Z	20 km NW of Parkfield, California	earthquake	0.37	1.25	0.69	7	reviewed	nc	nc
9/23/1975	6:15:27	36.0298333	-120.5888333	8.593	2.02	md	11	114	0.1252	0.06	nc	nc1026532	2016-12-15T03:26:28.724Z	Central California	earthquake	0.31	1.22	0.43	6	reviewed	nc	nc
9/23/1975	2:02:53	36.0355	-120.5915	8.565	2.51	md	8	114	0.1306	0.15	nc	nc1026528	2016-12-15T03:25:53.739Z	20 km NW of Parkfield, California	earthquake	0.73	2.49	0.15	3	reviewed	nc	nc
9/22/1975	13:25:35	35.9595	-120.5071667	12.177	3	md	10	102	0.03063	0.06	nc	nc1026519	2016-12-15T03:25:08.748Z	9 km NW of Parkfield, California	earthquake	0.49	1.75	0.11	4	reviewed	nc	nc
9/22/1975	4:55:02	35.9568333	-120.5083333	14.517	2.36	md	11	102	0.02973	0.06	nc	nc1026513	2016-12-15T03:24:53.590Z	9 km NW of Parkfield, California	earthquake	0.5	1.04	0.13	5	reviewed	nc	nc
9/21/1975	22:54:58	35.9566667	-120.5115	13.977	3.68	md	13	103	0.03243	0.05	nc	nc1026510	2016-12-15T03:24:42.148Z	9 km NW of Parkfield, California	earthquake	0.47	0.94	0.27	5	reviewed	nc	nc
9/21/1975	16:14:12	35.9648333	-120.515	11.637	2.27	md	13	76	0.03874	0.05	nc	nc1026501	2016-12-15T03:24:08.149Z	10 km NW of Parkfield, California	earthquake	0.41	0.89	0.23	5	reviewed	nc	nc
9/21/1975	10:40:55	35.9688333	-120.5185	8.727	2.49	md	12	133	0.04324	0.05	nc	nc1026495	2016-12-15T03:23:45.473Z	10 km NW of Parkfield, California	earthquake	0.34	1.48	0.54	5	reviewed	nc	nc
9/19/1975	19:36:18	35.9695	-120.517	11.367	2.12	md	8	105	0.04234	0.01	nc	nc1026475	2016-12-15T03:22:26.592Z	10 km NW of Parkfield, California	earthquake	0.44	0.97	0.47	4	reviewed	nc	nc
9/19/1975	7:36:59	35.89	-120.4348333	9.648	2.34	md	6	158	0.01892	0.01	nc	nc1026459	2016-12-15T03:21:30.461Z	1 km S of Parkfield, California	earthquake	0.88	1.2	0.15	3	reviewed	nc	nc
9/19/1975	4:17:47	35.9578333	-120.5071667	13.437	3.49	md	12	102	0.02973	0.06	nc	nc1026453	2016-12-15T03:21:08.326Z	9 km NW of Parkfield, California	earthquake	0.55	0.98	0.27	5	reviewed	nc	nc
9/18/1975	14:12:20	35.9978333	-120.57	4.773	2.15	md	10	116	0.09369	0.04	nc	nc1026445	2016-12-15T03:20:42.256Z	16 km NW of Parkfield, California	earthquake	0.47	1.05	0.28	4	reviewed	nc	nc
9/18/1975	11:23:13	36.0001667	-120.5658333	4.513	2.25	md	9	114	0.09279	0.02	nc	nc1026444	2016-12-15T03:20:38.639Z	16 km NW of Parkfield, California	earthquake	0.57	0.95	0.34	4	reviewed	nc	nc
9/17/1975	11:20:14	36.0161667	-120.5933333	5.323	2.73	md	11	139	0.1198	0.03	nc	nc1026422	2016-12-15T03:19:13.933Z	19 km NW of Parkfield, California	earthquake	0.44	0.93	0.44	4	reviewed	nc	nc
9/16/1975	21:24:34	36.0021667	-120.549	11.155	3.69	md	15	86	0.08288	0.06	nc	nc1026406	2016-12-15T03:18:20.093Z	15 km NW of Parkfield, California	earthquake	0.46	0.95	0.21	5	reviewed	nc	nc
9/16/1975	20:47:58	36.0016667	-120.575	4.083	2.62	md	9	116	0.0991	0.02	nc	nc1026403	2016-12-15T03:18:09.426Z	17 km NW of Parkfield, California	earthquake	0.37	0.92	0.02	3	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/15/1975	6:52:10	36.0038333	-120.5521667	8.475	2.25	md	9	110	0.08649	0.03	nc	nc1026366	2016-12-15T03:16:00.632Z	15 km NW of Parkfield, California	earthquake	0.42	1.91	0.31	5	reviewed	nc	nc
9/14/1975	3:49:43	35.9695	-120.5185	12.497	2.33	md	9	105	0.04324	0.03	nc	nc1026338	2016-12-15T03:14:15.144Z	10 km NW of Parkfield, California	earthquake	0.43	0.88	0.04	3	reviewed	nc	nc
9/14/1975	2:54:49	35.9891667	-120.5326667	11.807	2.89	md	10	107	0.06486	0.04	nc	nc1026336	2016-12-15T03:14:07.711Z	13 km NW of Parkfield, California	earthquake	0.34	1.07	0.22	3	reviewed	nc	nc
9/14/1975	0:56:12	35.9751667	-120.523	10.717	2.43	md	9	134	0.04955	0.07	nc	nc1026335	2016-12-15T03:14:03.864Z	11 km NW of Parkfield, California	earthquake	0.55	1.18	0.22	4	reviewed	nc	nc
9/13/1975	23:56:01	35.9976667	-120.541	11.977	3.31	md	15	71	0.07568	0.07	nc	nc1026334	2016-12-15T03:14:00.211Z	14 km NW of Parkfield, California	earthquake	0.46	1.07	0.49	6	reviewed	nc	nc
9/13/1975	22:57:46	35.968	-120.52	11.667	3.52	md	14	75	0.04324	0.08	nc	nc1026333	2016-12-15T03:13:56.634Z	10 km NW of Parkfield, California	earthquake	0.42	1.03	0.32	5	reviewed	nc	nc
9/13/1975	21:59:14	35.969	-120.5183333	11.657	2.08	md	8	105	0.04324	0.05	nc	nc1026332	2016-12-15T03:13:53.057Z	10 km NW of Parkfield, California	earthquake	0.53	1.06	0.31	4	reviewed	nc	nc
9/13/1975	21:46:04	35.961	-120.511	11.537	3.02	md	14	77	0.03333	0.08	nc	nc1026331	2016-12-15T03:13:49.330Z	9 km NW of Parkfield, California	earthquake	0.44	0.98	0.18	5	reviewed	nc	nc
9/13/1975	21:32:07	35.9663333	-120.515	10.987	2.29	md	10	104	0.03964	0.03	nc	nc1026329	2016-12-15T03:13:42.059Z	10 km NW of Parkfield, California	earthquake	0.39	0.75	0.32	3	reviewed	nc	nc
9/13/1975	21:31:02	35.9605	-120.5075	12.247	3.34	md	12	78	0.03063	0.08	nc	nc1026328	2016-12-15T03:13:38.638Z	9 km NW of Parkfield, California	earthquake	0.52	1.06	0.38	4	reviewed	nc	nc
9/13/1975	21:20:58	35.9976667	-120.5448333	10.405	4.8	ml	27	69	0.07748	0.07	nc	nc1026327	2018-06-04T20:43:45.000Z	14 km NW of Parkfield, California	earthquake	0.29	0.72		0	reviewed	nc	nc
9/10/1975	13:22:43	35.7846667	-120.3438333	7.414	3.74	md	12	261	0.04685	0.03	nc	nc1026254	2016-12-15T03:09:05.750Z	14 km NNE of Shandon, California	earthquake	1.93	0.8	0.64	6	reviewed	nc	nc
9/9/1975	12:36:08	36.0228333	-120.5986667	5.223	2.63	md	11	139	0.127	0.04	nc	nc1026228	2016-12-15T03:07:35.543Z	20 km NW of Parkfield, California	earthquake	0.57	1.08	0.39	6	reviewed	nc	nc
9/8/1975	7:40:37	36.0971667	-120.666	4.167	2.86	md	13	114	0.04865	0.07	nc	nc1026207	2016-12-15T03:06:23.155Z	23 km ENE of San Ardo, California	earthquake	0.4	0.56	0.64	6	reviewed	nc	nc
9/7/1975	3:53:26	35.7501667	-120.3313333	8.388	3.26	md	11	295	0.08288	0.05	nc	nc1026183	2016-12-15T03:04:47.751Z	11 km NNE of Shandon, California	earthquake	3.24	0.9	0.31	6	reviewed	nc	nc
9/3/1975	19:29:51	35.9976667	-120.5706667	0.913	2.83	md	9	149	0.09459	0.04	nc	nc1026099	2016-12-15T02:59:35.204Z	16 km NW of Parkfield, California	earthquake	0.44	6.42	0.22	3	reviewed	nc	nc
8/26/1975	8:39:27	34.994	-119.154	6	3.35	ml	0	155.2		0.471	ci	ci3023370	2016-01-29T21:59:42.660Z	16km N of Pine Mountain Club, CA	earthquake				7	reviewed	ci	ci
8/24/1975	18:42:14	36.0021667	-120.584	4.143	3.52	md	15	136	0.1054	0.08	nc	nc1025923	2016-12-15T02:48:02.962Z	17 km NW of Parkfield, California	earthquake	0.54	1.19	0.31	6	reviewed	nc	nc
8/24/1975	18:41:17	36.0085	-120.5811667	5.023	3.53	md	18	125	0.1072	0.08	nc	nc1025922	2016-12-15T02:47:59.362Z	18 km NW of Parkfield, California	earthquake	0.56	1.08	0.68	6	reviewed	nc	nc
8/24/1975	18:23:14	36.01	-120.586	4.303	2.92	md	14	138	0.1117	0.04	nc	nc1025921	2016-12-15T02:47:55.528Z	Central California	earthquake	0.49	0.96	0.56	6	reviewed	nc	nc
8/22/1975	19:13:48	36.1011667	-120.6436667	8.036	2.48	md	9	171	0.06577	0.03	nc	nc1025883	2016-12-15T02:45:39.247Z	25 km ENE of San Ardo, California	earthquake	0.79	0.62	0.55	4	reviewed	nc	nc
8/20/1975	19:37:01	34.851	-119.332	6	2.56	mh	0	161.6		0.13	ci	ci3023349	2016-01-29T21:47:06.540Z	17km W of Pine Mountain Club, CA	earthquake				12	reviewed	ci	ci
8/19/1975	5:11:38	36.0928333	-120.6678333	3.341	2.42	md	12	131	0.04865	0.03	nc	nc1025823	2016-12-15T02:41:58.705Z	22 km ENE of San Ardo, California	earthquake	0.34	0.56	0.49	4	reviewed	nc	nc
8/18/1975	8:57:32	35.9968333	-120.5665	4.393	3.45	md	15	137	0.09099	0.07	nc	nc1025809	2016-12-15T02:41:08.021Z	16 km NW of Parkfield, California	earthquake	0.55	1.12	0.49	7	reviewed	nc	nc
8/16/1975	20:25:32	35.9785	-120.5218333	11.638	2.51	md	11	148	0.05135	0.03	nc	nc1025763	2016-12-15T02:38:20.393Z	11 km NW of Parkfield, California	earthquake	0.55	0.88	0.5	4	reviewed	nc	nc
8/15/1975	2:40:20	35.089	-119.22	6	2.47	mh	0	178.3	0.6419	0.488	ci	ci3023292	2016-01-29T20:59:08.980Z	17km ENE of Maricopa, CA	earthquake				11	reviewed	ci	ci
8/14/1975	4:29:58	35.125	-119.177	6	3.78	ml	0	165.8		0.6	ci	ci3023276	2016-01-29T21:30:31.800Z	22km ENE of Maricopa, CA	earthquake				11	reviewed	ci	ci
8/13/1975	9:10:10	36.0295	-120.6096667	5.783	2.37	md	12	139	0.1225	0.06	nc	nc1025677	2016-12-15T02:32:58.464Z	21 km NW of Parkfield, California	earthquake	0.5	0.8	0.27	5	reviewed	nc	nc
8/13/1975	9:04:31	36.027	-120.6081667	2.893	3.29	md	19	126	0.1252	0.1	nc	nc1025676	2016-12-15T02:32:54.907Z	21 km NW of Parkfield, California	earthquake	0.55	0.88	0.48	6	reviewed	nc	nc
8/11/1975	5:38:18	36.0375	-120.2591667	11.108	3.17	md	7	263	0.1234	0.03	nc	nc1025600	2016-12-15T02:28:24.811Z	12 km WNW of Avenal, California	earthquake	2.03	1.05		3	reviewed	nc	nc
8/7/1975	13:27:07	36.0763333	-120.666	2.993	3.29	md	13	140	0.05766	0.06	nc	nc1025441	2016-12-15T02:18:23.420Z	22 km ENE of San Ardo, California	earthquake	0.37	0.52	0.54	5	reviewed	nc	nc
8/5/1975	18:37:42	35.037	-120.677	6	2.3	mh	0	326.4		0.127	ci	ci3023236	2016-01-29T21:14:43.380Z	9km SW of Oceano, CA	earthquake				4	reviewed	ci	ci
8/4/1975	11:24:48	35.819	-120.1513333	22.178	3.06	md	8	322	0.1658	0.2	nc	nc1025309	2016-12-15T02:09:50.607Z	20 km S of Avenal, California	earthquake	8.59	2.6	0.57	5	reviewed	nc	nc
7/31/1975	21:14:59	35.968	-120.5221667	10.698	3.13	md	14	144	0.04505	0.07	nc	nc1024978	2016-12-15T01:48:18.624Z	11 km NW of Parkfield, California	earthquake	0.58	0.96	0.67	8	reviewed	nc	nc
7/28/1975	12:51:58	35.5565	-120.8376667	4.468	2.89	md	11	209	0.3703	0.04	nc	nc1024954	2016-12-15T01:46:45.473Z	11 km W of Templeton, California	earthquake	1.88	5.1	0.7	5	reviewed	nc	nc
7/26/1975	13:21:08	35.9676667	-120.524	11.298	3.65	md	13	144	0.04595	0.06	nc	nc1024938	2016-12-15T01:45:38.657Z	11 km NW of Parkfield, California	earthquake	0.61	1.05	0.28	7	reviewed	nc	nc
7/26/1975	11:08:47	36.152	-120.6126667	6.874	3.13	md	13	149	0.04414	0.1	nc	nc1024934	2016-12-15T01:45:23.702Z	22 km W of Coalinga, California	earthquake	0.58	0.39	0.11	6	reviewed	nc	nc
7/19/1975	10:50:46	35.9878333	-120.5591667	4.003	2.21	md	10	147	0.08108	0.04	nc	nc1024837	2016-12-15T01:40:00.606Z	15 km NW of Parkfield, California	earthquake	0.45	1.02	0.48	3	reviewed	nc	nc
7/19/1975	6:19:50	36.135	-120.444	9.72	3.37	md	11	214	0.1793	0.07	nc	nc1024835	2016-12-15T01:39:53.191Z	Central California	earthquake	1.05	1.16	0.26	5	reviewed	nc	nc
7/19/1975	5:36:51	35.9546667	-120.1731667	18.798	2.6	md	7	297	0.136	0.03	nc	nc1024834	2016-12-15T01:39:49.480Z	6 km SW of Avenal, California	earthquake	4.45	2.27	0.26	4	reviewed	nc	nc
7/19/1975	5:05:48	35.9568333	-120.1558333	20.218	2.38	md	8	304	0.1505	0.04	nc	nc1024833	2016-12-15T01:39:45.675Z	5 km SSW of Avenal, California	earthquake	3.77	1.15	0.02	3	reviewed	nc	nc
7/19/1975	4:59:38	35.9938333	-120.0558333	21.828	2.46	md	9	302	0.2378	0.01	nc	nc1024832	2016-12-15T01:39:41.679Z	6 km E of Avenal, California	earthquake	4.14	1.66	0.01	3	reviewed	nc	nc
7/18/1975	13:43:45	36.0005	-120.1306667	15.288	3.61	md	11	284	0.182	0.08	nc	nc1024825	2016-12-15T01:39:13.709Z	0 km SSW of Avenal, California	earthquake	2.82	1.17	0.6	6	reviewed	nc	nc
7/13/1975	16:38:44	35.5591667	-120.0908333	9.228	3.28	md	22	169	0.3459	0.18	nc	nc1024767	2016-12-15T01:35:47.514Z	27 km ESE of Shandon, California	earthquake	2.02	0.89	0.39	8	reviewed	nc	nc
7/13/1975	13:53:04	36.0286667	-120.6036667	4.513	2.79	md	13	140	0.127	0.03	nc	nc1024766	2016-12-15T01:35:43.577Z	21 km NW of Parkfield, California	earthquake	0.48	0.73	0.04	3	reviewed	nc	nc
7/8/1975	11:20:05	35.9755	-120.5213333	10.878	2.55	md	13	147	0.04865	0.03	nc	nc1024711	2016-12-15T01:32:07.223Z	11 km NW of Parkfield, California	earthquake	0.49	0.8	0.47	7	reviewed	nc	nc
6/28/1975	10:04:30	35.8508333	-120.4208333	8.758	3.5	ml	13	134	0.03153	0.07	nc	nc1024564	2016-12-15T01:23:24.981Z	5 km S of Parkfield, California	earthquake	0.53	0.7		0	reviewed	nc	nc
6/26/1975	17:33:43	35.979	-120.537	10.283	2.23	md	10	147	0.06126	0.02	nc	nc1024530	2016-12-15T01:21:36.061Z	12 km NW of Parkfield, California	earthquake	0.91	1.24	0.17	3	reviewed	nc	nc
6/23/1975	5:41:34	35.07	-119.034	1	3.47	ml	0	142.7	0.5116	0.378	ci	ci3022808	2016-01-29T21:38:29.490Z	17km NW of Grapevine, CA	earthquake				9	reviewed	ci	ci
6/21/1975	6:50:12	36.0721667	-120.6638333	3.063	3.02	md	14	139	0.06126	0.07	nc	nc1024471	2016-12-15T01:17:38.521Z	22 km ENE of San Ardo, California	earthquake	0.49	0.7	0.44	8	reviewed	nc	nc
6/16/1975	23:33:55	35.9951667	-120.574	3.952	2.87	md	9	147	0.1667	0.02	nc	nc1024398	2016-12-15T01:12:32.077Z	16 km NW of Parkfield, California	earthquake	0.4	1.38	0.53	4	reviewed	nc	nc
6/16/1975	23:32:47	36.0006667	-120.5676667	3.942	2.82	md	9	150	0.1667	0.04	nc	nc1024397	2016-12-15T01:12:28.495Z	16 km NW of Parkfield, California	earthquake	0.47	1.14	0.36	4	reviewed	nc	nc
6/11/1975	18:41:42	36.0745	-120.6465	4.771	3.1	ml	25	130	0.06847	0.08	nc	nc1024314	2016-12-15T01:06:55.096Z	24 km ENE of San Ardo, California	earthquake	0.35	0.46		0	reviewed	nc	nc
6/10/1975	18:40:37	35.8581667	-120.4026667	4.828	2.23	md	6	120	0.02523	0.06	nc	nc1024287	2016-12-15T01:05:10.470Z	5 km SSE of Parkfield, California	earthquake	0.5	0.89	0.28	4	reviewed	nc	nc
6/10/1975	17:49:20	35.8328333	-120.4341667	1.418	3.5	md	10	163	0.05135	0.15	nc	nc1024284	2016-12-15T01:04:59.101Z	7 km S of Parkfield, California	earthquake	0.59	4.03	0.1	5	reviewed	nc	nc
6/9/1975	17:14:05	35.063	-118.972	6	2.73	ml	0	150.2		0.511	ci	ci3022330	2016-01-29T20:58:36.970Z	14km NNW of Grapevine, CA	earthquake				6	reviewed	ci	ci
6/9/1975	17:03:01	35.073	-119.035	6	2.54	mh	0	162.5		0.47	ci	ci3022329	2016-01-29T21:46:30.530Z	17km NNW of Grapevine, CA	earthquake				13	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/9/1975	11:41:42	36.0008333	-120.578	2.173	2.5	md	10	148	0.1009	0.11	nc	nc1024260	2016-12-15T01:03:32.797Z	17 km NW of Parkfield, California	earthquake	0.61	3.08	0.04	3	reviewed	nc	nc
6/8/1975	10:32:34	35.7801667	-120.3445	8.348	2.83	md	11	284	0.05135	0.05	nc	nc1024242	2016-12-15T01:02:32.462Z	14 km NNE of Shandon, California	earthquake	2.07	0.77	0.57	5	reviewed	nc	nc
6/8/1975	10:15:03	35.7658333	-120.3758333	6.208	3.1	ml	10	282	0.06757	0.04	nc	nc1024239	2016-12-15T01:02:21.449Z	12 km N of Shandon, California	earthquake	2.06	1.9		0	reviewed	nc	nc
6/8/1975	6:41:35	35.048	-119.01	1	2.85	ml	0	151.2		0.456	ci	ci3022301	2016-01-29T21:22:05.860Z	14km NNW of Grapevine, CA	earthquake				7	reviewed	ci	ci
6/6/1975	4:07:20	36.0386667	-120.625	6.831	2.97	md	13	131	0.1072	0.08	nc	nc1024119	2016-12-15T00:54:56.277Z	23 km NW of Parkfield, California	earthquake	0.73	0.84	0.06	5	reviewed	nc	nc
6/6/1975	3:01:28	35.9808333	-120.525	10.258	3.4	md	13	149	0.05405	0.05	nc	nc1024118	2016-12-15T00:54:52.584Z	12 km NW of Parkfield, California	earthquake	0.62	0.85	0.25	6	reviewed	nc	nc
6/5/1975	14:46:45	35.052	-119	1	4.09	ml	0	139.9		0.413	ci	ci3022245	2016-01-29T21:14:12.660Z	14km NNW of Grapevine, CA	earthquake				7	reviewed	ci	ci
6/2/1975	15:24:18	36.05	-120.6875	0.495	2.61	md	9	138	0.06667	0.17	nc	nc1024081	2016-12-15T00:52:24.945Z	19 km E of San Ardo, California	earthquake	1.58	12.96	0.2	4	reviewed	nc	nc
6/1/1975	15:11:49	35.8446667	-120.3748333	4.565	2.89	md	10	162	0.02162	0.04	nc	nc1024066	2016-12-15T00:51:41.048Z	8 km SE of Parkfield, California	earthquake	0.41	0.46	0.34	3	reviewed	nc	nc
5/27/1975	6:35:23	36.0035	-120.5828333	2.443	2.71	md	8	148	0.1054	0.02	nc	nc1024010	2016-12-15T00:48:21.457Z	17 km NW of Parkfield, California	earthquake	0.45	1.46	0.24	3	reviewed	nc	nc
5/25/1975	12:44:34	35.979	-120.5241667	10.938	3.93	md	15	148	0.05225	0.06	nc	nc1023983	2016-12-15T00:46:48.076Z	12 km NW of Parkfield, California	earthquake	0.48	0.91	0.29	9	reviewed	nc	nc
5/25/1975	4:04:43	35.9785	-120.5496667	2.953	2.01	md	10	145	0.06937	0.04	nc	nc1023978	2016-12-15T00:46:36.561Z	13 km NW of Parkfield, California	earthquake	0.44	1.49	0.32	4	reviewed	nc	nc
5/24/1975	7:23:48	35.9818333	-120.5203333	11.028	2.63	md	10	151	0.05225	0.02	nc	nc1023972	2016-12-15T00:46:21.575Z	12 km NW of Parkfield, California	earthquake	0.46	0.75	0.11	3	reviewed	nc	nc
5/24/1975	0:47:15	35.739	-120.2853333	12.118	2.02	md	6	305	0.1072	0.02	nc	nc1023968	2016-12-15T00:46:10.409Z	12 km NE of Shandon, California	earthquake	4.87	1.85	0.32	3	reviewed	nc	nc
5/23/1975	9:17:48	35.9798333	-120.5228333	11.268	2.89	md	13	148	0.05225	0.04	nc	nc1023958	2016-12-15T00:45:36.701Z	12 km NW of Parkfield, California	earthquake	0.61	0.82	0.84	6	reviewed	nc	nc
5/23/1975	7:09:32	35.9741667	-120.5265	10.218	2.39	md	10	147	0.05135	0.06	nc	nc1023957	2016-12-15T00:45:32.969Z	11 km NW of Parkfield, California	earthquake	0.6	0.95	0.12	3	reviewed	nc	nc
5/22/1975	9:39:00	35.9666667	-120.5431667	9.743	3.7	md	20	114	0.06036	0.12	nc	nc1023944	2016-12-15T00:44:31.542Z	12 km NW of Parkfield, California	earthquake	0.41	0.87	0.75	10	reviewed	nc	nc
5/14/1975	20:54:38	35.9415	-120.4873333	5.288	2.59	md	9	112	0.01171	0.02	nc	nc1023870	2016-12-15T00:40:02.094Z	6 km NW of Parkfield, California	earthquake	0.29	0.42	0.02	3	reviewed	nc	nc
5/14/1975	4:59:21	36.0478333	-120.6245	5.636	2.61	md	9	141	0.1018	0.03	nc	nc1023865	2016-12-15T00:39:43.989Z	23 km NW of Parkfield, California	earthquake	0.76	0.56	0.36	5	reviewed	nc	nc
5/13/1975	7:13:03	36.0471667	-120.6196667	6.185	2.31	md	10	156	0.1045	0.04	nc	nc1023854	2016-12-15T00:39:06.219Z	23 km NW of Parkfield, California	earthquake	0.59	0.74	0.49	6	reviewed	nc	nc
5/13/1975	5:12:04	36.0473333	-120.6201667	6.915	3.2	md	11	156	0.1045	0.06	nc	nc1023852	2016-12-15T00:38:51.579Z	23 km NW of Parkfield, California	earthquake	0.7	1.02	0.33	5	reviewed	nc	nc
5/13/1975	0:21:35	35.007	-119.097	24.05	4.56	ml	0	153		0.313	ci	ci3022027	2018-06-04T20:43:45.000Z	17km WNW of Grapevine, CA	earthquake		2.25		11	reviewed	ci	ci
5/9/1975	19:49:15	36.0101667	-120.5856667	3.153	2.26	md	9	150	0.1108	0.07	nc	nc1023817	2016-12-15T00:36:39.291Z	18 km NW of Parkfield, California	earthquake	0.6	1.43	0.37	4	reviewed	nc	nc
5/5/1975	18:51:21	35.826	-120.4385	-0.445	3.34	md	12	174	0.05946	0.17	nc	nc1023761	2016-12-15T00:33:02.683Z	8 km S of Parkfield, California	earthquake	0.62	5.08	0.52	6	reviewed	nc	nc
5/5/1975	1:54:54	36.0221667	-120.6001667	3.925	2.45	md	9	152	0.1279	0.06	nc	nc1023756	2016-12-15T00:32:43.918Z	20 km NW of Parkfield, California	earthquake	0.93	1.26	0.53	6	reviewed	nc	nc
5/4/1975	22:29:35	35.9696667	-120.5161667	11.245	2.54	md	11	156	0.04144	0.04	nc	nc1023754	2016-12-15T00:32:36.466Z	10 km NW of Parkfield, California	earthquake	0.7	0.62	0.76	6	reviewed	nc	nc
5/3/1975	19:36:32	36.0326667	-120.5975	7.893	3.41	md	14	139	0.1279	0.04	nc	nc1023740	2016-12-15T00:31:38.928Z	20 km NW of Parkfield, California	earthquake	0.58	0.77	0.12	6	reviewed	nc	nc
5/3/1975	6:54:50	35.977	-120.5215	11.748	2.49	md	9	149	0.04955	0.05	nc	nc1023732	2016-12-15T00:31:07.938Z	11 km NW of Parkfield, California	earthquake	0.49	0.8	0.04	3	reviewed	nc	nc
5/3/1975	2:48:52	36.022	-120.6056667	3.703	2.93	md	11	144	0.1297	0.09	nc	nc1023730	2016-12-15T00:31:00.544Z	20 km NW of Parkfield, California	earthquake	0.8	1.35	0.54	6	reviewed	nc	nc
5/3/1975	2:19:08	36.0385	-120.5698333	5.966	3.6	md	13	162	0.1216	0.12	nc	nc1023728	2016-12-15T00:30:53.046Z	19 km NW of Parkfield, California	earthquake	0.93	1.22	0.35	6	reviewed	nc	nc
5/2/1975	19:19:27	35.9743333	-120.5156667	11.558	3.56	md	14	137	0.04414	0.07	nc	nc1023723	2016-12-15T00:30:27.602Z	11 km NW of Parkfield, California	earthquake	0.63	0.93	0.32	6	reviewed	nc	nc
5/2/1975	3:17:41	35.9738333	-120.5248333	10.918	2.09	md	6	155	0.05045	0.04	nc	nc1023716	2016-12-15T00:30:04.598Z	11 km NW of Parkfield, California	earthquake	0.68	1.23	0.15	3	reviewed	nc	nc
5/1/1975	12:03:39	35.9708333	-120.5226667	11.078	3.1	ml	20	121	0.04685	0.07	nc	nc1023707	2016-12-15T00:29:29.360Z	11 km NW of Parkfield, California	earthquake	0.4	0.77		0	reviewed	nc	nc
4/29/1975	12:59:47	36.0326667	-120.5945	8.788	3.03	md	13	85	0.1306	0.06	nc	nc1023692	2016-12-15T00:28:29.466Z	20 km NW of Parkfield, California	earthquake	0.61	1.59	0.76	6	reviewed	nc	nc
4/28/1975	18:00:32	36.0478333	-120.6226667	6.234	2.95	md	18	117	0.1	0.08	nc	nc1023686	2016-12-15T00:28:07.149Z	Central California	earthquake	0.47	0.96	0.55	6	reviewed	nc	nc
4/26/1975	17:16:21	35.593	-118.959	6	3.43	ml	0	83.5		0.264	ci	ci3076364	2016-01-29T21:35:32.190Z	20km NNE of Oildale, CA	earthquake				8	reviewed	ci	ci
4/25/1975	5:20:22	36.0968333	-120.6685	7.301	3.45	md	13	143	0.04685	0.04	nc	nc1023653	2016-12-15T00:26:10.809Z	22 km ENE of San Ardo, California	earthquake	0.6	0.46	0.25	9	reviewed	nc	nc
4/23/1975	20:34:35	36.033	-120.5931667	7.253	3.5	md	12	144	0.1306	0.03	nc	nc1023644	2016-12-15T00:25:39.953Z	20 km NW of Parkfield, California	earthquake	0.53	0.76	0.3	6	reviewed	nc	nc
4/23/1975	20:11:02	36.0358333	-120.5806667	8.223	3.77	md	17	132	0.1252	0.12	nc	nc1023643	2016-12-15T00:25:36.018Z	20 km NW of Parkfield, California	earthquake	0.64	1.1	0.3	6	reviewed	nc	nc
4/23/1975	13:47:32	36.0196667	-120.6073333	5.413	2.06	md	10	149	0.1306	0.02	nc	nc1023638	2016-12-15T00:25:16.975Z	20 km NW of Parkfield, California	earthquake	0.85	2.07	0.4	5	reviewed	nc	nc
4/23/1975	13:20:57	36.0265	-120.5985	6.173	2.73	md	10	154	0.1297	0.01	nc	nc1023637	2016-12-15T00:25:13.059Z	Central California	earthquake	0.98	2.06	0.11	3	reviewed	nc	nc
4/23/1975	13:06:29	36.0221667	-120.5991667	5.203	2.9	md	12	152	0.127	0.03	nc	nc1023636	2016-12-15T00:25:09.061Z	20 km NW of Parkfield, California	earthquake	0.38	0.91	0.13	3	reviewed	nc	nc
4/23/1975	13:05:19	36.019	-120.611	4.153	2.67	md	10	136	0.1288	0.05	nc	nc1023635	2016-12-15T00:25:05.191Z	20 km NW of Parkfield, California	earthquake	0.47	0.99	0.05	3	reviewed	nc	nc
4/23/1975	12:46:24	36.0335	-120.5856667	8.573	4.19	md	15	113	0.1261	0.05	nc	nc1023633	2016-12-15T00:25:01.466Z	20 km NW of Parkfield, California	earthquake	0.52	0.96	0.28	7	reviewed	nc	nc
4/23/1975	11:01:46	36.0241667	-120.6013333	7.446	3.33	md	8	166	0.1297	0.01	nc	nc1023632	2016-12-15T00:24:57.584Z	20 km NW of Parkfield, California	earthquake	1.18	2.21	0.12	3	reviewed	nc	nc
4/5/1975	7:15:34	35.109	-119.118	6	3.01	ml	0	161.3		0.465	ci	ci3039426	2016-01-29T21:37:50.920Z	25km SW of Lamont, CA	earthquake				6	reviewed	ci	ci
4/5/1975	4:43:58	35.115	-119.115	0.01	2.21	mh	0	172.9		0.562	ci	ci3039424	2016-01-29T21:13:50.140Z	24km SW of Lamont, CA	earthquake		5.781		8	reviewed	ci	ci
3/29/1975	2:14:41	36.0103333	-120.577	5.008	2.17	md	10	152	0.1054	0.03	nc	nc1023344	2016-12-15T00:07:46.318Z	17 km NW of Parkfield, California	earthquake	0.47	1.39	0.54	5	reviewed	nc	nc
3/28/1975	19:56:20	36.014	-120.5901667	5.628	2.62	md	9	150	0.1162	0.05	nc	nc1023341	2016-12-15T00:07:29.533Z	19 km NW of Parkfield, California	earthquake	0.67	1.93	0.1	3	reviewed	nc	nc
3/26/1975	18:58:19	35.9966667	-120.5703333	2.778	2.12	md	9	149	0.09369	0.04	nc	nc1023322	2016-12-15T00:06:10.753Z	16 km NW of Parkfield, California	earthquake	0.48	1.94	0.54	3	reviewed	nc	nc
3/23/1975	15:04:11	36.0471667	-120.6133333	9.165	3.61	md	23	84	0.109	0.05	nc	nc1023295	2016-12-15T00:04:25.796Z	23 km NW of Parkfield, California	earthquake	0.41	0.64	0.54	5	reviewed	nc	nc
3/21/1975	3:46:24	35.043	-118.991	6	2.92	ml	0	149.9		0.491	ci	ci3039305	2016-01-29T21:29:31.720Z	12km NNW of Grapevine, CA	earthquake				4	reviewed	ci	ci
3/14/1975	12:33:10	35.433	-118.728	6	2.03	mh	0	221.3		0.26	ci	ci3038067	2016-01-29T21:45:56.950Z	26km NE of Lamont, CA	earthquake				7	reviewed	ci	ci
3/12/1975	23:46:30	35.5243333	-120.5718333	10.878	2.27	md	6	319	0.2946	0.04	nc	nc1023186	2016-12-14T23:56:38.454Z	4 km W of Creston, California	earthquake	6.99	3.36	0.37	3	reviewed	nc	nc
3/12/1975	22:44:41	35.9765	-120.5233333	10.478	3.1	md	13	147	0.05045	0.06	nc	nc1023185	2016-12-14T23:56:34.492Z	11 km NW of Parkfield, California	earthquake	0.6	0.81	0.63	5	reviewed	nc	nc
3/11/1975	23:29:41	35.9816667	-120.5525	1.053	2.03	md	10	146	0.07297	0.04	nc	nc1023172	2016-12-14T23:55:45.975Z	14 km NW of Parkfield, California	earthquake	0.46	6.57	0.16	3	reviewed	nc	nc
3/9/1975	18:48:06	35.98	-120.5298333	6.992	2.2	md	8	150	0.136	0.03	nc	nc1023143	2016-12-14T23:54:05.419Z	12 km NW of Parkfield, California	earthquake	0.53	1.68	0.36	4	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
3/8/1975	23:40:12	35.9833333	-120.598	4.812	2.58	md	7	158	0.1622	0.03	nc	nc1023134	2016-12-14T23:53:27.214Z	17 km WNW of Parkfield, California	earthquake	0.82	2.19	0.23	5	reviewed	nc	nc
3/8/1975	23:38:11	35.9988333	-120.5681667	4.972	2.09	md	8	149	0.1676	0.01	nc	nc1023133	2016-12-14T23:53:23.116Z	16 km NW of Parkfield, California	earthquake	1.06	0.74	0.47	4	reviewed	nc	nc
3/8/1975	10:20:51	35.9991667	-120.5941667	8.022	2.26	md	8	157	0.1523	0.07	nc	nc1023130	2016-12-14T23:53:10.453Z	18 km NW of Parkfield, California	earthquake	0.75	3.32	0.03	2	reviewed	nc	nc
3/6/1975	4:54:45	36.037	-120.6018333	5.293	2.46	md	6	202	0.1225	0.03	nc	nc1023098	2016-12-14T23:51:00.765Z	21 km NW of Parkfield, California	earthquake	1.98	0.96	0.07	2	reviewed	nc	nc
3/2/1975	19:45:54	36.0453333	-120.661	-0.027	2.32	md	9	152	0.08198	0.07	nc	nc1023035	2016-12-14T23:47:20.922Z	22 km E of San Ardo, California	earthquake	0.76	7.69	0.65	4	reviewed	nc	nc
3/1/1975	22:06:08	36.0251667	-120.6145	5.513	2.69	md	11	149	0.1225	0.05	nc	nc1023020	2016-12-14T23:46:16.582Z	Central California	earthquake	1.04	0.54	0.17	4	reviewed	nc	nc
2/27/1975	11:19:02	36.0015	-120.5711667	4.803	3.44	md	14	138	0.0964	0.05	nc	nc1022978	2016-12-14T23:43:42.323Z	16 km NW of Parkfield, California	earthquake	0.53	1.1	0.19	3	reviewed	nc	nc
2/18/1975	11:37:31	36.0363333	-120.6013333	5.363	2.79	md	9	116	0.1234	0.04	nc	nc1022880	2016-12-14T23:38:17.937Z	21 km NW of Parkfield, California	earthquake	0.76	0.6	0.14	5	reviewed	nc	nc
2/14/1975	8:05:31	35.9185	-120.2023333	15.038	2.03	md	5	317	0.1117	0.07	nc	nc1022832	2016-12-14T23:35:29.358Z	11 km SW of Avenal, California	earthquake	7.19	3.67	0.07	3	reviewed	nc	nc
2/12/1975	12:03:17	35.9728333	-120.1246667	19.183	3.4	ml	22	262	0.1784	0.16	nc	nc1022811	2016-12-14T23:34:09.788Z	3 km S of Avenal, California	earthquake	1.47	0.52		0	reviewed	nc	nc
2/11/1975	10:52:51	36.0063333	-120.5751667	4.983	2.69	md	12	153	0.1018	0.07	nc	nc1022805	2016-12-14T23:33:36.926Z	17 km NW of Parkfield, California	earthquake	0.62	1.11	0.64	4	reviewed	nc	nc
2/8/1975	0:36:20	35.5903333	-120.5458333	13.038	2.25	md	6	312	0.2261	0.13	nc	nc1022789	2016-12-14T23:32:29.464Z	8 km NNW of Creston, California	earthquake	9.67	3.99	0.53	4	reviewed	nc	nc
2/7/1975	9:29:54	35.9961667	-120.5763333	2.553	2.83	md	10	149	0.0973	0.03	nc	nc1022779	2016-12-14T23:32:00.503Z	16 km NW of Parkfield, California	earthquake	0.5	1.29	0.08	3	reviewed	nc	nc
2/1/1975	7:35:48	35.9493333	-120.1498333	18.848	3.25	md	12	297	0.1541	0.06	nc	nc1022721	2016-12-14T23:28:08.153Z	6 km SSW of Avenal, California	earthquake	2.61	0.49	0.34	3	reviewed	nc	nc
1/30/1975	15:55:10	35.444	-118.707	6	2.63	mh	0	171.8		0.145	ci	ci3037713	2016-01-29T21:19:44.110Z	25km SW of Bodfish, CA	earthquake				23	reviewed	ci	ci
1/30/1975	11:14:45	36.049	-120.031	6	2.93	mh	0	102.1		0.236	ci	ci3037709	2016-01-29T21:12:00.050Z	8km NW of Kettleman City, CA	earthquake				20	reviewed	ci	ci
1/30/1975	8:46:34	36.0715	-120.6493333	5.355	3.94	md	28	79	0.07117	0.08	nc	nc1022703	2016-12-14T23:26:58.780Z	23 km ENE of San Ardo, California	earthquake	0.36	0.54	0.46	9	reviewed	nc	nc
1/30/1975	8:07:07	35.9861667	-120.1548333	17.378	3.3	ml	30	162	0.1586	0.18	nc	nc1022701	2016-12-14T23:26:52.866Z	3 km SW of Avenal, California	earthquake	0.78	0.57		0	reviewed	nc	nc
1/26/1975	4:56:47	36.168	-119.944	6	2.8	mh	0	291.5	1.295	0.088	ci	ci3037659	2016-01-29T21:21:21.090Z	11km SSW of Lemoore Station, CA	earthquake				3	reviewed	ci	ci
1/25/1975	0:44:53	35.946	-120.497	14.785	3.42	md	12	132	0.01892	0.08	nc	nc1022650	2016-12-14T23:23:08.634Z	7 km NW of Parkfield, California	earthquake	0.71	0.91	0.58	3	reviewed	nc	nc
1/24/1975	0:00:13	36.0001667	-119.9635	13.213	4.06	md	9	306	0.3126	0.06	nc	nc1022638	2016-12-14T23:22:15.712Z	0 km S of Kettleman City, California	earthquake	6.78	3.73	0.61	7	reviewed	nc	nc
1/18/1975	17:03:17	35.7518333	-120.3001667	12.088	3.26	md	7	300	0.09009	0.04	nc	nc1022560	2016-12-14T23:17:36.481Z	12 km NNE of Shandon, California	earthquake	3.8	1.17	0.37	3	reviewed	nc	nc
1/18/1975	14:24:34	35.7275	-120.2768333	13.818	2.33	md	5	308	0.1207	0.03	nc	nc1022559	2016-12-14T23:17:32.578Z	11 km NE of Shandon, California	earthquake	6.08	1.88	0.65	4	reviewed	nc	nc
1/17/1975	5:42:15	34.954	-120.47	6	2.91	mh	0	289.7		0.37	ci	ci3037380	2016-01-29T20:57:32.260Z	3km W of Santa Maria, CA	earthquake				25	reviewed	ci	ci
1/14/1975	8:55:58	35.378	-118.823	6	2.84	ml	0	176.5	0.4022	0.177	ci	ci3037367	2016-01-29T21:21:03.710Z	16km NNE of Lamont, CA	earthquake				6	reviewed	ci	ci
1/11/1975	12:34:20	35.9643333	-120.5118333	10.778	2.74	md	13	145	0.03604	0.05	nc	nc1022493	2016-12-14T23:12:38.327Z	10 km NW of Parkfield, California	earthquake	0.4	0.63	0.77	6	reviewed	nc	nc
1/6/1975	19:07:44	35.9371667	-120.5021667	10.266	2.17	md	10	159	0.02432	0.02	nc	nc1022467	2016-12-14T23:10:32.624Z	7 km WNW of Parkfield, California	earthquake	0.67	0.57	0.68	4	reviewed	nc	nc
1/6/1975	11:17:12	35.9443333	-120.5136667	9.673	4.4	ml	19	117	0.03243	0.12	nc	nc1022464	2018-06-04T20:43:45.000Z	8 km NW of Parkfield, California	earthquake	0.43	0.89		0	reviewed	nc	nc
1/6/1975	8:07:14	35.9378333	-120.504	9.323	2.23	md	7	159	0.02523	0.01	nc	nc1022462	2016-12-14T23:10:05.407Z	7 km WNW of Parkfield, California	earthquake	1.42	0.57	0.59	6	reviewed	nc	nc
1/6/1975	7:16:45	35.9341667	-120.515	9.983	2.97	md	13	157	0.03514	0.07	nc	nc1022461	2016-12-14T23:09:59.454Z	8 km WNW of Parkfield, California	earthquake	0.64	0.76	0.46	10	reviewed	nc	nc
12/23/1974	3:58:19	36.018	-120.6033333	4.583	2.45	md	11	137	0.1279	0.1	nc	nc1022332	2016-12-14T22:58:20.769Z	20 km NW of Parkfield, California	earthquake	0.65	1.36	0.52	6	reviewed	nc	nc
12/13/1974	5:14:43	35.9421667	-120.4863333	10.233	2.59	md	12	113	0.01081	0.06	nc	nc1022206	2016-12-14T22:49:15.588Z	6 km NW of Parkfield, California	earthquake	0.52	0.81	0.33	6	reviewed	nc	nc
12/6/1974	15:34:02	35.824	-120.3796667	7.093	3.18	md	15	241	0.06396	0.06	nc	nc1022106	2016-12-14T22:42:23.639Z	9 km SSE of Parkfield, California	earthquake	0.88	0.37	0.24	7	reviewed	nc	nc
12/5/1974	21:49:52	35.8168333	-120.3673333	8.403	2.02	md	8	258	0.07477	0.02	nc	nc1022095	2016-12-14T22:41:45.252Z	10 km SSE of Parkfield, California	earthquake	1.35	0.68	0.14	4	reviewed	nc	nc
12/5/1974	21:26:20	35.8196667	-120.375	7.613	3.28	md	14	245	0.06937	0.05	nc	nc1022094	2016-12-14T22:41:41.407Z	10 km SSE of Parkfield, California	earthquake	0.99	0.38	0.84	8	reviewed	nc	nc
12/5/1974	2:19:01	35.9988333	-120.564	3.793	2.57	md	10	167	0.09009	0.03	nc	nc1022077	2016-12-14T22:40:16.516Z	16 km NW of Parkfield, California	earthquake	0.69	1.38	0.05	3	reviewed	nc	nc
11/27/1974	16:32:59	35.9951667	-120.5586667	4.943	2.71	md	11	150	0.08468	0.04	nc	nc1021933	2016-12-14T22:28:25.511Z	15 km NW of Parkfield, California	earthquake	0.58	0.94	0.38	6	reviewed	nc	nc
11/22/1974	23:15:44	35.9705	-120.5193333	7.433	2.18	md	9	146	0.04414	0.03	nc	nc1021860	2016-12-14T22:24:01.916Z	11 km NW of Parkfield, California	earthquake	0.59	1.37	0.34	4	reviewed	nc	nc
11/17/1974	12:52:56	35.9616667	-120.5126667	8.828	2.31	md	8	143	0.03514	0.04	nc	nc1021767	2016-12-14T22:17:40.672Z	9 km NW of Parkfield, California	earthquake	0.66	1.11	0.61	7	reviewed	nc	nc
11/17/1974	6:11:31	36.042	-120.6285	2.198	2.56	md	15	115	0.1586	0.08	nc	nc1021764	2016-12-14T22:17:29.452Z	23 km NW of Parkfield, California	earthquake	0.53	1.81	0.77	8	reviewed	nc	nc
11/12/1974	10:36:31	36.0353333	-120.6091667	4.785	2.67	md	12	141	0.1189	0.05	nc	nc1021713	2016-12-14T22:13:44.022Z	21 km NW of Parkfield, California	earthquake	0.51	0.74	0.29	4	reviewed	nc	nc
11/10/1974	7:43:40	36.0053333	-120.573	4.133	3.7	md	16	86	0.1	0.06	nc	nc1021687	2016-12-14T22:11:59.382Z	17 km NW of Parkfield, California	earthquake	0.47	1.1	0.64	5	reviewed	nc	nc
11/7/1974	20:52:22	36.0083333	-120.5755	4.983	2.73	md	12	139	0.1036	0.05	nc	nc1021645	2016-12-14T22:08:56.843Z	17 km NW of Parkfield, California	earthquake	0.53	1.1	0.75	6	reviewed	nc	nc
11/5/1974	5:48:42	36.2393333	-120.212	11.918	3.9	md	18	204	0.1649	0.1	nc	nc1021598	2016-12-14T22:05:17.174Z	10 km WNW of Huron, California	earthquake	0.7	1.26	0.76	9	reviewed	nc	nc
10/4/1974	21:36:37	36.0011667	-120.566	3.113	2.25	md	8	151	0.09279	0.03	nc	nc1021208	2016-12-14T21:34:36.237Z	16 km NW of Parkfield, California	earthquake	0.56	1.5	0.2	4	reviewed	nc	nc
9/21/1974	18:33:01	34.9278333	-118.9996667	6	3.18	ml	14	146		0.47	ci	ci3317670	2016-01-29T01:13:08.090Z	7km WSW of Grapevine, CA	earthquake	1.01	31.61	0.089	9	reviewed	ci	ci
9/21/1974	13:34:39	35.4736667	-118.6998333	6	2.72	ml	8	175		0.44	ci	ci3317667	2016-01-29T01:37:41.380Z	23km SW of Bodfish, CA	earthquake	1.69	31.61	0.136	6	reviewed	ci	ci
9/12/1974	22:17:00	36.0233333	-120.617	4.365	2.59	md	8	148	0.1225	0.06	nc	nc1020920	2016-12-14T21:13:31.789Z	21 km NW of Parkfield, California	earthquake	1.28	0.97	0.01	3	reviewed	nc	nc
8/30/1974	3:13:38	35.2385	-118.844	6	2.61	ml	8	153		0.49	ci	ci3318002	2016-01-29T01:33:02.090Z	4km NNW of Arvin, CA	earthquake	1.16	31.61	0.104	4	reviewed	ci	ci
8/19/1974	13:42:34	35.9968333	-120.5723333	2.163	3.22	md	12	135	0.09459	0.06	nc	nc1020623	2016-12-14T20:47:12.664Z	16 km NW of Parkfield, California	earthquake	0.57	1.62	0.42	9	reviewed	nc	nc
8/17/1974	13:22:23	36.0128333	-120.5791667	5.173	2.8	md	11	153	0.109	0.04	nc	nc1020604	2016-12-14T20:45:14.692Z	18 km NW of Parkfield, California	earthquake	0.57	1.05	0.54	8	reviewed	nc	nc
8/8/1974	8:22:24	35.999	-120.563	4.273	2.13	md	10	151	0.09009	0.05	nc	nc1020514	2016-12-14T20:36:57.069Z	16 km NW of Parkfield, California	earthquake	0.57	1.35	0.37	8	reviewed	nc	nc
8/8/1974	7:55:36	35.9978333	-120.5623333	2.733	2.48	md	10	150	0.08919	0.05	nc	nc1020513	2016-12-14T20:36:52.968Z	15 km NW of Parkfield, California	earthquake	0.65	1.62	0.5	10	reviewed	nc	nc
8/3/1974	17:24:23	36.0088333	-120.5601667	3.553	2.43	md	8	155	0.09459	0.11	nc	nc1020456	2016-12-14T20:31:43.225Z	16 km NW of Parkfield, California	earthquake	0.73	1.93	0.48	6	reviewed	nc	nc
8/2/1974	14:46:06	35.9951667	-120.5651667	3.303	3.83	md	15	136	0.08919	0.07	nc	nc1020444	2016-12-14T20:30:55.883Z	15 km NW of Parkfield, California	earthquake	0.5	1.31	0.66	4	reviewed	nc	nc
7/16/1974	3:21:06	36.1118333	-120.1458333	5.723	2.39	md	12	218	0.2387	0.16	nc	nc1020305	2016-12-14T20:20:44.595Z	10 km SSW of Huron, California	earthquake	2.19	1.73	0.3	5	reviewed	nc	nc
7/14/1974	16:39:12	36.0336667	-120.598	5.453	2.51	md	10	156	0.127	0.04	nc	nc1020289	2016-12-14T20:19:26.164Z	21 km NW of Parkfield, California	earthquake	0.62	0.74	0.39	4	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
7/9/1974	15:16:04	35.0686667	-119.0016667	6	2.61	ml	8	151		0.57	ci	ci3318058	2016-01-29T01:18:00.910Z	15km NNW of Grapevine, CA	earthquake	1.35	31.61	0.052	4	reviewed	ci	ci
7/9/1974	13:06:49	36.0318333	-120.614	4.318	2.33	md	12	113	0.1423	0.1	nc	nc1020222	2016-12-14T20:14:46.809Z	21 km NW of Parkfield, California	earthquake	0.77	2.7	0.72	6	reviewed	nc	nc
7/8/1974	21:37:33	36.0143333	-120.5948333	2.838	2.17	md	11	113	0.1198	0.05	nc	nc1020217	2016-12-14T20:14:29.983Z	19 km NW of Parkfield, California	earthquake	0.48	2.15	0.78	5	reviewed	nc	nc
7/6/1974	22:34:02	36.0265	-120.615	-0.662	2.26	md	15	115	0.1405	0.08	nc	nc1020210	2016-12-14T20:13:52.714Z	21 km NW of Parkfield, California	earthquake	0.48	4.23	0.18	9	reviewed	nc	nc
7/6/1974	21:55:04	36.03	-120.6161667	-0.302	2.71	md	14	115	0.1432	0.15	nc	nc1020209	2016-12-14T20:13:48.158Z	21 km NW of Parkfield, California	earthquake	0.54	5.59	0.69	6	reviewed	nc	nc
7/2/1974	17:48:45	35.9716667	-120.5331667	3.958	2.97	md	18	133	0.05495	0.05	nc	nc1020164	2016-12-14T20:10:29.146Z	12 km NW of Parkfield, California	earthquake	0.39	0.75	0.28	13	reviewed	nc	nc
6/26/1974	2:49:50	35.9336667	-120.5021667	9.078	3.47	md	14	95	0.02613	0.14	nc	nc1020102	2016-12-14T20:05:53.515Z	7 km WNW of Parkfield, California	earthquake	0.59	0.98	0.36	7	reviewed	nc	nc
6/26/1974	1:40:23	35.9428333	-120.4865	10.998	3	ml	18	105	0.00991	0.06	nc	nc1020101	2016-12-14T20:05:49.224Z	6 km NW of Parkfield, California	earthquake	0.45	0.62		0	reviewed	nc	nc
6/3/1974	21:24:02	35.0626667	-118.8768333	6	3.28	ml	14	145		0.5	ci	ci3318304	2016-01-29T01:42:14.190Z	14km NNE of Grapevine, CA	earthquake	0.87	31.61	0.081	11	reviewed	ci	ci
6/3/1974	11:32:59	35.9463333	-120.4891667	10.033	3.03	md	10	135	0.01261	0.06	nc	nc1019804	2016-12-14T19:40:18.007Z	7 km NW of Parkfield, California	earthquake	0.64	0.99	0.24	3	reviewed	nc	nc
6/2/1974	20:22:22	36.008	-120.5875	2.796	2.09	md	11	83	0.1117	0.04	nc	nc1019797	2016-12-14T19:39:53.481Z	18 km NW of Parkfield, California	earthquake	0.51	1.26	0.28	7	reviewed	nc	nc
6/2/1974	20:14:38	36.0076667	-120.5851667	4.786	2.4	md	10	112	0.1099	0.06	nc	nc1019796	2016-12-14T19:39:49.459Z	18 km NW of Parkfield, California	earthquake	0.55	1.25	0.39	6	reviewed	nc	nc
5/27/1974	9:21:25	35.8033333	-119.3166667	8	2.8	mh					ci	ci12322035	2016-01-29T01:43:04.980Z	7km WNW of Delano, CA	earthquake				0	reviewed	ci	ci
5/16/1974	23:20:33	36.0538333	-120.6381667	5.105	2.31	md	6	167	0.08919	0.07	nc	nc1019641	2016-12-14T19:30:25.255Z	24 km E of San Ardo, California	earthquake	1.32	1.01	0.21	4	reviewed	nc	nc
5/16/1974	6:48:01	35.0856667	-118.9516667	6	3.4	ml	13	150	0.477	0.36	ci	ci3318206	2016-01-29T01:37:24.510Z	16km N of Grapevine, CA	earthquake	0.65	31.61	0.187	9	reviewed	ci	ci
5/15/1974	14:44:13	35.85	-120.3735	8.591	2.88	md	6	180	0.02523	0.01	nc	nc1019625	2016-12-14T19:29:04.143Z	7 km SE of Parkfield, California	earthquake	1.78	1.46	0.51	5	reviewed	nc	nc
5/15/1974	14:08:29	35.8431667	-120.3875	7.431	2.31	md	6	148	0.02973	0.01	nc	nc1019624	2016-12-14T19:28:58.469Z	7 km SSE of Parkfield, California	earthquake	1.49	1.47	0.5	5	reviewed	nc	nc
5/12/1974	9:31:29	35.8928333	-120.796	7.775	3	md	9	136	0.2243	0.03	nc	nc1019591	2016-12-14T19:27:20.785Z	3 km N of Bradley, California	earthquake	0.38	4.4	0.6	3	reviewed	nc	nc
5/12/1974	2:47:51	36.0073333	-120.5435	11.579	2.41	md	9	181	0.08378	0.01	nc	nc1019587	2016-12-14T19:27:00.810Z	15 km NW of Parkfield, California	earthquake	0.86	0.96	0.1	3	reviewed	nc	nc
5/11/1974	10:29:01	36.0301667	-120.5995	7.442	2.92	md	7	169	0.1279	0.03	nc	nc1019580	2016-12-14T19:26:19.465Z	20 km NW of Parkfield, California	earthquake	0.78	1.27	0.19	3	reviewed	nc	nc
5/7/1974	4:49:41	36.093	-120.6681667	6.93	2.78	md	7	173	0.04865	0.03	nc	nc1019544	2016-12-14T19:24:34.408Z	22 km ENE of San Ardo, California	earthquake	0.71	0.44	0.04	3	reviewed	nc	nc
5/1/1974	8:49:04	36.03	-120.6101667	5.23	2.67	md	6	175	0.1216	0.03	nc	nc1019492	2016-12-14T19:20:25.082Z	21 km NW of Parkfield, California	earthquake	1.98	1.23	0.05	3	reviewed	nc	nc
4/29/1974	21:47:58	35.9698333	-120.4341667	3.846	2.69	md	6	166	0.04054	0.04	nc	nc1019478	2016-12-14T19:19:27.823Z	7 km N of Parkfield, California	earthquake	0.75	0.98	0.12	3	reviewed	nc	nc
4/26/1974	21:18:27	35.3626667	-118.8293333	6	2.95	ml	10	160		0.45	ci	ci3318168	2016-01-29T01:47:26.890Z	14km NE of Lamont, CA	earthquake	1.21	31.61	0.104	6	reviewed	ci	ci
4/22/1974	14:35:25	36.0028333	-120.568	4.276	3.03	md	9	151	0.0955	0.07	nc	nc1019400	2016-12-14T19:13:42.312Z	16 km NW of Parkfield, California	earthquake	0.89	1.54	0.02	3	reviewed	nc	nc
4/16/1974	14:12:37	36.0205	-120.5891667	3.996	2.97	md	8	153	0.1198	0.04	nc	nc1019321	2016-12-14T19:07:55.443Z	19 km NW of Parkfield, California	earthquake	1.04	0.88	0.11	5	reviewed	nc	nc
4/16/1974	14:11:52	36.0201667	-120.5885	3.266	2.13	md	5	182	0.1189	0.02	nc	nc1019320	2016-12-14T19:07:51.796Z	19 km NW of Parkfield, California	earthquake	5.12	5.17	0.66	4	reviewed	nc	nc
4/15/1974	14:11:52	36.0201667	-120.5885	3.266	2.13	md	5	182	0.1189	0.02	nc	nc1019312	2016-12-14T19:07:19.393Z	19 km NW of Parkfield, California	earthquake	5.12	5.17	0.66	4	reviewed	nc	nc
4/15/1974	5:06:29	36.0045	-120.5578333	4.996	2.38	md	8	154	0.09009	0.02	nc	nc1019310	2016-12-14T19:07:11.996Z	16 km NW of Parkfield, California	earthquake	0.79	1.12	0.57	4	reviewed	nc	nc
4/15/1974	0:17:44	36.0871667	-120.3911667	5.176	2.54	md	6	232	0.1568	0.02	nc	nc1019308	2016-12-14T19:07:04.669Z	6 km SSW of Coalinga, California	earthquake	0.99	2.09		3	reviewed	nc	nc
4/6/1974	16:51:53	36.0076667	-120.5375	14.128	2.68	md	9	160	0.08108	0.05	nc	nc1019235	2016-12-14T19:02:57.009Z	15 km NW of Parkfield, California	earthquake	0.85	1.75	0.2	6	reviewed	nc	nc
4/5/1974	2:47:58	36.0155	-120.529	15.343	3.25	md	7	177	0.08288	0.04	nc	nc1019214	2016-12-14T19:01:37.697Z	15 km NW of Parkfield, California	earthquake	0.89	1.75	0.59	4	reviewed	nc	nc
3/29/1974	3:48:26	36.0003333	-120.5641667	4.963	3.85	md	13	138	0.09099	0.09	nc	nc1019157	2016-12-14T18:57:05.199Z	16 km NW of Parkfield, California	earthquake	0.68	1.39	0.44	7	reviewed	nc	nc
3/26/1974	9:49:21	36.0288333	-120.4161667	8.658	2.05	md	5	296	0.0955	0.01	nc	nc1019129	2016-12-14T18:55:29.828Z	13 km SSW of Coalinga, California	earthquake	3.86	1.85	0.7	4	reviewed	nc	nc
3/21/1974	19:35:40	36.0166667	-120.5863333	4.843	2.24	md	10	152	0.1153	0.04	nc	nc1019069	2016-12-14T18:51:40.796Z	18 km NW of Parkfield, California	earthquake	0.62	1.09	0.58	4	reviewed	nc	nc
3/13/1974	2:57:02	36.0525	-120.6418333	2.945	3.72	md	13	140	0.08739	0.05	nc	nc1018987	2016-12-14T18:45:57.755Z	23 km E of San Ardo, California	earthquake	0.6	1.16	0.28	4	reviewed	nc	nc
3/12/1974	21:05:11	36.0496667	-120.6525	2.815	2.86	md	14	136	0.08288	0.09	nc	nc1018984	2016-12-14T18:45:45.905Z	23 km E of San Ardo, California	earthquake	0.54	1.2	0.5	6	reviewed	nc	nc
3/10/1974	13:36:27	35.9986667	-120.5671667	3.103	3.06	md	10	149	0.09279	0.04	nc	nc1018949	2016-12-14T18:42:48.983Z	16 km NW of Parkfield, California	earthquake	0.63	1.52	0.23	5	reviewed	nc	nc
3/10/1974	13:28:32	35.9983333	-120.567	3.353	3.13	md	10	149	0.09189	0.04	nc	nc1018948	2016-12-14T18:42:44.672Z	16 km NW of Parkfield, California	earthquake	0.61	1.51	0.12	4	reviewed	nc	nc
2/27/1974	21:18:34	36.0121667	-120.6023333	3.146	2.84	md	6	156	0.1234	0.03	nc	nc1018853	2016-12-14T18:36:24.149Z	19 km NW of Parkfield, California	earthquake	0.92	2.12	0.06	3	reviewed	nc	nc
2/27/1974	2:36:24	36.0233333	-120.5941667	4.973	2.07	md	10	140	0.1243	0.04	nc	nc1018845	2016-12-14T18:35:55.444Z	20 km NW of Parkfield, California	earthquake	0.59	1.11	0.3	5	reviewed	nc	nc
2/26/1974	15:45:03	36.0266667	-120.588	5.973	4.23	md	17	143	0.1234	0.08	nc	nc1018840	2016-12-14T18:35:39.533Z	19 km NW of Parkfield, California	earthquake	0.59	0.96	0.4	6	reviewed	nc	nc
2/25/1974	8:14:50	35.4516667	-120.8785	4.438	3.28	md	9	292	0.4703	0.06	nc	nc1018834	2016-12-14T18:35:13.303Z	1 km NE of Cayucos, California	earthquake	5.43	9.31	0.26	3	reviewed	nc	nc
2/21/1974	5:04:28	36.1435	-119.9296667	5.258	3.41	md	7	320	0.3937	0.02	nc	nc1018796	2016-12-14T18:32:50.037Z	10 km WSW of Stratford, California	earthquake	5.35	5.27	0.61	4	reviewed	nc	nc
2/18/1974	7:18:10	36.1121667	-119.9713333	8.448	3.91	md	10	270	0.3486	0.05	nc	nc1018774	2016-12-14T18:31:19.462Z	11 km N of Kettleman City, California	earthquake	2.12	2.2	0.04	3	reviewed	nc	nc
2/15/1974	11:12:50	36.1156667	-120.241	15.423	2.7	md	9	224	0.2	0.11	nc	nc1018749	2016-12-14T18:29:41.994Z	11 km ESE of Coalinga, California	earthquake	1.24	1.68	0.32	3	reviewed	nc	nc
2/13/1974	19:57:50	36.0765	-120.6671667	1.975	2.88	md	11	140	0.05676	0.08	nc	nc1018723	2016-12-14T18:27:53.582Z	22 km ENE of San Ardo, California	earthquake	0.61	2.06	0.67	8	reviewed	nc	nc
2/13/1974	10:11:08	36.0093333	-120.581	3.943	2.58	md	8	151	0.1081	0.03	nc	nc1018719	2016-12-14T18:27:37.006Z	18 km NW of Parkfield, California	earthquake	0.62	1.41	0.03	3	reviewed	nc	nc
2/1/1974	19:21:16	35.062	-119.1631667	6	2.43	mh	4	259		0.59	ci	ci3318611	2016-01-29T01:22:39.150Z	22km E of Maricopa, CA	earthquake	3.97	31.61	0.182	4	reviewed	ci	ci
1/30/1974	4:09:09	36.0608333	-120.642	3.155	2.36	md	11	114	0.08198	0.03	nc	nc1018580	2016-12-14T18:17:29.668Z	24 km E of San Ardo, California	earthquake	0.49	0.84	0.26	3	reviewed	nc	nc
1/27/1974	14:11:32	35.9918333	-120.5751667	2.685	2.63	md	12	112	0.09459	0.07	nc	nc1018553	2016-12-14T18:15:23.300Z	16 km NW of Parkfield, California	earthquake	0.46	1.51	0.64	4	reviewed	nc	nc
1/24/1974	5:15:10	35.0638333	-119.0381667	6	2.52	mh	7	153		0.37	ci	ci3318572	2016-01-29T01:12:36.880Z	17km NW of Grapevine, CA	earthquake	1.66	31.61	0.228	3	reviewed	ci	ci
1/24/1974	5:02:01	35.0335	-119.0791667	6	4.05	ml	21	142		0.58	ci	ci3318571	2016-01-29T01:41:58.150Z	17km NW of Grapevine, CA	earthquake	0.94	31.61	0.187	11	reviewed	ci	ci
1/23/1974	1:43:03	34.7546667	-119.7726667	19	2.2	mh					ci	ci12321847	2016-01-29T01:23:46.470Z	32km ENE of Santa Ynez, CA	earthquake				0	reviewed	ci	ci
12/31/1973	14:00:53	35.0366667	-119.0223333	6	3.38	ml	17	150		0.51	ci	ci3318928	2016-01-29T01:22:32.840Z	13km NW of Grapevine, CA	earthquake	0.92	31.61	0.136	10	reviewed	ci	ci
12/12/1973	3:45:36	35.0431667	-118.9105	6	2.4	mh	6	145	0.4228	0.46	ci	ci3318760	2016-01-29T01:22:29.080Z	11km N of Grapevine, CA	earthquake	1.61	31.61	0.248	14	reviewed	ci	ci
11/5/1973	5:13:19	35.0518333	-118.9348333	6	2.42	mh	5	147		0.53	ci	ci3318996	2016-01-29T01:37:03.570Z	12km N of Grapevine, CA	earthquake	1.32	31.61	0.242	9	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
10/17/1973	9:37:51	35.9418333	-120.568	6	3.22	ml	6	258	1.491	0.59	ci	ci3319251	2016-01-29T01:47:01.420Z	13km WNW of Parkfield, CA	earthquake	5.33	31.61	0.179	6	reviewed	ci	ci
8/25/1973	3:38:32	36.0848333	-119.9536667	6	2.88	ml	5	255	1.273	0.63	ci	ci3319442	2016-01-29T01:17:11.820Z	8km N of Kettleman City, CA	earthquake	4.11	31.61	0.098	6	reviewed	ci	ci
8/22/1973	1:35:46	35.9593333	-120.109	6	3.05	ml	3	311	1.361	0.2	ci	ci3319434	2016-01-29T01:17:10.860Z	5km SSE of Avenal, CA	earthquake	2.25	31.61	0.072	2	reviewed	ci	ci
7/30/1973	4:13:03	35.2856667	-119.1663333	6	2.97	ml	9	186		0.43	ci	ci3319371	2016-01-29T01:31:51.470Z	11km S of Rosedale, CA	earthquake	2.36	31.61	0.038	6	reviewed	ci	ci
7/20/1973	23:10:45	36.0196667	-120.4641667	6	3.12	ml	8	255	1.541	1.17	ci	ci3319574	2016-01-29T01:46:38.280Z	14km NNW of Parkfield, CA	earthquake	9.24	31.61	0.087	6	reviewed	ci	ci
7/6/1973	22:27:06	35.3373333	-118.7333333	6	2.8	ml	7	217	0.3876	0.57	ci	ci3319523	2016-01-29T01:21:50.050Z	17km NNE of Arvin, CA	earthquake	3.22	31.61	0.054	4	reviewed	ci	ci
6/10/1973	3:54:34	35.088	-119.0035	6	2.78	ml	8	141	0.7184	0.57	ci	ci3319630	2016-01-29T01:41:16.340Z	17km NNW of Grapevine, CA	earthquake	1.47	31.61	0.112	6	reviewed	ci	ci
5/8/1973	11:19:09	35.047	-119.1523333	6	2.75	ml	7	158	0.5724	0.56	ci	ci3319913	2016-01-29T01:16:45.330Z	22km N of Pine Mountain Club, CA	earthquake	1.38	31.61	0.138	8	reviewed	ci	ci
1/23/1973	13:05:39	35.8383333	-120.3285	6	3.53	ml	9	246	1.339	0.43	ci	ci3320447	2016-01-29T01:26:10.270Z	11km SE of Parkfield, CA	earthquake	3.98	31.61	0.102	6	reviewed	ci	ci
11/15/1972	16:44:10	35.2596667	-118.863	6	3.05	ml	10	156		0.63	ci	ci3320666	2016-01-29T01:16:09.140Z	5km E of Lamont, CA	earthquake	2.07	31.61	0.164	10	reviewed	ci	ci
11/15/1972	14:49:05	35.2503333	-118.8025	6	3.44	ml	12	70		0.59	ci	ci3320665	2016-01-29T01:45:35.140Z	5km NNE of Arvin, CA	earthquake	1.3	31.61	0.051	9	reviewed	ci	ci
8/15/1972	6:26:24	35.9915	-120.4483333	6	2.99	ml	11	146		0.79	ci	ci3321175	2016-01-29T01:45:20.520Z	10km N of Parkfield, CA	earthquake	2.52	31.61	0.036	7	reviewed	ci	ci
8/14/1972	22:49:29	36.1008333	-120.1545	6	2.98	ml	5	169		0.62	ci	ci3321174	2016-01-29T01:40:23.220Z	11km NNW of Avenal, CA	earthquake	3.81	31.61	0.01	4	reviewed	ci	ci
5/27/1972	0:07:23	35.5585	-119.4266667	6	3.05	ml	6	188		0.67	ci	ci3321440	2016-01-29T01:30:40.120Z	9km WSW of Wasco, CA	earthquake	3.46	31.61	0.058	4	reviewed	ci	ci
1/17/1972	9:10:37	34.8335	-120.189	4.43	2.53	mh	5	312		0.63	ci	ci3321675	2016-01-29T01:10:22.930Z	13km NE of Los Alamos, CA	earthquake	9.33	9.11	0.084	12	reviewed	ci	ci
11/15/1971	23:36:25	35.0233333	-119.0461667	6	3.12	ml	9	150		0.45	ci	ci3321710	2016-01-29T01:10:14.240Z	14km NW of Grapevine, CA	earthquake	1.26	31.61	0.146	10	reviewed	ci	ci
11/7/1971	14:03:29	35.539	-119.5683333	6	3.31	ml	10	213		0.47	ci	ci3321695	2016-01-29T01:10:13.660Z	18km NNW of Buttonwillow, CA	earthquake	2.24	31.61	0.123	10	reviewed	ci	ci
10/13/1971	16:21:05	34.973	-118.9766667	6	3.49	ml	11	134		0.6	ci	ci3321892	2016-01-29T01:15:25.220Z	5km NW of Grapevine, CA	earthquake	1.55	31.61	0.152	11	reviewed	ci	ci
10/13/1971	16:17:27	35.0005	-118.9875	6	2.93	ml	8	151		0.7	ci	ci3321889	2016-01-29T01:10:11.080Z	8km NW of Grapevine, CA	earthquake	2.03	31.61	0.319	8	reviewed	ci	ci
10/2/1971	19:38:55	36.2283333	-120.2821667	6	3.34	ml	5	251		1.48	ci	ci3321846	2016-01-29T01:15:24.690Z	12km NE of Coalinga, CA	earthquake	13.37	31.61	0.141	7	reviewed	ci	ci
8/17/1971	6:26:47	35.7191667	-119.4666667	6	3.32	ml	10	196		0.47	ci	ci3321964	2016-01-29T01:25:16.920Z	18km NW of Wasco, CA	earthquake	1.65	31.61	0.105	10	reviewed	ci	ci
7/26/1971	22:36:54	35.6116667	-119.9191667	6	3.49	ml	6	264		0.42	ci	ci3322406	2016-01-29T01:30:11.500Z	30km NNE of Simmler, CA	earthquake	3.83	31.61	0.155	9	reviewed	ci	ci
7/19/1971	12:43:07	35.0985	-119.0671667	6	2.14	mh	5	156		0.41	ci	ci3322332	2016-01-29T01:20:08.810Z	21km NW of Grapevine, CA	earthquake	2.07	31.61	0.125	10	reviewed	ci	ci
7/19/1971	12:13:05	35.0953333	-119.0753333	6	2.86	ml	5	157		0.38	ci	ci3322330	2016-01-29T01:30:09.440Z	22km NW of Grapevine, CA	earthquake	1.91	31.61	0.419	4	reviewed	ci	ci
6/15/1971	16:26:18	35.0508333	-119.0273333	6	3.49	ml	11	151		0.39	ci	ci3322461	2016-01-29T01:15:10.940Z	15km NW of Grapevine, CA	earthquake	1.19	31.61	0.07	10	reviewed	ci	ci
3/18/1971	11:58:59	35.938	-120.5015	6	3.42	ml	8	255	1.471	0.53	ci	ci3323265	2016-01-29T01:15:00.520Z	8km NW of Parkfield, CA	earthquake	4.25	31.61	0.057	8	reviewed	ci	ci
3/7/1971	8:54:51	35.04	-119.0533333	6	2.86	ml	7	152		0.37	ci	ci3323227	2016-01-29T01:44:16.850Z	16km NW of Grapevine, CA	earthquake	1.49	31.61	0.178	7	reviewed	ci	ci
1/18/1971	0:46:42	35.5061667	-119.8311667	6	3	ml	6	228	0.9836	0.61	ci	ci3323442	2016-01-29T01:14:37.870Z	23km NE of Simmler, CA	earthquake	4.57	31.61	0.109	8	reviewed	ci	ci
1/16/1971	5:33:32	36.0091667	-119.9376667	6	2.92	ml	4	230	1.238	0.2	ci	ci3323439	2016-01-29T01:09:30.130Z	2km E of Kettleman City, CA	earthquake	1.63	31.61	0.015	3	reviewed	ci	ci
1/2/1971	6:27:39	35.8381667	-120.2818333	6	3.26	ml	9	244	1.331	0.24	ci	ci3323419	2016-01-29T01:29:33.130Z	13km N of Cholame, CA	earthquake	2.27	31.61	0.131	8	reviewed	ci	ci
12/30/1970	19:19:07	34.9153333	-119.6421667	6	2.62	ml	4	171	0.4756	0.32	ci	ci3323414	2016-01-29T01:43:59.510Z	27km SW of Maricopa, CA	earthquake	6.06	31.61	0.53	4	reviewed	ci	ci
11/12/1970	8:25:27	34.9221667	-119.0346667	6	2.48	ml	6	246		0.62	ci	ci3323486	2016-01-29T01:34:18.910Z	10km WSW of Grapevine, CA	earthquake	4.94	31.61	0.172	4	reviewed	ci	ci
11/9/1970	10:29:13	35.8436667	-119.2255	6	2.82	ml	6	231		0.43	ci	ci3323636	2016-01-29T01:43:52.180Z	8km NNE of Delano, CA	earthquake	2	31.61	0.027	4	reviewed	ci	ci
11/3/1970	17:12:10	35.9016667	-120.3095	6	3.1	ml	6	142		0.8	ci	ci3323626	2016-01-29T01:14:31.410Z	11km E of Parkfield, CA	earthquake	3.16	31.61	0.02	4	reviewed	ci	ci
11/2/1970	9:34:36	35.0426667	-119.175	6	3.12	ml	10	159		0.56	ci	ci3323622	2016-01-29T01:24:42.380Z	21km E of Maricopa, CA	earthquake	1.33	31.61	0.042	8	reviewed	ci	ci
9/21/1970	14:59:38	35.4743333	-119.8301667	6	2.51	ml	4	322	1.121	0.62	ci	ci3323745	2016-01-29T01:24:36.490Z	21km NE of Simmler, CA	earthquake	6.49	31.61		1	reviewed	ci	ci
9/10/1970	11:14:29	35.217	-119.2845	6	2.53	mh	5	277	0.7623	0.54	ci	ci3323885	2016-01-29T01:38:52.470Z	18km ENE of Taft, CA	earthquake	4.44	31.61	0.588	11	reviewed	ci	ci
9/5/1970	11:29:10	36.1565	-120.0098333	6	2.52	mh	4	158		0.33	ci	ci3323872	2016-01-29T01:19:18.840Z	10km ESE of Huron, CA	earthquake	2.98	31.61	0.148	4	reviewed	ci	ci
8/5/1970	6:47:36	35.8008333	-119.9455	6	2.79	mh	8	119		0.63	ci	ci3323810	2016-01-29T01:34:09.460Z	23km S of Kettleman City, CA	earthquake	2.54	31.61	0.156	11	reviewed	ci	ci
7/17/1970	10:33:38	35.0691667	-118.944	6	2.81	ml	9	129	0.4603	0.52	ci	ci3324035	2016-01-29T01:14:15.570Z	14km N of Grapevine, CA	earthquake	1.06	31.61	0.263	7	reviewed	ci	ci
7/17/1970	8:25:59	35.0678333	-118.9755	6	2.11	mh	6	131	0.4764	0.49	ci	ci3324034	2016-01-29T01:29:19.100Z	14km NNW of Grapevine, CA	earthquake	1.27	31.61	0.17	13	reviewed	ci	ci
7/17/1970	8:21:37	35.0606667	-118.9621667	6	2.86	ml	10	130	0.4637	0.53	ci	ci3324033	2016-01-29T01:24:26.200Z	13km NNW of Grapevine, CA	earthquake	1.01	31.61	0.125	9	reviewed	ci	ci
7/17/1970	8:13:30	35.0675	-118.9391667	6	2.55	ml	7	127	0.4565	0.39	ci	ci3324032	2016-01-29T01:14:15.080Z	14km N of Grapevine, CA	earthquake	0.91	31.61	0.27	6	reviewed	ci	ci
7/16/1970	23:35:46	35.0711667	-118.9188333	0	2.61	ml	7	126	0.1998	0.39	ci	ci3324030	2016-01-29T01:34:08.920Z	14km N of Grapevine, CA	earthquake	0.92	2.67	0.025	4	reviewed	ci	ci
7/16/1970	22:56:22	35.0491667	-118.994	0.01	3.21	ml	11	132	0.1933	0.56	ci	ci3324021	2016-01-29T01:09:10.010Z	13km NNW of Grapevine, CA	earthquake	1.2	2.74	0.264	11	reviewed	ci	ci
7/15/1970	14:20:48	35.059	-118.9323333	0.19	2.23	mh	7	127	0.1889	0.48	ci	ci3324017	2016-01-29T01:24:25.700Z	13km N of Grapevine, CA	earthquake	1.22	2.89	0.264	13	reviewed	ci	ci
7/14/1970	1:15:38	35.0605	-118.9843333	0.19	3.48	ml	9	132		0.49	ci	ci3323991	2016-01-29T01:34:07.870Z	14km NNW of Grapevine, CA	earthquake	1	2.42	0.136	11	reviewed	ci	ci
7/14/1970	1:15:17	35.0798333	-118.9755	10.55	2.32	mh	7	132	0.2168	0.56	ci	ci3323989	2016-01-29T01:24:25.200Z	16km NNW of Grapevine, CA	earthquake	1.42	3.84	0.249	13	reviewed	ci	ci
7/9/1970	12:25:20	35.02	-119.0001667	0.09	2.45	ml	10	131	0.1694	0.42	ci	ci3323947	2016-01-29T01:24:23.680Z	11km NW of Grapevine, CA	earthquake	1.09	2.58	0.128	7	reviewed	ci	ci
7/9/1970	12:05:42	35.0536667	-119.0103333	0.19	2.56	ml	11	134	0.203	0.73	ci	ci3323945	2016-01-29T01:29:17.610Z	14km NNW of Grapevine, CA	earthquake	1.52	3.45	0.129	9	reviewed	ci	ci
7/7/1970	22:22:46	35.1883333	-118.8075	6	2.23	mh	3	231	0.5058	0.15	ci	ci3323935	2016-01-29T01:19:13.530Z	3km SE of Arvin, CA	earthquake	2.91	31.61	0.146	8	reviewed	ci	ci
6/21/1970	18:48:50	34.8256667	-120.0006667	6	2.63	mh	8	227	0.2978	0.46	ci	ci3324124	2016-01-29T01:09:05.150Z	20km NNE of Los Olivos, CA	earthquake	5	31.61	0.263	19	reviewed	ci	ci
5/13/1970	6:20:16	35.3438333	-118.9216667	6	2.78	ml	9	193	0.3609	0.39	ci	ci3324177	2016-01-29T01:24:18.060Z	9km N of Lamont, CA	earthquake	1.79	31.61	0.204	7	reviewed	ci	ci
4/21/1970	22:29:27	36.0153333	-120.1385	6	3.05	ml	8	149		0.43	ci	ci3324287	2016-01-29T01:24:14.940Z	2km NW of Avenal, CA	earthquake	2.83	31.61	0.233	5	reviewed	ci	ci
2/14/1970	15:52:59	36.2071667	-120.4998333	0.09	2.78	mh	6	142		1.27	ci	ci3324317	2016-01-29T01:29:03.590Z	15km WNW of Coalinga, CA	earthquake	8.03	16.79	0.131	9	reviewed	ci	ci
2/14/1970	15:44:57	36.1285	-120.5265	4.6	2.96	ml	9	113		0.5	ci	ci3324315	2016-01-29T01:38:29.180Z	15km W of Coalinga, CA	earthquake	3.12	3.92	0.186	5	reviewed	ci	ci
2/9/1970	16:00:46	35.9613333	-120.1696667	6	3.27	ml	12	122		0.56	ci	ci3324942	2016-01-29T01:08:55.150Z	6km SW of Avenal, CA	earthquake	1.41	31.61	0.09	6	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/29/1969	1:01:58	35.9823333	-118.8456667	6	2.64	mh	3	317	0.2818	0.48	ci	ci3325867	2016-01-28T19:34:47.380Z	18km ESE of Porterville, CA	earthquake	3.79	31.61	0.01	5	reviewed	ci	ci
12/28/1969	18:26:27	35.0485	-118.9536667	6	2.8	ml	4	153	0.182	0.62	ci	ci3325866	2016-01-28T19:51:59.380Z	12km N of Grapevine, CA	earthquake	1.96	46.51	0.03	3	reviewed	ci	ci
12/23/1969	23:27:31	35.8723333	-120.2166667	6	3.12	ml	6	242	1.129	0.43	ci	ci3325864	2016-01-28T20:00:35.150Z	17km SSW of Avenal, CA	earthquake	2.9	31.61	0.081	4	reviewed	ci	ci
12/23/1969	23:24:45	35.9348333	-120.2265	6	3.04	ml	3	289	1.148	0.44	ci	ci3325863	2016-01-28T19:43:16.200Z	12km SW of Avenal, CA	earthquake	4.41	31.61	0.108	5	reviewed	ci	ci
12/14/1969	19:08:00	36.0011667	-120.469	6	3.43	ml	8	289	1.354	0.49	ci	ci3325836	2016-01-28T20:00:33.650Z	12km NNW of Parkfield, CA	earthquake	8.86	31.61	0.317	7	reviewed	ci	ci
12/10/1969	13:25:33	35.9231667	-120.4733333	6	3.68	ml	16	155		0.57	ci	ci3325813	2016-01-28T19:47:31.230Z	5km NW of Parkfield, CA	earthquake	2.31	31.61	0.066	7	reviewed	ci	ci
11/23/1969	16:42:03	35.0666667	-118.9291667	3.01	2.92	ml	9	127	0.1962	0.53	ci	ci3326028	2016-01-28T19:34:42.350Z	14km N of Grapevine, CA	earthquake	1.08	2.64	0.07	7	reviewed	ci	ci
11/19/1969	5:31:30	34.981	-120.5476667	6	3.19	ml	5	289	0.6513	0.22	ci	ci3326021	2016-01-28T19:47:28.290Z	2km ENE of Guadalupe, CA	earthquake	2.9	31.61	0.299	7	reviewed	ci	ci
11/8/1969	1:29:56	34.9	-119.3365	16.91	2.86	ml	5	150	0.5542	0.4	ci	ci3325939	2016-01-28T19:43:09.320Z	18km WNW of Pine Mountain Club, CA	earthquake	1.82	34.37	0.189	6	reviewed	ci	ci
11/5/1969	18:06:10	35.0501667	-120.3406667	6	3.1	ml	5	260	0.6005	0.43	ci	ci3325888	2016-01-28T19:56:10.560Z	12km E of Nipomo, CA	earthquake	4.85	31.61	0.241	5	reviewed	ci	ci
10/2/1969	6:01:01	36.1576667	-120.0051667	0.02	3.33	ml	5	238	1.047	1	ci	ci3342227	2016-01-28T19:34:35.070Z	10km ESE of Huron, CA	earthquake	5.66	11.99	0.232	7	reviewed	ci	ci
9/25/1969	13:21:16	35.9278333	-120.7383333	6	3.09	ml	7	296	1.529	0.62	ci	ci3326286	2016-01-28T19:42:58.450Z	20km N of San Miguel, CA	earthquake	5.62	31.61	0.068	4	reviewed	ci	ci
9/24/1969	12:01:20	35.213	-118.9243333	6	2.71	ml	7	134	0.3413	0.6	ci	ci3326280	2016-01-28T20:00:18.780Z	5km S of Lamont, CA	earthquake	1.85	31.61	0.206	3	reviewed	ci	ci
9/23/1969	21:28:15	34.9363333	-119.0085	12.43	2.58	ml	8	125	0.11	0.58	ci	ci3326278	2016-01-28T19:47:15.360Z	7km W of Grapevine, CA	earthquake	1.13	2.83	0.166	5	reviewed	ci	ci
9/17/1969	0:39:39	35.598	-120.083	6	2.72	ml	6	268	1.014	0.46	ci	ci3326214	2016-01-28T19:42:56.970Z	24km SE of Cholame, CA	earthquake	3.07	31.61	0.01	5	reviewed	ci	ci
9/16/1969	20:59:02	36.011	-120.0895	6	3.23	ml	5	275	1.058	0.45	ci	ci3326212	2016-01-28T19:38:40.120Z	4km ENE of Avenal, CA	earthquake	2.57	31.61	0.168	7	reviewed	ci	ci
9/16/1969	19:06:04	35.9663333	-120.1426667	6	2.85	mh	3	311	1.088	0.08	ci	ci3326211	2016-01-28T19:56:00.110Z	4km SSW of Avenal, CA	earthquake	1.81	31.61	0.151	7	reviewed	ci	ci
8/22/1969	19:23:13	35.2315	-119.3043333	6	3.18	ml	5	179	0.5996	0.25	ci	ci3326970	2016-01-28T20:04:24.150Z	17km NE of Taft, CA	earthquake	1.18	31.61	0.081	7	reviewed	ci	ci
8/8/1969	5:04:10	35.1536667	-118.9006667	8.94	3.31	ml	10	128	0.2815	0.43	ci	ci3327194	2016-01-28T19:47:11.000Z	9km SW of Arvin, CA	earthquake	1.17	2.81	0.202	8	reviewed	ci	ci
8/2/1969	12:28:53	35.2923333	-119.3391667	6	3.26	ml	10	189	0.5531	0.47	ci	ci3327144	2016-01-28T19:55:55.330Z	17km SE of Buttonwillow, CA	earthquake	2.23	31.61	0.243	7	reviewed	ci	ci
7/24/1969	14:55:56	35.503	-119.2055	6	2.72	mh	7	220	0.6172	0.41	ci	ci3327109	2016-01-28T20:00:11.250Z	6km E of Shafter, CA	earthquake	1.99	31.61	0.158	8	reviewed	ci	ci
7/19/1969	2:14:07	35.4533333	-119.1556667	6	3.43	ml	12	167	0.5938	0.53	ci	ci3327293	2016-01-28T19:51:34.540Z	8km N of Rosedale, CA	earthquake	1.61	31.61	0.161	8	reviewed	ci	ci
7/16/1969	4:06:32	35.9491667	-120.3013333	6	3.54	ml	10	291	1.443	0.62	ci	ci3327276	2016-01-28T19:34:20.480Z	13km ENE of Parkfield, CA	earthquake	3.34	31.61	0.03	5	reviewed	ci	ci
6/19/1969	7:05:07	36.1111667	-119.5455	6	3.58	ml	13	80		0.54	ci	ci3327350	2016-01-28T19:55:51.260Z	2km NE of Corcoran, CA	earthquake	1.23	31.61	0.07	10	reviewed	ci	ci
4/8/1969	15:44:59	35.0908333	-118.9828333	6	2.28	mh	4	159	0.2291	0.41	ci	ci3327577	2016-01-28T20:00:00.460Z	17km NNW of Grapevine, CA	earthquake	1.05	31.61	0.109	9	reviewed	ci	ci
4/8/1969	15:39:55	35.0495	-118.988	6	3.55	ml	12	132	0.1917	0.48	ci	ci3327574	2016-01-28T19:59:59.940Z	13km NNW of Grapevine, CA	earthquake	1.01	31.61	0.115	12	reviewed	ci	ci
2/8/1969	6:31:39	35.36	-119.4283333	6	3.56	ml	10	219	0.6519	0.54	ci	ci3327818	2016-01-28T19:42:31.170Z	6km SE of Buttonwillow, CA	earthquake	2.1	31.61	0.164	8	reviewed	ci	ci
1/1/1969	8:25:14	35.4911667	-120.1255	6	2.77	mh	6	266	0.9687	0.37	ci	ci3328137	2016-01-28T19:46:50.580Z	19km NW of Simmler, CA	earthquake	2.47	31.61	0.144	12	reviewed	ci	ci
12/11/1968	12:19:51	36.0148333	-120.4791667	6	3.4	ml	7	297	1.365	0.49	ci	ci3328206	2016-01-28T20:03:58.460Z	14km NNW of Parkfield, CA	earthquake	3.58	31.61	0.078	6	reviewed	ci	ci
12/5/1968	11:33:48	34.6506667	-119.8266667	5.42	2.4	mh	7	171	0.1752	0.32	ci	ci3328202	2016-01-28T19:59:46.490Z	24km E of Santa Ynez, CA	earthquake	1.06	2.21	0.131	15	reviewed	ci	ci
11/6/1968	8:58:21	36.0031667	-120.5106667	6	3.25	ml	10	273	1.387	0.66	ci	ci3328282	2016-01-28T19:59:45.000Z	14km NNW of Parkfield, CA	earthquake	3.53	31.61	0.113	8	reviewed	ci	ci
10/14/1968	1:03:09	35.524	-118.7573333	0.88	2.93	ml	12	113	0.1893	0.5	ci	ci3328239	2016-01-28T19:38:08.180Z	25km WSW of Bodfish, CA	earthquake	1.02	2.43	0.106	10	reviewed	ci	ci
10/13/1968	5:41:25	35.5088333	-118.7583333	0	2.91	ml	10	113	0.2032	0.62	ci	ci3328238	2016-01-28T19:38:07.780Z	26km ENE of Oildale, CA	earthquake	2.16	5.22	0.131	10	reviewed	ci	ci
8/21/1968	2:02:08	35.0158333	-119.0893333	12.5	3.42	ml	14	139	0.2118	0.48	ci	ci3328678	2016-01-28T19:46:41.030Z	17km WNW of Grapevine, CA	earthquake	1.06	1.91	0.066	11	reviewed	ci	ci
8/16/1968	12:12:17	34.8688333	-120.2603333	6	3.15	ml	8	262	0.412	0.61	ci	ci3328666	2016-01-28T19:55:24.280Z	14km N of Los Alamos, CA	earthquake	4.25	31.61	0.126	11	reviewed	ci	ci
5/8/1968	22:45:52	35.0433333	-119.0951667	6	3.23	ml	9	142	0.5324	0.43	ci	ci3328825	2016-01-28T19:42:07.460Z	19km NW of Grapevine, CA	earthquake	0.95	31.61	0.088	11	reviewed	ci	ci
4/28/1968	19:53:38	35.7363333	-120.2896667	6	2.92	ml	7	244	1.177	0.5	ci	ci3328964	2016-01-28T19:59:26.790Z	2km NNE of Cholame, CA	earthquake	3.35	31.61	0.11	8	reviewed	ci	ci
4/23/1968	15:09:19	35.5731667	-120.5083333	6	3.32	ml	10	253	1.13	0.48	ci	ci3328939	2016-01-28T19:37:51.490Z	15km SW of Shandon, CA	earthquake	3.05	31.61	0.134	7	reviewed	ci	ci
4/6/1968	21:10:54	35.0168333	-119.0246667	1.73	2.66	ml	10	133	0.1774	0.51	ci	ci3329119	2016-01-28T19:54:56.970Z	12km NW of Grapevine, CA	earthquake	1.04	2.34	0.137	9	reviewed	ci	ci
4/4/1968	18:24:53	34.9316667	-119.0271667	10.75	2.98	ml	12	126	0.1204	0.41	ci	ci3329118	2016-01-28T19:33:29.870Z	9km W of Grapevine, CA	earthquake	0.64	1.36	0.069	11	reviewed	ci	ci
3/28/1968	4:53:25	35.9426667	-120.1195	6	3.32	ml	7	279	1.064	0.3	ci	ci3329114	2016-01-28T19:33:29.370Z	7km S of Avenal, CA	earthquake	1.6	31.61	0.147	7	reviewed	ci	ci
2/26/1968	15:05:44	36.0171667	-119.3245	6	2.78	ml	7	237	0.5024	0.59	ci	ci3329246	2016-01-28T20:03:21.970Z	5km SSW of Tipton, CA	earthquake	2.53	31.61	0.257	5	reviewed	ci	ci
2/4/1968	9:46:38	34.9553333	-120.5655	6	2.69	ml	4	290	0.6448	0.56	ci	ci3329290	2016-01-28T19:41:50.810Z	2km SSE of Guadalupe, CA	earthquake	6.31	31.61	0.038	2	reviewed	ci	ci
1/25/1968	17:37:37	35.2325	-119.2185	6	3.03	ml	8	171	0.4449	0.7	ci	ci3329279	2016-01-28T19:41:50.310Z	18km SSW of Rosedale, CA	earthquake	1.99	31.61	0.302	4	reviewed	ci	ci
1/19/1968	16:21:18	35.838	-119.8596667	6	3.21	ml	7	221	1.141	0.32	ci	ci3329337	2016-01-28T19:59:04.030Z	21km SSE of Kettleman City, CA	earthquake	1.7	31.61	0.039	3	reviewed	ci	ci
1/6/1968	0:25:59	35.0898333	-119.0591667	5	3.01	ml	11	142	0.2539	0.47	ci	ci3329320	2016-01-28T19:41:48.730Z	20km NW of Grapevine, CA	earthquake	1.05	31.61	0.106	11	reviewed	ci	ci
1/4/1968	6:19:25	35.1183333	-119.0991667	6	2.37	ml	8	147	0.2955	0.47	ci	ci3329315	2016-01-28T19:50:28.820Z	23km SW of Lamont, CA	earthquake	1.35	31.61	0.115	6	reviewed	ci	ci
1/4/1968	6:12:38	35.111	-119.0858333	6	2.59	ml	9	146	0.2834	0.45	ci	ci3329314	2016-01-28T19:54:49.210Z	23km SW of Lamont, CA	earthquake	1.03	31.61	0.136	6	reviewed	ci	ci
12/31/1967	23:48:14	35.8338333	-120.4976667	6	4.2	ml	16	54		0.58	ci	ci3329420	2016-01-28T19:59:00.050Z	9km SW of Parkfield, CA	earthquake	1.85	31.61	0.3	11	reviewed	ci	ci
12/28/1967	22:02:27	35.8308333	-119.8115	6	2.55	mh	4	262	0.7974	0.3	ci	ci3329415	2016-01-28T20:03:15.890Z	24km SE of Kettleman City, CA	earthquake	2.72	31.61	0.115	9	reviewed	ci	ci
12/25/1967	23:19:24	34.9503333	-119.0748333	6	2.95	ml	9	133	0.7325	0.62	ci	ci3329410	2016-01-28T19:41:47.700Z	13km W of Grapevine, CA	earthquake	1.07	31.61	0.108	11	reviewed	ci	ci
12/11/1967	8:21:21	35.0373333	-119.0043333	3.31	2.63	ml	8	133	0.1862	0.51	ci	ci3329392	2016-01-28T19:50:26.300Z	12km NNW of Grapevine, CA	earthquake	1.12	2.59	0.206	5	reviewed	ci	ci
11/14/1967	0:00:52	35.8698333	-120.479	6	3.25	ml	10	254	1.34	0.64	ci	ci3329429	2016-01-28T20:03:14.380Z	5km SW of Parkfield, CA	earthquake	3.62	31.61	0.126	9	reviewed	ci	ci
10/22/1967	20:07:42	34.9316667	-119.3591667	6	2.74	ml	7	156	0.5708	0.46	ci	ci3329463	2016-01-28T19:37:32.530Z	15km SSE of Maricopa, CA	earthquake	1.13	31.61	0.191	9	reviewed	ci	ci
10/21/1967	12:05:24	35.86	-120.332	6	3.34	ml	11	247	0.3898	0.57	ci	ci3329460	2016-01-28T19:37:32.030Z	10km ESE of Parkfield, CA	earthquake	3.35	31.61	0.142	10	reviewed	ci	ci
9/29/1967	1:36:40	35.115	-118.9308333	1	2.79	ml	9	129	0.2442	0.55	ci	ci3329519	2016-01-28T19:37:30.060Z	14km SW of Arvin, CA	earthquake	1.73	31.61	0.186	8	reviewed	ci	ci
9/24/1967	17:17:19	34.9643333	-119.1296667	14.5	3.22	ml	11	138	0.5129	0.47	ci	ci3329507	2016-01-28T19:54:44.730Z	13km N of Pine Mountain Club, CA	earthquake	0.89	2.23	0.215	10	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/22/1967	23:40:58	34.967	-118.976	6	3.06	ml	10	125	0.4085	0.53	ci	ci3329504	2016-01-28T19:54:44.230Z	5km WNW of Grapevine, CA	earthquake	0.91	31.61	0.03	9	reviewed	ci	ci
9/2/1967	21:25:39	34.861	-119.1886667	6	2.62	ml	6	168	0.5186	0.52	ci	ci3329483	2016-01-28T20:03:11.380Z	4km WNW of Pine Mountain Club, CA	earthquake	1.59	31.61	0.203	6	reviewed	ci	ci
8/25/1967	16:46:52	35.9865	-119.9621667	6	3.33	ml	10	231	0.9522	0.58	ci	ci3329548	2016-01-28T20:03:10.880Z	2km S of Kettleman City, CA	earthquake	2.75	31.61	0.209	9	reviewed	ci	ci
8/25/1967	16:35:28	35.985	-119.9463333	6	3.32	ml	9	229	0.9395	0.67	ci	ci3329547	2016-01-28T19:50:21.660Z	3km SSE of Kettleman City, CA	earthquake	3.46	31.61	0.291	9	reviewed	ci	ci
8/14/1967	22:47:35	35.3458333	-118.8698333	6	3.41	ml	10	179	0.354	0.57	ci	ci3329535	2016-01-28T19:58:47.850Z	10km NNE of Lamont, CA	earthquake	2.58	31.61	0.217	10	reviewed	ci	ci
8/14/1967	17:39:53	35.3493333	-118.8945	6	3.41	ml	12	138	0.3523	0.44	ci	ci3329534	2016-01-28T19:41:42.610Z	10km N of Lamont, CA	earthquake	1.07	31.61	0.13	11	reviewed	ci	ci
8/12/1967	18:57:41	35.7746667	-120.3281667	6	4.09	ml	14	246	1.21	0.56	ci	ci3329531	2016-01-28T19:33:12.190Z	6km NNW of Cholame, CA	earthquake	2.81	31.61	0.192	12	reviewed	ci	ci
7/24/1967	7:08:56	35.7426667	-120.0931667	6	3.75	ml	14	233	1.017	0.46	ci	ci3329576	2016-01-28T20:03:07.920Z	18km E of Cholame, CA	earthquake	2.55	31.61	0.08	10	reviewed	ci	ci
7/8/1967	6:16:49	34.8691667	-120.4408333	6	3.17	ml	10	286	0.5111	0.53	ci	ci3329627	2016-01-28T20:03:07.390Z	1km NW of Orcutt, CA	earthquake	2.66	31.61	0.01	7	reviewed	ci	ci
7/6/1967	1:06:40	35.9116667	-120.3935	6	3.04	ml	6	292	1.277	0.52	ci	ci3329626	2016-01-28T19:54:39.140Z	4km ENE of Parkfield, CA	earthquake	5.02	31.61	0.053	4	reviewed	ci	ci
6/13/1967	12:54:16	35.5321667	-120.7738333	6	3.21	ml	12	266	1.196	0.56	ci	ci3342051	2016-01-28T19:45:53.020Z	6km WSW of Templeton, CA	earthquake	4.57	31.61	0.123	8	reviewed	ci	ci
6/6/1967	6:11:38	35.932	-120.5331667	6	3.37	ml	10	279	1.392	0.69	ci	ci3329660	2016-01-28T20:03:05.820Z	10km WNW of Parkfield, CA	earthquake	4.57	31.61	0.077	7	reviewed	ci	ci
5/2/1967	21:24:45	35.0261667	-119.088	6	2.69	ml	7	154	0.5174	0.59	ci	ci3329689	2016-01-28T20:03:02.860Z	17km WNW of Grapevine, CA	earthquake	1.49	31.61	0.26	7	reviewed	ci	ci
4/14/1967	22:47:32	35.4136667	-119.3226667	14.2	3.5	mh					ci	ci10086786	2016-01-28T19:33:01.880Z	11km SSW of Shafter, CA	earthquake				0	reviewed	ci	ci
3/13/1967	21:59:47	35.9026667	-120.441	6	3.6	ml	8	276	1.575	0.48	ci	ci3329722	2016-01-28T19:41:31.360Z	1km WNW of Parkfield, CA	earthquake	3.89	31.61	0.164	9	reviewed	ci	ci
1/19/1967	22:31:39	34.9996667	-118.9735	0.02	2.6	ml	10	140	0.1413	0.57	ci	ci3329893	2016-01-28T20:02:52.850Z	7km NNW of Grapevine, CA	earthquake	1.77	3.82	0.161	7	reviewed	ci	ci
1/9/1967	23:18:57	36.0666667	-120.0438333	6	3.55	ml	10	286	1.041	0.51	ci	ci3329864	2016-01-28T19:41:24.260Z	10km NW of Kettleman City, CA	earthquake	3.07	31.61	0.095	11	reviewed	ci	ci
1/6/1967	9:10:32	35.0853333	-119.0485	2.67	3	ml	7	225	0.2456	0.49	ci	ci3329841	2016-01-28T19:37:10.830Z	19km NW of Grapevine, CA	earthquake	4.18	2.05	0.107	5	reviewed	ci	ci
11/18/1966	23:39:43	35.72	-120.2778333	6	3.32	ml	10	251	1.167	0.62	ci	ci3329979	2016-01-28T19:41:18.480Z	2km E of Cholame, CA	earthquake	3.84	31.61	0.146	9	reviewed	ci	ci
11/5/1966	13:31:33	35.8516667	-120.2751667	6	3.46	ml	12	265	1.173	0.45	ci	ci3329952	2016-01-28T19:37:06.840Z	15km N of Cholame, CA	earthquake	4.66	31.61	0.123	8	reviewed	ci	ci
9/7/1966	0:20:53	35.9605	-119.9826667	6	3.45	ml	12	271	0.961	0.6	ci	ci3330066	2016-01-28T19:54:15.540Z	6km SSW of Kettleman City, CA	earthquake	3.5	31.61	0.09	8	reviewed	ci	ci
8/21/1966	2:24:15	35.2971667	-119.2706667	6	3.07	ml	8	181	0.5222	0.5	ci	ci3330099	2016-01-28T19:45:31.210Z	15km SW of Rosedale, CA	earthquake	1.66	31.61	0.091	5	reviewed	ci	ci
8/19/1966	22:51:17	36.1948333	-120.4231667	6	3.54	ml	7	306	1.373	0.67	ci	ci3330098	2016-01-28T19:32:39.070Z	8km NW of Coalinga, CA	earthquake	5.03	31.61	0.102	8	reviewed	ci	ci
8/7/1966	17:03:22	36.0731667	-120.4361667	6	3.52	ml	10	304	1.345	0.42	ci	ci3330112	2016-01-28T19:45:29.660Z	10km SW of Coalinga, CA	earthquake	3.48	31.61	0.093	9	reviewed	ci	ci
8/3/1966	12:39:02	35.9811667	-120.451	6	3.79	ml	11	298	1.335	0.48	ci	ci3330108	2016-01-28T19:32:38.070Z	9km N of Parkfield, CA	earthquake	2.72	31.61	0.152	11	reviewed	ci	ci
8/3/1966	9:41:36	36.0585	-120.4125	6	3.31	ml	8	295	1.323	0.43	ci	ci3330107	2016-01-28T19:58:15.930Z	10km SSW of Coalinga, CA	earthquake	2.82	31.61	0.149	9	reviewed	ci	ci
8/1/1966	12:05:32	35.7295	-120.4266667	6	3.48	ml	7	301	1.288	0.64	ci	ci3330106	2016-01-28T19:32:37.570Z	10km NNW of Shandon, CA	earthquake	6.23	31.61	0.092	7	reviewed	ci	ci
7/16/1966	5:42:09	35.8515	-120.3783333	3.62	2.2	ml	9	156		0.07	nc	nc1000297	2017-05-26T23:02:49.535Z	7 km SE of Parkfield, California	earthquake	0.69	0.81		0	reviewed	nc	nc
7/14/1966	23:04:26	35.997	-120.4585	4.419	2.8	ma	10	182	0.1865	16.38	nc	nc1000279	2016-12-08T19:11:46.618Z	11 km NNW of Parkfield, California	earthquake	55.91	81.7		0	reviewed	nc	nc
7/13/1966	18:17:43	35.9816667	-120.4718333	14.325	2.2	ma	10	173	0.1784	0.03	nc	nc1000270	2016-12-08T19:10:46.306Z	9 km NNW of Parkfield, California	earthquake	1.28	0.93		0	reviewed	nc	nc
7/13/1966	16:44:28	35.9411667	-120.4576667	10.213	2.2	ma	6	163	0.2	0.01	nc	nc1000269	2016-12-08T19:10:41.100Z	5 km NNW of Parkfield, California	earthquake	1.15	3.45		0	reviewed	nc	nc
7/13/1966	4:20:02	35.8666667	-120.3963333	4.31	2.2	ml	10	152		0.08	nc	nc1000260	2017-05-26T22:55:17.477Z	4 km SE of Parkfield, California	earthquake	0.68	1.08		0	reviewed	nc	nc
7/11/1966	21:42:25	35.915	-120.4425	6.69	2.3	ma	10	159	0.1423	0.03	nc	nc1000246	2016-12-08T19:08:55.218Z	1 km NNW of Parkfield, California	earthquake	0.81	1.71		0	reviewed	nc	nc
7/11/1966	9:03:57	35.8668333	-120.3968333	2.66	2.2	ml	10	152		0.11	nc	nc1000238	2017-05-26T22:51:15.476Z	4 km SE of Parkfield, California	earthquake	1.52	2.05		0	reviewed	nc	nc
7/10/1966	9:22:30	35.7953333	-120.3351667	10.208	2.4	ma	10	94	0.01892	0.04	nc	nc1000222	2016-12-08T19:06:55.012Z	14 km SE of Parkfield, California	earthquake	0.52	0.91		0	reviewed	nc	nc
7/10/1966	0:42:06	35.7898333	-120.3323333	8.75	2.4	ml	9	88		0.07	nc	nc1000216	2017-05-26T22:48:14.841Z	15 km SE of Parkfield, California	earthquake	0.66	0.96		0	reviewed	nc	nc
7/9/1966	10:04:46	36.007	-119.9678333	6.301	2.9	ma	7	287	0.3108	0.05	nc	nc1000209	2016-12-08T19:05:54.519Z	0 km WSW of Kettleman City, California	earthquake	3.2	3.93		0	reviewed	nc	nc
7/7/1966	22:27:22	35.9423333	-120.481	7.125	2.3	ma	6	176	0.182	0.01	nc	nc1000179	2016-12-08T19:03:31.391Z	6 km NW of Parkfield, California	earthquake	1.64	2.23		0	reviewed	nc	nc
7/6/1966	3:46:09	35.9333333	-120.471	7.742	2	ma	8	162	0.1396	0.01	nc	nc1000153	2016-12-08T19:01:37.948Z	5 km NW of Parkfield, California	earthquake	1.11	1.65		0	reviewed	nc	nc
7/5/1966	18:54:54	35.9223333	-120.4585	7.442	3.1	ma	9	161	0.1252	0.04	nc	nc1000142	2016-12-08T19:00:48.450Z	3 km NW of Parkfield, California	earthquake	1.03	1.47		0	reviewed	nc	nc
7/5/1966	1:27:42	35.9195	-120.4593333	3.722	2.2	ma	7	162	0.1234	0.03	nc	nc1000126	2016-12-08T18:59:41.934Z	3 km NW of Parkfield, California	earthquake	1.15	2.29		0	reviewed	nc	nc
7/4/1966	5:28:48	35.8645	-120.3905	3.962	2.9	ma	8	154	0.04505	0.05	nc	nc1000112	2016-12-08T18:58:42.381Z	5 km SE of Parkfield, California	earthquake	0.8	1.1		0	reviewed	nc	nc
7/4/1966	3:04:57	35.8575	-120.3788333	3.706	2.4	ma	7	181	0.03333	0.05	nc	nc1000109	2016-12-08T18:58:28.800Z	6 km SE of Parkfield, California	earthquake	1.07	0.81		0	reviewed	nc	nc
7/4/1966	0:41:17	35.871	-120.3846667	4.151	2	ma	6	184	0.04775	0.05	nc	nc1000106	2016-12-08T18:58:15.103Z	5 km SE of Parkfield, California	earthquake	1.2	1		0	reviewed	nc	nc
7/3/1966	20:22:25	35.9305	-120.4636667	5.502	2.9	ma	8	167	0.1342	0.06	nc	nc1000102	2016-12-08T18:57:57.494Z	4 km NW of Parkfield, California	earthquake	1.31	1.6		0	reviewed	nc	nc
7/3/1966	5:30:54	35.8978333	-120.4271667	11.012	2.6	ma	8	160	0.09009	0.02	nc	nc1000090	2016-12-08T18:57:07.943Z	0 km ESE of Parkfield, California	earthquake	0.93	1.16		0	reviewed	nc	nc
7/2/1966	22:09:37	35.7918333	-120.3285	9.242	2	ma	7	92	0.02342	0.07	nc	nc1000081	2016-12-08T18:56:29.180Z	15 km SE of Parkfield, California	earthquake	0.68	0.74		0	reviewed	nc	nc
7/2/1966	20:57:26	35.8311667	-120.359	12.952	2.1	ma	7	265	0.004505	0.08	nc	nc1000079	2016-12-08T18:56:20.137Z	10 km SE of Parkfield, California	earthquake	2.56	3.67		0	reviewed	nc	nc
7/2/1966	12:25:06	35.797	-120.3281667	8.678	3.1	ma	8	101	0.02432	0.08	nc	nc1000070	2016-12-08T18:55:40.495Z	14 km SE of Parkfield, California	earthquake	0.67	0.72		0	reviewed	nc	nc
7/2/1966	12:16:14	35.7928333	-120.3353333	9.468	3.4	ma	8	89	0.01802	0.03	nc	nc1000069	2016-12-08T18:55:36.231Z	14 km SE of Parkfield, California	earthquake	0.57	0.61		0	reviewed	nc	nc
7/2/1966	12:08:34	35.7866667	-120.3265	8.578	3.7	ma	8	86	0.02523	0.04	nc	nc1000068	2016-12-08T18:55:31.977Z	15 km NNE of Shandon, California	earthquake	0.6	0.65		0	reviewed	nc	nc
7/2/1966	7:03:31	35.8668333	-120.3955	4.052	2	ma	8	154	0.04955	0.03	nc	nc1000054	2016-12-08T18:54:26.370Z	4 km SE of Parkfield, California	earthquake	0.75	1.09		0	reviewed	nc	nc
7/2/1966	1:08:40	35.8875	-120.4196667	6.372	2.7	ma	7	158	0.07838	0.04	nc	nc1000043	2016-12-08T18:53:33.583Z	1 km SE of Parkfield, California	earthquake	0.94	1.25		0	reviewed	nc	nc
7/1/1966	22:06:47	35.7758333	-120.303	4.468	2	ma	7	108	0.02162	0.13	nc	nc1000038	2016-12-08T18:53:12.475Z	14 km NNE of Shandon, California	earthquake	0.69	1.53		0	reviewed	nc	nc
7/1/1966	12:31:08	35.7798333	-120.3108333	8.811	2.6	ma	5	176	0.02432	0.03	nc	nc1000018	2016-12-08T18:51:34.390Z	15 km NNE of Shandon, California	earthquake	0.92	1.61		0	reviewed	nc	nc
7/1/1966	12:01:10	36.012	-120.5745	13.978	2.1	ma	5	179	0.1486	0.14	nc	nc1000016	2016-12-08T18:51:24.366Z	17 km NW of Parkfield, California	earthquake	4.24	5.26		0	reviewed	nc	nc
7/1/1966	9:41:21	35.9463333	-120.47	11.655	3.2	ma	7	171	0.1802	0.02	nc	nc1000010	2016-12-08T18:50:57.362Z	6 km NNW of Parkfield, California	earthquake	1.86	0.77		0	reviewed	nc	nc

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
7/1/1966	3:01:40	35.9276667	-120.4718333	4.792	2.1	ma	6	164	0.136	0.02	nc	nc1000003	2016-12-08T18:50:23.987Z	4 km NW of Parkfield, California	earthquake	1.23	3.49		0	reviewed	nc	nc
6/30/1966	1:17:37	35.7981667	-120.2046667	6	3.81	ml	10	248	1.111	0.64	ci	ci3330148	2016-01-28T20:02:39.340Z	12km NE of Cholame, CA	earthquake	4.44	31.61	0.169	12	reviewed	ci	ci
6/29/1966	13:11:56	35.9263333	-120.3733333	6	3.71	ml	10	300	1.263	0.46	ci	ci3330145	2016-01-28T19:45:27.190Z	6km ENE of Parkfield, CA	earthquake	2.63	31.61	0.119	11	reviewed	ci	ci
6/29/1966	8:55:51	35.8656667	-120.5405	6	3.19	ml	7	286	1.574	0.57	ci	ci3330144	2016-01-28T19:41:02.740Z	10km WSW of Parkfield, CA	earthquake	3.97	31.61	0.082	9	reviewed	ci	ci
6/29/1966	2:19:40	35.8548333	-120.4698333	6	3.9	ml	11	253	1.331	0.56	ci	ci3330143	2016-01-28T19:36:56.850Z	6km SW of Parkfield, CA	earthquake	2.64	31.61	0.189	12	reviewed	ci	ci
6/28/1966	23:57:24	35.8183333	-120.2948333	6	3.38	ml	6	252	1.454	0.49	ci	ci3330142	2016-01-28T19:54:09.480Z	11km N of Cholame, CA	earthquake	3.22	31.61	0.059	5	reviewed	ci	ci
6/28/1966	20:46:58	35.8991667	-120.1951667	6	3.37	ml	4	267	1.419	0.54	ci	ci3330141	2016-01-28T19:49:52.840Z	13km SSW of Avenal, CA	earthquake	3.91	31.61	0.157	6	reviewed	ci	ci
6/28/1966	13:48:19	35.7041667	-120.2623333	6	3.28	ml	9	249	1.154	0.66	ci	ci3330140	2016-01-28T19:36:56.360Z	4km ESE of Cholame, CA	earthquake	3.64	31.61	0.224	9	reviewed	ci	ci
6/28/1966	7:45:45	36.2556667	-120.4363333	6	3.22	ml	5	308	1.405	0.35	ci	ci3330138	2016-01-28T19:41:02.250Z	15km NNW of Coalinga, CA	earthquake	2.84	31.61	0.086	7	reviewed	ci	ci
6/28/1966	6:32:19	35.846	-120.4103333	6	3.76	ml	13	251	1.282	0.61	ci	ci3330137	2016-01-28T19:32:35.990Z	6km SSE of Parkfield, CA	earthquake	3.93	31.61	0.126	11	reviewed	ci	ci
6/28/1966	5:45:58	35.9866667	-120.422	6	3.7	ml	10	301	1.313	0.42	ci	ci3330136	2016-01-28T19:49:52.280Z	10km N of Parkfield, CA	earthquake	2.51	31.61	0.089	11	reviewed	ci	ci
6/28/1966	5:12:43	35.9908333	-120.4355	6	2.93	ml	5	303	1.325	0.68	ci	ci3330135	2016-01-28T19:41:01.760Z	10km N of Parkfield, CA	earthquake	5.95	31.61	0.067	7	reviewed	ci	ci
6/28/1966	5:01:04	35.8246667	-120.1583333	6	3.47	ml	12	246	1.076	0.5	ci	ci3330134	2016-01-28T19:58:12.390Z	17km NE of Cholame, CA	earthquake	5.59	31.61	0.112	11	reviewed	ci	ci
6/28/1966	4:46:19	35.9053333	-120.4336667	6	3.12	ml	4	329	1.308	0.73	ci	ci3330133	2016-01-28T19:54:09.080Z	1km NNW of Parkfield, CA	earthquake	7.25	31.61	0.162	7	reviewed	ci	ci
6/28/1966	4:39:07	35.8878333	-120.3615	6	3.48	ml	7	302	1.248	0.43	ci	ci3330132	2016-01-28T19:49:51.780Z	6km E of Parkfield, CA	earthquake	2.75	31.61	0.108	7	reviewed	ci	ci
6/28/1966	4:35:26	35.7653333	-120.1915	6	4	ml	5	282	1.098	0.43	ci	ci3330131	2016-01-28T20:02:38.830Z	11km ENE of Cholame, CA	earthquake	2.69	31.61	0.051	5	reviewed	ci	ci
6/28/1966	4:34:58	35.8203333	-120.4035	6	3.24	ml	5	304	1.274	0.61	ci	ci3330130	2016-01-28T19:41:01.260Z	9km SSE of Parkfield, CA	earthquake	4.66	31.61	0.22	7	reviewed	ci	ci
6/28/1966	4:32:46	36.0571667	-120.3228333	6	3.9	ml	3	331	1.253	0.41	ci	ci3330128	2016-01-28T19:54:08.700Z	10km SSE of Coalinga, CA	earthquake	5.56	31.61	0.116	5	reviewed	ci	ci
6/28/1966	4:28:36	35.95	-120.5	6	4.5	mh					ci	ci10086774	2018-06-04T20:43:45.000Z	8km NW of Parkfield, CA	earthquake				0	reviewed	ci	ci
6/28/1966	4:26:15	35.7905	-120.294	6	5.47	ml	15	247	1.183	0.48	ci	ci3330127	2022-04-26T23:17:05.979Z	8km N of Cholame, CA	earthquake	3.51	31.61	0.075	8	reviewed	ci	ci
6/28/1966	4:18:35	35.8565	-120.4461667	6	3.15	ml	7	259	1.312	0.32	ci	ci3330125	2016-01-28T19:32:35.480Z	5km SSW of Parkfield, CA	earthquake	1.93	31.61	0.105	7	reviewed	ci	ci
6/28/1966	4:08:59	35.8085	-120.188	6	4.69	ml	13	247	1.098	0.45	ci	ci3330124	2022-04-26T23:17:04.231Z	14km NE of Cholame, CA	earthquake	5.57	31.61	0.062	10	reviewed	ci	ci
6/26/1966	13:47:08	35.2121667	-118.994	6	2.93	ml	7	207	0.3485	0.41	ci	ci3330186	2016-01-28T19:45:26.660Z	9km SW of Lamont, CA	earthquake	2.27	31.61	0.217	9	reviewed	ci	ci
5/28/1966	4:26:12	35.3485	-118.922	6	2.98	ml	9	154	0.3564	0.42	ci	ci3330199	2016-01-28T19:32:32.790Z	10km N of Lamont, CA	earthquake	1.39	31.61	0.043	11	reviewed	ci	ci
4/16/1966	14:10:55	35.059	-119.1051667	0.73	2.73	ml	9	158	0.2516	0.52	ci	ci3330242	2016-01-28T20:02:33.800Z	20km NW of Grapevine, CA	earthquake	1.27	2.3	0.115	9	reviewed	ci	ci
1/28/1966	1:49:49	35.9093333	-120.1548333	6	3.18	ml	5	265	1.086	0.51	ci	ci3330282	2016-01-28T19:49:45.090Z	11km SSW of Avenal, CA	earthquake	3.25	31.61	0.189	4	reviewed	ci	ci
12/22/1965	13:41:13	35.4226667	-119.3191667	6	3.39	ml	8	189	0.4759	0.48	ci	ci3330317	2016-01-28T19:32:24.570Z	10km SSW of Shafter, CA	earthquake	2.24	31.61	0.126	7	reviewed	ci	ci
12/9/1965	16:50:59	35.0736667	-118.9095	10.66	3.04	ml	7	137	0.2018	0.51	ci	ci3330354	2016-01-28T19:53:55.810Z	15km N of Grapevine, CA	earthquake	1.41	3.18	0.058	9	reviewed	ci	ci
11/21/1965	17:55:02	35.2506667	-118.8376667	6	3.13	ml	10	83	0.3817	0.54	ci	ci3330361	2016-01-28T19:49:40.380Z	5km N of Arvin, CA	earthquake	1.38	31.61	0.106	7	reviewed	ci	ci
9/26/1965	18:05:10	35.9673333	-120.0505	6	3.29	ml	7	273	1.016	0.55	ci	ci3330441	2016-01-28T19:57:56.930Z	8km ESE of Avenal, CA	earthquake	2.81	31.61	0.145	11	reviewed	ci	ci
9/19/1965	15:42:10	35.9388333	-119.9643333	6	4.37	ml	12	238	0.941	0.6	ci	ci3330454	2018-06-04T20:43:45.000Z	8km S of Kettleman City, CA	earthquake	2.49	31.61	0.293	8	reviewed	ci	ci
9/6/1965	18:00:57	36.0235	-119.8668333	6	3.29	ml	7	266	0.8912	0.53	ci	ci3330446	2016-01-28T19:40:42.300Z	9km E of Kettleman City, CA	earthquake	2.98	31.61	0.104	11	reviewed	ci	ci
7/27/1965	5:01:58	35.0295	-119.1658333	11.72	2.72	ml	6	104	0.2692	0.26	ci	ci3330512	2016-01-28T20:02:19.660Z	20km N of Pine Mountain Club, CA	earthquake	0.7	2.81	0.308	7	reviewed	ci	ci
7/23/1965	5:31:57	35.674	-120.853	6	3.55	ml	8	274	1.545	0.46	ci	ci3330510	2016-01-28T19:49:31.710Z	6km SSE of Lake Nacimiento, CA	earthquake	5.01	31.61	0.172	7	reviewed	ci	ci
6/29/1965	8:56:11	35.0501667	-118.9605	0.02	2.8	ml	8	82	0.185	0.63	ci	ci3330559	2016-01-28T19:53:47.880Z	12km NNW of Grapevine, CA	earthquake	1.08	3.46	0.231	10	reviewed	ci	ci
6/29/1965	2:25:56	35.062	-118.995	3.37	3.05	ml	11	76	0.2054	0.62	ci	ci3330557	2016-01-28T19:45:01.890Z	14km NNW of Grapevine, CA	earthquake	1.11	2.76	0.171	11	reviewed	ci	ci
6/23/1965	16:21:36	35.087	-118.949	0.01	2.62	ml	9	76	0.2187	0.6	ci	ci3330552	2016-01-28T19:32:14.520Z	16km N of Grapevine, CA	earthquake	1.18	3.68	0.143	8	reviewed	ci	ci
6/23/1965	16:17:17	35.0703333	-118.9581667	2.96	3.91	ml	15	76	0.204	0.4	ci	ci3330551	2016-01-28T19:57:51.840Z	14km N of Grapevine, CA	earthquake	0.6	1.32	0.228	10	reviewed	ci	ci
4/11/1965	5:42:08	36.2386667	-120.1398333	6	3.53	ml	7	261	0.9648	0.39	ci	ci3338691	2016-01-28T19:53:43.270Z	5km NW of Huron, CA	earthquake	9.18	31.61	0.197	6	reviewed	ci	ci
4/1/1965	18:13:25	35.1816667	-118.9426667	6	2.86	ml	6	195	0.3114	0.37	ci	ci3330598	2016-01-28T19:36:28.910Z	9km SSW of Lamont, CA	earthquake	1.86	31.61	0.07	5	reviewed	ci	ci
3/28/1965	2:32:23	36.2143333	-120.0893333	6	3.58	ml	8	258	0.9288	0.67	ci	ci3330666	2016-01-28T19:53:41.290Z	2km NE of Huron, CA	earthquake	3.87	31.61	0.289	5	reviewed	ci	ci
2/21/1965	18:39:23	35.881	-120.3835	6	3.54	ml	10	257	1.538	0.56	ci	ci3330686	2016-01-28T19:32:10.560Z	5km ESE of Parkfield, CA	earthquake	3.75	31.61	0.048	11	reviewed	ci	ci
1/26/1965	8:38:15	36.062	-120.3426667	6	3.11	ml	4	301	0.88	0.63	ci	ci3330728	2016-01-28T19:49:21.000Z	9km S of Coalinga, CA	earthquake	4.79	31.61	0.084	7	reviewed	ci	ci
1/26/1965	8:36:32	36.078	-120.4863333	6	3.32	ml	6	297	0.9619	0.52	ci	ci3330727	2016-01-28T19:36:23.130Z	13km WSW of Coalinga, CA	earthquake	2.95	31.61	0.126	8	reviewed	ci	ci
11/26/1964	8:04:14	35.103	-119.0663333	6	2.47	ml	4	276	0.2682	0.64	ci	ci3330765	2016-01-28T20:02:08.300Z	22km NW of Grapevine, CA	earthquake	9.92	31.61	0.248	7	reviewed	ci	ci
11/26/1964	8:03:12	35.0478333	-119.0801667	4.71	3.23	ml	10	82	0.2298	0.64	ci	ci3330764	2016-01-28T19:53:34.160Z	18km NW of Grapevine, CA	earthquake	1.49	5.45	0.133	10	reviewed	ci	ci
11/8/1964	1:19:18	35.9473333	-120.0833333	6	3.92	ml	9	274	0.6776	0.63	ci	ci3330799	2016-01-28T19:44:50.520Z	8km SSE of Avenal, CA	earthquake	3.2	31.61	0.273	9	reviewed	ci	ci
10/20/1964	5:57:09	35.0415	-118.9675	1.76	3	ml	9	134	0.1784	0.48	ci	ci3330830	2016-01-28T19:44:48.430Z	11km NNW of Grapevine, CA	earthquake	1.17	3	0.142	7	reviewed	ci	ci
9/16/1964	12:22:48	35.0516667	-118.9533333	0.16	3.33	ml	11	73	0.185	0.45	ci	ci3330858	2016-01-28T20:02:02.630Z	12km N of Grapevine, CA	earthquake	0.97	2.32	0.171	10	reviewed	ci	ci
5/31/1964	6:38:57	35.501	-118.8241667	0.01	3.56	ml	12	55	0.1992	0.46	ci	ci3330889	2016-01-28T19:49:08.770Z	20km ENE of Oildale, CA	earthquake	0.92	2.18	0.166	10	reviewed	ci	ci
3/9/1964	20:49:57	35.467	-118.7035	4.21	3.53	ml	10	100	0.2592	0.39	ci	ci3330979	2016-01-28T19:57:34.650Z	23km SW of Bodfish, CA	earthquake	0.72	2.28	0.128	10	reviewed	ci	ci
1/23/1964	4:41:20	35.051	-118.9603333	12.83	3.12	ml	8	96	0.1858	0.32	ci	ci3331002	2016-01-28T19:53:20.380Z	12km NNW of Grapevine, CA	earthquake	0.72	1.83	0.058	10	reviewed	ci	ci
12/12/1963	17:10:49	35.1235	-119.1275	6	2.9	ml	7	152	0.5454	0.76	ci	ci3331104	2016-01-28T19:35:56.420Z	25km SW of Lamont, CA	earthquake	2.23	31.61	0.054	6	reviewed	ci	ci
11/21/1963	2:04:08	35.4391667	-119.3063333	6	3.22	ml	10	162	0.3763	0.66	ci	ci3331094	2016-01-28T19:53:17.740Z	8km SSW of Shafter, CA	earthquake	1.9	31.61	0.17	11	reviewed	ci	ci
11/21/1963	1:13:04	35.5133333	-119.2683333	6	3.76	ml	10	176	0.3926	0.57	ci	ci3331093	2016-01-28T19:48:54.820Z	2km NNE of Shafter, CA	earthquake	2.35	31.61	0.153	12	reviewed	ci	ci
11/21/1963	1:05:08	35.472	-119.3015	6	2.93	ml	7	169	0.391	0.52	ci	ci3331092	2016-01-28T19:57:25.870Z	4km SW of Shafter, CA	earthquake	1.63	31.61	0.184	9	reviewed	ci	ci
11/18/1963	10:54:45	36.2178333	-120.2868333	6	3.41	ml	5	309	1.279	0.54	ci	ci3331089	2016-01-28T19:35:54.370Z	11km NE of Coalinga, CA	earthquake	4.67	31.61	0.028	5	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/18/1963	9:31:38	36.215	-120.2528333	6	3.44	ml	7	257	1.253	0.45	ci	ci3331088	2016-01-28T19:48:53.720Z	13km NE of Coalinga, CA	earthquake	2.97	31.61	0.181	11	reviewed	ci	ci
11/2/1963	20:06:02	35.426	-119.2335	6	3.09	ml	6	183	0.6629	0.5	ci	ci3331082	2016-01-28T20:01:39.530Z	9km SSE of Shafter, CA	earthquake	2.23	31.61	0.119	10	reviewed	ci	ci
11/1/1963	14:05:58	35.9895	-120.2563333	6	3.22	ml	7	299	0.7812	0.53	ci	ci3331078	2016-01-28T19:35:52.850Z	12km W of Avenal, CA	earthquake	3.8	31.61	0.177	8	reviewed	ci	ci
10/16/1963	23:48:01	34.9658333	-118.955	13.84	2.91	ml	7	146	0.1043	0.31	ci	ci3331099	2016-01-28T19:44:29.770Z	3km NW of Grapevine, CA	earthquake	1.04	1.26	0.196	9	reviewed	ci	ci
8/21/1963	17:01:46	34.9516667	-119.4075	6	2.72	ml	8	184	0.4245	0.42	ci	ci3331258	2016-01-28T20:01:33.380Z	12km S of Maricopa, CA	earthquake	1.42	31.61	0.31	6	reviewed	ci	ci
7/2/1963	12:00:24	34.8671667	-119.819	6	2.56	ml	7	199	0.434	0.5	ci	ci3331273	2016-01-28T19:31:31.980Z	35km NE of Los Olivos, CA	earthquake	2.36	31.61	0.646	4	reviewed	ci	ci
6/26/1963	10:14:45	35.1201667	-118.9566667	0.13	2.74	ml	8	107	0.2524	0.48	ci	ci3331271	2016-01-28T19:39:54.090Z	15km SW of Arvin, CA	earthquake	1.63	3.01	0.06	4	reviewed	ci	ci
5/28/1963	11:37:54	34.9516667	-118.9903333	11.25	3.79	ml	11	91	0.109	0.34	ci	ci3331326	2016-01-28T19:39:53.090Z	6km W of Grapevine, CA	earthquake	0.81	1.82	0.113	12	reviewed	ci	ci
3/14/1963	12:23:47	35.3773333	-118.7855	4.56	3.23	ml	13	85	0.3255	0.57	ci	ci3331422	2016-01-28T19:48:33.380Z	18km NE of Lamont, CA	earthquake	1.04	3.35	0.106	10	reviewed	ci	ci
3/4/1963	20:10:42	34.9523333	-118.9735	9.26	3.99	ml	11	137	0.1007	0.29	ci	ci3331415	2016-01-28T19:44:16.460Z	4km WNW of Grapevine, CA	earthquake	0.8	1.64	0.106	9	reviewed	ci	ci
3/1/1963	0:25:57	34.9563333	-118.971	8.38	4.64	ml	14	86	0.1027	0.56	ci	ci3331412	2018-06-04T20:43:45.000Z	4km WNW of Grapevine, CA	earthquake	1.16	2.55	0.248	9	reviewed	ci	ci
2/27/1963	20:07:06	35.0973333	-118.8971667	2.91	2.6	ml	6	137	0.2253	0.44	ci	ci3331411	2016-01-28T19:35:37.190Z	14km SSW of Arvin, CA	earthquake	1.22	3.05	0.133	8	reviewed	ci	ci
1/9/1963	6:04:03	34.939	-119.1365	5.84	4.08	ml	11	186	0.2056	0.54	ci	ci3331464	2016-01-28T19:35:35.640Z	10km N of Pine Mountain Club, CA	earthquake	1.59	1.92	0.091	10	reviewed	ci	ci
12/14/1962	7:03:31	35.4226667	-118.7405	6	2.77	ml	6	138	0.3235	0.66	ci	ci3331481	2016-01-28T19:44:13.400Z	24km NE of Lamont, CA	earthquake	1.83	31.61	0.192	7	reviewed	ci	ci
10/22/1962	22:11:41	35.0675	-118.9448333	7.46	2.69	ml	8	97	0.1989	0.4	ci	ci3331656	2016-01-28T19:31:19.800Z	14km N of Grapevine, CA	earthquake	0.97	3.4	0.108	6	reviewed	ci	ci
8/10/1962	19:18:42	35.0611667	-119.0596667	3.93	3.62	ml	8	153	0.2301	0.39	ci	ci3331707	2016-01-28T19:35:27.760Z	18km NW of Grapevine, CA	earthquake	1.19	3.48	0.132	9	reviewed	ci	ci
6/9/1962	12:52:01	35.1618333	-118.8893333	6	2.87	ml	6	139	0.5382	0.75	ci	ci3344400	2016-01-28T20:01:10.680Z	8km SW of Arvin, CA	earthquake	1.99	31.61	0.059	7	reviewed	ci	ci
5/4/1962	20:52:30	35.3035	-119.6895	0	3.07	ml	9	96	0.05158	0.69	ci	ci3344432	2016-01-28T20:01:08.670Z	23km WSW of Buttonwillow, CA	earthquake	3.15	5.17	0.286	9	reviewed	ci	ci
4/8/1962	20:29:19	35.0588333	-119.1506667	6	3.15	ml	7	163	0.687	0.3	ci	ci3344405	2016-01-28T19:43:54.700Z	23km E of Maricopa, CA	earthquake	1.78	31.61	0.086	10	reviewed	ci	ci
4/4/1962	6:29:59	34.9308333	-118.9963333	6	2.6	ml	8	94	0.7304	0.49	ci	ci3344461	2016-01-28T19:35:24.240Z	6km WSW of Grapevine, CA	earthquake	1.44	31.61	0.104	7	reviewed	ci	ci
3/18/1962	12:31:48	35.4346667	-118.7155	0	3.12	ml	10	109	0.2848	0.61	ci	ci3344448	2016-01-28T19:43:51.470Z	26km SW of Bodfish, CA	earthquake	1.31	3.73	0.146	10	reviewed	ci	ci
3/16/1962	21:21:49	35.0266667	-119.0713333	0.54	3.36	ml	10	98	0.2091	0.65	ci	ci3344445	2016-01-28T20:01:06.670Z	16km NW of Grapevine, CA	earthquake	1.63	3.24	0.11	11	reviewed	ci	ci
2/8/1962	11:24:54	35.0651667	-119.0166667	0.38	3.05	ml	8	141	0.2156	0.69	ci	ci3344479	2016-01-28T19:56:52.370Z	16km NNW of Grapevine, CA	earthquake	1.82	4.51	0.074	10	reviewed	ci	ci
12/14/1961	11:51:14	35.97	-120.4701667	6	3.95	ml	12	297	0.8718	0.51	ci	ci3344629	2016-01-28T19:48:08.330Z	9km NNW of Parkfield, CA	earthquake	3.43	31.61	0.07	11	reviewed	ci	ci
11/26/1961	13:10:42	35.0476667	-118.8926667	6	2.8	ml	7	146	0.6521	0.54	ci	ci3344615	2016-01-28T20:01:01.910Z	12km NNE of Grapevine, CA	earthquake	1.55	31.61	0.095	8	reviewed	ci	ci
11/15/1961	5:56:08	34.9816667	-118.9483333	5.1	2.29	mh	4	136	0.1168	0.32	ci	ci3344603	2016-01-28T19:39:21.080Z	5km NNW of Grapevine, CA	earthquake	1.04	1.91	0.132	4	reviewed	ci	ci
11/15/1961	5:38:55	34.9463333	-118.9871667	5.45	4.97	ml	13	137	0.1033	0.55	ci	ci3344602	2018-06-04T20:43:45.000Z	5km W of Grapevine, CA	earthquake	1.17	1.79	0.072	9	reviewed	ci	ci
9/7/1961	20:50:42	35.0466667	-119.0611667	0.98	3.26	ml	8	153	0.2191	0.52	ci	ci3344796	2016-01-28T19:56:40.050Z	17km NW of Grapevine, CA	earthquake	1.3	2.44	0.12	13	reviewed	ci	ci
7/31/1961	0:07:06	35.8801667	-120.347	6	4.64	ml	12	291	0.7382	0.57	ci	ci3344833	2018-06-04T20:43:45.000Z	8km ESE of Parkfield, CA	earthquake	3.49	31.61	0.132	12	reviewed	ci	ci
7/20/1961	1:42:03	35.0295	-119.0836667	0.06	3.5	ml	11	77	0.2181	0.65	ci	ci3344820	2016-01-28T19:35:11.180Z	17km NW of Grapevine, CA	earthquake	1.4	3.14	0.133	12	reviewed	ci	ci
6/26/1961	7:36:00	35.3578333	-118.7268333	6	2.97	ml	8	148	0.3546	0.62	ci	ci3344811	2016-01-28T19:56:35.990Z	19km NNE of Arvin, CA	earthquake	1.74	31.61	0.141	11	reviewed	ci	ci
5/9/1961	12:20:59	35.6436667	-119.3515	6	3.14	ml	11	166	0.4168	0.61	ci	ci3344845	2016-01-28T19:56:35.000Z	6km N of Wasco, CA	earthquake	1.71	31.61	0.086	11	reviewed	ci	ci
4/8/1961	9:29:49	36.0691667	-120.3703333	6	3.59	ml	10	258	0.8985	0.38	ci	ci3344892	2016-01-28T19:39:07.340Z	8km S of Coalinga, CA	earthquake	2.21	31.61	0.231	9	reviewed	ci	ci
2/26/1961	13:48:18	35.084	-119.3176667	6	2.99	ml	7	258	0.4031	0.49	ci	ci3345145	2016-01-28T19:35:06.670Z	8km ENE of Maricopa, CA	earthquake	4.09	31.61	0.185	7	reviewed	ci	ci
2/24/1961	4:25:58	35.195	-118.9595	6	3.28	ml	9	92	0.5126	0.66	ci	ci3345144	2016-01-28T19:56:32.950Z	8km SSW of Lamont, CA	earthquake	1.52	31.61	0.145	11	reviewed	ci	ci
2/14/1961	18:16:48	35.6615	-119.3638333	6	2.98	ml	8	169	0.4248	0.52	ci	ci3345135	2016-01-28T19:47:47.130Z	8km NNW of Wasco, CA	earthquake	1.91	31.61	0.033	3	reviewed	ci	ci
2/12/1961	22:49:33	35.6126667	-119.391	6	3.81	ml	10	241	0.4537	0.42	ci	ci3345134	2016-01-28T19:35:05.680Z	5km WNW of Wasco, CA	earthquake	2.08	31.61	0.267	12	reviewed	ci	ci
1/23/1961	7:38:41	35.1178333	-119.0631667	12.57	2.98	ml	10	86	0.2798	0.55	ci	ci3347757	2016-01-28T19:30:48.350Z	21km SW of Lamont, CA	earthquake	0.99	2.38	0.139	11	reviewed	ci	ci
1/23/1961	3:20:30	35.0896667	-119.0878333	3.8	3.34	ml	11	84	0.2667	0.39	ci	ci3347756	2016-01-28T19:52:15.120Z	22km NW of Grapevine, CA	earthquake	1.09	3.42	0.202	12	reviewed	ci	ci
1/21/1961	16:59:57	35.0635	-118.9316667	10.91	3.02	ml	9	123	0.1933	0.6	ci	ci3347754	2016-01-28T19:30:47.710Z	13km N of Grapevine, CA	earthquake	1.37	3.43	0.125	8	reviewed	ci	ci
1/8/1961	13:21:51	35.0688333	-119.0418333	0.19	2.98	ml	7	146	0.2287	0.53	ci	ci3347744	2016-01-28T20:00:50.770Z	17km NW of Grapevine, CA	earthquake	1.42	2.6	0.14	5	reviewed	ci	ci
1/6/1961	20:46:47	36.0331667	-120.0416667	6	3.19	ml	6	253	0.745	0.51	ci	ci3347743	2016-01-28T19:47:45.200Z	8km WNW of Kettleman City, CA	earthquake	5.62	31.61	0.26	4	reviewed	ci	ci
11/7/1960	21:11:04	35.29	-119.2571667	6	3.73	ml	8	194	0.4014	0.28	ci	ci3349765	2016-01-28T20:00:48.840Z	14km SW of Rosedale, CA	earthquake	1.62	31.61	0.155	11	reviewed	ci	ci
11/4/1960	21:11:01	35.3	-119.3333333	6	3.8	mh					ci	ci10086582	2016-01-28T19:52:10.970Z	17km SE of Buttonwillow, CA	earthquake				0	reviewed	ci	ci
10/21/1960	0:11:44	35.0728333	-118.9436667	0.01	3.11	ml	8	141	0.204	0.82	ci	ci3349318	2016-01-28T19:47:43.260Z	14km N of Grapevine, CA	earthquake	2.31	4.73	0.055	9	reviewed	ci	ci
10/18/1960	16:37:46	35.64	-119.3013333	6	3.26	ml	8	161	0.377	0.56	ci	ci3349317	2016-01-28T19:35:00.120Z	6km NE of Wasco, CA	earthquake	2.1	31.61	0.2	9	reviewed	ci	ci
10/18/1960	12:17:08	35.6131667	-119.2751667	6	3.2	ml	8	192	0.3615	0.57	ci	ci3349316	2016-01-28T19:30:43.500Z	6km ENE of Wasco, CA	earthquake	2.39	31.61	0.068	10	reviewed	ci	ci
10/14/1960	21:02:51	35.053	-118.9048333	9.5	3.41	ml	10	75	0.1811	0.58	ci	ci3349311	2016-01-28T20:00:47.350Z	12km N of Grapevine, CA	earthquake	1.33	3.93	0.131	9	reviewed	ci	ci
10/9/1960	6:32:14	35.0486667	-119.2491667	6	3.43	ml	9	249	0.3367	0.45	ci	ci3349768	2016-01-28T19:56:28.890Z	14km E of Maricopa, CA	earthquake	3.28	31.61	0.129	9	reviewed	ci	ci
10/8/1960	16:25:08	35.074	-119.0631667	0.19	3.01	ml	7	154	0.2423	0.48	ci	ci3349309	2016-01-28T19:34:59.620Z	19km NW of Grapevine, CA	earthquake	1.26	2.93	0.037	8	reviewed	ci	ci
10/5/1960	8:04:49	35.4205	-118.7391667	0.47	3.1	ml	9	79	0.2917	0.8	ci	ci3349306	2016-01-28T19:30:42.970Z	24km NE of Lamont, CA	earthquake	2.58	5.79	0.119	10	reviewed	ci	ci
8/16/1960	19:50:32	35.032	-118.945	0.44	3.3	ml	12	74	0.1643	0.72	ci	ci3350203	2016-01-28T19:47:41.220Z	10km N of Grapevine, CA	earthquake	1.52	4.2	0.175	12	reviewed	ci	ci
8/1/1960	22:56:00	34.983	-119.0551667	9.38	2.97	ml	7	92	0.1691	0.27	ci	ci3350675	2016-01-28T19:34:56.200Z	12km WNW of Grapevine, CA	earthquake	0.69	2.42	0.108	6	reviewed	ci	ci
7/1/1960	3:25:48	35.3008333	-118.86	6	2.5	mh	2	238	0.4296	0.17	ci	ci10086534	2016-01-28T19:56:25.840Z	7km NE of Lamont, CA	earthquake	5.92	31.61		0	reviewed	ci	ci
6/19/1960	20:24:44	34.932	-119.2783333	6	2.9	ml	10	85	0.5495	0.73	ci	ci3350762	2016-01-28T19:47:39.720Z	15km NW of Pine Mountain Club, CA	earthquake	1.94	31.61	0.179	8	reviewed	ci	ci
12/29/1959	14:53:16	35.6703333	-119.7268333	6	3.33	ml	9	221	1.02	0.61	ci	ci3297282	2016-01-28T18:01:47.130Z	32km SW of Alpaugh, CA	earthquake	4.88	31.61	0.099	11	reviewed	ci	ci
12/8/1959	11:24:02	35.0426667	-119.0461667	6	3.3	ml	9	151	0.6763	0.8	ci	ci3297265	2016-01-28T18:01:46.630Z	15km NW of Grapevine, CA	earthquake	1.98	31.61	0.077	11	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/22/1959	18:30:08	35.3825	-118.7126667	6	3.03	ml	5	145	0.3345	0.29	ci	ci3297257	2016-01-28T18:29:33.530Z	22km NNE of Arvin, CA	earthquake	1.07	31.61	0.073	7	reviewed	ci	ci
11/12/1959	10:00:08	35.0391667	-119.0718333	2	2.84	ml	7	220	0.2188	0.44	ci	ci3297247	2016-01-28T18:24:52.350Z	17km NW of Grapevine, CA	earthquake	2.56	31.61	0.121	11	reviewed	ci	ci
7/1/1959	23:49:23	35.178	-119.0868333	6	4.63	ml	14	164		0.72	ci	ci3297109	2018-06-04T20:43:45.000Z	18km WSW of Lamont, CA	earthquake	2.01	31.61	0.177	11	reviewed	ci	ci
7/1/1959	19:50:42	35.2168333	-119.1415	6	3.38	ml	9	174		0.62	ci	ci3297108	2016-01-28T18:20:13.030Z	18km SSW of Bakersfield, CA	earthquake	1.7	31.61	0.095	10	reviewed	ci	ci
7/1/1959	19:38:25	35.1878333	-119.0663333	6	2.97	ml	8	163	0.3438	0.68	ci	ci3297107	2016-01-28T18:24:46.890Z	16km WSW of Lamont, CA	earthquake	2.23	31.61	0.083	10	reviewed	ci	ci
6/1/1959	15:16:30	35.3383333	-118.9833333	6	3.01	ml	8	206	0.3783	0.52	ci	ci3297074	2016-01-28T17:57:11.590Z	5km ESE of Bakersfield, CA	earthquake	2.63	31.61	0.027	9	reviewed	ci	ci
5/1/1959	4:05:29	35.0593333	-119.006	0.06	2.88	ml	10	147	0.2066	0.69	ci	ci3297051	2016-01-28T17:57:11.020Z	15km NNW of Grapevine, CA	earthquake	2.02	4.82	0.056	11	reviewed	ci	ci
4/30/1959	5:37:09	35.1865	-119.2091667	6	3.35	ml	13	172	0.4038	0.64	ci	ci3297050	2016-01-28T18:29:24.220Z	22km NE of Maricopa, CA	earthquake	1.77	31.61	0.179	11	reviewed	ci	ci
2/1/1959	4:20:01	35.5048333	-118.7305	5.76	2.99	ml	10	117	0.2156	0.5	ci	ci3296966	2016-01-28T18:20:05.860Z	24km WSW of Bodfish, CA	earthquake	1.37	4.81	0.22	11	reviewed	ci	ci
1/31/1959	16:20:12	35.1086667	-118.9958333	1.93	3.08	ml	10	81	0.2493	0.5	ci	ci3296965	2016-01-28T18:20:05.320Z	18km SSW of Lamont, CA	earthquake	1.18	3.05	0.113	11	reviewed	ci	ci
12/30/1958	1:34:15	36.0003333	-119.74	6	3.25	ml	6	227	0.6722	0.58	ci	ci3296892	2016-01-28T17:57:06.710Z	20km SW of Corcoran, CA	earthquake	2.96	31.61	0.247	7	reviewed	ci	ci
11/4/1958	0:27:58	34.948	-119.4961667	6	2.99	ml	10	195	0.4957	0.39	ci	ci3296802	2016-01-28T17:57:04.660Z	15km SW of Maricopa, CA	earthquake	1.28	31.61	0.188	5	reviewed	ci	ci
10/1/1958	5:06:18	35.0783333	-118.8598333	5.29	2.91	ml	8	132	0.209	0.56	ci	ci3296770	2016-01-28T18:01:25.420Z	15km S of Arvin, CA	earthquake	1.29	4.46	0.09	11	reviewed	ci	ci
8/24/1958	7:00:49	35.0495	-118.9155	0.6	3.49	ml	11	162		0.55	ci	ci3296755	2016-01-28T18:15:26.630Z	12km N of Grapevine, CA	earthquake	1.15	2.59	0.076	10	reviewed	ci	ci
8/11/1958	2:06:02	34.9843333	-119.4346667	6	3.31	ml	8	189		0.5	ci	ci3296730	2016-01-28T18:29:11.080Z	9km SSW of Maricopa, CA	earthquake	1.47	31.61	0.157	9	reviewed	ci	ci
7/25/1958	16:56:04	34.973	-118.9631667	6.01	3.23	ml	11	137	0.1137	0.5	ci	ci3296716	2016-01-28T18:15:24.080Z	4km NW of Grapevine, CA	earthquake	1.01	2.13	0.09	11	reviewed	ci	ci
7/6/1958	7:02:01	34.9658333	-119.0568333	5.31	3.05	ml	8	167	0.1594	0.56	ci	ci3296686	2016-01-28T18:15:23.090Z	12km WNW of Grapevine, CA	earthquake	1.41	3.74	0.196	8	reviewed	ci	ci
6/27/1958	1:56:40	34.9755	-119.0898333	6	3.34	ml	13	86		0.62	ci	ci3296668	2016-01-28T18:15:22.030Z	15km WNW of Grapevine, CA	earthquake	1	31.61	0.154	11	reviewed	ci	ci
6/7/1958	6:51:17	35.0203333	-118.9468333	6	2.95	ml	9	97		0.43	ci	ci3296654	2016-01-28T18:10:39.150Z	9km N of Grapevine, CA	earthquake	0.8	31.61	0.166	11	reviewed	ci	ci
5/26/1958	22:25:05	35.0856667	-119.072	6	3.26	ml	9	109		0.69	ci	ci3296630	2016-01-28T18:24:23.650Z	20km NW of Grapevine, CA	earthquake	1.34	31.61	0.135	11	reviewed	ci	ci
5/26/1958	20:23:34	35.1111667	-119.0813333	6	3.53	ml	11	86		0.36	ci	ci3296626	2016-01-28T18:06:03.620Z	22km SW of Lamont, CA	earthquake	0.8	31.61	0.106	11	reviewed	ci	ci
5/20/1958	3:59:32	35.0996667	-119.0281667	1	3.15	ml	10	106	0.2507	0.53	ci	ci3296619	2016-01-28T18:01:19.830Z	20km NNW of Grapevine, CA	earthquake	1.55	31.61	0.156	10	reviewed	ci	ci
5/13/1958	9:08:29	34.9336667	-119.0203333	13.97	2.86	ml	12	91	0.1166	0.45	ci	ci3296614	2016-01-28T18:15:20.370Z	8km W of Grapevine, CA	earthquake	0.81	1.16	0.056	11	reviewed	ci	ci
4/17/1958	13:03:26	35.022	-118.9128333	0.27	3.05	ml	10	99	0.1505	0.39	ci	ci3296584	2016-01-28T18:01:18.250Z	9km N of Grapevine, CA	earthquake	0.8	1.84	0.074	10	reviewed	ci	ci
2/23/1958	23:22:24	35.0191667	-119.0728333	2.33	3.22	ml	11	145	0.2045	0.52	ci	ci3296510	2016-01-28T18:15:17.320Z	16km WNW of Grapevine, CA	earthquake	1.28	1.77	0.073	11	reviewed	ci	ci
1/13/1958	2:45:01	34.9378333	-118.9951667	12.82	3.88	ml	14	72		0.49	ci	ci3296470	2016-01-28T18:29:06.440Z	6km W of Grapevine, CA	earthquake	0.85	1.88	0.088	11	reviewed	ci	ci
1/11/1958	23:08:46	34.879	-119.2515	2.92	3.94	ml	14	76	0.2889	0.51	ci	ci3296469	2016-01-28T18:19:47.160Z	10km WNW of Pine Mountain Club, CA	earthquake	1.01	2.9	0.137	11	reviewed	ci	ci
1/10/1958	17:44:23	34.8726667	-119.2233333	6	3.28	ml	12	93	0.2657	0.53	ci	ci3296468	2016-01-28T18:05:58.990Z	7km WNW of Pine Mountain Club, CA	earthquake	0.95	31.61	0.125	10	reviewed	ci	ci
12/15/1957	4:39:41	35.0266667	-119.1946667	6.15	3.73	ml	11	87		0.55	ci	ci3296328	2016-01-28T17:56:52.510Z	19km E of Maricopa, CA	earthquake	0.94	3.04	0.189	12	reviewed	ci	ci
9/5/1957	14:44:41	34.9708333	-118.9785	10.42	2.96	ml	6	160	0.1181	0.25	ci	ci3296195	2016-01-28T17:56:48.980Z	5km NW of Grapevine, CA	earthquake	0.91	1.02	0.165	7	reviewed	ci	ci
8/7/1957	3:27:37	35.0098333	-119.0835	6.94	3.58	ml	10	97	0.2043	0.49	ci	ci3296129	2016-01-28T18:28:58.160Z	16km WNW of Grapevine, CA	earthquake	1.06	2.6	0.05	10	reviewed	ci	ci
7/21/1957	5:06:10	35.0805	-119.1261667	5.94	3.11	ml	9	162	0.2791	0.63	ci	ci3296081	2016-01-28T18:28:57.620Z	24km NW of Grapevine, CA	earthquake	1.33	3.07	0.071	10	reviewed	ci	ci
7/21/1957	5:04:53	35.0818333	-119.1258333	10.88	3.55	ml	10	162	0.2799	0.4	ci	ci3296080	2016-01-28T18:24:09.220Z	24km NW of Grapevine, CA	earthquake	0.9	1.45	0.104	10	reviewed	ci	ci
4/29/1957	11:18:13	35.075	-119.1135	0.06	3.3	ml	7	247	0.2681	0.67	ci	ci3295993	2016-01-28T18:10:21.560Z	22km NW of Grapevine, CA	earthquake	3.24	2.8	0.173	10	reviewed	ci	ci
4/28/1957	23:47:28	35.4396667	-118.8005	6	3.01	ml	5	221	0.347	0.55	ci	ci3295992	2016-01-28T18:01:04.100Z	20km E of Oildale, CA	earthquake	3.5	31.61	0.057	6	reviewed	ci	ci
4/26/1957	14:03:56	35.0413333	-118.9333333	0.38	2.85	ml	9	92	0.1716	0.56	ci	ci3295988	2016-01-28T18:15:04.210Z	11km N of Grapevine, CA	earthquake	1.05	2.31	0.064	6	reviewed	ci	ci
4/8/1957	6:58:36	35.0431667	-118.9406667	4.38	2.79	ml	8	97	0.1745	0.5	ci	ci3295942	2016-01-28T18:10:18.150Z	11km N of Grapevine, CA	earthquake	0.99	1.89	0.061	5	reviewed	ci	ci
4/7/1957	21:19:42	35.0361667	-119.0483333	8.94	3.19	ml	9	80	0.2044	0.4	ci	ci3295941	2016-01-28T18:05:46.790Z	15km NW of Grapevine, CA	earthquake	1.21	2.23	0.14	11	reviewed	ci	ci
3/27/1957	3:43:42	34.9908333	-119.1666667	6	2.88	ml	7	86	0.581	0.35	ci	ci3295923	2016-01-28T18:01:01.970Z	16km N of Pine Mountain Club, CA	earthquake	0.73	31.61	0.242	9	reviewed	ci	ci
3/21/1957	14:56:08	35.4141667	-118.8411667	6	2.82	ml	6	140	0.3888	0.41	ci	ci3295910	2016-01-28T18:10:17.650Z	16km E of Oildale, CA	earthquake	1.44	31.61	0.072	8	reviewed	ci	ci
3/9/1957	14:59:19	34.7355	-119.7093333	6	2.91	ml	2	289	0.2941	0.43	ci	ci3295890	2016-01-28T18:19:31.460Z	34km NNW of Montecito, CA	earthquake	5.48	31.61	0.039	2	reviewed	ci	ci
3/8/1957	18:57:55	35.0096667	-119.074	4.36	3.13	ml	10	151	0.1985	0.49	ci	ci3295897	2016-01-28T18:24:00.920Z	15km WNW of Grapevine, CA	earthquake	1.21	2.33	0.114	11	reviewed	ci	ci
3/7/1957	4:01:42	35.0441667	-118.975	0.18	2.96	ml	11	143	0.1829	0.39	ci	ci3295883	2016-01-28T18:10:16.590Z	12km NNW of Grapevine, CA	earthquake	0.85	1.52	0.071	10	reviewed	ci	ci
3/4/1957	1:31:27	35.3883333	-118.7991667	6	3.15	ml	12	135	0.3131	0.63	ci	ci3295875	2016-01-28T18:00:58.410Z	18km NE of Lamont, CA	earthquake	1.49	31.61	0.1	10	reviewed	ci	ci
2/14/1957	10:30:26	36.0526667	-120.5151667	6	3.5	ml	7	297	1.402	0.7	ci	ci3295828	2016-01-28T17:56:37.050Z	17km SW of Coalinga, CA	earthquake	5.59	31.61	0.114	6	reviewed	ci	ci
2/14/1957	0:31:28	35.1513333	-119.9655	6	3.13	ml	7	232	0.7383	0.77	ci	ci3295826	2016-01-28T18:05:43.220Z	22km S of Simmler, CA	earthquake	9.27	31.61	0.241	10	reviewed	ci	ci
12/31/1956	15:23:28	35.0166667	-118.9086667	0.38	2.78	ml	8	134	0.145	0.5	ci	ci3295782	2016-01-28T18:14:57.710Z	8km NNE of Grapevine, CA	earthquake	1.95	3.41	0.112	8	reviewed	ci	ci
12/15/1956	2:18:05	35.1196667	-118.9265	6	2.83	ml	8	78	0.5829	0.46	ci	ci3295769	2016-01-28T18:10:11.870Z	13km SW of Arvin, CA	earthquake	1.12	31.61	0.181	7	reviewed	ci	ci
11/21/1956	6:30:44	35.0675	-119.051	6	2.69	ml	7	152	0.6533	0.65	ci	ci3295901	2016-01-28T18:23:55.700Z	18km NW of Grapevine, CA	earthquake	1.51	31.61	0.094	7	reviewed	ci	ci
11/12/1956	10:13:45	36.3718333	-120.0015	6	3.37	ml	6	311	1.063	0.68	ci	ci3295737	2016-01-28T18:23:55.250Z	14km WSW of Riverdale, CA	earthquake	5.78	31.61	0.073	5	reviewed	ci	ci
11/5/1956	9:10:25	35.0876667	-118.8946667	1.25	2.36	mh	9	99	0.2157	0.53	ci	ci3295718	2016-01-28T18:00:53.240Z	15km SSW of Arvin, CA	earthquake	2.09	3.81	0.184	20	reviewed	ci	ci
10/18/1956	22:11:44	34.9403333	-118.9983333	14.21	3.02	ml	11	94	0.1059	0.54	ci	ci3295649	2016-01-28T18:19:24.330Z	6km W of Grapevine, CA	earthquake	0.89	1.24	0.167	10	reviewed	ci	ci
9/26/1956	3:22:10	35.0941667	-118.9378333	1.64	2.65	ml	11	77		0.74	ci	ci3295490	2016-01-28T18:14:53.150Z	16km SW of Arvin, CA	earthquake	1.48	4.37	0.203	9	reviewed	ci	ci
9/23/1956	13:51:58	34.9158333	-119.1501667	2.61	2.88	ml	12	89	0.2102	0.76	ci	ci3295487	2016-01-28T17:56:31.670Z	8km N of Pine Mountain Club, CA	earthquake	1.19	2.67	0.383	8	reviewed	ci	ci
9/17/1956	23:29:27	36.1816667	-119.59	6	2.75	ml	6	222	0.7729	0.27	ci	ci3295466	2016-01-28T18:10:06.820Z	10km NNW of Corcoran, CA	earthquake	1.37	31.61	0.027	3	reviewed	ci	ci
9/10/1956	13:12:34	35.3495	-119.0146667	6	2.98	ml	6	168	0.3763	0.37	ci	ci3295452	2016-01-28T17:56:30.080Z	2km ESE of Bakersfield, CA	earthquake	1.19	31.61	0.115	11	reviewed	ci	ci
8/10/1956	1:50:16	35.1148333	-119.0735	6	2.95	ml	9	109	0.2814	0.52	ci	ci3295367	2016-01-28T18:10:01.160Z	22km SW of Lamont, CA	earthquake	1.08	31.61	0.193	8	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
7/25/1956	3:35:07	35.0546667	-118.9161667	5.91	2.81	ml	8	98	0.1832	0.55	ci	ci3295355	2016-01-28T18:23:48.590Z	12km N of Grapevine, CA	earthquake	1.56	7.74	0.198	8	reviewed	ci	ci
6/13/1956	16:08:32	35.3528333	-118.9803333	6	2.97	ml	6	205	0.3637	0.65	ci	ci3295299	2016-01-28T18:28:28.930Z	5km E of Bakersfield, CA	earthquake	3.4	31.61	0.03	3	reviewed	ci	ci
6/4/1956	8:33:19	35.1766667	-119.1483333	6	4.03	ml	13	93		0.54	ci	ci3295291	2016-01-28T18:28:28.280Z	23km SSW of Bakersfield, CA	earthquake	1.22	31.61	0.152	11	reviewed	ci	ci
5/30/1956	8:07:17	35.4168333	-118.747	6	2.87	ml	7	208	0.3313	0.57	ci	ci3295287	2016-01-28T18:09:55.380Z	23km NE of Lamont, CA	earthquake	2.7	31.61	0.17	6	reviewed	ci	ci
5/21/1956	4:21:14	34.8991667	-119.1445	6	3.43	ml	11	84	0.6519	0.45	ci	ci3295276	2016-01-28T18:23:44.500Z	6km N of Pine Mountain Club, CA	earthquake	0.88	31.61	0.08	9	reviewed	ci	ci
5/4/1956	8:16:17	35.6925	-120.8681667	6	3.25	ml	7	292		1.03	ci	ci3295138	2016-01-28T18:05:24.840Z	4km SSE of Lake Nacimiento, CA	earthquake	7.92	31.61	0.055	5	reviewed	ci	ci
4/16/1956	5:11:21	35.3343333	-118.9086667	6	3.11	ml	12	151	0.3686	0.62	ci	ci3295113	2016-01-28T18:05:22.770Z	8km N of Lamont, CA	earthquake	1.95	31.61	0.221	9	reviewed	ci	ci
3/23/1956	22:28:45	35.1231667	-119.0555	1.03	3.11	ml	8	111	0.2816	0.6	ci	ci3295051	2016-01-28T18:19:11.020Z	20km SW of Lamont, CA	earthquake	1.41	2.79	0.23	10	reviewed	ci	ci
3/23/1956	21:23:26	35.0766667	-119.0433333	0.01	4.37	ml	10	156	0.236	0.68	ci	ci3295049	2016-01-28T18:19:11.520Z	18km NW of Grapevine, CA	earthquake	1.95	3.78	0.165	11	reviewed	ci	ci
3/6/1956	20:02:50	34.898	-119.069	6	2.9	ml	3	243	1.053	0.56	ci	ci3297705	2016-01-28T18:00:37.540Z	9km NE of Pine Mountain Club, CA	earthquake	7.31	31.61	0.121	4	reviewed	ci	ci
3/3/1956	6:24:14	35.0536667	-119.0075	7.8	4.16	ml	10	241		0.31	ci	ci3297693	2016-01-28T18:14:37.680Z	14km NNW of Grapevine, CA	earthquake	2.97	1.81	0.097	11	reviewed	ci	ci
2/15/1956	19:57:52	36.226	-120.3496667	6	3.6	ml	5	290	1.329	0.46	ci	ci3297582	2016-01-28T17:56:15.490Z	10km N of Coalinga, CA	earthquake	3.62	31.61	0.586	6	reviewed	ci	ci
2/8/1956	10:53:35	35.437	-118.7343333	6	2.57	ml	9	98	0.2773	0.53	ci	ci3297516	2016-01-28T18:23:28.340Z	26km NE of Lamont, CA	earthquake	1.81	31.61	0.217	6	reviewed	ci	ci
2/6/1956	18:20:05	35.4148333	-118.7951667	6	3	ml	7	163	0.2873	0.59	ci	ci3297510	2016-01-28T18:09:35.750Z	20km E of Oildale, CA	earthquake	3.36	31.61	0.031	7	reviewed	ci	ci
12/21/1955	7:55:50	35.0921667	-119.0656667	6.5	2.51	ml	9	107	0.2587	0.61	ci	ci3297463	2016-01-28T18:00:26.770Z	21km NW of Grapevine, CA	earthquake	1.17	3.8	0.172	7	reviewed	ci	ci
12/8/1955	1:18:21	35.3671667	-118.8891667	6	2.74	ml	5	142	0.3341	0.34	ci	ci3297389	2016-01-28T18:14:24.730Z	12km N of Lamont, CA	earthquake	0.95	31.61	0.143	10	reviewed	ci	ci
12/4/1955	3:37:10	35.1491667	-119.1108333	6	2.79	ml	7	92	0.5492	0.59	ci	ci3297383	2016-01-28T18:23:22.570Z	22km SW of Lamont, CA	earthquake	1.21	31.61	0.146	8	reviewed	ci	ci
11/28/1955	15:04:27	35.014	-119.0328333	3.37	3.8	ml	12	83	0.1791	0.47	ci	ci3297372	2016-01-28T18:18:56.460Z	12km NW of Grapevine, CA	earthquake	0.94	1.99	0.152	8	reviewed	ci	ci
11/21/1955	18:14:21	35.4221667	-118.774	6	3.6	ml	9	183	0.3428	0.61	ci	ci3297359	2016-01-28T18:14:22.650Z	22km NE of Lamont, CA	earthquake	2.06	31.61	0.127	8	reviewed	ci	ci
11/19/1955	6:17:28	34.953	-118.9965	9.82	2.97	ml	9	95	0.1135	0.38	ci	ci3297354	2016-01-28T18:05:00.960Z	6km W of Grapevine, CA	earthquake	0.65	2.03	0.171	9	reviewed	ci	ci
11/16/1955	13:28:48	35.1221667	-119.0753333	6	2.97	ml	6	228	0.2885	0.36	ci	ci3297352	2016-01-28T18:18:55.960Z	21km SW of Lamont, CA	earthquake	2.48	31.61	0.152	5	reviewed	ci	ci
10/22/1955	7:04:14	36.1268333	-120.3021667	6	3.77	ml	11	257		0.66	ci	ci3297317	2016-01-28T18:04:58.980Z	5km ESE of Coalinga, CA	earthquake	5.85	31.61	0.184	10	reviewed	ci	ci
10/15/1955	0:59:58	35.0511667	-118.8783333	1.72	2.53	ml	8	133	0.1801	0.4	ci	ci3297306	2016-01-28T18:09:28.190Z	13km NNE of Grapevine, CA	earthquake	0.74	1.53	0.093	9	reviewed	ci	ci
10/6/1955	22:31:54	35.1711667	-119.0693333	6	2.83	ml	8	162	0.3296	0.49	ci	ci3297302	2016-01-28T18:23:20.410Z	17km SW of Lamont, CA	earthquake	1.1	31.61	0.15	10	reviewed	ci	ci
10/6/1955	10:19:43	35.1606667	-119.0895	6	3.6	ml	11	164	0.3277	0.44	ci	ci3297301	2016-01-28T17:56:03.860Z	19km SW of Lamont, CA	earthquake	1.09	31.61	0.195	11	reviewed	ci	ci
9/18/1955	10:43:40	35.4173333	-118.7141667	6	2.78	ml	5	144	0.3013	0.44	ci	ci3297986	2016-01-28T18:14:20.810Z	25km NE of Lamont, CA	earthquake	1.21	31.61	0.03	7	reviewed	ci	ci
8/8/1955	12:06:10	35.0405	-118.9313333	2	3.45	ml	13	74	0.1705	0.5	ci	ci3297946	2016-01-28T18:04:56.930Z	11km N of Grapevine, CA	earthquake	0.91	2.02	0.062	10	reviewed	ci	ci
7/13/1955	11:23:47	35.4918333	-118.8118333	6	2.23	ml	5	231	0.3239	0.39	ci	ci3297871	2016-01-28T18:00:15.200Z	20km ENE of Oildale, CA	earthquake	2.47	31.61	0.251	8	reviewed	ci	ci
7/11/1955	12:57:41	35.4601667	-118.932	6	2.61	ml	5	232	0.4246	0.59	ci	ci3297869	2016-01-28T17:55:57.250Z	9km ENE of Oildale, CA	earthquake	4.34	31.61	0.246	8	reviewed	ci	ci
7/10/1955	22:27:21	35.4075	-118.7766667	6	2.55	ml	5	139	0.3547	0.74	ci	ci3297865	2016-01-28T18:18:49.960Z	21km NE of Lamont, CA	earthquake	2.7	31.61	0.437	7	reviewed	ci	ci
6/19/1955	22:24:51	35.0755	-118.9661667	0.19	2.96	ml	10	94	0.2106	0.58	ci	ci3297844	2016-01-28T18:09:03.630Z	15km NNW of Grapevine, CA	earthquake	0.88	2.02	0.1	10	reviewed	ci	ci
6/16/1955	0:10:53	35.0721667	-119.0673333	10.01	3	ml	9	88	0.2427	0.54	ci	ci3297841	2016-01-28T18:04:45.340Z	19km NW of Grapevine, CA	earthquake	1.48	2.46	0.093	11	reviewed	ci	ci
6/9/1955	2:58:00	35.1548333	-118.8153333	9.48	2.97	ml	6	164	0.2911	0.24	ci	ci3297830	2016-01-28T18:09:03.120Z	6km S of Arvin, CA	earthquake	1.5	2.5	0.137	4	reviewed	ci	ci
6/6/1955	14:31:16	35.092	-119.0886667	8.57	3.57	ml	12	84	0.269	0.38	ci	ci3297825	2016-01-28T17:59:59.240Z	22km NW of Grapevine, CA	earthquake	0.92	2.21	0.091	8	reviewed	ci	ci
6/5/1955	21:49:46	35.0681667	-118.9923333	6	3.12	ml	6	227	0.6419	0.49	ci	ci3297824	2016-01-28T18:09:02.630Z	15km NNW of Grapevine, CA	earthquake	3.19	31.61	0.044	6	reviewed	ci	ci
5/22/1955	11:06:47	35.454	-118.7171667	6	3.03	ml	11	118	0.2664	0.58	ci	ci3297811	2016-01-28T17:55:42.220Z	25km SW of Bodfish, CA	earthquake	1.52	31.61	0.169	11	reviewed	ci	ci
5/20/1955	17:02:52	34.94	-119.0741667	14.69	3.03	ml	10	146	0.1585	0.45	ci	ci3297810	2016-01-28T17:55:39.580Z	12km NNE of Pine Mountain Club, CA	earthquake	1.04	1.36	0.186	11	reviewed	ci	ci
5/16/1955	18:22:55	35.844	-120.2898333	6	3.42	ml	11	252	1.184	0.49	ci	ci3297809	2016-01-28T18:18:30.360Z	14km N of Cholame, CA	earthquake	3.65	31.61	0.185	10	reviewed	ci	ci
5/11/1955	17:31:09	34.9456667	-119.1291667	15.47	2.94	ml	8	243	0.2022	0.45	ci	ci3297803	2016-01-28T18:04:42.790Z	11km N of Pine Mountain Club, CA	earthquake	2.87	1.42	0.351	7	reviewed	ci	ci
5/4/1955	17:05:36	35.3795	-118.8175	6	2.77	ml	10	94	0.3205	0.76	ci	ci3297800	2016-01-28T18:04:42.290Z	16km NNE of Lamont, CA	earthquake	1.4	31.61	0.155	6	reviewed	ci	ci
5/4/1955	7:01:23	35.1001667	-119.0005	0.01	2.59	ml	9	91	0.2425	0.61	ci	ci3297798	2016-01-28T17:55:38.560Z	19km NNW of Grapevine, CA	earthquake	1.16	2.42	0.254	11	reviewed	ci	ci
4/6/1955	20:28:44	35.1625	-119.0795	6	2.86	ml	7	92	0.3255	0.57	ci	ci3297779	2016-01-28T18:00:02.800Z	18km SW of Lamont, CA	earthquake	0.93	31.61	0.257	9	reviewed	ci	ci
4/2/1955	20:28:20	35.1063333	-118.9756667	0	2.84	ml	8	147	0.2423	0.58	ci	ci3297772	2016-01-28T18:13:51.780Z	18km SW of Arvin, CA	earthquake	1.57	3.15	0.03	5	reviewed	ci	ci
4/2/1955	20:27:59	35.2886667	-118.7405	6	2.12	mh	3	162	0.419	0.4	ci	ci3297771	2016-01-28T17:59:57.750Z	12km NE of Arvin, CA	earthquake	2.64	31.61	0.091	2	reviewed	ci	ci
3/7/1955	9:29:27	35.1416667	-118.9756667	6	2.77	ml	8	120	0.5673	0.81	ci	ci3297748	2016-01-28T18:27:38.050Z	14km SSW of Lamont, CA	earthquake	1.49	31.61	0.243	10	reviewed	ci	ci
2/26/1955	19:40:58	34.971	-119.0045	14.2	3.03	ml	10	141	0.1311	0.41	ci	ci3297740	2016-01-28T17:59:55.660Z	8km WNW of Grapevine, CA	earthquake	0.81	1.03	0.216	9	reviewed	ci	ci
2/12/1955	11:34:37	35.067	-118.9485	0.07	2.84	ml	8	100	0.199	0.57	ci	ci3297723	2016-01-28T18:18:27.730Z	14km N of Grapevine, CA	earthquake	1.22	2.63	0.175	9	reviewed	ci	ci
2/8/1955	16:01:05	35.052	-119.1103333	1.01	2.76	ml	9	159	0.2494	0.56	ci	ci3297715	2016-01-28T18:27:34.550Z	20km NW of Grapevine, CA	earthquake	1.26	2	0.13	9	reviewed	ci	ci
1/23/1955	0:09:48	35.1606667	-118.8846667	6	2.75	ml	7	139	0.2888	0.51	ci	ci3298027	2016-01-28T18:18:34.420Z	7km SW of Arvin, CA	earthquake	1.37	31.61	0.366	8	reviewed	ci	ci
1/16/1955	4:58:36	35.0751667	-119.0348333	6	2.46	ml	6	231	0.6426	0.51	ci	ci3298018	2016-01-28T18:18:26.140Z	18km NNW of Grapevine, CA	earthquake	3.31	31.61	0.124	6	reviewed	ci	ci
1/16/1955	4:51:04	35.0725	-118.9018333	6	3.48	ml	11	86	0.6278	0.63	ci	ci3298017	2016-01-28T17:59:54.620Z	15km N of Grapevine, CA	earthquake	1.1	31.61	0.072	10	reviewed	ci	ci
1/15/1955	1:03:06	34.955	-118.992	9.55	4.28	ml	12	91	0.1124	0.4	ci	ci3298015	2016-01-28T18:13:49.200Z	6km WNW of Grapevine, CA	earthquake	0.69	1.16	0.136	10	reviewed	ci	ci
12/30/1954	6:08:25	35.5083333	-118.7981667	0.01	2.87	ml	9	190	0.1949	0.58	ci	ci3298671	2016-01-28T18:22:47.690Z	22km ENE of Oildale, CA	earthquake	1.67	2.77	0.146	9	reviewed	ci	ci
12/29/1954	15:03:16	35.2785	-118.7603333	6	2.85	ml	5	195	0.4261	0.76	ci	ci3298669	2016-01-28T18:04:37.690Z	10km NE of Arvin, CA	earthquake	8.17	31.61	0.056	5	reviewed	ci	ci
12/27/1954	19:40:00	35.0333333	-119.04	6	2.82	ml	4	172	0.7801	0.32	ci	ci3298666	2016-01-28T18:18:25.150Z	14km NW of Grapevine, CA	earthquake	8.87	25.94	0.057	7	reviewed	ci	ci
12/22/1954	21:12:26	35.9953333	-120.6143333	6	3.67	ml	9	306	1.468	0.67	ci	ci3298662	2016-01-28T18:22:47.160Z	20km WNW of Parkfield, CA	earthquake	5.04	31.61	0.307	7	reviewed	ci	ci
12/17/1954	20:16:08	35.4986667	-118.7491667	1.66	3.43	ml	12	121	0.2153	0.34	ci	ci3298646	2016-01-28T18:04:36.630Z	25km WSW of Bodfish, CA	earthquake	0.83	2.29	0.097	11	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
12/14/1954	4:24:23	35.3428333	-119.4585	0.06	2.99	ml	7	122	0.2355	0.55	ci	ci3298645	2016-01-28T18:27:31.590Z	6km S of Buttonwillow, CA	earthquake	2.03	3.68	0.104	4	reviewed	ci	ci
12/3/1954	18:41:58	35.4331667	-118.8228333	13.15	2.52	mh	5	254	0.3652	0.67	ci	ci3298636	2016-01-28T18:18:23.090Z	18km E of Oildale, CA	earthquake	5.23	31.61	0.233	12	reviewed	ci	ci
12/2/1954	18:52:27	35.1098333	-119.0688333	6	3.12	ml	9	87	0.2751	0.66	ci	ci3298632	2016-01-28T18:09:15.100Z	22km SW of Lamont, CA	earthquake	1.83	31.61	0.137	7	reviewed	ci	ci
12/1/1954	3:13:52	35.0455	-119.0055	1.93	2.73	ml	7	101	0.1939	0.38	ci	ci3298630	2016-01-28T18:18:22.110Z	13km NNW of Grapevine, CA	earthquake	0.81	1.85	0.098	10	reviewed	ci	ci
11/30/1954	5:58:23	35.1638333	-118.931	6	2.72	ml	6	207	0.2927	0.32	ci	ci3298628	2016-01-28T18:09:14.630Z	11km WSW of Arvin, CA	earthquake	1.85	31.61	0.224	4	reviewed	ci	ci
11/13/1954	2:55:01	35.0648333	-119.0396667	6	3.36	ml	7	90	0.6347	0.48	ci	ci3298597	2016-01-28T17:59:48.600Z	17km NW of Grapevine, CA	earthquake	0.91	31.61	0.096	7	reviewed	ci	ci
11/7/1954	10:11:29	35.1023333	-119.0315	6	2.81	ml	11	82	0.6156	0.64	ci	ci3298557	2016-01-28T18:22:43.090Z	20km NNW of Grapevine, CA	earthquake	1.59	31.61	0.1	5	reviewed	ci	ci
10/28/1954	1:12:25	35.1098333	-118.8428333	6	2.57	ml	8	104	0.6286	0.57	ci	ci3298552	2016-01-28T18:08:50.440Z	11km S of Arvin, CA	earthquake	1.25	31.61	0.134	8	reviewed	ci	ci
10/5/1954	2:40:17	35.3555	-118.722	6	2.84	ml	6	102	0.3579	0.3	ci	ci3298477	2016-01-28T17:55:48.850Z	19km NNE of Arvin, CA	earthquake	1.66	31.61	0.364	6	reviewed	ci	ci
9/27/1954	13:14:08	35.059	-118.9745	4.4	2.81	ml	6	144	0.1968	0.32	ci	ci3298467	2016-01-28T18:13:42.770Z	14km NNW of Grapevine, CA	earthquake	0.78	2.47	0.109	9	reviewed	ci	ci
9/16/1954	14:08:31	35.0631667	-118.992	0.19	3.56	ml	10	90	0.2055	0.66	ci	ci3298453	2016-01-28T18:18:14.090Z	14km NNW of Grapevine, CA	earthquake	1.33	2.46	0.25	8	reviewed	ci	ci
9/13/1954	8:23:34	35.0113333	-119.1241667	9.17	3.37	ml	10	84	0.2309	0.48	ci	ci3298452	2016-01-28T18:18:13.600Z	18km N of Pine Mountain Club, CA	earthquake	0.8	1.66	0.107	11	reviewed	ci	ci
9/2/1954	3:21:41	36.223	-120.4373333	6	3.35	ml	6	321	1.056	0.58	ci	ci3298439	2016-01-28T18:13:40.830Z	12km NW of Coalinga, CA	earthquake	4.98	31.61	0.035	4	reviewed	ci	ci
9/1/1954	9:40:46	35.0586667	-119.0233333	0.47	3.06	ml	10	95	0.2123	0.49	ci	ci3298436	2016-01-28T17:59:41.800Z	15km NNW of Grapevine, CA	earthquake	0.83	2.05	0.108	11	reviewed	ci	ci
8/27/1954	16:37:57	35.0538333	-119.0798333	2.85	2.72	ml	9	87	0.2342	0.47	ci	ci3298429	2016-01-28T18:22:38.900Z	18km NW of Grapevine, CA	earthquake	0.91	2.05	0.067	10	reviewed	ci	ci
8/22/1954	13:51:06	35.3638333	-118.8315	6	3	ml	9	107	0.4172	0.67	ci	ci3298423	2016-01-28T18:04:30.410Z	14km NNE of Lamont, CA	earthquake	1.25	31.61	0.133	9	reviewed	ci	ci
8/19/1954	11:54:07	35.105	-119.06	0.06	2.98	ml	9	142	0.2674	0.54	ci	ci3298086	2016-01-28T18:13:39.730Z	22km NNW of Grapevine, CA	earthquake	1.19	2.31	0.16	4	reviewed	ci	ci
8/5/1954	10:28:45	35.5246667	-118.8181667	1	2.99	ml	12	98	0.1762	0.48	ci	ci3298069	2016-01-28T18:22:36.720Z	22km ENE of Oildale, CA	earthquake	0.86	31.61	0.094	8	reviewed	ci	ci
7/23/1954	11:57:19	35.1025	-118.8715	0.06	2.45	mh	5	134	0.2317	0.61	ci	ci3300035	2016-01-28T18:08:47.870Z	12km SSW of Arvin, CA	earthquake	2.97	8.07	0.195	10	reviewed	ci	ci
7/23/1954	11:15:15	35.1055	-118.8445	1.62	3.14	ml	12	78	0.2379	0.58	ci	ci3300033	2016-01-28T18:22:35.660Z	12km S of Arvin, CA	earthquake	1.37	3.3	0.06	9	reviewed	ci	ci
7/17/1954	15:36:46	35.0451667	-119.0976667	0	2.76	ml	8	160	0.2373	0.74	ci	ci3300019	2016-01-28T18:18:09.570Z	19km NW of Grapevine, CA	earthquake	2.03	3.5	0.125	6	reviewed	ci	ci
7/16/1954	7:00:21	35.45	-118.813	12.44	2.31	ml	6	105	0.2507	0.73	ci	ci3300016	2016-01-28T18:08:46.940Z	19km E of Oildale, CA	earthquake	6.99	11.74	0.359	5	reviewed	ci	ci
7/10/1954	6:19:43	35.0676667	-119.0908333	6	2.68	ml	8	86	0.5955	0.49	ci	ci3300009	2016-01-28T18:04:25.660Z	20km NW of Grapevine, CA	earthquake	1.08	31.61	0.07	11	reviewed	ci	ci
7/4/1954	19:13:31	35.2748333	-118.8268333	6	3.67	ml	11	153	0.4069	0.64	ci	ci3300004	2016-01-28T18:18:08.550Z	7km N of Arvin, CA	earthquake	1.85	31.61	0.208	11	reviewed	ci	ci
6/12/1954	15:04:07	35.1353333	-118.8601667	6	2.62	ml	6	212	0.5635	0.42	ci	ci3299960	2016-01-28T18:04:24.130Z	9km SSW of Arvin, CA	earthquake	3.19	31.61	0.159	7	reviewed	ci	ci
6/1/1954	9:53:20	35.1316667	-119.068	6	2.99	ml	7	87	0.5881	0.54	ci	ci3299947	2016-01-28T17:55:19.970Z	20km SW of Lamont, CA	earthquake	1.13	31.61	0.1	5	reviewed	ci	ci
5/27/1954	21:33:42	35.0931667	-118.9271667	6	2.6	mh	7	76	0.6092	0.66	ci	ci3299937	2016-01-28T17:55:18.980Z	16km SW of Arvin, CA	earthquake	3.05	31.61	0.112	9	reviewed	ci	ci
5/24/1954	8:57:02	35.0801667	-118.998	0.06	2.78	ml	9	92	0.2231	0.65	ci	ci3299933	2016-01-28T18:04:22.080Z	16km NNW of Grapevine, CA	earthquake	1.23	2.55	0.084	9	reviewed	ci	ci
5/23/1954	23:52:43	34.9681667	-119.0023333	14.48	5.03	ml	14	90		0.34	ci	ci3299932	2018-06-04T20:43:44.000Z	7km WNW of Grapevine, CA	earthquake	0.68	1.32	0.146	9	reviewed	ci	ci
5/17/1954	13:16:23	35.0313333	-119.039	2.22	2.46	ml	8	229	0.196	0.59	ci	ci3299916	2016-01-28T18:04:20.540Z	14km NW of Grapevine, CA	earthquake	3.97	1.95	0.233	7	reviewed	ci	ci
5/17/1954	1:46:46	35.1011667	-119.026	10.12	2.98	ml	10	81	0.2513	0.6	ci	ci3299902	2016-01-28T17:55:17.880Z	20km NNW of Grapevine, CA	earthquake	1.83	2.87	0.204	9	reviewed	ci	ci
5/13/1954	11:18:10	35.442	-118.706	6	3.22	ml	13	74	0.281	0.64	ci	ci3299897	2016-01-28T18:09:11.990Z	25km SW of Bodfish, CA	earthquake	1.17	31.61	0.046	7	reviewed	ci	ci
5/13/1954	10:05:26	35.4328333	-118.7233333	6	3.49	ml	13	76	0.2842	0.55	ci	ci3299896	2016-01-28T17:55:45.780Z	26km NE of Lamont, CA	earthquake	1.1	31.61	0.064	7	reviewed	ci	ci
5/13/1954	8:58:54	35.4695	-118.7041667	7.67	2.78	ml	9	100	0.2567	0.47	ci	ci3299895	2016-01-28T18:08:42.310Z	23km SW of Bodfish, CA	earthquake	1.45	3.92	0.214	6	reviewed	ci	ci
5/12/1954	20:37:42	35.4356667	-118.7138333	6	3.53	ml	12	76	0.2843	0.47	ci	ci3299894	2016-01-28T18:27:45.580Z	26km SW of Bodfish, CA	earthquake	0.93	31.61	0.118	7	reviewed	ci	ci
5/12/1954	18:47:14	35.4623333	-118.7228333	6	2.67	ml	9	81	0.2569	0.6	ci	ci3299893	2016-01-28T18:04:48.980Z	25km WSW of Bodfish, CA	earthquake	1.32	31.61	0.308	5	reviewed	ci	ci
5/9/1954	22:37:05	35.0205	-119.1126667	7.66	2.87	ml	8	240	0.2293	0.53	ci	ci3299881	2016-01-28T17:55:16.830Z	19km WNW of Grapevine, CA	earthquake	3.09	2.45	0.277	7	reviewed	ci	ci
5/9/1954	21:36:33	34.9696667	-119.1763333	5.31	3.44	ml	12	244	0.2471	0.56	ci	ci3299880	2016-01-28T18:18:05.540Z	14km N of Pine Mountain Club, CA	earthquake	4.84	3.45	0.17	6	reviewed	ci	ci
5/8/1954	19:14:23	35.1356667	-119.0881667	6	2.77	ml	7	230	0.3054	0.47	ci	ci3299878	2016-01-28T17:55:45.280Z	21km SW of Lamont, CA	earthquake	4.7	31.61	0.181	9	reviewed	ci	ci
5/6/1954	3:01:07	35.1101667	-119.0628333	10.85	3.61	ml	14	84	0.273	0.63	ci	ci3299872	2016-01-28T18:04:19.440Z	21km SW of Lamont, CA	earthquake	1.24	2.17	0.143	10	reviewed	ci	ci
5/5/1954	22:20:44	35.1366667	-119.0191667	6	2.75	ml	9	89	0.282	0.67	ci	ci3299868	2016-01-28T18:23:02.280Z	17km SW of Lamont, CA	earthquake	1.46	31.61	0.19	8	reviewed	ci	ci
5/3/1954	4:08:34	35.1268333	-119.0065	6.57	3.49	ml	11	152	0.2693	0.59	ci	ci3299856	2016-01-28T17:59:34.120Z	17km SSW of Lamont, CA	earthquake	1.32	3.83	0.118	11	reviewed	ci	ci
4/25/1954	18:52:02	34.9763333	-119.0515	6	3.43	ml	11	147	0.7416	0.57	ci	ci3299849	2016-01-28T17:55:15.790Z	12km WNW of Grapevine, CA	earthquake	1.05	31.61	0.083	10	reviewed	ci	ci
4/23/1954	16:00:34	35.0758333	-119.0663333	6	2.82	ml	6	235	0.6487	0.55	ci	ci3299847	2016-01-28T18:18:05.050Z	19km NW of Grapevine, CA	earthquake	5.19	31.61	0.064	5	reviewed	ci	ci
4/19/1954	3:54:44	34.9576667	-119.0575	10.87	2.89	ml	10	146	0.1552	0.47	ci	ci3299824	2016-01-28T18:04:17.940Z	12km W of Grapevine, CA	earthquake	0.93	2.16	0.093	6	reviewed	ci	ci
4/14/1954	8:28:26	34.9656667	-119.1236667	11.95	3.03	ml	11	89	0.2063	0.51	ci	ci3299812	2016-01-28T18:08:38.710Z	14km N of Pine Mountain Club, CA	earthquake	0.98	1.8	0.073	8	reviewed	ci	ci
4/13/1954	3:03:58	34.959	-119.059	18.91	3.48	ml	12	89	0.157	0.49	ci	ci3299807	2016-01-28T18:27:13.740Z	12km W of Grapevine, CA	earthquake	0.81	1.66	0.189	11	reviewed	ci	ci
4/9/1954	12:01:23	35.4916667	-118.696	6	2	mh	3	261	0.2404	0.38	ci	ci3299802	2016-01-28T17:59:31.600Z	21km WSW of Bodfish, CA	earthquake	3.43	33.7		0	reviewed	ci	ci
4/8/1954	22:19:17	35.0268333	-119.144	3	3.2	ml	8	164	0.2532	0.6	ci	ci3299800	2016-01-28T17:59:31.050Z	20km N of Pine Mountain Club, CA	earthquake	1.38	2.46	0.09	7	reviewed	ci	ci
4/1/1954	13:22:59	35.1478333	-118.8255	6	3.23	ml	9	108	0.2824	0.61	ci	ci3299788	2016-01-28T18:27:44.050Z	7km S of Arvin, CA	earthquake	1.25	31.61	0.122	10	reviewed	ci	ci
3/26/1954	3:18:50	35.3946667	-118.8388333	6	2.81	ml	12	142	0.3047	0.55	ci	ci3299765	2016-01-28T17:55:44.260Z	16km NNE of Lamont, CA	earthquake	1.62	31.61	0.097	8	reviewed	ci	ci
3/25/1954	16:06:41	34.9868333	-119.0875	4.27	3.07	ml	8	151	0.1922	0.37	ci	ci3299764	2016-01-28T18:04:15.360Z	15km WNW of Grapevine, CA	earthquake	0.83	1.56	0.112	7	reviewed	ci	ci
3/14/1954	19:04:39	35.0628333	-119.0251667	0.1	3.09	ml	11	150	0.2167	0.7	ci	ci3299650	2016-01-28T18:27:06.400Z	16km NNW of Grapevine, CA	earthquake	1.46	3.2	0.067	8	reviewed	ci	ci
3/14/1954	14:27:38	35.0843333	-119.0276667	0.06	2.48	ml	6	220	0.2367	0.53	ci	ci3299649	2016-01-28T18:22:23.790Z	18km NNW of Grapevine, CA	earthquake	3.76	2.61	0.08	5	reviewed	ci	ci
3/14/1954	6:24:40	35.03	-118.9083333	5.41	2.75	ml	8	187	0.1583	0.57	ci	ci3299647	2016-01-28T18:08:33.340Z	10km NNE of Grapevine, CA	earthquake	2.24	4.02	0.115	6	reviewed	ci	ci
3/13/1954	18:03:00	35.072	-118.9985	0.52	3.05	ml	9	147	0.2157	0.56	ci	ci3299644	2016-01-28T18:13:23.460Z	16km NNW of Grapevine, CA	earthquake	1.23	2.31	0.069	8	reviewed	ci	ci
3/9/1954	19:55:29	35.8751667	-120.5245	6	3.86	ml	12	262	0.8379	0.76	ci	ci3299638	2016-01-28T17:55:09.120Z	9km WSW of Parkfield, CA	earthquake	4.76	31.61	0.153	9	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
3/5/1954	9:27:51	35.07	-118.897	0.19	2.79	ml	10	76	0.198	0.55	ci	ci3298696	2016-01-28T17:55:08.640Z	14km NNE of Grapevine, CA	earthquake	0.95	2.25	0.086	5	reviewed	ci	ci
3/3/1954	12:39:47	35.4085	-119.232	6	3.09	ml	11	147	0.4279	0.49	ci	ci3298695	2016-01-28T17:59:22.610Z	8km WNW of Rosedale, CA	earthquake	0.96	31.61	0.173	9	reviewed	ci	ci
3/1/1954	6:46:23	35.0568333	-119.0775	0.06	2.84	ml	10	80	0.2354	0.48	ci	ci3298692	2016-01-28T17:55:07.680Z	18km NW of Grapevine, CA	earthquake	1.14	2.49	0.213	7	reviewed	ci	ci
2/28/1954	10:33:03	35.0966667	-119.024	4.41	3.3	ml	11	81	0.2466	0.41	ci	ci3298690	2016-01-28T18:08:31.670Z	19km NNW of Grapevine, CA	earthquake	0.8	2.35	0.205	10	reviewed	ci	ci
2/27/1954	15:00:26	35.014	-118.978	2.01	3.03	ml	10	73	0.1559	0.55	ci	ci3298689	2016-01-28T18:17:56.610Z	9km NNW of Grapevine, CA	earthquake	1.03	1.96	0.132	7	reviewed	ci	ci
2/25/1954	0:37:43	35.0795	-119.0938333	3.75	2.88	ml	8	153	0.2614	0.4	ci	ci3298684	2016-01-28T17:55:07.200Z	21km NW of Grapevine, CA	earthquake	1.4	3.65	0.138	10	reviewed	ci	ci
2/24/1954	23:08:31	35.053	-119.1025	2.03	2.86	ml	11	81	0.2458	0.59	ci	ci3298683	2016-01-28T18:04:03.810Z	20km NW of Grapevine, CA	earthquake	1.5	2.07	0.109	10	reviewed	ci	ci
2/24/1954	22:30:22	35.0596667	-119.049	8.07	4.67	ml	14	78		0.51	ci	ci3298682	2018-06-04T20:43:44.000Z	17km NW of Grapevine, CA	earthquake	0.96	2.13	0.348	10	reviewed	ci	ci
2/23/1954	7:15:02	34.9521667	-119.0711667	3.7	3.09	ml	12	90	0.1619	0.35	ci	ci3298678	2016-01-28T18:27:05.340Z	13km W of Grapevine, CA	earthquake	0.62	1.08	0.175	10	reviewed	ci	ci
2/21/1954	4:01:30	34.9401667	-119.075	2.62	3.08	ml	12	90	0.1592	0.61	ci	ci3298676	2016-01-28T17:59:22.050Z	12km NNE of Pine Mountain Club, CA	earthquake	0.96	1.68	0.1	10	reviewed	ci	ci
2/18/1954	20:14:56	35.1885	-118.9766667	6	3.34	ml	10	151	0.3224	0.63	ci	ci3301267	2016-01-28T18:18:36.830Z	10km SW of Lamont, CA	earthquake	2.2	31.61	0.096	9	reviewed	ci	ci
2/10/1954	23:58:38	34.9296667	-119.0988333	9.56	4.61	ml	14	90	0.1733	0.48	ci	ci3301260	2018-06-04T20:43:44.000Z	10km NNE of Pine Mountain Club, CA	earthquake	0.86	2.09	0.132	11	reviewed	ci	ci
2/7/1954	0:09:53	35.0446667	-119.082	7.9	4.56	ml	14	83		0.5	ci	ci3301253	2017-02-07T04:56:28.114Z	18km NW of Grapevine, CA	earthquake	1.24	3.22	0.146	9	reviewed	ci	ci
2/4/1954	20:48:41	35.3438333	-118.8306667	6	3.97	ml	13	60	0.3555	0.41	ci	ci3301250	2016-01-28T18:23:01.770Z	12km NE of Lamont, CA	earthquake	0.99	31.61	0.079	10	reviewed	ci	ci
1/28/1954	17:42:01	35.0758333	-119.0676667	3.28	2.99	ml	9	104	0.2459	0.38	ci	ci3301216	2016-01-28T18:13:21.530Z	19km NW of Grapevine, CA	earthquake	0.75	1.41	0.221	10	reviewed	ci	ci
1/24/1954	7:20:28	35.0031667	-119.0165	5.52	3.02	ml	6	167	0.1624	0.27	ci	ci3301210	2016-01-28T18:13:20.540Z	10km NW of Grapevine, CA	earthquake	0.66	2.89	0.113	6	reviewed	ci	ci
1/23/1954	1:10:50	34.971	-119.0471667	15.36	3.06	ml	7	145	0.1563	0.4	ci	ci3301171	2016-01-28T18:22:19.150Z	11km WNW of Grapevine, CA	earthquake	0.86	1.14	0.06	7	reviewed	ci	ci
1/17/1954	8:57:38	35.0745	-119.0043333	0	2.77	ml	9	148	0.2198	0.52	ci	ci3301161	2016-01-28T18:27:03.820Z	16km NNW of Grapevine, CA	earthquake	1.19	2.55	0.04	9	reviewed	ci	ci
1/16/1954	10:37:45	35.0646667	-119.0053333	4.03	2.57	mh	8	96	0.2112	0.37	ci	ci3301159	2016-01-28T17:59:18.880Z	15km NNW of Grapevine, CA	earthquake	0.72	1.52	0.264	10	reviewed	ci	ci
1/16/1954	9:32:56	35.0788333	-119.0366667	0.19	2.81	ml	8	93	0.2353	0.48	ci	ci3301154	2016-01-28T18:27:03.280Z	18km NNW of Grapevine, CA	earthquake	0.93	2.38	0.149	11	reviewed	ci	ci
1/15/1954	9:54:07	35.0423333	-119.0521667	0.02	2.71	ml	10	80	0.2112	0.58	ci	ci3301155	2016-01-28T18:22:18.650Z	16km NW of Grapevine, CA	earthquake	1.15	2.58	0.123	9	reviewed	ci	ci
1/15/1954	3:42:58	35.0575	-119.0526667	2.59	2.52	ml	8	151	0.2239	0.53	ci	ci3301153	2016-01-28T17:55:04.650Z	17km NW of Grapevine, CA	earthquake	1.24	2.21	0.266	9	reviewed	ci	ci
1/14/1954	2:08:58	35.0965	-119.0576667	0.02	2.86	ml	8	144	0.259	0.44	ci	ci3301146	2016-01-28T18:17:52.490Z	21km NW of Grapevine, CA	earthquake	1	2.64	0.098	9	reviewed	ci	ci
1/13/1954	23:04:23	35.046	-119.1728333	6	3.25	ml	8	79	0.5466	0.31	ci	ci3301143	2016-01-28T18:00:03.290Z	21km E of Maricopa, CA	earthquake	1.32	31.61	0.16	9	reviewed	ci	ci
1/13/1954	23:04:18	35.0881667	-119.0853333	0.04	2.2	mh	7	83	0.2643	0.46	ci	ci3301144	2016-01-28T17:59:18.410Z	21km NW of Grapevine, CA	earthquake	2.52	6.07		0	reviewed	ci	ci
1/13/1954	23:00:19	35.0451667	-119.0686667	1.3	3.44	ml	11	81	0.2217	0.58	ci	ci3301141	2016-01-28T18:08:27.260Z	17km NW of Grapevine, CA	earthquake	1.39	3.05	0.055	11	reviewed	ci	ci
1/13/1954	22:55:52	35.013	-119.0921667	0.19	3.25	ml	8	98	0.2117	0.46	ci	ci3301139	2016-01-28T18:17:51.980Z	17km WNW of Grapevine, CA	earthquake	0.91	2.25	0.088	11	reviewed	ci	ci
1/13/1954	22:11:02	35.0343333	-119.0745	3.43	2.82	ml	8	83	0.2165	0.46	ci	ci3301138	2016-01-28T18:08:26.690Z	17km NW of Grapevine, CA	earthquake	1.07	2.52	0.078	16	reviewed	ci	ci
1/13/1954	22:00:55	35.0115	-119.0986667	0.1	3.67	ml	11	84	0.2147	0.62	ci	ci3301137	2016-01-28T18:27:02.780Z	17km WNW of Grapevine, CA	earthquake	1.28	3.53	0.098	12	reviewed	ci	ci
1/13/1954	21:47:34	35.024	-119.094	0.02	3.21	ml	8	84	0.2202	0.52	ci	ci3301136	2016-01-28T18:08:26.130Z	17km WNW of Grapevine, CA	earthquake	0.99	2.73	0.102	10	reviewed	ci	ci
1/13/1954	20:43:09	34.9463333	-119.1365	0.19	2.33	mh	5	180	0.2081	0.43	ci	ci3301133	2016-01-28T18:17:51.470Z	11km N of Pine Mountain Club, CA	earthquake	1.94	2.77	0.172	4	reviewed	ci	ci
1/13/1954	14:40:11	34.9855	-119.0238333	0.58	3.3	ml	12	88	0.1525	0.62	ci	ci3301132	2016-01-28T18:13:19.020Z	10km WNW of Grapevine, CA	earthquake	1.05	2.59	0.124	12	reviewed	ci	ci
1/13/1954	10:28:20	34.9873333	-119.1161667	2.57	2.86	ml	7	73	0.2118	0.58	ci	ci3301131	2016-01-28T18:27:02.290Z	16km N of Pine Mountain Club, CA	earthquake	1.9	2.71	0.401	9	reviewed	ci	ci
1/13/1954	9:12:39	35.0558333	-119.0191667	0.98	3.01	ml	5	124	0.2082	0.16	ci	ci3301130	2016-01-28T17:59:17.920Z	15km NNW of Grapevine, CA	earthquake	0.75	1.4	0.033	8	reviewed	ci	ci
1/13/1954	8:13:34	35.0771667	-119.0568333	1.05	3.07	ml	5	148	0.2422	0.28	ci	ci3301129	2016-01-28T18:27:01.810Z	19km NW of Grapevine, CA	earthquake	0.85	1.65	0.148	4	reviewed	ci	ci
1/13/1954	8:11:56	35.0316667	-119.0445	0.01	3.12	ml	10	81	0.199	0.43	ci	ci3301128	2016-01-28T18:04:00.080Z	14km NW of Grapevine, CA	earthquake	0.88	2.48	0.131	9	reviewed	ci	ci
1/13/1954	4:51:42	35.0625	-119.0355	0.19	2.99	ml	7	79	0.2206	0.46	ci	ci3301126	2016-01-28T18:27:01.320Z	16km NW of Grapevine, CA	earthquake	1.14	2.99	0.146	11	reviewed	ci	ci
1/13/1954	4:14:50	35.001	-119.1013333	1.68	3.47	ml	11	86	0.2098	0.51	ci	ci3301125	2016-01-28T18:03:59.550Z	17km WNW of Grapevine, CA	earthquake	0.94	2.2	0.104	12	reviewed	ci	ci
1/13/1954	3:18:18	35.0391667	-119.0671667	4.66	3.58	ml	11	82	0.2163	0.53	ci	ci3301124	2016-01-28T18:22:17.650Z	16km NW of Grapevine, CA	earthquake	1.02	3.24	0.084	12	reviewed	ci	ci
1/13/1954	2:52:42	35.0395	-119.1068333	3.93	2.85	ml	7	78	0.2385	0.48	ci	ci3301123	2016-01-28T17:55:04.150Z	19km WNW of Grapevine, CA	earthquake	1.48	4.13	0.299	11	reviewed	ci	ci
1/13/1954	2:32:44	35.0315	-119.0568333	0.01	3.12	ml	9	82	0.205	0.49	ci	ci3301122	2016-01-28T17:55:03.640Z	15km NW of Grapevine, CA	earthquake	1.13	2.5	0.135	9	reviewed	ci	ci
1/13/1954	1:45:31	35.0365	-119.0866667	8.48	4.6	ml	13	83	0.2248	0.35	ci	ci3301121	2017-02-07T04:53:45.911Z	18km NW of Grapevine, CA	earthquake	0.6	1.51	0.067	12	reviewed	ci	ci
1/13/1954	0:54:46	35.0605	-119.091	0	3.52	ml	10	80	0.2452	0.69	ci	ci3301120	2016-01-28T17:59:17.410Z	20km NW of Grapevine, CA	earthquake	1.34	3.03	0.088	12	reviewed	ci	ci
1/13/1954	0:14:31	35.0365	-119.139	0.38	3.09	ml	11	78	0.2561	0.66	ci	ci3301118	2016-01-28T17:59:16.910Z	21km N of Pine Mountain Club, CA	earthquake	1.93	2.91	0.155	10	reviewed	ci	ci
1/12/1954	23:50:24	34.9921667	-119.1256667	13.83	3.15	ml	7	112	0.2209	0.46	ci	ci3301117	2016-01-28T18:13:18.520Z	16km N of Pine Mountain Club, CA	earthquake	1.12	1.41	0.187	7	reviewed	ci	ci
1/12/1954	23:49:53	35.0221667	-119.142	0	2.63	ml	8	98	0.2491	0.45	ci	ci3301115	2016-01-28T18:17:50.950Z	20km N of Pine Mountain Club, CA	earthquake	0.99	1.97	0.047	2	reviewed	ci	ci
1/12/1954	23:40:37	35.0536667	-119.1163333	5.16	4.06	ml	11	180	0.254	0.59	ci	ci3301113	2016-01-28T18:03:59.020Z	21km NW of Grapevine, CA	earthquake	1.31	3.64	0.084	11	reviewed	ci	ci
1/12/1954	23:33:48	34.9823333	-119.0613333	0.02	5.4	ml	12	88		0.69	ci	ci3301140	2022-04-26T17:39:28.106Z	13km WNW of Grapevine, CA	earthquake	1.49	3.16	0.064	6	reviewed	ci	ci
1/5/1954	0:23:26	35.9563333	-119.8571667	6	3.16	ml	5	234	0.6348	0.79	ci	ci3301102	2016-01-28T18:08:25.090Z	11km ESE of Kettleman City, CA	earthquake	10.72	31.61	0.088	6	reviewed	ci	ci
12/31/1953	6:56:07	34.9085	-119.1153333	2.89	2.96	ml	12	91	0.1807	0.53	ci	ci3300327	2016-01-28T18:08:24.600Z	8km NNE of Pine Mountain Club, CA	earthquake	0.89	1.63	0.159	8	reviewed	ci	ci
12/21/1953	5:27:47	35.0601667	-119.0603333	2.71	3.01	ml	8	111	0.2296	0.44	ci	ci3300303	2016-01-28T18:08:23.460Z	18km NW of Grapevine, CA	earthquake	1.03	1.97	0.16	10	reviewed	ci	ci
12/19/1953	6:55:14	35.1233333	-119.0413333	6	3.07	ml	8	129	0.2767	0.4	ci	ci3300300	2016-01-28T18:23:06.470Z	19km SW of Lamont, CA	earthquake	1.02	31.61	0.171	9	reviewed	ci	ci
12/15/1953	12:44:35	35.1976667	-118.8478333	6	4.64	ml	14	79	0.3282	0.62	ci	ci3300290	2018-06-04T20:43:44.000Z	2km SW of Arvin, CA	earthquake	1.55	31.61	0.09	9	reviewed	ci	ci
12/14/1953	8:05:14	34.9643333	-118.9695	12.03	2.67	ml	6	182	0.1087	0.44	ci	ci3300285	2016-01-28T18:22:13.950Z	4km WNW of Grapevine, CA	earthquake	1.71	1.37	0.089	5	reviewed	ci	ci
11/7/1953	5:48:09	35.0388333	-118.9411667	0.14	2.93	ml	9	168	0.1703	0.41	ci	ci3300233	2016-01-28T18:03:53.880Z	11km N of Grapevine, CA	earthquake	0.91	1.52	0.137	8	reviewed	ci	ci
11/7/1953	5:44:27	34.9825	-118.9586667	1.68	3.2	ml	9	145	0.1207	0.46	ci	ci3300232	2016-01-28T18:22:10.910Z	5km NNW of Grapevine, CA	earthquake	0.87	1.65	0.066	9	reviewed	ci	ci
11/5/1953	11:57:17	35.2971667	-118.9271667	6	3.14	ml	11	159	0.4253	0.51	ci	ci3300229	2016-01-28T18:22:10.410Z	4km NNW of Lamont, CA	earthquake	1.32	31.61	0.088	8	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/4/1953	4:37:48	35.4568333	-118.7396667	6	3.04	ml	10	112	0.5986	0.62	ci	ci3300223	2016-01-28T17:59:12.830Z	26km E of Oildale, CA	earthquake	1.48	31.61	0.097	8	reviewed	ci	ci
11/1/1953	17:41:50	35.356	-118.7371667	6	3.23	ml	8	203	0.5015	0.55	ci	ci3300220	2016-01-28T17:54:58.770Z	18km NNE of Arvin, CA	earthquake	1.85	31.61	0.151	11	reviewed	ci	ci
10/29/1953	12:53:51	35.507	-118.8093333	6	3.05	ml	8	160	0.6384	0.56	ci	ci3300216	2016-01-28T18:08:19.090Z	21km ENE of Oildale, CA	earthquake	1.98	31.61	0.092	9	reviewed	ci	ci
10/16/1953	3:45:33	35.9018333	-120.646	6	3.57	ml	10	266	1.645	0.52	ci	ci3300199	2016-01-28T18:22:08.430Z	17km NNE of San Miguel, CA	earthquake	2.58	31.61	0.142	9	reviewed	ci	ci
10/15/1953	6:43:53	35.5468333	-118.747	6	2.87	ml	8	216	0.6854	0.5	ci	ci3300198	2016-01-28T18:17:45.890Z	24km W of Bodfish, CA	earthquake	2.67	31.61	0.163	8	reviewed	ci	ci
10/5/1953	3:27:07	35.3978333	-118.7965	6	3.48	ml	11	134	0.304	0.54	ci	ci3300186	2016-01-28T18:14:04.730Z	19km NE of Lamont, CA	earthquake	1.29	31.61	0.085	9	reviewed	ci	ci
9/12/1953	6:41:16	35.374	-118.8318333	6	4.02	ml	9	140	0.3254	0.35	ci	ci3300164	2016-01-28T18:04:50.960Z	15km NNE of Lamont, CA	earthquake	1.08	31.61	0.113	10	reviewed	ci	ci
9/10/1953	19:44:07	34.9486667	-119.4158333	6	3.23	ml	6	184	0.4307	0.54	ci	ci3300161	2016-01-28T18:13:07.660Z	12km S of Maricopa, CA	earthquake	1.45	31.61	0.175	11	reviewed	ci	ci
9/10/1953	3:20:24	35.3818333	-118.9781667	6	2.66	ml	4	227	0.3357	0.57	ci	ci3300158	2016-01-28T18:18:43.580Z	6km ENE of Bakersfield, CA	earthquake	8.75	31.61	0.121	5	reviewed	ci	ci
9/4/1953	3:54:26	35.8298333	-120.291	6	3.8	ml	8	252	0.6705	0.59	ci	ci3300147	2016-01-28T17:54:54.640Z	12km N of Cholame, CA	earthquake	3.44	31.61	0.173	9	reviewed	ci	ci
9/3/1953	7:43:32	35.0385	-119.061	2.63	3.02	ml	7	87	0.2126	0.38	ci	ci3300146	2016-01-28T18:03:50.930Z	16km NW of Grapevine, CA	earthquake	0.65	1.26	0.09	9	reviewed	ci	ci
9/2/1953	15:27:54	35.0015	-119.093	1.58	3.94	ml	10	85	0.2047	0.43	ci	ci3300145	2016-01-28T18:08:15.370Z	16km WNW of Grapevine, CA	earthquake	0.97	1.65	0.074	9	reviewed	ci	ci
8/29/1953	20:51:15	35.5358333	-118.8391667	6	2.89	ml	3	276	1.049	0.25	ci	ci3300140	2016-01-28T17:59:07.820Z	21km NE of Oildale, CA	earthquake	2.22	31.61	0.1	5	reviewed	ci	ci
8/29/1953	8:46:29	35.4206667	-118.906	6	2.9	ml	5	144	0.6928	0.63	ci	ci3300139	2016-01-28T18:26:48.650Z	10km E of Oildale, CA	earthquake	2.22	31.61	0.055	7	reviewed	ci	ci
8/6/1953	11:20:03	35.064	-119.0771667	0.06	4.29	ml	12	80	0.2408	0.5	ci	ci3300093	2016-01-28T18:07:10.850Z	19km NW of Grapevine, CA	earthquake	0.95	1.91	0.155	10	reviewed	ci	ci
8/5/1953	12:20:59	35.0068333	-119.0868333	6	4.19	ml	13	85	0.6272	0.51	ci	ci3300063	2016-01-28T18:12:00.630Z	16km WNW of Grapevine, CA	earthquake	1.32	31.61	0.07	9	reviewed	ci	ci
8/2/1953	4:18:31	35.1476667	-118.8425	6	3.04	ml	10	76	0.5511	0.53	ci	ci3300059	2016-01-28T18:25:46.320Z	7km S of Arvin, CA	earthquake	0.87	31.61	0.192	9	reviewed	ci	ci
7/30/1953	11:58:39	35.0963333	-118.975	9.23	3.5	ml	12	79	0.2326	0.5	ci	ci3305838	2016-01-28T18:02:30.480Z	18km NNW of Grapevine, CA	earthquake	1.7	2.76	0.057	8	reviewed	ci	ci
7/28/1953	17:09:46	35.0618333	-119.0656667	4.74	3.37	ml	10	79	0.2335	0.54	ci	ci3305836	2016-01-28T18:16:34.720Z	18km NW of Grapevine, CA	earthquake	1.7	4.46	0.079	6	reviewed	ci	ci
7/27/1953	1:24:54	35.0538333	-119.174	6	2.63	mh	4	245	0.6988	0.53	ci	ci3305830	2016-01-28T18:25:45.380Z	21km E of Maricopa, CA	earthquake	5.12	31.61	0.124	8	reviewed	ci	ci
7/26/1953	15:59:35	35.0626667	-119.1056667	6	2.98	ml	5	239	0.6708	0.53	ci	ci3305829	2016-01-28T17:58:07.400Z	21km NW of Grapevine, CA	earthquake	3.44	31.61	0.095	7	reviewed	ci	ci
7/26/1953	13:26:28	34.9756667	-119.2153333	6	2.91	ml	7	249	0.7838	0.57	ci	ci3305827	2016-01-28T18:11:59.150Z	16km NNW of Pine Mountain Club, CA	earthquake	3.81	31.61	0.128	4	reviewed	ci	ci
7/26/1953	12:44:57	34.978	-119.2501667	6	2.91	ml	8	252	0.7931	0.5	ci	ci3305826	2016-01-28T18:11:58.650Z	16km ESE of Maricopa, CA	earthquake	3.32	31.61	0.082	8	reviewed	ci	ci
7/23/1953	9:30:05	35.1066667	-119.1501667	6	3.14	ml	9	244	0.3117	0.46	ci	ci3305822	2016-01-28T18:14:06.950Z	23km ENE of Maricopa, CA	earthquake	2.5	31.61	0.152	9	reviewed	ci	ci
7/18/1953	5:25:11	35.1281667	-119.1328333	6	3.37	ml	8	280	1.259	0.6	ci	ci3305819	2016-01-28T18:25:44.890Z	25km SW of Lamont, CA	earthquake	3.46	31.61	0.143	6	reviewed	ci	ci
7/15/1953	19:13:46	34.9356667	-119.13	6	3.16	ml	7	244	1.115	0.48	ci	ci3305815	2016-01-28T18:25:43.870Z	10km N of Pine Mountain Club, CA	earthquake	3.74	31.61	0.085	6	reviewed	ci	ci
7/8/1953	13:57:08	35.0643333	-119.0501667	6	2.89	ml	6	152	0.6562	0.71	ci	ci3305802	2016-01-28T18:20:59.960Z	17km NW of Grapevine, CA	earthquake	1.82	31.61	0.06	6	reviewed	ci	ci
7/7/1953	9:36:23	35.1206667	-118.8581667	6	2.65	mh	7	205	0.7553	0.55	ci	ci3305799	2016-01-28T17:58:04.060Z	10km SSW of Arvin, CA	earthquake	2.4	31.61	0.144	8	reviewed	ci	ci
6/26/1953	5:05:59	35.0036667	-118.9386667	6	2.85	ml	7	137	0.699	0.5	ci	ci3305779	2016-01-28T18:30:07.230Z	7km N of Grapevine, CA	earthquake	1.55	31.61	0.122	6	reviewed	ci	ci
6/23/1953	3:57:15	35.3606667	-118.845	6	2.8	ml	6	270	1.114	0.59	ci	ci3305775	2016-01-28T18:07:08.710Z	13km NNE of Lamont, CA	earthquake	3.92	31.61	0.04	5	reviewed	ci	ci
6/22/1953	15:22:32	35.9158333	-120.7836667	6	4.46	ml	9	272	1.591	0.76	ci	ci3305773	2016-01-28T18:07:08.230Z	20km NNW of San Miguel, CA	earthquake	4.54	31.61	0.088	8	reviewed	ci	ci
6/22/1953	3:10:26	35.0775	-119.0805	6	3.41	ml	7	237	0.6504	0.5	ci	ci3305771	2016-01-28T18:25:39.790Z	20km NW of Grapevine, CA	earthquake	3.13	31.61	0.062	8	reviewed	ci	ci
6/22/1953	2:50:23	35.0686667	-119.1641667	6	3.86	ml	8	243	0.682	0.53	ci	ci3305770	2016-01-28T18:11:56.150Z	22km E of Maricopa, CA	earthquake	3.03	31.61	0.16	8	reviewed	ci	ci
6/18/1953	17:34:47	34.9346667	-119.1768333	7.22	3.32	ml	8	246	0.2359	0.58	ci	ci3305758	2016-01-28T18:20:57.040Z	10km NNW of Pine Mountain Club, CA	earthquake	3.03	2.47	0.116	8	reviewed	ci	ci
6/10/1953	8:49:42	35.0193333	-119.0205	6	2.89	ml	7	85	0.6687	0.54	ci	ci3304041	2016-01-28T18:30:04.050Z	12km NW of Grapevine, CA	earthquake	1.27	31.61	0.177	8	reviewed	ci	ci
6/6/1953	20:26:30	36.1206667	-120.466	6	3.45	ml	5	308	0.9854	0.42	ci	ci3304033	2016-01-28T18:11:53.100Z	10km WSW of Coalinga, CA	earthquake	3.8	31.61	0.194	8	reviewed	ci	ci
5/31/1953	23:51:15	36.0348333	-120.4978333	6	3.48	ml	9	297	0.9349	0.38	ci	ci3304022	2016-01-28T18:02:25.390Z	16km NNW of Parkfield, CA	earthquake	3.14	31.61	0.026	8	reviewed	ci	ci
5/31/1953	7:00:38	35.0526667	-118.9258333	1.25	3.14	ml	9	75	0.182	0.53	ci	ci3304018	2016-01-28T18:02:24.810Z	12km N of Grapevine, CA	earthquake	1.19	2.42	0.078	7	reviewed	ci	ci
5/30/1953	21:37:01	35.1028333	-119.2471667	6	2.97	ml	7	252	0.3666	0.63	ci	ci3304017	2016-01-28T18:11:51.590Z	15km ENE of Maricopa, CA	earthquake	4.14	31.61	0.199	4	reviewed	ci	ci
5/30/1953	9:57:41	35.0793333	-118.9126667	0.49	2.94	ml	8	129	0.2076	0.35	ci	ci3304015	2016-01-28T18:11:50.520Z	15km N of Grapevine, CA	earthquake	0.81	1.82	0.113	6	reviewed	ci	ci
5/30/1953	9:52:56	35.055	-118.9516667	1.42	3.7	ml	10	74	0.1879	0.41	ci	ci3304014	2016-01-28T18:25:37.360Z	13km N of Grapevine, CA	earthquake	1.12	2.37	0.089	8	reviewed	ci	ci
5/30/1953	1:54:33	35.044	-119.2166667	6	3.49	ml	10	169	0.3117	0.47	ci	ci3304013	2016-01-28T18:09:19.860Z	17km E of Maricopa, CA	earthquake	1.72	31.61	0.118	8	reviewed	ci	ci
5/28/1953	7:58:33	36.0041667	-120.5011667	6	3.61	ml	7	296	0.9139	0.39	ci	ci3304011	2016-01-28T18:11:50.020Z	13km NNW of Parkfield, CA	earthquake	3.28	31.61		1	reviewed	ci	ci
5/28/1953	3:51:18	35.8623333	-120.1728333	6	4.15	ml	10	247	0.6378	0.6	ci	ci3304010	2016-01-28T18:11:49.460Z	16km SSW of Avenal, CA	earthquake	3.39	31.61	0.119	8	reviewed	ci	ci
5/25/1953	17:33:30	35.02	-119.1493333	9.09	3.73	ml	9	84	0.2527	0.46	ci	ci3304009	2016-01-28T17:57:57.180Z	19km N of Pine Mountain Club, CA	earthquake	1.02	2.11	0.084	8	reviewed	ci	ci
5/25/1953	6:55:41	34.9973333	-119.0296667	0.74	2.93	ml	8	87	0.1645	0.49	ci	ci3304008	2016-01-28T17:57:56.690Z	11km WNW of Grapevine, CA	earthquake	1.03	2.32	0.122	8	reviewed	ci	ci
5/25/1953	3:24:00	34.9708333	-119.0485	3.23	4.77	ml	11	89	0.1571	0.49	ci	ci3304007	2018-06-04T20:43:44.000Z	11km WNW of Grapevine, CA	earthquake	1.35	2.44	0.045	6	reviewed	ci	ci
5/23/1953	17:03:56	35.0493333	-119.1515	7.93	3.17	ml	8	81	0.2722	0.36	ci	ci3304003	2016-01-28T18:25:36.340Z	23km N of Pine Mountain Club, CA	earthquake	1.67	2.42	0.181	8	reviewed	ci	ci
5/23/1953	7:52:54	34.9978333	-119.1418333	0.3	4.16	ml	12	84	0.2352	0.61	ci	ci3304002	2016-01-28T18:25:35.840Z	17km N of Pine Mountain Club, CA	earthquake	1.76	3.23	0.09	8	reviewed	ci	ci
5/21/1953	20:46:13	35.421	-118.76	6	3.79	ml	10	72	0.2867	0.57	ci	ci3304001	2016-01-28T18:23:08.590Z	23km NE of Lamont, CA	earthquake	1.52	31.61	0.075	8	reviewed	ci	ci
5/19/1953	2:44:30	34.9048333	-119.0578333	10.64	3.52	ml	8	95	0.1338	0.55	ci	ci3303998	2016-01-28T18:25:35.350Z	11km NE of Pine Mountain Club, CA	earthquake	1.58	2.73	0.106	8	reviewed	ci	ci
5/17/1953	16:44:19	35.414	-118.7983333	6	2.9	ml	9	107	0.2878	0.54	ci	ci3303992	2016-01-28T18:27:49.220Z	20km E of Oildale, CA	earthquake	1.08	31.61	0.146	8	reviewed	ci	ci
5/16/1953	5:36:34	34.99	-119.031	6	2.84	ml	5	113	0.6752	0.47	ci	ci3303989	2016-01-28T18:16:28.030Z	11km WNW of Grapevine, CA	earthquake	1.11	31.61	0.085	8	reviewed	ci	ci
5/15/1953	9:47:28	35.4438333	-118.7333333	6	3.03	ml	7	80	0.2711	0.48	ci	ci3303987	2016-01-28T18:09:18.770Z	26km E of Oildale, CA	earthquake	1.02	31.61	0.048	6	reviewed	ci	ci
5/14/1953	3:36:00	36.0001667	-119.882	6	3.11	ml	6	241	0.6811	0.63	ci	ci3303980	2016-01-28T18:16:25.980Z	7km E of Kettleman City, CA	earthquake	3.94	31.61	0.091	5	reviewed	ci	ci
5/6/1953	14:08:51	35.0005	-119.1696667	1.29	2.81	ml	8	84	0.2561	0.53	ci	ci3303184	2016-01-28T18:07:02.260Z	17km N of Pine Mountain Club, CA	earthquake	1.58	2.82	0.291	8	reviewed	ci	ci
5/6/1953	3:01:36	35.03	-119.0935	0.37	2.88	ml	7	76	0.2241	0.52	ci	ci3303182	2016-01-28T18:02:22.310Z	18km WNW of Grapevine, CA	earthquake	1.52	2.56	0.19	8	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
4/29/1953	8:45:05	35.3348333	-118.884	6	2.89	ml	4	272	1.153	0.55	ci	ci3303152	2016-01-28T17:57:52.730Z	9km NNE of Lamont, CA	earthquake	5.34	31.61	0.121	6	reviewed	ci	ci
4/23/1953	10:16:02	35.0588333	-119.0331667	6	3.21	ml	8	82	0.642	0.48	ci	ci3303146	2016-01-28T18:25:32.850Z	16km NW of Grapevine, CA	earthquake	1.07	31.61	0.044	4	reviewed	ci	ci
4/19/1953	17:59:32	35.0261667	-119.1546667	6	3.17	ml	10	83	0.5696	0.54	ci	ci3303140	2016-01-28T18:16:20.470Z	20km N of Pine Mountain Club, CA	earthquake	1.17	31.61	0.101	9	reviewed	ci	ci
4/13/1953	10:47:00	35.0361667	-119.0826667	0.52	2.94	ml	7	154	0.2224	0.56	ci	ci3303133	2016-01-28T18:30:00.820Z	17km NW of Grapevine, CA	earthquake	1.35	3.04	0.133	9	reviewed	ci	ci
4/8/1953	19:00:17	35.1083333	-119.1268333	6	3.03	ml	3	279	0.3008	0.57	ci	ci3303129	2016-01-28T18:23:09.080Z	26km ENE of Maricopa, CA	earthquake	4.63	31.61	0.128	10	reviewed	ci	ci
4/1/1953	18:38:14	35.1275	-119.0173333	2.79	3.46	ml	7	197	0.2729	0.39	ci	ci3303119	2016-01-28T18:11:42.880Z	17km SSW of Lamont, CA	earthquake	1.72	1.17	0.173	10	reviewed	ci	ci
3/29/1953	17:19:37	35.7828333	-120.1083333	6	3.61	ml	7	271	1.343	0.45	ci	ci3303109	2016-01-28T18:11:42.390Z	18km ENE of Cholame, CA	earthquake	3.58	31.61	0.137	10	reviewed	ci	ci
3/27/1953	9:17:55	35.083	-118.9736667	0.06	2.89	ml	3	280	0.2195	0.3	ci	ci3303098	2016-01-28T18:29:59.330Z	16km NNW of Grapevine, CA	earthquake	1.49	1.25	0.115	10	reviewed	ci	ci
3/23/1953	17:06:36	35.0318333	-118.925	5.65	4.04	ml	11	136	0.1612	0.51	ci	ci3303090	2016-01-28T18:25:29.950Z	10km N of Grapevine, CA	earthquake	1.1	3.13	0.116	10	reviewed	ci	ci
3/19/1953	19:44:48	34.9943333	-118.9546667	0.01	3.03	ml	8	146	0.1305	0.58	ci	ci3303088	2016-01-28T18:20:50.660Z	6km NNW of Grapevine, CA	earthquake	1.35	2.88	0.198	10	reviewed	ci	ci
3/10/1953	19:50:48	35.481	-118.7795	0.31	2.76	ml	5	157	0.2248	0.49	ci	ci3302826	2016-01-28T18:29:57.240Z	23km ENE of Oildale, CA	earthquake	3.15	6.33	0.162	8	reviewed	ci	ci
3/8/1953	5:42:15	35.0286667	-119.0401667	0.01	3.42	ml	5	174	0.1944	0.64	ci	ci3302388	2016-01-28T17:57:51.700Z	14km NW of Grapevine, CA	earthquake	1.74	3.18	0.102	9	reviewed	ci	ci
3/3/1953	7:02:32	34.9325	-119.0425	12.99	3.41	ml	10	142	0.1318	0.44	ci	ci3302240	2016-01-28T18:02:18.280Z	10km W of Grapevine, CA	earthquake	0.91	1.64	0.133	9	reviewed	ci	ci
3/1/1953	19:26:57	35.018	-119.1508333	9.75	3.15	ml	8	160	0.2525	0.25	ci	ci3302238	2016-01-28T18:06:55.220Z	19km N of Pine Mountain Club, CA	earthquake	0.67	1.25	0.096	10	reviewed	ci	ci
2/26/1953	4:23:00	35.43	-118.7461667	3.73	3.66	ml	9	83	0.281	0.57	ci	ci3302236	2016-01-28T18:25:26.890Z	24km NE of Lamont, CA	earthquake	1.74	5.28	0.084	10	reviewed	ci	ci
2/26/1953	3:22:01	35.4375	-118.7576667	1.65	2.78	ml	6	153	0.2712	0.53	ci	ci3302234	2016-01-28T17:57:50.190Z	24km E of Oildale, CA	earthquake	3.77	7.44	0.041	6	reviewed	ci	ci
2/24/1953	21:28:52	35.441	-118.7823333	3	3.16	ml	4	159	0.2633	0.57	ci	ci3302232	2016-01-28T18:16:15.900Z	22km E of Oildale, CA	earthquake	5.07	10.06	0.203	6	reviewed	ci	ci
2/23/1953	17:11:07	35.37	-118.9013333	6	3.43	ml	8	101	0.3325	0.36	ci	ci3302229	2016-01-28T18:23:11.520Z	12km E of Bakersfield, CA	earthquake	1.1	31.61	0.074	6	reviewed	ci	ci
2/21/1953	1:14:10	35.0316667	-119.0406667	1.49	3.11	ml	5	84	0.1971	0.19	ci	ci3302223	2016-01-28T18:02:17.290Z	14km NW of Grapevine, CA	earthquake	1.09	1.43	0.15	8	reviewed	ci	ci
2/18/1953	17:45:58	35.3845	-118.7835	6	2.95	ml	4	161	0.3187	0.41	ci	ci3302211	2016-01-28T18:23:11.050Z	18km NE of Lamont, CA	earthquake	1.55	31.61	0.136	8	reviewed	ci	ci
2/17/1953	11:56:56	35.0671667	-119.0901667	7.24	2.97	ml	4	236	0.2499	0.49	ci	ci3317553	2016-01-28T18:25:24.900Z	20km NW of Grapevine, CA	earthquake	8.93	5.91	0.183	8	reviewed	ci	ci
2/16/1953	7:55:04	34.9821667	-119.2996667	6	3	ml	4	256		0.29	ci	ci3317544	2016-01-28T18:04:52.990Z	13km SE of Maricopa, CA	earthquake	2.46	31.61	0.152	5	reviewed	ci	ci
2/15/1953	8:11:56	35.0763333	-119.0413333	0.22	3.26	ml	8	152		0.32	ci	ci3317539	2016-01-28T18:16:14.340Z	18km NW of Grapevine, CA	earthquake	1.47	2.35	0.1	10	reviewed	ci	ci
2/13/1953	11:53:54	35.332	-118.7426667	6	2.87	ml	2	286		0.16	ci	ci3317531	2016-01-28T18:29:53.740Z	16km NNE of Arvin, CA	earthquake	2.35	31.61	0.111	8	reviewed	ci	ci
2/12/1953	13:32:33	35.0288333	-119.0775	6	2.79	ml	2	279		0.15	ci	ci3317530	2016-01-28T18:25:23.340Z	16km NW of Grapevine, CA	earthquake	2.45	31.61	0.116	8	reviewed	ci	ci
2/11/1953	9:16:08	35.4116667	-118.7933333	6	3.04	ml	3	237		0.47	ci	ci3317525	2016-01-28T18:20:47.730Z	20km NNE of Lamont, CA	earthquake	4.08	31.61	0.138	10	reviewed	ci	ci
1/30/1953	15:21:10	35.179	-119.0168333	6	3.33	ml	8	156		0.45	ci	ci3317339	2016-01-28T18:23:12.010Z	13km SW of Lamont, CA	earthquake	2.01	31.61	0.085	10	reviewed	ci	ci
1/27/1953	20:31:40	34.9341667	-119.1048333	6	3	ml	3	188		0.38	ci	ci3317337	2016-01-28T18:20:47.230Z	11km NNE of Pine Mountain Club, CA	earthquake	1.65	31.61	0.118	10	reviewed	ci	ci
1/25/1953	12:13:36	35.5035	-118.879	2.36	3.12	ml	7	154		0.41	ci	ci3317333	2016-01-28T18:02:13.760Z	16km NE of Oildale, CA	earthquake	1.84	3.25	0.132	10	reviewed	ci	ci
1/21/1953	1:05:07	34.9781667	-118.9498333	5.37	3.16	ml	4	136		0.36	ci	ci3317327	2016-01-28T18:20:46.270Z	4km NNW of Grapevine, CA	earthquake	0.96	1.44	0.132	9	reviewed	ci	ci
1/16/1953	0:43:25	35.0265	-118.9376667	0	3.15	ml	4	207		0.4	ci	ci3317314	2016-01-28T18:02:12.160Z	9km N of Grapevine, CA	earthquake	4.23	5.51	0.118	10	reviewed	ci	ci
1/14/1953	23:50:52	35.4358333	-118.742	5.41	3.21	ml	6	149	0.2764	0.44	ci	ci3308552	2016-01-28T18:02:11.590Z	25km NE of Lamont, CA	earthquake	1.35	4.2	0.121	6	reviewed	ci	ci
1/6/1953	21:53:39	34.9985	-119.1071667	6.13	3.25	ml	5	240		0.52	ci	ci3308455	2016-01-28T18:25:18.850Z	17km WNW of Grapevine, CA	earthquake	4.05	2.4	0.088	8	reviewed	ci	ci
1/3/1953	13:56:34	35.1156667	-119.0213333	6.79	2.72	ml	4	216		0.38	ci	ci3308433	2016-01-28T18:11:34.780Z	19km SSW of Lamont, CA	earthquake	7.17	10.95	0.054	5	reviewed	ci	ci
1/1/1953	3:05:52	35.0685	-118.9818333	2.66	3.56	ml	8	95		0.34	ci	ci3308380	2016-01-28T18:06:51.850Z	15km NNW of Grapevine, CA	earthquake	0.71	1.44	0.073	8	reviewed	ci	ci
12/29/1952	10:35:16	34.9695	-119.0943333	7.44	3.55	ml	8	89		0.5	ci	ci3308339	2016-01-28T18:02:10.600Z	15km NNE of Pine Mountain Club, CA	earthquake	0.83	2.67	0.137	10	reviewed	ci	ci
12/26/1952	18:09:37	35.064	-118.9205	10.56	3.95	ml	11	73		0.56	ci	ci3307895	2016-01-28T18:11:33.760Z	13km N of Grapevine, CA	earthquake	1.55	3.9	0.116	7	reviewed	ci	ci
12/18/1952	20:40:19	35.3538333	-118.8903333	6	3.84	ml	13	97	0.3474	0.71	ci	ci3307270	2016-01-28T18:27:51.740Z	11km NNE of Lamont, CA	earthquake	1.28	31.61	0.066	9	reviewed	ci	ci
12/15/1952	1:09:05	35.0506667	-118.9058333	3.54	2.74	ml	8	121	0.1788	0.49	ci	ci3307267	2016-01-28T18:20:43.380Z	12km N of Grapevine, CA	earthquake	1.84	2.71	0.231	5	reviewed	ci	ci
12/5/1952	5:02:28	35.0725	-118.9781667	4.68	3.56	ml	11	83		0.61	ci	ci3307257	2016-01-28T18:06:49.860Z	15km NNW of Grapevine, CA	earthquake	1.26	4.89	0.084	9	reviewed	ci	ci
12/5/1952	4:01:08	35.0091667	-119.1721667	2.16	3.83	ml	9	112		0.58	ci	ci3307256	2016-01-28T18:16:11.200Z	18km N of Pine Mountain Club, CA	earthquake	1.48	1.98	0.118	9	reviewed	ci	ci
12/3/1952	22:26:43	35.2765	-118.7586667	1	3.23	ml	7	99		0.56	ci	ci3307252	2016-01-28T17:57:43.800Z	10km NE of Arvin, CA	earthquake	1.17	31.61	0.073	5	reviewed	ci	ci
12/2/1952	15:29:31	34.9576667	-118.9715	10.61	3.18	ml	6	144		0.3	ci	ci3307250	2016-01-28T18:29:50.280Z	4km WNW of Grapevine, CA	earthquake	0.94	0.86	0.143	5	reviewed	ci	ci
11/30/1952	3:12:37	35.391	-118.7316667	1	3.56	ml	6	179		0.55	ci	ci3307244	2016-01-28T18:02:08.550Z	22km NNE of Arvin, CA	earthquake	2.35	31.61	0.152	8	reviewed	ci	ci
11/28/1952	16:22:29	34.999	-118.9596667	6	3.94	ml	9	146		0.55	ci	ci3307239	2016-01-28T18:16:10.710Z	7km NNW of Grapevine, CA	earthquake	1.85	31.61	0.042	6	reviewed	ci	ci
11/28/1952	10:25:44	35.3405	-118.7885	6	3.13	ml	7	132		0.46	ci	ci3307237	2016-01-28T18:25:15.280Z	14km NE of Lamont, CA	earthquake	1.1	31.61	0.076	5	reviewed	ci	ci
11/28/1952	1:43:49	35.316	-118.751	6	3.12	ml	6	126		0.46	ci	ci3307236	2016-01-28T18:06:48.720Z	14km NNE of Arvin, CA	earthquake	1.85	31.61	0.145	5	reviewed	ci	ci
11/27/1952	22:03:38	35.4381667	-118.7246667	6	3.31	ml	7	120	0.2788	0.63	ci	ci3307235	2016-01-28T18:00:13.230Z	26km NE of Lamont, CA	earthquake	1.96	31.61	0.146	6	reviewed	ci	ci
11/25/1952	19:17:46	36.0446667	-119.5051667	6	3.06	ml	4	218		0.33	ci	ci3307229	2016-01-28T18:06:48.330Z	8km SE of Corcoran, CA	earthquake	3.66	31.61	0.226	4	reviewed	ci	ci
11/14/1952	23:34:00	35.051	-118.9796667	1.42	4.02	ml	11	75		0.31	ci	ci3307210	2016-01-28T17:57:42.250Z	13km NNW of Grapevine, CA	earthquake	0.7	1.71	0.097	8	reviewed	ci	ci
11/12/1952	4:16:30	34.9275	-118.9971667	6	3.91	ml	9	138	0.7653	0.47	ci	ci3307209	2016-01-28T18:20:39.890Z	6km WSW of Grapevine, CA	earthquake	0.89	31.61	0.157	10	reviewed	ci	ci
11/11/1952	18:12:24	34.9446667	-119.0303333	6	4.05	ml	9	142		0.29	ci	ci3307207	2016-01-28T17:57:41.760Z	9km W of Grapevine, CA	earthquake	0.85	31.61	0.103	9	reviewed	ci	ci
11/11/1952	17:22:07	35.133	-119.0268333	6	4.12	ml	9	154		0.41	ci	ci3307206	2016-01-28T17:57:41.230Z	17km SW of Lamont, CA	earthquake	1.07	31.61	0.039	9	reviewed	ci	ci
11/7/1952	9:42:37	35.0273333	-119.0353333	0.64	4	ml	10	100	0.2194	0.6	ci	ci3307202	2016-01-28T17:57:40.700Z	13km NW of Grapevine, CA	earthquake	1.12	2.71	0.114	10	reviewed	ci	ci
11/7/1952	8:55:35	34.9641667	-119.0995	8.34	4.53	ml	12	73	0.1714	0.5	ci	ci3307201	2018-06-04T20:43:44.000Z	14km NNE of Pine Mountain Club, CA	earthquake	1.13	2.93	0.107	9	reviewed	ci	ci
11/7/1952	7:15:27	35.2591667	-118.7605	6	3.55	ml	12	97	0.2933	0.45	ci	ci3306872	2016-01-28T18:04:54.380Z	8km NE of Arvin, CA	earthquake	1.11	31.61	0.112	10	reviewed	ci	ci
10/31/1952	15:03:58	35.4531667	-118.7973333	0.06	3.97	ml	13	113	0.2216	0.4	ci	ci3306870	2016-01-28T18:06:47.110Z	20km E of Oildale, CA	earthquake	1.15	2.64	0.322	10	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
10/22/1952	20:03:27	35.3383333	-118.9353333	6	3.85	ml	12	101	0.3626	0.46	ci	ci3306862	2016-04-02T16:12:47.565Z	9km NNW of Lamont, CA	earthquake	1.22	31.61	0.121	8	reviewed	ci	ci
10/21/1952	11:44:16	35.057	-118.9815	0.06	3.76	ml	13	82	0.2493	0.64	ci	ci3306861	2016-01-28T18:11:31.180Z	14km NNW of Grapevine, CA	earthquake	1.34	3.46	0.06	10	reviewed	ci	ci
10/13/1952	22:20:35	35.3616667	-118.8416667	6	4.02	ml	12	141	0.3376	0.54	ci	ci3306855	2016-01-28T17:55:52.400Z	13km NNE of Lamont, CA	earthquake	1.6	31.61	0.059	9	reviewed	ci	ci
9/25/1952	16:21:35	35.0558333	-118.8891667	8.38	4.03	ml	11	134	0.2667	0.46	ci	ci3306792	2016-01-28T18:16:06.070Z	13km NNE of Grapevine, CA	earthquake	1.9	4.28	0.112	10	reviewed	ci	ci
9/14/1952	11:46:05	35.9081667	-120.0618333	6	3.2	ml	5	243	1.491	0.58	ci	ci3306779	2016-01-28T18:02:06.120Z	12km SSE of Avenal, CA	earthquake	8.98	31.61	0.107	7	reviewed	ci	ci
9/12/1952	10:35:24	34.9821667	-119.0836667	4.86	4.43	ml	11	153	0.1832	0.4	ci	ci3306776	2018-06-04T20:43:44.000Z	15km WNW of Grapevine, CA	earthquake	1.4	2.69	0.09	8	reviewed	ci	ci
9/2/1952	9:06:12	35.2816667	-118.9371667	6	3.77	ml	7	263	1.055	0.23	ci	ci3306767	2016-01-28T18:11:28.750Z	3km NW of Lamont, CA	earthquake	1.47	31.61	0.121	10	reviewed	ci	ci
9/1/1952	10:39:00	35.2731667	-118.8466667	6	4.01	ml	11	154	0.3585	0.51	ci	ci3306765	2016-01-28T18:09:21.140Z	6km ENE of Lamont, CA	earthquake	1.65	31.61	0.108	9	reviewed	ci	ci
8/25/1952	6:20:26	35.0575	-118.9516667	6	4.66	ml	11	141	0.647	0.44	ci	ci3306754	2018-06-04T20:43:44.000Z	13km N of Grapevine, CA	earthquake	0.98	31.61	0.084	6	reviewed	ci	ci
8/24/1952	23:11:47	34.972	-118.9646667	6	3.64	ml	9	137	0.733	0.55	ci	ci3306753	2016-01-28T18:25:09.200Z	4km NW of Grapevine, CA	earthquake	1.14	31.61	0.179	9	reviewed	ci	ci
8/22/1952	22:41:23	35.3516667	-118.954	6	5.52	ml	11	56		0.52	ci	ci3306746	2022-04-26T18:05:46.164Z	7km E of Bakersfield, CA	earthquake	1.7	31.61	0.03	3	reviewed	ci	ci
8/19/1952	19:12:26	35.0203333	-119.2405	6	4.42	ml	9	188	0.283	0.52	ci	ci3306639	2018-06-04T20:43:44.000Z	15km ESE of Maricopa, CA	earthquake	2.11	31.61	0.056	6	reviewed	ci	ci
8/18/1952	4:40:10	35.0353333	-119.0768333	13	4.7	ml	10	177	0.2327	0.32	ci	ci3306593	2018-06-04T20:43:44.000Z	17km NW of Grapevine, CA	earthquake	0.95	1.61	0.047	6	reviewed	ci	ci
8/17/1952	11:10:26	35.0306667	-118.998	0.19	3.87	ml	10	150	0.2221	0.75	ci	ci3306577	2016-01-28T18:02:01.940Z	12km NNW of Grapevine, CA	earthquake	1.63	3.56	0.083	9	reviewed	ci	ci
8/17/1952	9:09:06	35.028	-118.972	0.03	4	ml	10	169	0.2216	0.58	ci	ci3306564	2016-01-28T18:06:45.110Z	10km NNW of Grapevine, CA	earthquake	1.56	3.15	0.106	9	reviewed	ci	ci
8/17/1952	6:14:03	35.0313333	-118.9403333	6	3.89	ml	9	167	0.5901	0.44	ci	ci3306555	2016-01-28T18:29:47.290Z	10km N of Grapevine, CA	earthquake	1.24	31.61	0.099	9	reviewed	ci	ci
8/10/1952	19:44:23	35.012	-119.0185	6	4.21	ml	11	171	0.6446	0.51	ci	ci3306519	2016-01-28T18:29:46.760Z	11km NW of Grapevine, CA	earthquake	1.33	31.61	0.144	9	reviewed	ci	ci
8/7/1952	19:19:07	35.3423333	-118.8901667	6	4.19	ml	9	147	0.3588	0.6	ci	ci3317940	2016-01-28T18:11:25.810Z	9km NNE of Lamont, CA	earthquake	1.64	31.61	0.2	9	reviewed	ci	ci
8/7/1952	16:31:50	35.045	-119.0936667	6	5.03	ml	11	156		0.34	ci	ci3317936	2018-06-04T20:43:44.000Z	19km NW of Grapevine, CA	earthquake	1.1	31.61	0.161	7	reviewed	ci	ci
8/6/1952	22:46:13	35.363	-118.927	6	3.7	ml	0	156.1	0.343	0.387	ci	ci3317933	2016-01-28T18:02:31.470Z	10km E of Bakersfield, CA	earthquake				7	reviewed	ci	ci
8/5/1952	6:50:09	35.3758333	-118.8011667	6	4.32	ml	10	155	0.5919	0.49	ci	ci3317888	2016-01-28T18:17:44.420Z	16km NE of Lamont, CA	earthquake	1.73	31.61	0.086	10	reviewed	ci	ci
8/4/1952	19:47:52	35.0261667	-118.9868333	6	4	ml	3	171	0.837	0.35	ci	ci3317887	2016-01-28T18:22:06.490Z	11km NNW of Grapevine, CA	earthquake	1.3	31.61	0.097	9	reviewed	ci	ci
8/4/1952	19:47:22	35.0563333	-119.0016667	6	3.73	ml	9	153	0.8498	0.66	ci	ci3317886	2016-01-28T18:22:06.010Z	14km NNW of Grapevine, CA	earthquake	1.85	31.61	0.109	10	reviewed	ci	ci
7/31/1952	19:53:13	35.352	-119.0178333	6	4.7	ml	13	101		0.44	ci	ci3317872	2018-06-04T20:43:44.000Z	1km ESE of Bakersfield, CA	earthquake	1.13	31.61	0.09	8	reviewed	ci	ci
7/29/1952	19:51:31	35.3458333	-118.9771667	6	4.57	ml	12	99		0.56	ci	ci3317850	2018-06-04T20:43:44.000Z	5km ESE of Bakersfield, CA	earthquake	1.62	31.61	0.093	5	reviewed	ci	ci
7/29/1952	12:50:35	35.3881667	-118.843	6	3.45	ml	13	94		0.52	ci	ci3317845	2016-01-28T18:06:43.490Z	16km NNE of Lamont, CA	earthquake	1.04	31.61	0.168	10	reviewed	ci	ci
7/29/1952	8:07:48	35.4075	-118.7816667	6	3.9	ml	12	92		0.57	ci	ci3317830	2016-01-28T18:25:05.860Z	20km NE of Lamont, CA	earthquake	1.47	31.61	0.282	7	reviewed	ci	ci
7/29/1952	8:01:45	35.4026667	-118.8203333	6	5.19	ml	13	94		0.34	ci	ci3318185	2018-06-04T20:43:44.000Z	18km NNE of Lamont, CA	earthquake	1.19	31.61	0.079	4	reviewed	ci	ci
7/29/1952	7:56:23	35.344	-118.7515	6	3.82	ml	10	151		0.54	ci	ci3318183	2016-01-28T18:16:00.440Z	16km NNE of Arvin, CA	earthquake	1.9	31.61	0.061	5	reviewed	ci	ci
7/29/1952	7:13:58	35.3375	-118.8403333	6	4.01	ml	7	155		0.44	ci	ci3317824	2016-01-28T18:20:32.940Z	11km NE of Lamont, CA	earthquake	2.19	31.61	0.121	8	reviewed	ci	ci
7/29/1952	7:03:46	35.3568333	-118.8948333	6	5.72	ml	14	96		0.86	ci	ci3317823	2022-04-26T18:05:22.223Z	11km N of Lamont, CA	earthquake	2.77	31.61	0.038	4	reviewed	ci	ci
7/29/1952	5:56:23	35.3683333	-118.8463333	6	3.9	ml	14	94		0.69	ci	ci3317820	2016-01-28T18:06:42.690Z	14km NNE of Lamont, CA	earthquake	1.54	31.61	0.028	9	reviewed	ci	ci
7/27/1952	11:34:38	35.0903333	-119.0601667	13.2	4.04	ml	13	98		0.71	ci	ci3317800	2016-01-28T18:20:31.430Z	20km NW of Grapevine, CA	earthquake	1.64	3.84	0.169	11	reviewed	ci	ci
7/27/1952	7:16:09	35.0656667	-119.1468333	4.33	4.09	ml	12	102		0.6	ci	ci3317797	2016-01-28T18:06:41.460Z	23km E of Maricopa, CA	earthquake	1.23	3.18	0.122	10	reviewed	ci	ci
7/26/1952	22:28:20	34.9556667	-119.013	14.93	3.32	ml	9	88		0.38	ci	ci3318702	2016-01-28T17:57:31.710Z	8km W of Grapevine, CA	earthquake	1.04	0.92	0.11	8	reviewed	ci	ci
7/25/1952	10:22:52	34.9923333	-118.978	2.21	3.29	ml	4	266	0.1856	0.37	ci	ci3318704	2016-01-28T18:08:13.390Z	7km NW of Grapevine, CA	earthquake	1.48	1.21	0.041	2	reviewed	ci	ci
7/25/1952	7:37:30	34.9785	-119.0098333	6	3.36	ml	4	265	0.1698	0.36	ci	ci3318397	2016-01-28T18:13:05.130Z	8km WNW of Grapevine, CA	earthquake	2.17	31.61	0.068	4	reviewed	ci	ci
7/25/1952	1:46:55	35.1551667	-118.903	6	4.1	ml	5	176		0.31	ci	ci3318388	2016-01-28T18:11:20.730Z	9km SW of Arvin, CA	earthquake	2.79	31.61	0.123	9	reviewed	ci	ci
7/24/1952	19:56:25	35.337	-118.736	6	2.51	mh	0	194.7		0.12	ci	ci3318363	2016-01-28T18:08:12.890Z	16km NNE of Arvin, CA	earthquake				1	reviewed	ci	ci
7/24/1952	19:47:50	35.0361667	-118.9083333	6	3.73	mh	4	184		0.29	ci	ci3318362	2016-01-28T18:11:19.770Z	10km N of Grapevine, CA	earthquake	6.01	31.61	0.385	2	reviewed	ci	ci
7/24/1952	5:21:36	35.0915	-119.0506667	6	3.85	ml	6	157	0.2843	0.52	ci	ci3318339	2016-01-28T18:26:46.670Z	20km NNW of Grapevine, CA	earthquake	1.44	31.61	0.116	9	reviewed	ci	ci
7/24/1952	3:29:27	34.9763333	-119.0461667	6	3.57	ml	7	142	0.17	0.46	ci	ci3318321	2016-01-28T18:06:39.420Z	11km WNW of Grapevine, CA	earthquake	1.41	31.61	0.181	7	reviewed	ci	ci
7/24/1952	3:11:06	35.1128333	-118.997	6	4.08	ml	10	117		0.52	ci	ci3318317	2016-01-28T18:11:18.790Z	18km SSW of Lamont, CA	earthquake	1.51	31.61	0.289	8	reviewed	ci	ci
7/24/1952	1:25:18	35.4266667	-118.7235	6	3.22	ml	3	341	1.354	0.61	ci	ci3318312	2016-01-28T17:59:04.130Z	25km NE of Lamont, CA	earthquake	10.14	31.61	0.015	6	reviewed	ci	ci
7/24/1952	1:23:21	35.0603333	-119.0561667	6	2.79	ml	4	265	0.8224	0.5	ci	ci3318309	2016-01-28T17:54:52.100Z	17km NW of Grapevine, CA	earthquake	5.7	31.61	0.191	4	reviewed	ci	ci
7/24/1952	1:09:41	35.119	-119.1591667	6	3.27	ml	5	271	0.3328	0.36	ci	ci3318303	2016-01-28T18:26:46.190Z	23km ENE of Maricopa, CA	earthquake	2.78	31.61	0.14	7	reviewed	ci	ci
7/23/1952	22:32:19	35.0326667	-118.896	0.67	4.05	ml	10	144		0.59	ci	ci3318297	2016-01-28T18:24:59.850Z	10km NNE of Grapevine, CA	earthquake	1.58	3.19	0.063	11	reviewed	ci	ci
7/23/1952	22:07:47	35.0698333	-118.8995	6	3.87	ml	7	159		0.26	ci	ci3318291	2016-01-28T18:06:38.620Z	14km N of Grapevine, CA	earthquake	1.29	31.61	0.148	6	reviewed	ci	ci
7/23/1952	21:53:38	35.1308333	-118.8898333	6	3.63	ml	7	161		0.48	ci	ci3318289	2016-01-28T18:29:42.340Z	10km SSW of Arvin, CA	earthquake	2.37	31.61	0.009	7	reviewed	ci	ci
7/23/1952	21:16:58	35.035	-118.9383333	6	4.03	ml	12	90		0.6	ci	ci3318287	2016-01-28T17:57:29.270Z	10km N of Grapevine, CA	earthquake	1.31	31.61	0.079	10	reviewed	ci	ci
7/23/1952	18:26:50	35.2043333	-119.0718333	6	3.81	ml	7	160		0.48	ci	ci3318278	2016-01-28T18:29:41.850Z	16km WSW of Lamont, CA	earthquake	2.01	31.61	0.133	7	reviewed	ci	ci
7/23/1952	18:13:50	34.996	-118.9301667	15.24	5.13	ml	14	88		0.5	ci	ci3318277	2018-06-04T20:43:44.000Z	6km N of Grapevine, CA	earthquake	1.07	2.42	0.09	5	reviewed	ci	ci
7/23/1952	17:53:28	35.0503333	-119.0271667	6	4.09	ml	12	95		0.73	ci	ci3318274	2016-01-28T17:57:28.720Z	15km NW of Grapevine, CA	earthquake	1.76	31.61	0.228	10	reviewed	ci	ci
7/23/1952	13:17:05	35.1656667	-118.7993333	6	5.51	ml	11	64		0.57	ci	ci3318262	2022-05-09T20:19:26.952Z	6km SSE of Arvin, CA	earthquake	1.84	31.61	0.079	3	reviewed	ci	ci
7/22/1952	17:52:34	35.0313333	-119.0815	6	4.09	ml	10	97		0.46	ci	ci3318788	2016-01-28T18:11:16.320Z	17km NW of Grapevine, CA	earthquake	1.07	31.61	0.038	9	reviewed	ci	ci
7/22/1952	14:05:10	35.0355	-118.9678333	6	4.03	ml	9	149		0.56	ci	ci3318793	2016-01-28T18:15:55.400Z	11km NNW of Grapevine, CA	earthquake	1.93	31.61	0.216	9	reviewed	ci	ci
7/22/1952	10:19:38	35.0025	-119.036	6	4.02	ml	10	87		0.73	ci	ci3319412	2016-01-28T18:01:53.030Z	12km NW of Grapevine, CA	earthquake	1.93	31.61	0.085	10	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
7/22/1952	8:21:21	35.0168333	-118.9801667	6	4.2	ml	11	91		0.61	ci	ci3318798	2016-01-28T18:20:25.120Z	9km NNW of Grapevine, CA	earthquake	1.57	31.61	0.182	10	reviewed	ci	ci
7/21/1952	23:53:28	34.9686667	-118.9795	6	4.41	ml	8	165		0.62	ci	ci3318976	2018-06-04T20:43:44.000Z	5km WNW of Grapevine, CA	earthquake	1.88	31.61	0.098	8	reviewed	ci	ci
7/21/1952	22:45:59	35.2016667	-119.0453333	6	3.32	ml	3	260	0.9379	0.86	ci	ci3318980	2016-01-28T18:17:42.510Z	14km WSW of Lamont, CA	earthquake	6.98	31.61	0.048	6	reviewed	ci	ci
7/21/1952	16:17:00	35.0403333	-119.0075	6	4.05	ml	4	236	1.126	0.61	ci	ci3319103	2016-01-28T17:59:02.180Z	13km NNW of Grapevine, CA	earthquake	8.21	31.61	0.138	7	reviewed	ci	ci
7/21/1952	15:53:04	34.9676667	-118.9656667	6	4.42	ml	5	165	0.8108	0.32	ci	ci3319102	2018-06-04T20:43:44.000Z	4km NW of Grapevine, CA	earthquake	1.64	31.61	0.117	7	reviewed	ci	ci
7/21/1952	15:38:02	34.9843333	-119.0238333	6	4.48	ml	4	170	0.7862	0.79	ci	ci3319115	2016-01-28T18:13:00.820Z	10km WNW of Grapevine, CA	earthquake	2.72	31.61	0.036	5	reviewed	ci	ci
7/21/1952	15:36:15	35.266	-118.8865	6	4.33	ml	4	181	1.069	0.13	ci	ci3319116	2016-01-28T18:03:44.000Z	3km ENE of Lamont, CA	earthquake	0.77	31.61	0.078	4	reviewed	ci	ci
7/21/1952	14:06:20	35	-119	6	4.03	ml	3	259	0.8112	2.58	ci	ci3319130	2016-01-28T18:22:02.580Z	9km NW of Grapevine, CA	earthquake	99	31.61	0.1	2	reviewed	ci	ci
7/21/1952	13:38:36	34.9908333	-119.0648333	6	4.03	ml	5	152	0.7668	0.38	ci	ci3319150	2016-01-28T18:03:43.500Z	13km WNW of Grapevine, CA	earthquake	1.06	31.61	0.031	5	reviewed	ci	ci
7/21/1952	13:13:05	34.997	-118.981	6	4.51	ml	5	148	0.8206	0.49	ci	ci3319158	2018-06-04T20:43:44.000Z	8km NW of Grapevine, CA	earthquake	1.28	31.61	0.15	3	reviewed	ci	ci
7/21/1952	13:08:00	35.0275	-118.9533333	6	4.39	ml	3	168	0.8579	0.52	ci	ci3319160	2018-06-04T20:43:44.000Z	10km NNW of Grapevine, CA	earthquake	2.09	31.61	0.173	2	reviewed	ci	ci
7/21/1952	12:40:00	35	-119	16	4.9	ml					ushis	ushis1802	2018-06-04T20:43:44.000Z	7 km SSW of Mettler, California	earthquake					reviewed	ushis	pas
7/21/1952	12:07:00	35	-119	0	5.18	mh					ci	ci3319396	2018-06-04T20:43:44.000Z	9km NW of Grapevine, CA	earthquake				1	reviewed	ci	ci
7/21/1952	12:06:00	35	-119	0	5.4	mh					ci	ci3319397	2018-06-04T20:43:44.000Z	9km NW of Grapevine, CA	earthquake				1	reviewed	ci	ci
7/21/1952	12:05:31	34.9731667	-119.0661667	6	5.8	mh	8	89		0.68	ci	ci3319398	2022-05-09T20:19:15.571Z	13km WNW of Grapevine, CA	earthquake	2.57	31.61		1	reviewed	ci	ci
7/21/1952	12:02:00	35	-119	0	4.31	mh	0	360	1.091	0	ci	ci3319400	2018-06-04T20:43:44.000Z	9km NW of Grapevine, CA	earthquake				2	reviewed	ci	ci
7/21/1952	11:59:00	35	-119.0333333	0	4.5	mh					ci	ci10084410	2018-06-04T20:43:44.000Z	11km NW of Grapevine, CA	earthquake				0	reviewed	ci	ci
7/21/1952	11:58:00	35	-119.0333333	0	4.6	mh					ci	ci10084406	2018-06-04T20:43:44.000Z	11km NW of Grapevine, CA	earthquake				0	reviewed	ci	ci
7/21/1952	11:57:00	35	-119.0333333	0	4.5	mh					ci	ci10084402	2018-06-04T20:43:44.000Z	11km NW of Grapevine, CA	earthquake				0	reviewed	ci	ci
7/21/1952	11:55:00	35	-119.033	16	4.5	ml					ushis	ushis1789	2018-06-04T20:43:44.000Z	9 km SW of Mettler, California	earthquake					reviewed	ushis	pas
7/21/1952	11:54:00	35	-119.0333333	0	4.5	mh					ci	ci10084394	2018-06-04T20:43:44.000Z	11km NW of Grapevine, CA	earthquake				0	reviewed	ci	ci
7/21/1952	11:52:14	34.9581667	-118.998	6	7.5	mw	8	146		0.39	ci	ci3319401	2022-04-26T18:05:09.065Z	6km WNW of Grapevine, CA	earthquake	1.42	31.61		0	reviewed	ci	ci
4/13/1952	7:47:02	34.9791667	-119.2161667	6	2.68	ml	7	199	0.6763	0.38	ci	ci3322003	2016-01-28T17:58:55.110Z	16km NNW of Pine Mountain Club, CA	earthquake	1.81	31.61	0.282	10	reviewed	ci	ci
3/9/1952	17:14:07	35.9863333	-120.3603333	6	3.28	ml	3	285	1.961	0.38	ci	ci10086302	2016-01-28T18:26:38.960Z	12km NNE of Parkfield, CA	earthquake	3.77	31.61	0.027	4	reviewed	ci	ci
3/9/1952	0:25:43	36.049	-120.44	6	3.15	ml	4	287	2.021	0.57	ci	ci10086298	2016-01-28T17:58:54.100Z	13km SW of Coalinga, CA	earthquake	4.6	31.61	0.028	6	reviewed	ci	ci
3/7/1952	23:23:39	34.8961667	-119.2091667	6	2.19	mh	3	284	1.136	0.14	ci	ci3324699	2016-01-28T18:03:34.770Z	8km NW of Pine Mountain Club, CA	earthquake	2.42	31.61	0.186	2	reviewed	ci	ci
1/1/1952	16:53:56	35.256	-119.1101667	6	3.03	ml	4	278	0.9534	0.3	ci	ci3322196	2016-01-28T17:58:49.880Z	13km SSW of Bakersfield, CA	earthquake	2.51	31.61	0.153	6	reviewed	ci	ci
12/20/1951	4:13:04	36.0375	-120.2525	6	3.69	ml	4	253	1.653	0.27	ci	ci3322106	2016-01-28T18:12:51.440Z	12km WNW of Avenal, CA	earthquake	1.9	31.61	0.071	10	reviewed	ci	ci
12/15/1951	5:41:58	35.1228333	-119.0568333	1	3.3	ml	9	159	0.8697	0.64	ci	ci3322102	2016-01-28T18:12:50.970Z	20km SW of Lamont, CA	earthquake	1.51	31.61	0.087	10	reviewed	ci	ci
12/15/1951	5:33:47	35.1453333	-119.0828333	6	2.89	ml	6	185	0.8745	0.62	ci	ci3322095	2016-01-28T18:12:50.480Z	20km SW of Lamont, CA	earthquake	2.13	31.61	0.121	10	reviewed	ci	ci
11/25/1951	23:15:40	35.3355	-119.371	6	3.65	ml	7	189	0.9363	0.58	ci	ci3322230	2016-01-28T18:17:26.660Z	12km SE of Buttonwillow, CA	earthquake	2.77	31.61	0.101	10	reviewed	ci	ci
10/3/1951	13:44:32	35.8693333	-120.451	6	3.67	ml	6	259	1.548	0.43	ci	ci3322265	2016-01-28T18:07:55.760Z	4km SSW of Parkfield, CA	earthquake	3.85	31.61	0.154	10	reviewed	ci	ci
5/29/1951	5:08:24	35.0936667	-119.661	6	3.1	ml	6	242	0.6529	0.41	ci	ci3322511	2016-01-28T18:07:48.430Z	19km WSW of Taft, CA	earthquake	2.42	31.61	0.205	9	reviewed	ci	ci
5/13/1951	2:19:13	35.3225	-119.052	6	2.75	ml	5	215	1.035	0.48	ci	ci3322503	2016-01-28T17:54:29.290Z	4km SSW of Bakersfield, CA	earthquake	2.49	31.61	0.171	5	reviewed	ci	ci
5/4/1951	20:08:10	36.3048333	-120.3051667	6	3.46	ml	5	285	1.828	0.76	ci	ci3322500	2016-01-28T18:07:47.470Z	19km NNE of Coalinga, CA	earthquake	6	31.61	0.126	6	reviewed	ci	ci
5/4/1951	3:28:36	36.2441667	-120.3728333	6	3.35	ml	3	325	1.903	0.13	ci	ci3322498	2016-01-28T17:54:28.820Z	12km N of Coalinga, CA	earthquake	1.64	31.61	0.024	3	reviewed	ci	ci
12/15/1950	23:41:26	35.4758333	-118.7831667	6	2.55	ml	6	216	0.9467	0.35	ci	ci3342406	2016-01-28T18:21:39.700Z	22km ENE of Oildale, CA	earthquake	1.97	31.61	0.185	8	reviewed	ci	ci
12/14/1950	13:56:20	35.2318333	-119.0801667	6	4.27	ml	4	345	1.311	0.59	ci	ci3342405	2016-01-28T18:17:10.720Z	15km SSW of Bakersfield, CA	earthquake	9.33	31.61	0.19	14	reviewed	ci	ci
12/8/1950	4:24:47	35.4261667	-118.7536667	6	2.53	ml	3	307	0.9655	0.5	ci	ci3342370	2016-01-28T18:17:08.360Z	24km NE of Lamont, CA	earthquake	4.33	31.61	0.14	6	reviewed	ci	ci
12/8/1950	4:18:20	35.4468333	-118.7238333	6	2.91	ml	8	153	0.9339	0.53	ci	ci3342369	2016-01-28T17:54:22.340Z	26km SW of Bodfish, CA	earthquake	1.67	31.61	0.191	12	reviewed	ci	ci
12/7/1950	7:14:31	35.4296667	-118.71	6	2.87	ml	9	152	0.9392	0.44	ci	ci3342363	2016-01-28T18:26:16.650Z	26km SW of Bodfish, CA	earthquake	1.19	31.61	0.173	12	reviewed	ci	ci
11/28/1950	8:33:47	35.0126667	-119.3828333	6	2.85	ml	7	274	0.6327	0.32	ci	ci3342329	2016-01-28T17:54:20.870Z	5km SSE of Maricopa, CA	earthquake	1.73	31.61	0.146	10	reviewed	ci	ci
11/4/1950	0:47:41	35.2436667	-118.9901667	6	2.51	ml	4	255	1.231	0.17	ci	ci3323200	2016-01-28T17:54:15.600Z	7km WSW of Lamont, CA	earthquake	2.67	31.61	0.09	7	reviewed	ci	ci
11/2/1950	6:39:23	35.2966667	-119.0415	6	2.67	ml	5	259	1.223	0.34	ci	ci3323198	2016-01-28T18:26:09.760Z	7km S of Bakersfield, CA	earthquake	3.42	31.61	0.114	7	reviewed	ci	ci
7/11/1950	9:19:43	35.4088333	-119.256	6	3.55	ml	6	184	1.037	0.53	ci	ci3344197	2016-01-28T18:21:22.350Z	10km S of Shafter, CA	earthquake	1.49	31.61	0.026	12	reviewed	ci	ci
5/21/1950	19:26:51	35.9056667	-119.716	6	3.3	ml	5	226	1.452	0.65	ci	ci3366704	2016-01-28T18:21:19.720Z	21km W of Alpaugh, CA	earthquake	4.21	31.61	0.11	10	reviewed	ci	ci
4/15/1950	11:56:33	35.8773333	-119.6921667	6	4.4	ml	6	223	1.433	0.59	ci	ci3366677	2018-06-04T20:43:44.000Z	18km W of Alpaugh, CA	earthquake	3.22	31.61	0.302	14	reviewed	ci	ci
3/22/1950	1:31:02	35.7956667	-120.569	6	3.61	ml	7	263	1.522	0.53	ci	ci3366647	2016-01-28T18:07:15.250Z	12km ENE of San Miguel, CA	earthquake	3.22	31.61	0.079	12	reviewed	ci	ci
10/14/1949	1:26:12	35.955	-120.0678333	6	3.52	ml	7	274	1.538	0.44	ci	ci3355542	2016-01-28T01:42:04.040Z	8km SE of Avenal, CA	earthquake	2.36	31.61	0.23	10	reviewed	ci	ci
8/29/1949	12:07:21	36.171	-120.4211667	6	3.71	ml	5	261	1.82	0.35	ci	ci3355710	2016-01-28T01:42:01.490Z	7km WNW of Coalinga, CA	earthquake	2.13	31.61	0.116	13	reviewed	ci	ci
8/9/1949	0:44:09	36.063	-120.588	6	3.4	ml	3	335	1.769	0.96	ci	ci3355618	2016-01-28T01:46:02.060Z	22km WSW of Coalinga, CA	earthquake	99	31.61	0.089	12	reviewed	ci	ci
7/14/1949	8:14:34	34.9065	-119.1695	6	2.92	ml	6	173	0.6465	0.39	ci	ci3355834	2016-01-28T01:30:11.310Z	7km NNW of Pine Mountain Club, CA	earthquake	1.09	31.61	0.081	12	reviewed	ci	ci
6/21/1949	22:08:18	35.0426667	-118.9416667	6	3.17	ml	5	169	0.8752	0.54	ci	ci3355796	2016-01-28T01:38:10.220Z	11km N of Grapevine, CA	earthquake	0.98	31.61	0.079	10	reviewed	ci	ci
4/21/1949	7:12:22	35.0071667	-119.133	6	2.9	ml	5	158	0.741	0.45	ci	ci3356136	2016-01-28T01:38:03.050Z	18km N of Pine Mountain Club, CA	earthquake	1.23	31.61	0.106	10	reviewed	ci	ci
10/28/1948	2:27:04	34.8051667	-119.302	6	2.75	ml	3	352	1.141	0.31	ci	ci3357127	2016-01-28T01:22:12.200Z	15km WSW of Pine Mountain Club, CA	earthquake	7.4	31.61	0.159	6	reviewed	ci	ci
9/29/1948	4:06:49	35.5181667	-118.834	6	4.13	ml	7	162	0.9486	0.47	ci	ci3356953	2016-01-28T01:29:39.700Z	20km ENE of Oildale, CA	earthquake	1.12	31.61	0.159	14	reviewed	ci	ci
8/4/1948	10:21:56	35.9125	-120.5431667	6	3.53	ml	6	263	1.618	0.42	ci	ci3357470	2016-01-28T01:22:09.170Z	10km W of Parkfield, CA	earthquake	1.91	31.61	0.143	12	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
5/9/1948	11:10:00	34.75	-120.25	6	2.7	mh					ci	ci12290339	2016-01-28T01:24:13.380Z	3km ENE of Los Alamos, CA	earthquake				0	reviewed	ci	ci
4/20/1948	10:03:45	35.3511667	-118.9605	6	2.9	ml	4	280	1.1	0.61	ci	ci3357627	2016-01-28T01:33:34.900Z	6km E of Bakersfield, CA	earthquake	3.44	31.61	0.13	10	reviewed	ci	ci
3/23/1948	11:59:19	35.186	-119.2083333	6	3.17	ml	5	172	0.8524	0.4	ci	ci3357683	2016-01-28T01:45:14.380Z	22km NE of Maricopa, CA	earthquake	0.94	31.61	0.065	12	reviewed	ci	ci
3/20/1948	17:35:01	35.2126667	-119.2733333	6	3.11	ml	6	178	0.8515	0.47	ci	ci3357685	2016-01-28T01:18:13.190Z	18km ENE of Taft, CA	earthquake	0.93	31.61	0.097	11	reviewed	ci	ci
3/20/1948	2:24:54	35.098	-119.523	6	2.88	ml	4	216	0.6745	0.65	ci	ci3357686	2016-01-28T01:45:13.950Z	8km SW of Taft, CA	earthquake	2.24	31.61	0.146	9	reviewed	ci	ci
3/2/1948	9:02:56	34.7985	-119.6655	6	2.8	ml	4	199	0.3592	0.57	ci	ci3357720	2016-01-28T01:45:10.980Z	38km SW of Maricopa, CA	earthquake	1.52	31.61	0.321	8	reviewed	ci	ci
2/15/1948	8:04:05	35.8325	-120.538	6	3.44	ml	5	263	1.544	0.55	ci	ci12290303	2016-01-28T01:47:38.760Z	12km SW of Parkfield, CA	earthquake	2.89	31.61	0.06	12	reviewed	ci	ci
2/6/1948	6:28:45	34.9973333	-119.1965	6	2.91	ml	3	246	1.197	0.27	ci	ci3357879	2016-01-28T01:33:27.200Z	17km NNW of Pine Mountain Club, CA	earthquake	2.5	31.61	0.106	6	reviewed	ci	ci
7/17/1947	20:32:11	34.942	-119.3616667	6	2.72	ml	4	268	0.5786	0.68	ci	ci3358676	2016-01-28T01:29:07.260Z	14km SSE of Maricopa, CA	earthquake	5.42	31.61	0.048	12	reviewed	ci	ci
7/14/1947	5:40:07	35.8948333	-119.8013333	6	4.01	ml	5	230	1.452	0.48	ci	ci3358663	2016-01-28T01:21:35.690Z	19km SE of Kettleman City, CA	earthquake	3.07	31.61	0.079	11	reviewed	ci	ci
3/14/1947	19:18:20	35.0946667	-119.3006667	6	2.5	ml	4	276	0.7361	0.49	ci	ci3359031	2016-01-28T01:21:17.720Z	10km ENE of Maricopa, CA	earthquake	5.01	31.61	0.193	9	reviewed	ci	ci
2/25/1947	9:23:18	35.4301667	-118.9955	6	2.7	ml	5	229	1.106	0.48	ci	ci3358891	2016-01-28T01:21:17.220Z	2km ENE of Oildale, CA	earthquake	2.82	31.61	0.134	12	reviewed	ci	ci
2/12/1947	13:33:00	35.5025	-118.7921667	6	3.14	ml	7	160	0.9336	0.68	ci	ci3358874	2016-01-28T01:44:27.560Z	23km ENE of Oildale, CA	earthquake	2.11	31.61	0.091	12	reviewed	ci	ci
2/10/1947	10:14:35	35.4546667	-118.7343333	6	2.68	ml	5	214	0.9339	0.59	ci	ci3358869	2016-01-28T01:28:41.860Z	26km E of Oildale, CA	earthquake	4.18	31.61	0.147	10	reviewed	ci	ci
2/10/1947	9:24:02	35.4988333	-118.7958333	6	2.73	ml	5	218	0.9383	0.77	ci	ci3358865	2016-01-28T01:44:26.580Z	22km ENE of Oildale, CA	earthquake	4.87	31.61	0.067	10	reviewed	ci	ci
2/7/1947	12:19:59	35.4771667	-118.7385	6	3.09	ml	6	155	0.92	0.65	ci	ci3358860	2016-01-28T01:44:26.090Z	26km WSW of Bodfish, CA	earthquake	1.95	31.61	0.295	16	reviewed	ci	ci
2/1/1947	1:45:20	35.8841667	-118.9221667	6	2.66	ml	4	225	0.8294	0.73	ci	ci3358841	2016-01-28T01:17:34.850Z	22km SSE of Porterville, CA	earthquake	4	31.61	0.149	10	reviewed	ci	ci
11/28/1946	9:57:09	35.4915	-120.8776667	6	3.12	ml	4	276	1.418	1.07	ci	ci3359213	2016-01-28T01:21:10.840Z	6km NNE of Cayucos, CA	earthquake	10.03	31.61	0.088	10	reviewed	ci	ci
11/25/1946	21:01:02	35.0008333	-119.0401667	6	3.1	ml	5	151	0.7881	0.76	ci	ci3359207	2016-01-28T01:44:20.990Z	12km WNW of Grapevine, CA	earthquake	2.09	31.61	0.067	9	reviewed	ci	ci
11/5/1946	16:24:29	35.1923333	-119.042	6	2.64	ml	4	273	0.9321	0.47	ci	ci3359162	2016-01-28T01:44:18.520Z	14km WSW of Lamont, CA	earthquake	4.47	31.61	0.054	8	reviewed	ci	ci
9/29/1946	14:20:40	35.0463333	-119.204	6	2.92	ml	4	268	0.7362	0.66	ci	ci3359592	2016-01-28T01:28:37.380Z	18km E of Maricopa, CA	earthquake	5.46	31.61	0.148	11	reviewed	ci	ci
9/19/1946	6:35:44	35.8796667	-119.7381667	6	3.16	ml	5	226	1.436	0.24	ci	ci3359584	2016-01-28T01:36:43.610Z	23km W of Alpaugh, CA	earthquake	1.46	31.61	0.208	9	reviewed	ci	ci
7/26/1946	0:43:10	34.8213333	-119.1461667	6	2.68	ml	4	246	0.6034	0.21	ci	ci3359722	2016-01-28T01:40:28.250Z	3km S of Pine Mountain Club, CA	earthquake	2.38	31.61	0.1	9	reviewed	ci	ci
7/24/1946	0:23:08	35.1466667	-119.1553333	6	2.98	ml	3	273	0.8415	0.57	ci	ci3359718	2016-01-28T01:36:41.210Z	24km ENE of Maricopa, CA	earthquake	5.21	31.61	0.065	9	reviewed	ci	ci
7/24/1946	0:19:09	35.1361667	-119.1451667	6	4.08	ml	5	272	0.8374	0.5	ci	ci3359716	2016-01-28T01:17:24.820Z	25km ENE of Maricopa, CA	earthquake	3.64	31.61	0.181	12	reviewed	ci	ci
5/21/1946	6:04:40	35.9636667	-119.9825	6	3.3	ml	5	240	1.535	0.87	ci	ci10085214	2016-01-28T01:28:26.850Z	5km SSW of Kettleman City, CA	earthquake	7.02	31.61	0.069	9	reviewed	ci	ci
3/27/1946	11:16:56	35.608	-118.934	6	3.22	ml	3	225	1.551	0.14	ci	ci3359848	2016-01-28T01:40:16.860Z	22km NNE of Oildale, CA	earthquake	4.18	31.61	0.183	8	reviewed	ci	ci
3/16/1946	9:05:24	35.4886667	-118.8348333	6	2.69	ml	3	162	0.3416	0.3	ci	ci3360188	2016-01-28T01:24:41.060Z	18km ENE of Oildale, CA	earthquake	3.01	31.61	0.07	3	reviewed	ci	ci
2/13/1946	21:02:00	34.8898333	-119.204	6	2.82	ml	4	256	0.6149	0.54	ci	ci3360154	2016-01-28T01:40:08.260Z	7km NW of Pine Mountain Club, CA	earthquake	4.89	31.61	0.169	8	reviewed	ci	ci
12/1/1945	4:56:39	35.2763333	-119.198	6	2.99	ml	4	201	0.9357	0.75	ci	ci3360337	2016-01-28T01:32:19.070Z	13km SSW of Rosedale, CA	earthquake	2.95	31.61	0.25	5	reviewed	ci	ci
11/14/1945	14:43:32	35.3585	-118.9031667	6	3.55	ml	5	160	1.099	0.49	ci	ci3360313	2016-01-28T01:43:56.340Z	11km N of Lamont, CA	earthquake	1.89	31.61	0.235	10	reviewed	ci	ci
9/7/1945	11:24:20	35.8785	-120.68	6	4.01	ml	3	268	1.638	0.63	ci	ci10084878	2016-01-28T01:24:32.690Z	14km N of San Miguel, CA	earthquake	8.37	31.61	0.096	12	reviewed	ci	ci
9/4/1945	4:45:02	35.4551667	-119.0768333	6	3.1	ml	5	174	1.14	0.49	ci	ci3360282	2016-01-28T01:32:17.500Z	6km NW of Oildale, CA	earthquake	1.95	31.61	0.094	11	reviewed	ci	ci
7/25/1945	0:08:11	34.9785	-118.9721667	6	3.38	ml	5	257	0.8138	0.35	ci	ci3360474	2016-01-28T01:43:54.390Z	6km NW of Grapevine, CA	earthquake	2.65	31.61	0.062	12	reviewed	ci	ci
3/22/1945	5:19:00	35.0743333	-118.87	6	2.82	ml	6	146	0.9399	0.34	ci	ci3360737	2016-01-28T01:24:24.830Z	16km SSW of Arvin, CA	earthquake	0.9	31.61	0.1	10	reviewed	ci	ci
2/25/1945	20:18:37	35.989	-120.7445	6	3.4	ml	5	270	1.76	1.09	ci	ci3360602	2016-01-28T01:43:50.860Z	27km N of San Miguel, CA	earthquake	9.01	31.61	0.171	12	reviewed	ci	ci
2/5/1945	21:27:13	35.153	-118.8618333	0.09	2.77	ml	6	149	0.9989	0.61	ci	ci3361061	2016-01-28T01:16:58.450Z	7km SSW of Arvin, CA	earthquake	1.58	31.61	0.122	14	reviewed	ci	ci
11/28/1944	16:35:58	35.8611667	-120.3461667	6	3.38	ml	4	255	1.509	1.06	ci	ci3362074	2016-01-28T01:36:12.080Z	9km ESE of Parkfield, CA	earthquake	16.72	31.61	0.106	12	reviewed	ci	ci
9/15/1944	14:12:39	35.0615	-120.3706667	6	2.76	mh	3	335	0.8216	0.68	ci	ci3363997	2016-01-28T01:39:50.580Z	10km ENE of Nipomo, CA	earthquake	7.91	31.61	0.097	6	reviewed	ci	ci
7/15/1944	11:26:41	35.4481667	-119.2071667	6	3.2	ml	5	239	1.544	0.57	ci	ci3366592	2016-01-28T01:43:35.510Z	8km SE of Shafter, CA	earthquake	8.7	31.61	0.127	11	reviewed	ci	ci
6/13/1944	8:46:44	35.0551667	-120.2716667	6	3.82	ml	4	330	0.7654	0.39	ci	ci3366555	2016-01-28T01:39:45.590Z	19km E of Nipomo, CA	earthquake	3.74	31.61	0.147	14	reviewed	ci	ci
6/13/1944	8:27:33	35.0353333	-120.1818333	6	4.38	ml	4	327	0.7069	0.53	ci	ci3366556	2018-06-04T20:43:44.000Z	25km ENE of Santa Maria, CA	earthquake	4.78	31.61	0.162	14	reviewed	ci	ci
6/1/1944	1:35:00	35.5	-118.867	6	2.26	mh	0	360	0.9808	0	ci	ci3366531	2016-01-28T01:35:57.180Z	16km ENE of Oildale, CA	earthquake				1	reviewed	ci	ci
6/1/1944	0:50:44	35.4776667	-118.8371667	6	2.25	ml	3	250	0.9774	0.23	ci	ci3366530	2016-01-28T01:24:06.390Z	18km ENE of Oildale, CA	earthquake	2.58	31.61	0.176	8	reviewed	ci	ci
2/23/1944	23:42:45	35.4856667	-118.7136667	6	3.63	ml	5	154	1.328	0.43	ci	ci3366490	2016-01-28T01:31:44.070Z	23km WSW of Bodfish, CA	earthquake	1.8	31.61	0.042	9	reviewed	ci	ci
2/3/1944	16:05:39	35.6103333	-118.8795	6	2.69	ml	5	168	0.9213	0.53	ci	ci3366483	2016-01-28T01:35:54.680Z	25km NNE of Oildale, CA	earthquake	2.64	31.61	0.141	11	reviewed	ci	ci
1/31/1944	14:09:52	35.5261667	-118.8228333	6	3.06	ml	7	162	0.9365	0.4	ci	ci3366481	2016-01-28T01:43:28.900Z	21km ENE of Oildale, CA	earthquake	1.79	31.61	0.111	11	reviewed	ci	ci
1/31/1944	8:17:00	35.4863333	-119.2271667	6	2.5	ml	3	240	1.585	0.13	ci	ci3366480	2016-01-28T01:20:17.100Z	4km ESE of Shafter, CA	earthquake	3.45	31.61	0.09	5	reviewed	ci	ci
1/31/1944	7:43:52	35.5145	-118.7893333	6	3.22	ml	7	160	0.9238	0.41	ci	ci3366479	2016-01-28T01:43:28.400Z	23km ENE of Oildale, CA	earthquake	1.47	31.61	0.119	9	reviewed	ci	ci
1/31/1944	7:28:52	35.4943333	-118.7508333	6	3.2	ml	7	156	0.9149	0.48	ci	ci3366478	2016-01-28T01:39:39.760Z	26km WSW of Bodfish, CA	earthquake	1.33	31.61	0.127	10	reviewed	ci	ci
1/29/1944	3:26:23	35.5346667	-118.834	6	3.5	ml	7	163	0.9379	0.59	ci	ci3366477	2016-01-28T01:39:39.260Z	21km NE of Oildale, CA	earthquake	2.12	31.61	0.118	12	reviewed	ci	ci
1/27/1944	11:18:39	35.5198333	-118.8086667	6	2.28	ml	5	161	0.9319	0.44	ci	ci3366476	2016-01-28T01:39:38.770Z	22km ENE of Oildale, CA	earthquake	2.7	31.61	0.289	9	reviewed	ci	ci
1/26/1944	13:17:50	35.5395	-118.8126667	6	2.89	ml	7	162	0.9215	0.55	ci	ci3366475	2016-01-28T01:27:40.680Z	23km NE of Oildale, CA	earthquake	2.24	31.61	0.146	12	reviewed	ci	ci
1/22/1944	21:39:34	35.5453333	-118.8343333	6	2.48	ml	5	163	0.9313	0.68	ci	ci3366474	2016-01-28T01:43:27.910Z	22km NE of Oildale, CA	earthquake	3.07	31.61	0.103	12	reviewed	ci	ci
1/22/1944	21:24:56	35.5431667	-118.8403333	6	2.88	ml	7	163	0.9364	0.53	ci	ci3366473	2016-01-28T01:47:28.190Z	21km NE of Oildale, CA	earthquake	2.04	31.61	0.166	12	reviewed	ci	ci
1/21/1944	9:51:56	35.5488333	-118.8001667	6	2.89	ml	7	161	0.9077	0.6	ci	ci3366472	2016-01-28T01:35:54.190Z	24km NE of Oildale, CA	earthquake	2.23	31.61	0.21	11	reviewed	ci	ci
1/21/1944	9:45:07	35.5215	-118.7928333	6	2.96	ml	5	160	0.9212	0.56	ci	ci3366471	2016-01-28T01:47:27.650Z	23km ENE of Oildale, CA	earthquake	2.45	31.61	0.134	9	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
11/8/1943	11:33:43	36.0413333	-120.4685	6	3.12	ml	4	286	2.044	0.26	ci	ci3366438	2016-01-28T01:31:41.080Z	15km SW of Coalinga, CA	earthquake	3.52	31.61	0.142	12	reviewed	ci	ci
8/15/1943	20:44:30	35.217	-118.9913333	6	2.71	ml	5	255	1.251	0.55	ci	ci3366366	2016-01-28T01:35:46.740Z	8km SW of Lamont, CA	earthquake	6.02	31.61	0.219	10	reviewed	ci	ci
7/15/1943	0:44:45	35.93	-120.185	6	3.06	ml	4	277	1.825	0.36	ci	ci3366345	2016-01-28T01:31:34.540Z	10km SSW of Avenal, CA	earthquake	4.26	31.61	0.179	9	reviewed	ci	ci
1/15/1943	18:58:30	35.1225	-118.978	6	2.95	ml	4	177	0.9113	0.44	ci	ci3366210	2016-01-28T01:43:11.000Z	16km SSW of Lamont, CA	earthquake	1.28	31.61	0.116	12	reviewed	ci	ci
12/5/1942	11:57:04	34.9841667	-119.0121667	6	2.81	ml	4	168	0.7931	0.36	ci	ci3366172	2016-01-28T01:47:06.740Z	9km WNW of Grapevine, CA	earthquake	1.1	31.61	0.176	7	reviewed	ci	ci
11/15/1942	15:38:53	34.9308333	-118.9963333	6	2.89	ml	4	253	0.7679	0.48	ci	ci3366153	2016-01-28T01:19:58.860Z	6km WSW of Grapevine, CA	earthquake	3.54	31.61	0.152	8	reviewed	ci	ci
10/31/1942	10:51:10	35.8441667	-120.401	6	4.09	ml	6	257	1.509	0.3	ci	ci3366132	2016-01-28T01:47:04.250Z	7km SSE of Parkfield, CA	earthquake	6.41	31.61	0.154	13	reviewed	ci	ci
6/29/1942	21:07:41	35.6	-120.8	6	3.9	ml	2	338	1.46	2.46	ci	ci3366025	2016-01-28T01:31:15.760Z	10km WNW of Templeton, CA	earthquake	99	31.61	0.157	10	reviewed	ci	ci
6/12/1942	22:28:25	35.4336667	-118.7918333	6	2.38	ml	4	157	0.9815	0.46	ci	ci3366012	2016-01-28T01:39:08.250Z	21km E of Oildale, CA	earthquake	2.41	31.61	0.156	6	reviewed	ci	ci
5/20/1942	0:38:04	35.3476667	-119.1938333	6	3.45	ml	3	293	1.001	0.25	ci	ci3365979	2016-01-28T01:42:56.650Z	6km SW of Rosedale, CA	earthquake	3.26	31.61	0.184	11	reviewed	ci	ci
4/22/1942	5:32:52	35.3601667	-119.2748333	6	2.73	ml	3	296	0.986	0.47	ci	ci3365959	2016-01-28T01:35:16.150Z	12km WSW of Rosedale, CA	earthquake	4.45	31.61	0.184	10	reviewed	ci	ci
12/22/1941	0:54:06	35.8536667	-120.6603333	6	3.74	ml	3	288	2.218	0.38	ci	ci3365834	2016-01-28T01:46:46.640Z	12km NNE of San Miguel, CA	earthquake	4.8	31.61	0.09	10	reviewed	ci	ci
11/28/1941	6:23:57	36.0803333	-119.8571667	6	3.49	ml	3	269	1.547	0.49	ci	ci3365823	2016-01-28T01:35:06.690Z	12km NE of Kettleman City, CA	earthquake	4.84	31.61	0.119	7	reviewed	ci	ci
9/29/1941	15:35:11	34.9131667	-119.385	6	2.9	ml	3	257	1.259	0.08	ci	ci3365767	2016-01-28T01:27:06.100Z	16km S of Maricopa, CA	earthquake	2.59	31.61	0.214	11	reviewed	ci	ci
6/4/1941	8:47:19	35.405	-119.251	6	4.02	ml	6	184	1.035	0.59	ci	ci3365625	2016-01-28T01:38:45.990Z	10km WNW of Rosedale, CA	earthquake	2.72	31.61	0.08	11	reviewed	ci	ci
5/28/1941	22:32:00	35.25	-118.9878333	6	2.9	ml	4	161	1.005	0.65	ci	ci3365622	2016-01-28T01:38:45.540Z	7km W of Lamont, CA	earthquake	2.05	31.61	0.168	8	reviewed	ci	ci
3/30/1941	23:37:07	35.1605	-119.2071667	6	3.28	ml	5	171	0.8308	0.49	ci	ci3365595	2016-01-28T01:26:54.630Z	21km ENE of Maricopa, CA	earthquake	2.09	31.61	0.367	10	reviewed	ci	ci
3/13/1941	23:12:15	35.3981667	-119.2548333	6	3.38	ml	6	184	1.027	0.58	ci	ci3365581	2016-01-28T01:34:52.890Z	10km W of Rosedale, CA	earthquake	2.62	31.61	0.194	10	reviewed	ci	ci
2/9/1941	18:53:41	35.0248333	-119.1198333	6	2.68	ml	4	264	0.7614	0.33	ci	ci3365553	2016-01-28T01:42:36.760Z	20km WNW of Grapevine, CA	earthquake	3.59	31.61	0.036	11	reviewed	ci	ci
2/4/1941	3:42:08	34.6566667	-119.7923333	6	2.92	ml	3	303	0.2247	0.08	ci	ci3365549	2016-01-28T01:46:32.180Z	25km N of Goleta, CA	earthquake	1.47	31.61	0.109	8	reviewed	ci	ci
2/4/1941	3:19:11	34.6555	-119.7763333	6.07	2.89	ml	4	300	0.2201	0.32	ci	ci3365548	2016-01-28T01:42:36.260Z	25km N of Goleta, CA	earthquake	3.81	7.96	0.248	8	reviewed	ci	ci
1/29/1941	8:53:59	34.6725	-119.558	6	2.84	ml	3	259	0.265	0.23	ci	ci3365543	2016-01-28T01:42:35.760Z	27km NNE of Montecito, CA	earthquake	2.25	31.61	0.092	6	reviewed	ci	ci
1/25/1941	15:09:00	35.428	-119.2535	6	3.02	ml	6	184	1.055	0.57	ci	ci3365539	2016-01-28T01:38:41.690Z	8km SSE of Shafter, CA	earthquake	2.52	31.61	0.183	12	reviewed	ci	ci
1/23/1941	16:41:00	35.4116667	-119.1886667	6	3.07	ml	5	180	1.061	0.27	ci	ci3365538	2016-01-28T01:38:41.160Z	5km NW of Rosedale, CA	earthquake	1.37	31.61	0.114	12	reviewed	ci	ci
1/20/1941	13:58:16	35.4088333	-119.2708333	6	3.99	ml	6	185	1.032	0.52	ci	ci3365536	2016-01-28T01:19:24.930Z	10km S of Shafter, CA	earthquake	2.38	31.61	0.236	14	reviewed	ci	ci
11/17/1940	21:23:45	34.9228333	-119.4328333	6	2.63	ml	4	198	0.5342	0.46	ci	ci3365500	2016-01-28T01:23:10.650Z	15km S of Maricopa, CA	earthquake	4.92	31.61	0.224	9	reviewed	ci	ci
8/6/1940	15:33:53	34.94	-119.2013333	6	3.23	ml	5	260	0.6536	0.29	ci	ci3365422	2016-01-28T01:19:19.230Z	11km NNW of Pine Mountain Club, CA	earthquake	2.46	31.61	0.153	10	reviewed	ci	ci
7/29/1940	12:14:25	35.1203333	-119.0896667	6	3.42	ml	4	261	1.23	0.48	ci	ci3365418	2016-01-28T01:38:34.430Z	22km SW of Lamont, CA	earthquake	5.02	31.61	0.094	12	reviewed	ci	ci
6/26/1940	8:56:03	36.3283333	-120.1555	6	3.47	ml	4	255	1.709	0.6	ci	ci3365385	2016-01-28T01:42:25.470Z	15km NNW of Huron, CA	earthquake	4.45	31.61	0.05	10	reviewed	ci	ci
1/18/1940	17:18:49	34.9235	-119.0318333	6	2.6	ml	4	146	0.7408	0.37	ci	ci3365206	2016-01-28T01:26:30.730Z	10km WSW of Grapevine, CA	earthquake	1.47	31.61	0.083	12	reviewed	ci	ci
12/30/1939	15:24:34	35.9183333	-120.591	6	3.73	ml	6	265	1.64	0.67	ci	ci3365184	2016-01-27T18:38:59.890Z	14km W of Parkfield, CA	earthquake	4.57	31.61	0.143	12	reviewed	ci	ci
12/14/1939	3:45:14	36.2095	-120.3836667	6	3.1	ml	3	286	1.927	0.21	ci	ci3365168	2016-04-02T13:49:16.643Z	8km NNW of Coalinga, CA	earthquake	2.43	31.61	0.363	11	reviewed	ci	ci
10/25/1939	9:45:48	35.0843333	-119.2573333	6	2.64	ml	4	273	0.7444	0.46	ci	ci3365136	2016-01-27T18:56:28.430Z	13km ENE of Maricopa, CA	earthquake	3.49	31.61	0.238	12	reviewed	ci	ci
10/25/1939	9:07:28	35.1063333	-119.269	6	3.3	ml	4	274	0.7587	0.54	ci	ci3365135	2016-01-27T18:51:54.670Z	13km ENE of Maricopa, CA	earthquake	4.13	31.61	0.269	12	reviewed	ci	ci
8/19/1939	17:08:44	35.3941667	-119.329	6	3.23	ml	5	188	1.003	0.31	ci	ci3365078	2016-01-27T18:26:07.750Z	13km E of Buttonwillow, CA	earthquake	1.46	31.61	0.106	12	reviewed	ci	ci
7/24/1939	8:41:11	34.9175	-119.017	6	2.34	ml	5	145	0.7463	0.62	ci	ci3365063	2016-01-27T18:30:28.760Z	8km WSW of Grapevine, CA	earthquake	2.53	31.61	0.076	12	reviewed	ci	ci
6/15/1939	21:12:12	34.822	-119.4993333	6	2.65	ml	3	353	1.287	0.61	ci	ci3365030	2016-01-27T18:38:45.580Z	28km SSW of Maricopa, CA	earthquake	20.85	31.61	0.281	10	reviewed	ci	ci
5/18/1939	23:00:25	35.9638333	-120.6846667	6	3.05	ml	2	292	1.715	0.07	ci	ci3365006	2016-01-27T18:34:34.740Z	24km N of San Miguel, CA	earthquake	2.13	31.61	0.151	10	reviewed	ci	ci
5/8/1939	2:48:02	35.0626667	-119.062	6	4.38	ml	5	264	0.821	0.4	ci	ci3364995	2018-06-04T20:43:44.000Z	18km NW of Grapevine, CA	earthquake	2.83	31.61	0.112	14	reviewed	ci	ci
5/2/1939	18:49:25	35.8961667	-120.745	6	4.18	ml	5	270	1.679	0.51	ci	ci3364980	2016-01-27T18:56:19.780Z	17km NNW of San Miguel, CA	earthquake	3.67	31.61	0.2	14	reviewed	ci	ci
3/7/1939	23:26:20	34.9403333	-119.0055	6	2.63	ml	3	346	1.048	0.35	ci	ci3364917	2016-01-27T18:30:17.120Z	7km W of Grapevine, CA	earthquake	7.06	31.61	0.045	8	reviewed	ci	ci
2/23/1939	10:25:35	34.9456667	-118.9783333	6	3.24	ml	4	254	0.7887	0.22	ci	ci3364906	2016-01-27T18:38:36.230Z	4km W of Grapevine, CA	earthquake	1.97	31.61	0.056	12	reviewed	ci	ci
2/23/1939	9:46:00	35.0311667	-118.9968333	6	2.86	ml	4	261	0.8347	0.29	ci	ci3364905	2016-01-27T18:51:44.110Z	12km NNW of Grapevine, CA	earthquake	2.09	31.61	0.075	12	reviewed	ci	ci
2/23/1939	9:33:17	34.969	-118.9903333	6	3.3	ml	4	256	0.7963	0.34	ci	ci3364904	2016-01-27T18:26:01.690Z	6km WNW of Grapevine, CA	earthquake	2.45	31.61	0.053	12	reviewed	ci	ci
2/23/1939	8:58:01	34.9846667	-119.0306667	6	2.95	ml	4	258	0.7824	0.43	ci	ci3364902	2016-01-27T18:38:35.750Z	10km WNW of Grapevine, CA	earthquake	3.56	31.61	0.031	12	reviewed	ci	ci
2/23/1939	8:45:50	35.0331667	-118.9876667	6	4.41	ml	5	261	0.8414	0.32	ci	ci3364901	2018-06-04T20:43:44.000Z	11km NNW of Grapevine, CA	earthquake	2.1	31.61	0.092	14	reviewed	ci	ci
2/9/1939	6:44:02	35.8985	-120.536	6	2.99	ml	3	263	1.602	1.04	ci	ci3364884	2016-01-27T18:51:40.880Z	9km W of Parkfield, CA	earthquake	7.9	31.61	0.09	5	reviewed	ci	ci
1/1/1939	0:53:37	34.8531667	-120.221	6	2.8	ml	3	334	0.586	0.5	ci	ci3364837	2016-01-27T18:56:12.080Z	13km NNE of Los Alamos, CA	earthquake	5.04	31.61	0.174	8	reviewed	ci	ci
11/22/1938	15:30:45	35.7578333	-120.497	6	4.29	ml	5	261	1.462	0.43	ci	ci3364801	2016-01-27T18:34:57.230Z	16km NW of Shandon, CA	earthquake	3.76	31.61	0.166	13	reviewed	ci	ci
11/22/1938	15:30:00	35.93	-120.48		4.5	ml					ushis	ushis1228	2018-06-04T20:43:44.000Z	5 km NW of Parkfield, California	earthquake					reviewed	ushis	pas
11/16/1938	13:39:38	35.9251667	-120.6868333	6	3.14	ml	4	268	1.681	0.77	ci	ci3364800	2016-01-27T18:52:11.820Z	19km N of San Miguel, CA	earthquake	7.6	31.61	0.07	9	reviewed	ci	ci
11/1/1938	22:46:54	35.1738333	-120.254	6	3.17	ml	4	327	0.8554	0.4	ci	ci3364792	2016-01-27T18:30:53.230Z	25km NE of Nipomo, CA	earthquake	5	31.61	0.095	9	reviewed	ci	ci
10/28/1938	10:07:44	35.7296667	-120.4518333	6	3.25	ml	5	283	2.073	0.59	ci	ci3364789	2016-01-27T18:30:52.760Z	11km NW of Shandon, CA	earthquake	4.93	31.61	0.111	9	reviewed	ci	ci
10/17/1938	18:13:17	35.909	-120.744	6	3.47	ml	4	290	2.278	0.38	ci	ci3364784	2016-01-27T18:30:51.820Z	18km NNW of San Miguel, CA	earthquake	3.65	31.61	0.153	11	reviewed	ci	ci
10/15/1938	11:19:40	35.1755	-118.9418333	6	2.61	ml	3	280	0.9705	0.61	ci	ci3364780	2016-01-27T18:26:29.620Z	10km SSW of Lamont, CA	earthquake	5.81	31.61	0.08	5	reviewed	ci	ci
6/22/1938	3:49:44	35.31	-120.151	6	2.83	mh	4	322	0.9384	0.64	ci	ci3364660	2016-01-27T18:30:45.710Z	14km WSW of Simmler, CA	earthquake	14.58	31.61	0.099	7	reviewed	ci	ci
6/20/1938	22:36:18	34.9186667	-120.47	6	3.11	ml	3	357	2.047	0.3	ci	ci3364658	2016-01-27T18:34:50.150Z	5km SW of Santa Maria, CA	earthquake	21.59	31.61	0.19	8	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/1/1938	6:18:38	34.6695	-119.7311667	6	2.85	ml	3	291	0.2286	0.08	ci	ci3364631	2016-01-27T18:43:20.490Z	27km NNW of Montecito, CA	earthquake	2.2	31.61	0.188	8	reviewed	ci	ci
4/24/1938	3:34:20	35.7525	-120.211	6	2.93	ml	3	277	2.059	0.79	ci	ci3364596	2016-01-27T18:30:43.410Z	8km ENE of Cholame, CA	earthquake	19.14	31.61	0.127	8	reviewed	ci	ci
4/12/1938	1:50:17	35.1	-120.4	6	3.34	ml	3	285	2.069	1.72	ci	ci3364572	2016-01-27T18:43:17.080Z	9km NE of Nipomo, CA	earthquake	99	31.61	0.226	9	reviewed	ci	ci
12/25/1937	13:01:19	36.168	-120.296	6	3.14	ml	4	283	1.883	0.09	ci	ci3364498	2016-01-27T18:39:32.990Z	6km ENE of Coalinga, CA	earthquake	1.9	31.61	0.16	4	reviewed	ci	ci
12/12/1937	2:31:42	35.5306667	-119.4046667	6	3.48	ml	5	228	1.117	0.57	ci	ci3364484	2016-01-27T18:52:37.420Z	9km SW of Wasco, CA	earthquake	3.32	31.61	0.114	12	reviewed	ci	ci
11/25/1937	14:51:39	34.8091667	-119.3105	6	2.65	mh	3	352	1.149	0.08	ci	ci3364464	2016-01-27T18:31:13.620Z	15km WSW of Pine Mountain Club, CA	earthquake	5.76	31.61	0.238	7	reviewed	ci	ci
11/22/1937	6:29:18	34.8338333	-119.239	6	2.55	ml	3	351	1.116	0.44	ci	ci3364457	2016-01-27T18:35:20.550Z	8km W of Pine Mountain Club, CA	earthquake	12.72	31.61	0.155	5	reviewed	ci	ci
10/4/1937	8:06:45	35.035	-118.951	6	2.62	ml	3	345	1.094	0.45	ci	ci3364420	2016-01-27T18:57:14.970Z	10km N of Grapevine, CA	earthquake	99	31.61	0.086	8	reviewed	ci	ci
4/30/1937	8:16:01	34.7323333	-119.516	6	2.38	mh	3	262	0.334	0.47	ci	ci3364226	2016-01-27T18:26:40.900Z	34km NNE of Montecito, CA	earthquake	5.26	31.61	0.146	8	reviewed	ci	ci
4/23/1937	3:47:47	34.8665	-119.3348333	6	3.13	ml	3	255	1.199	0.12	ci	ci3364220	2016-01-27T18:48:01.430Z	17km W of Pine Mountain Club, CA	earthquake	2.39	31.61	0.12	9	reviewed	ci	ci
4/17/1937	12:38:37	35.4315	-119.409	6	2.67	ml	3	249	1.381	0.11	ci	ci3364215	2016-01-27T18:52:21.650Z	6km ENE of Buttonwillow, CA	earthquake	3.35	31.61	0.278	7	reviewed	ci	ci
2/20/1937	9:58:10	35.9938333	-120.754	6	3.95	ml	4	291	2.278	0.53	ci	ci3364116	2016-01-27T18:26:35.320Z	27km N of San Miguel, CA	earthquake	3.91	31.61	0.112	8	reviewed	ci	ci
12/23/1936	17:16:54	35.9061667	-120.4901667	6	3.56	ml	5	286	1.594	0.69	ci	ci3364050	2016-01-27T18:31:42.210Z	5km W of Parkfield, CA	earthquake	6.13	31.61	0.106	10	reviewed	ci	ci
12/1/1936	4:36:28	35.019	-119.3063333	6	3.16	ml	4	271	0.6678	0.35	ci	ci3364014	2016-01-27T18:40:06.350Z	10km ESE of Maricopa, CA	earthquake	3.65	31.61	0.225	11	reviewed	ci	ci
11/27/1936	16:28:06	35.933	-120.5543333	6	2.98	ml	3	264	1.64	1.04	ci	ci3363994	2016-01-27T18:35:50.000Z	12km WNW of Parkfield, CA	earthquake	13.32	31.61	0.148	5	reviewed	ci	ci
10/19/1936	14:01:40	35.156	-120.4875	6	2.94	ml	3	336	0.9557	0.3	ci	ci3363916	2016-01-27T18:40:01.900Z	10km ENE of Arroyo Grande, CA	earthquake	3.98	31.61	0.271	5	reviewed	ci	ci
10/16/1936	15:36:47	35.1948333	-120.4146667	6	3.19	ml	3	333	0.9473	0.3	ci	ci3363908	2016-01-27T18:48:38.060Z	18km NNE of Nipomo, CA	earthquake	3.87	31.61	0.03	3	reviewed	ci	ci
10/10/1936	6:17:31	35.2306667	-118.9305	6	2.8	ml	3	252	1.207	0.45	ci	ci3363890	2016-01-27T18:57:37.850Z	4km SSW of Lamont, CA	earthquake	4.94	31.61	0.118	11	reviewed	ci	ci
10/5/1936	22:50:21	35.0448333	-118.8865	6	3.69	ml	5	145	0.9103	0.48	ci	ci3363870	2016-01-27T18:52:55.010Z	12km NNE of Grapevine, CA	earthquake	1.68	31.61	0.156	11	reviewed	ci	ci
9/27/1936	1:55:41	35.3365	-118.9271667	6	3.68	ml	5	160	1.104	0.46	ci	ci3363847	2016-01-27T18:27:17.290Z	9km N of Lamont, CA	earthquake	1.49	31.61	0.188	13	reviewed	ci	ci
8/27/1936	11:12:50	34.7885	-119.2791667	6	2.11	ml	3	352	1.116	0.55	ci	ci3363763	2016-01-27T18:57:34.620Z	14km WSW of Pine Mountain Club, CA	earthquake	16.57	31.61	0.252	8	reviewed	ci	ci
8/21/1936	5:12:13	35.0486667	-118.895	6	2.82	ml	6	145	0.9076	0.56	ci	ci3363745	2016-01-27T18:44:16.890Z	12km NNE of Grapevine, CA	earthquake	1.59	31.61	0.184	11	reviewed	ci	ci
8/4/1936	8:01:33	34.8541667	-119.351	6	3.08	ml	4	257	1.202	0.65	ci	ci3363730	2016-01-27T18:31:30.040Z	18km W of Pine Mountain Club, CA	earthquake	8.22	31.61	0.213	12	reviewed	ci	ci
7/22/1936	4:03:01	34.7556667	-119.7391667	6	2.86	ml	3	356	1.43	0.57	ci	ci3363718	2016-01-27T18:39:47.770Z	35km ENE of Santa Ynez, CA	earthquake	32.15	31.61	0.542	9	reviewed	ci	ci
5/31/1936	4:41:52	35.1386667	-119.0611667	6	2.98	ml	4	270	0.8799	0.45	ci	ci3363625	2016-01-27T18:31:26.350Z	19km SW of Lamont, CA	earthquake	3.63	31.61	0.252	10	reviewed	ci	ci
5/20/1936	17:22:21	35.8835	-120.559	6	3.06	ml	4	263	1.597	0.31	ci	ci3363612	2016-01-27T18:48:25.560Z	12km W of Parkfield, CA	earthquake	2.79	31.61	0.133	10	reviewed	ci	ci
2/3/1936	9:12:18	34.767	-119.925	6	2.9	ml	0	360	1.575	0.689	ci	ci3363436	2016-01-27T18:44:02.560Z	21km ENE of Los Olivos, CA	earthquake			0.162	10	reviewed	ci	ci
1/1/1936	4:50:41	35.2403333	-119.0406667	6	2.53	mh	4	233	1.297	0.46	ci	ci3363385	2016-01-27T18:57:18.630Z	12km W of Lamont, CA	earthquake	7.9	31.61	0.175	12	reviewed	ci	ci
11/23/1935	15:58:03	35.1816667	-119.3646667	6	2.57	ml	3	289	0.7934	0.61	ci	ci3363321	2016-01-27T18:32:18.150Z	9km ENE of Taft, CA	earthquake	5.22	31.61	0.126	8	reviewed	ci	ci
11/22/1935	10:45:20	35.881	-119.8045	6	2.89	ml	3	265	1.527	0.29	ci	ci3363319	2016-01-27T18:32:17.670Z	20km SE of Kettleman City, CA	earthquake	3.05	31.61	0.131	8	reviewed	ci	ci
10/22/1935	18:37:49	35.87	-120.5746667	6	3.62	ml	3	264	1.59	0.3	ci	ci3363243	2016-01-27T18:36:23.070Z	13km WSW of Parkfield, CA	earthquake	3.43	31.61	0.136	11	reviewed	ci	ci
10/18/1935	9:23:39	35.8163333	-120.6733333	6	3.6	ml	4	289	2.234	0.61	ci	ci3363236	2016-01-27T18:58:15.360Z	7km NNE of San Miguel, CA	earthquake	7	31.61	0.155	9	reviewed	ci	ci
9/22/1935	23:34:13	35.1621667	-119.5641667	6	3.18	ml	4	259	1.53	0.42	ci	ci3363198	2016-01-27T18:40:33.940Z	10km WNW of Taft, CA	earthquake	4.99	31.61	0.25	8	reviewed	ci	ci
9/10/1935	21:27:01	35.1311667	-119.2223333	6	3.06	ml	5	171	0.7992	0.54	ci	ci3363180	2016-01-27T18:44:55.640Z	18km ENE of Maricopa, CA	earthquake	1.59	31.61	0.314	9	reviewed	ci	ci
7/25/1935	4:15:57	35.7876667	-120.5866667	6	3.31	ml	4	287	1.522	0.16	ci	ci3363099	2016-01-27T18:49:09.150Z	11km ENE of San Miguel, CA	earthquake	2.67	31.61	0.123	11	reviewed	ci	ci
7/7/1935	23:00:59	35.2048333	-118.942	6	2.98	ml	3	282	0.9927	0.43	ci	ci3363074	2016-01-27T18:53:32.250Z	7km SSW of Lamont, CA	earthquake	4.03	31.61	0.128	11	reviewed	ci	ci
6/10/1935	2:02:30	35.1918333	-119.6171667	6	3.1	ml	3	299	0.7536	0.31	ci	ci3363017	2016-01-27T18:44:48.040Z	16km WNW of Taft, CA	earthquake	3.64	31.61	0.137	10	reviewed	ci	ci
5/20/1935	23:45:03	34.6903333	-119.9331667	6	2.68	ml	2	325	0.3073	0.17	ci	ci3362986	2016-01-27T18:36:11.440Z	16km ENE of Santa Ynez, CA	earthquake	2.58	31.61	0.059	9	reviewed	ci	ci
4/14/1935	6:59:06	35.018	-119.1378333	6	2.25	ml	5	242	1.178	0.62	ci	ci3362885	2016-01-27T18:27:37.710Z	19km N of Pine Mountain Club, CA	earthquake	9.29	31.61	0.15	9	reviewed	ci	ci
4/14/1935	6:52:10	35.0433333	-118.9396667	6	2.62	ml	6	148	0.8769	0.53	ci	ci3362884	2016-01-27T18:40:18.050Z	11km N of Grapevine, CA	earthquake	1.41	31.61	0.102	11	reviewed	ci	ci
4/5/1935	10:13:10	35.884	-120.7093333	6	3.67	ml	5	268	1.654	0.79	ci	ci3362872	2016-01-27T18:57:51.350Z	15km N of San Miguel, CA	earthquake	5.92	31.61	0.035	9	reviewed	ci	ci
3/18/1935	14:57:26	35.3408333	-118.78	6	2.76	ml	6	153	1.044	0.7	ci	ci3362849	2016-01-27T18:40:16.650Z	15km NE of Lamont, CA	earthquake	2.62	31.61	0.049	12	reviewed	ci	ci
3/17/1935	20:26:50	35.3435	-118.7898333	6	3.71	ml	6	153	1.047	0.6	ci	ci3362845	2016-01-27T18:44:38.470Z	15km NE of Lamont, CA	earthquake	2.07	31.61	0.186	14	reviewed	ci	ci
2/18/1935	4:02:14	35.8978333	-120.5613333	6	3.48	ml	5	263	1.611	0.43	ci	ci3362752	2016-01-27T18:40:11.980Z	12km W of Parkfield, CA	earthquake	3.29	31.61	0.102	10	reviewed	ci	ci
1/23/1935	13:52:56	35.4808333	-119.2958333	6	4.05	ml	3	274	1.276	0.65	ci	ci3362716	2016-01-27T18:57:43.910Z	3km SW of Shafter, CA	earthquake	7.29	31.61	0.243	11	reviewed	ci	ci
1/6/1935	4:40:06	35.8835	-120.5078333	6	3.66	ml	4	261	1.579	0.26	ci	ci3362687	2016-01-27T18:44:34.220Z	7km WSW of Parkfield, CA	earthquake	6.19	31.61	0.126	11	reviewed	ci	ci
1/6/1935	4:04:58	35.9328333	-120.658	6	4.18	ml	4	267	1.677	0.42	ci	ci3362686	2016-01-27T18:44:33.720Z	20km N of San Miguel, CA	earthquake	4.54	31.61	0.127	13	reviewed	ci	ci
12/24/1934	16:26:00	35.8806667	-120.7141667	6	4.77	ml	5	268	1.654	0.54	ci	ci3362641	2018-06-04T20:43:44.000Z	14km N of San Miguel, CA	earthquake	4.61	31.61	0.158	13	reviewed	ci	ci
12/6/1934	7:43:28	35.3555	-119.0425	6	3.63	ml	4	282	1.067	0.48	ci	ci3362604	2016-01-27T18:49:56.460Z	1km WSW of Bakersfield, CA	earthquake	3.66	31.61	0.28	13	reviewed	ci	ci
11/17/1934	1:25:46	35.3125	-118.7441667	6	2.45	ml	4	275	1.18	0.69	ci	ci3362569	2016-01-27T18:36:58.810Z	14km NNE of Arvin, CA	earthquake	5.8	31.61	0.269	11	reviewed	ci	ci
10/13/1934	14:06:06	34.778	-119.7691667	6	2.33	mh	3	298	0.3394	0.27	ci	ci3362502	2016-01-27T18:28:32.630Z	34km ENE of Santa Ynez, CA	earthquake	4.2	31.61	0.218	13	reviewed	ci	ci
9/12/1934	11:29:50	36.0545	-118.9051667	6	2.85	ml	4	226	1.136	0.19	ci	ci3362416	2016-01-27T18:49:48.620Z	10km E of Porterville, CA	earthquake	6.94	31.61	0.079	10	reviewed	ci	ci
8/21/1934	3:37:11	35.948	-120.3376667	6	3.14	ml	4	255	1.588	0.72	ci	ci3362356	2016-01-27T18:28:26.170Z	10km ENE of Parkfield, CA	earthquake	7.36	31.61	0.142	7	reviewed	ci	ci
7/31/1934	21:02:21	34.9638333	-118.9833333	6	2.78	ml	3	255	0.7973	0.44	ci	ci3362313	2016-01-27T18:54:17.220Z	5km WNW of Grapevine, CA	earthquake	4.41	31.61	0.191	12	reviewed	ci	ci
7/2/1934	18:43:58	35.8828333	-120.5613333	6	3.28	ml	4	263	1.597	0.44	ci	ci3362276	2016-01-27T18:41:03.880Z	12km W of Parkfield, CA	earthquake	5.34	31.61	0.096	8	reviewed	ci	ci
7/2/1934	16:32:03	36.0273333	-120.4196667	6	2.79	ml	2	333	2.005	0.61	ci	ci3362275	2016-01-27T18:58:41.080Z	14km SSW of Coalinga, CA	earthquake	7.32	31.61	0.07	5	reviewed	ci	ci
6/24/1934	23:56:57	35.75	-120.5	6	2.84	ml	2	335	2.107	1.15	ci	ci3362259	2016-01-27T18:54:15.810Z	15km NW of Shandon, CA	earthquake	99	31.61	0.199	8	reviewed	ci	ci

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
6/17/1934	3:15:42	35.75	-120.5	6	2.59	ml	0	360	2.247	0.449	ci	ci3362245	2016-01-27T18:28:21.180Z	15km NW of Shandon, CA	earthquake			0.059	8	reviewed	ci	ci
6/15/1934	4:49:00	35.75	-120.5	6	2.83	ml	0	360	1.456	0	ci	ci3362242	2016-01-27T18:28:20.730Z	15km NW of Shandon, CA	earthquake			0.242	10	reviewed	ci	ci
6/14/1934	22:01:59	35.7053333	-120.5008333	6	3.61	ml	5	261	1.417	0.25	ci	ci3362241	2016-01-27T18:36:43.940Z	13km WNW of Shandon, CA	earthquake	3.44	31.61	0.121	12	reviewed	ci	ci
6/14/1934	19:26:16	35.7695	-120.5061667	6	4.2	ml	4	261	1.476	0.58	ci	ci3362240	2016-01-27T18:41:01.510Z	16km SSW of Parkfield, CA	earthquake	5.06	31.61	0.283	13	reviewed	ci	ci
6/14/1934	19:26:00	35.8	-120.33	16	4.5	ml					ushis	ushis1070	2018-06-04T20:43:44.000Z	14 km SE of Parkfield, California	earthquake					reviewed	ushis	pas
6/14/1934	15:54:50	35.7965	-120.5208333	6	4.12	ml	5	262	1.505	0.55	ci	ci3362238	2016-01-27T18:32:39.240Z	14km SW of Parkfield, CA	earthquake	4.61	31.61	0.151	12	reviewed	ci	ci
6/14/1934	14:55:44	35.8261667	-120.4425	6	3.89	ml	5	258	1.505	0.82	ci	ci3362237	2016-01-27T18:49:41.630Z	8km S of Parkfield, CA	earthquake	6.08	31.61	0.066	12	reviewed	ci	ci
6/12/1934	10:47:34	35.7451667	-120.462	6	3.37	ml	5	259	1.438	0.63	ci	ci3362234	2016-01-27T18:41:01.040Z	13km NW of Shandon, CA	earthquake	5.43	31.61	0.111	11	reviewed	ci	ci
6/12/1934	3:25:49	35.8238333	-120.2366667	6	3.05	ml	5	250	1.445	0.7	ci	ci3362232	2016-01-27T18:45:21.520Z	13km NNE of Cholame, CA	earthquake	8.08	31.61	0.107	10	reviewed	ci	ci
6/10/1934	8:03:20	35.8131667	-120.5665	6	4.49	ml	5	263	1.537	0.25	ci	ci3362231	2016-01-27T18:32:38.260Z	14km ENE of San Miguel, CA	earthquake	2.69	31.61	0.071	13	reviewed	ci	ci
6/10/1934	6:47:06	35.9285	-120.626	6	3.17	ml	3	266	1.661	0.87	ci	ci3362230	2016-01-27T18:54:13.940Z	18km W of Parkfield, CA	earthquake	19.62	31.61	0.047	10	reviewed	ci	ci
6/10/1934	4:05:58	35.7408333	-120.15	6	2.71	ml	3	245	1.345	0.58	ci	ci3362229	2016-01-27T18:49:41.110Z	13km E of Cholame, CA	earthquake	13.21	31.61	0.048	10	reviewed	ci	ci
6/8/1934	23:23:35	35.823	-120.421	6	3.93	ml	6	257	1.496	0.49	ci	ci3362227	2016-01-27T18:36:42.980Z	8km S of Parkfield, CA	earthquake	5.64	31.61	0.186	10	reviewed	ci	ci
6/8/1934	15:30:09	35.902	-120.6563333	6	3.86	ml	5	267	1.649	0.41	ci	ci3362226	2016-01-27T18:41:00.580Z	17km NNE of San Miguel, CA	earthquake	5.07	31.61	0.079	12	reviewed	ci	ci
6/8/1934	9:30:19	35.8493333	-120.5726667	6	3.93	ml	5	263	1.571	0.49	ci	ci3362225	2016-01-27T18:49:40.650Z	14km WSW of Parkfield, CA	earthquake	5.85	31.61	0.116	12	reviewed	ci	ci
6/8/1934	5:42:57	35.7363333	-120.3185	6	4.23	ml	6	253	1.384	0.45	ci	ci3362222	2016-01-27T18:49:40.120Z	3km NW of Cholame, CA	earthquake	9.78	31.61	0.228	14	reviewed	ci	ci
6/8/1934	5:42:00	35.8	-120.33	16	4.5	ml					ushis	ushis1069	2018-06-04T20:43:44.000Z	14 km SE of Parkfield, California	earthquake					reviewed	ushis	pas
6/8/1934	5:37:00	35.9	-120.7	6	2.91	ml	0	360	1.665	0	ci	ci3362221	2016-01-27T18:54:13.480Z	16km N of San Miguel, CA	earthquake			0.152	9	reviewed	ci	ci
6/8/1934	5:23:15	36.0115	-120.705	6	3.44	ml	3	269	1.764	0.52	ci	ci3362220	2016-01-27T18:36:42.490Z	28km WNW of Parkfield, CA	earthquake	5.54	31.61	0.048	12	reviewed	ci	ci
6/8/1934	4:47:45	35.8463333	-120.6663333	6	5.84	ml	7	267	1.605	0.84	ci	ci3362218	2022-04-25T21:45:28.456Z	11km NNE of San Miguel, CA	earthquake	7.93	31.61	0.155	7	reviewed	ci	ci
6/8/1934	4:30:20	35.8705	-120.6936667	6	5.09	ml	6	268	1.636	0.48	ci	ci3362223	2019-05-02T20:46:27.709Z	13km N of San Miguel, CA	earthquake	5.87	31.61	0.276	14	reviewed	ci	ci
6/6/1934	22:40:15	35.883	-120.7171667	6	3.71	ml	4	269	1.657	0.51	ci	ci3362216	2016-01-27T18:36:41.950Z	15km N of San Miguel, CA	earthquake	4.43	31.61	0.156	12	reviewed	ci	ci
6/6/1934	10:33:13	35.9	-120.7	6	2.61	mh	0	360	2.3	0.796	ci	ci3362214	2016-01-27T18:49:39.240Z	16km N of San Miguel, CA	earthquake			0.044	3	reviewed	ci	ci
6/6/1934	0:55:07	35.9	-120.7	6	3	mh	0	360	2.3	7.449	ci	ci3362213	2016-01-27T18:36:41.490Z	16km N of San Miguel, CA	earthquake			0.196	13	reviewed	ci	ci
6/5/1934	22:52:24	35.9215	-120.7298333	6	4.27	ml	5	269	1.695	0.43	ci	ci3362212	2016-01-27T18:58:39.710Z	19km N of San Miguel, CA	earthquake	3.48	31.61	0.192	12	reviewed	ci	ci
6/5/1934	22:52:00	35.8	-120.33	16	4	ml					ushis	ushis1065	2018-06-04T20:43:44.000Z	14 km SE of Parkfield, California	earthquake					reviewed	ushis	pas
6/5/1934	21:49:17	35.8176667	-120.524	6	4.81	ml	5	262	1.525	0.48	ci	ci3362210	2019-05-02T20:46:27.042Z	12km SW of Parkfield, CA	earthquake	9	31.61	0.204	10	reviewed	ci	ci
6/5/1934	13:46:17	35.8813333	-120.7035	6	3.14	ml	4	268	1.65	0.39	ci	ci3362211	2016-01-27T18:32:36.430Z	14km N of San Miguel, CA	earthquake	4.28	31.61	0.117	10	reviewed	ci	ci
6/5/1934	11:47:09	35.8926667	-120.7063333	6	3.27	ml	4	269	1.661	0.31	ci	ci3362209	2016-01-27T18:45:20.570Z	16km N of San Miguel, CA	earthquake	7.28	31.61	0.162	10	reviewed	ci	ci
5/7/1934	5:03:24	35.6396667	-119.4663333	6	3.46	ml	5	250	1.329	0.57	ci	ci3362149	2016-01-27T18:40:55.490Z	12km WNW of Wasco, CA	earthquake	4.01	31.61	0.15	12	reviewed	ci	ci
5/6/1934	20:14:39	35.871	-120.6825	6	3.51	ml	4	289	2.233	0.2	ci	ci3362142	2016-01-27T18:49:35.400Z	13km N of San Miguel, CA	earthquake	2.99	31.61	0.152	12	reviewed	ci	ci
4/30/1934	13:33:39	35.007	-119.24	6	2.03	mh	3	267	0.6871	0.09	ci	ci3362125	2016-01-27T18:54:08.010Z	16km ESE of Maricopa, CA	earthquake	2.22	31.61	0.303	11	reviewed	ci	ci
2/20/1934	0:53:44	34.6846667	-120.0976667	6	3.02	ml	3	337	0.3987	0.31	ci	ci3362001	2016-01-27T18:53:58.850Z	2km NE of Los Olivos, CA	earthquake	4.3	31.61	0.081	8	reviewed	ci	ci
10/15/1933	14:01:38	35.3476667	-119.1195	6	2.91	ml	5	201	1.029	0.74	ci	ci3361546	2016-01-27T18:29:33.840Z	5km SSE of Rosedale, CA	earthquake	3.12	31.61	0.122	12	reviewed	ci	ci
9/30/1933	10:52:00	35.471	-120.648	6	2.48	mh	0	360	2.428	0	ci	ci3361370	2016-01-27T18:50:49.910Z	3km SE of Atascadero, CA	earthquake			0.136	10	reviewed	ci	ci
9/30/1933	7:03:00	35.337	-120.707	6	2.54	mh	0	360	2.401	0	ci	ci3361369	2016-01-27T18:50:49.460Z	7km NW of San Luis Obispo, CA	earthquake			0.163	13	reviewed	ci	ci
8/20/1933	13:27:29	36	-120.6	6	3.21	mh	2	357	2.717	0.65	ci	ci3361161	2016-04-02T03:24:28.814Z	19km NW of Parkfield, CA	earthquake	99	31.61		7	reviewed	ci	ci
8/20/1933	11:29:55	36.025	-120.578	6	3.64	ml	3	354	2.72	0.74	ci	ci3361160	2016-01-27T18:33:33.910Z	19km NW of Parkfield, CA	earthquake	99	31.61	0.083	5	reviewed	ci	ci
8/19/1933	0:16:00	35.526	-120.469	6	2.99	mh	0	360	1.247	0	ci	ci3361154	2016-01-27T18:59:35.460Z	17km SSW of Shandon, CA	earthquake			0.03	5	reviewed	ci	ci
10/27/1932	2:59:34	34.852	-119.4948333	6	2.82	ml	3	262	1.299	0.08	ci	ci3359406	2016-01-27T18:51:25.260Z	24km SSW of Maricopa, CA	earthquake	2.4	31.61	0.308	10	reviewed	ci	ci
8/13/1932	3:10:31	35.795	-119.266	6	2.84	mh	2	357	1.855	0.29	ci	ci3359193	2016-01-27T18:42:31.890Z	3km NNW of Delano, CA	earthquake	99	31.61	0.126	9	reviewed	ci	ci
7/25/1932	21:33:05	34.953	-119.026	6	2.05	mh	2	354	1.069	0.19	ci	ci3359134	2016-01-27T18:47:01.830Z	9km W of Grapevine, CA	earthquake	99	31.61	0.092	7	reviewed	ci	ci
7/17/1932	22:52:10	36.0343333	-118.9688333	6	3.01	ml	3	230	1.179	0.25	ci	ci3359122	2016-01-27T18:51:16.030Z	6km SE of Porterville, CA	earthquake	7.58	31.61	0.226	10	reviewed	ci	ci
7/3/1932	16:56:33	35.2143333	-120.3345	6	2.51	mh	2	334	0.9249	0.08	ci	ci3359090	2016-01-27T18:55:48.260Z	23km NE of Nipomo, CA	earthquake	4.22	31.61	0.145	8	reviewed	ci	ci
5/27/1932	4:01:22	34.8311667	-119.5991667	6	2.33	mh	3	281	0.401	0.11	ci	ci3359027	2016-01-27T18:38:03.230Z	31km SW of Maricopa, CA	earthquake	2.45	31.61	0.093	7	reviewed	ci	ci
5/16/1932	3:37:09	36	-120.5	6	2.9	ml	2	334	2.072	5.05	ci	ci3359006	2016-01-27T18:55:42.480Z	13km NNW of Parkfield, CA	earthquake	99	31.61	0.045	4	reviewed	ci	ci
4/21/1932	3:36:17	35.9543333	-120.7135	6	3.21	ml	4	269	1.717	0.32	ci	ci3358794	2016-01-27T18:33:57.930Z	22km N of San Miguel, CA	earthquake	3.12	31.61	0.193	9	reviewed	ci	ci
3/8/1932	22:29:10	36.1898333	-120.4421667	6	2.9	ml	3	263	1.844	0.73	ci	ci3358632	2016-01-27T18:55:35.950Z	9km NW of Coalinga, CA	earthquake	7.28	31.61	0.163	6	reviewed	ci	ci
2/14/1932	17:55:05	35.0198333	-118.9815	6	2.63	mh	3	260	0.8358	0.33	ci	ci3358594	2016-04-02T13:01:38.924Z	10km NNW of Grapevine, CA	earthquake	3.63	31.61	0.205	8	reviewed	ci	ci
2/5/1932	6:47:00	36	-120.5	6	3.6	ml	0	289.5	1.683	1.983	ci	ci3358532	2016-01-27T18:51:38.030Z	13km NNW of Parkfield, CA	earthquake				6	reviewed	ci	ci
7/21/1931	12:08:00	35.25	-120.67		4.8	uk					ushis	ushis874	2018-06-04T20:43:44.000Z	3 km SSW of San Luis Obispo, California	earthquake					reviewed	ushis	jon
2/23/1931	10:01:00	35.83	-120.5		4.7	uk					ushis	ushis866	2018-06-04T20:43:44.000Z	9 km SW of Parkfield, California	earthquake					reviewed	ushis	jon
3/13/1929	2:28:00	35	-119		4.5	ml					ushis	ushis800	2018-06-04T20:43:44.000Z	7 km SSW of Mettler, California	earthquake					reviewed	ushis	cdmg
11/19/1927	3:32:30	35	-120.5		5	uk					ushis	ushis776	2018-06-04T20:43:44.000Z	5 km SSW of Nipomo, California	earthquake					reviewed	ushis	jon
12/27/1926	9:19:00	36.17	-120.32		5	ml					ushis	ushis756	2018-06-04T20:43:44.000Z	4 km NE of Coalinga, California	earthquake					reviewed	ushis	cdmg
6/30/1926	13:31:00	35.6	-118.8		5	ml					ushis	ushis742	2018-06-04T20:43:44.000Z	25 km SSW of Posey, California	earthquake					reviewed	ushis	cdmg
8/18/1922	5:12:00	35.75	-120.33		5	ml					ushis	ushis681	2018-06-04T20:43:44.000Z	11 km NNE of Shandon, California	earthquake					reviewed	ushis	cdmg

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
3/16/1922	23:11:00	35.75	-120.33		5	uk					ushis	ushis676	2018-06-04T20:43:44.000Z	11 km NNE of Shandon, California	earthquake					reviewed	ushis	jon
2/16/1919	15:57:00	35	-119		5	ml					ushis	ushis647	2018-06-04T20:43:44.000Z	7 km SSW of Mettler, California	earthquake					reviewed	ushis	cdmg
7/26/1917	8:33:00	35	-120.5		4.8	uk					ushis	ushis622	2018-06-04T20:43:44.000Z	5 km SSW of Nipomo, California	earthquake					reviewed	ushis	jon
1/6/1905	14:30:00	35.5	-118.7		5	ml					ushis	ushis432	2018-06-04T20:43:44.000Z	21 km WSW of Bodfish, California	earthquake					reviewed	ushis	cdmg
7/28/1902	6:57:00	34.8	-120.4		5.4	ml					ushis	ushis404	2018-06-04T20:43:44.000Z	7 km SSE of Orcutt, California	earthquake					reviewed	ushis	cdmg
3/3/1901	7:45:00	36	-120.5		6.4	ms					ushis	ushis393	2018-06-04T20:43:44.000Z	12 km NNW of Parkfield, California	earthquake					reviewed	ushis	ell

Notes:

depthError: Uncertainty of reported depth of the event in kilometers.

dmin: Horizontal distance from the epicenter to the nearest station (in degrees). 1 degree is approximately 111.2 kilometers. In general, the smaller this number, the more reliable is the calculated depth of the earthquake.

gap: The largest azimuthal gap between azimuthally adjacent stations (in degrees). In general, the smaller this number, the more reliable is the calculated horizontal position of the earthquake. Earthquake locations in which the azimuthal gap exceeds 180 degrees typically have large location and depth

horizontalError: Uncertainty of reported place of the event in kilometers.

km: kilometer

locationSo: The network that originally authored the reported location of this event.

mag: The magnitude for the event.

magError: Uncertainty of reported magnitude of the event. The estimated standard error of the magnitude. The uncertainty corresponds to the specific magnitude type being reported and does not take into account magnitude variations and biases between different magnitude scales. We report an "unknown" value if the contributing seismic network does not supply uncertainty estimates.

magNST: The total number of seismic stations used to calculate the magnitude for this earthquake.

magSource: Network that originally authored the reported magnitude for this event.

magType: The method or algorithm used to calculate the preferred magnitude for the event. Typical values: "Md", "Ml", "Ms", "Mw", "Me", "Mi", "Mb", "Mlg"

net: The ID of a data contributor. Identifies the network considered to be the preferred source of information for this event.

nst: The total number of seismic stations used to determine earthquake location.

rms: The root-mean-square (RMS) travel time residual, in sec, using all weights. This parameter provides a measure of the fit of the observed arrival times to the predicted arrival times for this location. Smaller numbers reflect a better fit of the data. The value is dependent on the accuracy of the velocity model used to compute the earthquake location, the quality weights assigned to the arrival time data, and the procedure used to locate the earthquake.

Appendix 2E
Seismic History Data

USGS Seismicity Data, 1950–2022, within 15 km Radius of Area of Review, Magnitude 2.0+

date	time	latitude	longitude	depth	mag	magType	nst	gap	dmin	rms	net	id	updated	place	type	horizontalError	depthError	magError	magNst	status	locationSource	magSource
9/21/1970 0:00	0.624745	35.4743333	-119.8301667	6	2.51	ml	4	322	1.121	0.62	ci	ci3323745	2016-01-29T01:24:36.490Z	21km NE of Simmler, CA	earthquake	6.49	31.61		1	reviewed	ci	ci
1/18/1971 0:00	0.032431	35.5061667	-119.8311667	6	3	ml	6	228	0.9836	0.61	ci	ci3323442	2016-01-29T01:14:37.870Z	23km NE of Simmler, CA	earthquake	4.57	31.61	0.109	8	reviewed	ci	ci
7/26/1971 0:00	0.942292	35.6116667	-119.9191667	6	3.49	ml	6	264		0.42	ci	ci3322406	2016-01-29T01:30:11.500Z	30km NNE of Simmler, CA	earthquake	3.83	31.61	0.155	9	reviewed	ci	ci
5/30/1979 0:00	0.175625	35.6073333	-119.8226667	30.53	2	mh	7	260	0.2039	0.29	ci	ci3349448	2016-02-01T23:25:55.610Z	33km NNE of Simmler, CA	earthquake	2.53	0.97		0	reviewed	ci	ci
3/10/1980 0:00	0.049132	35.4805	-119.6691667	7.76	3.26	ml	14	136	0.2415	0.4	ci	ci9725114	2016-02-03T00:10:11.420Z	20km WNW of Buttonwillow, CA	earthquake	1.26	1.89	0.198	26	reviewed	ci	ci
3/9/1983 0:00	0.841782	35.516	-119.7536667	-0.12	2.57	mc	9	190	0.1862	0.37	ci	ci1102727	2016-04-02T03:57:07.561Z	29km WNW of Buttonwillow, CA	earthquake	1.15	2.64		14	reviewed	ci	ci
12/21/1984 0:00	0.923125	35.457	-119.782	-0.571	3.13	ml	0	146.6		0.237	ci	ci57150	2016-02-02T19:20:01.460Z	23km ENE of Simmler, CA	earthquake		3.347		6	reviewed	ci	ci
8/9/1985 0:00	0.055856	35.58	-119.754	5.085	2.27	mc	0	224.1		0.404	ci	ci109034	2016-02-03T20:01:28.430Z	33km NW of Buttonwillow, CA	earthquake				7	reviewed	ci	ci
1/15/1986 0:00	0.638345	35.504	-119.742	-0.941	2.72	mc	0	75		0.391	ci	ci113670	2016-02-03T20:44:59.190Z	27km WNW of Buttonwillow, CA	earthquake		2.939		38	reviewed	ci	ci
2/22/1988 0:00	0.487882	35.5666667	-119.7198333	5.358	2.1	mh	8	180	0.3126	0.35	ci	ci743919	2016-04-01T23:17:32.111Z	29km NW of Buttonwillow, CA	earthquake	1.85	29.99		0	reviewed	ci	ci
2/22/1988 0:00	0.321678	35.546	-119.676	5.114	4.2	ml	0	51.9		0.472	ci	ci743909	2016-02-03T20:23:07.570Z	25km NW of Buttonwillow, CA	earthquake				10	reviewed	ci	ci
2/23/1988 0:00	0.178241	35.56	-119.699	5.279	2.01	mc	0	135		0.273	ci	ci744000	2016-02-04T00:59:28.940Z	27km NW of Buttonwillow, CA	earthquake				17	reviewed	ci	ci
3/8/1988 0:00	0.343623	35.555	-119.706	5.151	2.05	mc	0	209.4		0.287	ci	ci745257	2016-02-04T02:18:09.620Z	27km NW of Buttonwillow, CA	earthquake				16	reviewed	ci	ci
3/15/1988 0:00	0.735556	35.51	-119.761	4.952	2.07	mc	0	222		0.26	ci	ci745789	2016-02-03T20:23:28.430Z	28km NE of Simmler, CA	earthquake				10	reviewed	ci	ci
3/15/1988 0:00	0.728854	35.423	-119.752	5.114	2.8	ml	0	134.9		0.282	ci	ci745786	2016-02-04T04:15:28.850Z	24km ENE of Simmler, CA	earthquake				6	reviewed	ci	ci
3/15/1988 0:00	0.695405	35.447	-119.735	5.151	2.97	ml	0	192.2		0.284	ci	ci745782	2016-02-04T04:15:28.320Z	25km WNW of Buttonwillow, CA	earthquake				4	reviewed	ci	ci
7/24/1988 0:00	0.09478	35.52	-119.699	5.052	2.19	mc	0	187.8		0.308	ci	ci643559	2016-02-04T02:59:39.290Z	25km WNW of Buttonwillow, CA	earthquake				12	reviewed	ci	ci
12/2/1990 0:00	0.081817	35.6405	-119.9053333	6.929	2.38	md	24	94	0.1532	0.26	nc	nc201616	2016-12-17T22:09:34.056Z	19 km W of Lost Hills, California	earthquake	0.77	1.64	0.06	10	reviewed	nc	nc
8/23/1991 0:00	0.875521	35.5256667	-119.7216667	21.223	2.27	mc	17	128		0.35	ci	ci2027465	2016-04-02T15:18:42.753Z	27km WNW of Buttonwillow, CA	earthquake	1.23	31.61		17	reviewed	ci	ci
8/24/1993 0:00	0.092384	35.663	-119.853	5.143	2.01	mc	0	137.3		0.364	ci	ci3118947	2016-02-10T16:58:34.489Z	37km NNE of Simmler, California	earthquake				30	reviewed	ci	ci
8/31/1993 0:00	0.185648	35.658	-119.845	5.05	2.29	mc	0	77.9		0.361	ci	ci3119945	2016-02-09T23:14:27.462Z	37km NNE of Simmler, California	earthquake				48	reviewed	ci	ci
4/28/1994 0:00	0.993854	35.637	-119.805	2.805	2.5	mh	0	231.8	0.2366	0.327	ci	ci3165419	2016-02-12T12:24:14.567Z	36km NNE of Simmler, California	earthquake		2.058		0	reviewed	ci	ci
5/29/1994 0:00	0.887801	35.593	-119.781	5.165	2.06	mc	0	231.3	0.2138	0.271	ci	ci3169727	2016-02-12T17:44:55.241Z	33km NE of Simmler, California	earthquake				20	reviewed	ci	ci
4/13/1995 0:00	0.559734	35.575	-119.755	3.08	2.92	mc	0	208.5		0.398	ci	ci3209845	2016-02-13T01:47:15.921Z	32km NW of Buttonwillow, Californ	earthquake		9.838		105	reviewed	ci	ci
10/23/1998 0:00	0.476227	35.641	-119.794	5.165	2.41	mc	0	232	0.2449	0.233	ci	ci9069759	2016-02-12T14:42:59.433Z	37km NNE of Simmler, California	earthquake				11	reviewed	ci	ci
4/5/2001 0:00	0.617975	35.5806667	-119.9368333	4.852	2.34	mc	9	199	0.145	0.24	ci	ci9642401	2016-02-16T09:47:18.752Z	26km NNE of Simmler, California	earthquake	1.61	22.47	0.317	7	reviewed	ci	ci
2/27/2003 0:00	0.536586	35.5126667	-119.898	6.529	2.2	ml	5	275.2	0.09128	0.1	ci	ci13940056	2016-02-16T20:14:13.272Z	20km NNE of Simmler, California	earthquake	9.22	5.77	0.412	5	reviewed	ci	ci
12/10/2004 0:00	0.507975	35.599	-119.883	13.168	2.45	ml	15	86	0.1738	0.35	ci	ci10066029	2016-02-16T08:42:19.701Z	30km NNE of Simmler, California	earthquake	0.97	1.49	0.137	12	reviewed	ci	ci
11/20/2011 0:00	0.955856	35.6225	-119.9023333	16.477	2.03	ml	18	128	0.1036	0.22	ci	ci11034805	2016-03-10T05:45:48.833Z	31km NNE of Simmler, CA	earthquake	0.68	1.19	0.16	15	reviewed	ci	ci
2/18/2012 0:00	0.840301	35.6093333	-119.8735	14.755	2.06	ml	23	83	0.1303	0.41	ci	ci11068709	2022-07-23T16:53:54.244Z	31km NNE of Simmler, CA	earthquake	0.57	0.81	0.27	21	reviewed	ci	ci
5/30/2020 0:00	0.499468	35.5141667	-119.7745	9.26	2.13	ml	25	89	0.1715	0.36	ci	ci39223191	2020-05-30T20:23:50.730Z	27km NE of Simmler, CA	earthquake	0.72	31.61	0.151	45	reviewed	ci	ci
5/30/2020 0:00	0.511725	35.5251667	-119.7423333	9.26	2.15	ml	20	92	0.1999	0.32	ci	ci39223199	2020-05-30T20:43:47.823Z	28km WNW of Buttonwillow, CA	earthquake	0.62	31.61	0.171	54	reviewed	ci	ci
5/30/2020 0:00	0.461424	35.5278333	-119.7401667	9.26	2.19	ml	26	93	0.2027	0.35	ci	ci39223151	2020-05-30T21:00:44.330Z	28km WNW of Buttonwillow, CA	earthquake	0.61	31.61	0.154	52	reviewed	ci	ci
5/30/2020 0:00	0.446134	35.5115	-119.7576667	9.26	2.27	ml	30	88	0.1829	0.39	ci	ci39223119	2020-05-30T20:18:44.705Z	28km NE of Simmler, CA	earthquake	0.64	31.61	0.146	74	reviewed	ci	ci
5/30/2020 0:00	0.483171	35.5285	-119.7415	9.26	2.44	ml	27	94	0.202	0.35	ci	ci39223175	2020-05-30T20:52:10.859Z	28km WNW of Buttonwillow, CA	earthquake	0.57	31.61	0.123	80	reviewed	ci	ci
5/30/2020 0:00	0.606296	35.5066667	-119.7601667	10.46	2.62	ml	30	75	0.1791	0.42	ci	ci39223271	2020-08-15T20:19:53.040Z	28km NE of Simmler, CA	earthquake	0.59	1.7	0.143	105	reviewed	ci	ci
5/31/2020 0:00	0.235139	35.5025	-119.7686667	9.25	2.07	ml	14	94	0.1711	0.4	ci	ci37446597	2020-06-01T21:00:00.492Z	27km NE of Simmler, CA	earthquake	0.94	31.61	0.073	2	reviewed	ci	ci
5/31/2020 0:00	0.104514	35.5216667	-119.7418333	9.26	2.21	ml	23	97	0.1988	0.3	ci	ci39223839	2020-05-31T03:04:51.034Z	28km WNW of Buttonwillow, CA	earthquake	0.51	31.61	0.197	49	reviewed	ci	ci
5/31/2020 0:00	0.226771	35.5186667	-119.733	9.26	2.6	ml	35	71	0.2042	0.32	ci	ci39223895	2020-08-15T20:19:56.040Z	27km WNW of Buttonwillow, CA	earthquake	0.46	31.61	0.17	31	reviewed	ci	ci
6/1/2020 0:00	0.222697	35.5228333	-119.7373333	9.26	2.32	ml	34	71	0.2026	0.31	ci	ci39224959	2020-06-03T14:21:31.920Z	28km WNW of Buttonwillow, CA	earthquake	0.45	31.61	0.227	20	reviewed	ci	ci
6/11/2020 0:00	0.953669	35.5261667	-119.7333333	5.26	2.2	ml	22	98	0.207	0.28	ci	ci39475600	2020-06-12T00:13:48.480Z	28km WNW of Buttonwillow, CA	earthquake	0.54	31.61	0.165	46	reviewed	ci	ci
6/12/2020 0:00	0.263646	35.5298333	-119.7331667	5.26	2.62	ml	32	73	0.2087	0.31	ci	ci39475936	2020-08-22T19:14:46.040Z	28km WNW of Buttonwillow, CA	earthquake	0.45	31.61	0.133	85	reviewed	ci	ci

Notes:
depthError: Uncertainty of reported depth of the event in kilometers
dmin: Horizontal distance from the epicenter to the nearest station (in degrees). 1 degree is approximately 111.2 kilometers. In general, the smaller this number, the more reliable is the calculated depth of the earthquake
gap: The largest azimuthal gap between azimuthally adjacent stations (in degrees). In general, the smaller this number, the more reliable is the calculated horizontal position of the earthquake. Earthquake locations in which the azimuthal gap exceeds 180 degrees typically have large location and depth
horizontalError: Uncertainty of reported place of the event in kilometers.
locationSo: The network that originally authored the reported location of this event.
km: kilometer
mag: The magnitude for the event.
magError: Uncertainty of reported magnitude of the event. The estimated standard error of the magnitude. The uncertainty corresponds to the specific magnitude type being reported and does not take into account magnitude variations and biases between different magnitude scales. We report an "unknown" value if the contributing seismic network does not supply uncertainty estimates.
magNST: The total number of seismic stations used to calculate the magnitude for this earthquake.
magSource: Network that originally authored the reported magnitude for this event.
magType: The method or algorithm used to calculate the preferred magnitude for the event. Typical values: "Md", "Ml", "Ms", "Mw", "Me", "Mi", "Mb", "Mlg"
net: The ID of a data contributor. Identifies the network considered to be the preferred source of information for this event
nst: The total number of seismic stations used to determine earthquake location.
rms: The root-mean-square (RMS) travel time residual, in sec, using all weights. This parameter provides a measure of the fit of the observed arrival times to the predicted arrival times for this location. Smaller numbers reflect a better fit of the data. The value is dependent on the accuracy of the velocity model used to compute the earthquake location, the quality weights assigned to the arrival time data, and the procedure used to locate the earthquake.

Appendix 2D
Seismicity History Data

SCEDC Seismicity Data, 1950–2022, within 15 km Radius of Area of Review, Magnitude 2.0+

datasource	date	time	type	mag	latitude	longitude	depth_km	quality	id	nph	ngrm
SCEDC	9/21/1970	14:59:39	eq	2.51	35.47433	-119.83017	6	D	3323745	10	0
SCEDC	1/18/1971	0:46:42	eq	3	35.50617	-119.83117	6	C	3323442	16	0
SCEDC	7/26/1971	22:36:55	eq	3.49	35.61167	-119.91917	6	C	3322406	24	0
SCEDC	7/15/1979	9:06:08	eq	3.34	35.67683	-119.797	6	C	3350622	40	114
SCEDC	3/10/1980	1:10:45	eq	3.26	35.4805	-119.66917	7.8	B	9725114	31	0
SCEDC	3/9/1983	20:12:10	eq	2.57	35.516	-119.75367	-0.1	C	1102727	18	162
SCEDC	12/21/1984	22:09:18	eq	3.13	35.457	-119.782	-0.6	B	57150	14	158
SCEDC	8/9/1985	1:20:27	eq	2.27	35.58	-119.754	5.1	C	109034	13	56
SCEDC	1/15/1986	15:19:14	eq	2.72	35.504	-119.742	-0.9	B	113670	21	100
SCEDC	2/22/1988	11:42:34	eq	2.1	35.56667	-119.71983	5.4	C	743919	9	42
SCEDC	2/22/1988	7:43:14	eq	4.2	35.546	-119.676	5.1	C	743909	83	246
SCEDC	2/23/1988	4:16:41	eq	2.01	35.56	-119.699	5.3	C	744000	17	124
SCEDC	3/8/1988	8:14:50	eq	2.05	35.555	-119.706	5.2	C	745257	13	67
SCEDC	3/15/1988	17:39:13	eq	2.07	35.51	-119.761	5	C	745789	8	30
SCEDC	3/15/1988	17:29:33	eq	2.8	35.423	-119.752	5.1	C	745786	16	135
SCEDC	3/15/1988	16:41:23	eq	2.97	35.447	-119.735	5.2	C	745782	14	84
SCEDC	7/24/1988	2:16:29	eq	2.19	35.52	-119.699	5.1	C	643559	15	50
SCEDC	12/2/1990	1:57:50	eq	2.48	35.626	-119.909	5.3	C	2008330	31	71
SCEDC	8/23/1991	21:00:45	eq	2.27	35.52567	-119.72167	21.2	C	2027465	21	60
SCEDC	8/24/1993	2:13:03	eq	2.01	35.663	-119.853	5.1	C	3118947	25	72
SCEDC	8/31/1993	4:27:20	eq	2.29	35.658	-119.845	5	C	3119945	32	100
SCEDC	4/28/1994	23:51:09	eq	2.5	35.637	-119.805	2.8	C	3165419	17	85
SCEDC	5/29/1994	21:18:26	eq	2.06	35.593	-119.781	5.2	C	3169727	12	68
SCEDC	4/13/1995	13:26:02	eq	2.92	35.575	-119.755	3.1	C	3209845	41	186
SCEDC	10/23/1998	11:25:46	eq	2.41	35.641	-119.794	5.2	C	9069759	10	53
SCEDC	4/5/2001	14:49:53	eq	2.34	35.58067	-119.93683	4.9	C	9642401	14	132
SCEDC	12/10/2004	12:11:29	eq	2.45	35.599	-119.883	13.2	A	10066029	21	300
SCEDC	11/20/2011	22:56:26	eq	2.03	35.6225	-119.90233	16.5	A	11034805	28	1567
SCEDC	2/18/2012	20:10:02	eq	2.06	35.60933	-119.8735	14.8	A	11068709	42	1701
SCEDC	5/30/2020	11:59:15	eq	2.13	35.51417	-119.7745	9.3	C	39223191	38	1819
SCEDC	5/30/2020	12:16:54	eq	2.15	35.52517	-119.74233	9.3	C	39223199	36	2118
SCEDC	5/30/2020	11:04:27	eq	2.19	35.52783	-119.74017	9.3	C	39223151	43	1777
SCEDC	5/30/2020	10:42:26	eq	2.27	35.5115	-119.75767	9.3	C	39223119	52	2061
SCEDC	5/30/2020	11:35:46	eq	2.44	35.5285	-119.7415	9.3	C	39223175	46	2475
SCEDC	5/30/2020	14:33:05	eq	2.62	35.50667	-119.76017	10.5	A	39223271	46	2600
SCEDC	5/31/2020	5:38:37	eq	2.07	35.5025	-119.76867	9.2	C	37446597	29	2080
SCEDC	5/31/2020	2:30:31	eq	2.21	35.52167	-119.74183	9.3	C	39223839	38	2336
SCEDC	5/31/2020	5:26:33	eq	2.6	35.51867	-119.733	9.3	C	39223895	58	2538
SCEDC	6/1/2020	5:20:42	eq	2.32	35.52283	-119.73733	9.3	C	39224959	62	1855
SCEDC	6/11/2020	22:53:18	eq	2.2	35.52617	-119.73333	5.3	C	39475600	32	2310
SCEDC	6/12/2020	6:19:39	eq	2.62	35.52983	-119.73317	5.3	C	39475936	48	2626

Notes:
depth km: depth in kilometers (km)
eq: earthquake
mag: magnitude
ngrms: number of grams (i.e., number of station traces)
nph: number of picked phases
quality: Location quality, 'A' +- 1 km horizontal distance, +- 2 km depth; 'B' +- 2 km horizontal distance, +- 5 km depth; 'C' +- 5 km hori -ontal distance, no depth restriction; 'D' >+- 5 km horizontal distance
SCEDC: Southern California Earthquake Data Center

Appendix 2F
Hydrologic and Hydrogeologic Information

Contents

Well Picks for the Base of Alluvium and Tulare Formation

Water Supply Wells within AoR and 1.5-mile Buffer – Database Outputs and Well Completion Reports

Appendix 2F
Hydrologic and Hydrogeologic Information

Well Picks for the Base of Alluvium and Tulare Formation

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040290116800	32	6033738.98	2377241.91	Base of Alluvium	300
040290116800	32	6033738.98	2377241.91	Base of Tulare	937
040290117200	32A	6033792.59	2378506.47	Base of Tulare	900
040290981000	123-12	6033525.22	2376387.43	Base of Alluvium	309
040290981000	123-12	6033525.22	2376387.43	Base of Tulare	963
040290981300	25A-12	6033040.61	2374739.52	Base of Tulare	960
040292961800	62X-27N	6025909.38	2388754.66	Base of Tulare	508
040292965900	1-36N	6033816.62	2384356.70	Base of Alluvium	132
040292977200	11-7	6038050.73	2377673.29	Base of Tulare	1,220
040292977300	12-7	6038039.13	2377011.40	Base of Alluvium	335
040292977300	12-7	6038039.13	2377011.40	Base of Tulare	1,228
040292977400	14-7	6038016.94	2375687.57	Base of Tulare	1,222
040292977500	16-7	6038344.68	2374356.18	Base of Tulare	1,265
040292977600	17-7	6037984.17	2373702.35	Base of Tulare	1,236
040292977900	27-7	6038683.00	2373686.18	Base of Tulare	1,305
040292978300	37-7	6039381.82	2373670.01	Base of Tulare	1,489
040292978600	16A-7	6037664.57	2374041.84	Base of Tulare	1,194
040292978700	21A-7	6038396.32	2377333.22	Base of Tulare	1,276
040292978800	22A-7	6038384.72	2376671.32	Base of Tulare	1,266
040292978900	24A-7	6038361.53	2375347.54	Base of Tulare	1,270
040292979100	26A-7	6038339.38	2374025.22	Base of Tulare	1,255
040292979500	35A-7	6039050.79	2374669.93	Base of Tulare	1,473
040292979600	36A-7	6039038.21	2374009.05	Base of Tulare	1,324
040292980500	11C-7	6037722.82	2377680.80	Base of Tulare	1,178
040292980700	16C-7	6037669.87	2374372.79	Base of Tulare	1,202
040292980900	22C-7	6038391.02	2377002.27	Base of Alluvium	344
040292980900	22C-7	6038391.02	2377002.27	Base of Tulare	1,275
040292981100	27C-7	6038308.10	2373694.85	Base of Tulare	1,260
040292981200	28C-7	6038321.49	2373032.38	Base of Tulare	1,289
040292981300	31C-7	6039105.40	2377645.92	Base of Tulare	1,389
040292981400	35C-7	6039057.08	2375000.86	Base of Tulare	1,457
040292982000	48C-7	6039719.14	2373000.04	Base of Alluvium	378
040292982100	11D-7	6038044.43	2377342.36	Base of Alluvium	328
040292982100	11D-7	6038044.43	2377342.36	Base of Tulare	1,222
040292982200	12D-7	6038033.84	2376680.43	Base of Alluvium	336
040292982200	12D-7	6038033.84	2376680.43	Base of Tulare	1,224
040292982500	16D-7	6038059.46	2374031.70	Base of Tulare	1,242
040292982600	17D-7	6037977.87	2373371.42	Base of Tulare	1,251
040292982700	21D-7	6038748.21	2377324.09	Base of Tulare	1,331
040292982800	24D-7	6038712.43	2375339.43	Base of Alluvium	360
040292982800	24D-7	6038712.43	2375339.43	Base of Tulare	1,401
040292983800	48D-7	6040061.76	2372661.02	Base of Alluvium	385
040292984000	24E-7	6038195.53	2375847.99	Base of Tulare	1,243
040292984400	37E-7	6038885.35	2373831.54	Base of Alluvium	385
040292984800	14F-7	6037693.69	2375861.01	Base of Tulare	1,180
040292985400	24G-7	6038545.41	2375838.91	Base of Tulare	1,302
040292986100	11H-7	6038068.13	2377822.89	Base of Tulare	1,209
040292986800	48H-7	6040071.60	2373156.47	Base of Alluvium	385
040292988000	48K-7	6039893.10	2372996.01	Base of Alluvium	382
040292988100	21L-7	6038222.06	2377442.78	Base of Tulare	1,241
040292988200	24L-7	6038189.25	2375518.05	Base of Tulare	1,250
040292989200	47M-7	6039728.08	2373495.95	Base of Alluvium	390
040292989300	48M-7	6039715.50	2372835.07	Base of Alluvium	380
040292989500	23N-7	6038551.73	2376170.84	Base of Tulare	1,272
040292990200	48N-7	6040190.37	2372829.76	Base of Alluvium	390
040292990300	13P-7	6038024.88	2376183.52	Base of Tulare	1,212
040292991000	36R-7	6038863.25	2374013.09	Base of Alluvium	383
040292991500	13S-7	6037847.29	2376023.08	Base of Tulare	1,199
040292991600	14S-7	6037835.70	2375361.18	Base of Tulare	1,221
040292992400	48S-7	6039887.81	2372665.05	Base of Alluvium	383
040293502600	43-11	6029215.14	2376365.40	Base of Tulare	597
040293502800	15-8	6043406.04	2374826.75	Base of Alluvium	373
040293502800	15-8	6043406.04	2374826.75	Base of Tulare	1,766
040293503000	81NX-9	6053158.08	2377229.93	Base of Alluvium	331
040293503000	81NX-9	6053158.08	2377229.93	Base of Tulare	1,748
040293760900	5	6037034.24	2377178.57	Base of Alluvium	346
040293760900	5	6037034.24	2377178.57	Base of Tulare	1,159
040293775100	RK2-36N	6033464.46	2387362.03	Base of Alluvium	167
040293775300	RK4-36N	6033054.47	2387365.69	Base of Alluvium	144
040293775400	RK5-36N	6033063.30	2387825.61	Base of Alluvium	154
040293775500	RK6-36N	6033286.79	2387589.61	Base of Alluvium	156
040293775700	RK8-36N	6033323.21	2387819.29	Base of Tulare	750
040293775800	RR9X-36N	6033983.27	2387817.39	Base of Alluvium	180

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040293775900	RK10-36N	6033694.46	2387359.97	Base of Alluvium	181
040293776000	RK11-36N	6033971.70	2387370.49	Base of Alluvium	191
040293776200	RK13-36N	6033537.30	2387822.37	Base of Alluvium	173
040293795500	82B-24	6036825.97	2366443.27	Base of Tulare	892
040293799300	86X-14	6031841.48	2369180.30	Base of Alluvium	259
040293799300	86X-14	6031841.48	2369180.30	Base of Tulare	875
040293905600	VICTORIA 11	6036452.78	2362712.73	Base of Alluvium	162
040293905600	VICTORIA 11	6036452.78	2362712.73	Base of Tulare	680
040294172300	11A	6036260.42	2378546.10	Base of Alluvium	313
040294172300	11A	6036260.42	2378546.10	Base of Tulare	1,068
040294178500	RK15-36N	6033071.99	2388070.54	Base of Alluvium	160
040294605600	RK16-36N	6033527.48	2388040.46	Base of Alluvium	171
040294605700	RK17-36N	6033364.93	2388273.91	Base of Alluvium	167
040294675100	RK20-36N	6033703.48	2388038.89	Base of Alluvium	191
040294790100	RR21X-36N	6033015.20	2388447.04	Base of Alluvium	160
040294849300	11	6036366.53	2377152.46	Base of Alluvium	361
040294849300	11	6036366.53	2377152.46	Base of Tulare	1,126
040294849400	13	6036014.53	2377610.48	Base of Tulare	1,073
040294849600	17	6035649.52	2377165.49	Base of Alluvium	334
040294849600	17	6035649.52	2377165.49	Base of Tulare	1,060
040294849700	19	6035300.52	2377623.50	Base of Tulare	1,021
040294849800	21	6035287.50	2376724.49	Base of Tulare	1,047
040294849900	23	6034935.50	2377178.51	Base of Tulare	1,008
040294850000	25	6034583.51	2377635.52	Base of Tulare	987
040294850100	27	6034570.49	2376736.51	Base of Alluvium	316
040294850100	27	6034570.49	2376736.51	Base of Tulare	997
040294850200	29	6034202.57	2377232.28	Base of Alluvium	304
040294850200	29	6034202.57	2377232.28	Base of Tulare	964
040294850300	33	6033853.48	2376749.53	Base of Tulare	964
040294908700	RK22-36N	6033257.66	2387269.87	Base of Alluvium	161
040294956000	RK23-36N	6033522.54	2387261.62	Base of Alluvium	174
040294956100	RK24-36N	6032972.55	2387266.52	Base of Alluvium	141
040294967900	RK25-36N	6033237.44	2387519.16	Base of Alluvium	159
040295028600	HILL 554X	6040672.27	2365238.24	Base of Alluvium	303
040295028600	HILL 554X	6040672.27	2365238.24	Base of Tulare	1,143
040295099700	52A-1N	6035107.44	2382025.29	Base of Tulare	876
040295160000	RK26-36N	6033812.54	2387259.04	Base of Alluvium	189
040295160100	RK27-36N	6033812.42	2387514.04	Base of Alluvium	187
040295160200	RK28-36N	6034042.53	2387256.99	Base of Alluvium	210
040295160200	RK28-36N	6034042.53	2387256.99	Base of Tulare	837
040295160300	RK29-36N	6032452.56	2387271.15	Base of Alluvium	126
040295160300	RK29-36N	6032452.56	2387271.15	Base of Tulare	612
040295168800	RK30-36N	6032457.46	2387526.11	Base of Alluvium	132
040295168800	RK30-36N	6032457.46	2387526.11	Base of Tulare	588
040295326500	MCPHAIL 5-6R-36	6034023.64	2386660.57	Base of Alluvium	186
040295328300	1S-24	6036641.33	2366602.34	Base of Alluvium	284
040295328300	1S-24	6036641.33	2366602.34	Base of Tulare	901
040295452000	RK32-36N	6033355.39	2387933.11	Base of Alluvium	161
040295452200	RK34-36N	6033557.15	2387501.32	Base of Tulare	770
040295489800	63A-13	6035588.95	2370767.73	Base of Alluvium	301
040295489800	63A-13	6035588.95	2370767.73	Base of Tulare	1,016
040295489900	73A-13	6036250.86	2370756.15	Base of Alluvium	307
040295489900	73A-13	6036250.86	2370756.15	Base of Tulare	1,025
040295490000	83A-13	6036913.77	2370744.56	Base of Alluvium	396
040295490000	83A-13	6036913.77	2370744.56	Base of Tulare	1,091
040295490200	72C-13	6036268.72	2371749.00	Base of Alluvium	313
040295490200	72C-13	6036268.72	2371749.00	Base of Tulare	1,056
040295494600	GIBSON 23-36	6035223.49	2385644.77	Base of Alluvium	206
040295498000	13A-13	6032309.06	2370825.16	Base of Alluvium	267
040295498000	13A-13	6032309.06	2370825.16	Base of Tulare	970
040295498100	23A-13	6032935.98	2370814.19	Base of Alluvium	280
040295498100	23A-13	6032935.98	2370814.19	Base of Tulare	975
040295498200	24A-13	6032922.10	2370152.32	Base of Alluvium	278
040295498200	24A-13	6032922.10	2370152.32	Base of Tulare	959
040295501500	MCPHAIL I-2-36	6034002.44	2386151.39	Base of Alluvium	167
040295501500	MCPHAIL I-2-36	6034002.44	2386151.39	Base of Tulare	774
040295501600	MCPI-1	6034358.88	2386095.80	Base of Alluvium	173
040295531300	62D-13	6035931.47	2371423.85	Base of Alluvium	306
040295531300	62D-13	6035931.47	2371423.85	Base of Tulare	1,031
040295532300	RK8-36	6034582.83	2385075.01	Base of Alluvium	151
040295535800	51C-13	6034956.46	2372434.05	Base of Alluvium	300
040295535800	51C-13	6034956.46	2372434.05	Base of Tulare	987
040295536100	51D-13	6035281.13	2372097.32	Base of Alluvium	306
040295536100	51D-13	6035281.13	2372097.32	Base of Tulare	983
040295552900	74A-13	6036240.29	2370094.23	Base of Alluvium	305

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040295553100	63C-13	6035594.24	2371098.68	Base of Alluvium	300
040295553100	63C-13	6035594.24	2371098.68	Base of Tulare	1,023
040295553600	53D-13	6035256.99	2370773.53	Base of Alluvium	301
040295553600	53D-13	6035256.99	2370773.53	Base of Tulare	1,009
040295553700	63D-13	6035919.90	2370761.94	Base of Alluvium	300
040295553700	63D-13	6035919.90	2370761.94	Base of Tulare	1,027
040295553800	72D-13	6036593.38	2371412.27	Base of Alluvium	327
040295553800	72D-13	6036593.38	2371412.27	Base of Tulare	1,076
040295553900	74D-13	6036572.25	2370088.43	Base of Alluvium	327
040295553900	74D-13	6036572.25	2370088.43	Base of Tulare	1,040
040295615700	64D-13	6035908.33	2370100.04	Base of Alluvium	303
040295615700	64D-13	6035908.33	2370100.04	Base of Tulare	1,026
040295623500	71D-13	6036604.95	2372074.17	Base of Alluvium	365
040295623500	71D-13	6036604.95	2372074.17	Base of Tulare	1,085
040295644100	77A-13	6036213.75	2368102.77	Base of Alluvium	279
040295644100	77A-13	6036213.75	2368102.77	Base of Tulare	934
040295644400	77C-13	6036210.86	2368440.39	Base of Alluvium	277
040295644400	77C-13	6036210.86	2368440.39	Base of Tulare	942
040295644600	67D-13	6035872.62	2368115.10	Base of Alluvium	276
040295644600	67D-13	6035872.62	2368115.10	Base of Tulare	928
040295644700	77D-13	6036537.52	2368103.79	Base of Alluvium	289
040295644700	77D-13	6036537.52	2368103.79	Base of Tulare	948
040295727600	RK37-36N	6033483.47	2387831.97	Base of Tulare	787
040295728100	RK35-36N	6033606.36	2387720.88	Base of Alluvium	188
040295767700	52N-1N	6035276.03	2382186.81	Base of Alluvium	180
040295767700	52N-1N	6035276.03	2382186.81	Base of Tulare	889
040295793000	25D-18	6038688.33	2369387.20	Base of Alluvium	328
040295793000	25D-18	6038688.33	2369387.20	Base of Tulare	1,163
040295848400	11C-18	6037754.90	2372374.33	Base of Tulare	1,229
040295857001	17A-7_ST1	6037628.98	2373380.49	Base of Tulare	1,180
040295857100	17C-7	6037634.27	2373711.45	Base of Tulare	1,197
040295894701	22E-18_ST1	6038239.89	2371868.98	Base of Tulare	1,298
040295895800	32N-18	6039226.42	2371519.07	Base of Tulare	1,335
040295896800	23G-18	6038558.32	2371205.22	Base of Tulare	1,271
040295909400	RK38-36N	6033335.61	2387423.29	Base of Alluvium	165
040295909600	RK40-36N	6034012.43	2387512.26	Base of Alluvium	203
040295909600	RK40-36N	6034012.43	2387512.26	Base of Tulare	849
040295924100	82K-35N	6032070.16	2387673.00	Base of Alluvium	116
040295924100	82K-35N	6032070.16	2387673.00	Base of Tulare	623
040295924200	81N-35N	6032079.72	2388169.91	Base of Alluvium	114
040295943800	26X-8	6043875.11	2373976.66	Base of Alluvium	402
040295943800	26X-8	6043875.11	2373995.09	Base of Tulare	1,833
040295950300	55N-7	6040793.09	2374790.61	Base of Alluvium	434
040295950300	55N-7	6040799.43	2374798.29	Base of Tulare	1,757
040295982601	67L-18_ST1	6040811.97	2368187.11	Base of Tulare	1,344
040296026300	HILL 12-19	6037882.30	2366455.63	Base of Alluvium	282
040296026300	HILL 12-19	6037882.30	2366455.63	Base of Tulare	944
040296026600	HILL 17A-19	6037547.32	2362799.09	Base of Alluvium	204
040296026600	HILL 17A-19	6037547.32	2362799.09	Base of Tulare	771
040296034000	78D-12	6036616.54	2372737.03	Base of Alluvium	361
040296034000	78D-12	6036616.54	2372737.03	Base of Tulare	1,087
040296081600	13L-18	6037564.28	2370896.37	Base of Tulare	1,137
040296130100	A-5	6036626.44	2378990.41	Base of Alluvium	271
040296130100	A-5	6036626.44	2378990.41	Base of Tulare	1,114
040296135200	RK41-36N	6033160.91	2387700.74	Base of Alluvium	156
040296135200	RK41-36N	6033160.91	2387700.74	Base of Tulare	736
040296135300	RK42-36N	6033125.32	2387931.05	Base of Tulare	750
040296135400	RK43-36N	6033477.04	2388017.91	Base of Alluvium	190
040296135500	RK44-36N	6033299.16	2388129.50	Base of Alluvium	171
040296135600	1-24	6037295.22	2366767.94	Base of Tulare	936
040296140600	HILL 141-19	6039789.51	2366677.22	Base of Tulare	1,108
040296140900	HILL 152A-19	6040287.52	2365882.21	Base of Tulare	1,114
040296153500	RK45I-36N	6033233.60	2387840.09	Base of Alluvium	168
040296178000	HILL 21C-19	6038339.99	2367084.72	Base of Alluvium	306
040296178000	HILL 21C-19	6038339.99	2367084.72	Base of Tulare	982
040296178100	HILL 21D-19	6038675.00	2366741.68	Base of Alluvium	272
040296178100	HILL 21D-19	6038684.64	2366739.63	Base of Tulare	1,021
040296178200	HILL 22B-19	6038659.10	2366088.90	Base of Tulare	1,002
040296178300	HILL 22D-19	6038650.12	2366427.62	Base of Alluvium	292
040296178600	HILL 24B-19	6038629.87	2364756.96	Base of Alluvium	274
040296178600	HILL 24B-19	6038629.87	2364756.96	Base of Tulare	939
040296178800	HILL 31A-19	6039013.36	2366734.86	Base of Alluvium	300
040296178800	HILL 31A-19	6039018.66	2366736.38	Base of Tulare	1,039
040296178900	HILL 31C-19	6039021.71	2367072.79	Base of Alluvium	302
040296178900	HILL 31C-19	6039021.71	2367072.79	Base of Tulare	1,061

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040296179000	HILL 32B-19	6039304.99	2366070.32	Base of Alluvium	271
040296179000	HILL 32B-19	6039304.99	2366070.32	Base of Tulare	1,039
040296179100	HILL 32C-19	6038992.28	2366410.72	Base of Alluvium	299
040296179100	HILL 32C-19	6038992.28	2366410.72	Base of Tulare	1,026
040296179200	HILL 33-19	6039293.06	2365728.32	Base of Alluvium	266
040296179200	HILL 33-19	6039293.06	2365728.32	Base of Tulare	1,033
040296179300	HILL 33B-19	6039275.44	2365400.98	Base of Alluvium	267
040296179300	HILL 33B-19	6039275.44	2365400.98	Base of Tulare	1,019
040296179500	HILL 34B-19	6039254.57	2364716.91	Base of Alluvium	274
040296179500	HILL 34B-19	6039254.57	2364716.91	Base of Tulare	971
040296179700	35C	6038941.92	2364429.69	Base of Alluvium	273
040296179700	35C	6038941.92	2364429.69	Base of Tulare	919
040296179800	36C	6038970.75	2363760.77	Base of Alluvium	219
040296179800	36C	6038970.75	2363760.77	Base of Tulare	871
040296179900	HILL 43B-19	6039966.32	2365399.83	Base of Alluvium	267
040296179900	HILL 43B-19	6039966.32	2365399.83	Base of Tulare	1,063
040296180100	HILL 44C-19	6039652.21	2365089.08	Base of Alluvium	284
040296180100	HILL 44C-19	6039655.22	2365093.19	Base of Tulare	1,033
040296180200	HILL 53B-19	6040511.05	2365358.37	Base of Alluvium	293
040296180200	HILL 53B-19	6040613.11	2365368.21	Base of Tulare	1,147
040296190000	A-17	6034477.65	2379024.47	Base of Tulare	921
040296248000	643A-18	6039686.45	2370703.21	Base of Alluvium	373
040296248100	644-18	6040012.43	2370323.58	Base of Alluvium	382
040296248200	644A-18	6039711.35	2370007.47	Base of Alluvium	370
040296248200	644A-18	6039711.35	2370007.47	Base of Tulare	1,298
040296248600	656-18	6040678.60	2368970.23	Base of Alluvium	377
040296309400	45DR1-18	6040028.74	2369338.12	Base of Tulare	1,316
040296309600	45NR1-18	6039864.42	2369507.23	Base of Tulare	1,301
040296310100	56CR1-18	6040350.16	2369003.46	Base of Tulare	1,315
040296310300	56ER1-18	6040202.98	2369155.74	Base of Tulare	1,312
040296310402	56GR1-18_ST2	6040517.24	2369166.83	Base of Tulare	1,352
040296349200	624-18	6038691.38	2370393.16	Base of Alluvium	347
040296349200	624-18	6038691.38	2370393.16	Base of Tulare	1,211
040296349300	633-18	6039362.19	2371002.80	Base of Alluvium	371
040296349300	633-18	6039362.19	2371002.80	Base of Tulare	1,307
040296349600	632A-18	6039040.11	2371375.34	Base of Alluvium	364
040296349600	632A-18	6039040.11	2371375.34	Base of Tulare	1,319
040296349800	634A-18	6039014.05	2370056.61	Base of Alluvium	350
040296349800	634A-18	6039014.05	2370056.61	Base of Tulare	1,237
040296349900	645A-18	6039662.37	2369380.98	Base of Alluvium	360
040296349900	645A-18	6039662.37	2369380.98	Base of Tulare	1,273
040296379700	HILL 142B-19	6039595.51	2366189.23	Base of Tulare	1,085
040296393800	656A-18	6040296.39	2368695.57	Base of Alluvium	358
040296393800	656A-18	6040296.39	2368695.57	Base of Tulare	1,284
040296394100	6635A-18	6039032.93	2369358.75	Base of Alluvium	337
040296394100	6635A-18	6039032.93	2369358.75	Base of Tulare	1,183
040296396400	6658A-18	6040322.96	2367389.67	Base of Alluvium	348
040296396400	6658A-18	6040322.96	2367389.67	Base of Tulare	1,230
040296428200	HILL 71EW-19	6042131.57	2366811.19	Base of Tulare	1,436
040296460300	7-5-36N	6034636.82	2386920.20	Base of Alluvium	227
040296460300	7-5-36N	6034636.82	2386920.20	Base of Tulare	882
040296460400	7-6-36N	6034612.71	2386565.65	Base of Tulare	855
040296516000	RK46-36N	6032885.32	2387933.20	Base of Alluvium	149
040296516000	RK46-36N	6032885.32	2387933.20	Base of Tulare	720
040296516100	RK47-36N	6032880.92	2387703.25	Base of Alluvium	147
040296516300	RK49-36N	6033006.51	2387472.12	Base of Alluvium	153
040296586100	55H-19	6040206.52	2364511.97	Base of Alluvium	264
040296586100	55H-19	6040206.52	2364511.97	Base of Tulare	1,008
040296592300	613-18	6038043.05	2371066.32	Base of Alluvium	353
040296592300	613-18	6038043.05	2371066.32	Base of Tulare	1,219
040296592400	615-18	6038019.01	2369747.79	Base of Alluvium	321
040296592400	615-18	6038019.01	2369747.79	Base of Tulare	1,106
040296592500	616-18	6037989.77	2369108.22	Base of Alluvium	305
040296592500	616-18	6037989.77	2369108.22	Base of Tulare	1,053
040296592600	622-18	6038714.87	2371675.94	Base of Alluvium	377
040296592600	622-18	6038714.87	2371675.94	Base of Tulare	1,345
040296592700	614-18	6038031.52	2370406.43	Base of Alluvium	333
040296592700	614-18	6038031.52	2370406.43	Base of Tulare	1,138
040296593000	6614-18	6038064.98	2370372.65	Base of Alluvium	335
040296593000	6614-18	6038064.98	2370372.65	Base of Tulare	1,141
040296593100	6615-18	6038053.46	2369713.14	Base of Alluvium	318
040296593100	6615-18	6038053.46	2369713.14	Base of Tulare	1,096
040296593500	6624-18	6038721.86	2370360.45	Base of Alluvium	343
040296593500	6624-18	6038721.86	2370360.45	Base of Tulare	1,213
040296594300	614A-18	6037695.36	2370086.12	Base of Alluvium	325

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040296594300	614A-18	6037695.36	2370086.12	Base of Tulare	1,089
040296594400	615A-18	6037683.82	2369426.00	Base of Alluvium	305
040296594400	615A-18	6037683.82	2369426.00	Base of Tulare	1,049
040296594500	622A-18	6038382.20	2371386.56	Base of Alluvium	366
040296594800	6613A-18	6037742.31	2370709.20	Base of Alluvium	337
040296594800	6613A-18	6037742.31	2370709.20	Base of Tulare	1,170
040296594900	6614A-18	6037729.80	2370050.32	Base of Alluvium	324
040296594900	6614A-18	6037729.80	2370050.32	Base of Tulare	1,092
040296595700	6633A-18	6039058.07	2370683.75	Base of Alluvium	358
040296595700	6633A-18	6039058.07	2370683.75	Base of Tulare	1,265
040296595800	6634A-18	6039045.53	2370023.88	Base of Alluvium	348
040296595800	6634A-18	6039045.53	2370023.88	Base of Tulare	1,240
040296616700	G-3	6037091.55	2377591.45	Base of Alluvium	337
040296616700	G-3	6037091.55	2377591.45	Base of Tulare	1,176
040296616900	G-7	6036248.04	2377646.40	Base of Tulare	1,109
040296617200	G-15	6034788.42	2377717.19	Base of Tulare	997
040296617400	G-19	6034100.25	2377680.77	Base of Alluvium	320
040296617400	G-19	6034100.25	2377680.77	Base of Tulare	951
040296618400	J-10	6035700.26	2376980.09	Base of Tulare	1,071
040296618800	K-17	6034493.86	2376774.37	Base of Alluvium	325
040296618800	K-17	6034493.86	2376774.37	Base of Tulare	994
040296619800	C-17	6034472.52	2378574.53	Base of Alluvium	265
040296619800	C-17	6034472.52	2378574.53	Base of Tulare	956
040296619900	E-5	6036613.17	2378090.46	Base of Tulare	1,136
040296620000	E-7	6036305.16	2378095.34	Base of Tulare	1,106
040296620200	E-11	6035589.28	2378106.74	Base of Alluvium	306
040296620200	E-11	6035589.28	2378106.74	Base of Tulare	1,058
040296627100	C-19	6034114.64	2378580.16	Base of Alluvium	274
040296627100	C-19	6034114.64	2378580.16	Base of Tulare	900
040296675100	HILL 40-19	6039824.15	2367153.43	Base of Alluvium	305
040296675100	HILL 40-19	6039824.15	2367153.43	Base of Tulare	1,147
040296749000	672R-13	6036063.87	2371510.54	Base of Alluvium	306
040296749000	672R-13	6036063.87	2371510.54	Base of Tulare	1,041
040296749200	673H-13	6036659.48	2371230.09	Base of Alluvium	338
040296749600	682C-13	6036919.11	2371830.64	Base of Alluvium	393
040296749600	682C-13	6036919.11	2371830.64	Base of Tulare	1,084
040296749900	671A-13	6036323.99	2372079.08	Base of Alluvium	320
040296749900	671A-13	6036323.99	2372079.08	Base of Tulare	1,044
040296756400	611-18	6038102.12	2372385.30	Base of Alluvium	374
040296756400	611-18	6038102.12	2372385.30	Base of Tulare	1,278
040296756500	611A-18	6037767.93	2372062.94	Base of Alluvium	362
040296756500	611A-18	6037767.93	2372062.94	Base of Tulare	1,217
040296756600	612-18	6038090.60	2371726.39	Base of Alluvium	360
040296756700	612A-18	6037755.39	2371403.07	Base of Alluvium	347
040296756700	612A-18	6037755.39	2371403.07	Base of Tulare	1,225
040296756800	612L-18	6037441.01	2371631.40	Base of Tulare	1,172
040296757100	617A-18	6037677.22	2368138.89	Base of Alluvium	292
040296757100	617A-18	6037677.22	2368138.89	Base of Tulare	1,000
040296757300	621A-18	6038370.25	2372015.99	Base of Alluvium	374
040296757300	621A-18	6038370.25	2372015.99	Base of Tulare	1,318
040296765200	63H-13	6035888.79	2371193.56	Base of Alluvium	310
040296766000	62N-13	6035729.19	2371658.42	Base of Alluvium	310
040296766400	61PR-13	6035999.36	2372230.78	Base of Alluvium	316
040296766500	73R-13	6036038.86	2370757.86	Base of Alluvium	308
040296778000	J-16	6034609.40	2377042.18	Base of Alluvium	318
040296778000	J-16	6034609.40	2377042.18	Base of Tulare	989
040296786000	HILL 131-19	6038678.55	2367184.44	Base of Tulare	1,010
040296787600	G-1	6037448.56	2377585.44	Base of Tulare	1,195
040296788200	617D-7	6037899.58	2373416.24	Base of Alluvium	370
040296788200	617D-7	6037899.58	2373416.24	Base of Tulare	1,234
040296788400	627A-7	6038336.67	2373356.11	Base of Tulare	1,278
040296788500	628M-7	6038370.58	2372850.20	Base of Alluvium	375
040296788500	628M-7	6038370.58	2372850.20	Base of Tulare	1,285
040296788600	611E-18	6037575.46	2372535.51	Base of Alluvium	359
040296788600	611E-18	6037575.46	2372535.51	Base of Tulare	1,219
040296791500	28S-7	6038577.97	2372685.35	Base of Alluvium	390
040296802100	B-20	6033893.43	2378842.23	Base of Tulare	892
040296805300	H-2	6037266.55	2377362.44	Base of Tulare	1,194
040296805600	I-1	6037441.55	2377134.43	Base of Alluvium	336
040296805600	I-1	6037441.55	2377134.43	Base of Tulare	1,187
040296806000	K-1	6037307.54	2376729.29	Base of Tulare	1,170
040296823200	588N-13	6037028.77	2367595.54	Base of Tulare	937
040296823300	574N-13	6036408.55	2370257.28	Base of Alluvium	309
040296823300	574N-13	6036408.55	2370257.28	Base of Tulare	1,051
040296886600	HILL 21B-19	6038325.37	2366418.75	Base of Alluvium	286

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040296886600	HILL 21B-19	6038325.37	2366418.75	Base of Tulare	995
040296886700	HILL 31B-19	6039325.22	2366717.99	Base of Alluvium	299
040296886700	HILL 31B-19	6039325.22	2366717.99	Base of Tulare	1,091
040296909300	33NR-18	6039229.59	2370840.82	Base of Tulare	1,296
040296967700	HILL 154D-19	6040453.55	2364648.65	Base of Tulare	1,048
040296968700	674D-13	6036527.33	2370157.22	Base of Alluvium	335
040296968700	674D-13	6036527.33	2370157.22	Base of Tulare	1,044
040296968800	671E-13	6036140.15	2372529.37	Base of Alluvium	307
040296968800	671E-13	6036140.15	2372529.37	Base of Tulare	1,035
040296968900	663F-13	6035620.82	2371323.26	Base of Alluvium	305
040296968900	663F-13	6035620.82	2371323.26	Base of Tulare	1,019
040296969000	674G-13	6036364.62	2370615.14	Base of Alluvium	320
040296969000	674G-13	6036364.62	2370615.14	Base of Tulare	1,035
040296969100	662H-13	6035885.45	2371923.72	Base of Alluvium	315
040296969100	662H-13	6035885.45	2371923.72	Base of Tulare	1,004
040296969200	662J-13	6035457.71	2371756.18	Base of Alluvium	311
040296969200	662J-13	6035457.71	2371756.18	Base of Tulare	980
040296969400	663N-13	6035759.02	2370895.78	Base of Alluvium	304
040296969400	663N-13	6035759.02	2370895.78	Base of Tulare	1,024
040296972200	678K-12	6036474.77	2373190.59	Base of Alluvium	367
040296972200	678K-12	6036474.77	2373190.59	Base of Tulare	1,077
040296972400	664-13	6035930.71	2370436.70	Base of Alluvium	309
040296972400	664-13	6035930.71	2370436.70	Base of Tulare	1,014
040296972600	675E-13	6036058.69	2369995.39	Base of Alluvium	304
040296972600	675E-13	6036058.69	2369995.39	Base of Tulare	1,005
040296972700	684M-13	6036806.06	2370258.60	Base of Alluvium	348
040296972700	684M-13	6036883.69	2370292.40	Base of Tulare	1,090
040296972800	651P-13	6035284.65	2372192.27	Base of Alluvium	306
040296972800	651P-13	6035284.65	2372192.27	Base of Tulare	982
040296998000	HILL 151-19	6040544.96	2366427.51	Base of Tulare	1,182
040297028800	583N-13	6037100.76	2370887.27	Base of Alluvium	394
040297028800	583N-13	6037100.76	2370887.27	Base of Tulare	1,105
040297028900	586E-13	6036727.26	2369254.06	Base of Alluvium	319
040297028900	586E-13	6036727.26	2369254.06	Base of Tulare	978
040297075000	MD1-12	6033937.46	2376113.52	Base of Alluvium	311
040297075100	MD2-12	6033237.45	2376124.53	Base of Alluvium	301
040297126500	546D-1N	6034688.14	2379373.94	Base of Tulare	948
040297136100	671C-35N	6031257.96	2388347.03	Base of Alluvium	44
040297136300	617C-25N	6032602.90	2389655.73	Base of Alluvium	205
040297136300	617C-25N	6032602.90	2389655.73	Base of Tulare	814
040297136400	677D-26N	6031567.01	2389298.88	Base of Alluvium	163
040297136400	677D-26N	6031567.01	2389298.88	Base of Tulare	661
040297136500	448-36N	6034474.54	2383671.90	Base of Alluvium	165
040297136500	448-36N	6034474.54	2383671.90	Base of Tulare	771
040297136600	583E-13	6036758.49	2371252.60	Base of Alluvium	354
040297164000	HILL 142C-19	6039265.51	2366198.24	Base of Tulare	1,052
040297169900	27R-7	6038117.05	2373318.19	Base of Tulare	1,261
040297175300	18G-7	6037869.08	2373196.86	Base of Tulare	1,250
040297175800	82G-13	6037104.96	2371882.40	Base of Tulare	1,127
040297176100	81H-13	6037424.77	2372430.90	Base of Alluvium	309
040297176100	81H-13	6037424.77	2372430.90	Base of Tulare	1,198
040297176600	81M-13	6036936.85	2372315.41	Base of Tulare	1,128
040297176700	82M-13	6036985.94	2371631.44	Base of Tulare	1,101
040297177000	81P-13	6037270.53	2372229.56	Base of Tulare	1,166
040297177100	71R-13	6036081.85	2372010.31	Base of Tulare	1,020
040297177800	RR1-36N	6034232.54	2387256.15	Base of Alluvium	209
040297177900	RR2-36N	6033906.07	2387964.07	Base of Alluvium	207
040297178000	RR3-36N	6034655.58	2388077.37	Base of Alluvium	226
040297178000	RR3-36N	6034655.58	2388077.37	Base of Tulare	955
040297179600	71H-13	6036671.81	2372503.08	Base of Tulare	1,087
040297191200	RK50-36N	6032876.70	2387483.28	Base of Alluvium	146
040297199300	668-18	6041265.32	2367666.03	Base of Alluvium	363
040297199300	668-18	6041265.32	2367666.03	Base of Tulare	1,387
040297199500	678A-18	6041556.72	2367363.55	Base of Alluvium	365
040297199500	678A-18	6041556.72	2367363.55	Base of Tulare	1,400
040297204500	614A-7	6037860.67	2375298.80	Base of Alluvium	357
040297204500	614A-7	6037714.33	2375350.90	Base of Tulare	1,228
040297204600	615M-7	6037686.12	2374825.54	Base of Alluvium	364
040297204600	615M-7	6037686.12	2374825.54	Base of Tulare	1,208
040297204700	616C-7	6037733.44	2374408.34	Base of Alluvium	369
040297204700	616C-7	6037733.44	2374408.33	Base of Tulare	1,210
040297204800	617F-7	6037726.75	2373990.39	Base of Alluvium	376
040297204800	617F-7	6037726.75	2373990.39	Base of Tulare	1,225
040297204900	627E-7	6038246.35	2373845.08	Base of Alluvium	373
040297204900	627E-7	6038186.39	2373926.86	Base of Tulare	1,244
040297205700	67DR-18	6041331.38	2367989.66	Base of Tulare	1,382

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040297205800	68CRE-18	6040986.34	2367670.15	Base of Tulare	1,346
040297221300	416-7	6037851.16	2374514.64	Base of Alluvium	375
040297221400	468-18	6041464.57	2367677.65	Base of Alluvium	370
040297221400	468-18	6041464.57	2367677.65	Base of Tulare	1,423
040297221500	631-18	6039429.16	2372315.58	Base of Alluvium	395
040297221600	641A-18	6039752.82	2371978.00	Base of Alluvium	388
040297221700	642-18	6040051.31	2371631.00	Base of Alluvium	389
040297221800	642A-18	6039740.26	2371317.13	Base of Alluvium	377
040297221900	632-18	6039416.63	2371655.70	Base of Alluvium	381
040297221900	632-18	6039416.63	2371655.70	Base of Tulare	1,354
040297222000	631A-18	6039093.97	2371992.24	Base of Alluvium	390
040297229200	638P-7	6039280.43	2372896.16	Base of Alluvium	390
040297229300	638L-7	6038813.49	2372840.95	Base of Alluvium	385
040297229400	637R-7	6038821.94	2373368.89	Base of Alluvium	386
040297230200	14P-7	6037985.02	2375567.37	Base of Alluvium	358
040297230700	15P-7	6037936.34	2374837.75	Base of Tulare	1,275
040297231200	16M-7	6037702.14	2374139.99	Base of Tulare	1,206
040297231300	16P-7	6037962.66	2374169.97	Base of Tulare	1,243
040297231400	16R-7	6037499.84	2373941.59	Base of Tulare	1,185
040297231500	16R1-7	6037966.38	2374402.94	Base of Tulare	1,222
040297231600	17H-7	6037959.63	2373855.97	Base of Alluvium	368
040297231600	17H-7	6037959.63	2373855.97	Base of Tulare	1,242
040297231700	26L-7	6038195.60	2374164.58	Base of Tulare	1,249
040297232400	26N-7	6038428.54	2374159.19	Base of Alluvium	371
040297232500	27G-7	6038423.56	2373973.26	Base of Alluvium	374
040297241700	HILL 143C-19	6039617.51	2365868.23	Base of Tulare	1,060
040297250200	27M-7	6038379.47	2373655.19	Base of Alluvium	379
040297250400	28N-7	6038582.63	2372976.33	Base of Alluvium	359
040297251700	42LR-18	6039578.95	2371486.30	Base of Tulare	1,358
040297255900	48LR-7	6039544.71	2372912.05	Base of Alluvium	380
040297256600	33LR1-18	6038866.68	2370849.22	Base of Tulare	1,252
040297256700	11NR-18	6037885.01	2372192.27	Base of Tulare	1,226
040297257900	413-18	6038236.86	2371052.84	Base of Alluvium	355
040297257900	413-18	6038236.86	2371052.84	Base of Tulare	1,238
040297258300	436-18	6039096.41	2368888.48	Base of Alluvium	346
040297258300	436-18	6039096.41	2368888.48	Base of Tulare	1,177
040297258400	437-18	6039083.81	2368225.60	Base of Alluvium	315
040297258400	437-18	6039083.81	2368225.60	Base of Tulare	1,128
040297258500	438-18	6039030.43	2367577.48	Base of Alluvium	316
040297258500	438-18	6039030.43	2367577.47	Base of Tulare	1,080
040297258600	447-18	6040096.46	2368506.99	Base of Alluvium	348
040297258600	447-18	6040096.46	2368506.99	Base of Tulare	1,274
040297313200	2-24	6037308.17	2367217.81	Base of Tulare	958
040297364500	MRWD3-12	6033707.46	2376259.53	Base of Alluvium	299
040297364600	MRWD4-12	6033044.45	2376320.55	Base of Alluvium	299
040297367400	584L-13	6036727.66	2370261.86	Base of Tulare	1,077
040297369600	667C-26N	6030676.40	2389699.96	Base of Alluvium	147
040297369600	667C-26N	6030676.40	2389699.96	Base of Tulare	611
040297369700	676D-26N	6031618.62	2389968.25	Base of Alluvium	186
040297369700	676D-26N	6031618.62	2389968.25	Base of Tulare	710
040297369800	685D-26N	6032280.81	2390609.34	Base of Alluvium	217
040297369800	685D-26N	6032280.81	2390609.34	Base of Tulare	822
040297395500	WW1-12	6033096.49	2375101.40	Base of Alluvium	287
040297427800	414-18	6038245.49	2370403.48	Base of Alluvium	338
040297427800	414-18	6038245.49	2370403.48	Base of Tulare	1,163
040297428000	432-18	6039211.97	2371365.35	Base of Alluvium	374
040297428000	432-18	6039211.97	2371365.35	Base of Tulare	1,313
040297428200	443-18	6040303.17	2371036.01	Base of Alluvium	392
040297428200	443-18	6040303.17	2371036.01	Base of Tulare	1,414
040297428400	445-18	6040205.70	2369708.88	Base of Alluvium	374
040297428400	445-18	6040205.70	2369708.88	Base of Tulare	1,335
040297428500	446-18	6040151.24	2369055.79	Base of Alluvium	368
040297428500	446-18	6040151.24	2369055.79	Base of Tulare	1,298
040297428600	428-7	6038517.64	2372977.83	Base of Alluvium	387
040297428600	428-7	6038517.64	2372977.83	Base of Tulare	1,302
040297428700	487-12	6037447.04	2373635.64	Base of Alluvium	369
040297428700	487-12	6037447.04	2373635.64	Base of Tulare	1,180
040297428800	472-13	6036566.42	2371790.80	Base of Alluvium	353
040297428900	483-13	6037265.05	2371260.50	Base of Tulare	1,130
040297431700	H-11	6035550.85	2377525.44	Base of Alluvium	330
040297441500	582NR-13	6037063.07	2371638.72	Base of Tulare	1,113
040297471700	10WW-11	6031768.40	2374652.56	Base of Alluvium	289
040297471800	11WW-11	6031368.39	2374657.57	Base of Alluvium	278
040297471900	12WW-11	6030972.38	2374664.58	Base of Alluvium	271
040297472000	13WW-11	6030568.38	2374665.60	Base of Alluvium	253

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040297476500	MRWD5-12	6032599.44	2376277.56	Base of Alluvium	297
040297477700	21-36	6034404.17	2384833.87	Base of Alluvium	149
040297477700	21-36	6034404.17	2384833.87	Base of Tulare	760
040297477800	22-36	6034404.91	2384622.34	Base of Alluvium	154
040297477800	22-36	6034404.91	2384622.34	Base of Tulare	749
040297503700	442M-7	6039632.71	2376724.97	Base of Alluvium	392
040297503700	442M-7	6039632.71	2376724.97	Base of Tulare	1,497
040297503900	455E-31	6040382.76	2385609.46	Base of Alluvium	225
040297503900	455E-31	6040382.76	2385609.46	Base of Tulare	1,152
040297504100	455E-9	6050854.29	2374935.40	Base of Alluvium	353
040297512600	43-27N	6023411.37	2389940.65	Base of Tulare	621
040297515500	7-24	6034778.43	2366488.51	Base of Tulare	845
040297515600	8-24	6033641.42	2366730.74	Base of Alluvium	267
040297515600	8-24	6033641.42	2366730.74	Base of Tulare	800
040297552600	573L-13	6036088.05	2370916.00	Base of Tulare	1,031
040297561000	534D-1N	6034086.33	2380717.71	Base of Tulare	778
040297625700	28-36	6035067.99	2383271.24	Base of Alluvium	205
040297625800	29-36	6035421.56	2384589.48	Base of Alluvium	175
040297625800	29-36	6035421.56	2384589.48	Base of Tulare	868
040297684800	RR11C-36N	6032554.47	2388308.16	Base of Alluvium	138
040297685500	53-18	6040669.43	2370992.53	Base of Alluvium	396
040297685800	77A-18	6041652.35	2367984.60	Base of Tulare	1,436
040297693500	48AR-7	6039692.06	2372682.58	Base of Alluvium	384
040297703000	557H-12	6035312.53	2373885.15	Base of Tulare	1,016
040297729500	C-6	6036491.31	2378542.47	Base of Tulare	1,099
040297738900	BB-16	6034536.36	2378969.86	Base of Tulare	944
040297763900	221-19	6038096.49	2367046.28	Base of Tulare	966
040297774000	221C-19	6038455.49	2366961.27	Base of Tulare	988
040297774300	HILL 231BW-19	6039102.50	2366931.26	Base of Tulare	1,054
040297805700	HILL 254A-19	6040188.10	2364816.58	Base of Tulare	1,061
040297808300	HILL 244D-19	6039803.18	2364597.20	Base of Tulare	1,007
040297810200	HILL 254F-19	6040577.58	2364759.34	Base of Tulare	1,088
040297811200	HILL 244H-19	6039892.31	2364782.73	Base of Tulare	1,035
040297811700	HILL 254I-19	6040770.08	2364868.84	Base of Tulare	1,128
040297825500	RR31M-36N	6034017.00	2388117.08	Base of Alluvium	208
040297844500	556A-1N	6034854.44	2379263.99	Base of Tulare	964
040297844600	566A-1N	6035640.31	2379258.61	Base of Tulare	1,034
040297859900	662E-1N	6035623.20	2382439.76	Base of Alluvium	217
040297859900	662E-1N	6035623.20	2382439.76	Base of Tulare	923
040297862801	41F-1N_ST1	6034469.50	2383149.94	Base of Alluvium	189
040297863500	31H-1N	6034236.51	2383152.00	Base of Alluvium	159
040297863600	41H-1N	6034936.49	2383145.82	Base of Alluvium	196
040297867800	444-1N	6034771.03	2380698.28	Base of Alluvium	169
040297867800	444-1N	6034771.03	2380698.28	Base of Tulare	917
040297867900	455-1N	6035228.18	2380228.25	Base of Tulare	992
040297868000	464-1N	6035713.87	2381156.96	Base of Alluvium	205
040297868000	464-1N	6035713.87	2381156.96	Base of Tulare	994
040297888400	457M-7	6040544.33	2373375.06	Base of Alluvium	405
040297891100	RR42L-36N	6034470.50	2387412.03	Base of Alluvium	218
040297895300	51F-1N	6035169.49	2383143.76	Base of Alluvium	198
040297895600	51G-1N	6035403.49	2383141.71	Base of Alluvium	201
040297896200	62KR-1N	6036085.77	2382202.69	Base of Alluvium	216
040297906300	R637-36N	6034258.25	2384281.80	Base of Alluvium	136
040297906500	637D-36N	6034249.97	2383851.88	Base of Alluvium	155
040297906600	637J-36N	6033791.28	2384285.93	Base of Alluvium	132
040297906900	637R-36N	6033782.98	2383856.00	Base of Alluvium	133
040297906900	637R-36N	6033782.98	2383856.00	Base of Tulare	697
040297907000	647S-36N	6034716.96	2383847.76	Base of Alluvium	163
040297907000	647S-36N	6034716.96	2383847.76	Base of Tulare	803
040297915200	37E-36N	6033795.00	2384480.89	Base of Alluvium	132
040297915400	R37G-36N	6034029.00	2384478.82	Base of Alluvium	141
040297918100	47L-36N	6034487.45	2384082.79	Base of Alluvium	160
040297919701	47G-36N_ST1	6034728.99	2384472.65	Base of Alluvium	166
040297924500	R437-36N	6033940.02	2383908.62	Base of Tulare	715
040297950600	438U-18	6039241.49	2367266.47	Base of Alluvium	296
040297950600	438U-18	6039241.49	2367266.46	Base of Tulare	1,106
040297951500	457-12	6034856.92	2373588.98	Base of Alluvium	294
040297967900	47H-36N	6034899.98	2384470.61	Base of Alluvium	168
040297975000	HILL 224-19	6038711.50	2365163.24	Base of Tulare	954
040297975200	HILL 272-19	6041563.33	2366225.07	Base of Tulare	1,336
040297975500	HILL 272A-19	6041424.25	2366524.84	Base of Tulare	1,404
040297976100	HILL 251F-19	6040679.53	2366861.21	Base of Tulare	1,249
040297976200	HILL 252F-19	6040931.54	2366057.95	Base of Tulare	1,243
040297981700	88-14	6031965.73	2367806.11	Base of Alluvium	269
040297981700	88-14	6031965.73	2367806.11	Base of Tulare	799

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040298000400	241M-19	6040109.52	2366814.23	Base of Tulare	1,159
040298048400	HILL 245F-19	6039449.21	2364265.71	Base of Tulare	927
040298128300	578N-12	6036459.93	2372937.70	Base of Tulare	1,070
040298131900	27E-25N	6033138.10	2389657.59	Base of Alluvium	215
040298131900	27E-25N	6033138.10	2389657.59	Base of Tulare	860
040298132000	28-25N	6033591.87	2388953.29	Base of Alluvium	238
040298132000	28-25N	6033591.87	2388953.29	Base of Tulare	837
040298132100	66N-26N	6030806.31	2390144.75	Base of Alluvium	158
040298132200	72N-35N	6031463.12	2387469.20	Base of Alluvium	70
040298144400	48DR-7	6040040.59	2372646.51	Base of Alluvium	386
040298180300	67R-26N	6030685.93	2389198.04	Base of Alluvium	143
040298180300	67R-26N	6030685.93	2389198.04	Base of Tulare	576
040298186400	17A-25N	6032662.25	2389195.09	Base of Alluvium	200
040298186400	17A-25N	6032662.25	2389195.09	Base of Tulare	792
040298186500	17R-25N	6032439.23	2389196.10	Base of Alluvium	188
040298186600	87G-26N	6032205.06	2389667.33	Base of Alluvium	195
040298186700	88K-26N	6032191.88	2388967.45	Base of Tulare	725
040298186800	87S-26N	6032196.27	2389200.41	Base of Alluvium	184
040298186900	618J-25N	6032449.87	2388964.09	Base of Alluvium	185
040298186900	618J-25N	6032449.87	2388964.09	Base of Tulare	748
040298187000	628C-25N	6033357.84	2388955.51	Base of Alluvium	229
040298187000	628C-25N	6033357.84	2388955.51	Base of Tulare	823
040298187100	628R-25N	6033118.80	2388561.22	Base of Alluvium	166
040298187200	687N-26N	6032200.65	2389433.38	Base of Alluvium	195
040298187200	687N-26N	6032200.65	2389433.38	Base of Tulare	742
040298189600	87A-26N	6031962.28	2389203.54	Base of Alluvium	174
040298189700	77E-26N	6031250.28	2389680.84	Base of Alluvium	166
040298189800	87M-26N	6031966.67	2389436.50	Base of Alluvium	184
040298190000	72H-35N	6031701.43	2387725.90	Base of Alluvium	93
040298191800	28A-25N	6033351.23	2388569.57	Base of Alluvium	181
040298191900	18C-25N	6032657.86	2388962.22	Base of Alluvium	191
040298192000	28J-25N	6033124.85	2388957.99	Base of Alluvium	214
040298192100	28L-25N	6033120.44	2388724.02	Base of Tulare	801
040298192300	18M-25N	6032653.46	2388728.26	Base of Alluvium	190
040298192300	18M-25N	6032653.46	2388728.26	Base of Tulare	772
040298192500	18N-25N	6032887.45	2388726.14	Base of Alluvium	201
040298192600	28P-25N	6033587.43	2388719.79	Base of Tulare	833
040298194100	677P-26N	6031733.68	2389439.62	Base of Alluvium	164
040298194100	677P-26N	6031733.68	2389439.62	Base of Tulare	679
040298195500	666D-26N	6031045.44	2389915.86	Base of Alluvium	162
040298195600	616R-25N	6032467.43	2389896.96	Base of Alluvium	196
040298195700	686A-26N	6031975.46	2389903.43	Base of Alluvium	189
040298195800	677L-26N	6031266.72	2389445.87	Base of Alluvium	164
040298195900	676S-26N	6031509.49	2389909.66	Base of Alluvium	170
040298196600	373D-18	6042021.28	2370596.57	Base of Alluvium	450
040298196600	373D-18	6042021.28	2370596.57	Base of Tulare	1,619
040298197800	27A-25N	6033362.23	2389188.84	Base of Alluvium	222
040298198000	27M-25N	6033366.61	2389421.43	Base of Alluvium	230
040298198100	17N-25N	6032900.62	2389425.84	Base of Alluvium	210
040298198200	27R-25N	6033129.23	2389190.95	Base of Alluvium	218
040298198300	RR11G-36N	6032882.82	2388426.19	Base of Alluvium	149
040298202400	618K-25N	6032891.86	2388959.92	Base of Alluvium	205
040298202400	618K-25N	6032891.86	2388959.92	Base of Tulare	787
040298202500	627L-25N	6033133.62	2389423.63	Base of Alluvium	223
040298202600	617M-25N	6032666.63	2389428.05	Base of Alluvium	199
040298202600	617M-25N	6032666.63	2389428.05	Base of Tulare	782
040298202700	RR611F-36N	6032648.22	2388427.28	Base of Alluvium	136
040298202800	RR621H-36N	6033583.58	2388397.36	Base of Alluvium	187
040298202800	RR621H-36N	6033587.21	2388472.91	Base of Tulare	816
040298221600	RR31E-36N	6033814.97	2388394.93	Base of Alluvium	199
040298233700	1-1R-19	6040183.89	2364463.22	Base of Alluvium	263
040298233700	1-1R-19	6040183.89	2364463.21	Base of Tulare	964
040298247700	RR11J-36N	6032482.16	2388236.39	Base of Alluvium	131
040298247800	RR11A-36N	6032639.27	2387974.39	Base of Alluvium	136
040298248100	17F-25N	6032671.03	2389662.11	Base of Alluvium	205
040298249000	77G-26N	6031505.11	2389676.70	Base of Alluvium	169
040298249100	77H-26N	6031738.05	2389673.34	Base of Alluvium	179
040298249600	87F-26N	6031971.07	2389670.47	Base of Alluvium	184
040298251000	RR11CR-36N	6032644.18	2388235.34	Base of Alluvium	136
040298251800	RK611S-36N	6032873.27	2387972.26	Base of Alluvium	151
040298251800	RK611S-36N	6032873.27	2387972.26	Base of Tulare	725
040298254500	77D-26N	6031683.47	2389207.13	Base of Alluvium	168
040298254900	88N-26N	6032141.64	2388732.87	Base of Alluvium	123
040298254900	88N-26N	6032184.90	2388732.62	Base of Tulare	706
040298255100	77S-26N	6031496.38	2389209.90	Base of Alluvium	158

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040298257200	RK621A-36N	6033339.45	2387968.58	Base of Alluvium	169
040298257500	RK632M-36N	6034029.50	2387441.85	Base of Alluvium	197
040298257500	RK632M-36N	6034029.50	2387441.85	Base of Tulare	843
040298257600	RK622P-36N	6033615.11	2387442.24	Base of Alluvium	177
040298257600	RK622P-36N	6033565.50	2387448.16	Base of Tulare	762
040298257700	RR631R-36N	6033806.13	2387964.40	Base of Alluvium	198
040298260600	RK21J-36N	6033111.11	2388230.91	Base of Alluvium	160
040298260700	RK11K-36N	6032877.77	2388232.99	Base of Alluvium	154
040298260800	RK21R-36N	6033106.12	2387970.66	Base of Tulare	746
040298261100	RR21-36N	6033577.79	2388226.73	Base of Alluvium	177
040298261300	RR31A-36N	6034039.48	2387962.32	Base of Alluvium	213
040298261400	RR31C-36N	6034044.47	2388222.56	Base of Alluvium	214
040298261500	RR12E-36N	6032473.76	2387715.85	Base of Alluvium	132
040298261700	RR12F-36N	6032634.05	2387714.34	Base of Alluvium	136
040298261800	RR32F-36N	6034034.49	2387703.08	Base of Alluvium	183
040298261900	RR32H-36N	6034267.82	2387700.00	Base of Alluvium	208
040298262000	RR31J-36N	6033843.70	2388224.65	Base of Alluvium	200
040298263700	RK12A-36N	6032623.86	2387193.70	Base of Alluvium	132
040298263800	RK22A-36N	6033324.02	2387187.81	Base of Alluvium	166
040298263800	RK22A-36N	6033324.02	2387187.81	Base of Tulare	712
040298263900	RK32A-36N	6034024.50	2387181.62	Base of Alluvium	203
040298264100	RK22D-36N	6033558.01	2387185.60	Base of Alluvium	175
040298264100	RK22D-36N	6033558.01	2387185.60	Base of Tulare	758
040298264300	RK22F-36N	6033366.46	2387702.14	Base of Alluvium	167
040298264300	RK22F-36N	6033366.46	2387702.14	Base of Tulare	768
040298264400	RK12G-36N	6032873.18	2387701.68	Base of Alluvium	145
040298264500	RK22H-36N	6033566.33	2387704.48	Base of Alluvium	179
040298264600	RK32L-36N	6033796.15	2387443.94	Base of Alluvium	185
040298264700	RK22M-36N	6033329.47	2387448.11	Base of Tulare	727
040298264800	RK22R-36N	6033091.06	2387189.59	Base of Alluvium	151
040298264900	RK32R-36N	6033859.83	2387186.05	Base of Alluvium	197
040298264900	RK32R-36N	6033807.01	2387180.99	Base of Tulare	808
040298265000	RK12S-36N	6032858.60	2387191.80	Base of Alluvium	141
040298266200	RR32D-36N	6034257.37	2387179.14	Base of Alluvium	207
040298266200	RR32D-36N	6034262.28	2387177.64	Base of Tulare	863
040298266400	RR32P-36N	6034263.13	2387439.77	Base of Alluvium	213
040298271400	417S-25N	6032819.62	2389271.62	Base of Alluvium	207
040298271700	RK622L-36N	6033096.03	2387449.97	Base of Alluvium	152
040298271700	RK622L-36N	6033096.03	2387449.97	Base of Tulare	696
040298271800	RK612M-36N	6032629.04	2387454.39	Base of Alluvium	140
040298312300	RK12R-36N	6032461.92	2387195.95	Base of Alluvium	127
040298325500	HILL 30R-19	6039145.67	2367179.84	Base of Alluvium	309
040298325500	HILL 30R-19	6039145.67	2367179.84	Base of Tulare	1,077
040298417600	D-8A	6036146.55	2378306.78	Base of Alluvium	309
040298417600	D-8A	6036146.55	2378306.78	Base of Tulare	1,061
040298417700	I-8B	6036044.48	2377266.49	Base of Alluvium	338
040298417700	I-8B	6036048.77	2377256.59	Base of Tulare	1,099
040298467000	HILL 33D-19	6038915.09	2365571.08	Base of Tulare	977
040298467100	HILL 54D-19	6040282.52	2365088.51	Base of Alluvium	277
040298493000	578A-12	6036101.81	2372613.19	Base of Tulare	1,042
040298493100	568N-12	6035770.28	2372886.73	Base of Tulare	1,019
040298514800	C-9A	6035772.51	2378562.79	Base of Alluvium	296
040298514800	C-9A	6035772.51	2378562.79	Base of Tulare	1,052
040298514900	CC-6	6036398.26	2378662.87	Base of Alluvium	303
040298514900	CC-6	6036398.26	2378662.87	Base of Tulare	1,093
040298535100	634R-18	6039368.50	2370360.30	Base of Alluvium	362
040298535100	634R-18	6039368.50	2370360.30	Base of Tulare	1,297
040298535200	636R-18	6039305.50	2369077.29	Base of Alluvium	339
040298535200	636R-18	6039305.50	2369077.29	Base of Tulare	1,204
040298650700	555G-36N	6033767.34	2384192.76	Base of Alluvium	142
040298672400	577L-12	6036132.91	2373546.39	Base of Tulare	1,067
040298673200	588E-12	6036785.77	2373196.48	Base of Tulare	1,119
040298761500	655-18	6040730.53	2369713.26	Base of Alluvium	389
040298761600	666A-18	6041001.54	2368748.24	Base of Alluvium	385
040298764000	GG-5	6036517.93	2377682.73	Base of Tulare	1,104
040298764400	JJ-9	6035867.93	2377096.28	Base of Tulare	1,079
040298769500	FF-10	6035725.68	2378021.65	Base of Tulare	1,038
040298769600	G-8A	6035974.49	2377894.23	Base of Tulare	1,054
040298780200	C-8A	6036135.55	2378492.08	Base of Alluvium	308
040298780300	D-7	6036357.23	2378400.16	Base of Tulare	1,077
040298780500	E-5A	6036534.12	2378247.04	Base of Tulare	1,103
040298783700	6646-18	6039952.51	2369042.27	Base of Alluvium	365
040298783700	6646-18	6039952.51	2369042.27	Base of Tulare	1,276
040298783900	654AR-18	6040305.52	2370000.27	Base of Alluvium	380
040298784000	655AR-18	6040330.52	2369337.26	Base of Alluvium	373

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040298784000	655AR-18	6040330.52	2369337.26	Base of Tulare	1,329
040298857500	JJ-7	6036367.82	2377124.91	Base of Tulare	1,130
040298858900	21ER-18	6038230.48	2372508.35	Base of Alluvium	363
040298858900	21ER-18	6038230.48	2372508.35	Base of Tulare	1,289
040298859000	43GR2-18	6039908.51	2371133.29	Base of Alluvium	381
040298864500	682AR-13	6037050.73	2371429.72	Base of Alluvium	365
040298864500	682AR-13	6037050.73	2371429.72	Base of Tulare	1,117
040298917600	44NR1-18	6039872.51	2370167.28	Base of Alluvium	375
040298917600	44NR1-18	6039872.51	2370167.28	Base of Tulare	1,319
040298925100	667AR-18	6040907.54	2368052.24	Base of Alluvium	360
040298925100	667AR-18	6040907.54	2368052.24	Base of Tulare	1,360
040298947400	82KR-13	6037202.46	2371652.37	Base of Alluvium	357
040298947400	82KR-13	6037202.46	2371652.37	Base of Tulare	1,144
040298947500	81RR-13	6036825.46	2372000.39	Base of Alluvium	384
040298947500	81RR-13	6036825.46	2372000.39	Base of Tulare	1,090
040298947600	667-18	6041335.55	2368332.23	Base of Alluvium	375
040298947600	667-18	6041335.55	2368332.23	Base of Tulare	1,423
040298947700	621R1-18	6038686.79	2372413.09	Base of Alluvium	393
040298996200	35GR2-18	6039199.50	2369853.30	Base of Alluvium	359
040298996200	35GR2-18	6039199.50	2369853.29	Base of Tulare	1,243
040298996300	45ER2-18	6039519.51	2369824.29	Base of Alluvium	353
040298996300	45ER2-18	6039519.51	2369824.29	Base of Tulare	1,276
040298999700	665A-18	6041041.54	2369322.25	Base of Alluvium	379
040298999700	665A-18	6041041.54	2369322.25	Base of Tulare	1,465
040300001300	654-18	6040731.53	2370318.26	Base of Alluvium	400
040300039600	576A-1N	6036359.86	2379281.53	Base of Tulare	1,077
040300039800	588N-12	6036974.59	2372802.77	Base of Tulare	1,114
040300040800	539N-36N	6033752.59	2384449.39	Base of Alluvium	134
040300042100	EE-8	6036051.32	2378158.70	Base of Alluvium	321
040300099000	12GR-18	6037924.48	2371854.36	Base of Alluvium	364
040300099000	12GR-18	6037924.48	2371854.36	Base of Tulare	1,227
040300099100	53NR2-18	6040533.52	2370790.27	Base of Alluvium	399
040300160500	67GR-18	6041117.61	2368530.78	Base of Alluvium	379
040300160600	77LR-18	6041464.94	2368196.84	Base of Alluvium	385
040300344100	54D3-18	6040726.58	2369962.83	Base of Alluvium	394
040300594500	651AU-18	6040317.53	2371989.53	Base of Alluvium	399
040300594600	651JU-18	6040243.03	2372454.83	Base of Alluvium	397
040300594700	652CU-18	6040487.77	2371653.62	Base of Alluvium	403
040300594800	652SU-18	6040649.89	2371327.88	Base of Alluvium	392
040300645800	644C-18	6039758.75	2370274.02	Base of Alluvium	368
040300645800	644C-18	6039761.00	2370274.56	Base of Tulare	1,324
040300645900	645X-18	6039950.68	2369745.04	Base of Alluvium	372
040300645900	645X-18	6039967.26	2369759.07	Base of Tulare	1,311
040300790800	616J-7	6037596.76	2374305.67	Base of Tulare	1,208
040300790900	617E-7	6037636.83	2373955.78	Base of Alluvium	380
040300790900	617E-7	6037636.07	2373980.12	Base of Tulare	1,193
040300990100	566S1-1N	6036132.88	2379310.05	Base of Tulare	1,062
040300990200	576S1-1N	6036503.42	2379302.79	Base of Tulare	1,089
040300990300	576R1-1N	6036262.30	2379309.64	Base of Tulare	1,071
040300990400	566R1-1N	6035801.16	2379339.58	Base of Tulare	1,035
040301025900	556S1-1N	6035405.53	2379299.03	Base of Tulare	1,012
040301641100	557C1-36N	6032651.09	2383639.20	Base of Alluvium	53
040301641100	557C1-36N	6032652.01	2383637.99	Base of Tulare	490
040301642400	557S1-36N	6032771.32	2383236.87	Base of Alluvium	46
040301642400	557S1-36N	6032768.57	2383236.97	Base of Tulare	500
040301643200	511E1-1N	6032420.52	2383174.07	Base of Alluvium	49
040301643200	511E1-1N	6032418.58	2383196.15	Base of Tulare	482
040301643400	521M1-1N	6033164.90	2382860.15	Base of Alluvium	91
040301643400	521M1-1N	6033169.52	2382839.97	Base of Tulare	582
040301643500	511S1-1N	6032767.13	2382557.26	Base of Alluvium	61
040301643500	511S1-1N	6032769.62	2382559.24	Base of Tulare	533
040301643600	521S1-1N	6033421.86	2382613.12	Base of Alluvium	92
040301643600	521S1-1N	6033437.96	2382601.37	Base of Tulare	605
040301643700	511U1-1N	6032882.39	2382894.23	Base of Alluvium	80
040301643700	511U1-1N	6032878.35	2382891.43	Base of Tulare	530
040301643800	511Z1-1N	6032420.52	2382568.59	Base of Alluvium	31
040301643800	511Z1-1N	6032417.95	2382568.98	Base of Tulare	478
040301668700	564M1-35N	6031988.13	2383392.21	Base of Tulare	440
040301696000	HILL 72HR-19	6041604.42	2366010.54	Base of Alluvium	336
040301696000	HILL 72HR-19	6041604.42	2366010.54	Base of Tulare	1,292
040301696100	HILL 72J-19	6041913.26	2365992.74	Base of Alluvium	342
040301696100	HILL 72J-19	6041913.26	2365992.74	Base of Tulare	1,345
040301740800	527A1-18	6038363.85	2368056.46	Base of Tulare	1,056
040301741300	516D1-18	6037998.90	2368719.17	Base of Tulare	1,049
040301741600	527D1-18	6038661.04	2368025.18	Base of Tulare	1,072

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040301741800	527H1-18	6038581.49	2368424.08	Base of Tulare	1,084
040301742600	518U1-18	6037994.67	2367711.56	Base of Tulare	1,007
040301742800	527V1-18	6038667.01	2368346.33	Base of Tulare	1,091
040301743100	518X1-18	6038017.00	2367454.13	Base of Tulare	997
040301886800	HILL 82CS-19	6042271.14	2366298.09	Base of Alluvium	366
040301886800	HILL 82CS-19	6042272.58	2366297.39	Base of Tulare	1,409
040301913600	516P1-18	6037926.48	2368813.27	Base of Tulare	1,037
040301913900	516U1-18	6038040.50	2369055.20	Base of Tulare	1,066
040301917800	526S1-18	6038430.91	2368617.17	Base of Tulare	1,071
040301917900	526U1-18	6038664.53	2369050.86	Base of Tulare	1,121
040301927900	547A1-18	6039693.67	2368014.87	Base of Tulare	1,208
040301929900	557S1-12	6035278.38	2373397.77	Base of Tulare	1,002
040302074500	576N1-1N	6036671.71	2379398.77	Base of Tulare	1,101
040302083600	HILL 41F-19	6039819.52	2366968.25	Base of Alluvium	305
040302083600	HILL 41F-19	6039819.52	2366968.25	Base of Tulare	1,142
040302083700	HILL 41EW-19	6040162.98	2366724.89	Base of Alluvium	298
040302083700	HILL 41EW-19	6040162.98	2366724.89	Base of Tulare	1,172
040302095500	567A1-12	6035668.18	2373350.93	Base of Alluvium	332
040302095500	567A1-12	6035671.23	2373351.28	Base of Tulare	1,025
040302095600	567C1-12	6035618.95	2373626.57	Base of Alluvium	323
040302095600	567C1-12	6035639.96	2373611.32	Base of Tulare	1,023
040302095700	578E1-12	6036252.48	2373078.05	Base of Alluvium	314
040302095700	578E1-12	6036249.16	2373078.78	Base of Tulare	1,055
040302095800	568K1-12	6035945.15	2373039.74	Base of Alluvium	302
040302095800	568K1-12	6035946.60	2373042.26	Base of Tulare	1,024
040302245200	HILL 32D-19	6039299.53	2366561.24	Base of Alluvium	298
040302245200	HILL 32D-19	6039299.53	2366561.24	Base of Tulare	1,071
040302245300	HILL 42D-19	6039837.48	2366014.50	Base of Alluvium	282
040302245300	HILL 42D-19	6039837.48	2366014.50	Base of Tulare	1,069
040302282200	516K1-18	6037813.23	2368964.86	Base of Alluvium	294
040302282200	516K1-18	6037808.74	2368986.14	Base of Tulare	1,022
040302282600	515S1-18	6037810.14	2369241.33	Base of Alluvium	312
040302282600	515S1-18	6037814.15	2369318.45	Base of Tulare	1,052
040302293900	926J-18	6038189.81	2369075.93	Base of Alluvium	310
040302293900	926J-18	6038219.26	2369034.23	Base of Tulare	1,082
040302324200	HILL 64F-19	6040837.15	2364959.76	Base of Alluvium	283
040302324200	HILL 64F-19	6040837.15	2364959.76	Base of Tulare	1,128
040302389500	11B1-11	6029700.72	2377194.38	Base of Alluvium	195
040302396200	925A-18	6038322.08	2369338.11	Base of Alluvium	318
040302396200	925A-18	6038320.71	2369309.25	Base of Tulare	1,101
040302396300	928D-18	6038699.00	2367285.06	Base of Tulare	1,023
040302396600	925L-18	6038115.98	2369500.60	Base of Alluvium	318
040302396600	925L-18	6038078.30	2369554.19	Base of Tulare	1,090
040302461000	556Y1-1N	6035547.47	2379373.55	Base of Tulare	1,024
040302461100	566Y1-1N	6035871.92	2379276.51	Base of Alluvium	237
040302461100	566Y1-1N	6035866.44	2379230.95	Base of Tulare	1,052
040302483700	309-12	6035740.97	2374096.92	Base of Alluvium	316
040302483700	309-12	6035738.42	2374100.38	Base of Tulare	1,047
040302483800	252A-12	6035612.86	2375274.35	Base of Alluvium	320
040302483800	252A-12	6035616.68	2375266.49	Base of Tulare	1,058
040302495300	938D-18	6039385.24	2367253.49	Base of Tulare	1,123
040302495500	937G-18	6039234.81	2368426.52	Base of Alluvium	334
040302495500	937G-18	6039235.57	2368426.90	Base of Tulare	1,142
040302495700	926Q-18	6038433.64	2369337.45	Base of Alluvium	323
040302495700	926Q-18	6038405.45	2369237.92	Base of Tulare	1,117
040302559900	515M1-18	6037613.88	2369500.68	Base of Tulare	1,050
040302565500	566Q1-1N	6036027.61	2379358.34	Base of Alluvium	247
040302565500	566Q1-1N	6036026.23	2379358.63	Base of Tulare	1,054
040302688400	536M2-18	6038928.76	2368781.03	Base of Alluvium	341
040302688400	536M2-18	6038962.66	2368826.82	Base of Tulare	1,151
040302688500	915P-18	6037987.24	2369524.87	Base of Alluvium	316
040302688500	915P-18	6037974.85	2369569.09	Base of Tulare	1,081
040302689400	588H-13	6037345.06	2367904.63	Base of Tulare	959
040302751200	WWD1-18	6042621.66	2368590.79	Base of Alluvium	432
040302751300	WWD2-18	6041861.62	2369688.29	Base of Alluvium	425
040302767700	515C-18	6037730.14	2369775.83	Base of Tulare	1,072
040302768700	588H1-13	6037373.73	2367766.78	Base of Tulare	956
040302837400	578DHZT-18	6041965.81	2367229.42	Base of Alluvium	380
040302837400	578DHZT-18	6041959.04	2367227.67	Base of Tulare	1,464
040302920900	81C-24	6037333.99	2367110.82	Base of Tulare	960
040302927600	987P-13	6037289.87	2368177.71	Base of Tulare	964
040302928000	528A2-18	6038282.65	2367289.05	Base of Tulare	995
040302929600	525C-18	6038244.95	2369718.93	Base of Alluvium	321
040302929600	525C-18	6038242.81	2369721.69	Base of Tulare	1,110
040302930200	525D2-18	6038663.20	2369302.77	Base of Alluvium	332

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040302930200	525D2-18	6038658.58	2369303.40	Base of Tulare	1,144
040302933600	528LR-18	6038160.55	2367602.99	Base of Alluvium	298
040302933600	528LR-18	6038184.35	2367631.84	Base of Tulare	1,001
040302935800	958R-18	6040125.33	2367268.43	Base of Alluvium	338
040302935800	958R-18	6040151.41	2367284.68	Base of Tulare	1,184
040302940300	937DR-18	6039303.74	2368576.47	Base of Alluvium	334
040302940300	937DR-18	6039246.83	2368547.02	Base of Tulare	1,151
040303015500	556A2-1N	6035240.13	2379275.72	Base of Tulare	992
040303022900	HILL 524E	6038301.67	2365252.25	Base of Alluvium	252
040303022900	HILL 524E	6038299.47	2365247.38	Base of Tulare	924
040303045700	HILL 516H	6038020.55	2363959.08	Base of Tulare	819
040303065800	HILL 506CW	6037704.14	2362812.75	Base of Alluvium	206
040303065800	HILL 506CW	6037709.98	2362808.50	Base of Tulare	784
040303105100	621M-36N	6033380.52	2388040.97	Base of Alluvium	175
040303105100	621M-36N	6033391.02	2388039.56	Base of Tulare	797
040303105200	622E-36N	6033102.94	2387684.02	Base of Alluvium	156
040303105200	622E-36N	6033089.96	2387758.84	Base of Tulare	734
040303105300	622C-36N	6033329.73	2387466.78	Base of Alluvium	165
040303108800	21C1-36N	6033369.82	2388318.42	Base of Alluvium	176
040303108800	21C1-36N	6033370.40	2388318.94	Base of Tulare	800
040303108900	21L-36N	6033091.90	2388040.63	Base of Alluvium	162
040303108900	21L-36N	6033092.50	2388041.31	Base of Tulare	775
040303109000	32F1-36N	6033922.15	2387768.91	Base of Alluvium	178
040303109000	32F1-36N	6033927.66	2387770.09	Base of Tulare	828
040303109100	22P-36N	6033652.33	2387487.42	Base of Alluvium	182
040303109200	22F1-36N	6033381.96	2387736.84	Base of Alluvium	169
040303109300	21P-36N	6033649.33	2388032.91	Base of Alluvium	188
040303109300	21P-36N	6033655.54	2388028.51	Base of Tulare	826
040303109400	12G1-36N	6032826.65	2387709.40	Base of Alluvium	144
040303109400	12G1-36N	6032830.80	2387760.32	Base of Tulare	739
040303109500	22A1-36N	6033381.32	2387296.25	Base of Alluvium	169
040303109500	22A1-36N	6033380.59	2387250.83	Base of Tulare	728
040303109600	22L-36N	6033103.63	2387484.12	Base of Alluvium	153
040303109600	22L-36N	6033105.26	2387485.22	Base of Tulare	699
040303112200	622H-36N	6033649.38	2387719.17	Base of Alluvium	185
040303123900	578L1-12	6036147.23	2372862.26	Base of Alluvium	316
040303123900	578L1-12	6036186.26	2372867.56	Base of Tulare	1,049
040303221900	536C-18	6038912.56	2369058.52	Base of Tulare	1,164
040303225800	265-12	6035431.47	2374955.84	Base of Alluvium	305
040303225800	265-12	6035380.24	2375006.88	Base of Tulare	1,035
040303226000	238A-12	6035562.20	2375748.38	Base of Alluvium	309
040303226000	238A-12	6035560.11	2375716.31	Base of Tulare	1,060
040303403800	102	6032614.64	2384663.89	Base of Tulare	503
040303403900	108-36	6032754.60	2384663.37	Base of Alluvium	64
040303403900	108-36	6032754.60	2384663.37	Base of Tulare	525
040303404000	113	6032675.88	2385018.50	Base of Tulare	525
040303404100	116	6032884.52	2384662.93	Base of Alluvium	70
040303404100	116	6032884.52	2384662.93	Base of Tulare	550
040303404200	118-36	6032810.84	2385018.03	Base of Alluvium	58
040303404200	118-36	6032810.84	2385018.03	Base of Tulare	551
040303404300	120-36	6033024.48	2384662.45	Base of Tulare	578
040303404400	127-36	6033159.45	2384662.00	Base of Alluvium	91
040303404400	127-36	6033159.45	2384662.00	Base of Tulare	610
040303411900	CCC-6	6036415.05	2378583.75	Base of Alluvium	303
040303727900	211A-12	6035951.42	2376420.02	Base of Tulare	1,077
040303729300	568H2-12	6036085.39	2373081.17	Base of Alluvium	307
040303729300	568H2-12	6036056.14	2373096.71	Base of Tulare	1,040
040303729500	567N3-12	6035954.45	2373450.08	Base of Alluvium	314
040303729500	567N3-12	6035951.01	2373448.16	Base of Tulare	1,057
040303889800	1-12	6035401.61	2377125.51	Base of Alluvium	313
040303889800	1-12	6035397.28	2377125.58	Base of Tulare	1,051
040303942800	927F-18	6038289.34	2368463.38	Base of Tulare	1,058
040303944300	938R-18	6038780.04	2367339.95	Base of Tulare	1,035
040303981000	565D4-1N	6036087.67	2379874.58	Base of Alluvium	237
040303981000	565D4-1N	6036085.85	2379865.21	Base of Tulare	1,096
040304048600	HHH-6	6036490.57	2377416.43	Base of Alluvium	333
040304064800	12G1R-36N	6032854.59	2387714.17	Base of Alluvium	150
040304067200	621MR-36N	6033366.32	2388034.58	Base of Alluvium	176
040304067300	622HR-36N	6033652.63	2387736.92	Base of Alluvium	188
040304121700	46DR-18	6039984.03	2368716.16	Base of Alluvium	353
040304135100	526N1-18	6038491.22	2368831.06	Base of Alluvium	313
040304135100	526N1-18	6038494.08	2368834.31	Base of Tulare	1,096
040304137100	28C-25N	6033360.03	2388870.14	Base of Alluvium	177
040304137100	28C-25N	6033361.28	2388876.43	Base of Tulare	838
040304137200	28D-25N	6033571.71	2388590.33	Base of Alluvium	194

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040304137200	28D-25N	6033573.05	2388554.38	Base of Tulare	838
040304137300	28R-25N	6033086.14	2388592.51	Base of Tulare	787
040304137600	11KR-36N	6032819.04	2388319.74	Base of Alluvium	152
040304137600	11KR-36N	6032815.77	2388319.75	Base of Tulare	740
040304137700	31F-36N	6033849.09	2388250.82	Base of Alluvium	203
040304140400	628A-25N	6033370.15	2388609.01	Base of Alluvium	185
040304140400	628A-25N	6033369.77	2388614.26	Base of Tulare	834
040304146400	621-36N	6033646.69	2388310.58	Base of Alluvium	194
040304146400	621-36N	6033650.93	2388308.53	Base of Tulare	831
040304146500	621J-36N	6033090.09	2388320.02	Base of Alluvium	165
040304152200	937C-18	6038862.32	2368110.53	Base of Alluvium	311
040304152200	937C-18	6038857.71	2368213.11	Base of Tulare	1,095
040304203100	536D1-18	6039328.54	2368672.11	Base of Alluvium	339
040304203100	536D1-18	6039326.19	2368631.46	Base of Tulare	1,170
040304272600	576R4-1N	6036253.47	2379292.08	Base of Tulare	1,076
040304312000	957R-18	6040204.01	2367905.59	Base of Alluvium	349
040304312000	957R-18	6040167.56	2367943.85	Base of Tulare	1,260
040304312100	947Z-18	6039809.32	2368340.15	Base of Alluvium	348
040304312100	947Z-18	6039904.59	2368221.57	Base of Tulare	1,236
040304388500	881N-13	6037161.13	2372220.17	Base of Alluvium	402
040304388500	881N-13	6037126.33	2372203.39	Base of Tulare	1,166
040304413100	622HR2-36N	6033668.18	2387735.29	Base of Alluvium	189
040304435900	566R2-1N	6035690.17	2379292.72	Base of Alluvium	228
040304435900	566R2-1N	6035681.49	2379286.94	Base of Tulare	1,031
040304472400	515Z1-18	6037989.17	2369668.87	Base of Alluvium	317
040304472400	515Z1-18	6037990.79	2369672.82	Base of Tulare	1,085
040304472900	536N1-18	6039153.47	2368823.06	Base of Alluvium	339
040304472900	536N1-18	6039159.92	2368801.18	Base of Tulare	1,164
040304498100	926A-18	6038196.04	2369199.56	Base of Alluvium	313
040304498100	926A-18	6038231.69	2369223.20	Base of Tulare	1,095
040304498200	928NR-18	6038368.65	2367397.96	Base of Tulare	1,008
040304498300	936L-18	6038723.89	2368709.85	Base of Alluvium	317
040304498300	936L-18	6038738.82	2368706.06	Base of Tulare	1,102
040304552900	33F-18	6039105.13	2371174.31	Base of Alluvium	368
040304552900	33F-18	6039101.93	2371184.96	Base of Tulare	1,299
040304553000	44J-18	6039579.44	2370396.48	Base of Alluvium	372
040304553000	44J-18	6039577.03	2370391.07	Base of Tulare	1,378
040304553100	45K1-18	6039815.05	2369696.38	Base of Alluvium	364
040304553100	45K1-18	6039804.84	2369695.73	Base of Tulare	1,304
040304553200	46F-18	6039661.08	2369175.15	Base of Alluvium	357
040304553200	46F-18	6039660.26	2369178.93	Base of Tulare	1,265
040304581300	240A-12	6036171.36	2375603.27	Base of Alluvium	374
040304581300	240A-12	6036191.42	2375626.42	Base of Tulare	1,091
040304587300	21A-36N	6033194.47	2387919.39	Base of Alluvium	167
040304587300	21A-36N	6033219.44	2387917.16	Base of Tulare	762
040304587400	21J1-36N	6033287.14	2388184.35	Base of Alluvium	172
040304587400	21J1-36N	6033253.44	2388174.65	Base of Tulare	801
040304587500	22J-36N	6033198.55	2387600.27	Base of Alluvium	163
040304587500	22J-36N	6033228.15	2387615.08	Base of Tulare	761
040304587600	22K-36N	6033514.60	2387622.57	Base of Alluvium	180
040304651600	546P4-35N	6030934.07	2384814.41	Base of Tulare	391
040304654900	564C6-35N	6031919.02	2383706.63	Base of Tulare	433
040304655000	564F4-35N	6031952.82	2383819.83	Base of Tulare	435
040304676000	521R3-1N	6033114.94	2382560.78	Base of Tulare	586
040304676100	531E1-1N	6033716.81	2383087.64	Base of Tulare	654
040304690000	548D2-35N	6032187.22	2384596.29	Base of Tulare	480
040304690100	548L3-35N	6031652.93	2384809.47	Base of Tulare	430
040304690600	563N5-35N	6031428.22	2383336.64	Base of Tulare	415
040304712000	882D-8	6048070.06	2376574.07	Base of Alluvium	395
040304712000	882D-8	6048069.45	2376573.06	Base of Tulare	1,854
040304747800	558L5-36N	6032992.66	2383395.90	Base of Tulare	534
040304747900	501A3-2N	6031928.83	2382583.74	Base of Tulare	460
040304764900	538E2-18	6038798.65	2367802.55	Base of Tulare	1,066
040304765300	521N2-1N	6033431.65	2382833.58	Base of Alluvium	90
040304765300	521N2-1N	6033433.11	2382820.06	Base of Tulare	603
040304816900	888L-13	6036671.25	2367737.60	Base of Alluvium	294
040304816900	888L-13	6036671.40	2367739.27	Base of Tulare	950
040304892400	518A-18	6037550.68	2367426.92	Base of Tulare	982
040304893000	558N1-18	6040494.84	2367444.83	Base of Alluvium	345
040304893000	558N1-18	6040495.99	2367435.98	Base of Tulare	1,264
040304924700	530G3-35N	6030921.52	2386538.51	Base of Tulare	389
040304950300	12K-18	6037816.07	2371643.42	Base of Alluvium	358
040304950300	12K-18	6037827.55	2371629.35	Base of Tulare	1,230
040304950400	21G-18	6038516.98	2372440.36	Base of Alluvium	389
040304950500	32F-18	6038835.69	2371737.62	Base of Alluvium	382

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040304950500	32F-18	6038837.47	2371739.44	Base of Tulare	1,368
040304950700	57F-18	6040251.58	2368418.96	Base of Alluvium	353
040304950700	57F-18	6040249.79	2368418.90	Base of Tulare	1,286
040304950800	57P-18	6040760.55	2368005.15	Base of Alluvium	355
040304950800	57P-18	6040747.54	2367979.31	Base of Tulare	1,337
040304951000	68M-18	6041038.79	2367458.98	Base of Alluvium	357
040304951000	68M-18	6041048.36	2367470.10	Base of Tulare	1,358
040304986100	WWD3-18	6042684.57	2370352.43	Base of Alluvium	462
040304986200	WWD4-18	6042704.26	2371349.99	Base of Alluvium	471
040304986300	WWD5-18	6042718.05	2372304.30	Base of Alluvium	470
040304989800	565N5-1N	6035915.73	2380150.23	Base of Alluvium	227
040304989800	565N5-1N	6035915.83	2380149.42	Base of Tulare	1,070
040305000400	534E3-35N	6031215.19	2385883.04	Base of Tulare	402
040305002400	533F3-35N	6031962.01	2385834.06	Base of Tulare	481
040305002900	548P5-35N	6032284.16	2384887.91	Base of Tulare	486
040305020000	48M-18	6039555.59	2367407.69	Base of Alluvium	327
040305020000	48M-18	6039565.93	2367420.77	Base of Tulare	1,140
040305057600	274B-12	6036011.27	2374791.07	Base of Alluvium	348
040305057600	274B-12	6036016.21	2374792.02	Base of Tulare	1,035
040305059800	917AR2-18	6037568.35	2368585.43	Base of Tulare	1,004
040305059900	918AR2-18	6037540.31	2367940.21	Base of Tulare	978
040305060400	927LR-18	6037988.45	2368077.91	Base of Tulare	1,024
040305105400	548G5-35N	6032061.09	2385029.96	Base of Tulare	450
040305105900	564E6-35N	6031913.68	2383800.70	Base of Tulare	429
040305113700	555P3-1N	6035528.93	2380176.09	Base of Alluvium	221
040305113700	555P3-1N	6035479.90	2380171.52	Base of Tulare	1,026
040305113900	556K2-1N	6035234.94	2379524.65	Base of Alluvium	214
040305113900	556K2-1N	6035237.32	2379587.43	Base of Tulare	1,001
040305114400	566U3-1N	6036086.23	2379527.99	Base of Alluvium	242
040305114400	566U3-1N	6036114.37	2379553.30	Base of Tulare	1,069
040305124800	546A4-35N	6030508.21	2384496.94	Base of Tulare	404
040305125700	563E1-35N	6031093.38	2383726.05	Base of Tulare	407
040305127000	558K3-36N	6033501.77	2383594.41	Base of Tulare	638
040305127200	516E1-18	6037457.30	2369155.76	Base of Tulare	1,026
040305133700	588B1-13	6037367.79	2367590.81	Base of Tulare	950
040305134700	537Z1-18	6039371.10	2368242.61	Base of Alluvium	336
040305134700	537Z1-18	6039353.94	2368309.38	Base of Tulare	1,175
040305135100	948S-18	6039836.51	2367275.71	Base of Alluvium	333
040305135100	948S-18	6039844.45	2367291.12	Base of Tulare	1,161
040305193500	512L2-1N	6032439.53	2382100.54	Base of Alluvium	50
040305193500	512L2-1N	6032440.80	2382097.42	Base of Tulare	500
040305194500	522R1-1N	6033109.87	2382153.56	Base of Alluvium	77
040305194500	522R1-1N	6033100.07	2382122.16	Base of Tulare	570
040305194600	531E2-1N	6033773.60	2382999.02	Base of Tulare	645
040305195100	556U3-36N	6032947.11	2384284.95	Base of Tulare	545
040305196100	HILL 81F	6042663.62	2366981.92	Base of Alluvium	393
040305196100	HILL 81F	6042742.49	2367092.82	Base of Tulare	1,576
040305196200	HILL 81G	6042373.33	2367020.55	Base of Alluvium	383
040305196200	HILL 81G	6042367.24	2367131.95	Base of Tulare	1,511
040305196300	HILL 81H	6042713.69	2366731.07	Base of Alluvium	374
040305196300	HILL 81H	6042713.69	2366731.07	Base of Tulare	1,503
040305198900	531L2-1N	6033747.85	2382861.33	Base of Tulare	640
040305257300	549Z2-35N	6032275.47	2384216.44	Base of Tulare	475
040305257800	934N-35N	6031479.39	2385477.77	Base of Tulare	418
040305257900	935Z-35N	6030896.42	2385601.88	Base of Tulare	382
040305258000	946A-35N	6030560.00	2385249.80	Base of Tulare	368
040305258700	557E4-36N	6032405.87	2383839.37	Base of Alluvium	42
040305258700	557E4-36N	6032412.27	2383826.59	Base of Tulare	476
040305259900	921E-1N	6032975.27	2382992.86	Base of Tulare	558
040305266300	949C-35N	6031926.69	2384152.04	Base of Tulare	440
040305266600	950L-35N	6031024.75	2384065.35	Base of Tulare	378
040305270500	964E-35N	6031617.95	2383757.90	Base of Tulare	426
040305270900	530A2-35N	6030635.58	2385906.38	Base of Tulare	356
040305271400	564D5-35N	6032208.80	2383305.68	Base of Alluvium	38
040305271400	564D5-35N	6032225.64	2383298.55	Base of Tulare	464
040305288200	373DR-18	6041977.60	2370666.98	Base of Alluvium	447
040305334200	211BR-12	6036084.09	2376440.96	Base of Alluvium	365
040305334200	211BR-12	6036077.98	2376415.57	Base of Tulare	1,098
040305334300	295CR-12	6036032.85	2374252.25	Base of Alluvium	336
040305334300	295CR-12	6036048.05	2374286.93	Base of Tulare	1,072
040305334500	947ER2-18	6039323.92	2368368.07	Base of Tulare	1,171
040305334700	948DR-18	6039834.03	2367857.53	Base of Alluvium	344
040305334700	948DR-18	6039835.05	2367860.10	Base of Tulare	1,214
040305334800	958CR2-18	6040136.91	2367535.13	Base of Tulare	1,219
040305334900	958ER2-18	6039959.71	2367541.35	Base of Alluvium	339

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040305334900	958ER2-18	6039978.21	2367650.07	Base of Tulare	1,206
040305335000	530M3-35N	6030578.87	2386103.25	Base of Tulare	356
040305335100	534P6-35N	6031601.90	2385534.40	Base of Tulare	423
040305335300	547M4-35N	6031309.27	2384836.35	Base of Tulare	402
040305350400	537A2-18	6038958.35	2367916.15	Base of Alluvium	307
040305350400	537A2-18	6038930.01	2367971.09	Base of Tulare	1,087
040305350500	538G2-18	6039082.36	2367808.94	Base of Alluvium	309
040305350500	538G2-18	6039084.54	2367813.18	Base of Tulare	1,098
040305350600	547C2-18	6039595.11	2368354.73	Base of Alluvium	341
040305350600	547C2-18	6039592.31	2368295.43	Base of Tulare	1,199
040305351100	926K-18	6038488.61	2368946.05	Base of Alluvium	316
040305351100	926K-18	6038454.23	2368966.34	Base of Tulare	1,098
040305351400	917FR2-18	6037621.07	2368481.43	Base of Alluvium	297
040305351400	917FR2-18	6037618.36	2368479.32	Base of Tulare	1,005
040305351500	528ZR-18	6038506.49	2367752.74	Base of Tulare	1,044
040305351600	528D-18	6038504.62	2367417.99	Base of Tulare	1,020
040305351800	527E2-18	6038105.85	2368473.55	Base of Tulare	1,055
040305352000	516A2-18	6037623.82	2368668.07	Base of Tulare	1,002
040305358700	926M-18	6038287.62	2368823.63	Base of Tulare	1,085
040305380500	EE-5A	6036770.41	2378193.65	Base of Alluvium	297
040305402200	CC-12I	6035346.94	2378749.20	Base of Alluvium	273
040305402200	CC-12I	6035324.25	2378739.43	Base of Tulare	995
040305402400	D-11I	6035523.59	2378482.81	Base of Alluvium	296
040305402400	D-11I	6035523.59	2378482.81	Base of Tulare	1,026
040305404600	HH-4	6036879.94	2377413.23	Base of Alluvium	343
040305404600	HH-4	6036901.62	2377410.08	Base of Tulare	1,149
040305404800	I-13A	6035191.40	2377246.11	Base of Alluvium	307
040305404800	I-13A	6035189.35	2377245.20	Base of Tulare	1,032
040305405100	KK-5A	6036639.10	2376881.23	Base of Alluvium	358
040305405100	KK-5A	6036621.10	2376881.23	Base of Tulare	1,125
040305405500	A-3	6037130.57	2379118.39	Base of Alluvium	269
040305405500	A-3	6037131.43	2379134.37	Base of Tulare	1,115
040305405900	BB-5	6036650.26	2379030.20	Base of Alluvium	261
040305405900	BB-5	6036650.26	2379030.20	Base of Tulare	1,107
040305406100	BBB-14	6034990.11	2378908.47	Base of Alluvium	267
040305406100	BBB-14	6035023.57	2379005.84	Base of Tulare	949
040305406200	C-2	6037205.51	2378564.15	Base of Alluvium	309
040305406200	C-2	6037150.23	2378543.92	Base of Tulare	1,152
040305414500	65A1-12	6035684.37	2374624.05	Base of Alluvium	312
040305414500	65A1-12	6035678.62	2374641.56	Base of Tulare	1,016
040305414600	65G-12	6035988.37	2375101.99	Base of Alluvium	350
040305414700	65N-12	6035861.58	2374800.34	Base of Alluvium	318
040305414700	65N-12	6035928.52	2374785.69	Base of Tulare	1,039
040305414800	66C-12	6035672.72	2374407.52	Base of Alluvium	311
040305414800	66C-12	6035681.02	2374357.61	Base of Tulare	1,054
040305414900	66N-12	6035985.54	2374219.75	Base of Alluvium	338
040305414900	66N-12	6035926.58	2374205.12	Base of Tulare	1,071
040305415000	66S-12	6035833.48	2373908.96	Base of Alluvium	330
040305415000	66S-12	6035922.86	2373935.54	Base of Tulare	1,073
040305415100	75D-12	6036696.26	2374600.06	Base of Alluvium	384
040305415100	75D-12	6036683.65	2374626.64	Base of Tulare	1,129
040305415200	75E-12	6036197.05	2375220.47	Base of Alluvium	377
040305415200	75E-12	6036188.39	2375219.38	Base of Tulare	1,104
040305415300	75F-12	6036442.74	2375082.25	Base of Alluvium	384
040305415300	75F-12	6036443.37	2375064.45	Base of Tulare	1,116
040305415400	75H-12	6036691.23	2375207.73	Base of Alluvium	402
040305415400	75H-12	6036694.28	2375207.21	Base of Tulare	1,129
040305415500	75M-12	6036443.23	2374777.93	Base of Alluvium	378
040305415600	75R-12	6036152.18	2374607.14	Base of Alluvium	364
040305415600	75R-12	6036183.38	2374630.55	Base of Tulare	1,086
040305415700	76-12	6036694.66	2374389.62	Base of Alluvium	387
040305415700	76-12	6036683.62	2374344.35	Base of Tulare	1,119
040305415800	76A1-12	6036414.19	2373940.28	Base of Alluvium	336
040305415800	76A1-12	6036425.80	2373956.48	Base of Tulare	1,095
040305415900	76J-12	6036154.54	2374391.84	Base of Alluvium	348
040305416000	76M-12	6036428.62	2374198.27	Base of Alluvium	345
040305416000	76M-12	6036429.01	2374196.85	Base of Tulare	1,100
040305416100	85E-12	6036943.82	2375079.57	Base of Alluvium	354
040305416100	85E-12	6036939.56	2375061.11	Base of Tulare	1,158
040305416200	85G-12	6037195.75	2375199.56	Base of Alluvium	350
040305416200	85G-12	6037196.98	2375201.36	Base of Tulare	1,178
040305417000	86R-12	6036927.97	2373901.93	Base of Alluvium	360
040305417100	86P-12	6037428.12	2374180.74	Base of Alluvium	366
040305417200	86L-12	6036931.77	2374190.54	Base of Alluvium	366
040305417300	86K-12	6037147.15	2374388.84	Base of Alluvium	353

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040305417300	86K-12	6037180.64	2374338.74	Base of Tulare	1,166
040305417400	86D-12	6037426.49	2373890.16	Base of Alluvium	378
040305417400	86D-12	6037425.35	2373893.80	Base of Tulare	1,180
040305417500	85S-12	6037131.77	2374545.74	Base of Alluvium	367
040305417500	85S-12	6037179.45	2374610.87	Base of Tulare	1,164
040305417600	85P-12	6037434.54	2374759.14	Base of Alluvium	364
040305417600	85P-12	6037440.76	2374761.47	Base of Tulare	1,181
040305417700	85L-12	6036940.74	2374765.34	Base of Alluvium	357
040305417700	85L-12	6036941.15	2374768.76	Base of Tulare	1,136
040305418000	666G-12	6035977.56	2374498.04	Base of Alluvium	347
040305418000	666G-12	6035927.90	2374496.72	Base of Tulare	1,081
040305418100	675-12	6036690.16	2374915.77	Base of Alluvium	400
040305418100	675-12	6036693.48	2374919.21	Base of Tulare	1,137
040305418200	675J-12	6036168.52	2374915.83	Base of Alluvium	374
040305418200	675J-12	6036180.43	2374919.19	Base of Tulare	1,055
040305418300	676D-12	6036637.89	2374038.29	Base of Alluvium	390
040305418300	676D-12	6036661.23	2374037.59	Base of Tulare	1,125
040305418400	676F-12	6036431.99	2374484.07	Base of Alluvium	355
040305418400	676F-12	6036430.24	2374479.62	Base of Tulare	1,101
040305418500	676R-12	6036179.80	2374070.59	Base of Alluvium	334
040305418500	676R-12	6036180.80	2374049.70	Base of Tulare	1,082
040305418600	685H-12	6037192.07	2374906.64	Base of Alluvium	354
040305418600	685H-12	6037190.91	2374913.16	Base of Tulare	1,166
040305418700	686E-12	6036932.90	2374478.14	Base of Alluvium	359
040305418700	686E-12	6036930.21	2374478.58	Base of Tulare	1,131
040305418800	686H-12	6037436.63	2374502.06	Base of Alluvium	360
040305418800	686H-12	6037425.12	2374455.21	Base of Tulare	1,194
040305418900	686S-12	6037190.57	2374037.32	Base of Alluvium	354
040305444100	537DR-18	6039304.02	2368038.73	Base of Alluvium	317
040305444100	537DR-18	6039309.10	2368047.02	Base of Tulare	1,134
040305458100	555AR-1N	6035038.95	2380071.65	Base of Tulare	974
040305458400	555Z1-1N	6035555.29	2380259.31	Base of Alluvium	221
040305458400	555Z1-1N	6035537.48	2380269.30	Base of Tulare	1,035
040305459000	946P-1N	6034818.25	2379484.71	Base of Tulare	981
040305459800	976D-1N	6036712.86	2379805.13	Base of Alluvium	240
040305459800	976D-1N	6036713.23	2379808.56	Base of Tulare	1,120
040305462500	976G-1N	6036569.17	2379668.51	Base of Alluvium	257
040305462500	976G-1N	6036568.18	2379665.07	Base of Tulare	1,098
040305494000	444A-18	6039693.42	2369977.87	Base of Alluvium	365
040305521100	553Z1-12	6035428.23	2376276.51	Base of Alluvium	316
040305521100	553Z1-12	6035429.26	2376307.39	Base of Tulare	1,056
040305521300	573Z1-12	6036754.41	2376291.28	Base of Alluvium	365
040305521300	573Z1-12	6036753.46	2376291.52	Base of Tulare	1,127
040305521500	575A1-12	6036428.69	2374763.23	Base of Alluvium	374
040305521800	954P-12	6035414.49	2375480.44	Base of Alluvium	317
040305521800	954P-12	6035414.16	2375494.39	Base of Tulare	1,063
040305522400	974M-12	6036414.81	2375471.78	Base of Alluvium	374
040305522700	977J-12	6036215.37	2373651.15	Base of Alluvium	323
040305522700	977J-12	6036214.07	2373650.19	Base of Tulare	1,080
040305523500	516E2-2N	6031786.32	2382440.77	Base of Tulare	456
040305531600	568K4-12	6035865.37	2373024.94	Base of Alluvium	312
040305531600	568K4-12	6035858.26	2373025.26	Base of Tulare	1,031
040305532400	938NR-18	6039038.84	2367426.69	Base of Alluvium	316
040305532400	938NR-18	6039034.61	2367426.20	Base of Tulare	1,071
040305532500	948CR3-18	6039458.55	2367857.14	Base of Alluvium	334
040305532500	948CR3-18	6039544.21	2367837.75	Base of Tulare	1,173
040305538500	533Z2-35N	6032299.63	2385623.11	Base of Tulare	518
040305539300	22LR-36N	6033125.49	2387457.55	Base of Alluvium	159
040305559100	554L1-1N	6035160.20	2380739.17	Base of Alluvium	190
040305559100	554L1-1N	6035098.26	2380762.57	Base of Tulare	952
040305559200	556G-1N	6035273.03	2379866.41	Base of Alluvium	217
040305559200	556G-1N	6035228.76	2379901.42	Base of Tulare	1,010
040305559400	556N3-1N	6035350.37	2379489.52	Base of Tulare	1,011
040305560000	576AR-1N	6036387.92	2379422.68	Base of Alluvium	260
040305560000	576AR-1N	6036387.38	2379428.58	Base of Tulare	1,088
040305560100	944A-1N	6034416.56	2381241.86	Base of Alluvium	167
040305560100	944A-1N	6034419.09	2381243.97	Base of Tulare	819
040305560200	944E-1N	6034245.26	2381043.18	Base of Alluvium	139
040305560200	944E-1N	6034238.23	2381024.92	Base of Tulare	796
040305600100	564N5-35N	6032116.88	2383456.47	Base of Tulare	453
040305601200	556Q2-1N	6035247.29	2379779.52	Base of Alluvium	214
040305601200	556Q2-1N	6035208.74	2379776.82	Base of Tulare	999
040305601300	566S5-1N	6035849.75	2379410.77	Base of Alluvium	232
040305601300	566S5-1N	6035852.65	2379409.86	Base of Tulare	1,036
040305635900	85H1-12	6037405.86	2375067.55	Base of Alluvium	354

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040305635900	85H1-12	6037405.56	2375052.78	Base of Tulare	1,188
040305702000	537L1-18	6038868.13	2368065.48	Base of Alluvium	309
040305702000	537L1-18	6038798.80	2368113.93	Base of Tulare	1,090
040305712300	564W-35N	6032260.20	2383492.20	Base of Tulare	468
040305726500	12A1-18	6037651.57	2371307.27	Base of Alluvium	402
040305726500	12A1-18	6037652.34	2371303.88	Base of Tulare	1,190
040305726600	13K-18	6037936.17	2370987.96	Base of Alluvium	350
040305726600	13K-18	6037939.08	2370984.37	Base of Tulare	1,197
040305726700	33J-18	6038802.44	2370954.33	Base of Alluvium	362
040305726700	33J-18	6038841.76	2370977.14	Base of Tulare	1,262
040305726800	34K1-18	6039246.14	2370260.05	Base of Alluvium	361
040305726800	34K1-18	6039216.66	2370295.33	Base of Tulare	1,283
040305726900	35P-18	6039316.35	2369502.29	Base of Alluvium	356
040305726900	35P-18	6039337.45	2369525.94	Base of Tulare	1,242
040305727000	46S-18	6039805.67	2368680.32	Base of Alluvium	350
040305727000	46S-18	6039823.30	2368645.35	Base of Tulare	1,250
040305727100	58K-18	6040456.25	2367683.39	Base of Alluvium	346
040305727100	58K-18	6040460.16	2367691.70	Base of Tulare	1,278
040305727200	68L1-18	6040791.39	2367428.95	Base of Alluvium	347
040305727200	68L1-18	6040795.76	2367429.28	Base of Tulare	1,302
040305740400	421N-7	6038655.82	2377496.45	Base of Alluvium	332
040305740500	447J-7	6041831.24	2373453.50	Base of Alluvium	448
040305740700	477K-18	6041969.40	2368283.24	Base of Alluvium	405
040305745000	522G-1N	6033351.17	2382450.46	Base of Tulare	611
040305821900	956G-36N	6032738.97	2384315.28	Base of Tulare	518
040305822500	556L4-36N	6032447.69	2384126.17	Base of Alluvium	47
040305822500	556L4-36N	6032430.16	2384126.44	Base of Tulare	476
040305822700	931G-35N	6031397.12	2386396.13	Base of Tulare	424
040305853400	572G1-13	6036523.29	2371830.92	Base of Alluvium	356
040305853400	572G1-13	6036523.53	2371830.49	Base of Tulare	1,074
040305854400	571C1-13	6036354.97	2372275.75	Base of Alluvium	318
040305855300	572C-13	6036276.64	2371721.26	Base of Alluvium	312
040305856400	987R-12	6036886.24	2373320.44	Base of Alluvium	354
040305857600	977K-12	6036608.91	2373655.80	Base of Alluvium	386
040305857600	977K-12	6036558.07	2373649.52	Base of Tulare	1,113
040305865000	977H-12	6036720.43	2373868.03	Base of Alluvium	382
040305871600	83E-12	6037014.98	2376426.49	Base of Alluvium	341
040305871600	83E-12	6036965.41	2376503.96	Base of Tulare	1,158
040305871700	83H-12	6037447.33	2376462.69	Base of Alluvium	348
040305871800	83K-12	6037210.84	2376358.02	Base of Alluvium	351
040305871800	83K-12	6037214.51	2376357.31	Base of Tulare	1,170
040305871900	73Y-12	6036459.48	2375933.96	Base of Alluvium	373
040305871900	73Y-12	6036455.62	2375934.95	Base of Tulare	1,104
040305872000	74C-12	6036463.68	2375617.17	Base of Alluvium	375
040305872000	74C-12	6036451.10	2375646.43	Base of Tulare	1,098
040305872100	74L-12	6036193.17	2375526.60	Base of Alluvium	382
040305872100	74L-12	6036198.55	2375502.28	Base of Tulare	1,088
040305872200	73P-12	6036704.42	2376087.76	Base of Alluvium	364
040305872200	73P-12	6036708.11	2376080.68	Base of Tulare	1,112
040305872300	73L-12	6036203.80	2376091.93	Base of Alluvium	365
040305872400	73J-12	6036205.91	2376372.93	Base of Alluvium	373
040305872400	73J-12	6036207.51	2376367.79	Base of Tulare	1,111
040305872500	684R-12	6036948.79	2375385.35	Base of Alluvium	351
040305872500	684R-12	6036943.86	2375344.29	Base of Tulare	1,135
040305872600	73-12	6036707.29	2376362.84	Base of Alluvium	359
040305872700	73F-12	6036460.35	2376453.98	Base of Alluvium	361
040305872700	73F-12	6036459.31	2376510.87	Base of Tulare	1,120
040305872800	683J-12	6036945.28	2376205.51	Base of Alluvium	353
040305872800	683J-12	6036959.05	2376211.57	Base of Tulare	1,138
040305872900	684D-12	6037392.75	2375415.05	Base of Alluvium	351
040305872900	684D-12	6037448.58	2375339.64	Base of Tulare	1,195
040305873000	684G-12	6037202.83	2375778.54	Base of Alluvium	353
040305873000	684G-12	6037208.32	2375779.03	Base of Tulare	1,147
040305873100	674H-12	6036701.40	2375783.89	Base of Alluvium	367
040305873100	674H-12	6036700.98	2375782.85	Base of Tulare	1,104
040305873200	683-12	6037462.69	2376210.43	Base of Alluvium	351
040305873200	683-12	6037462.23	2376209.43	Base of Tulare	1,176
040305873300	674A-12	6036444.76	2375394.34	Base of Alluvium	377
040305873300	674A-12	6036443.12	2375354.00	Base of Tulare	1,109
040305873600	74P-12	6036694.72	2375526.63	Base of Alluvium	381
040305873600	74P-12	6036696.35	2375492.81	Base of Tulare	1,110
040305873800	64K-12	6036019.05	2375709.97	Base of Alluvium	375
040305873800	64K-12	6035946.72	2375654.63	Base of Tulare	1,081
040305873900	663K-12	6035989.52	2376224.21	Base of Alluvium	368
040305873900	663K-12	6035950.40	2376231.56	Base of Tulare	1,089

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040305874000	674E-12	6036196.99	2375795.23	Base of Alluvium	374
040305874000	674E-12	6036199.07	2375792.60	Base of Tulare	1,091
040305874100	83D-12	6037440.71	2375939.42	Base of Alluvium	353
040305874200	673C-12	6036460.16	2376220.60	Base of Alluvium	362
040305874200	673C-12	6036455.94	2376219.78	Base of Tulare	1,117
040305874300	63S-12	6035981.63	2375920.29	Base of Alluvium	355
040305874400	63M-12	6035693.14	2376111.59	Base of Alluvium	309
040305874400	63M-12	6035692.69	2376100.47	Base of Tulare	1,074
040305874500	63G-12	6036059.75	2376511.58	Base of Alluvium	338
040305874500	63G-12	6035957.64	2376520.61	Base of Tulare	1,088
040305874600	63C-12	6035741.56	2376379.11	Base of Alluvium	322
040305874600	63C-12	6035703.82	2376373.54	Base of Tulare	1,068
040305874700	83N-12	6037246.90	2376101.56	Base of Alluvium	350
040305874700	83N-12	6037208.67	2376064.57	Base of Tulare	1,151
040305874800	83R-12	6036957.49	2375923.67	Base of Alluvium	354
040305874800	83R-12	6036949.05	2375926.30	Base of Tulare	1,127
040305874900	84-12	6037437.97	2375835.57	Base of Alluvium	354
040305874900	84-12	6037455.81	2375638.39	Base of Tulare	1,181
040305875000	84J-12	6036957.85	2375617.40	Base of Alluvium	350
040305875000	84J-12	6036945.54	2375634.81	Base of Tulare	1,125
040305875100	84N-12	6037200.00	2375488.63	Base of Alluvium	351
040305875100	84N-12	6037202.09	2375487.67	Base of Tulare	1,142
040305933000	546H3-35N	6030870.03	2385256.21	Base of Tulare	383
040305949700	576L5-1N	6036299.98	2379432.99	Base of Alluvium	251
040305949700	576L5-1N	6036312.65	2379488.00	Base of Tulare	1,079
040305949800	576E8-1N	6036279.92	2379843.09	Base of Alluvium	241
040305949800	576E8-1N	6036283.69	2379842.17	Base of Tulare	1,091
040305962600	916LR-18	6037457.86	2368804.73	Base of Tulare	1,005
040305963000	939DR-18	6039214.97	2367429.27	Base of Alluvium	318
040305963000	939DR-18	6039214.81	2367329.93	Base of Tulare	1,094
040305969600	547AR-18	6039551.52	2368045.27	Base of Alluvium	335
040305970000	253E-12	6035800.07	2375260.08	Base of Alluvium	329
040305970000	253E-12	6035820.40	2375391.22	Base of Tulare	1,094
040305987900	987E-12	6036777.76	2373732.66	Base of Tulare	1,129
040305988200	977Z-12	6036673.67	2373607.06	Base of Alluvium	385
040305988200	977Z-12	6036668.69	2373585.77	Base of Tulare	1,117
040305988300	977N-12	6036463.07	2373403.15	Base of Alluvium	376
040305988300	977N-12	6036461.04	2373405.39	Base of Tulare	1,101
040306149700	987C-12	6036962.32	2373589.62	Base of Alluvium	361
040306157600	971N-13	6036448.88	2372052.13	Base of Alluvium	377
040306157600	971N-13	6036443.01	2372071.58	Base of Tulare	1,070
040306158300	561NR-13	6035948.52	2372263.11	Base of Alluvium	317
040306158300	561NR-13	6035944.01	2372256.50	Base of Tulare	1,029
040306186500	950G-35N	6031321.39	2384351.58	Base of Tulare	412
040306191500	925R-18	6038148.37	2369383.99	Base of Alluvium	318
040306191500	925R-18	6038128.39	2369317.15	Base of Tulare	1,086
040306219900	685HL-12	6037157.30	2374881.10	Base of Alluvium	352
040306219900	685HL-12	6037231.85	2374908.98	Base of Tulare	1,173
040306220000	676DL-12	6036700.02	2374065.15	Base of Alluvium	387
040306220100	676FR-12	6036413.36	2374477.70	Base of Alluvium	352
040306220100	676FR-12	6036409.30	2374485.43	Base of Tulare	1,095
040306241800	77W-12	6036692.09	2373742.29	Base of Alluvium	387
040306241800	77W-12	6036680.99	2373762.75	Base of Tulare	1,123
040306241900	77M-12	6036177.66	2373755.36	Base of Alluvium	327
040306241900	77M-12	6036171.21	2373771.40	Base of Tulare	1,082
040306242000	87A-12	6037177.25	2373737.58	Base of Alluvium	368
040306242000	87A-12	6037173.44	2373755.22	Base of Tulare	1,147
040306262200	666GR-12	6035979.57	2374533.82	Base of Alluvium	348
040306262200	666GR-12	6035933.96	2374527.81	Base of Tulare	1,073
040306263600	58P-18	6040593.55	2367494.99	Base of Alluvium	350
040306263600	58P-18	6040590.66	2367535.68	Base of Tulare	1,294
040306263700	23K-18	6038620.02	2370972.97	Base of Alluvium	357
040306263700	23K-18	6038567.17	2370947.64	Base of Tulare	1,248
040306263800	24G1-18	6038542.34	2370449.48	Base of Alluvium	344
040306263800	24G1-18	6038545.25	2370453.79	Base of Tulare	1,196
040306263900	25D1-18	6038706.46	2369675.57	Base of Alluvium	325
040306263900	25D1-18	6038709.76	2369683.57	Base of Tulare	1,180
040306264000	35D1-18	6039303.54	2369237.73	Base of Alluvium	344
040306264000	35D1-18	6039300.60	2369238.94	Base of Tulare	1,218
040306264200	47H-18	6039985.64	2368471.23	Base of Alluvium	352
040306264200	47H-18	6039962.60	2368437.12	Base of Tulare	1,264
040306264400	57A1-18	6040409.54	2367900.30	Base of Alluvium	340
040306264400	57A1-18	6040409.24	2367908.57	Base of Tulare	1,297
040306267900	46M-18	6039613.54	2368814.61	Base of Alluvium	344
040306267900	46M-18	6039600.66	2368837.94	Base of Tulare	1,244

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040306277600	547J4-35N	6031106.47	2385070.94	Base of Tulare	381
040306313100	11A1-18	6037722.61	2371906.29	Base of Alluvium	362
040306313100	11A1-18	6037726.19	2371908.65	Base of Tulare	1,219
040306313200	57M-18	6040212.16	2368127.99	Base of Alluvium	346
040306313200	57M-18	6040240.78	2368152.24	Base of Tulare	1,294
040306313300	33A1-18	6038964.54	2370668.11	Base of Alluvium	361
040306313300	33A1-18	6038969.84	2370611.56	Base of Tulare	1,260
040306313400	23L1-18	6038211.39	2370736.76	Base of Alluvium	347
040306313400	23L1-18	6038210.49	2370733.53	Base of Tulare	1,182
040306313500	22J-18	6038235.55	2371684.69	Base of Alluvium	372
040306313600	58H-18	6040580.44	2367827.70	Base of Alluvium	345
040306313600	58H-18	6040635.35	2367812.63	Base of Tulare	1,322
040306319200	949G-35N	6032007.09	2384441.80	Base of Tulare	444
040306319300	901E-2N	6031645.42	2382978.78	Base of Tulare	426
040306319800	557G-26N	6027511.29	2389138.84	Base of Tulare	540
040306319900	505C-35N	6029374.88	2388415.37	Base of Tulare	501
040306320000	520C-35N	6029914.79	2386881.49	Base of Alluvium	3
040306320000	520C-35N	6029890.25	2386882.37	Base of Tulare	355
040306320100	953D-26N	6029879.45	2389258.09	Base of Alluvium	76
040306320100	953D-26N	6029804.59	2389191.14	Base of Tulare	536
040306320200	915A-35N	6031342.49	2387328.08	Base of Tulare	616
040306325300	917ZR-18	6037879.86	2368218.84	Base of Alluvium	299
040306325300	917ZR-18	6037867.09	2368241.38	Base of Tulare	1,034
040306346300	971T-13	6036709.62	2372500.70	Base of Alluvium	361
040306346400	971Q-13	6036309.87	2372513.03	Base of Alluvium	330
040306346400	971Q-13	6036427.88	2372658.67	Base of Tulare	1,099
040306346800	578N1-12	6036598.94	2372886.43	Base of Alluvium	371
040306346800	578N1-12	6036552.71	2372837.15	Base of Tulare	1,081
040306346900	578D-12	6036677.07	2372787.09	Base of Alluvium	358
040306346900	578D-12	6036628.93	2372760.83	Base of Tulare	1,092
040306347100	578AR-12	6036211.05	2372755.31	Base of Alluvium	319
040306347100	578AR-12	6036281.85	2372727.06	Base of Tulare	1,063
040306347600	588LR-12	6036753.10	2372882.95	Base of Alluvium	353
040306347600	588LR-12	6036781.50	2372902.45	Base of Tulare	1,106
040306398900	548S4-35N	6032034.14	2384607.83	Base of Tulare	454
040306408700	927DR-18	6038550.37	2368506.79	Base of Alluvium	318
040306408700	927DR-18	6038508.92	2368543.99	Base of Tulare	1,080
040306409900	917DR-18	6037895.74	2368507.87	Base of Alluvium	294
040306409900	917DR-18	6037899.59	2368564.73	Base of Tulare	1,027
040306410300	938CR-18	6038888.94	2367496.83	Base of Alluvium	312
040306410300	938CR-18	6038869.27	2367526.99	Base of Tulare	1,049
040306410600	555J4-36N	6033096.23	2384232.35	Base of Alluvium	91
040306410600	555J4-36N	6033074.88	2384234.22	Base of Tulare	561
040306414400	558P4-36N	6033527.52	2383431.56	Base of Tulare	641
040306458700	571E2-13	6036052.65	2372532.27	Base of Alluvium	312
040306458700	571E2-13	6036126.14	2372572.21	Base of Tulare	1,045
040306461500	435L-12	6033653.60	2374896.69	Base of Alluvium	296
040306461500	435L-12	6033649.85	2374893.67	Base of Tulare	975
040306461600	568D2-12	6036039.31	2372806.83	Base of Alluvium	311
040306461600	568D2-12	6035963.24	2372750.58	Base of Tulare	1,044
040306462000	561C1-13	6035679.25	2372416.96	Base of Alluvium	310
040306462000	561C1-13	6035698.84	2372349.72	Base of Tulare	1,006
040306462900	971K-13	6036468.68	2372394.09	Base of Alluvium	377
040306462900	971K-13	6036518.96	2372337.35	Base of Tulare	1,086
040306466600	561N1-13	6035909.82	2372240.06	Base of Alluvium	318
040306467000	971ER-13	6036145.32	2372463.39	Base of Alluvium	314
040306468600	561GR-13	6035786.10	2372583.49	Base of Alluvium	310
040306468600	561GR-13	6035793.47	2372581.78	Base of Tulare	1,018
040306468800	453M-13	6035093.41	2370926.78	Base of Alluvium	304
040306468800	453M-13	6035094.58	2370926.20	Base of Tulare	1,010
040306492700	87-12	6037421.99	2373318.86	Base of Alluvium	385
040306492700	87-12	6037423.81	2373318.12	Base of Tulare	1,162
040306493400	17M-7	6037662.57	2373449.91	Base of Alluvium	361
040306493400	17M-7	6037662.40	2373452.47	Base of Tulare	1,189
040306493500	87N-12	6037158.38	2373463.46	Base of Alluvium	371
040306493500	87N-12	6037161.94	2373462.14	Base of Tulare	1,164
040306493600	87R-12	6036935.78	2373296.39	Base of Alluvium	354
040306493600	87R-12	6036914.67	2373321.53	Base of Tulare	1,140
040306494200	34N1-18	6039097.18	2370118.90	Base of Alluvium	360
040306494200	34N1-18	6039102.33	2370123.77	Base of Tulare	1,262
040306494300	34J1-18	6038886.04	2370255.00	Base of Alluvium	355
040306494300	34J1-18	6038931.85	2370285.71	Base of Tulare	1,261
040306494400	88-12	6037404.63	2373031.26	Base of Alluvium	383
040306498300	45L1-18	6039594.84	2369434.88	Base of Alluvium	359
040306498300	45L1-18	6039596.16	2369442.45	Base of Tulare	1,276

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040306499300	558D1-12	6035345.01	2372707.58	Base of Alluvium	321
040306499300	558D1-12	6035371.11	2372677.52	Base of Tulare	1,000
040306499800	24H-18	6038738.05	2370506.40	Base of Alluvium	352
040306499800	24H-18	6038753.60	2370531.09	Base of Tulare	1,227
040306499900	23P-18	6038647.17	2370855.03	Base of Alluvium	360
040306499900	23P-18	6038639.73	2370858.67	Base of Tulare	1,236
040306501000	35H1-18	6039469.83	2369771.40	Base of Alluvium	351
040306501000	35H1-18	6039414.29	2369749.89	Base of Tulare	1,261
040306501100	45D1-18	6039951.28	2369281.74	Base of Alluvium	371
040306501100	45D1-18	6039936.12	2369269.94	Base of Tulare	1,314
040306501700	46P-18	6039994.20	2368882.30	Base of Alluvium	358
040306501700	46P-18	6040013.42	2368847.85	Base of Tulare	1,283
040306502300	558Z-12	6035249.63	2373095.97	Base of Alluvium	316
040306511200	568LR-12	6035558.75	2373006.47	Base of Alluvium	337
040306514600	568A-12	6035587.90	2372683.42	Base of Alluvium	317
040306514600	568A-12	6035634.47	2372737.10	Base of Tulare	1,009
040306515000	957Z-12	6035366.26	2373654.61	Base of Alluvium	315
040306515600	567C-12	6035657.92	2373742.89	Base of Alluvium	320
040306516200	567A-12	6035703.31	2373480.05	Base of Alluvium	333
040306516400	967P-12	6036026.13	2373463.10	Base of Alluvium	314
040306518900	568C-12	6035625.14	2373079.92	Base of Alluvium	331
040306536700	549K5-35N	6032026.22	2384160.81	Base of Tulare	446
040306575000	942Z-1N	6034733.16	2382156.98	Base of Alluvium	164
040306575200	931C-35N	6031120.10	2386202.42	Base of Tulare	378
040306575400	934ER3-35N	6031058.98	2385661.10	Base of Tulare	379
040306575500	542D-1N	6034847.70	2382054.25	Base of Alluvium	169
040306575500	542D-1N	6034819.50	2382004.37	Base of Tulare	857
040306575600	542Z-1N	6034777.71	2382383.53	Base of Alluvium	167
040306575600	542Z-1N	6034762.54	2382331.37	Base of Tulare	845
040306576300	517C1-36N	6032606.51	2384198.34	Base of Alluvium	57
040306576300	517C1-36N	6032606.65	2384196.74	Base of Tulare	481
040306577100	948H-35N	6032275.95	2385055.22	Base of Tulare	479
040306577400	964ER2-35N	6031690.64	2383617.61	Base of Tulare	432
040306577600	948L-35N	6031581.98	2384673.83	Base of Tulare	415
040306588400	542N1-1N	6034748.17	2382138.87	Base of Alluvium	166
040306588800	543G-1N	6034635.01	2381809.71	Base of Alluvium	169
040306588800	543G-1N	6034652.58	2381824.62	Base of Tulare	838
040306589600	965P1-1N	6036209.55	2380101.95	Base of Tulare	1,090
040306589700	542G-1N	6034591.37	2382465.35	Base of Alluvium	158
040306595900	5004E-1N	6035957.00	2378890.35	Base of Alluvium	270
040306595900	5004E-1N	6035957.00	2378890.35	Base of Tulare	1,048
040306597100	5004F-1N	6036052.60	2379135.96	Base of Tulare	1,062
040306597200	5006E-1N	6036496.13	2378861.98	Base of Alluvium	280
040306597200	5006E-1N	6036496.13	2378861.98	Base of Tulare	1,112
040306601100	81G-13	6037228.64	2372419.40	Base of Alluvium	397
040306601100	81G-13	6037226.05	2372420.25	Base of Tulare	1,182
040306601200	13H-18	6037961.00	2371218.51	Base of Alluvium	354
040306601200	13H-18	6037953.13	2371226.34	Base of Tulare	1,216
040306601300	88N-12	6037138.22	2372848.41	Base of Alluvium	370
040306601300	88N-12	6037135.31	2372844.83	Base of Tulare	1,143
040306601400	11J-18	6037600.78	2372327.55	Base of Alluvium	360
040306601400	11J-18	6037568.99	2372311.90	Base of Tulare	1,225
040306601500	11R-18	6037558.92	2372012.56	Base of Alluvium	351
040306601500	11R-18	6037518.00	2372044.02	Base of Tulare	1,213
040306601600	12F-18	6037654.48	2371789.50	Base of Alluvium	356
040306601600	12F-18	6037606.20	2371738.69	Base of Tulare	1,217
040306601700	12H-18	6037995.03	2371812.65	Base of Alluvium	366
040306601700	12H-18	6038007.61	2371795.27	Base of Tulare	1,251
040306601800	22M-18	6038354.36	2371362.39	Base of Alluvium	369
040306601800	22M-18	6038304.35	2371400.00	Base of Tulare	1,272
040306601900	18L-7	6037616.29	2372846.25	Base of Alluvium	366
040306602700	942K-1N	6034675.24	2382358.05	Base of Alluvium	165
040306602800	942S-1N	6034681.20	2382015.23	Base of Alluvium	167
040306602800	942S-1N	6034684.13	2382018.31	Base of Tulare	852
040306611200	9005-1N	6036196.38	2379059.00	Base of Alluvium	272
040306611200	9005-1N	6036196.38	2379059.00	Base of Tulare	1,075
040306613900	546P5-35N	6030962.83	2384850.16	Base of Tulare	394
040306615400	11G2-18	6037831.56	2372510.70	Base of Alluvium	371
040306615400	11G2-18	6037840.10	2372568.95	Base of Tulare	1,251
040306620700	511K12-1N	6032680.70	2382952.63	Base of Tulare	527
040306620900	501P7-2N	6032185.35	2382766.93	Base of Tulare	471
040306624200	511S6-1N	6032735.28	2382594.78	Base of Tulare	540
040306624300	557R5-36N	6032472.50	2383394.33	Base of Alluvium	48
040306624300	557R5-36N	6032440.02	2383362.97	Base of Tulare	483
040306733100	16C2-7	6037679.69	2374329.89	Base of Tulare	1,218

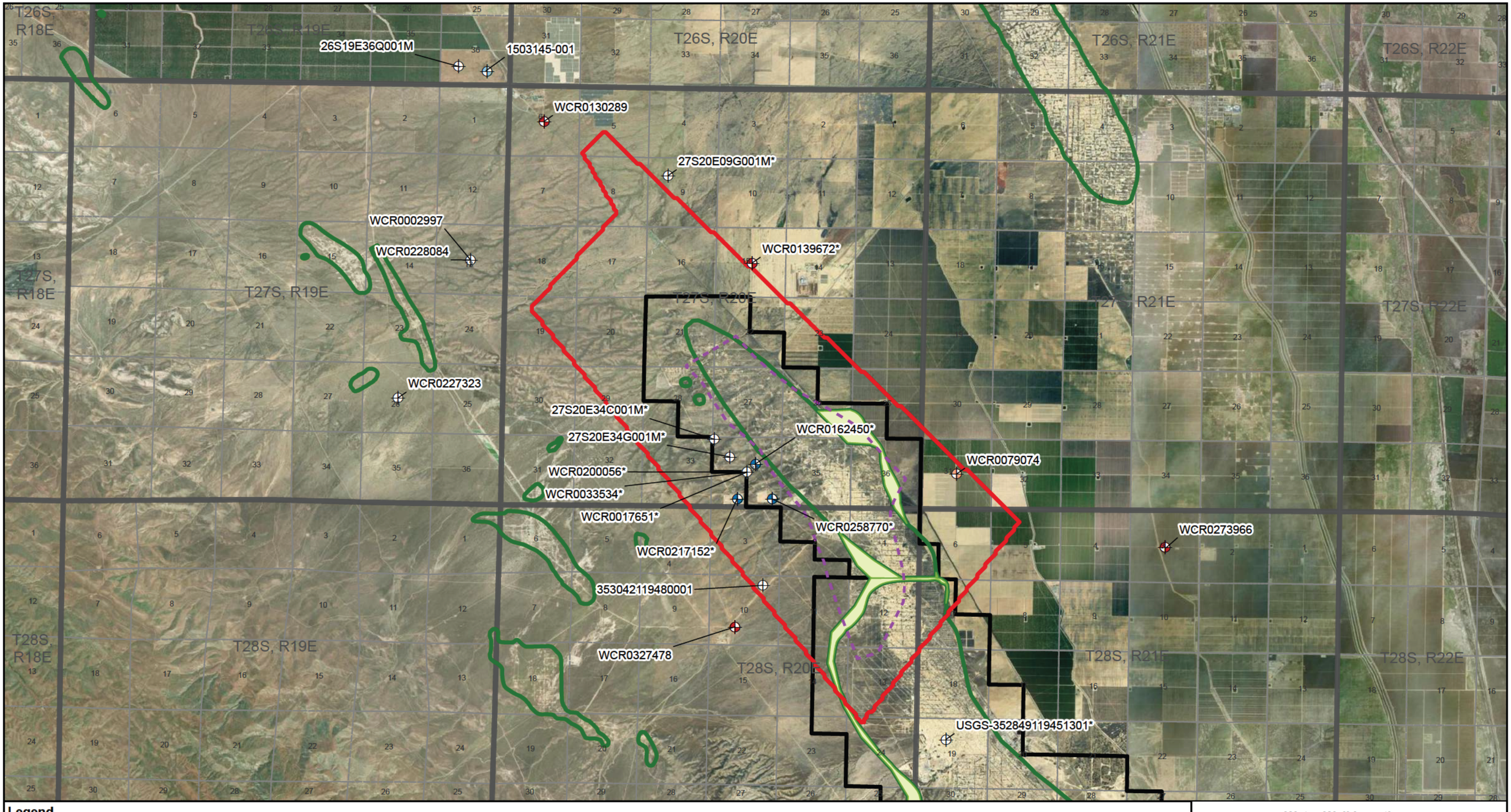
UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040306733200	15A2-7	6037683.69	2374615.48	Base of Tulare	1,225
040306734100	15F-7	6037667.83	2375116.68	Base of Alluvium	366
040306749600	53N-12	6035215.38	2376130.70	Base of Alluvium	300
040306749600	53N-12	6035201.55	2376099.08	Base of Tulare	1,036
040306751100	55H-12	6035441.68	2375094.04	Base of Alluvium	309
040306751100	55H-12	6035434.12	2375081.45	Base of Tulare	1,026
040306751500	53H-12	6035426.17	2376549.00	Base of Alluvium	319
040306751500	53H-12	6035454.48	2376531.75	Base of Tulare	1,028
040306751600	56P-12	6035415.70	2374190.53	Base of Alluvium	308
040306751600	56P-12	6035425.04	2374213.91	Base of Tulare	1,030
040306751700	53R-12	6034826.95	2375958.37	Base of Alluvium	309
040306751700	53R-12	6034899.58	2375970.70	Base of Tulare	1,051
040306751800	656H-12	6035404.00	2374541.21	Base of Alluvium	309
040306751800	656H-12	6035429.62	2374503.57	Base of Tulare	1,023
040306751900	55S-12	6035233.59	2374625.97	Base of Alluvium	301
040306751900	55S-12	6035181.27	2374645.36	Base of Tulare	1,027
040306752000	54V-12	6035562.33	2375617.39	Base of Alluvium	302
040306752000	54V-12	6035491.91	2375642.92	Base of Tulare	1,055
040306752100	54N-12	6035213.57	2375484.19	Base of Alluvium	302
040306752100	54N-12	6035189.53	2375516.55	Base of Tulare	1,057
040306752200	55L-12	6034946.72	2374804.54	Base of Alluvium	300
040306752200	55L-12	6034931.28	2374797.92	Base of Tulare	1,015
040306752300	54J-12	6035001.29	2375689.82	Base of Alluvium	307
040306752300	54J-12	6034944.21	2375669.16	Base of Tulare	1,028
040306752400	56D-12	6035415.46	2373943.21	Base of Alluvium	309
040306752400	56D-12	6035417.82	2373949.99	Base of Tulare	1,022
040306752800	64M-12	6035696.01	2375482.22	Base of Alluvium	322
040306752800	64M-12	6035691.44	2375511.76	Base of Tulare	1,054
040306752900	65F-12	6035678.37	2375166.11	Base of Alluvium	329
040306752900	65F-12	6035690.44	2375221.21	Base of Tulare	1,038
040306753000	53K-12	6035242.31	2376426.17	Base of Alluvium	317
040306753000	53K-12	6035205.26	2376385.45	Base of Tulare	1,027
040306753100	665K-12	6035136.23	2374898.31	Base of Alluvium	308
040306753100	665K-12	6035185.04	2374938.86	Base of Tulare	1,036
040306753200	55P-12	6035432.71	2374790.28	Base of Alluvium	305
040306753200	55P-12	6035432.58	2374788.66	Base of Tulare	1,019
040306753400	665C-12	6035694.22	2374916.51	Base of Alluvium	308
040306753400	665C-12	6035684.95	2374930.49	Base of Tulare	1,040
040306753800	53D-12	6035548.05	2375905.00	Base of Alluvium	312
040306753800	53D-12	6035473.84	2375916.06	Base of Tulare	1,065
040306753900	56K-12	6035280.12	2374276.48	Base of Alluvium	308
040306753900	56K-12	6035229.45	2374354.13	Base of Tulare	1,027
040306766900	666M-12	6035715.86	2374113.46	Base of Alluvium	314
040306766900	666M-12	6035694.21	2374065.52	Base of Tulare	1,051
040306767000	664S-12	6035840.75	2375442.81	Base of Alluvium	314
040306767000	664S-12	6035941.31	2375362.43	Base of Tulare	1,087
040306767200	664F-12	6035697.68	2375804.35	Base of Alluvium	310
040306767200	664F-12	6035699.73	2375802.62	Base of Tulare	1,056
040306767300	653-12	6035488.88	2376232.25	Base of Alluvium	320
040306767300	653-12	6035452.54	2376237.29	Base of Tulare	1,027
040306768000	654G-12	6035191.60	2375818.48	Base of Alluvium	310
040306768000	654G-12	6035199.24	2375808.24	Base of Tulare	1,027
040306769300	654D-12	6035439.54	2375423.35	Base of Alluvium	319
040306769300	654D-12	6035442.19	2375368.19	Base of Tulare	1,066
040306845900	55G-12	6035076.76	2375213.21	Base of Alluvium	315
040306845900	55G-12	6035183.47	2375229.37	Base of Tulare	1,050
040306934000	23F-18	6038402.20	2371165.79	Base of Alluvium	367
040306934000	23F-18	6038408.43	2371198.52	Base of Tulare	1,256
040306934100	36N2-18	6039182.31	2368781.17	Base of Alluvium	337
040306934100	36N2-18	6039175.49	2368731.18	Base of Tulare	1,182
040306934200	24E2-18	6038235.51	2370444.44	Base of Alluvium	336
040306934200	24E2-18	6038205.43	2370400.89	Base of Tulare	1,161
040306934800	35E2-18	6038846.75	2369739.61	Base of Alluvium	342
040306934800	35E2-18	6038858.14	2369722.04	Base of Tulare	1,207
040306934900	48G2-18	6039839.64	2367765.91	Base of Alluvium	337
040306934900	48G2-18	6039811.40	2367765.33	Base of Tulare	1,187
040306935000	58C2-18	6040354.31	2367682.81	Base of Alluvium	346
040306935000	58C2-18	6040347.65	2367607.77	Base of Tulare	1,266
040306935100	23A2-18	6038386.16	2370559.61	Base of Alluvium	343
040306935100	23A2-18	6038387.82	2370562.23	Base of Tulare	1,193
040306935200	57R-18	6040153.06	2368015.66	Base of Alluvium	348
040306935200	57R-18	6040149.46	2368017.36	Base of Tulare	1,260
040306935300	36F-18	6039006.66	2369166.75	Base of Alluvium	331
040306935300	36F-18	6039006.96	2369206.94	Base of Tulare	1,193
040306935400	48X-18	6040093.71	2367503.31	Base of Alluvium	345

UWI Number	Well Name	Easting (SPZ5 USft)	Northing (SPZ5 USft)	Surface Pick Name	Measured Depth (feet)
040306935400	48X-18	6040037.23	2367550.56	Base of Tulare	1,211
040306935500	47S-18	6039809.74	2367913.07	Base of Alluvium	335
040306935500	47S-18	6039811.20	2368017.72	Base of Tulare	1,213
EH1908000000	11N1	6027034.35	2373776.32	Base of Alluvium	170
EH1922000000	14A1	6031455.81	2372623.12	Base of Alluvium	287
EH2931000000	25C1	6035131.16	2392507.00	Base of Alluvium	243
EH3741000000	19M1	6037984.40	2396257.68	Base of Alluvium	232
EH3742000000	25H1	6037560.20	2391204.78	Base of Alluvium	225
EH3743000000	14R1	6032507.43	2399311.38	Base of Alluvium	264
EH5270000000	14K1	6029646.30	2369837.59	Base of Alluvium	256
USGSBWSD	USGS BWSD	6047307.27	2377682.90	Base of Alluvium	326
USGSBWSD	USGS BWSD	6047307.27	2377682.90	Base of Tulare	1,671
WP1054900000	16D2	6048196.91	2372289.36	Base of Alluvium	375

Notes:
Base of Alluvium is used for the top Tulare Fm
Base of Alluvium picked using the uppermost clay of the Tulare Fm
Coordinates provided in NAD 1983 State Plane California V FIPS 0405 (US Feet)
Controls for surface generation:
1) Well picks
2) Outcrops to control surfaces
3) 2D/3D seismic data to guide surfaces in areas of low well density
4) Groundwater monitoring wells with published top of Tulare picks

Appendix 2F
Hydrologic and Hydrogeologic Information

Water Supply Wells within AOI and 1.5-mile Buffer – Database Outputs and Well Completion Reports



Legend

Water Supply Wells

- Agricultural
- Domestic
- Public
- Industrial
- Other, Unknown, Not Specified

- Area of Review
- Area of Interest
- North/South Belridge Administrative Boundary
- 1973/74 Oil Field Boundary and Aquifer Exempt Areas
- Tulare Formation Aquifer Exemption Area
- Section
- Township

Notes:

* Indicates wells not within the internal databse of the Water Resources Management group at Aera Energy LLC. These wells were identified, based on operator knowledge, as mislocated and likely not within the Area of Interest, destroyed/not operable, or cathodic protection wells (i.e., not water supply wells). These wells were retained here due to the lack of publicly available records to confirm the well status, type, or location independent of operator records.
Wells WCR0227323 and WCR0273966 are located outside of the 1.5 mile buffer area.

N

0 1.5 Miles

Water Well Locations Within 1.5 miles of Area of Interest

North Belridge Oil Field
Western Kern County
California

CarbonFrontier

Figure 2F-1

CarbonFrontier | December 2023

P:\GIS\Aera Belridge CCUS\Projects\EPA Response\Section 2.7 Hydrology and Hydrogeology\Section 2.7 Hydrology and Hydrogeology.aprx\Fig2F-1_Water_Supply_Wells_1.5mi_AOI_Model_Boundary 12/15/2023 2:55 PM (MBradford)

WCR Number	Well Category	Legacy Log Number	Region Office	County Name	Local Permiting Agency	Permit Date	Permit Number	Owner Assigned Well Number	Well Location	City	Planned Use/ Former Use	Driller Name
WCR0033534*	Unknown	NN	DWR South Central Region Office	Kern	Department of Public Health Services - Environmental Health Department		None				Other Unknown	
WCR0079074	Domestic	27123	DWR South Central Region Office	Kern	Department of Public Health Services - Environmental Health Department		None				Domestic	RILEY W RUMMANS
WCR0002997	Other Not Specified	36974	DWR South Central Region Office	Kern	Department of Public Health Services - Environmental Health Department		None				Other Not Specified	MILLER DRILLING CO
WCR0258770*	Industrial	NN	DWR South Central Region Office	Kern	Department of Public Health Services - Environmental Health Department		None				Other Unknown	
WCR0228084	Unknown	E0224848	DWR South Central Region Office	San Luis Obispo	San Luis Obispo County Environmental Health Services		None					
WCR0162450*	Industrial	NN	DWR South Central Region Office	Kern	Department of Public Health Services - Environmental Health Department		None				Other Unknown	
WCR0217152*	Industrial	NN	DWR South Central Region Office	Kern	Department of Public Health Services - Environmental Health Department		None				Other Unknown	
WCR0139672*	Irrigation - Agricultural	911611	DWR South Central Region Office	Kern	Department of Public Health Services - Environmental Health Department		06-1551R		RD 18 & COUNTY LINE		Water Supply Irrigation - Agricultural	ARTHUR & ORUM WELL DRILLING INC
WCR0227323	Unknown	E0234902	DWR South Central Region Office	San Luis Obispo	San Luis Obispo County Environmental Health Services		None					
WCR0200056*	Unknown		DWR South Central Region Office	Kern	Department of Public Health Services - Environmental Health Department		None					
WCR0017651*	Unknown	NN	DWR South Central Region Office	Kern	Department of Public Health Services - Environmental Health Department		None				Other Unknown	
WCR0130289	Irrigation - Agricultural	9582	DWR South Central Region Office	Kern	Department of Public Health Services - Environmental Health Department		None	55-3			Water Supply Irrigation - Agricultural	RELIANCE DRILLING CO
WCR0273966	Irrigation - Agricultural	NN	DWR South Central Region Office	Kern	Department of Public Health Services - Environmental Health Department		None				Other Unknown	ROSCOE MOSS CO
WCR0327478	Agricultural - Stock	278940	DWR South Central Region Office	Kern	Department of Public Health Services - Environmental Health Department		None				Test Well/Other - Stock	CRUSE DRILLING CO

Notes:
DWR: California Department of Water Resources GPM: gallons per minute
GPM: gallons per minute
WCR: Well Completion Report
Depths and distances provided in feet (ft)
Latitude/Longitude provided in Decimal Degrees
* Indicates wells not within the Water Resources Management group at Aera Energy LLC internal database, which includes records from California Geologic Energy Management Division (CalGEM), United States Geological Survey (USGS), the California Department of Water Resources (DWR), GeoTracker Groundwater Ambient Monitoring and Assessment (GAMA), and the Kern County Environmental Health Well Permit online databases in addition to their own internal records. These wells were identified, based on operator knowledge, as mislocated and likely not within the Area of Interest, destroyed/ not operable, or cathodic protection wells (i.e., not water supply wells). These wells were not included on Figure 2.7-9, but retained in this appendix due to the lack of publicly available records to confirm the well status, type, or location independent of Aera's internal records.
- Well information and location was not verified in the field and could not be confirmed with water supply districts.

WCR Number	Driller Licence Number	Record Type	Decimal Latitude	Decimal Longitude	Method of Determination LL	LLAccuracy	Horizontal Datum	Ground Surface Elevation	Elevation Accuracy	Elevation Determination Method	Vertical Datum	Township	Range	Section	Baseline Meridian	APN	Date Work Ended	Work-flow Status	Total Drilled Depth	Total Completion Depth
WCR0033534*		WellCompletion/New/Production or Monitoring/NA	35.5352	-119.8055	Derived from TRS	Centroid of Section						27S	20E	34	Mount Diablo					3502
WCR0079074	196554	WellCompletion/New/Production or Monitoring/NA	35.5356	-119.7521	Derived from TRS	Centroid of Section						27S	21E	31	Mount Diablo		7/14/1967		300	0
WCR0002997	238600	WellCompletion/New/Production or Monitoring/NA	35.5784	-119.8770	Derived from TRS	Centroid of Section						27S	19E	13	Mount Diablo		11/23/1968			200
WCR0258770*		WellCompletion/New/Production or Monitoring/NA	35.5352	-119.8055	Derived from TRS	Centroid of Section						27S	20E	34	Mount Diablo					530
WCR0228084		WellCompletion/New/Production or Monitoring/NA	35.5784	-119.8770	Derived from TRS	Centroid of Section						27S	19E	13	Mount Diablo					0
WCR0162450*		WellCompletion/New/Production or Monitoring/NA	35.5352	-119.8055	Derived from TRS	Centroid of Section						27S	20E	34	Mount Diablo					0
WCR0217152*		WellCompletion/New/Production or Monitoring/NA	35.5352	-119.8055	Derived from TRS	Centroid of Section						27S	20E	34	Mount Diablo					0
WCR0139672*	361319	WellCompletion/New/Production or Monitoring/NA	35.5788	-119.8052	Derived from TRS	Centroid of Section						27S	20E	15	Mount Diablo	068-200-010	5/29/2006			600
WCR0227323		WellCompletion/New/Production or Monitoring/NA	35.5493	-119.8949	Derived from TRS	Centroid of Section						27S	19E	26	Mount Diablo					0
WCR0200056*		WellCompletion/New/Production or Monitoring/NA	35.5352	-119.8055	Derived from TRS	Centroid of Section						27S	20E	34	Mount Diablo					0
WCR0017651*		WellCompletion/New/Production or Monitoring/NA	35.5352	-119.8055	Derived from TRS	Centroid of Section						27S	20E	34	Mount Diablo					0
WCR0130289	113379	WellCompletion/New/Production or Monitoring/NA	35.6076	-119.8589	Derived from TRS	Centroid of Section						27S	20E	6	Mount Diablo		9/15/1954			800
WCR0273966		WellCompletion/New/Production or Monitoring/NA	35.5213	-119.6987	Derived from TRS	Centroid of Section						28S	21E	3	Mount Diablo		1/19/1947			740
WCR0327478	278907	WellCompletion/New/Production or Monitoring/NA	35.6076	-119.8589	Derived from TRS	Centroid of Section						27S	20E	6	Mount Diablo		8/10/1989			140

WCR Number	Top of Perforated Interval	Bottom of Perforated Interval	Casing Diameter	Drilling Method	Fluid	Static Water Level	Total Draw Down	Test Type	Pump Test Length	Well Yield	Well Yield Unit of Measurement	Other Observations	PLSS MTRS	WCR Links	Global ID
WCR0033534*				Direct Rotary	Other								M27S20E34	https://cadwr.app.box.com/v/WellCompletionReports/file/461441762632	{385DB8C4-8C12-4876-AE10-642EE8F32C24}
WCR0079074	125	300		Rotary- cable		131							M27S21E31	https://cadwr.app.box.com/v/WellCompletionReports/file/461441431788	{8B057E8D-A9C3-4C98-B682-B3805F192725}
WCR0002997	120	200	8.625	Direct Rotary	Other	122							M27S19E13	https://cadwr.app.box.com/v/WellCompletionReports/file/461420663199	{70E2353D-13AB-444B-BC58-EB1F8856EBDB}
WCR0258770*			10	Other	Other								M27S20E34	https://cadwr.app.box.com/v/WellCompletionReports/file/461420475376	{DAFD429D-5798-4875-ADAA-EDF8DD9E5A9F}
WCR0228084													M27S19E13		{A575C2A2-D6B1-4A51-B72B-F48776A7BE65}
WCR0162450*				Other	Other								M27S20E34	https://cadwr.app.box.com/v/WellCompletionReports/file/461419186317	{E18F5A63-F632-4360-A79E-2BDAB52096B5}
WCR0217152*				Other	Other								M27S20E34	https://cadwr.app.box.com/v/WellCompletionReports/file/461443273307	{84BD1820-E313-4517-9F94-19E5546C4A67}
WCR0139672*	280	600		Other	Other								M27S20E15	https://cadwr.app.box.com/v/WellCompletionReports/file/461419301857	{12094E1C-FA3C-49CE-891D-125E5D24D8F0}
WCR0227323													M27S19E26		{49CF94AA-4B2D-448F-BFC9-90E667175033}
WCR0200056*													M27S20E34		{D0DC3C05-83C0-4226-AF18-6FA325E8A206}
WCR0017651*				Other	Other								M27S20E34	https://cadwr.app.box.com/v/WellCompletionReports/file/461419351978	{D5619F9F-2C0D-49FA-B9CB-5B2A4EE1FC88}
WCR0130289			16	Direct Rotary	Other					2600	GPM		M27S20E06	https://cadwr.app.box.com/v/WellCompletionReports/file/461420420421	{342221CC-B8B6-46AB-99CC-E66847A27856}
WCR0273966	660	700		Other	Other								M28S21E03	https://cadwr.app.box.com/v/WellCompletionReports/file/461416144429	
WCR0327478	80	140	6	Direct Rotary	Other	110				15	GPM		M27S20E06	https://cadwr.app.box.com/v/WellCompletionReports/file/461440687515	{EC4F1F26-075A-4B37-A8B1-1D10F84DBBA7}

28/21-3

REGION

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

BASIN

DWR No. 28S/21E-3 S B & M

OTHER Nos. #18

209

WELL LOG

LOCATION

OWNER

DRILLED BY Roscoe Moss co ADDRESS 4360 Worth St., Los Angeles

started 1/3/47

DRILLING METHOD GRAVEL PACKED DATE COMPLETED 1/20/47

SIZE OF CASING DEPTH 710' 90' of 12" - 10 gauge STRUCK WATER AT 191±8 ft

PERFORATIONS SIZE 3/16" No.

WATER LEVEL BEFORE PERFORATING AFTER

TEST DATA: DISCHARGE G. P. M. DRAWDOWN FT. HOURS RUN

OTHER DATA AVAILABLE: WATER LEVEL RECORD ANALYSIS

SURFACE ELEV. DATUM SOURCE OF INFORMATION

DEPTH	ELEV. OF BOTTOM OF STRATUM	MATERIAL	THICK-NESS	SP. YIELD %	
661 670		coarse sand			
670 710		blue clay			
		perforated			
		700 to 660 7 holes per 8 inches			

MICROFILMED

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY DATE SHEET 1 OF

FORM 263

27/20-34 P1, 2

34 P2

WELL No. 2

34 P1

WELL No 1.

27/20-34 P1, 2

0

100

200

300

400

500

600

700

800

900

SANDY SOIL

SANDY CLAY DRY

177 YELLOW SAND DRY

187 SANDY CLAY DRY

211 WHITE SAND DRY

223 SANDY CLAY

253 CEMENTED SAND

277 SAND STONE

301 BLUE CEMENTED SAND

327 BLUE SHALE WITH SHELL OF ROCK

339 CEMENTED SAND HARD

383 WATER LEVEL 10 19 1922

400 BROWN SANDY SHALE

438 HARD ROCK

440 BROWN SANDY SHALE

455 8" WATER SAND

BROWN SANDY SHALE

538 END OF CASING

548 WATER SAND

583 BLUE SHALE

585 WOODEN PLUG - BOTTOM OF WELL

600

688 END OF CASING

12½"-40" CASING

10"-40" CASING

283

WATER LEVEL 10-17-1922 390

12½"-40" CASING

10"-40" CASING

BOTTOM OF WELL 725

END OF CASING 720

SANTA CRUZ OIL WELL CEMENT 750

ROCKS AND SANTA CRUZ OIL WELL CEMENT

820

SANTA CRUZ OIL WELL CEMENT

865

LEAD WOOL TAMPED SOLID 870

SOLID ROCK BRIDGE 875

BROKEN ROCK

SANDY SOIL

100

SANDY CLAY DRY

177 YELLOW SAND DRY

187 SANDY CLAY DRY 200

211 WHITE SAND DRY

223 SANDY CLAY

253 CEMENTED SAND

277 SAND STONE

301 BLUE CEMENTED SAND 300

327 BLUE SHALE WITH SHELL ROCK

339 CEMENTED SAND HARD

400 400

BROWN SANDY SHALE

438 HARD ROCK

440

BROWN SANDY SHALE 500

520 WATER SAND

530

BROWN SANDY SHALE 600

650

CLEAN SHARP WATER-SAND. (VERY COARSE) 700

725

800

BLUE SHALE

27/20-34P1 Y7

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

REGION 5 BASIN
COUNTY Kern DWR No. 27/20-34P1 MD&M
NEAR North Belridge OTHER Nos.

WELL LOG

LOCATION At Carneros Pump Station, 1.7 mi S/O North Belridge 88

OWNER Tidewater Oil Co. ADDRESS

DRILLED BY — ADDRESS

DRILLING METHOD GRAVEL PACKED DATE COMPLETED

SIZE OF CASING DEPTH 12" to 283', 10" 740, plugged at 725' STRUCK WATER AT

PERFORATIONS SIZE No.

WATER LEVEL BEFORE PERFORATING AFTER

TEST DATA: DISCHARGE G. P. M. Well capped, 1955, Log of 27/20-34P2 (688') on DRAWDOWN FT. HOURS RUN File at USGS

OTHER DATA AVAILABLE: WATER LEVEL RECORD 390 (10/22) ANALYSIS

SURFACE ELEV. 750 DATUM MSL SOURCE OF INFORMATION USGS

DEPTH	ELEV. OF BOTTOM OF STRATUM	MATERIAL	THICKNESS	SP. YIELD %	
0 - 100		Sandy soil			
177		Sandy clay, dry			
187		Yellow sand, dry			
211		Sandy clay, dry			
223		White sand, dry			
253		Sandy clay			
277		Cemented sand			
301		Sandstone			
327		Blue cemented sand			
339		Blue shale with shell rock			
400		Cemented sand, hard			
438		Brown sandy shale			
440		Hard rock			
520		Brown sandy shale			
530		Water sand			

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY R S Ford DATE 4/8/58 SHEET 1 OF 2

FORM 263

FORM 263A
INVESTIGATION 27/20-34P1

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

2/7

SHEET 2

NUMBER 27/20-34 P1

WELL LOG

LOCAL DESIGNATION

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
530-650		Brown sandy shale				
725		Clean sharp water sand (very coarse)				
986		Blue shale				

FOR FIELD COPIES USE ALTERNATE LINES

27/20-34P1 3/7

-063
(December 1949)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

No. 27/20-34P1

OTHER NOS.

WELL LOG

State _____ County _____ Subarea _____

Owner _____

Location _____

Drilled by _____ Address _____

Date _____ Casing diam. _____ Land-surf. alt. _____

Source of data _____

(Enter type of well, perforations, yield, and drawdown at end of log)

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
0-100	SANDY SOIL	100	100
100-177	SANDY CLAY DRY	77	177
177-187	YELLOW SAND DRY	10	187
187-211	SANDY CLAY DRY	24	211
211-223	WHITE SAND DRY	12	223
223-253	SANDY CLAY	30	253
253-277	CEMENTED SAND	24	277
277-301	SAND STONE	24	301
301-327	BLUE CEMENTED SAND	26	327
327-339	BLUE SHALE WITH SHELL ROCK	12	339
339-400	CEMENTED SAND HARD	61	400
400-438	BROWN SANDY SHALE	38	438
438-440	HARD ROCK	2	440
440-520	BROWN SANDY SHALE	80	520
520-530	WATER SAND	10	530
530-650	BROWN SANDY SHALE	120	650
650-725	CLEAN SHARP WATER SAND (VERY COARSE)	75	725
725-986	BLUE SHALE	261	986

Salt water reported at 986 feet.

RECORD BY _____ DATE _____ SHEET _____ OF _____

U. S. GOVERNMENT PRINTING OFFICE 16—61587-1

27/20-34P1

4/1

27/20-34P1, 2

Tidewater Associated Oil Co.

Carneros Pump Station. well #1.

1 first record of well 4-11-27 — well has not been used much in last 3 years. approximately 675 ft deep, 400 ft to water.

4-25-27

Run air compressor 145 R.P.M. and could only hold 50 lbs pressure at tank. pumped about 1 gal. in 45 minutes.

4-30-27

lowered nozzle to 611 ft.

5-1-27

tested out of well with air compressor 100 R.P.M pumped 12.8 gpm 768 gal/hr = 576 bbls/day at 125 R.P.M. pumped 22.054 gpm 1323 gal/hr = 1000 bbls/day at 100 R.P.M. air pressure 87 lbs @ 125 R.P.M. air pressure 90 lbs.

6-7-29

sounded 395 ft to water

3-4-32

sounded 395 ft to water, well 602 ft deep.

10-4-32

395 ft to water, 660 ft 7 pipe in well.

5-31-33

396 ft to water

27/20-34P1 5/1

27/20-34P1

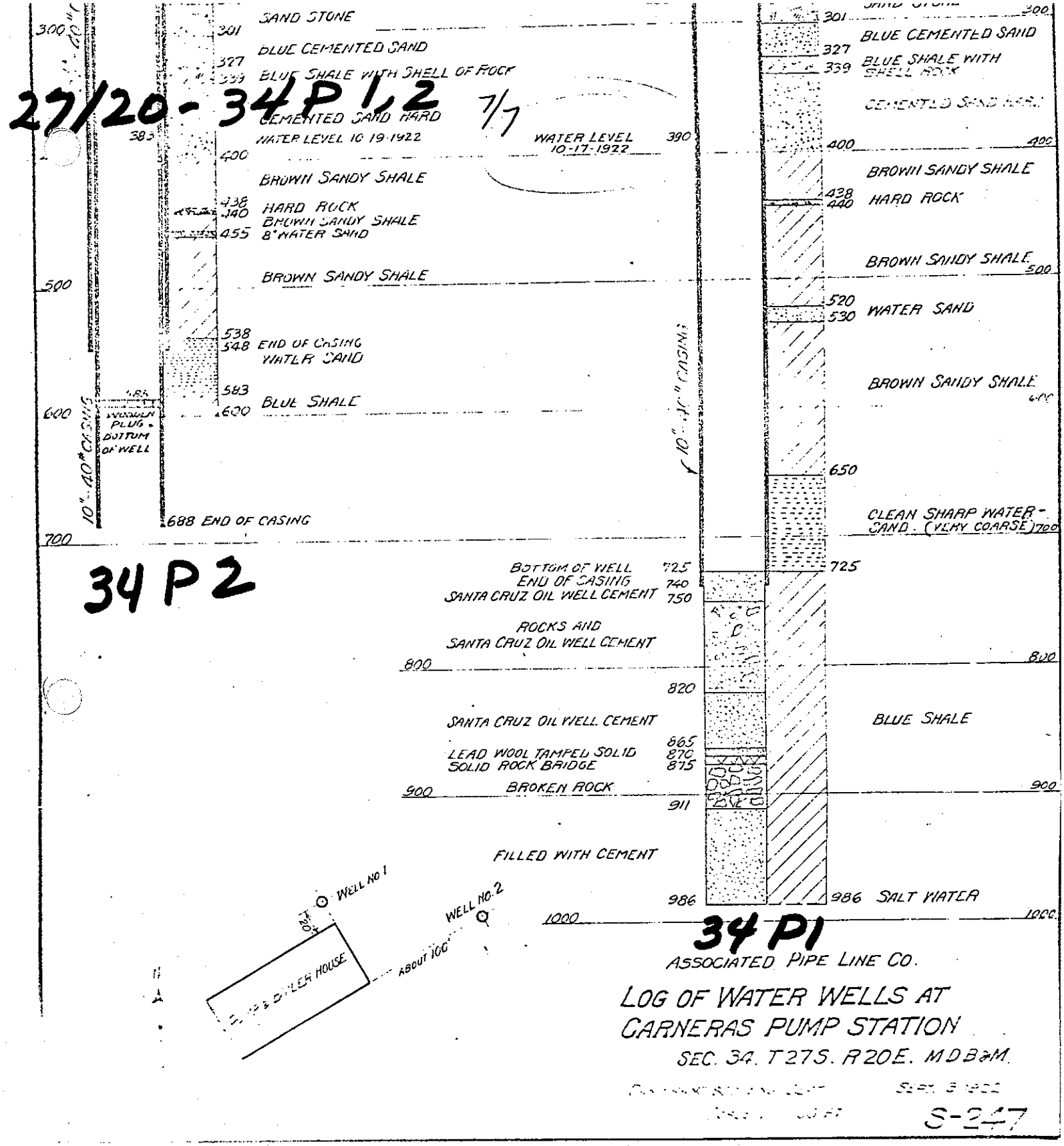
5-30-34

393 ft to water approximately 537 ft sup.

data from records at Pumpstation.

Nov. 1955

D-log in file.



ASSOCIATED PIPE LINE CO.

LOG OF WATER WELLS AT CARNERAS PUMP STATION

SEC. 34. T27S. R20E. MDB&M.

S-247

27/20-6

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

ORIGINAL
File with DWR

Do not fill in

No. 278940

State Well No. ~~28/19-4~~

Notice of Intent No. 244034

Local Permit No. or Date

Other Well No.

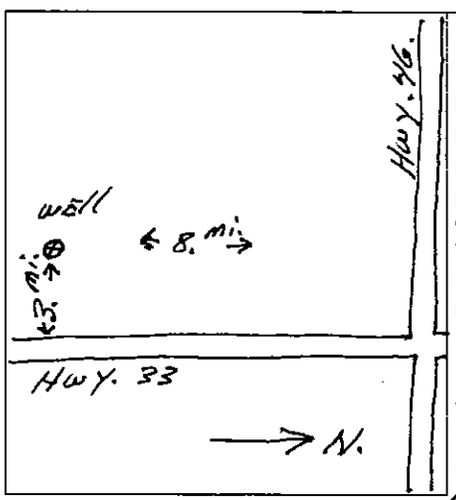
(2) LOCATION OF WELL (See instructions):

County KERN Owner's Well Number

Well address if different from above

Township 28 S. Range 19-E. Section 4

Distance from cities, roads, railroads, fences, etc. 8 mi. So. OF BLACKWELLS CORNER



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [X]
Municipal [ ]
Other [ ]
(Describe) STOCK

(5) EQUIPMENT:
Rotary [X] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size 3/8
Diameter of bore 16 in.
Packed from 50 ft. to 140 ft.

(7) CASING INSTALLED:
Steel [ ] Plastic [X] Concrete [ ]

(8) PERFORATIONS:
Type of perforation or size of screen SAW

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	140	6	C.160	80	140	0.90

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 50 ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval ft.
Method of sealing CONCRETE

(10) WATER LEVELS:
Depth of first water, if known 110 ft.
Standing level after well completion 110 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? CRUSE
Type of test Pump [ ] Bailer [ ] Air lift [X]
Depth to water at start of test 110 ft. At end of test 110 ft.
Discharge 15 gal./min after hours Water temperature 0
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 140 ft. Completed depth 140 ft.

from ft	to ft	Formation: (Describe by color, character, size or material)
0	40	BRN. SANDY GRAVEL
40	80	BRN. & YELLOW CLAY
80	110	BRN. CLAY & SHALE
110	140	BROKEN SHALE & GRAVEL

CUTSIDE CORC. CLAY AREA

Work started 8-4- 1989 Completed 8-10- 1989

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief

Signed (Well Driller)

NAME CRUSE DRILLING CO. (Person, firm, or corporation) (Typed or printed)

Address 7601 DARRIN AVE.

City BKSFLD. CAL. ZIP 93308

License No. 228909 Date of this report 8-16-89

CONFIDENTIAL NOT FOR PUBLIC USE WATER CODE SEC. 13752

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

27/20-22P

27/20-22P

Richfield Oil Corp well #3 North Coldridge.

894.65 ft No & 1555.91 ft E of SW Cor ground 657 ft above sl

0-55 ft [illegible] sand & clay

55-189 boulder sand & clay

189-458 shale w/ stringers hard sand

458-697 hard sand and sandy shale

697-833 hard sand & shells

833-1159 hard shale & shells

1159-1447 sandy shale & stringers hard sand

1447-1755 sandy blue shale w/ stringers hard sand.

1755-2023 hard shale

log continues to TD 8355 ft.

Rec'd 1938

TOTAL DEPTH - 8355 FEET

27S/19E-13

ORIGINAL
File with DWR

DEC 2 1968

WATER WELL DRILLERS REPORT

(Sections 7079, 7080, 7081, 7082, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Do Not Fill In

No 36974

State Well No. 27S/19E-13

Other Well No.

(2) LOCATION OF WELL:

County San Luis Obispo Owner's number, if any

Township, Range, and Section Sec. 13 T27S R19E

Distance from cities, roads, railroads, etc. 7

(3) TYPE OF WORK *(check)*:

New Well X Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE *(check)*:

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other X

(5) EQUIPMENT:

Rotary X
Cable ☐
Other ☐

(6) CASING INSTALLED:

STEEL: OTHER:
SINGLE X DOUBLE ☐

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	If gravel packed: From ft.	If gravel packed: To ft.
0	200	8 5/8"	.188	13 3/8"	0-200	

Size of shoe or well ring: open-bottom Size of gravel: 3/8"

Describe joint: welded

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen: Machine-sawed

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
0	120	blank		
120	200	perfs.	8 row	3 x .160

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes X No ☐ To what depth 50 ft.

Were any strata sealed against pollution? Yes ☐ No ☐ If yes, note depth of strata

From ft. to ft.

From ft. to ft.

Method of sealing drillers clay

(9) WATER LEVELS:

Depth at which water was first found, if known 164 ft.

Standing level before perforating, if known ft.

Standing level after perforating and developing 122 ft.

(10) WELL TESTS:

Was pump test made? Yes ☐ No X If yes, by whom?

gal/min with ft. drawdown after hrs.

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

Was electric log made of well? Yes ☐ No X If yes, attach copy

(11) WELL LOG:

Total depth 200 ft. Depth of completed well 200 ft.

Formation: *Describe by color, character, size of material, and structure*

0	2	top soil	
2	15	brown clay	
15	45	brown clay & shale	
45	53	brown clay	
53	59	brown clay & shale	
59	97	brown shale some clay	
97	102	hard brown shale	
102	104	brown clay	
104	124	dark brown shale	
124	175	black shale	
175	200	black shale with strong sulhper.	

CONFIDENTIAL - NOT FOR PUBLIC RELEASE

Work started 11/18/68 Completed 11/23/68

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Miller Drilling Co.
(Person, firm, or corporation. (Typed or printed)

Address Rt. 1 Box 22 Paso Robles, Calif.

[SIGNED] [illegible]
(Well Driller)

License No. 238600 Dated 11/25/68 19

SKETCH LOCATION OF WELL ON REVERSE SIDE

56391-950 10-65 50M TRIP

27/20-34P2

27/20-34P2

6-24-28

7½" x 7½" x 9" air compressor running at 100 RPM pumped 120 gpm 160 bbls/hr into #3 tank.

4-10-29

7½" x 7½" x 9" air compressor running at 100 R.P.M pumped 5" of water into #3 tank in 6½ hr. = 672 bbls in 24 hr. = 19.6 gpm

6-6-29

395 ft to water

2-9-32

7½" x 7½" x 9" giant air compressor at 110 RPM 85 lbs pressure pumped 28 bbls/hr = 672 [illegible] = 19.6 gpm

5-26-33

well producing 18.2 gpm 26 bbls/hr. with Laid Law-Dunn Gordon Compressor running at 64 R.P.M. well producing 12.2 gpm 17½ bbls/hr with Little Giant compressor at 110 RPM

5-30-34

Sounded well to water 399 ft approximately 588 ft deep

D-109 in well log file.

27/20-34P2

1/4

27/20-34P2

Tidewater Associated Oil Co.

Carneras Pump Station Well #2

4-3-27 first record of well.

5-22-27

Bailed 52 ft of sand out of well, bottom at 596 ft.

584 ft. of 2" water line and 584 ft of 1" air line.

bailer brought up a number of rock the size of a pullet egg and smaller which indicates 10" casing may be eaten out.

5-29-27

395 ft to top of water

5-30-27

395 ft to top of water

6-4-27

lowered air line nozzle to 589 ft. which brings 2½" tail pipe below nozzle 4 ft off bottom with hardly no improvement in amount of water pumped.

2-12-28

ran 12X14X12 L.L.D.G. compressor for 2 hrs at 88 R.P.M. and pumped 37 bbls/hr (25.9 gpm) = 884 bbls in 24? hrs — ran it 1 hr. at 58 RPM and pumped 32 bbls/hr (22.4 gpm) = 768 bbls in 24? hrs. Air pressure at 88 RPM - 94 lbs at 55 RPM 89 lbs.

27/20-34P2

2/4

27/20-34P2

6-24-28

7½" x 7½" x 9" air compressor running at 100 RPM pumped 120 gpm 160 bbls/hr into #3 tank.

4-10-29

7½" x 7½" x 9" air compressor running at 100 R.P.M pumped 5" of water into #3 tank in 6½ hr. = 672 bbls in 24 hr. = 19.6 gpm

6-6-29

395 ft to water

2-9-32

7½" x 7½" x 9" giant air compressor at 110 RPM 85 lbs pressure pumped 28 bbls/hr = 672 [illegible] = 19.6 gpm

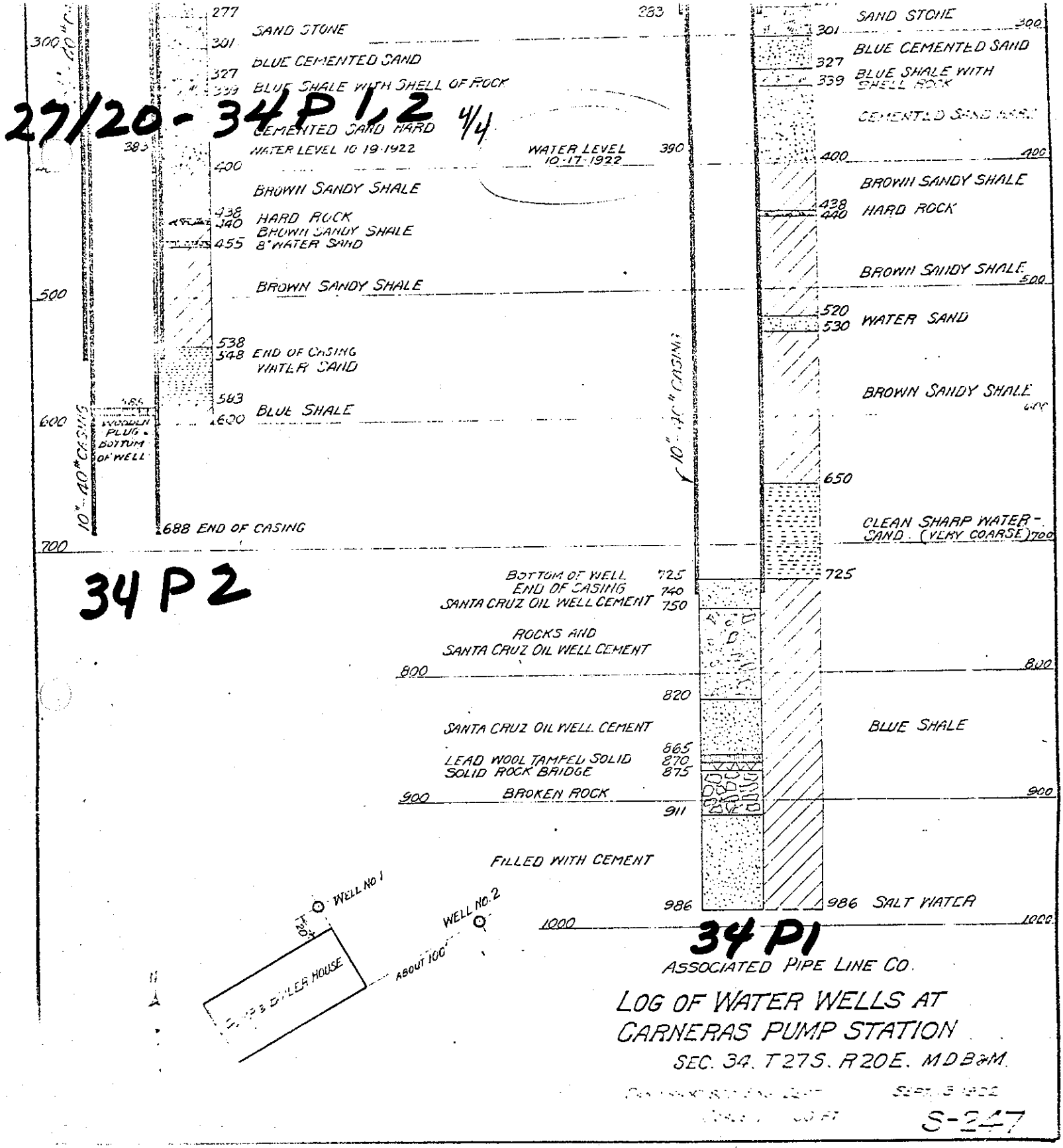
5-26-33

well producing 18.2 gpm 26 bbls/hr. with Laid Law-Dunn Gordon Compressor running at 64 R.P.M. well producing 12.2 gpm 17½ bbls/hr with Little Giant compressor at 110 RPM

5-30-34

Sounded well to water 399 ft approximately 588 ft deep

D-log in well log file.


27/20-34P1,2 4/4
34P2
34P1
SAND STONE
BLUE CEMENTED SAND
BLUE SHALE WITH SHELL OF ROCK
CEMENTED SAND HARD
WATER LEVEL 10-19-1922
WATER LEVEL 10-17-1922
BROWN SANDY SHALE
HARD ROCK
BROWN SANDY SHALE
8" WATER SAND
BROWN SANDY SHALE
END OF CASING
WATER SAND
BLUE SHALE
WOODEN PLUG BOTTOM OF WELL
10"-40# CASING
688 END OF CASING
BLUE SHALE WITH SHELL ROCK
CEMENTED SAND HARD
BROWN SANDY SHALE
HARD ROCK
BROWN SANDY SHALE
WATER SAND
BROWN SANDY SHALE
CLEAN SHARP WATER-SAND. (VERY COARSE)
BOTTOM OF WELL 725
END OF CASING 740
SANTA CRUZ OIL WELL CEMENT 750
ROCKS AND SANTA CRUZ OIL WELL CEMENT
SANTA CRUZ OIL WELL CEMENT
LEAD WOOL TAMPED SOLID 865
SOLID ROCK BRIDGE 870
BROKEN ROCK 875
FILLED WITH CEMENT
BLUE SHALE
SALT WATER
WELL NO 1
WELL NO. 2
ABOUT 100'
PUMP & BOILER HOUSE
ASSOCIATED PIPE LINE CO.
LOG OF WATER WELLS AT
CARNERAS PUMP STATION
SEC. 34. T27S. R20E. MDB&M.
S-247

27/20-34 P1, 2

34 P2

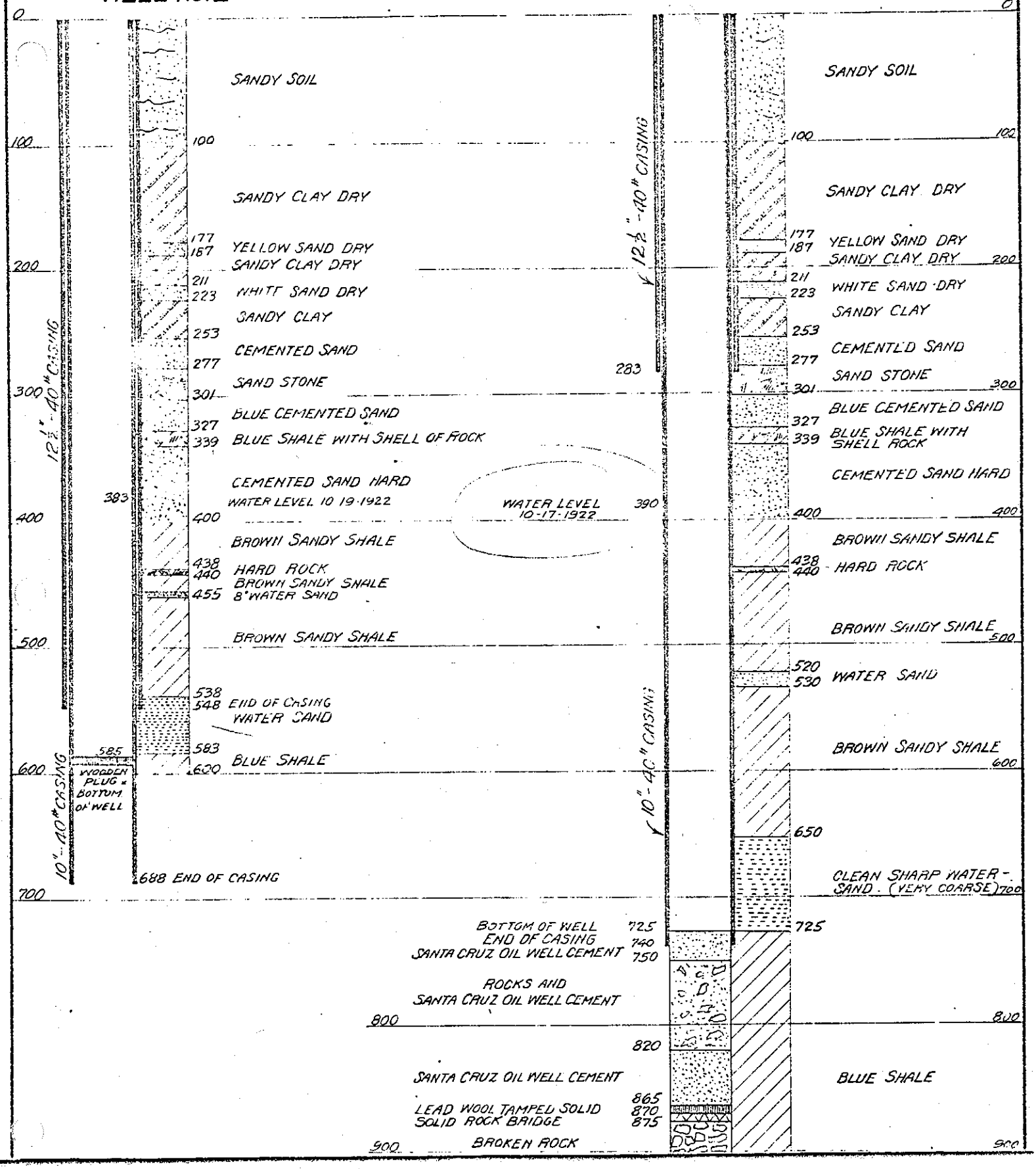
WELL No. 2

3/4

34 P1

WELL No 1.

27/20-34 P1, 2



V2

ORIGINAL
File with DWR

Page ___ of ___
Owner's Well No. ___
Date Work Began 5-18-06, Ended 5-29-06
Local Permit Agency Kern
Permit No. 06-1551 Permit Date 5-17-06

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 0911611

DWR USE ONLY — DO NOT FILL IN
27S/20E-15
STATE WELL NO./STATION NO.
LATITUDE ___ LONGITUDE ___
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD ___ FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	5	Top Soil
5	40	Hard pan & Sand
40	50	sand & clay
50	80	Sand & rock
80	140	sand & clay
140	160	sand & shell
160	180	sand & rock
180	200	sand&shell
200	240	sand & shell
240	260	sand & small rock
260	300	sand & shell
300	340	hard shell & clay
340	360	hard shell & clay
360	420	sand & clay
420	500	shell & clay
500	560	hard shell & sand
560	600	hard shell & clay

TOTAL DEPTH OF BORING 600 (Feet)
TOTAL DEPTH OF COMPLETED WELL 600 (Feet)

WELL OWNER

WELL LOCATION

Address Rd 18 & County line
City ___
County ___
APN Book 068 Page 200 Parcel 010
Township 9 Range 16E Section 11
Lat ___ DEG. ___ MIN. ___ SEC. N
Long ___ DEG. ___ MIN. ___ SEC. W

LOCATION SKETCH

NORTH / WEST / EAST / SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

XXX NEW WELL
___ MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
___ Domestic ___ Public
XXX Irrigation ___ Industrial
___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER NA (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL NA (Ft.) & DATE MEASURED ___
ESTIMATED YIELD * NA (GPM) & TEST TYPE ___
TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	280	24	x				steel	15/12	1/4	
280	600	24		x			Stell	15 1/2	1/4	.090

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	50	x			1 1/2
50	300			x	1/12

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Arthur & Orum Well Drilling Inc.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 3262 E. Conejo CITY Fresno, Ca STATE 93725 ZIP

Signed [signature] 5/31/06
C-57 LICENSED WATER WELL CONTRACTOR DATE SIGNED

C-57 LICENSE NUMBER 361319

DWR 188 REV. 05-03 IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM OSP 03 78836

FORM 263A
INVESTIGATION

27/20-34B1

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

SHEET 2 of 2

K C Ground [illegible]

NUMBER 27/20-34B

WELL LOG

LOCAL DESIGNATION

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
3502-3546		Shale	44			
3546-3589		" + thin shells	43			
3589-3860		Shale	271			
3860-3898		" + thin shells	38			
3898-3968		Shale	70			
3968-4059		Hard shale	91			
4059-4082		" " , Stks of Sand	23			
4082-4119		Shale + Hard shale	37			
4119-4246		Hard shale	127			
4246-4649		Shale Stks. of Hard shale	403			
4649-4858		Hard Shale	209			
4858-4972		Hard Massive br. Sh. Fish	114			
~~4972-5000~~		remains				
4972-5000		Hard Mass. br. sh. Bolivine	28			
		Fish remains Sparb.				
5518-5522		Fine to Medium silty Sand	7			
5522-5525		Fine gr. silty sand sh. stks.	3			
25-27		Silty Sand Stks sh.	2			
27-54		" "	27			
54-60		Hard SS. Pecten Andersoni	6			
60-80		Oil Sand? tested wet	20			
80-83		SS. shell. Pecten Andersoni	3			
5583-5661		Compact Sand + [illegible] shells	78			
5661-5686		Friable to compact [illegible] Sand	25			
5686-5696			10			
			3			
			30			
			10			
			12			

FOR FIELD COPIES USE ALTERNATE LINES

27/20-34 B1 Y2

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

REGION

COUNTY Kern

NEAR Elk Hills Sch.

2 mi. SE on Hwy 33 (¾ mi. W. of Hwy 23

LOCATION 2120' N & 150' W. of S.E. cor. Sec. 34

4/-4/ Cor. Surrendered 4154

OWNER Tide Ass. Oil (Formerly) ADDRESS 1057-19th St. Bakersfield

DRILLED BY ADDRESS

DRILLING METHOD Rotary GRAVEL PACKED DATE COMPLETED

SIZE OF CASING DEPTH STRUCK WATER AT

PERFORATIONS SIZE No.

WATER LEVEL BEFORE PERFORATING AFTER

TEST DATA: DISCHARGE G. P. M. DRAWDOWN FT. HOURS RUN

OTHER DATA AVAILABLE: WATER LEVEL RECORD ANALYSIS

SURFACE ELEV. 700' DATUM SOURCE OF INFORMATION Tide Ass. Oil 1057 19th St Bakersfield

WELL LOG

BASIN N. Belridge Oil Field

DWR No. 27/20-34 B1 M.D. B & M

OTHER Nos.

DEPTH: 9027 Ft.

34E

FOR FIELD COPIES USE ALTERNATE LINES

DEPTH	ELEV. OF BOTTOM OF STRATUM	MATERIAL	THICKNESS	SP. YIELD %
0-600		Surf. clays & sand	600	
600-931		Silty blue clay Stks of Sand	331	
931-1313		Silty blue shale	382	
1313-1333		Silty Sand	20	
1333-1600		Silty Blue Shale	267	
1600-1724		Silty Brown Shale	124	
1724-1930		Br. Sh.	156	
1930-2082		Sandy Br. Sh. occas. hard stks	152	
2082-2163		Sandy Sh. Stks hard sh	81	
2163-2213		Tough Br. Sh.	50	
2213-2223		Sand & Shale	10	
2223-2342		Br. Sh.	119	
2342-2443		Hard Br. Sh.	101	
2443-2641		Br. Sh. with hard stks.	198	
2641-2657		Brittle Shale	16	
2657-2671		Hard sh. Stks sandy sh.	14	
2671-2705		Brittle Shale	34	
2705-2748		Hard shale	43	
2748-2783		Brittle Shale	35	
2783-2916		" " & Hard shale	133	
2916-3142		Shale	226	
3142-3175		" & Stks. Hard sh.	33	
3175-3250		Shale	75	
3250-3264		" with Stks Sand	14	
3264-3305		Shale	41	
3305-3337		" & Sand	32	
3337-3357		Hard shale	20	
3357-3500		Shale	143	
3500-3502		Hard Shale	2	

LOG OBTAINED BY DATE SHEET 1 OF

FORM 263

FORM 263A
INVESTIGATION

27/20-34B1

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

2/2

SHEET 2 of 2

NUMBER 27/20-34B

K C R[illegible]

WELL LOG

LOCAL DESIGNATION

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
3502-3546		Shale	44			
3546-3589		" + thin shells	43			
3589-3860		Shale	271			
3860-3898		" + thin shells	38			
3898-3968		Shale	70			
3968-4059		Hard shale	91			
4059-4082		" " , Stks of Sand	23			
4082-4119		Shale + Hard shale	37			
4119-4246		Hard shale	127			
4246-4649		Shale Stks. of Hard shale	403			
4649-4858		Hard Shale	209			
4858-4972		Hard Massive br. Sh. Fish	114			
~~4972-5000~~		remains				
4972-5000		Hard. Mass. br. Sh. Kalisina	28			
		Fish remains [illegible]				
5515-5522		[illegible] Sand	7			
5522-[illegible]		[illegible] Sand [illegible]	3			
25	[illegible]	Silt, Sand [illegible]	2			
27	[illegible]		27			
54	[illegible]	[illegible]	6			
60	[illegible]	Oil Sand? [illegible]	20			
[illegible]	[illegible]	[illegible]	[illegible]			
5[illegible]	5[illegible]	Compact Sand [illegible]	78			
5[illegible]	5[illegible]	[illegible]	25			
[illegible]	5[illegible]		10			
			3			
			30			
			10			
			12			

FOR FIELD COPIES USE ALTERNATE LINES

27/21-31

ORIGINAL
File with DWR

WATER WELL DRILLERS REPORT

(Sections 7079, 7080, 7081, 7082, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Do Not Fill In
No 27123

State Well No.
Other Well No. 27/21E-31

(1) OWNER:

Name
Addres

(2) LOCATION OF WELL:

County KERN Owner's number, if any

Township, Range, and Section RFD.# 3. BOX # 656. SHAFTER ROAD

Distance from cities, roads, railroads, etc. BAKERSFIELD CALIFORNIA

TOWNSHIP: 31 - RANGE. 27 - SECTION 21

(3) TYPE OF WORK *(check)*:

New Well [X] Deepening [ ] Reconditioning [ ] Destroying [ ]

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE *(check)*:

Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]

(5) EQUIPMENT:

Rotary [ ]
Cable [X]
Other [ ]

(6) CASING INSTALLED:

STEEL: OTHER:
SINGLE [X] DOUBLE [ ]

From ft.	To ft.	Diam.	Gage or Wall
0	300	8 5/8	3/16

If gravel packed

Diameter of Bore	From ft.	To ft.
14½	0	300

Size of shoe or well ring:
Size of gravel: ¼"
Describe joint welded

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen punched perforations

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
125	300	6	4	1x 1/8"

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes [X] No [ ] To what depth 6" ft.

Were any strata sealed against pollution? Yes [ ] No [X] If yes, note depth of strata

From ft. to ft.

From ft. to ft.

Method of sealing 4 x 4ftx 6" cement mat at top of well

(9) WATER LEVELS:

Depth at which water was first found, if known 131 ft ft.

Standing level before perforating, if known ft.

Standing level after perforating and developing 121 ft ft.

(10) WELL TESTS:

Was pump test made? Yes [ ] No [X] If yes, by whom?

Yield: gal./min. with ft. drawdown after hrs.

Temperature of water Was a chemical analysis made? Yes [ ] No [X]

Was electric log made of well? Yes [ ] No [X] If yes, attach copy

(11) WELL LOG:

Total depth 300 ft. Depth of completed well 300 ft.

Formation: *Describe by color, character, size of material, and structure*

	ft. to	ft.
0 to 5 top soil		
5 to 30 blue sandy clay		
30 to 40 fine sand		
40 to 48 blue clay		
48 to 78 fine sand		
78 to 87 blue clay		
87 to 97 coarse sand		
97 to115 blue clay		
115 to 120 coarse sand & rock		
120 to 130 blue clay		
130 to 137 coarse sand		
137 to 150 blue clay		
150 to 170 coarse sand & rock		
170 to 180 blue clay		
180 to 193 fine sand		
193 to 242 blue clay		
242 to 247 medium sand		
247 to 263 blue clay		
263 to 270 medium sand		
270 to 278 blue clay		
278 to 295 coarse sand		
295 to 300 blue clay		

Work started July 3 19 67 Completed July 14 19 67

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME RILEY W RUMMANS
(Person, firm, or corporation) (*Typed or printed*)

Address 2717 VIRGINIA AVE:
BAKERSFIELD CALIFORNIA

[SIGNED] Riley W Rummans
(Well Driller)

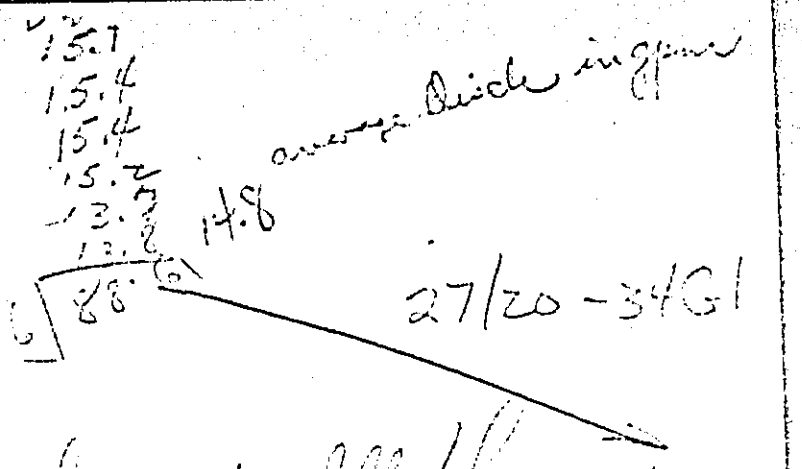
License No. 196554 Dated JULY 15th 1967, 19

SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV. 9-65)

56391-950 10-65 50M TR1P ① △ OSP

27/20-34G1



based on 42 g.l. = 1 bbl

15.7
15.4
15.4
15.2
13.7
13.8
6) 88.6 14.8 average disch in gpm

27/20-34G1

3-26-33 Ave. water del. [illegible] 21½ bbls/hr. = 15.06 gpm
4-25-33 " " " " 22 bbls/hr = 15.4 gpm
5-25-33 " " " " " 22 bbls/hr = 15.4 gpm
6-65-33 " " " " " 21.70 bbls/hr 704 hr = 15.19
7-25-33 " " " " " 19.52 bbls/hr 692 hr = 13.6
8-25-33 " " " " " 19.72 bbls/hr. 672 hr = 13.8

5-28-37 bailed sand out total depth 459 ft water level 70 ft W.S. 389 ft.

8-11-38
Depth of well 459 ft., tubing 452 ft water level 394 ft.

3-5-47
installed 430' 6" of I.D. tubing pump is a 3x7 D&B tubing pump.

8-11-49
Pulled pump, bailed to bottom - 430 to 450 ft. fluid level 389 feet.

9-10-51
pulled tubing 449.89 ft. bailed down to 450 ft. 445 ft of new pump complete with 8 cups alternating [illegible] fiber & one leather.

9-19-51
sanded up, pulled and installed new cups bailed out sand

Form DWR 42Y

Avenal - McKittrick (shallow)

State No. 27S/20E-34G1

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

1/4 SW-NE Sec

WELL DATA

Owner ASSOCIATED OIL Co.
Address Carneras Pump Station
Tenant LOST HILLS, DO 2-2042
Address

State No. 27S/20E-34G1
Other No. USGS 22-20-34G1
REWARD WELL

Type of Well: Hydrograph ☐ Key ☒ Index ☐ Semiannual ☐
Basin AVENAL - McKITTRICK No. 5-22.44
Location: County KERN
U.S.G.S. Quad. BLACKWELLS CORNER Quad. No. 5-474d
SW ¼ NE ¼ Section 34, Twp. 27S, Rge. 20E, MD Base & Meridian
Description 0.51 MI. N & 0.51 MI. E/o SEC. LINE
~~OLD WOODEN TOWER OVER WELL~~ GONE
A CONCRETE SLAB & ENGINE BLOCK LOCATED 20' E/o WELL
75 ft. NE of ¼ corner marker.
Rt turn off Hwy 33 @ JUNCTION OF YELLOW FRAME HOUSE & OIL SIGN OF CARNERES STATION
Reference Point description TOP OF CASING

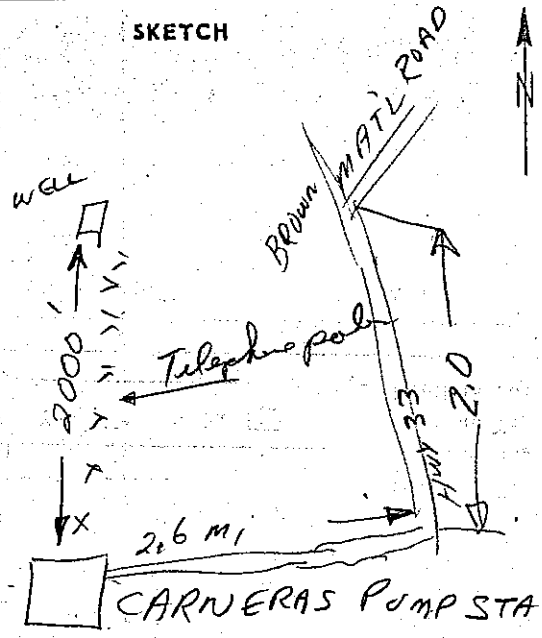
PLOTTED

which is 1.0 ft. above land surface. Ground Elevation 725.0 ft.
Reference Point Elev. 726.0 ft. Determined from QUAD.
Well: Use INDUSTRIAL Condition Depth 460 ft.
Casing, size 6 in., perforations No perfs. - open bottom

Measurements By: DWR ☐ USGS ☒ USBR ☐ County ☐ Irr. Dist. ☐ Water Dist. ☐ Cons. Dist. ☐
Chief Aquifer: Name Depth to Top Aq. Depth to Bot. Aq.
Type of Material Perm. Rating Thickness
Gravel Packed? Yes ☐ No ☐ Depth to Top Gr. Depth to Bot. Gr.
Supp. Aquifer Depth to Top Aq. Depth to Bot. Aq.
Driller
Date drilled Log, filed open (1) confidential (2)
Equipment: Pump, type LIET - ROCKERARM make LUFKIN
Serial No. 14 Size of discharge pipe 3 in.
Power, Kind ELEC. Make ALIS - CHALMERS
H. P. 5 Motor Serial No. 5415C1C
Elec. Meter No. Transformer No.
Yield G.P.M. Pumping level ft.

Water Analysis: Min. (1) San. (2) H.M. (3)
Water Levels available: Yes (1) *8-16-27 No
Period of Record: Begin * End
Collecting Agency: PUMP ENGINEER, DWR
Prod. Rec. (1) Pump Test (2) Yield (3)

SKETCH



REMARKS

CHEM. ANAL. - 1954

WATER LEVEL DATA FROM RECORDS AT PUMP STA.
RECORDS INDICATE MEAS. ON 8-16-27, 10-18-28, 11-7-29, 8-11-38, 8-11-49, 11-11-57, (RECORDS THEN DWR COULDN'T LOCATE IN 1961 (POSS. FROM PUMP OWNER)
11/7/67 DTW 381'

DOESN'T FIT PROP VERY WELL
DO NOT ENTER ON SCHEDULE.
PROBABLY BECAUSE IN HILLS.

SEE ATTACHED

Recorded by: J.H. ADAMS FROM U.S.G.S.
Date 7-23-62

RECEIVED
MAR 14 2002
Kern County Water Agency

TNC JFS JMB GLB DWM LWF
CWW JWP DML SMR ALL RBI

27/20-34G1

9/4

27/20-34 G1

Tidewater Associated Oil Co.

Carneros Pump Station Petaluma

6" stovepipe casing.

8-16-27

Sounded well 375 ft. to top of water and 449 ft. to top of sand.

20½ joints 3" tubing in well

10-18-28

Bailed 1 ft. of sand out of well from 449 to 450 ft. level.

Bottom of hole is now 450 ft. 55 ft of water.

water level would be 450-55 = 395 ft.

10-18-28

water level 395 ft below land surface.

428 ft of 3" pipe in well

11-7-29

Sounded well 390 ft to water. pump had been down for 4 or 5 days.

8-19-32

Checked capacity @ 25.0 R.P.M = no figure bbls/hr.

2-16-33

Installed 2" trident water meter near domestic water tank and A.P. Boundary fence.

27/20-34G1

3/4

Bush on 42 gal = 1 bbl

15.7
15.4
15.4
15.2
13.7
13.8
6 | 88.6 14.8 average disch in gpm

27/20-34G1

3-26-33 Ave. water del. for month 21½ bbls/hr = 15.06 gpm
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6-65-33 " " " " " 21.70 bbls/hr 704 hr = 15.19
7-25-33 " " " " " 19.52 bbls/hr 692 hr = 13.6
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9-19-51
sanded up, pulled and installed new cups bailed out sand

27/20-34 G1

4/4

27/20-34 G1

12-12-51

sanded up - pulled and installed new cups 400'0" of 3" tubing

2-12-52

total depth 460'0" - bottom [illegible] 455.30 ft

tubing 435.83 ft.

2-25-54

432.85 ft. of tubing in hole.

D-log for this well can be obtained from Production Dept. in Oil City.

Chem Anal. 1954 in file.

27/20-34R

[illegible]

[illegible] 27/20-34R.

Foreman reports that [illegible] 20 years and They [illegible] Semi-Tropic well field. [illegible] [illegible] and [illegible] Bilbo water pump station spent a lot of money trying [illegible] water but [illegible] failure [illegible] told them they [illegible] no water in that area but the Engineer at San Francisco thought differently so they [illegible] several wells. Now all water is piped from Semitropic wellfield. The [illegible] Engineer map shows a water well at Standard station but foreman says no well drilled. May be the Engineer figured the evaporating tower indicated well I don't know.

P. Wood

27/20-6

LOCATION NOT CHECKED

ORIGINAL
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
Nº 9582
State Well No.
Other Well No. 27S-20E-6

(1) OWNER:
Name
Address

(2) LOCATION OF WELL:
County Kern Owner's number, if any— 55-3
R. F. D. or Street No. 800 feet E of Sec 6 T. 27 R 20. North Side of Highway 466 Between Lerdo Canal & Friant Kern Canal

(3) TYPE OF WORK (check):
New well XX Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation XX Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary XX
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:
SINGLE XX DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	800	16"	¼"

If gravel packed

Diameter of Bore	from ft.	to ft.
27½	0	800

Type and size of shoe or well ring —
Size of gravel 3/16 to 3/8
Describe joint Bell end

(7) PERFORATIONS:
Type of perforator used Shop perforated
Size of perforations 1½ in., length, by 5/32 in.

From ft.	to ft.	Perf. per row	Rows per ft.

(8) CONSTRUCTION:
Was a surface sanitary seal provided? XX Yes ☐ No To what depth 12 ft.
Were any strata sealed against pollution? ☐ Yes XX No If yes, note depth of strata

From ft.	to ft.

Method of Sealing

(9) WATER LEVELS:
Depth at which water was first found 230 ft.
Standing level before perforating — ft.
Standing level after perforating — ft.

(10) WELL TESTS: S. A. Camp Pump Co.
Was a pump test made? XX Yes ☐ No If yes, by whom?
Yield: 2600 gal./min. with 48 ft. draw down after 40½ hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:
Total depth 800 ft. Depth of completed well 800 ft.
Formation: Describe by color, character, size of material, and structure.

ft.	to ft.	
0	100	surface sand & clay;
100	116	sandy clay;
116	128	coarse sand;
128	152	sandy clay;
152	168	coarse sand;
168	181	sandy clay;
181	193	medium sand;
193	213	sandy clay;
213	246	coarse sand & clay;
246	257	hard sand;
257	283	sandy clay;
283	296	hard sand;
296	302	coarse sand;
302	320	sandy clay;
320	334	hard sand;
334	348	sandy clay;
348	361	fine sand;
361	374	clay;
374	386	fine sand;
386	408	sandy clay;
408	413	hard sand;
413	430	sandy clay;
430	441	hard sand;
441	458	sandy clay;
458	463	hard sand;
463	478	sandy clay;
478	489	hard sand;
489	503	sandy clay;
503	512	fine sand;
512	528	sandy clay;
528	534	coarse sand;
534	541	sandy clay;
541	555	hard sand;
555	570	sandy clay;
570	578	fine sand;
578	591	sandy clay;
591	603	hard sand;
603	631	sandy clay;
631	642	fine sand;
642	650	hard sand;
650	672	sandy clay;

Work started 9-8-54 19 , Completed 9-15-54 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME RELIANCE DRILLING CO.
(Person, firm, or corporation) (Typed or printed)
Address 1718 Jefferson St.,
Delano, California
[SIGNED] L. D. Johnson
Well Driller
License No. 113379 Dated 10-1, 1954

95689 3-54 50M QUIN ⊙ SPO DWR FORM NO. 246 (REV. 3-54)

Appendix 2G
Geochemistry Supporting Data

Contents

Petrography Results

Water Lab Reports

Sensitivity Analyses and Supplemental Files

Predicted Geochemical Reactions Following Injectate Gas Interaction

Appendix 2G
Geochemistry Supporting Data

Petrography Results

Subset of the Core Analysis Data by Petroleum Testing Service, Inc

N. BELRIDGE 17-2

SAS 15:31 MONDAY, SEPTEMBER 22, 1986 1

OBS	DEPTH	QUARTZ	KSPAR	PHIINTER	RFRAG	CLAY	DOLOMITE	CALCITE	QTZCMT	PLAG	PHISEC	LAUM	KAOL	ANHY	OTHER	GLAUC
1	8485.5	50.4	17.5	4.4	5.0	1.4	0.0	0.2	8.0	8.0	3.8	0.0	0.2	0	0.3	0.2
2	8534.5	45.6	17.8	5.3	8.0	1.6	0.0	1.0	7.3	7.0	4.6	0.0	1.3	0	0.3	0.0
3	8538.5	40.6	19.3	8.3	7.0	1.0	0.0	1.3	8.6	8.3	3.0	0.0	2.3	0	0.0	0.0
4	8542.5	51.3	13.6	5.0	5.3	0.3	0.0	0.0	6.0	10.6	4.6	0.0	2.8	0	0.3	0.0
5	8544.5	43.3	20.0	8.0	8.3	2.0	0.0	0.0	7.0	8.3	2.6	0.0	1.6	0	0.6	0.0
6	8550.5	40.6	16.3	5.0	7.3	2.0	0.0	0.3	10.0	10.0	3.6	0.0	3.3	0	1.3	0.0
7	8560.4	46.3	14.3	6.6	4.3	3.0	0.3	0.3	7.6	11.0	1.8	0.0	3.0	0	1.0	0.3
8	8564.5	43.6	17.3	6.3	5.0	1.3	1.6	0.0	6.6	11.6	1.0	0.0	4.6	0	0.6	0.0
9	8618.5	50.6	11.6	7.0	5.3	1.6	0.6	0.0	9.3	9.0	1.3	0.0	2.0	0	1.3	0.0
10	8621.5	45.0	16.6	6.3	6.6	2.6	0.6	0.0	8.6	8.3	1.6	0.0	2.0	0	0.3	0.0
11	8626.5	45.0	18.3	7.0	5.0	1.6	0.0	0.0	8.0	9.3	4.0	0.0	1.3	0	0.3	0.0
12	8628.5	48.3	17.0	5.3	7.0	0.3	0.0	0.3	5.6	9.6	3.8	0.0	2.8	0	0.0	0.0
13	8632.5	45.6	11.0	8.3	8.0	2.3	0.0	0.0	8.0	10.6	3.0	0.0	2.3	0	0.0	0.0
14	8639.5	42.3	14.6	8.0	8.6	2.6	0.3	0.0	5.6	10.0	3.3	0.0	3.3	0	1.0	0.0
15	8651.5	50.3	14.6	5.3	5.3	0.6	0.6	0.3	5.0	9.0	5.0	0.0	2.3	0	1.3	0.0
16	8652.5	35.3	15.3	6.6	7.6	1.6	0.0	0.0	11.0	12.6	4.3	0.0	4.8	0	0.6	0.0
17	8658.5	46.3	16.3	6.0	9.6	0.6	0.0	0.0	5.3	8.6	3.6	0.0	3.0	0	0.3	0.0
18	8669.5	48.3	14.6	6.6	7.6	0.6	0.6	1.0	5.6	10.3	2.3	0.0	1.6	0	0.3	0.0
19	8676.5	50.6	14.6	7.0	7.0	0.6	0.0	0.3	4.3	9.3	2.6	0.0	3.0	0	0.3	0.0
20	8679.5	42.6	19.0	9.0	3.3	2.0	2.0	0.0	3.6	11.6	4.0	0.0	2.0	0	0.3	0.3
21	8683.5	45.3	16.3	7.3	7.3	2.0	0.0	2.6	4.6	8.6	2.3	0.0	2.6	0	0.6	0.0
22	8688.4	44.3	16.0	8.0	9.6	1.0	0.0	1.3	5.0	11.0	2.6	0.0	0.3	0	0.6	0.0
23	8689.5	36.3	18.0	7.3	10.0	3.6	0.0	0.0	6.0	14.3	1.6	0.0	1.3	0	1.3	0.0

OBS	PHI	KA	GDENSITY	WELL	TOTCMT	TOTFELD	TOTCLAY	TSPHI	RK	TOTAL	QTZ	FELD	RKFRAG	KPLAGR
1	11.1	3.60	2.63	W	8.2	25.5	1.8	8.2	5.2	81.1	0.621455	0.314427	0.064118	2.18750
2	13.0	20.00	2.63	W	8.3	24.8	2.9	9.9	8.0	78.2	0.583120	0.314578	0.102302	2.51429
3	12.4	50.00	2.63	W	9.9	27.6	3.3	11.3	7.0	75.2	0.539894	0.367021	0.093085	2.32530
4	13.4	36.70	2.63	W	6.0	24.2	2.9	9.8	5.3	80.8	0.634901	0.299505	0.065594	1.28302
5	13.0	34.00	2.63	W	7.0	28.3	3.6	10.6	6.3	77.9	0.555841	0.363286	0.080873	2.40964
6	12.7	7.00	2.63	W	10.3	26.3	5.3	8.6	7.3	74.2	0.547170	0.354447	0.098383	1.63000
7	12.8	8.70	2.63	W	8.2	25.3	6.0	8.2	4.6	76.2	0.607812	0.332021	0.060367	1.30000
8	12.6	6.00	2.63	W	8.2	28.9	5.9	7.3	5.0	77.5	0.562581	0.372903	0.064516	1.49138
9	11.8	4.80	2.64	W	9.9	20.6	3.6	8.3	5.3	78.5	0.681438	0.269281	0.069281	1.28889
10	12.7	10.00	2.64	W	9.2	24.9	4.6	7.9	6.6	77.5	0.593548	0.321290	0.085161	2.00000
11	14.7	36.00	2.63	W	8.0	27.8	2.9	11.0	5.0	77.8	0.579897	0.355670	0.064433	1.96774
12	14.5	20.50	2.63	W	5.9	26.6	2.9	8.9	7.0	81.9	0.589744	0.324786	0.085470	1.77083
13	14.5	28.00	2.63	W	8.6	21.6	4.6	11.3	8.0	75.2	0.606383	0.287234	0.106383	1.03774
14	13.4	7.50	2.64	W	5.9	24.6	5.9	11.3	8.6	75.5	0.580265	0.325828	0.113907	1.46000
15	12.8	31.00	2.63	W	5.9	23.6	2.9	10.3	5.3	79.2	0.635101	0.297980	0.066919	1.62222
16	13.8	2.70	2.64	W	11.0	27.9	6.2	10.9	7.6	70.8	0.498588	0.394068	0.107345	1.21429
17	13.2	5.70	2.63	W	5.3	24.9	3.6	9.6	9.6	80.8	0.573020	0.308168	0.118812	1.89535
18	13.9	14.00	2.64	W	7.2	24.9	2.2	8.9	7.6	80.8	0.597772	0.308168	0.094059	1.41748
19	12.9	9.80	2.63	W	4.6	23.9	3.6	9.8	7.0	81.5	0.620859	0.293252	0.085890	1.56989
20	14.1	6.70	2.64	W	5.6	30.6	4.0	13.0	3.6	76.8	0.554688	0.398438	0.046875	1.63793
21	12.4	2.10	2.63	W	7.2	24.9	4.6	9.6	7.3	77.5	0.584516	0.321290	0.094194	1.89535
22	13.8	11.00	2.64	W	6.3	27.0	1.3	10.6	9.6	80.9	0.547590	0.333745	0.118665	1.45455
23	11.5	1.30	2.63	W	6.0	32.3	4.9	8.9	10.0	78.6	0.461832	0.410941	0.127228	1.25874

SAS 15:31 MONDAY, SEPTEMBER 22, 1986 2

OBS	DEPTH	QUARTZ	KSPAR	PHIINTER	RFRAG	CLAY	DOLOMITE	CALCITE	QTZCMT	PLAG	PHISEC	LAUM	KAOL	ANHY	OTHER	GLAUC
24	8701.4	38.0	13.6	10.6	7.3	1.6	1.0	0.3	6.3	12.3	3.6	0.0	3.6	0	1.3	0.0
25	8709.5	46.0	15.6	5.3	4.6	2.3	0.0	0.0	6.6	12.3	3.3	0.0	3.3	0	0.3	0.0
26	8716.5	46.3	14.3	11.6	4.3	2.0	0.0	0.0	6.0	9.0	2.3	0.0	3.0	0	1.0	0.0
27	8718.5	41.6	15.0	12.0	8.6	0.6	0.0	0.0	5.0	12.0	3.0	0.0	1.6	0	0.3	0.0
28	8727.5	38.3	19.0	9.6	6.0	2.0	0.6	0.3	7.0	7.3	5.6	0.0	3.6	0	0.3	0.0
29	8732.5	38.3	17.0	7.0	11.0	2.0	2.0	1.0	7.3	7.6	4.0	0.0	1.6	0	1.0	0.0
30	8734.5	50.3	16.6	8.0	6.3	1.0	0.0	1.6	6.0	6.3	1.6	0.0	1.0	0	1.0	0.0
31	8737.5	36.8	20.4	8.0	8.8	0.4	2.0	0.8	5.2	10.0	4.0	0.4	2.8	0	0.4	0.0
32	8745.4	39.0	15.3	7.0	11.6	2.3	0.3	1.0	4.3	10.0	4.6	0.0	3.0	0	1.3	0.0
33	8746.5	35.3	16.6	8.3	8.0	1.6	0.0	0.0	8.0	15.0	3.0	0.0	4.6	0	1.0	0.3
34	8753.5	45.0	18.0	8.6	5.0	1.0	0.0	0.0	5.6	12.3	1.6	0.0	3.6	0	1.0	0.0
35	8764.5	40.0	14.8	10.0	8.6	2.0	0.3	0.3	5.0	12.0	4.6	0.0	2.6	0	1.6	0.0
36	8773.5	35.0	18.3	3.6	6.0	0.6	9.0	5.3	5.3	9.0	2.6	0.0	2.6	0	2.3	0.0
37	8805.5	36.0	15.0	5.3	6.0	1.3	9.0	0.6	7.0	14.3	1.6	0.0	2.3	0	1.0	0.3
38	8822.5	29.0	23.0	4.0	8.6	8.3	0.6	0.3	5.3	13.0	3.6	0.0	1.6	0	2.7	1.6
39	8825.6	32.0	18.6	6.6	7.0	5.6	0.3	0.3	7.0	12.6	3.0	0.0	2.6	0	2.3	1.6
40	8829.5	48.0	19.3	6.0	5.3	4.0	0.3	0.0	7.0	7.3	1.0	0.0	0.3	0	1.0	0.3
41	8832.3	58.0	11.3	6.0	4.0	2.3	0.3	0.3	8.0	8.3	1.0	0.0	0.0	0	1.6	0.6
42	8841.5	43.6	11.3	6.3	4.0	13.6	0.0	0.3	5.0	12.0	1.6	0.0	0.3	0	1.0	0.6
43	8842.5	41.0	19.6	6.6	7.3	5.3	0.0	1.6	6.6	9.3	1.3	0.0	0.0	0	0.0	0.3
44	8843.4	43.0	16.0	3.3	5.0	15.0	0.3	0.0	1.3	13.3	0.6	0.0	0.3	0	1.0	0.6
45	8851.5	43.0	16.6	2.3	4.0	16.3	0.0	0.0	4.3	12.3	0.3	0.0	0.0	0	0.6	0.0

RFrag - rock fragments

Phisec

Laum

Phi Inter-

OBS	PHI	KA	GDENSITY	WELL	TOTCMT	TOTFELD	TOTCLAY	TSPHI	RK	TOTAL	QTZ	FELD	RKFRAG	KPLAGR
24	14.2	2.30	2.63	W	7.6	25.9	5.2	14.2	7.3	71.2	0.533708	0.383764	0.102528	1.10569
25	13.9	10.00	2.63	W	8.6	27.9	5.6	8.6	4.6	78.5	0.585987	0.355414	0.058599	1.26829
26	13.8	14.00	2.64	W	6.0	23.3	5.0	13.9	4.3	73.9	0.626522	0.315291	0.058187	1.58689
27	14.0	14.00	2.63	W	5.0	27.0	2.2	15.0	8.6	77.2	0.538680	0.349741	0.111399	1.25000
28	14.3	8.30	2.62	W	7.9	26.3	5.6	15.2	6.0	70.6	0.542493	0.372521	0.084986	2.60274
29	12.7	6.30	2.64	W	10.3	24.6	3.6	11.0	11.0	73.9	0.518268	0.332882	0.148850	2.23684
30	13.0	4.30	2.63	W	7.6	22.9	2.0	9.6	6.3	79.5	0.632704	0.288050	0.079245	2.63492
31	12.5	2.40	2.64	W	8.4	30.4	3.2	12.0	8.8	76.0	0.484211	0.400000	0.115789	2.04000
32	15.3	4.20	2.62	W	5.6	25.3	5.3	11.6	11.8	75.9	0.513834	0.333333	0.152833	1.53000
33	14.6	9.70	2.63	W	8.0	31.6	6.2	9.3	8.3	75.2	0.469415	0.420213	0.110372	1.10667
34	13.7	8.60	2.63	W	5.6	28.3	4.6	10.2	5.0	78.3	0.574713	0.381430	0.063857	1.30081
35	15.4	15.00	2.63	W	5.6	26.8	4.6	14.6	6.8	73.2	0.546448	0.363388	0.090164	1.21667
36	10.1	0.98	2.66	W	19.8	27.3	3.2	8.2	6.0	68.3	0.512445	0.399707	0.087848	2.03333
37	13.1	0.92	2.65	W	16.6	29.3	3.6	6.9	6.3	71.6	0.502793	0.409218	0.087989	1.04895
38	15.0	0.70	2.64	W	6.2	36.0	7.9	7.6	10.2	75.2	0.385638	0.478723	0.135638	1.76923
39	16.0	1.32	2.64	W	7.6	31.2	8.2	9.6	8.6	71.8	0.445682	0.434540	0.119777	1.47619
40	15.1	4.40	2.64	W	7.3	26.6	4.3	7.0	5.6	80.2	0.598504	0.331671	0.069825	2.64384
41	12.5	9.40	2.64	W	8.6	17.8	2.3	7.0	4.6	80.2	0.723192	0.219451	0.057357	1.79365
42	15.3	4.90	2.64	W	5.3	23.3	13.9	7.9	4.6	71.5	0.609790	0.325874	0.064336	0.94167
43	14.2	5.80	2.63	W	8.2	28.9	5.3	7.9	7.6	77.5	0.529032	0.372903	0.098065	2.10753
44	13.0	0.50	2.63	W	1.6	29.3	15.3	3.9	5.6	77.9	0.551990	0.376123	0.071887	1.20301
45	10.4	0.60	2.63	W	4.3	28.9	16.3	2.6	4.0	75.9	0.566535	0.380764	0.052701	1.34959

VARIABLE	N	MEAN	STD DEV	SUM	MINIMUM	MAXIMUM
DEPTH	45	8693.17555556	98.70200385	391192.9000000	8485.50000000	8851.50000000
QUARTZ	45	43.16222222	5.78977503	1942.3000000	29.00000000	58.00000000
KSPAR	45	16.28222222	2.53988984	732.7000000	11.00000000	23.00000000
PHIINTER	45	6.84222222	2.02366554	307.9000000	2.30000000	12.00000000
RFRAG	45	6.69555556	1.95051923	301.3000000	3.30000000	11.60000000
CLAY	45	2.78444444	3.56032146	125.3000000	0.30000000	16.30000000
DOLOMITE	45	0.72444444	1.88789873	32.6000000	0	9.00000000
CALCITE	45	0.50888889	0.92707316	22.9000000	0	5.30000000
QTZCMT	45	6.36222222	1.78762017	286.3000000	1.30000000	11.00000000
PLAG	45	10.27555556	2.19505183	462.4000000	6.30000000	15.00000000
PHISEC	45	2.83777778	1.30371652	127.7000000	0.30000000	5.60000000
LAUM	45	0.00888889	0.05962848	0.4000000	0	0.40000000
KAOL	45	2.16444444	1.26170079	97.4000000	0	4.60000000
ANHY	45	0	0	0	0	0
OTHER	45	0.83333333	0.61498489	37.5000000	0	2.70000000
GLAUC	45	0.15555556	0.35964348	7.0000000	0	1.60000000
PHI	45	13.39777778	1.27844551	602.9000000	10.10000000	16.00000000
KA	45	10.79377778	11.37078139	485.7200000	0.50000000	50.00000000
GDENSITY	45	2.63400000	0.00719848	118.5300000	2.62000000	2.66000000
TOTCMT	45	7.60444444	2.93977083	342.2000000	1.60000000	19.60000000
TOTFELD	45	26.55777778	3.26179600	1195.1000000	17.60000000	38.00000000
TOTCLAY	45	4.94888889	3.16498041	222.7000000	1.30000000	16.30000000
TSPHI	45	9.68000000	2.63029552	435.6000000	2.60000000	15.20000000
RK	45	6.85111111	1.95048039	308.3000000	3.60000000	11.60000000

VARIABLE	N	MEAN	STD DEV	SUM	MINIMUM	MAXIMUM
TOTAL	45	78.57111111	3.33743384	3445.7000000	68.30000000	81.90000000
QTZ	45	0.56245727	0.06090343	25.3105771	0.38563830	0.72319202
FELD	45	0.34785184	0.04794224	15.6533329	0.21945137	0.47872340
RKFRAG	45	0.08969089	0.02596955	4.0360900	0.04687500	0.15283267
KPLAGR	45	1.66401385	0.47306097	74.8808233	0.94166667	2.64383562

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	DEPTH	QUARTZ	KSPAR	PHIINTER	RFRAG	CLAY	DOLOMITE	CALCITE	QTZCMT	PLAG	PHISEC	LAUM
DEPTH	1.00000	-0.31423	0.04119	-0.07369	-0.02983	0.52918	0.21904	0.13616	-0.42763	0.29023	-0.34659	0.06847
	0.0000	0.0355	0.7882	0.6305	0.8457	0.0002	0.1483	0.3725	0.0034	0.0531	0.0197	0.6550
QUARTZ	-0.31423	1.00000	-0.49968	-0.04546	-0.43069	-0.14779	-0.33860	-0.17726	0.00170	-0.54785	-0.21952	-0.16753
	0.0355	0.0000	0.0005	0.7668	0.0031	0.3326	0.0229	0.2441	0.9911	0.0001	0.1474	0.2713
KSPAR	0.04119	-0.49968	1.00000	-0.14634	0.18147	-0.01260	0.09394	0.19398	-0.08224	-0.05650	0.15381	0.24717
	0.7882	0.0005	0.0000	0.3374	0.2329	0.9345	0.5394	0.2017	0.5912	0.7124	0.3131	0.1016
PHIINTER	-0.07369	-0.04546	-0.14634	1.00000	0.15960	-0.41282	-0.20789	-0.15781	0.02326	-0.05717	0.21293	0.08722
	0.6305	0.7668	0.3374	0.0000	0.2950	0.0048	0.1706	0.3005	0.8795	0.7091	0.1602	0.5689
RFRAG	-0.02983	-0.43069	0.18147	0.15960	1.00000	-0.27757	-0.05811	0.16278	0.00523	0.03304	0.34318	0.16449
	0.8457	0.0031	0.2329	0.2950	0.0000	0.0649	0.7048	0.2853	0.9728	0.8294	0.0210	0.2802
CLAY	0.52918	-0.14779	-0.01260	-0.41282	-0.27757	1.00000	-0.14179	-0.15736	-0.35951	0.31903	-0.46312	-0.10211
	0.0002	0.3326	0.9345	0.0048	0.0649	0.0000	0.3529	0.3019	0.0153	0.0327	0.0014	0.5045
DOLOMITE	0.21904	-0.33860	0.09394	-0.20789	-0.05811	-0.14179	1.00000	0.54812	-0.06349	0.12541	-0.07352	0.10301
	0.1483	0.0229	0.5394	0.1706	0.7048	0.3529	0.0000	0.0001	0.6786	0.4117	0.6313	0.5007
CALCITE	0.13616	-0.17726	0.19398	-0.15781	0.16278	-0.15736	0.54812	1.00000	-0.14420	-0.27698	-0.02003	0.04787
	0.3725	0.2441	0.2017	0.3005	0.2853	0.3019	0.0001	0.0000	0.3446	0.0655	0.8961	0.7548

0QTZCMT	-0.42763	0.00170	-0.08224	0.02326	0.00523	-0.35951	-0.06349	-0.14420	1.00000	-0.20441	0.09463	-0.09912
	0.0034	0.9911	0.5912	0.8795	0.9728	0.0153	0.6786	0.3446	0.0000	0.1780	0.5363	0.5171
0PLAG	0.29023	-0.54765	-0.05850	-0.05717	0.03304	0.31903	0.12541	-0.27698	-0.20441	1.00000	-0.12459	-0.01914
	0.0531	0.0001	0.7124	0.7091	0.8294	0.0327	0.4117	0.0655	0.1780	0.0000	0.4148	0.9007
0PHISEC	-0.34659	-0.21952	0.15381	0.21293	0.34318	-0.46312	-0.07352	-0.02003	0.09463	-0.12459	1.00000	0.13591
	0.0197	0.1474	0.3131	0.1602	0.0210	0.0014	0.6313	0.8961	0.5363	0.4148	0.0000	0.3734

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0	DEPTH	QUARTZ	KSPAR	PHIINTER	RFRAG	CLAY	DOLOMITE	CALCITE	QTZCMT	PLAG	PHISEC	LAUM
0LAUM	0.08847	-0.16753	0.24717	0.08722	0.16449	-0.10211	0.10301	0.04787	-0.09912	-0.01914	0.13591	1.00000
	0.6550	0.2713	0.1018	0.5689	0.2802	0.5045	0.5007	0.7548	0.5171	0.9007	0.3734	0.0000
0KAOL	-0.29068	-0.30546	-0.06809	0.26702	0.14520	-0.47313	0.09245	-0.08424	0.22974	0.26581	0.39213	0.07680
	0.0527	0.0413	0.6662	0.0762	0.3413	0.0010	0.5458	0.5822	0.1290	0.0776	0.0077	0.6161
0ANHY	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0OTHER	0.48416	-0.42093	0.07532	-0.17447	0.04541	0.19477	0.29684	0.25101	-0.08028	0.22572	-0.11074	-0.10743
	0.0008	0.0040	0.6229	0.2517	0.7671	0.1998	0.0478	0.0963	0.6001	0.1360	0.4689	0.4824
0GLAUC	0.46823	-0.35948	0.25837	-0.27341	-0.09230	0.41763	0.00899	-0.09899	-0.09870	0.29195	-0.13933	-0.06594
	0.0012	0.0153	0.0866	0.0892	0.5465	0.0043	0.9836	0.5177	0.5274	0.0517	0.3613	0.6669
0PHI	0.27718	-0.21181	-0.01284	0.36385	0.13382	-0.00071	-0.30800	-0.34991	-0.04825	0.22662	0.30024	-0.10723
	0.0653	0.1625	0.9333	0.0140	0.3808	0.9963	0.0396	0.0185	0.7530	0.1344	0.0451	0.4832
0KA	-0.53074	0.30898	-0.03968	0.17163	-0.09170	-0.31129	-0.24932	-0.12439	0.21133	-0.26809	0.32279	-0.11254
	0.0002	0.0389	0.7958	0.2596	0.5491	0.0374	0.0986	0.4156	0.1635	0.0750	0.0306	0.4617
0GDENSITY	0.28429	-0.19533	0.00522	-0.17723	-0.10554	-0.01614	0.67998	0.40863	0.08323	0.05667	-0.25137	0.12708
	0.0584	0.1985	0.9728	0.2441	0.4902	0.9162	0.0001	0.0058	0.6799	0.7116	0.0958	0.4055
0TOTCMT	-0.07504	-0.27571	0.07650	-0.16736	0.02053	-0.36136	0.77852	0.58064	0.51982	-0.13149	0.00677	0.04128
	0.6242	0.0688	0.6174	0.2718	0.8935	0.0147	0.0001	0.0001	0.0003	0.3892	0.9648	0.7879
0TOTFELD	0.22739	-0.75764	0.74066	-0.15243	0.16354	0.20488	0.15754	-0.03535	-0.20160	0.62896	0.03592	0.17959
	0.1330	0.0001	0.0001	0.3175	0.2831	0.1770	0.3013	0.8177	0.1842	0.0001	0.8148	0.2378
0TOTCLAY	0.47940	-0.28802	-0.04052	-0.35794	-0.25436	0.93630	-0.12264	-0.21060	-0.31283	0.46484	-0.36465	-0.08425
	0.0009	0.0550	0.7916	0.0158	0.0918	0.0001	0.4222	0.1649	0.0364	0.0013	0.0138	0.5822
0TSPHI	-0.22848	-0.14378	-0.03635	0.87491	0.29289	-0.54716	-0.19638	-0.13134	0.08480	-0.10574	0.85948	0.13447
	0.1311	0.3460	0.8126	0.0001	0.0509	0.0001	0.1980	0.3898	0.6724	0.4894	0.0001	0.3785
0RK	0.05850	-0.49698	0.22911	0.10919	0.98300	-0.20057	-0.05682	0.14453	-0.01280	0.08688	0.31749	0.15233
	0.7124	0.0005	0.1301	0.4752	0.0001	0.1865	0.7108	0.3435	0.9345	0.5704	0.0338	0.3178
0TOTAL	-0.28988	0.70388	-0.00907	-0.18403	-0.01283	-0.17337	-0.46884	-0.25759	-0.20144	-0.28458	-0.16015	-0.02609
	0.0534	0.0001	0.9528	0.2816	0.9333	0.2547	0.0012	0.0876	0.1845	0.0581	0.2933	0.8649
0QTZ	-0.27860	0.95861	-0.01830	0.02119	-0.52881	-0.10488	-0.24450	-0.12458	0.07594	-0.56048	-0.21413	-0.19587
	0.0639	0.0001	0.0001	0.8901	0.0002	0.4929	0.1055	0.4148	0.6200	0.0001	0.1578	0.1972
0FELD	0.30072	-0.89816	0.66159	-0.09511	0.14682	0.22824	0.30310	0.06245	-0.11112	0.64417	0.08656	0.18583
	0.0447	0.0001	0.0001	0.5343	0.3365	0.1316	0.0430	0.6836	0.4674	0.0001	0.5718	0.2763

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0	DEPTH	QUARTZ	KSPAR	PHIINTER	RFRAG	CLAY	DOLOMITE	CALCITE	QTZCMT	PLAG	PHISEC	LAUM
0RKFRAG	0.09821	-0.59371	0.22887	0.12590	0.96480	-0.17540	0.01384	0.17689	0.02703	0.12523	0.34237	0.15322
	0.5210	0.0001	0.1308	0.4099	0.0001	0.2491	0.9281	0.2451	0.8601	0.4124	0.0213	0.3150
0KPLAGR	-0.16527	0.12915	0.60482	-0.03043	0.06845	-0.23317	-0.02488	0.31808	0.13918	-0.80413	0.15851	0.12117
	0.2779	0.3978	0.0001	0.8427	0.6550	0.1232	0.8711	0.0332	0.3619	0.0001	0.2983	0.4278

0	KAOL	ANHY	OTHER	GLAUC	PHI	KA	GDENSITY	TOTCMT	TOTFELD	TOTCLAY	TSPHI	RK
0DEPTH	-0.29068	0.00000	0.48416	0.46823	0.27718	-0.53074	0.28429	-0.07504	0.22739	0.47940	-0.22848	0.05650
	0.0527	1.0000	0.0008	0.0012	0.0653	0.0002	0.0584	0.6242	0.1330	0.0009	0.1311	0.7124
0QUARTZ	-0.30546	0.00000	-0.42093	-0.35948	-0.21181	0.30898	-0.19533	-0.27571	-0.75764	-0.28802	-0.14378	-0.49698
	0.0413	1.0000	0.0040	0.0153	0.1625	0.0389	0.1985	0.0688	0.0001	0.0550	0.3460	0.0005
0KSPAR	-0.06809	0.00000	0.07532	0.25837	-0.01284	-0.03968	0.00522	0.07650	0.74066	-0.04052	-0.03635	0.22911
	0.6662	1.0000	0.6229	0.0866	0.9333	0.7958	0.9728	0.6174	0.0001	0.7916	0.8126	0.1301
0PHIINTER	0.26702	0.00000	-0.17447	-0.27341	0.36385	0.17163	-0.17723	-0.16736	-0.15243	-0.35794	0.87491	0.10919
	0.0762	1.0000	0.2517	0.0892	0.0140	0.2596	0.2441	0.2718	0.3175	0.0158	0.0001	0.4752
0RFRAG	0.14520	0.00000	0.04541	-0.09230	0.13382	-0.09170	-0.10554	0.02053	0.16354	-0.25436	0.29289	0.98300
	0.3413	1.0000	0.7671	0.5465	0.3808	0.5491	0.4902	0.8935	0.2831	0.0918	0.0509	0.0001
0CLAY	-0.47313	0.00000	0.19477	0.41763	-0.00071	-0.31129	-0.01614	-0.36136	0.20488	0.93630	-0.54716	-0.20057
	0.0010	1.0000	0.1998	0.0043	0.9963	0.0374	0.9162	0.0147	0.1770	0.0001	0.0001	0.1865
0DOLOMITE	0.09245	0.00000	0.29684	0.00899	-0.30800	-0.24932	0.67998	0.77852	0.15754	-0.12264	-0.19638	-0.05682
	0.5458	1.0000	0.0478	0.9636	0.0396	0.0986	0.0001	0.0001	0.3013	0.4222	0.1980	0.7108
0CALCITE	-0.08424	0.00000	0.25101	-0.09899	-0.34991	-0.12439	0.40863	0.58064	-0.03535	-0.21060	-0.13134	0.14453
	0.5822	1.0000	0.0963	0.5177	0.0185	0.4156	0.0058	0.0001	0.8177	0.1649	0.3898	0.3435
0QTZCMT	0.22974	0.00000	-0.08028	-0.09870	-0.04825	0.21133	0.08323	0.51982	-0.20160	-0.31283	0.08480	-0.01280
	0.1290	1.0000	0.6001	0.5274	0.7530	0.1635	0.6799	0.0003	0.1842	0.0364	0.6724	0.9345
0PLAG	0.28581	0.00000	0.22572	0.29195	0.22662	-0.26809	0.05667	-0.13149	0.62896	0.46484	-0.10574	0.08688
	0.0776	1.0000	0.1360	0.0517	0.1344	0.0750	0.7116	0.3892	0.0001	0.0013	0.4894	0.5704
0PHISEC	0.39213	0.00000	-0.11074	-0.13933	0.30024	0.32279	-0.25137	0.00677	0.03592	-0.36465	0.85948	0.31749
	0.0077	1.0000	0.4689	0.3613	0.0451	0.0306	0.0958	0.9648	0.8148	0.0138	0.0001	0.0336
0LAUM	0.07680	0.00000	-0.10743	-0.06594	-0.10723	-0.11254	0.12708	0.04126	0.17959	-0.08425	0.13447	0.15233
	0.6161	1.0000	0.4824	0.6669	0.4832	0.4617	0.4055	0.7879	0.2378	0.5822	0.3785	0.3178
0KAOL	1.00000	0.00000	-0.00840	-0.21893	0.15434	0.01322	-0.12912	0.17406	0.12742	-0.13359	0.39979	0.10484
	0.0000	1.0000	0.9563	0.1485	0.3114	0.9313	0.3979	0.2528	0.4042	0.3817	0.0065	0.4931

1 SAS 15:31 MONDAY, SEPTEMBER 22, 1988 7

0 CORRELATION COEFFICIENTS / PROB > |R| UNDER HO:RHO=0 / N = 45

0	KAOL	ANHY	OTHER	GLAUC	PHI	KA	GDENSITY	TOTCMT	TOTFELD	TOTCLAY	TSPHI	RK
0ANHY	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
ODTHER	-0.00840	0.00000	1.00000	0.60183	0.08958	-0.42976	0.39532	0.21866	0.21055	0.21575	-0.18912	0.15638
	0.9563	1.0000	0.0000	0.0001	0.6497	0.0032	0.0072	0.1490	0.1650	0.1548	0.2134	0.3050
OGLAUC	-0.21893	0.00000	0.60183	1.00000	0.38049	-0.28821	0.24581	-0.08687	0.39765	0.38252	-0.27942	0.09209
	0.1485	1.0000	0.0001	0.0000	0.0099	0.0549	0.1036	0.5704	0.0068	0.0095	0.0630	0.5474
OPHI	0.15434	0.00000	0.08958	0.38049	1.00000	0.09668	-0.19936	-0.33965	0.14250	0.08073	0.42875	0.20398
	0.3114	1.0000	0.6497	0.0099	0.0000	0.5275	0.1892	0.0224	0.3504	0.6919	0.0033	0.1789
OKA	0.01322	0.00000	-0.42976	-0.28821	0.09668	1.00000	-0.28290	-0.07312	-0.21131	-0.34491	0.29204	-0.14484
	0.9313	1.0000	0.0032	0.0549	0.5275	0.0000	0.0597	0.6331	0.1635	0.0203	0.0518	0.3425
OGDENSITY	-0.12912	0.00000	0.39532	0.24581	-0.19936	-0.28290	1.00000	0.80593	0.04220	-0.08963	-0.26095	-0.06022
	0.3979	1.0000	0.0072	0.1036	0.1892	0.0597	0.0000	0.0001	0.7831	0.8495	0.0834	0.6944
OTOTCMT	0.17406	0.00000	0.21866	-0.08687	-0.33965	-0.07312	0.80593	1.00000	-0.02892	-0.33711	-0.12540	0.00452
	0.2528	1.0000	0.1490	0.5704	0.0224	0.6331	0.0001	0.0000	0.8504	0.0235	0.4118	0.9785
OTOTFELD	0.12742	0.00000	0.21055	0.39766	0.14250	-0.21131	0.04220	-0.02892	1.00000	0.28127	-0.09947	0.23687
	0.4042	1.0000	0.1650	0.0068	0.3504	0.1635	0.7831	0.8504	0.0000	0.0612	0.5156	0.1172
OTOTCLAY	-0.13359	0.00000	0.21575	0.38252	0.08073	-0.34491	-0.08963	-0.33711	0.28127	1.00000	-0.45813	-0.18383
	0.3817	1.0000	0.1546	0.0095	0.6919	0.0203	0.6495	0.0235	0.0612	0.0000	0.0018	0.2267
OTSPHI	0.39979	0.00000	-0.18912	-0.27942	0.42875	0.29204	-0.26095	-0.12540	-0.09947	-0.45813	1.00000	0.24137
	0.0085	1.0000	0.2134	0.0630	0.0033	0.0518	0.0834	0.4118	0.5156	0.0018	0.0000	0.1102
ORK	0.10484	0.00000	0.15638	0.09209	0.20398	-0.14484	-0.06022	0.00452	0.23687	-0.18383	0.24137	1.00000
	0.4931	1.0000	0.3050	0.5474	0.1789	0.3425	0.6944	0.9765	0.1172	0.2267	0.1102	0.0000
OTOTAL	-0.34411	0.00000	-0.43305	-0.18116	-0.10896	0.24484	-0.33280	-0.50393	-0.19858	-0.33220	-0.20558	-0.04624
	0.0206	1.0000	0.0030	0.2337	0.4762	0.1050	0.0255	0.0004	0.1910	0.0258	0.1755	0.7630
OQTZ	-0.24407	0.00000	-0.36151	-0.38724	-0.21784	0.28874	-0.12024	-0.15410	-0.85863	-0.21528	-0.08983	-0.59822
	0.1061	1.0000	0.0147	0.0086	0.1506	0.0544	0.4314	0.3122	0.0001	0.1556	0.5573	0.0001
OFELD	0.22428	0.00000	0.33719	0.42358	0.15799	-0.27033	0.15780	0.15014	0.94866	0.34618	-0.03028	0.22472
	0.1386	1.0000	0.0235	0.0037	0.2999	0.0725	0.3005	0.3249	0.0001	0.0198	0.8435	0.1378
ORKFRAG	0.15835	0.00000	0.22532	0.12617	0.21919	-0.17810	-0.00934	0.08421	0.26234	-0.13418	0.26656	0.98809
	0.2989	1.0000	0.1367	0.4089	0.1480	0.2418	0.9515	0.5823	0.0817	0.3795	0.0767	0.0001
OKPLAGR	-0.26382	0.00000	-0.14498	-0.09370	-0.17170	0.18379	-0.06165	0.17141	-0.07018	-0.38746	0.05515	0.05118
	0.0799	1.0000	0.3420	0.5404	0.2594	0.2823	0.6875	0.2602	0.6469	0.0130	0.7190	0.7385

O CORRELATION COEFFICIENTS / PROB > |R| UNDER H0:RHO=0 / N = 45

O	TOTAL	QTZ	FELD	RKFRAG	KPLAGR
ODEPTH	-0.28988	-0.27860	0.30072	0.09821	-0.16527
	0.0534	0.0639	0.0447	0.5210	0.2779
OQUARTZ	0.70388	0.95861	-0.69618	-0.59371	0.12915
	0.0001	0.0001	0.0001	0.0001	0.3978
OKSPAR	-0.00907	-0.61830	0.66159	0.22867	0.60482
	0.9528	0.0001	0.0001	0.1308	0.0001
OPHIINTER	-0.18403	0.02119	-0.09511	0.12590	-0.03043
	0.2816	0.8901	0.5343	0.4099	0.8427
ORFRAG	-0.01283	-0.52681	0.14862	0.98480	0.08845
	0.9333	0.0002	0.3365	0.0001	0.5550
OCLAY	-0.17337	-0.10488	0.22824	-0.17540	-0.23317
	0.2547	0.4929	0.1316	0.2491	0.1232
ODOLOMITE	-0.46664	-0.24450	0.30310	0.01384	-0.02488
	0.0012	0.1055	0.0430	0.9281	0.8711
OCALCITE	-0.25759	-0.12458	0.06245	0.17689	0.31808
	0.0876	0.4148	0.6836	0.2451	0.0332
OQTZCMT	-0.20144	0.07594	-0.11112	0.02703	0.13916
	0.1845	0.6200	0.4874	0.8601	0.3619
OPLAG	-0.28458	-0.56048	0.64417	0.12523	-0.80413
	0.0581	0.0001	0.0001	0.4124	0.0001
OPHISEC	-0.18015	-0.21413	0.08656	0.34237	0.15851
	0.2933	0.1578	0.5718	0.0213	0.2983
OLAUM	-0.02609	-0.19587	0.18583	0.15322	0.12117
	0.8649	0.1972	0.2763	0.3150	0.4278
OKAOL	-0.34411	-0.24407	0.22428	0.15835	-0.26382
	0.0206	0.1061	0.1386	0.2989	0.0799
OANHY	0.00000	0.00000	0.00000	0.00000	0.00000
	1.0000	1.0000	1.0000	1.0000	1.0000
ODTHER	-0.43305	-0.36151	0.33719	0.22532	-0.14498
	0.0030	0.0147	0.0235	0.1367	0.3420

O CORRELATION COEFFICIENTS / PROB > |R| UNDER H0:RHO=0 / N = 45

O	TOTAL	QTZ	FELD	RKFRAG	KPLAGR
OGLAUC	-0.18116	-0.38724	0.42358	0.12617	-0.09370
	0.2337	0.0086	0.0037	0.4089	0.5404
OPHI	-0.10896	-0.21784	0.15799	0.21919	-0.17170
	0.4762	0.1506	0.2999	0.1480	0.2594
OKA	0.24484	0.28874	-0.27033	-0.17810	0.18379
	0.1050	0.0544	0.0725	0.2418	0.2823
OGDENSITY	-0.33280	-0.12024	0.15780	-0.00934	-0.06165
	0.0255	0.4314	0.3005	0.9515	0.6875
OTOTCMT	-0.50393	-0.15410	0.15014	0.08421	0.17141
	0.0004	0.3122	0.3249	0.5823	0.2602
OTOTFELD	-0.19858	-0.85863	0.94866	0.26234	-0.07018
	0.1910	0.0001	0.0001	0.0817	0.6469

OTOTCLAY	-0.33220	-0.21528	0.34616	-0.13418	-0.36746
	0.0258	0.1556	0.0198	0.3795	0.0130
OTSPHI	-0.20558	-0.08983	-0.03028	0.26656	0.05515
	0.1755	0.5573	0.8435	0.0767	0.7190
ORK	-0.04624	-0.59822	0.22472	0.98809	0.05118
	0.7630	0.0001	0.1378	0.0001	0.7385
OTOTAL	1.00000	0.47420	-0.49617	-0.19011	0.18537
	0.0000	0.0010	0.0005	0.1967	0.2228
OQTZ	0.47420	1.00000	-0.91328	-0.65919	0.08078
	0.0010	0.0000	0.0001	0.0001	0.5978
OFELD	-0.49617	-0.91328	1.00000	0.29571	-0.11669
	0.0005	0.0001	0.0000	0.0486	0.4453
ORKFRAG	-0.19011	-0.65919	0.29571	1.00000	0.02597
	0.1967	0.0001	0.0486	0.0000	0.8655
OKPLAGR	0.18537	0.08078	-0.11669	0.02597	1.00000
	0.2228	0.5978	0.4453	0.8655	0.0000



8000229941
31 28S 20E 2
WELL TEST + ANALYSI CORE ANL/DESCRIPTIO

CA

FEE 17-2
BELRIDGE N

Well Name:	17-2		Coding date:	01/00/1900
Well UWI:	0402977930		This sheet coded by:	Lester Carcamo
Sec-Twp-Rge:	S02-T28S-R20E		Vendor:	Shell Development Company
Central Files Barcode:	8000229941		Vendor file number	
Report Title:	MINERALOGY 8485-8851		Report Date:	05/04/1986
Sample Type	Reservoir: a, b, c, d, e.		ANOTATED	NO
X Conventional-Plug	Agua		Data containers information	
Conventional-Whole			LIVE-LINK	Scan Requested
Sidewall			Core DB	YES
Cuttings			OpenWorks	Notes
Mudlog Sample			Binders	
Produced	Top Depth		R:drive	
Surface	8485		LAS file	
Geological Outcrop	Bottom Depth	X	Ambient Pressure	
Other	8851		Stressed Pressure	

Check all pertaining to each report - submit sheet for each report

	Core Report Type	Core Report Subtype
	Routine Analysis	Description-UV Light
	Routine Analysis	Photography-White/UV
	Routine Analysis	Density-Grain
	Routine Analysis	Routine Analysis - Other
	Routine Analysis	Porosity-Other
	Routine Analysis	Natural-Spectral Gamma Ray
	Routine Analysis	Permeability-Air
	Routine Analysis	Density-Matrix
	Routine Analysis	Fluid Saturation-PKS
	Routine Analysis	Sieve Analysis
	Routine Analysis	Description-Lithological
	Petrophysical	Formation Resistivity Factor
	Petrophysical	Cementation Factor
	Petrophysical	Luminosity Analysis
	Petrophysical	Oil Viscosity
	Petrophysical	Petrophysical - Other
	Petrophysical	Saturation Exponent
	Petrophysical	Tortuosity
	Petrophysical	Formation Resistivity Index
	Petrophysical	Model Evaluation
	Petrophysical	Oil Gravity-Density
	Petrophysical	Oil Pyrolysis
	Petrophysical	Formation Water Resistivity
	Petrophysical	Matrix Neutron Index
	Petrophysical	Oil Chromatography
	Petrophysical	Bulk PEF
	Petrophysical	CAT Scan
	Petrophysical	Mercury Injection
	Petrophysical	Capillary Pressure Analysis
	petrophysical	Cation Exchange Capacity
	Petrophysical	NMR Analysis
	Petrophysical	Pore Throat Analysis

	Core Report Type	Core Report Subtype
	Petrophysical-Flow Study	Heat Transfer Coefficient
	Petrophysical-Flow Study	Fines Migration-Mobilization Velocity
	Petrophysical-Flow Study	Petrophysical-Flow Study - Other
	Petrophysical-Flow Study	Permeability-Oil
	Petrophysical-Flow Study	Rock Pore Preferred Wettability
	Petrophysical-Flow Study	Permeability-Toluene
	Petrophysical-Flow Study	Relative Permeability
	Petrophysical-Flow Study	Permeability-Brine
	Petrophysical-Flow Study	Permeability-Vertical
	Petrophysical-Flow Study	Permeability-Water
	Geochemistry	Geochemistry - Other
	Geochemistry	Formation Water-Brine Chemical
	Geological Service	Description-Petrographic
	Geological Service	Formation-Rock Unit Identification
	Geological Service	Rock Age
X	Geological Service	Mineralogy-XRD/FTIR
	Geological Service	Geological Service - Other
	Geological Service	Photography-Infra Red
	Geological Service	Paleontological Analysis
	Geological Service	Box Report
	Geological Service	Thin Section
	Geological Service	Description-Field Engineer Report
	Geological Service	Hydralic Unit Analysis
	Geological Service	Scanning Electron Microscopy
	Reservoir Fluid	Steamflood Analysis
	Reservoir Fluid	Produced Gas Analysis
	Reservoir Fluid	Reservoir Fluid - Other
	Reservoir Fluid	Produced Water Analysis
	Reservoir Fluid	Produced Oil Analysis
	Rock Mechanics	Rock Mechanics - Other
	Rock Mechanics	Rock Acoustic Velocity
	Rock Mechanics	Surface Area Per Unit Volume
	Rock Mechanics	Rock Compressibility Analysis
	Other	Other

Lester Carcamo 07/23/2009

Appendix 2G
Geochemistry Supporting Data

Water Lab Reports

ZALCO LABORATORIES, INC.
Analytical and Consulting Services
4309 Armour Avenue
Bakersfield, California 93308
(661) 395-0539
FAX (661) 395-3069

CLIENT:	Aera Energy LLC	**Report Date:**	11/26/03
Lab Order:	0311207	**Lab ID:**	0311207-001A
Project:		**Collection Date:**	11/20/03 10:40:00 AM
Client Sample ID:	17-2N, Water Sample	**Matrix:**	
Report Comment:			

Analyses	Method	Result	Units	DLR	Date Analyzed	Qual.
METALS						
Boron	E200.7	44	mg/L	1.0	11/20/03	
Calcium	E200.7	860	mg/L	0.50	11/20/03	
Iron	E200.7	43	mg/L	10	11/20/03	
Magnesium	E200.7	110	mg/L	0.50	11/20/03	
Potassium	E200.7	43	mg/L	5.0	11/20/03	
Sodium	E200.7	10000	mg/L	700	11/20/03	
ALKALINITY						
Alkalinity	M2320 B	460	mg/L CaCO3		11/20/03	
Bicarbonate, HCO3	M2320 B	560	mg/L CaCO3		11/20/03	
Carbonate, CO3	M2320 B	0	mg/L CaCO3		11/20/03	
Hydroxide, OH-	M2320 B	0	mg/L CaCO3		11/20/03	
ANIONS						
Chloride	E300	25000	mg/L	400	11/20/03	
Sulfate	E300	16	mg/L	0.50	11/20/03	
ELECTRICAL CONDUCTANCE						
Electrical Conductivity	SM 2510 B	58.29	mmhos/cm	0.010	11/20/03	
HARDNESS						
Hardness	M2340 B	2700	mg/L	2.0	11/20/03	
PH						
pH	E150.1	6.6	pH Units		11/20/03	
RESISTIVITY						
Resistivity	SM2510 B	0.17	ohms/cm		11/20/03	
SPECIFIC GRAVITY, DERIVED FROM MG/L TDS						
Specific Gravity (derived from TDS)	M2540 C	1.030	sp. gr.		11/20/03	
SULFIDE						
Sulfide	E376.1	< 2.0	mg/L	2.0	11/20/03	
TOTAL DISSOLVED SOLIDS						
Total Dissolved Solids	M2540 C	41000	mg/L	10	11/20/03	

Qualifiers / Abbreviations:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
H - Hold Time Exceeded
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
DLR: Detection Limit for Reporting
NSS - Non-Sufficient Sample Amount

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

Data uploaded to OpenWorks®

SHELL CALIF PROD INC
P.O. BOX 11164
BAKERSFIELD CA. 93389

LABORATORY NO : 65062
DATE RECEIVED : 10/22/85
DATE REPORTED : 10/31/85

ATTENTION : J.R. THURMAN
North Belridge 43-27
Lower 64 Zone
8818'-8858'
8873'-8950'

SAMPLE DESCRIPTION : TEST 3 GAS LIFT UPPER ZONE 12 PM 10/11

GEOCHEMICAL WATER ANALYSIS

CONSTITUENTS	MG/L	MEQ/L	REACTING PERCENT
CALCIUM, CA	310.00	15.46	2.19
MAGNESIUM, MG	27.00	2.22	0.31
SODIUM, NA	6540.00	284.38	40.40
POTASSIUM, K	900.00	23.01	3.27
IRON, FE (TOTAL)	500.00	26.88	3.81
CHLORIDE, CL	12040.00	339.39	48.22
SULFATE, S04	110.00	2.29	0.32
SULFIDE, S	0.00		
BICARBONATE, HC03	620.00	10.16	1.44
CARBONATE, C03	0.00	0.00	0.00
HYDROXIDE	0.00	0.00	0.00
TOTALS (SUM)	20731.85	703.81	100.00
BORON	46.00		
TOTAL DIS SOLIDS (GRAV)	21060.00		
TOTAL HARDNESS AS CAC03	1781.20		
SODIUM CHLORIDE, TOTAL	19785.85		

PH	7.33	PRIMARY SALINITY	80.81
SPECIFIC GRAVITY @ 60 F	1.016	SECONDARY SALINITY	16.28
		TOTAL SALINITY	97.09
ELECTRICAL CONDUCTIVITY, (E.C., MILLIMHO/CM @ 25C)	32.53	PRIMARY ALKALINITY	0.00
		SECONDARY ALKALINITY	2.88
RESISTIVITY @ 25 C (OHM-METERS)	0.307	TOTAL ALKALINITY	2.88
	MG/L	LANGELIER SCALE INDEX	0.99
BARIUM, BA	0.6	STIFF-DAVIS INDEX	0.19
SILICA, SiO_2	13		
STRONTIUM, SR	13		

COPIES:

WELL FILES

JIM ETHERTON
LABORATORY DIRECTOR

4309 Armour Avenue Bakersfield, California 93308
[805] 395-0539

Appendix # 2

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Aera Energy LLC - Belridge
59231 Main Camp
McKittrick, CA 93251

Reported: 01/25/2017 22:24
Project: Water Sample
Project Number: [none]
Project Manager: Tony Singh

BCL Sample ID: 1701422-01 | **Client Sample Name:** 25-26N, 1/16/2017 9:03:00AM, GTA

Geochemical Analysis

pH	7.06	EPA 150.1	Electrical Conductivity mmhos/cm @ 25 C:	47.8	EPA 120.1
Specific Gravity @ 15.6 C:	1.031	ASTM D1429	Resistivity, ohm meters @ 25 C:	0.21	Calculation

	mg/L	meq/L	Reacting Percent	Method
Dissolved Calcium	680	34	3.15	EPA 6010B
Dissolved Magnesium	82	6.7	0.62	EPA 6010B
Dissolved Sodium	11000	470	44.00	EPA 6010B
Dissolved Potassium	210	5.4	0.50	EPA 6010B
Dissolved Iron	22	1.2	0.11	EPA 6010B
Dissolved Manganese	0.40	0.010	ND	EPA 6010B
Chloride	19000	530	49.14	EPA 300.0
Sulfate	940	20	1.82	EPA 300.0
Hydroxide	ND	0.0	0.00	EPA 310.1
Carbonate	ND	0.0	0.00	EPA 310.1
Bicarbonate	420	7.0	0.65	EPA 310.1
Summations	32000	1100	100	

Total Dissolved Solids, TDS	34000	mg/L	EPA 160.1
Dissolved Sulfide	ND	mg/L	SM 4500SD
Hydrogen Sulfide	ND	mg/L	Calculation
Boron	54	mg/L	EPA 6010B
Barium	0.33	mg/L	EPA 6010B
Silica	67	mg/L	EPA 6010B
Strontium	36	mg/L	EPA 6010B
Alkalinity	350	mg/L	Calculation
Chloride as NaCl (Salinity)	31000	mg/L	Calculation
EC as NaCl (Salinity)	28000	mg/L	Calculation
Hardness, Dissolved	2000	mg/L	Calculation
Langlier Index, LI	0.27		Calculation
Stiff and Davis Index, SDI	-0.07		Calculation
Cation/Anion Balance	3.2	%	Calculation

ZALCO LABORATORIES, INC.

www.zalcolabs.com

Analytical and Consulting Services
4309 Armour Avenue, Bakersfield, CA 93308 (661) 395-0539 FAX (661) 395-3069

BC Laboratories, Inc.
4100 Atlas Court
Bakersfield CA 93308

Laboratory No: 1409099-01
Date Received: 9/9/2014
Date Reported: 9/10/2014

Attention: Kerrie Vaughan

Sample Identification: 25-26N
Sampled by: Date: 9/4/2014 Time: 8:00
Report Notes:

COMPLETE GEOCHEM ANALYSIS

pH	7.42	Specific Gravity @ 60 F...	1.021
Electrical Conductivity (EC) *(millimhos/cm @ 25 C)*	46.00	Resistivity (ohm meters @ 25 C)	0.22

Constituents	mg/L	meq/L	Reacting %
Calcium, Ca	490	24	2.55
Magnesium, Mg	61	5	0.52
Sodium, Na	9500	410	43.13
Potassium, K	160	4.1	0.43
Iron, Fe (total)	< 1.0	0	0
Alkalinity as:			
Hydroxide, OH	0	0	0
Carbonate, CO3	0	0	0
Bicarbonate, HCO3	290	4.75	0.5
Chloride, Cl	17000	480	50.03
Sulfate, SO4	1300	27	2.83
Sulfide, S	1.6		
Boron, B	42		
Barium, Ba	< 1.0		
Silica, SiO2	58		
Strontium, Sr	28		
Totals (Sum)	28800	955	100

Total Dissolved Solids, (Gravimetric)	29000		
Calculated Hardness, CaCO3	1500		
Total Alkalinity, CaCO3	290		
Sodium Chloride, (total)	29000		
		Primary Salinity	87.12
		Secondary Salinity	6.14
		Total Salinity	93.26
Cation/Anion Balance, %	7.0%		
Sodium, Na (Calculated), mg/L	10984.63	Primary Alkalinity	0
Langelier Scale Index	1.19	Secondary Alkalinity	0
Stiff/Davis Stability Index	1.19	Total Alkalinity	0

Laboratory Authorization

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Table S4. Geochemical data. [nd, no data; nws, no wellhead sample]

Field	Local ID	Map ID	Sample date	Sample time	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	Cl (mg/L)	Br (mg/L)	SO_4 (mg/L)	HCO_3 (mg/L)	NH_4 (mg-N/L)	B (µg/L)	Ba (µg/L)	Fe(II) (µg/L)	Li (µg/L)	Sr (µg/L)	TDS, sum of constituents (mg/L)
Fruitvale	4_FRUT_PW01	F1	7/26/2016	0700	1080	165	109	110	0.5	<2.0	3200	6.8	1260	3520	1070	1890	7290	4710
Fruitvale	4_FRUT_PW02	F2	7/26/2016	1000	1400	204	143	2100	11	<19	1300	7.2	5450	1600	1100	1200	4910	5220
Fruitvale	4_FRUT_PW03	F3	7/26/2016	1200	1040	228	118	1400	7.5	<16	1400	6.0	4780	681	415	862	3220	4240
Fruitvale	4_FRUT_PW04	F4	7/26/2016	1300	1630	62.2	45.2	1800	9.2	<17	1500	5.6	9250	1640	1860	621	2980	5170
Fruitvale	4_FRUT_PW05	F5	7/26/2016	1500	380	296	101	110	0.54	<0.2	1800	1.4	614	1900	1990	354	3760	2730
Fruitvale	4_FRUT_PW06	F6	7/26/2016	1600	1890	178	40.7	3300	18	<19	150	7.2	6460	599	379	429	3030	5600
Fruitvale	4_FRUT_PW07	F7	7/27/2016	0800	1520	166	77.1	2300	12	<17	1100	5.6	6210	1410	88	837	3810	5230
Fruitvale	4_FRUT_PW08	F8	7/27/2016	0900	1360	166	83.9	1400	7.8	72	1800	5.2	5190	1840	258	962	4450	4950
Lost Hills	4_LOST_PW01	L1	11/5/2014	0930	6530	119	103	7170	34	80	4500	nd	65000	3300	140	5900	3100	18700
Lost Hills	4_LOST_PW02	L2	10/11/2016	0900	5580	128	74.8	7300	37	190	5900	153	67700	3860	480	5140	2810	19600
Lost Hills	4_LOST_PW02	L2	10/11/2016	0910	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Lost Hills	4_LOST_PW02	L2	10/11/2016	0920	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Lost Hills	4_LOST_PW03	L3	10/11/2016	1100	5300	176	132	7900	63	<64	6000	150	62700	3400	13900	5510	4050	20000
Lost Hills	4_LOST_PW03	L3	10/11/2016	1110	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Lost Hills	4_LOST_PW03	L3	10/11/2016	1120	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Lost Hills	4_LOST_PW04	L4	10/11/2016	1300	8850	383	222	15000	71	<64	6000	214	112000	12100	5670	12800	8120	30900
Lost Hills	4_LOST_PW05	L5	10/12/2016	0800	6340	108	101	9200	44	<65	6300	150	87400	4280	7900	6830	2700	22500
Lost Hills	4_LOST_PW05	L5	10/12/2016	0810	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Lost Hills	4_LOST_PW05	L5	10/12/2016	0820	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Lost Hills	4_LOST_PW06	L6	10/12/2016	1000	6070	159	143	10000	53	<65	nd	173	86100	4780	4900	6530	5510	--
Lost Hills	4_LOST_PW07	L7	10/12/2016	1100	6450	183	76.4	11000	60	<62	5100	184	83300	6840	1670	7580	11400	23300
Lost Hills	4_LOST_PW07	L7	10/12/2016	1110	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Lost Hills	4_LOST_PW07	L7	10/12/2016	1120	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Lost Hills	4_LOST_PW08	L8	10/12/2016	1300	7210	150	109	10000	62	<63	6200	208	89900	7890	7550	8710	4160	24200
Lost Hills	4_LOST_PW08	L8	10/12/2016	1310	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Lost Hills	4_LOST_PW08	L8	10/12/2016	1320	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Lost Hills	4_LOST_PW09	L9	10/13/2016	0800	12400	140	56.0	16000	130	<78	5600	115	158000	20000	32400	1290	19700	36800
Lost Hills	4_LOST_PW09	L9	10/13/2016	0810	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Lost Hills	4_LOST_PW09	L9	10/13/2016	0820	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Lost Hills	4_LOST_PW10	L10	10/13/2016	1000	11000	714	102	17000	130	<119	5200	163	124000	26300	26400	2790	27700	37400
North Belridge	4_BELN_PW01	BN1	11/5/2014	1020	8040	367	181	13500	81	31	2100	nd	46000	8300	53000	11000	14000	24600
North Belridge	4_BELN_PW02	BN2	11/5/2014	1100	10100	204	228	15900	98	<0.14	3180	nd	75000	12000	200	12000	15000	30000
North Belridge	4_BELN_PW03	BN3	7/25/2017	0700	8550	301	201	19000	130	220	3600	402	104000	7670	49700	12900	29000	32700
North Belridge	4_BELN_PW04	BN4	7/25/2017	0900	11100	329	193	20000	140	160	3200	460	131000	16600	3270	17500	19400	35900
South Belridge	4_BELN_PW05	BN5	7/25/2017	1100	11000	1640	198	23000	96	<125	450	118	53200	14300	54	3840	190000	37000
South Belridge	4_BELN_PW06	BN6	7/25/2017	1300	9690	243	226	19000	130	<132	4100	449	108000	6560	1610	16000	18000	34200
South Belridge	4_BELS_PW01	BS1	11/5/2014	1200	4300	240	9.6	6460	24	440	277	nd	94000	500	<1000	5200	5300	12000
South Belridge	4_BELS_PW02	BS2	10/12/2017	0800	9950	<117	44.9	16000	110	<83	5700	nd	132000	4800	125	2300	5670	32300
South Belridge	4_BELS_PW03	BS3	10/12/2017	1000	4560	291	55.3	8000	35	140	1100	nd	74600	2520	<2	2150	6300	14400

Table S4. Geochemical data. [nd, no data; nws, no wellhe

Field	Local ID	Map ID	Charge-balance error (%)	Dissolved organic carbon (mg/L)	Acetic acid (mg/L)	$\delta^{2}H$-H_2O (‰), VSMOW	$\delta^{18}O$-H_2O (‰), VSMOW	$\delta^{13}C$-dissolved inorganic carbon (‰), VPDB	$^{87}Sr/^{86}Sr$	224Ra (Bq/L)	226Ra (Bq/L)	228Ra (Bq/L)	Type of hydrocarbon gas sample	Methane (mole %)	Ethane (mole %)	Propane (mole %)	Isobutane (mole %)	n-Butane (mole %)
Fruitvale	4_FRUT_PW01	F1	8.3	23	nd	-71.4	-10.45	23.97	0.70761	1.07	0.70	1.15	wellhead	10.06	0.279	0.0561	0.135	0.0474
Fruitvale	4_FRUT_PW02	F2	2.7	45	nd	-64.2	-9.66	24.17	0.70754	0.67	0.63	0.15	wellhead	62.63	1.43	0.0702	0.0214	0.0092
Fruitvale	4_FRUT_PW03	F3	4.4	34	nd	-65.9	-9.97	24.43	0.70743	0.22	0.04	0.05	wellhead	93.18	0.0802	0.0044	0.0021	0.0012
Fruitvale	4_FRUT_PW04	F4	3.5	100	nd	-63.7	-9.86	21.47	0.70757	0.33	0.15	0.33	wellhead	79.67	0.806	0.0287	0.0279	0.0070
Fruitvale	4_FRUT_PW05	F5	10.3	30	nd	-76.0	-10.29	22.38	0.70751	1.00	0.52	0.45	nws	nws	nws	nws	nws	nws
Fruitvale	4_FRUT_PW06	F6	0.6	6.2	nd	-63.9	-8.24	6.49	0.70768	0.15	0.04	0.09	nws	nws	nws	nws	nws	nws
Fruitvale	4_FRUT_PW07	F7	0.0	41	nd	-63.7	-9.39	24.18	0.70757	0.33	0.22	0.30	nws	nws	nws	nws	nws	nws
Fruitvale	4_FRUT_PW08	F8	4.0	46	nd	-65.7	-9.89	24.42	0.70755	0.52	0.30	0.41	nws	nws	nws	nws	nws	nws
Lost Hills	4_LOST_PW01	L1	6.6	130	nd	-37.6	-3.65	nd	0.70807	nd	nd	nd	nws	nws	nws	nws	nws	nws
Lost Hills	4_LOST_PW02	L2	-3.6	130	2.7	-32.7	-2.85	20.61	0.70818	0.37	0.33	0.10	wellhead	19.46	9.16	2.00	3.12	1.39
Lost Hills	4_LOST_PW02	L2	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	carboy	10.64	5.24	1.13	1.77	0.925
Lost Hills	4_LOST_PW02	L2	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	casing gas	50.46	10.6	1.62	1.83	1.00
Lost Hills	4_LOST_PW03	L3	-7.0	160	<0.84	-33.0	-3.31	23.61	0.70813	0.37	0.41	0.19	wellhead	27.89	1.40	0.112	0.146	0.0655
Lost Hills	4_LOST_PW03	L3	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	carboy	19.16	1.75	0.190	0.247	0.118
Lost Hills	4_LOST_PW03	L3	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	casing gas	71.88	2.89	0.382	0.328	0.244
Lost Hills	4_LOST_PW04	L4	-5.2	nd	<0.84	-9.9	1.60	18.91	0.70714	0.81	0.70	0.50	wellhead	69.71	1.29	0.372	0.189	0.0749
Lost Hills	4_LOST_PW05	L5	-5.4	170	2.2	-20.8	-0.80	20.16	0.70772	0.30	0.26	0.19	wellhead	25.39	1.82	0.483	0.21	0.161
Lost Hills	4_LOST_PW05	L5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	carboy	13.9	1.32	0.278	0.0866	0.0673
Lost Hills	4_LOST_PW05	L5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	casing gas	74.11	1.02	0.141	0.166	0.0954
Lost Hills	4_LOST_PW06	L6	--	170	2.9	-22.3	-1.42	22.49	0.70802	0.44	0.33	0.23	wellhead	10.83	1.05	0.373	0.0938	0.141
Lost Hills	4_LOST_PW07	L7	-8.4	140	2.4	-23.7	-0.65	20.70	0.70616	0.93	0.41	0.10	wellhead	23.99	5.41	7.08	2.36	5.49
Lost Hills	4_LOST_PW07	L7	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	carboy	7.39	2.61	3.9	1.32	3.62
Lost Hills	4_LOST_PW07	L7	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	casing gas	47.29	7.95	7.25	1.83	3.87
Lost Hills	4_LOST_PW08	L8	-1.7	150	<0.84	-20.0	-0.48	22.29	0.70803	0.15	0.59	0.33	wellhead	31.49	1.80	2.43	2.40	6.31
Lost Hills	4_LOST_PW08	L8	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	carboy	10.15	0.858	1.01	0.877	2.76
Lost Hills	4_LOST_PW08	L8	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	casing gas	39.22	8.91	13.36	2.66	5.52
Lost Hills	4_LOST_PW09	L9	4.1	2100	760	-21.2	5.71	-3.83	0.70827	nd	5.55	0.75	wellhead	74.52	8.34	6.91	1.18	3.36
Lost Hills	4_LOST_PW09	L9	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	carboy	40.74	10.4	8.88	1.24	4.09
Lost Hills	4_LOST_PW09	L9	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	casing gas	78.59	8.01	5.35	0.82	2.34
Lost Hills	4_LOST_PW10	L10	-0.9	2900	910	-20.0	3.85	0.16	0.70744	nd	2.48	0.83	nws	nws	nws	nws	nws	nws
North Belridge	4_BELN_PW01	BN1	-2.1	182	nd	-32.1	-4.72	nd	0.70913	nd	nd	nd	nws	nws	nws	nws	nws	nws
North Belridge	4_BELN_PW02	BN2	-1.1	209	nd	-14.9	-4.00	nd	0.70826	nd	nd	nd	nws	nws	nws	nws	nws	nws
North Belridge	4_BELN_PW03	BN3	-12.7	130	<0.91	-23.7	1.74	18.21	0.70736	1.11	1.21	0.67	wellhead	86.81	2.45	2.45	0.309	0.861
North Belridge	4_BELN_PW04	BN4	-2.8	99	<0.91	-21.9	3.40	14.16	0.70816	1.76	1.24	1.02	wellhead	85.91	0.696	0.765	0.255	0.883
South Belridge	4_BELN_PW05	BN5	-4.6	260	340	-22.5	1.18	-0.21	0.70628	4.81	8.62	3.66	nws	nws	nws	nws	nws	nws
South Belridge	4_BELN_PW06	BN6	-7.8	170	<0.91	-23.5	2.21	17.89	0.70817	0.75	0.91	0.61	wellhead	85.02	3.65	2.73	0.311	0.733
South Belridge	4_BELS_PW01	BS1	7.2	149	nd	-54.0	-5.66	nd	0.70836	nd	nd	nd	nws	nws	nws	nws	nws	nws
South Belridge	4_BELS_PW02	BS2	-7.5	380	280	-11.7	6.29	8.24	0.70830	0.09	1.40	0.45	wellhead	1.71	0.0024	0.0008	<0.0001	<0.0001
South Belridge	4_BELS_PW03	BS3	-1.9	140	37	-54.7	-4.56	2.82	0.70816	0.22	0.40	0.19	wellhead	0.909	0.0019	0.0010	<0.0001	<0.0001

Appendix 2G
Geochemistry Supporting Data

Sensitivity Analyses and Supplemental Files

Geochemical Model Sensitivity Analyses

Ion Activity Model Selection

Geochemical modeling software packages use databases of laboratory-generated thermodynamic data to calculate mineral solubility relative to aqueous solutions. The Lawrence-Livermore National Laboratory database (LLNL.dat) contains the most robust assemblage of thermodynamic information for the mineral system comprising the target injection unit and was therefore used for this evaluation. This database includes thermodynamic data appropriate for the pressures and temperatures applicable to the target injection zone.

TDS concentrations in 64 Zone Sandstone formation waters are categorized as brackish to highly saline. As such, the Pitzer database (pitzer.dat), which utilizes the Pitzer equations as the ion activity model in the calculations [Pitzer, 1973], may be a more appropriate database to model waters of high salinity. Multiple carbon capture, utilization, and storage (CCUS) studies have demonstrated the ability of the Pitzer ion activity model to successfully replicate laboratory-derived mineral solubility constants in highly saline brines, whereas calculations completed using the extended Debye-Hückel ion activity model (the model utilized in LLNL.dat) could not replicate experimental results [Dethlefsen and Haase, 2011; Tremosa et al., 2013]. However, the Pitzer database contains limited solid phase thermodynamic information and does not include thermodynamic information for the majority of minerals present in the target injection zone. An expanded Pitzer database was produced for the Yucca Mountain Project by Sandia National Laboratory and reformatted to the PHREEQC format by Quintessa [Benbow et al., 2008]. Geochemical modeling in PHREEQC was completed using both the LLNL database and the expanded Pitzer database to evaluate sensitivity of model results to the selection of the ion activity model.

The LLNL database and the expanded Pitzer database contain appropriate thermodynamic information for most minerals present in the system except for glauconite. Glauconite (an authigenic iron-potassium phyllosilicate mineral in the clay/mica family) was observed in petrographic analyses and plays a role in the fate of important cementing-building aqueous components like iron, aluminum, and silica. The LLNL database was modified to include thermodynamic information for this mineral from Blanc et al. [2015]. The architecture of the expanded Pitzer database does not allow for the inclusion of some additional minerals; therefore, glauconite was not addressed using this database. Of note, the expanded Pitzer database is unable to incorporate aqueous redox pairs. As a result, aqueous ferric (Fe^{3+}) iron and sulfide are not considered in Pitzer calculations. Modeling efforts in PHREEQC utilized the LLNL thermodynamic database and the expanded Pitzer thermodynamic database, with the LLNL database modified to include glauconite. The expanded Pitzer database is not available in the Geochemists Workbench™ (GWB) format, and thus, GWB modeling was completed using only the modified LLNL database.

Appendix 2G Tables 1 and 2 provide results for the LLNL thermodynamic database model runs and the expanded Pitzer thermodynamic database model runs for aqueous components and solid-phase components respectively. A comparison between the results of each approach is provided as the sensitivity difference column in each table.

Comparison of results from the LLNL database and the expanded Pitzer database indicate that differences for most parameters are relatively minor, suggesting a limited influence of ion activity model selection. Of note, aqueous results for iron, sodium, alkalinity, and potassium differ appreciably, although the direction of these changes relative to the initial composition are consistent (e.g., alkalinity significantly increases in model outputs relative to initial composition for both methods). The discrepancies between aqueous iron and sulfate results were likely a byproduct of the expanded Pitzer database's inability to assess redox reactions. It stands to reason that LLNL model results for aqueous iron and sulfate are more realistic. Differences in the treatment of sodium, potassium, and chloride between the two ion activity models are well documented [Dethlefsen and Haase, 2011; Tremosa et al., 2013].

Initial saturation index (SI) calculations differ between the two approaches as a function of each ion activity model's method of calculating ion activity coefficients. Comparison of LLNL and Pitzer results revealed minor differences in modeled solid-phase delta outputs; however, the modeled minerals should react in the same direction (i.e., precipitate or dissolve) regardless of database selection. This observation, combined with the sensitivity analysis results for the aqueous phase, supports the conclusion that both databases provide reasonable predictions of mineral reactivity.

Reaction pathway result comparisons are presented in **Appendix 2G Table 3**. Reaction pathway modeling calculations performed in PHREEQC using the LLNL and expanded Pitzer databases yielded different values for SIs; however, both models suggested identical trends in predicted SI changes relative to present conditions. The most significant difference between the two databases was observed with calculated SIs for kaolinite and dolomite. These minerals reacted in the same direction following injectate introduction (decrease in SI relative to current state), but a difference was observed between the initial pre-injection SIs. Dolomite in LLNL database model runs was initially supersaturated and shifted to undersaturated following injection, compared to dolomite in Pitzer database model runs which was initially very supersaturated and shifted to less supersaturated. Likewise, kaolinite in LLNL database model runs was initially undersaturated and became even more undersaturated following injection interaction, and kaolinite in Pitzer model runs was initially supersaturated and shifted to less supersaturated (**Appendix 2G Table 3**). Comparison between equilibrium models indicated that predicted mineral mass changes for these minerals from the two databases yield a sensitivity difference of 0.001 mol/L for dolomite and 0.394 mol/L for kaolinite (**Appendix 2G Table 2**). These values were not considered consequential enough to warrant further sensitivity testing using the expanded Pitzer database.

Pressure-Temperature Conditions

Sensitivity analyses were performed using the geochemical modeling initial inputs and general methods described in **Section 3.3.2** to evaluate the potential for geochemical pathway changes resulting from modifying pressure/temperature conditions through the continual addition of injectate gas. Injectate gas temperature is predicted to be 35°C at the time of injection. The continual addition of injectate into the hotter (112.8°C) subsurface is expected to cool the surrounding injection zone formation, and thus potentially alter thermodynamic relationships and kinetic rates. Additionally, continued injection of gas into the target injection zone zone is expected

to increase total pressure within the system. The maximum anticipated pressure resulting from CO_2 injection is approximately 80% of the 4,200 psi discovery pressure (i.e., a maximum of 3,360 psi or 229 atm).

Sensitivity analyses were performed by first running the base case model simulation using model inputs described in **Section 3.3.2.1**. Base case inputs were used to generate model outputs for each of the multiple modeling approaches (thermodynamic reaction pathway modeling, thermodynamic equilibrium modeling, and kinetic reaction pathway modeling). These model outputs represent an intermediate step in pressure-temperature sensitivity modeling which assumes that the system reaches full thermodynamic equilibrium in the case of thermodynamic models and that kinetically controlled geochemical reactions occur over the defined 50-year time period in the case of kinetic modeling. These base case model outputs are then provided as initial inputs for a second model run in which the adjusted pressure-temperature values are used. The iterative modeling process assesses aqueous geochemical and mineral mass changes resulting from an initial period of equilibration associated with the beginning of gas injection which then is subjected to modified pressure-temperature conditions and allowed to continue geochemical reactions.

Two sensitivity model runs were completed to simulate cooling of the surrounding reservoir system at temperatures of both 35°C (expected temperature of injectate gas) and 90°C (lower than the initial system temperature by approximately 30% of the difference between the current formation and injectate temperatures) while maintaining the anticipated high pressure of 229 atm. The sensitivity analyses are intended to assess the geochemical impact of induced pressure-temperature changes on the system as a result of the injection process. Sensitivity analysis conditions are not believed to be fully representative of future conditions; rather, results bracket the plausible maximum impacts of pressure-temperature changes induced by future injection.

The sensitivity analysis for the equilibrium model was conducted in PHREEQC using only the LLNL thermodynamic database, as results of the LLNL and expanded Pitzer calculations were deemed to be sufficiently comparable. Sensitivity testing of reaction pathway modeling was conducted in PHREEQC using the LLNL database and GWB React module using the LLNL database incorporating identical mineral kinetic values as the base case modeling effort. React models were set to run for 50 years using base case conditions during the intermediate step, and an additional 50 years using adjusted pressure-temperature conditions during the final step.

Results of sensitivity runs were compared to initial conditions (base case model inputs) to evaluate predicted changes relative to pre-injection conditions. Sensitivity analysis results for equilibrium modeling are provided in **Appendix 2G Table 4** (aqueous concentrations) and **Table 5** (mineralogy). Results for reaction pathway modeling using PHREEQC are provided in **Appendix 2G Table 6**. Results tables display initial conditions (base case model inputs), intermediate step inputs (base case model outputs), and sensitivity model outputs. Delta columns reflect the difference between sensitivity model outputs and initial conditions and the difference between sensitivity model outputs and base case model outputs.

Sensitivity analysis equilibrium modeling results are interpreted as the final model outputs relative to initial (pre-injection) conditions compared to the base case model outputs relative to initial

conditions. Results indicated that nearly every reaction identified in base case modeling will continue to proceed through changing pressure-temperature conditions, with the exception of a potential shift to dissolution of potassium feldspar under cooler conditions and precipitation of the mineral dawsonite ($NaAlCO_3(OH)_2$) under both temperature conditions (**Table 5**). Apart from potassium feldspar and dawsonite, the mineral mass fluctuations are predicted to continue in the same direction as base case modeling results. Aqueous concentration changes maintained the same direction for all analytes except for iron (only in the case of the 35°C condition) and boron (**Table 4**). The directions of predicted changes in aqueous parameter concentrations following sensitivity runs relative to the base case remained largely consistent, indicating that the same mechanisms and reactions would continue to occur during the second iteration of the sensitivity modeling process, only at different rates and scales. Sensitivity analysis conditions resulted in increased rates of aqueous concentration and mineral mass changes. Nonetheless, sensitivity conditions predicted minor changes in individual mineral masses compared to the results of the base case.

The sensitivity analyses for reaction pathway modeling revealed a similar observation. PHREEQC-calculated SIs for both sensitivity analysis conditions maintained the same direction as the base case scenario for most minerals, with exceptions of potassium feldspar at 35°C and kaolinite and dawsonite at both temperatures (**Table 6**). Results suggest that the precipitation of dawsonite and kaolinite would be favorable as conditions change due to the impact of gas injection. This predicted kaolinite precipitation may occur at the expense of feldspar minerals albite and potassium feldspar, as both minerals are predicted to remain undersaturated in sensitivity conditions and both minerals are predicted to dissolve in sensitivity modeling with the exception of potassium feldspar in 35°C conditions. The formation of kaolinite at the expense of feldspar is known to commonly occur during diagenesis. The precipitation of dawsonite may also occur at the expense of feldspar minerals, as predicted from geochemical modeling evaluations of high-salinity sandstone systems following carbon injection activities [Johnson et al., 2001; Rochelle et al., 2004].

Kinetic reaction pathway model outputs for the high-pressure, 35°C sensitivity conditions are provided as **Appendix 2G Figures 1 through 5**. Model outputs for the high-pressure, 90°C sensitivity conditions are provided as **Appendix 2G Figures 6 through 10**. Generally, kinetic reaction pathway modeling using sensitivity analysis conditions also predicted similar reactions would occur at higher rates. Sensitivity modeling using lower temperature (35°C) conditions predicted a total mineral mass decrease of 41 kilograms per cubic meter (kg/m^3) relative to the base case results (**Figure 4**). This predicted mineral mass decrease would result in an additional porosity increase of 1.6% (i.e., an increase of 0.016 relative to the 0.13 total porosity value) over the second model iteration at changed pressure-temperature conditions (**Figure 5**). The predicted mineral mass decrease using higher temperature (90°C) sensitivity conditions was 46 kg/m^3 (**Figure 9**), which corresponds to an additional porosity increase of 1.8% (i.e., an increase of 0.018 relative to the 0.13 total porosity value) over the second the second model iteration at changed pressure-temperature conditions (**Figure 10**). Under both sensitivity analysis conditions, the rate of porosity increase was predicted to decline after approximately 40 years, as seen by the curves partially leveling off (**Figures 5** and **10**).

Generally, the sensitivity analyses indicated that predicted mineral reactions and aqueous/mineral changes would maintain the same directions as in the base case effort, but these changes are predicted to increase in magnitude during the second model iteration under sensitivity analysis conditions. Quartz is an exception to this conclusion, as quartz was predicted to dissolve under sensitivity conditions in kinetic reaction pathway models despite thermodynamic sensitivity models predicting quartz precipitation. Dawsonite, a mineral which was not expected to precipitate during the base case model run, was predicted to precipitate, potentially at the expense of potassium feldspar and albite. Kinetic modeling predicted that total porosity (0.13) would increase by 0.017 (0.0015 during the base case model iteration and 0.0156 within the sensitivity model iteration) under high pressure/35°C sensitivity conditions, and by 0.019 (0.0015 during the base case model iteration and 0.0177 within the sensitivity model iteration) under high pressure/90°C sensitivity conditions. Thus, the porosity change of 1.9 porosity units constitutes the maximum expected porosity change associated with sensitivity modeling of gas injection.

Appendix 2G References

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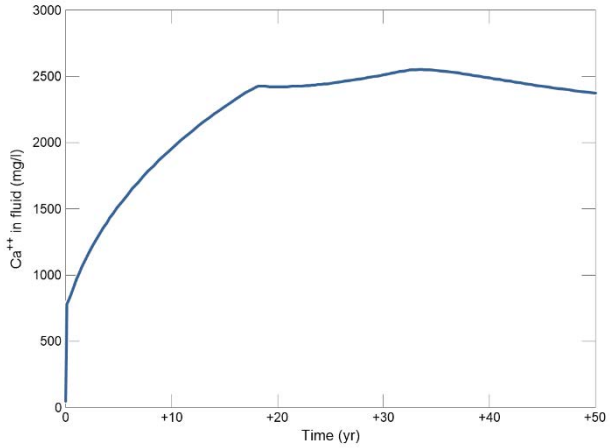
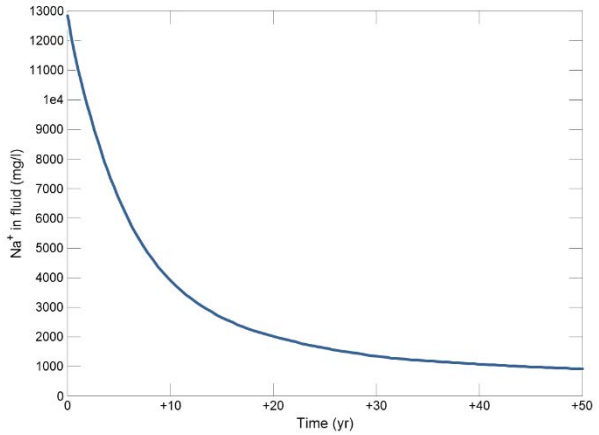
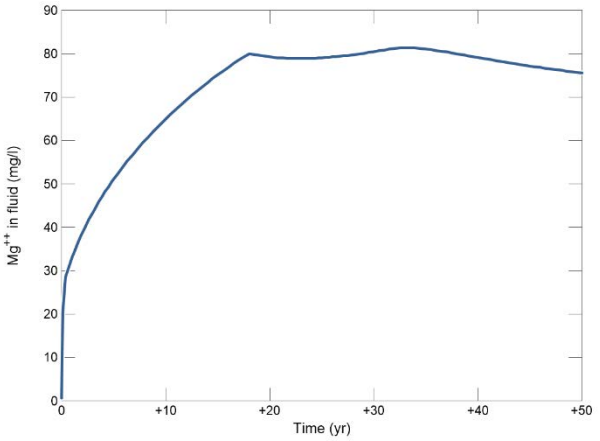
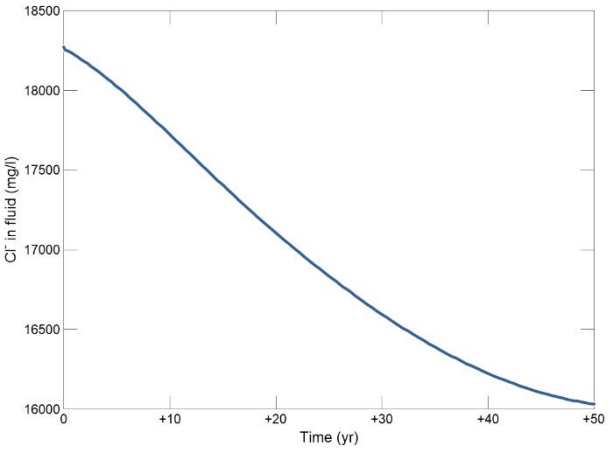
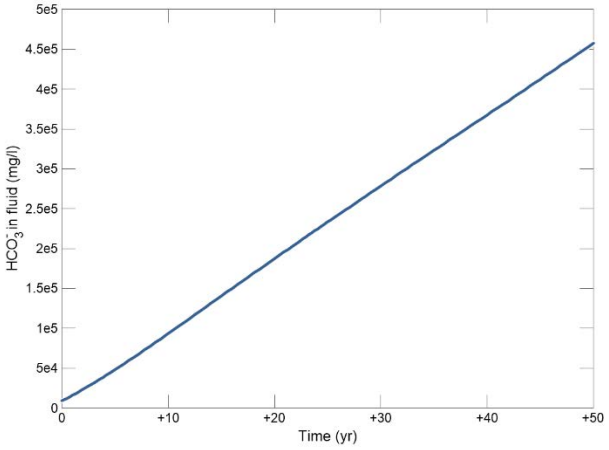
Figures

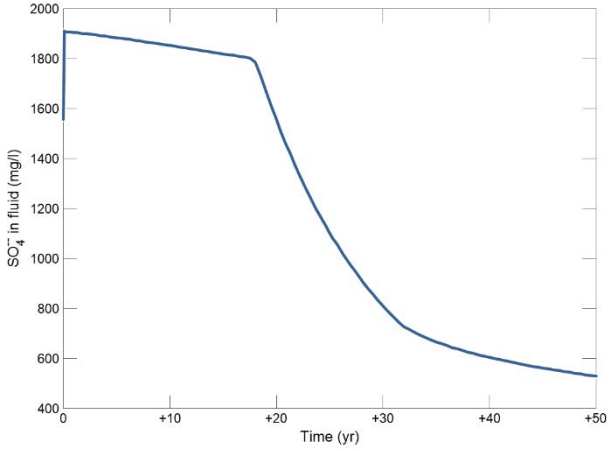












Notes:

Aqueous concentrations displayed over the defined 50-year sensitivity model interval. Modeling completed using the React module of Geochemists Workbench™. Plots are shown in units of milligrams per liter (mg/L).

35°C Sensitivity Model React Outputs – Major Ions
North Belridge Oil Field
Western Kern County
California

Geosyntec consultants

Figure **1**

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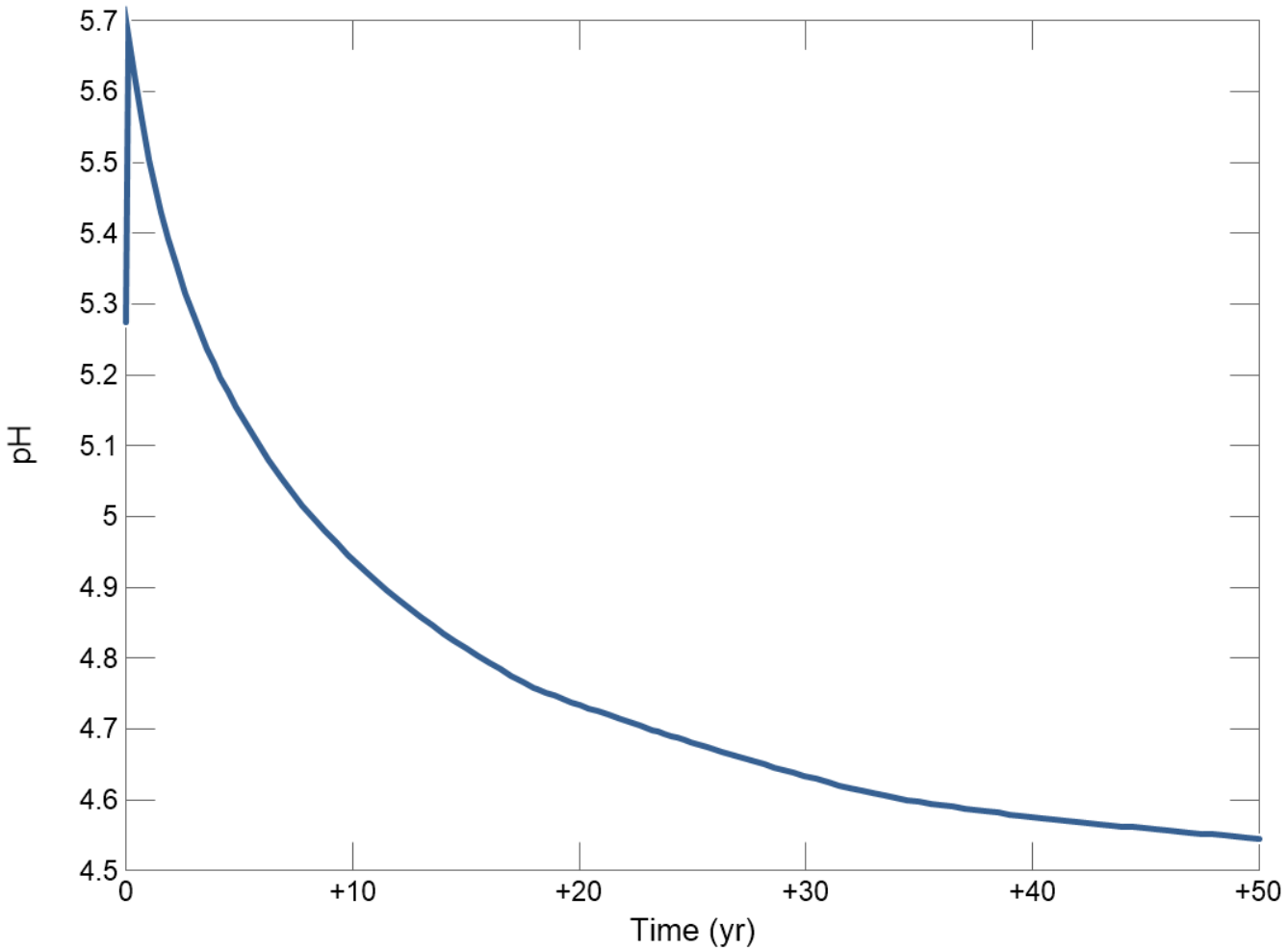

Notes:

pH of formation water displayed over the defined 50-year sensitivity model interval. Modeling completed using the React module of Geochemists Workbench™. pH is shown in standard units (SU).

35°C Sensitivity Model React Outputs – pH
North Belridge Oil Field
Western Kern County
California

Geosyntec consultants

Figure **2**

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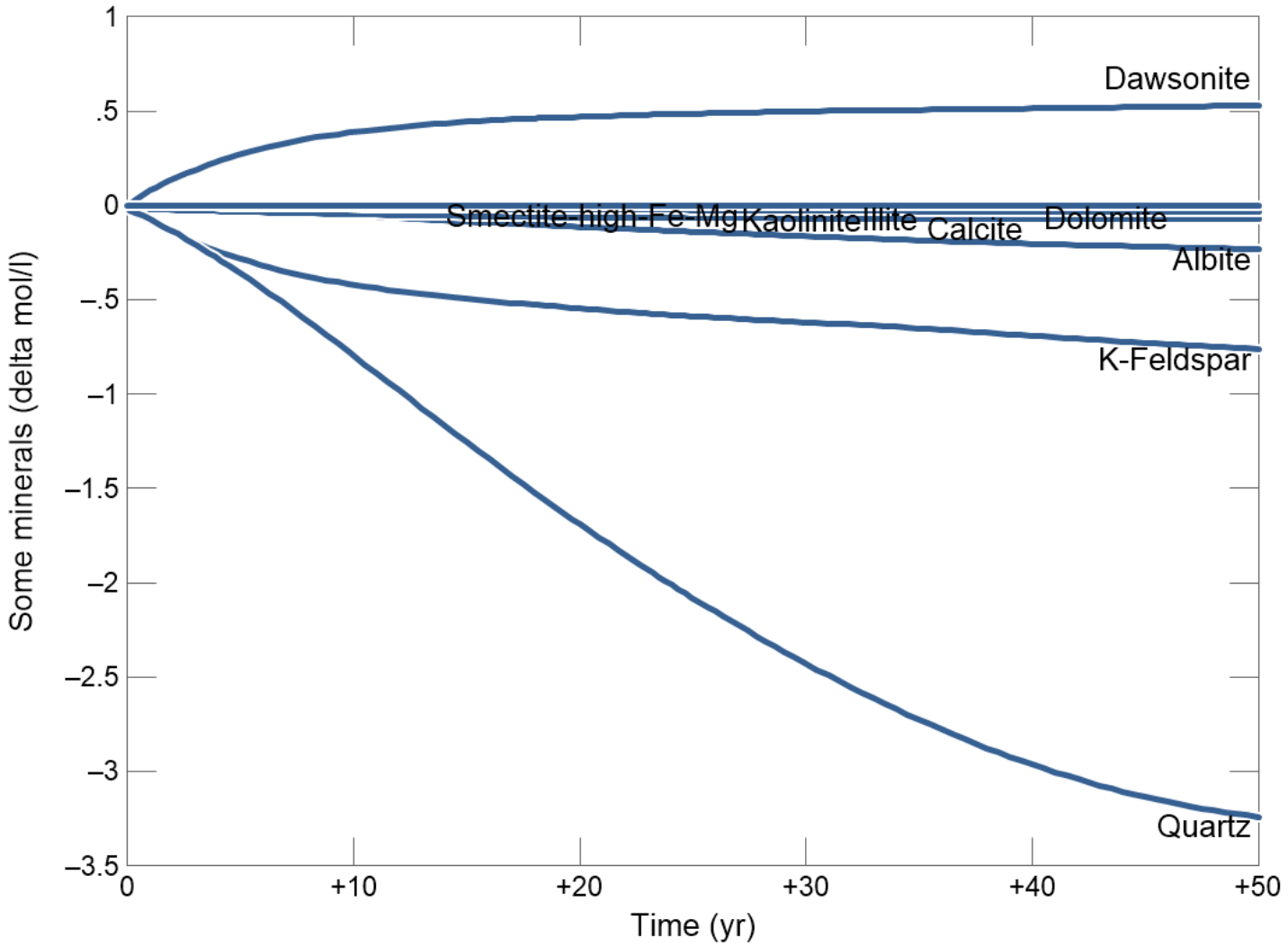

Notes:

Mineral mass changes displayed over the defined 50-year sensitivity model interval. Modeling completed using the React module of Geochemists Workbench™.
Mineral mass change is shown in units of delta moles per liter (mol/L).

35°C Sensitivity Model React Outputs – Mineral Changes
North Belridge Oil Field
Western Kern County
California

Geosyntec consultants

Figure **3**

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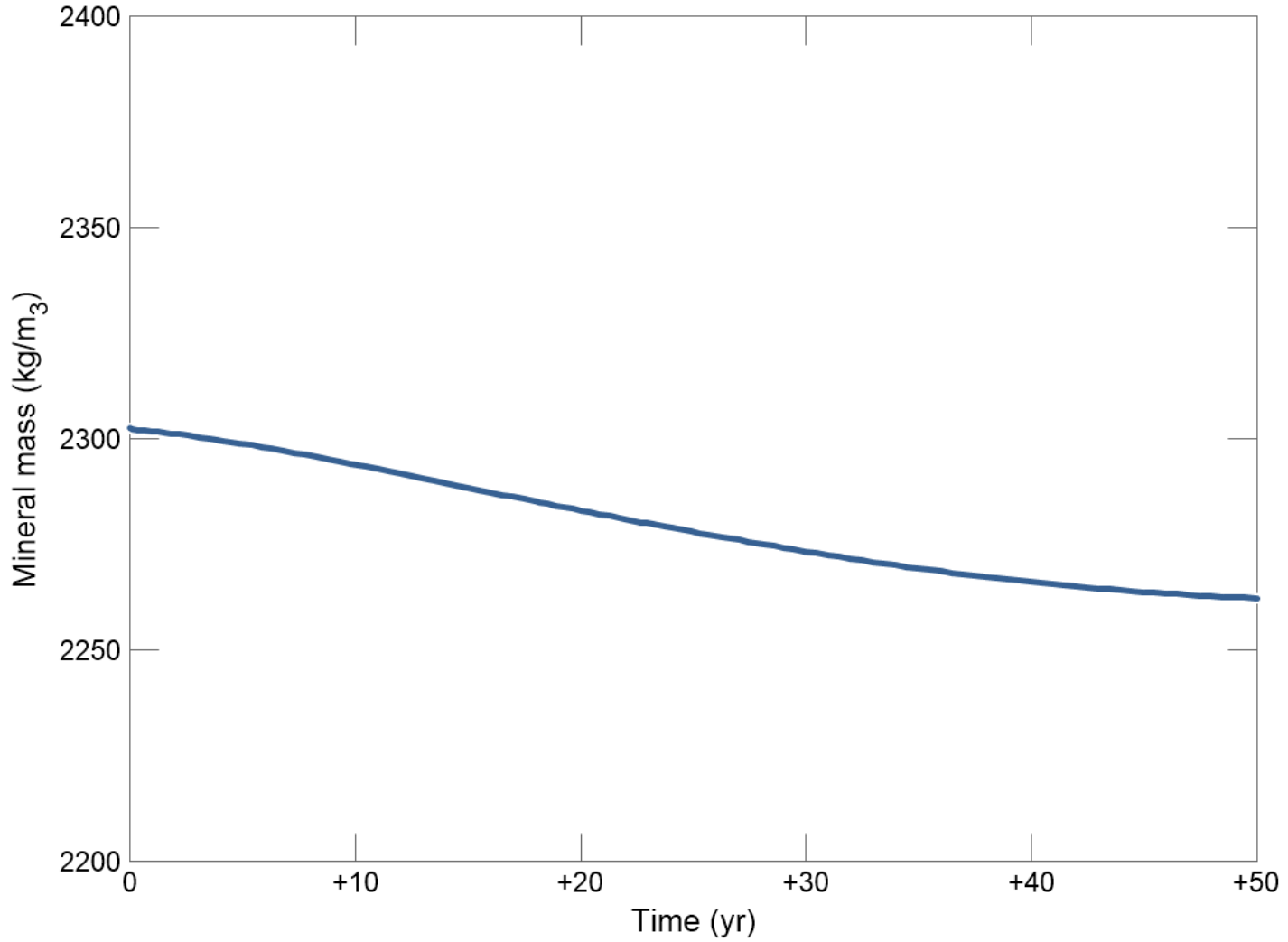

Notes:

Total mineral mass changes displayed over the defined 50-year sensitivity model interval. Modeling completed using the React module of Geochemists Workbench™. Mass change is shown in units of kilograms per cubic meter (kg/m^3).

35°C Sensitivity Model React Outputs – Total Mineral Mass
North Belridge Oil Field
Western Kern County
California

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Figure **4**

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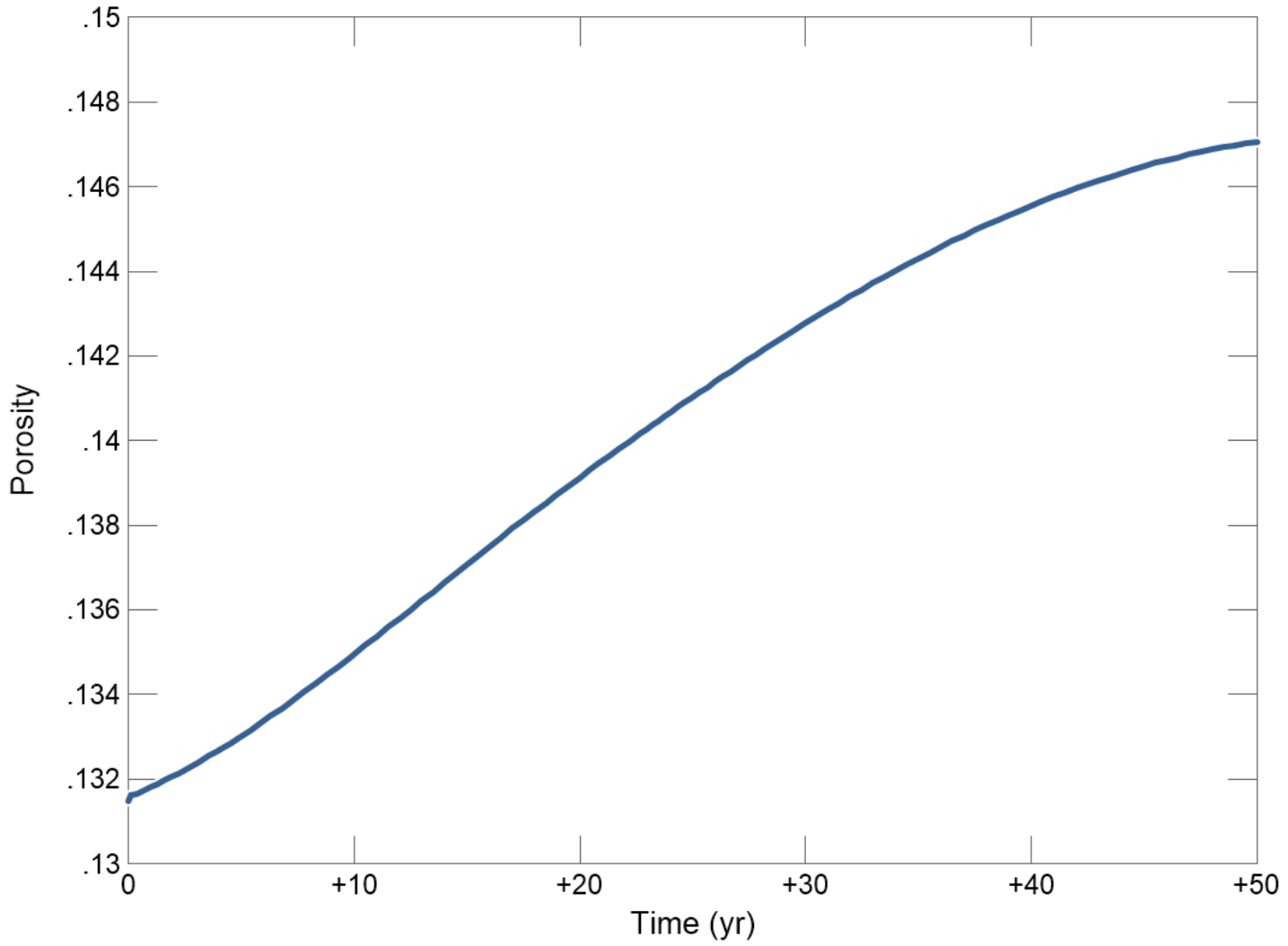

Notes:

Total porosity changes displayed over the defined 50-year sensitivity model interval. Modeling completed using the React module of Geochemists Workbench™.
Porosity is shown as the fraction of total pore volume in a unit volume of bulk rock.

35°C Sensitivity Model React Outputs – Porosity
North Belridge Oil Field
Western Kern County
California

Geosyntec consultants

Figure **5**

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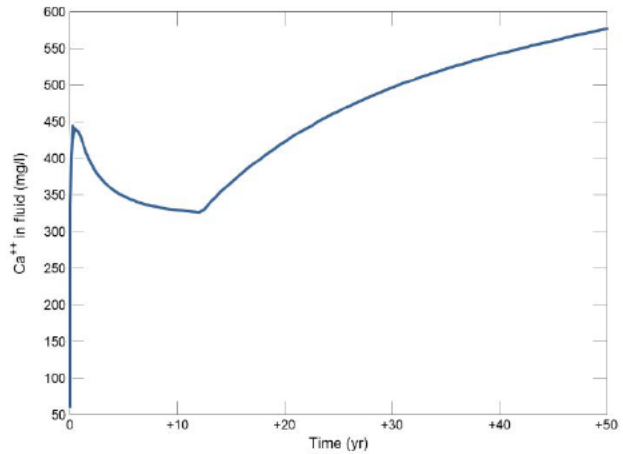

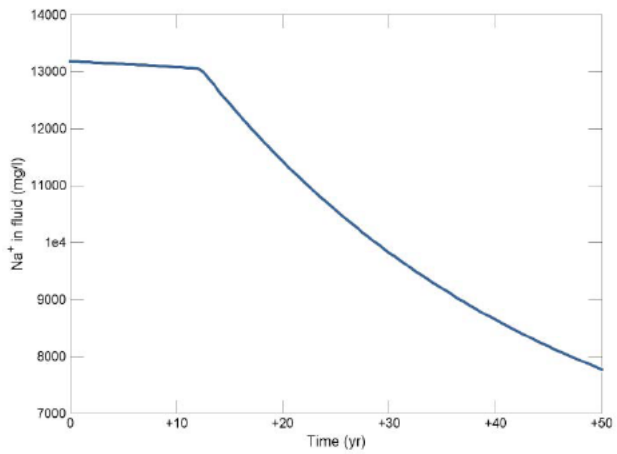

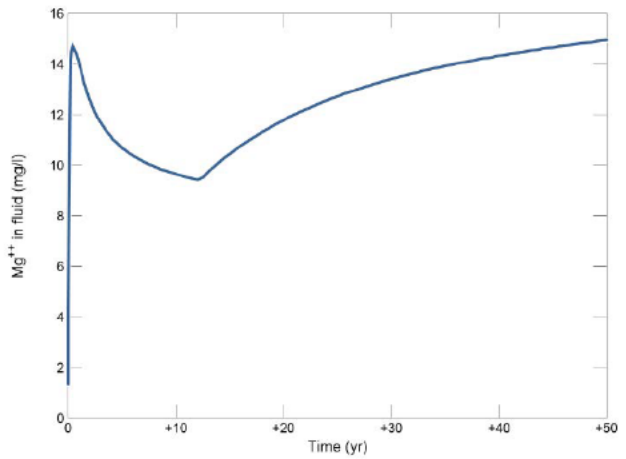

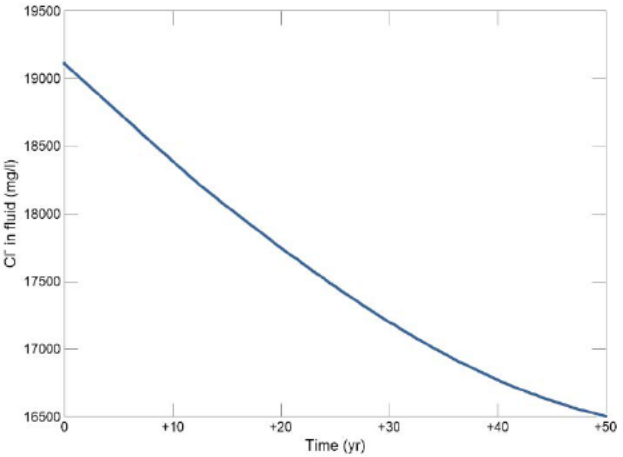

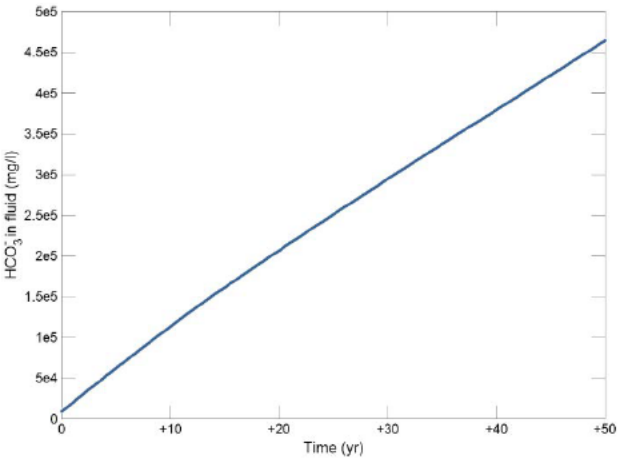

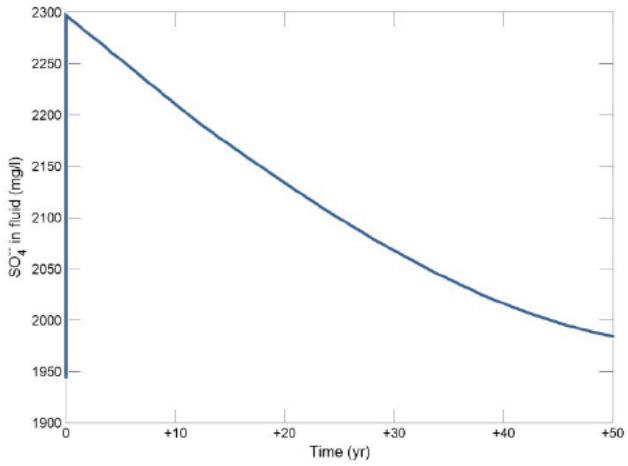

Notes:

Aqueous concentrations displayed over the defined 50-year sensitivity model interval. Modeling completed using the React module of Geochemists Workbench™. Plots are shown in units of milligrams per liter (mg/L).

90°C Sensitivity Model React Outputs – Major Ions
North Belridge Oil Field
Western Kern County
California

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Figure 6

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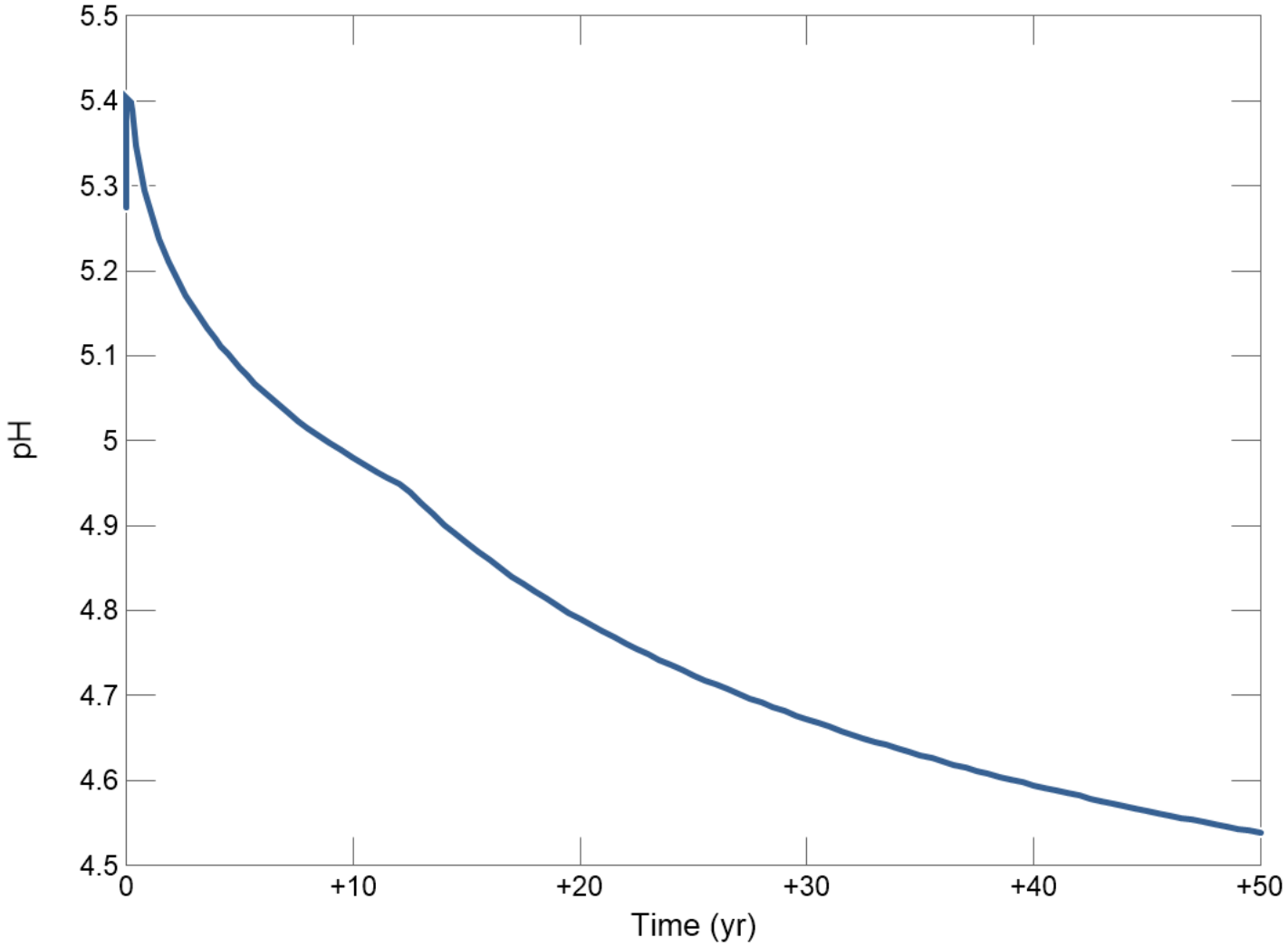

Notes:

pH of formation water displayed over the defined 50-year sensitivity model interval. Modeling completed using the React module of Geochemists Workbench™. pH is shown in standard units (SU).

90°C Sensitivity Model React Outputs – pH
North Belridge Oil Field
Western Kern County
California

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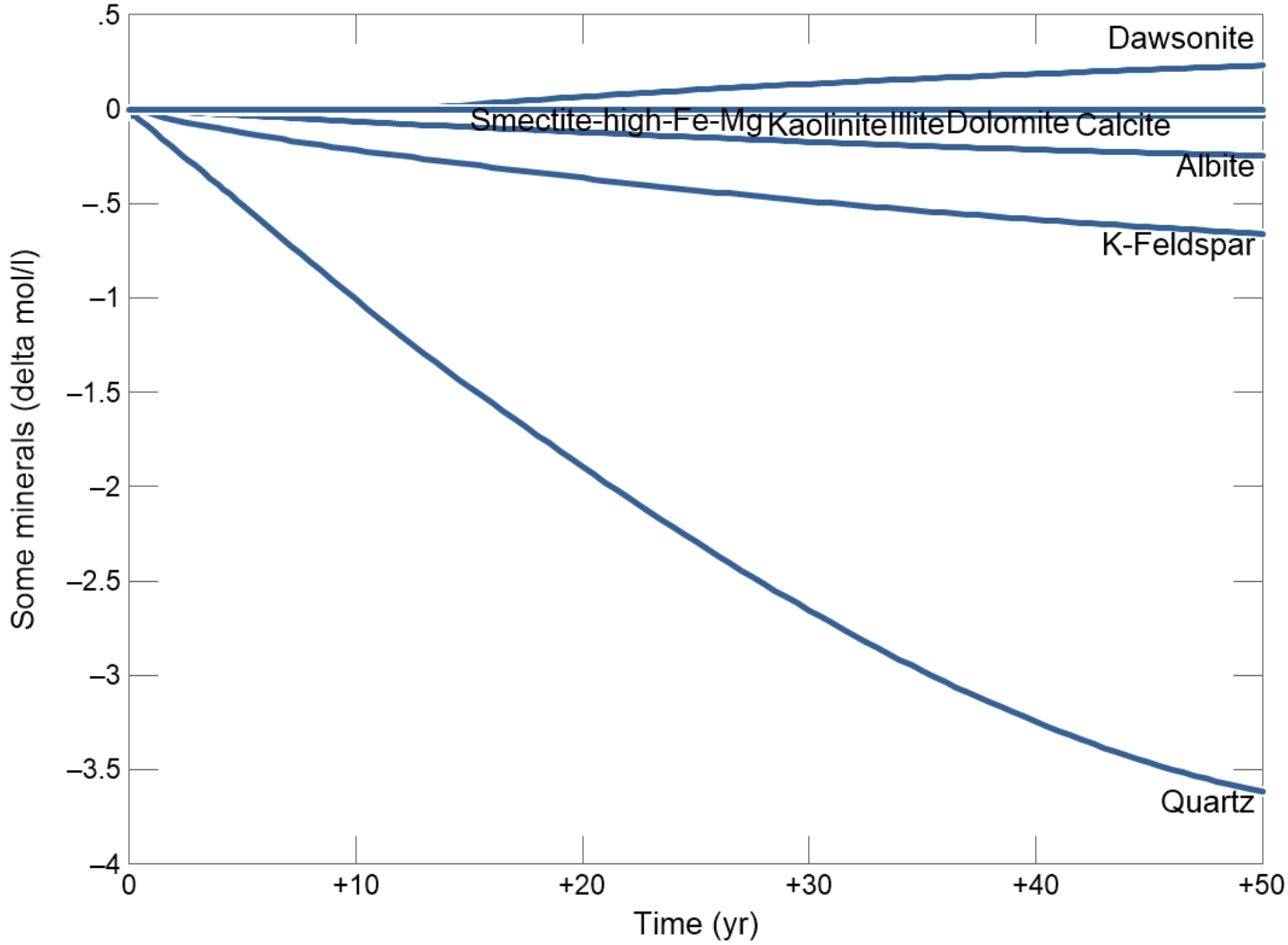
Figure **7**

CarbonFrontier	December 2023



Notes:

Mineral mass changes displayed over the defined 50-year sensitivity model interval. Modeling completed using the React module of Geochemists Workbench™.
Mineral mass change is shown in units of delta moles per liter (mol/L).

90°C Sensitivity Model React Outputs – Mineral Changes
North Belridge Oil Field
Western Kern County
California

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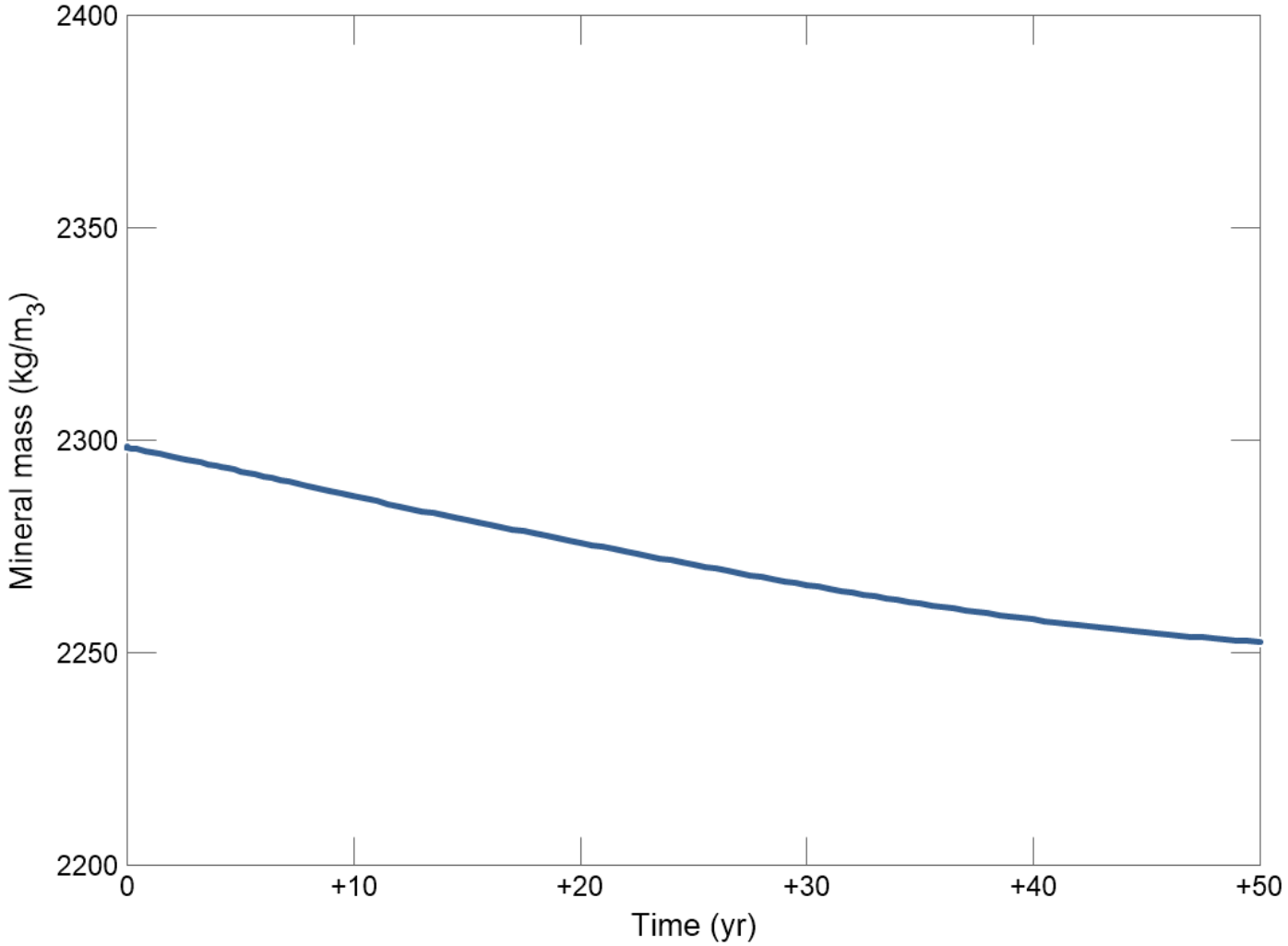
Figure **8**

CarbonFrontier | December 2023



Notes:

Total mineral mass changes displayed over the defined 50-year sensitivity model interval. Modeling completed using the React module of Geochemists Workbench™. Mass change is shown in units of kilograms per cubic meter (kg/m^3).

90°C Sensitivity Model React Outputs – Total Mineral Mass
North Belridge Oil Field
Western Kern County
California

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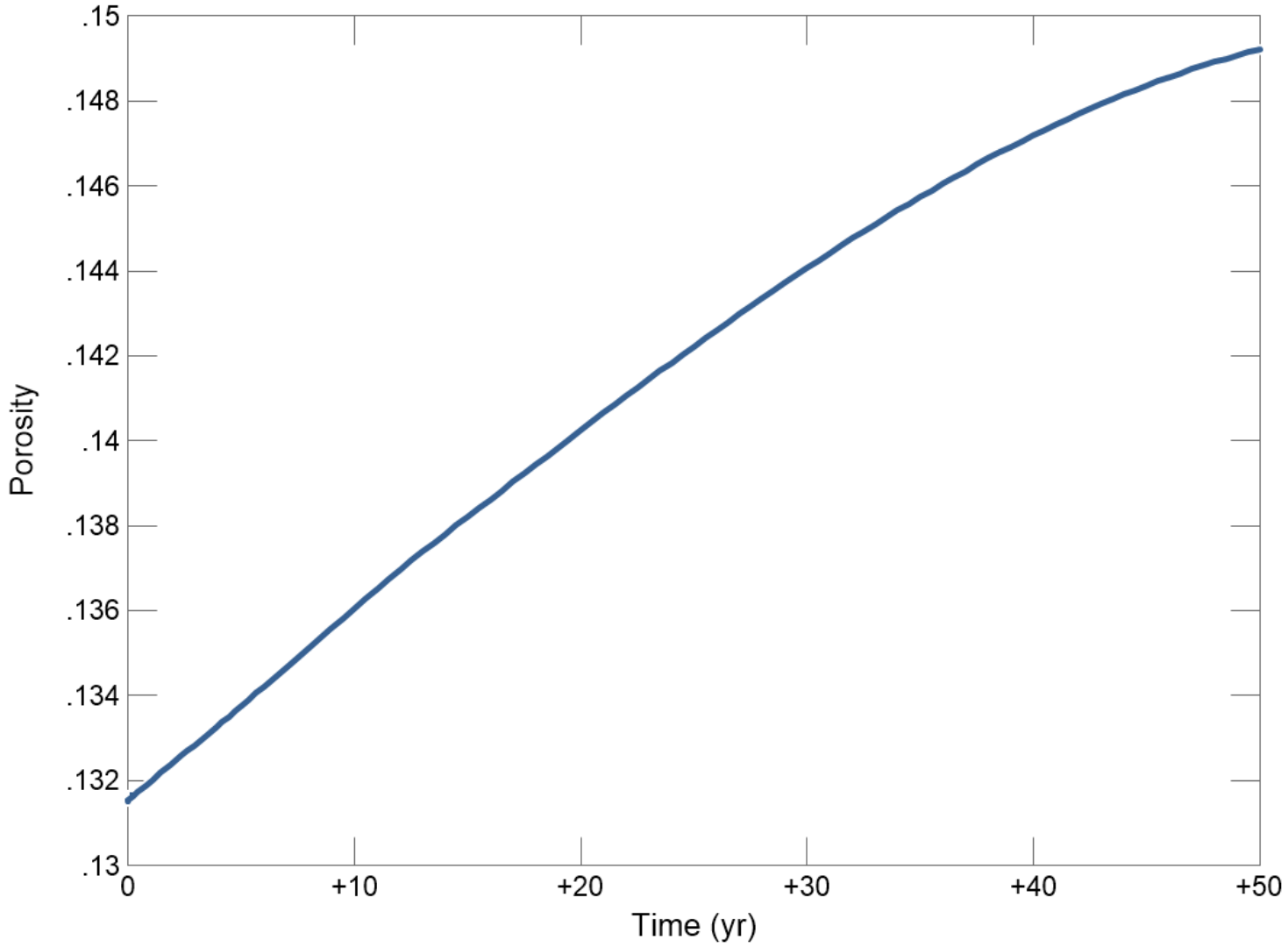
Figure **9**

CarbonFrontier | December 2023



Notes:

Total porosity changes displayed over the defined 50-year sensitivity model interval.
Modeling completed using the React module of Geochemists Workbench™.
Porosity is shown as the fraction of total pore volume in a unit volume of bulk rock.

90°C Sensitivity Model React Outputs – Porosity
North Belridge Oil Field
Western Kern County
California

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Figure **10**

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Tables

Appendix 2G: Geochemical Model Sensitivity Analyses - Table 1
Supplemental Files
64 Zone Sandstones Formation Equilibrium Modeling Results - Aqueous Concentrations

Parameter	Initial Input (mg/L)		LLNL Equilibrium Output (mg/L)	Pitzer Equilibrium Output (mg/L)	LLNL Delta (mg/L)	Pitzer Delta (mg/L)	Sensitivity Difference (Absolute Value mg/L)
Calcium	728	Equilibrium modeling	54.5	3.7	-674	-724	51
Magnesium	88.2		1.18	2.55	-87.1	-85.7	1.38
Sodium	9,322		39,888	21,599	30,566	12,277	18,289
Potassium	296		2,047	414	1,751	117	1,633
Iron (Total)	114		720	1,114	606	1,001	394
Chloride	18,322		19,616	19,198	1,294	876	418
Sulfate	490		1,727	2,710	1,238	2,220	983
Sulfide	1.60		0.00	--	-1.60	--	--
Boron	47.8		42.7	41.8	-5.13	-6.03	0.91
Barium	3.91		4.19	4.10	0.27	0.18	0.09
Manganese	0.25		0.27	0.26	0.02	0.02	0.01
Silica	56.6		31.1	35.2	-25.5	-21.4	4.02
Strontium	58.4		62.5	61.2	4.08	2.75	1.32
Total Alkalinity	454		67,423	32,641	66,969	32,187	34,782
Aluminum	0.02*		0.00	0.00	0.01	-0.02	0.03
pH	7.10		5.28	5.21	-1.82	-1.89	0.07

Notes:
Equilibrium modeling completed using PHREEQC
* - Formation water was not analyzed for aluminum. Concentrations used as inputs were derived from equilibration of aluminosilicate minerals with formation water
pH values given in Standard Units (SU)
mg/L - milligrams per liter
LLNL - Lawrence Livermore National Laboratory
LLNL denotes the usage of the LLNL.dat thermodynamic database
Pitzer denotes the usage of the expanded Pitzer thermodynamic database
--: The expanded Pitzer database does not incorporate redox reactions and therefore cannot address sulfate and sulfide simultaneously

Mineral	Initial Input (mol/L)		LLNL Equilibrium Output (mol/L)	Pitzer Equilibrium Output (mol/L)	LLNL Delta (mol/L)	Pitzer Delta (mol/L)	Sensitivity Difference (Absolute Value mol/L)
Quartz	26.57	Equilibrium modeling	29.19	27.63	2.62	1.06	1.56
K-Feldspar	1.92		2.00	2.04	0.078	0.122	0.044
Plagioclase	1.25		0.000	0.746	-1.25	-0.504	0.746
Dolomite	0.104		0.184	0.185	0.080	0.082	0.001
Calcite	0.138		0.088	0.088	-0.050	-0.050	0.000
Kaolinite	0.246		1.07	0.679	0.826	0.433	0.394
Illite	0.196		0.000	0.000	-0.196	-0.196	0.000
Smectite	0.025		0.000	0.000	-0.025	-0.025	0.000
Glauconite	0.010		0.012	--	0.003	--	--
Anhydrite	0.012		0.000	0.000	-0.012	-0.012	0.000
Dawsonite	0.000		0.000	0.000	0.000	0.000	0.000

Notes:
Equilibrium modeling completed using PHREEQC
mol/L - moles per liter of specified mineral
LLNL - Lawrence Livermore National Laboratory
LLNL denotes the usage of the LLNL.dat thermodynamic database
Pitzer denotes the usage of the expanded Pitzer thermodynamic database
--: Glauconite was not included in the expanded Pitzer thermodynamic database

Minerals Present in System	LLNL			Pitzer			Sensitivity Difference (Absolute Value SI)
	Current State Saturation Index	Saturation Index Following Injectate	Difference in Saturation Index Following Injectate	Current State Saturation Index	Saturation Index Following Injectate	Difference in Saturation Index Following Injectate	
Quartz	-0.37	-0.34	0.03	-0.42	-0.41	0.01	0.02
K-Feldspar	-0.85	-5.12	-4.27	4.83	-2.63	-7.46	3.19
Albite	-1.04	-5.31	-4.27	7.04	-0.44	-7.48	3.21
Dolomite	3.38	-3.92	-7.3	14.8	10.74	-4.1	3.2
Calcite	1.3	-2.35	-3.65	-2.37	-4.24	-1.87	1.78
Kaolinite	-2.25	-3.2	-0.95	5.5	4.88	-0.62	0.33
Illite	-1.95	-7.22	-5.27	13.0	-1.78	-14.8	9.54
Smectite	4.19	-11.59	-15.8	11.3	-1.78	-13.1	2.72
Anhydrite	-0.83	-0.88	-0.05	-2.7	-7.07	-4.37	4.32
Glauconite	22.7	-3.18	-25.9	--	--	--	--
Dawsonite	-2.2	-2.42	-0.2	3.24	-1.2	-4.44	4.23
Minerals Thermodynamically Favored to Precipitate				Minerals Thermodynamically Favored to Precipitate			
Hematite	23.27	13.9	-9.4	23.76	5.63	-18.13	8.73
Goethite	10.91	6.17	-4.7	11.28	2.19	-9.09	4.35
Magnetite	26.53	9.3	-17.2	27.26	3.13	-24.13	6.93
Jarosite	14.14	11.5	-2.6	7.89	-10	-17.89	15.27
Nontronite	23.81	13	-10.8	28.31	7.62	-20.69	9.88
Ferrite	18.96	2.1	-16.9	19.34	-3.78	-23.12	6.21
Alunite	--	--	--	10.28	3.76	-6.52	--
Beidellite-Ca	--	--	--	16.76	3.65	-13.11	--
Chabazite	--	--	--	37.43	7.78	-29.65	--
Erionite	--	--	--	38.67	6.27	-32.4	--
Laumontite	--	--	--	39.22	7.99	-31.23	--
Phillipsite	--	--	--	34.67	6.67	-28	--
Pyrophyllite	--	--	--	13.31	2.77	-10.54	--
Stellerite	--	--	--	20.61	9.08	-11.53	--

Notes:
PHREEQC used for saturation index calculations
Saturation indices are unitless
LLNL - Lawrence Livermore National Laboratory
LLNL denotes the usage of the LLNL.dat thermodynamic database
Pitzer denotes the usage of the expanded Pitzer thermodynamic database
Glauconite was not included in the expanded Pitzer thermodynamic database

Parameter	Initial Conditions (mg/L)	Base Case Model Output (mg/L)	Sensitivity Model Run	Sensitivity Model Output - High P, 35°C (mg/L)	Sensitivity Model Output - High P, 90°C (mg/L)	Delta (Base Case Output) High P, 35°C (mg/L)	Delta (Base Case Output) High P, 90°C (mg/L)	Delta (Initial Conditions) - High P, 35°C (mg/L)	Delta (Initial Conditions) - High P, 90°C (mg/L)
Calcium	728	54.5		542	141	488	86.8	-186	-587
Magnesium	88.2	1.18		18.5	3.35	17.3	2.17	-69.7	-84.9
Sodium	9,322	39,888		46,279	46,049	6,391	6,161	36,957	36,727
Potassium	296	2,047		11,522	4,790	9,475	2,743	11,226	4,493
Iron (Total)	114	720		0.19	857	-720	137	-113	744
Chloride	18,322	19,616		22,743	22,633	3,127	3,017	4,421	4,312
Sulfate	490	1,727		2,100	2,089	373	362	1,610	1,600
Sulfide	1.60	0.00		0.00	0.00	0.00	0.00	-1.60	-1.60
Boron	47.8	42.7		283	282	240	239	235	234
Barium	3.91	4.19		4.86	4.84	0.67	0.65	0.94	0.92
Manganese	0.25	0.27		0.31	0.31	0.04	0.04	0.07	0.07
Silica	56.6	31.1		4.03	20.1	-27.1	-11.0	-52.6	-36.5
Strontium	58.4	62.5		72.5	72.1	9.99	9.64	14.0	13.7
Total Alkalinity	454	67,423		66,502	75,959	-921	8,536	66,048	75,505
Aluminum	0.02*	0.00		0.00	0.00	0.00	0.00	-0.02	-0.02
pH	7.10	5.28		4.95	4.99	-0.33	-0.29	-2.14	-2.10

Notes:
Equilibrium modeling completed using PHREEQC
* - Formation water was not analyzed for aluminum. Concentrations used as inputs were derived from equilibration of aluminosilicate minerals with formation water
pH values given in Standard Units (SU)
mg/L - milligrams per liter
P - Pressure
Initial Conditions refers to initial base case model input conditions
Base case model output conditions were used as model inputs for pressure-temperature sensitivity runs

Mineral	Initial Conditions (mol/L)	Base Case Model Output (mol/L)	Sensitivity Model Run	Sensitivity Model Output - High P, 35°C (mol/L)	Sensitivity Model Output - High P, 90°C (mol/L)	Delta (Base Case Output) - High P, 35°C (mol/L)	Delta (Base Case Output) - High P, 90°C (mol/L)	Delta (Initial Conditions) - High P, 35°C (mol/L)	Delta (Initial Conditions) - High P, 90°C (mol/L)
Quartz	26.6	29.2	Sensitivity Model Run	29.7	29.3	0.469	0.128	3.09	2.75
K-Feldspar	1.92	2.00		1.77	1.94	-0.232	-0.061	-0.150	0.020
Plagioclase	1.25	0.000		0.000	0.000	0.000	0.000	-1.25	-1.25
Dolomite	0.104	0.184		0.181	0.181	-0.003	-0.003	0.077	0.077
Calcite	0.138	0.088		0.078	0.088	-0.010	0.000	-0.059	-0.050
Kaolinite	0.246	1.070		1.19	1.103	0.118	0.033	0.942	0.856
Illite	0.196	0.000		0.000	0.000	0.000	0.000	-0.196	-0.196
Smectite	0.025	0.000		0.000	0.000	0.000	0.000	-0.025	-0.025
Glauconite	0.010	0.012		0.010	0.010	-0.002	-0.002	0.000	0.000
Anhydrite	0.012	0.000		0.000	0.000	0.000	0.000	-0.012	-0.012
Dawsonite	0.000	0.000		1.99	1.89	1.99	1.89	1.99	1.89

Notes:
Equilibrium modeling completed using PHREEQC
mol/L - moles per liter of specified mineral
P - Pressure
Initial Conditions refers to initial base case model input conditions
Base case model output conditions were used as model inputs for pressure-temperature sensitivity runs

Minerals Present in System	Initial Conditions - Saturation Index	Base Case Model Output - Saturation Index	High P, 35°C Model Run			High P, 90°C Model Run		
			Saturation Index Following Injectate	Delta (Base Case Output)	Delta (Initial Conditions)	Saturation Index Following Injectate	Delta (Base Case Output)	Delta (Initial Conditions)
Quartz	-0.37	-0.34	0.47	0.81	0.84	-0.36	-0.02	0.01
K-Feldspar	-0.85	-5.12	-0.47	4.65	0.38	-1.45	3.67	-0.60
Albite	-1.04	-5.31	-1.95	3.36	-0.91	-2.13	3.18	-1.09
Dolomite	3.38	-3.92	-2.3	1.62	-5.68	-1.00	2.92	-4.38
Calcite	1.3	-2.35	-1.06	1.29	-2.36	-0.50	1.85	-1.80
Kaolinite	-2.25	-3.2	-1.76	1.44	0.49	-1.20	2.00	1.05
Illite	-1.95	-7.22	-3.88	3.34	-1.93	-3.29	3.93	-1.34
Smectite	4.19	-11.6	-11.76	-0.16	-16.0	-8.77	2.83	-13.0
Anhydrite	-0.83	-0.88	-1.95	-1.07	-1.12	-2.44	-1.56	-1.61
Glauconite	22.68	-3.18	-5.6	-2.42	-28.3	-2.78	0.40	-25.5
Dawsonite	-2.21	-2.42	1.17	3.59	3.38	1.58	0.84	3.79

Notes:
PHREEQC used for saturation index calculations
Saturation indices are unitless
P - Pressure
Initial Conditions refers to saturation indices calculated at present conditions prior to initiation of injection
Base case model output conditions were used as model inputs for pressure-temperature sensitivity runs

Appendix 2G
Geochemistry Supporting Data

Predicted Geochemical Reactions Following Injectate Gas Interaction

Predicted Geochemical Reactions Following Injectate Gas Interaction

- CO_2 dissolution into formation water

$$CO_2(g) + H_2O \rightarrow H_2CO_3$$

- Carbonic acid dissolution into bicarbonate

$$H_2CO_3 \rightarrow H^+ + HCO_3^-$$

- Bicarbonate dissociation into carbonate

$$HCO_3^- \rightarrow H^+ + CO_3^{2-}$$

- Dissolution of K-feldspar

$$KAlSi_3O_8 + 8\,H2O \rightarrow K^+ + Al(OH)_4^- + 3\,H_4SiO_4$$

- Dissolution of plagioclase feldspar

$$NaAlSi_3O_8 + 8H_2O \rightarrow Na^+ + Al(OH)_4^- + 3\,H_4SiO_4$$

- Dissolution of illite

$$K_{0.6}Mg_{0.25}Al_{2.3}Si_{3.5}O_{10}(OH)_2 + 11.2\,H_2O \rightarrow 0.6\,K^+ + 0.25\,Mg^{2+} + 2.3\,Al(OH)_4^- + 3.5\,H_4SiO_4 + 1.2\,H^+$$

- Dissolution of smectite

$$Ca_{0.25}Na_{0.1}K_{0.2}Fe_{0.7}Mg_{1.15}Al_{1.25}Si_{3.5}O_{10}(OH)_2 + 8\,H^+ \rightarrow 0.25\,Ca^{2+}\,0.1\,Na^+ + 0.2\,Fe^{3+} + 0.5\,Fe^{2+} + 0.2\,K^+ + 1.15\,Mg^{2+} + 1.25\,Al^{3+} + 3.5\,SiO_2 + 5\,H_2O$$

- Dissolution of kaolinite

$$Al_2Si_2O_5(OH)_4 + 6\,H^+ \rightarrow H_2O + 2\,H_4SiO_4 + 2\,Al^{3+}$$

- Dissolution of carbonate (as calcite) cements

$$CaCO_3 \rightarrow CO_3^{2-} + Ca^{2+}$$

- Precipitation of quartz cements

$$H_4SiO_4 \rightarrow SiO_2 + 2\,H_2O$$

- Potential precipitation of kaolinite

$$H_2O + 2\,H_4SiO_4 + 2\,Al^{3+} \rightarrow Al_2Si_2O_5(OH)_4 + 6\,H^+$$

- Reprecipitation of carbonate (as calcite) cements

$$CO_3^{2-} + Ca^{2+} \rightarrow CaCO_3$$

- Precipitation of Fe-oxyhydroxide (as hematite) minerals

$$2\,Fe^{3+} + 3\,H_2O \rightarrow Fe_2O_3$$

- Precipitation of calcium aluminosilicate (as laumontite) minerals

$$1\,Ca^{2+} + 2\,Al^{3+} + 8\,H_2O + 4\,SiO_2 \rightarrow CaAl_2Si_4O_{12} \cdot 4\,H_2O + 8\,H^+$$

- Potential precipitation of dawsonite (under sensitivity pressure-temperature conditions)

$$Al^{3+} + HCO_3^- + Na^+ + 2H_2O \rightarrow NaAlCO_3(OH)_2 + 3H^+$$

Appendix 5A

Class VI CO_2 Injection and Monitoring Well Construction Details

Contents

Well-Specific Construction Details for the following wells:

- **New Drill Injection Well**
- **Injection Well 27R-27N**
- **Injection Well 55-26N**
- **Injection Well 64-35N**
- **Injection Well 9-1N**
- **Injection Well 64-27N**
- **Monitoring Well 1-28N**
- **Monitoring Well 25-26N**
- **Monitoring Well 27-1N**
- **Monitoring Well 35X-27N**
- **Monitoring Well 39-26N**

CONSTRUCTION DETAILS

AERA ENERGY, LLC - CARBONFRONTIER

FACILITY INFORMATION

Facility name: CarbonFrontier
Well name: New Drill Injection Well
API No. N/A

Facility contact: Randy Hoyle, Chief Carbon Solutions Officer
10000 Ming Ave., Bakersfield, CA 93311
(661) 665-5000, RWHoyle@aeraenergy.com

Well location: Kern County, CA
See "Table 5-2: New Drill Wells to be Constructed as Co2 Injection Wells" in Section 5 of the Application Narrative.

1. INTRODUCTION

The well construction details provided in this document are well-specific and supplement details presented in Construction Details (**Attachment K**) and **Section 5** of the **Application Narrative**. This is a new drill well drilled and completed as an EPA Class VI CO_2 injection well.

1.1.1 Rationale for a Casing-Liner Well Design

The injection zone (64 Zone Sandstone) has been on oil and gas production for decades, and the reservoir pressure has been depleted from original at over 4,000 pounds per square inch (psi), to approximately 700 psi. The reduction in pressure impacts the cementing process where circulating cement to surface is a requirement for EPA Class IV wells. Cement slurry densities normally used for zonal isolation range from 16 pounds per gallon (ppg) to as low as 12.5 ppg for extended yield slurry designs. Attempting to set and cement casing at the base of the 64 Zone Sandstone will likely result in fluid losses to the formation and not bring cement to surface. Therefore, long string casing will be set and cemented at the base of the Lower Santos shale (the primary confining zone), which should bring cement to surface (40 CFR 146.86(b)(3)).

2. WELL DESIGN

2.1 Directional

The well will be drilled as a vertical well. Directional surveys will be taken as the well is drilled.

2.2 Underground Sources of Drinking Water

The Tulare formation is the only potential USDW but has an approved Aquifer Exemption.

2.3 Tubing and Packer

Injection will be through tubing and a packer per 40 CFR 146.86(c)(2). Materials for the tubing and packer are shown in **Section 5** of the **Application Narrative, Attachment K,** and **Table 10** and were selected to ensure compatibility with the injected and reservoir fluids as required per 40 CFR 146.86(c)(1). The packer will be set in the casing opposite a cemented interval. The setting depth will be selected based on an evaluation of the cement bond log run after the casing is run and cemented.

The tubing size was selected based on the proposed injection rate, composition, and reservoir conditions. The fluid flow model PROSPER[1] was used to determine the pressure and temperature profiles for CO_2 injection. PROSPER has Pressure-Volume-Temperature (PVT) correlations that have been validated for CO_2 injection with a wide range of impurities.

The tubing wall thickness was selected to account for corrosion wall loss including upset conditions for the selected grade. Corrosion wall loss estimates were determined using OLI,[2] an industry standard commercial thermodynamic corrosion analysis program for aqueous systems.

2.4 Proposed Perforations

Proposed perforations will be selected based on the new well location.

Table 1 shows the proposed perforations intervals for the well.

Table 1: Proposed Perforations

Zone	Perforations Top (ft)	Perforations Bottom (ft)
64 Zone Sandstone	TBD	TBD
64 Zone Sandstone	TBD	TBD

ft: feet

2.5 Maximum Surface Pressures and Mechanical Integrity

The operating injection pressure will depend on the reservoir pressure, the properties of the injected fluid, the wellbore friction, and the rate. PROSPER was used to determine the pressure and temperature profiles for CO_2 injection. PROSPER has PVT correlations that have been validated for CO_2 injection with a wide range of impurities.

The annulus pressure will be maintained at a pressure higher than the tubing injection pressure as required per CFR 146.88(c). The design pressure loads on the injection tubing and tubing by casing annulus are as follows:

- Maximum tubing injection pressure 2,800 psi
- Maximum annulus pressure 2,900 psi
- Maximum shut-in tubing pressure with methane (CH_4) 3,950 psi

[1] https://www.petex.com
[2] https://www.olisystems.com/

The maximum tubing injection and shut-in pressures are based on PROSPER flow assurance modeling. The maximum annulus pressure is higher than the maximum injection pressure as required per CFR 146.88(c).

After each casing and liner is set and cemented, and after the tubing and packer are installed, they will be pressure tested to a pressure equal or greater than the design pressure for that component to demonstrate mechanical integrity.

2.6 Injection Well Casing, Liner, and Tubing Design

The casings, liner, and tubing have been designed to withstand all expected loads during the life of the well including the maximum injection and annulus pressure loads. The materials selected for these items as shown in **Section 5** of the **Application Narrative** and **Attachment K** were based on corrosion analysis to ensure that the materials are compatible with the injected and reservoir fluids. The upper casing section will be carbon steel with a corrosion-resistant alloy (CRA) lower section for compatibility with the injected and reservoir fluids per CFR 146.86(b)(1). The flow-wetted lower part of the injection casing, liner, tubing, and packer will be CRA materials.

The loads were evaluated and compared to the strengths to determine an appropriate well design including safety factors. **Table 2** shows the design factors (minimum safety factors) used in the analysis.

Table 2: Design Factors

Failure Mode	Casing	Tubing
Triaxial (1)	1.25	1.25
Burst (2)	1.30	1.20
Collapse (3)	1.00	1.10
Axial – Tension (4)	1.60	1.40
Axial – Compression (4)	1.40	1.40
1. VME Criterion (YS derated for temperature) 2. API Minimum Internal Yield Pressure 3. API (Tension adjusted) Collapse 4. API Pipe Body Yield Strength API: American Petroleum Institute VME: Von Mises Equivalent YS: Yield Strength		

2.6.1 Design Analysis Results without Corrosion

The long string casing, liner, and tubing details are shown in **Section 5** of the **Application Narrative** and **Attachment K**.

A description of the dictating design loads and the design results for nominal wall thickness casing, liner, and tubing are included in **Table 3**, **Table 4**, **Table 5**, and **Table 6**. All safety factors exceed the design factors. Additional details on the tubular design are available in the FEED Study for the Aera North Belridge CCS Project design report.

Table 3: 7-inch Injection Casing Nominal Wall Design Results Section 1

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.36	–	>3	–	2.53
3,950 psi Shut-in tubing pressure with methane to surface	1.74	–	2.89	–	1.89

SF: safety factor

Table 4: 7-inch Injection Casing Nominal Wall Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	1.96	–	>3	–	2.09
3,950 psi Shut-in tubing pressure with methane to surface	1.64	–	>3	>3	1.74

Table 5: 4.5-inch Injection Liner Nominal Wall Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure	2.75	–	>3	–	3.00
3,950 psi Shut-in tubing pressure with methane to surface	2.68	–	>3	–	2.87

Table 6: 4.5-inch Tubing Nominal Wall Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure with 0 psi annulus pressure	2.69	–	>3	>3	2.73
3,950 psi Shut-in tubing pressure with methane to surface	1.97	–	2.40	–	1.98

2.6.2 Design Analysis Results with Corrosion

The wall thickness may reduce with time because of corrosion. Corrosion analysis using a corrosion model was used to estimate wall loss at the end of the injection period. The design results for the inner casing, inner liner, and tubing with respective remaining body wall (RBW) estimates are included in **Table 7**, **Table 8**, and **Table 9**, respectively. All safety factors exceed the design factors at the end of the injection phase.

Table 7: 7-inch Injection Casing 78.8% RBW Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	1.76	–	>3	–	1.63

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
3,950 psi Shut-in tubing pressure with methane to surface	1.48	–	>3	>3	1.36

Table 8: 4.5-inch Injection Liner 74.3% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure with 0 psi annulus pressure	2.34	–	>3	–	2.22
3,950 psi Shut-in tubing pressure with methane to surface	2.28	–	>3	–	2.12

Table 9: 4.5-inch Tubing 73.2% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure with 0 psi annulus pressure	2.25	–	>3	>3	2.16
3,950 psi Shut-in tubing pressure with methane to surface	1.64	–	2.40	–	1.58

Table 10: Packer Information

Item	Value
Packer Setting Depth	7,550 ft
Packer material	Alloy 718 or equivalent
Packer element material	EPDM or HNBR
Packer type	Permanent or retrievable with latched seal assembly
Maximum casing ID	6.184 in. (nominal ID for 7 in. 29 ppf casing)
Minimum casing ID	6.059 in. (drift diameter for 7 in. 29 ppf casing)
Packer / seal assembly ID	4.500 in.
Packer rating	Differential pressure ±7,500 psi, axial capacity ±200,000 lbf, based on the packer loads in **Figure 1** .

EPDM: ethylene propylene diene monomer rubber
HNBR: hydrogenated nitrile butadiene rubber
ID: inner diameter
in: inches
lbf: pound-force
ppf: pounds per foot

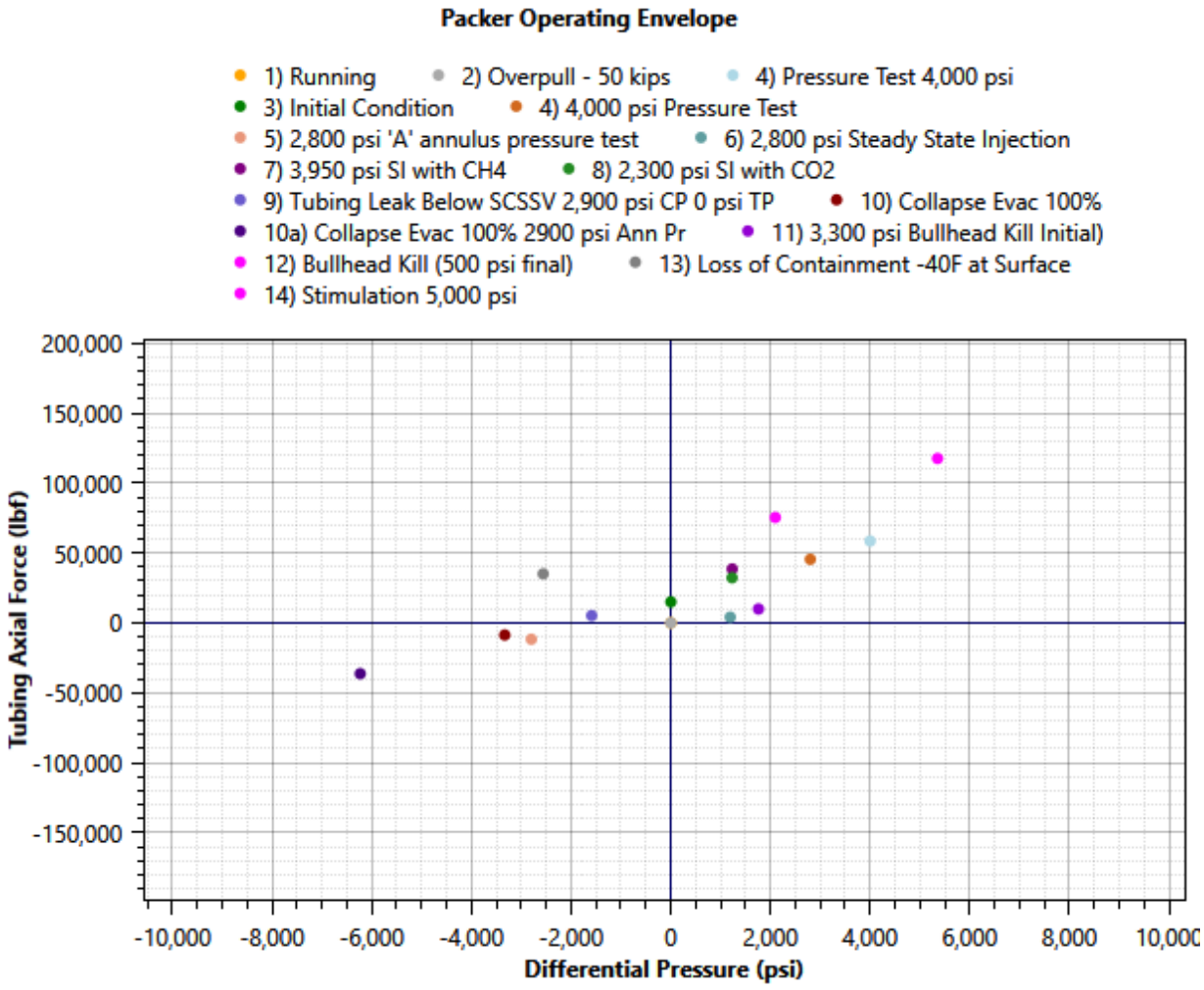

Figure 1: Packer Loads

CONSTRUCTION DETAILS

AERA ENERGY, LLC - CARBONFRONTIER

FACILITY INFORMATION

Facility name: CarbonFrontier
Well name: 27R-27N Injection Well
API No.: 0402929616

Facility contact: Randy Hoyle, Chief Carbon Solutions Officer
10000 Ming Ave., Bakersfield, CA 93311
(661) 665-5000, RWHoyle@aeraenergy.com

Well location: Kern County, CA
35° 33’ 2.4280” N, 119° 48’ 28.6103” W

1. INTRODUCTION

The well construction details provided in this document are well-specific and supplement details presented in Construction Details (**Attachment K**) and **Section 5** of the **Application Narrative**. The well is an existing well that will be repurposed and converted to a CO_2 injection well. The well will be worked over and recompleted as an EPA Class VI injection well.

2. WELL DESIGN

2.1 Well History

The original well was drilled in 1942. The surface casing as shown in **Section 5** of the **Application Narrative** and **Attachment K** was set and cemented to surface. The intermediate casing, long-string casing, and liner details are included in **Section 5** of the **Application Narrative** and **Attachment K**.

2.2 Directional

The well was drilled as a vertical well. The directional surveys are included in **Table 11**.

2.3 Underground Sources of Drinking Water

The Tulare formation is the only potential underground source of drinking water but has an approved Aquifer Exemption.

2.4 Tubing and Packer

Injection will be through tubing and a packer per 40 CFR 146.86(c)(2). Materials for the tubing and packer are shown in **Section 5** of the **Application Narrative, Attachment K,** and **Table 10**, respectively and were selected to ensure compatibility with the injected and reservoir fluids as required by 40 CFR 146.86(c)(1). The packer will be set in the casing opposite a cemented interval. The setting depth will be selected based on an evaluation of the cement bond log run after the inner casing is run and cemented.

The tubing size was selected based on the proposed injection rate, composition, and reservoir conditions. The fluid flow model PROSPER[1] was used to determine the pressure and temperature profiles for CO_2 injection. PROSPER has Pressure-Volume-Temperature (PVT) correlations that have been validated for CO_2 injection with a wide range of impurities.

The tubing wall thickness was selected to account for corrosion wall loss including upset conditions for the selected grade. Corrosion wall loss estimates were determined using OLI,[2] an industry standard commercial thermodynamic corrosion analysis program for aqueous systems.

2.5 Proposed Perforations

Table 1 shows the proposed perforations intervals for the well.

Table 1: Proposed Perforations

Zone	Perforations Top (ft)	Perforations Bottom (ft)
64 Zone Sandstone	7,713	7,775
64 Zone Sandstone	7,825	8,025

ft: feet

2.6 Maximum Surface Pressures and Mechanical Integrity

The operating injection pressure will depend on the reservoir pressure, the properties of the injected fluid, the wellbore friction, and the rate. PROSPER was used to determine the pressure and temperature profiles for CO_2 injection. PROSPER has Pressure-Volume-Temperature (PVT) correlations that have been validated for CO_2 injection with a wide range of impurities.

The annulus pressure will be maintained at a pressure higher than the tubing injection pressure as required by CFR 146.88(c). The design pressure loads on the injection tubing and tubing by casing annulus are as follows:

- Maximum tubing injection pressure 2,800 pounds per square inch (psi)
- Maximum annulus pressure 2,900 psi
- Maximum shut-in tubing pressure with methane (CH_4) 3,950 psi

The maximum tubing injection and shut-in pressures are based on PROSPER flow assurance modeling. The maximum annulus pressure is higher than the maximum injection pressure as required by CFR 146.88(c).

After each casing and liner is set and cemented, and after the tubing and packer are installed, they will be pressure tested to a pressure equal or greater than the design pressure for that component to demonstrate mechanical integrity.

[1] https://www.petex.com
[2] https://olisystems.com

2.7 Injection Well Casing, Liner, and Tubing Design

The new long string inner casing, inner liner, and tubing have been designed to withstand all expected loads during the life of the well including the maximum injection and annulus pressure loads. The materials selected for these items as shown in **Section 5** of the **Application Narrative** and **Attachment K** were based on corrosion analysis to ensure that the materials are compatible with the injected and reservoir fluids. The upper casing section will be carbon steel with a corrosion-resistant alloy (CRA) lower section for compatibility with the injected and reservoir fluids per CFR 146.86(b)(1). The flow wetted lower part of the inner casing, inner liner, tubing, and packer will be CRA materials.

The loads were evaluated and compared to the strengths to determine an appropriate well design including safety factors. **Table 2** shows the design factors (minimum safety factors) used in the analysis.

Table 2: Design Factors

Failure Mode	Casing	Tubing
Triaxial (1)	1.25	1.25
Burst (2)	1.30	1.20
Collapse (3)	1.00	1.10
Axial – Tension (4)	1.60	1.40
Axial – Compression (4)	1.40	1.40
1. VME Criterion (YS derated for temperature) 2. API Minimum Internal Yield Pressure 3. API (Tension adjusted) Collapse 4. API Pipe Body Yield Strength API: American Petroleum Institute VME: Von Mises Equivalent YS: Yield Strength		

2.7.1 Design Results without Corrosion

The new long-string inner casing, inner liner, and tubing details are shown in **Section 5** of the **Application Narrative** and **Attachment K**.

A description of the design loads and the design results for the inner casing, inner liner, and tubing are included in **Table 3** , **Table 4**, **Table 5**, and **Table 6**, respectively. All safety factors exceed the design factors. Additional details on the tubular design are available in the FEED Study for the Aera North Belridge CCS Project design report.

Table 3: 7-inch Inner Casing Design Results Section 1

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.34	–	>3	–	2.50

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
3,950 psi Shut-in tubing pressure with methane to surface	1.72	–	>3	–	1.82

SF: safety factor

Table 4: 7-inch Inner Casing Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.34	–	>3	>3	2.50
3,950 psi Shut-in tubing pressure with methane to surface	1.72	–	>3	>3	1.82

Table 5: 4.5-inch Inner Liner Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure	>3	–	>3	–	>3
3,950 psi Shut-in tubing pressure with methane to surface	>3	–	–	>3	>3

Table 6: 4.5-inch Tubing Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure with 0 psi annulus pressure	2.69	–	>3	>3	2.73
3,950 psi Shut-in tubing pressure with methane to surface	1.97	–	2.40	>	1.98

2.7.2 Design Results with Corrosion

The wall thickness may reduce with time because of corrosion. Corrosion analysis using a corrosion model was used to estimate wall loss at the end of the injection period. The design results for the inner casing, inner liner, and tubing with respective remaining body wall (RBW) estimates are included in **Table 7**, **Table 8**, and **Table 9**, respectively. All safety factors exceed the design factors at the end of the injection phase.

Table 7: 7-inch Inner Casing 77.7% RBW Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.08	–	>3	>3	1.93

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
3,950 psi Shut-in tubing pressure with methane to surface	1.53	–	>3	>3	1.40

Table 8: 4.5-inch Inner Liner 74.3% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure	>3	–	>3	–	>3
3,950 psi Shut-in tubing pressure with methane to surface	>3	–	–	>3	3

Table 9: 4.5-inch Tubing 73.2% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure with 0 psi annulus pressure	2.25	–	>3	>3	2.16
3,950 psi Shut-in tubing pressure with methane to surface	1.64	–	2.40	–	1.58

Table 10: Packer Information

Item	Value
Packer Setting Depth	7,550 ft
Packer material	Alloy 718 or equivalent
Packer element material	EPDM or HNBR
Packer type	Permanent or retrievable with latched seal assembly
Maximum casing ID	6.276 inches (nominal ID for 7 in. 26 ppf casing)
Minimum casing ID	6.151 in. (drift diameter for 7 in. 26 ppf casing)
Packer/seal assembly ID	4.500 in.
Packer rating	Differential pressure ±7,500 psi, axial capacity ±200,000 lbf, based on the packer loads in **Figure 1**.

EPDM: ethylene propylene diene monomer rubber
HNBR: hydrogenated nitrile butadiene rubber
ID: inner diameter
in: inches
lbf: pound-force
ppf: pounds per foot

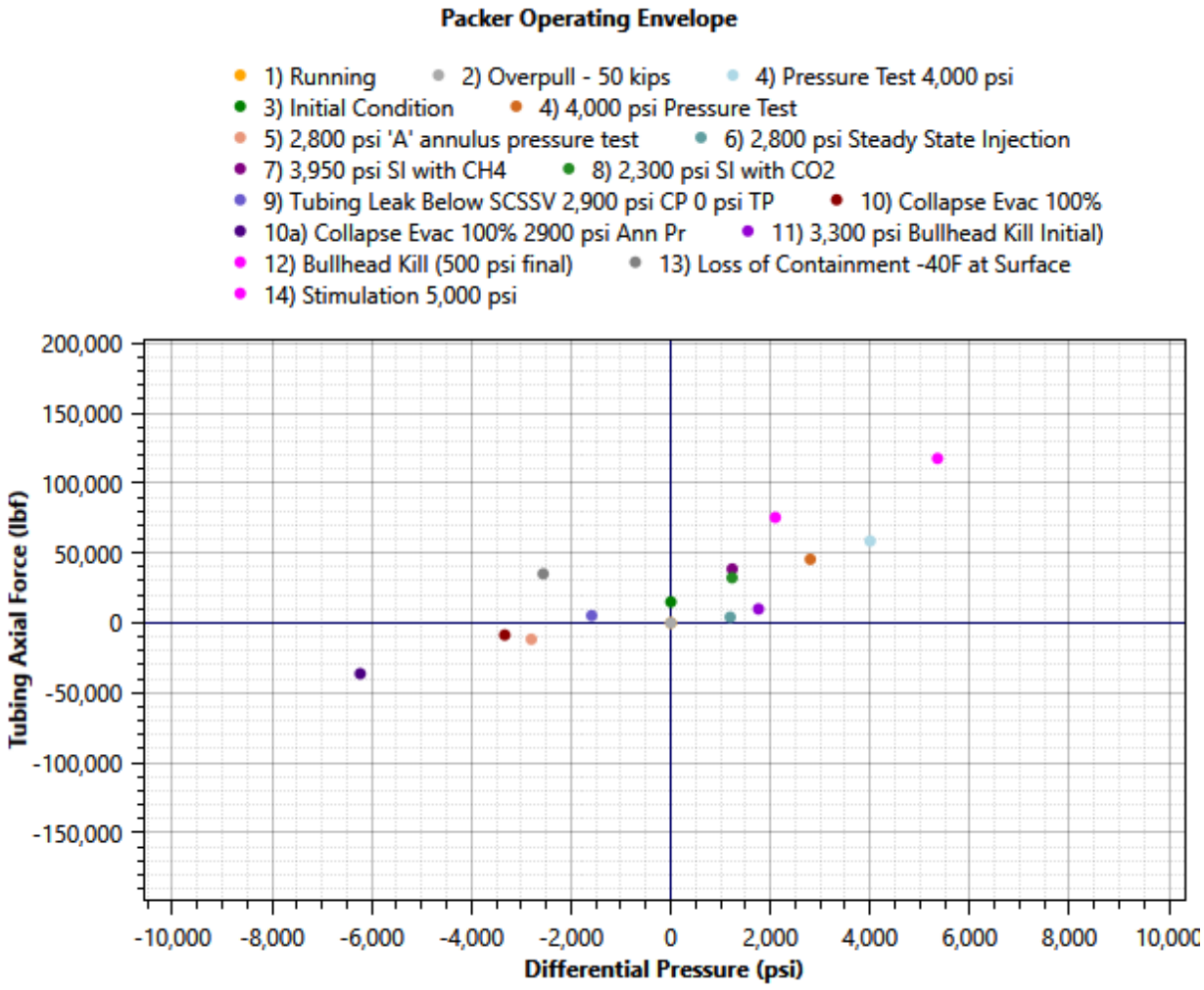

Figure 1: Packer Loads

Table 11: Directional Surveys

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
0	0.00	0.00	0.00	0	0	0	0
100	0	1.04	0.00	100	0	0	0
200	0	1.04	0.00	200	0	0	0
300	0	1.04	0.00	300	0	0	0
400	0	1.04	0.00	400	0	0	0
500	0	1.04	0.00	500	0	0	0
600	0.25	191.03	0.25	600	0	0	0
700	0	191.03	0.25	700	0	0	0
800	0	191.03	0.00	800	0	0	0
900	0	191.03	0.00	900	0	0	0
1,000	0.25	228.03	0.25	1,000	-1	-1	0
1,100	0	228.03	0.25	1,100	-1	-1	0
1,200	0	228.03	0.00	1,200	-1	-1	0
1,300	0	228.03	0.00	1,300	-1	-1	0
1,400	0	228.03	0.00	1,400	-1	-1	0
1,500	0	228.03	0.00	1,500	-1	-1	0
1,600	0	228.03	0.00	1,600	-1	-1	0
1,700	0	228.03	0.00	1,700	-1	-1	0
1,800	0.5	102.03	0.50	1,800	0	-1	0
1,900	1	83.03	0.55	1,900	1	-1	1
2,000	1.5	85.03	0.50	2,000	2	-1	3
2,100	1.75	86.03	0.25	2,100	5	0	6
2,200	2.5	81.03	0.77	2,200	8	0	10
2,300	2.25	80.03	0.25	2,300	11	1	14
2,400	2.5	78.03	0.26	2,400	15	2	18
2,500	2.75	76.03	0.27	2,500	19	3	23
2,600	2.75	75.03	0.05	2,599	24	4	27
2,700	2.75	74.03	0.05	2,699	28	5	32
2,800	2.75	73.03	0.05	2,799	32	6	36
2,900	2.5	74.03	0.25	2,899	37	8	41
3,000	2.5	72.03	0.09	2,999	41	9	45
3,100	2.75	76.03	0.31	3,099	45	10	49
3,200	2.5	74.03	0.27	3,199	49	11	54
3,300	2.75	73.03	0.25	3,299	53	13	58
3,400	2.75	74.03	0.05	3,399	58	14	63
3,500	2.75	74.03	0.00	3,498	62	15	67
3,600	2.75	74.03	0.00	3,598	67	17	72
3,700	2.5	76.03	0.27	3,698	71	18	77
3,800	2.5	75.03	0.04	3,798	75	19	81
3,900	2.25	72.03	0.28	3,898	79	20	85
4,000	2.5	70.03	0.26	3,998	82	22	89
4,100	2	72.03	0.51	4,098	86	23	92
4,200	2	71.03	0.03	4,198	89	24	96
4,300	1.75	69.03	0.26	4,298	92	25	99
4,400	1.75	64.03	0.15	4,398	95	26	102
4,500	1.75	71.03	0.21	4,498	98	27	104
4,600	1.5	68.03	0.26	4,598	101	28	107
4,700	1.5	72.03	0.10	4,698	103	29	109
4,800	1.25	71.03	0.25	4,798	106	30	112
4,900	1	73.03	0.25	4,898	108	31	114

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
5,000	0.75	65.03	0.28	4,998	109	31	115
5,100	0.75	59.03	0.08	5,098	110	32	116
5,200	0.75	49.03	0.13	5,198	112	33	117
5,300	0.75	50.03	0.01	5,298	113	33	118
5,400	0.75	50.03	0.00	5,398	114	34	119
5,500	0.5	53.03	0.25	5,498	115	35	120
5,600	0.5	54.03	0.01	5,598	116	35	121
5,700	0.5	62.03	0.07	5,698	117	36	122
5,800	0.25	44.03	0.27	5,798	118	36	122
5,900	0.5	18.03	0.30	5,898	118	37	122
6,000	0.5	10.03	0.07	5,998	119	38	123
6,100	0.5	4.03	0.05	6,098	120	39	123
6,200	0.25	348.03	0.27	6,198	120	39	123
6,300	0.5	340.03	0.25	6,298	120	40	122
6,400	0.25	1.04	0.28	6,398	121	40	122
6,500	0.25	28.03	0.12	6,498	121	41	122
6,600	0.5	29.03	0.25	6,598	121	41	123
6,700	0.25	37.03	0.25	6,697	122	42	123
6,800	0.25	59.03	0.10	6,797	123	42	123
6,900	0.5	56.03	0.25	6,897	123	43	124
7,000	0.5	66.03	0.09	6,997	124	43	125
7,100	0.25	76.03	0.26	7,097	125	43	125
7,200	0.5	81.03	0.25	7,197	125	43	126
7,300	0.25	79.03	0.25	7,297	126	44	127
7,400	0	79.03	0.25	7,397	126	44	127
7,500	0	79.03	0.00	7,497	126	44	127
7,600	0	79.03	0.00	7,597	126	44	127
7,700	0	79.03	0.00	7,697	126	44	127
7,800	0	79.03	0.00	7,797	126	44	127
7,900	0.25	289.03	0.25	7,897	126	44	127
8,000	0.5	305.03	0.27	7,997	126	44	126
8,100	0.75	296.03	0.27	8,097	125	45	125
8,200	1	299.03	0.25	8,197	125	45	124
8,287	1	306.03	0.14	8,284	124	46	122
8,940	1	306.03	0.00	8,937	121	53	113

Azim.: azimuth
DLS: dogleg severity
N-S: north to south
E-W: east to west
Incl.: inclination
MD: measured depth
TVD: true vertical depth
Vert. Sec: vertical section

CONSTRUCTION DETAILS

AERA ENERGY, LLC - CARBONFRONTIER

FACILITY INFORMATION

Facility name: CarbonFrontier
Well name: 55-26N Injection Well
API No.: 0402935057

Facility contact: Randy Hoyle, Chief Carbon Solutions Officer
10000 Ming Ave., Bakersfield, CA 93311
(661) 665-5000, RWHoyle@aeraenergy.com

Well location: Kern County, CA
35° 32’ 43.2520” N, 119° 47’ 32.7755” W

1. INTRODUCTION

The well construction details provided in this document are well-specific and supplement details presented in Construction Details (**Attachment K**) and **Section 5** of the **Application Narrative**. The well is an existing well that will be repurposed and converted to a CO_2 injection well. The well will be worked over and recompleted as an EPA Class VI injection well.

2. WELL DESIGN

2.1 Well History

The original well was drilled in 1941. The surface casing as shown in the **Section 5** of the **Application Narrative** and **Attachment K** was set and cemented to surface. The intermediate casing, long string casing, and liner details are included in **Section 5** of the **Application Narrative** and **Attachment K**.

2.2 Directional

The well was drilled as a vertical well.

2.3 Underground Sources of Drinking Water

The Tulare formation is the only potential underground source of drinking water but has an approved Aquifer Exemption.

2.4 Tubing and Packer

Injection will be through tubing and a packer per 40 CFR 146.86(c)(2). Materials for the tubing and packer are shown in **Section 5** of the **Application Narrative, Attachment K,** and **Table 10** and were selected to ensure compatibility with the injected and reservoir fluids as required per 40 CFR 146.86(c)(1). The packer will be set in the casing opposite a cemented interval. The setting depth will be selected based on an evaluation of the cement bond log run after the inner casing is run and cemented.

The tubing size was selected based on the proposed injection rate, composition, and reservoir conditions. The fluid flow model PROSPER[1] was used to determine the pressure and temperature profiles for CO_2 injection. PROSPER has Pressure-Volume-Temperature (PVT) correlations that have been validated for CO_2 injection with a wide range of impurities.

The tubing wall thickness was selected to account for corrosion wall loss including upset conditions for the selected grade. Corrosion wall loss estimates were determined using OLI,[2] an industry-standard commercial thermodynamic corrosion analysis program for aqueous systems.

2.5 Proposed Perforations

Table 1 shows the proposed perforations intervals for the well.

Table 1: Proposed Perforations

Zone	Perforations Top (ft)	Perforations Bottom (ft)
64 Zone Sandstone	7,650	7,716
64 Zone Sandstone	7,785	7,985

ft: feet

2.6 Maximum Surface Pressures and Mechanical Integrity

The operating injection pressure will depend on the reservoir pressure, the properties of the injected fluid, the wellbore friction, and the rate.

The annulus pressure will be maintained at a pressure higher than the tubing injection pressure as required per CFR 146.88(c). The maximum proposed pressure loads on the injection tubing and tubing by casing annulus are as follows:

- Maximum tubing injection pressure 2,800 pounds per square inch (psi)
- Maximum annulus pressure 2,900 psi
- Maximum shut-in tubing pressure with methane (CH_4) 3,950 psi

The maximum tubing injection and shut-in pressures are based on PROSPER flow assurance modeling. The maximum annulus pressure is higher than the maximum injection pressure as required per CFR 146.88(c).

After each casing and liner is set and cemented, and after the tubing and packer are installed, they will be pressure tested to a pressure equal or greater than the design pressure for that component to demonstrate mechanical integrity.

2.7 Injection Well Casing and Tubing Design

The new long string inner casing and tubing have been designed to withstand all expected loads during the life of the well including the maximum injection and annulus pressure loads. The materials selected for these items as shown in **Section 5** of the **Application Narrative** and

[1] https://www.petex.com
[2] https://olisystems.com

Attachment K were based on corrosion analysis to ensure that the materials are compatible with the injected and reservoir fluids. The upper casing section will be carbon steel with a corrosion-resistant alloy (CRA) lower section for compatibility with the injected and reservoir fluids per CFR 146.86(b)(1). The flow-wetted lower part of the inner casing, tubing, and packer will be CRA materials.

The loads were evaluated and compared to the strengths to determine an appropriate well design including safety factors. **Table 2** shows the design factors (minimum safety factors) used in the analysis.

Table 2: Design Factors

Failure Mode	Casing	Tubing
Triaxial (1)	1.25	1.25
Burst (2)	1.30	1.20
Collapse (3)	1.00	1.10
Axial – Tension (4)	1.60	1.40
Axial – Compression (4)	1.40	1.40
1. VME Criterion (YS derated for temperature) 2. API Minimum Internal Yield Pressure 3. API (Tension adjusted) Collapse 4. API Pipe Body Yield Strength API: American Petroleum Institute VME: Von Mises Equivalent YS: Yield Strength		

2.7.1 Design Results without Corrosion

The new long string inner casing and tubing details are shown in **Section 5** of the **Application Narrative** and **Attachment K**.

A description of the design loads and the design results for the inner casing, inner liner and tubing are included in **Table 3**, **Table 4**, **Table 5,** and **Table 6** respectively. All safety factors exceed the design factors. Additional details on the tubular design are available in the FEED Study for the Aera North Belridge CCS Project design report.

Table 3: 7-inch Inner Casing Design Results Section 1

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.34	–	>3	–	2.50
3,950 psi Shut-in tubing pressure with methane to surface	1.72	–	>3	–	1.82

SF: safety factor

Table 4: 7-inch Inner Casing Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.34	–	>3	>3	2.50
3,950 psi Shut-in tubing pressure with methane to surface	1.72	–	>3	>3	1.82

Table 5: 4.5-inch Liner Nominal Wall Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure	2.22	–	>3	–	2.36
3,950 psi Shut-in tubing pressure with methane to surface	2.64	–	>3	–	2.82

Table 6: 4.5-inch Tubing Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure with 0 psi annulus pressure	2.69	–	>3	>3	2.73
3,950 psi Shut-in tubing pressure with methane to surface	1.97	–	2.40	–	1.98

2.7.2 Design Results with Corrosion

The wall thickness may reduce with time because of corrosion. Corrosion analysis using a corrosion model was used to estimate wall loss at the end of the injection period. The design results for the inner casing, inner liner, and tubing with respective remaining body wall (RBW) estimates are included in **Table 7**, **Table 8,** and **Table 9**, respectively. All safety factors exceed the design factors at the end of the injection phase.

The casing corrosion below the packer is not considered in the design because the 9-inch casing is isolated by the CRA inner casing through the caprock.

Table 7: 7-inch Inner Casing 77.7% RBW Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.08	–	>3	>3	1.93
3,950 psi Shut-in tubing pressure with methane to surface	1.53	–	>3	>3	1.40

Table 8: 4.5-inch Liner 74.3% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure	1.88	–	>3	–	1.83
3,950 psi Shut-in tubing pressure with methane to surface	2.24	–	>3	–	2.08

Table 9: 4.5-inch Tubing 73.2% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure with 0 psi annulus pressure	2.25	–	>3	>3	2.16
3,950 psi Shut-in tubing pressure with methane to surface	1.64	–	2.40	–	1.58

Table 10: Packer Information

Item	Value
Packer Setting Depth	7,550 ft
Packer material	Alloy 718 or equivalent
Packer element material	EPDM or HNBR
Packer type	Permanent or retrievable with latched seal assembly
Maximum casing ID	6.276 in. (nominal ID for 7 in. 26 ppf casing)
Minimum casing ID	6.151 in. (drift diameter for 7 in. 26 ppf casing)
Packer / seal assembly ID	4.500 in.
Packer rating	Differential pressure ±7,500 psi, axial capacity ±200,000 lbf, based on the packer loads in **Figure 1.**

EPDM: ethylene propylene diene monomer rubber
HNBR: hydrogenated nitrile butadiene rubber
ID: inner diameter
in: inches
lbf: pound force
ppf: pounds per foot

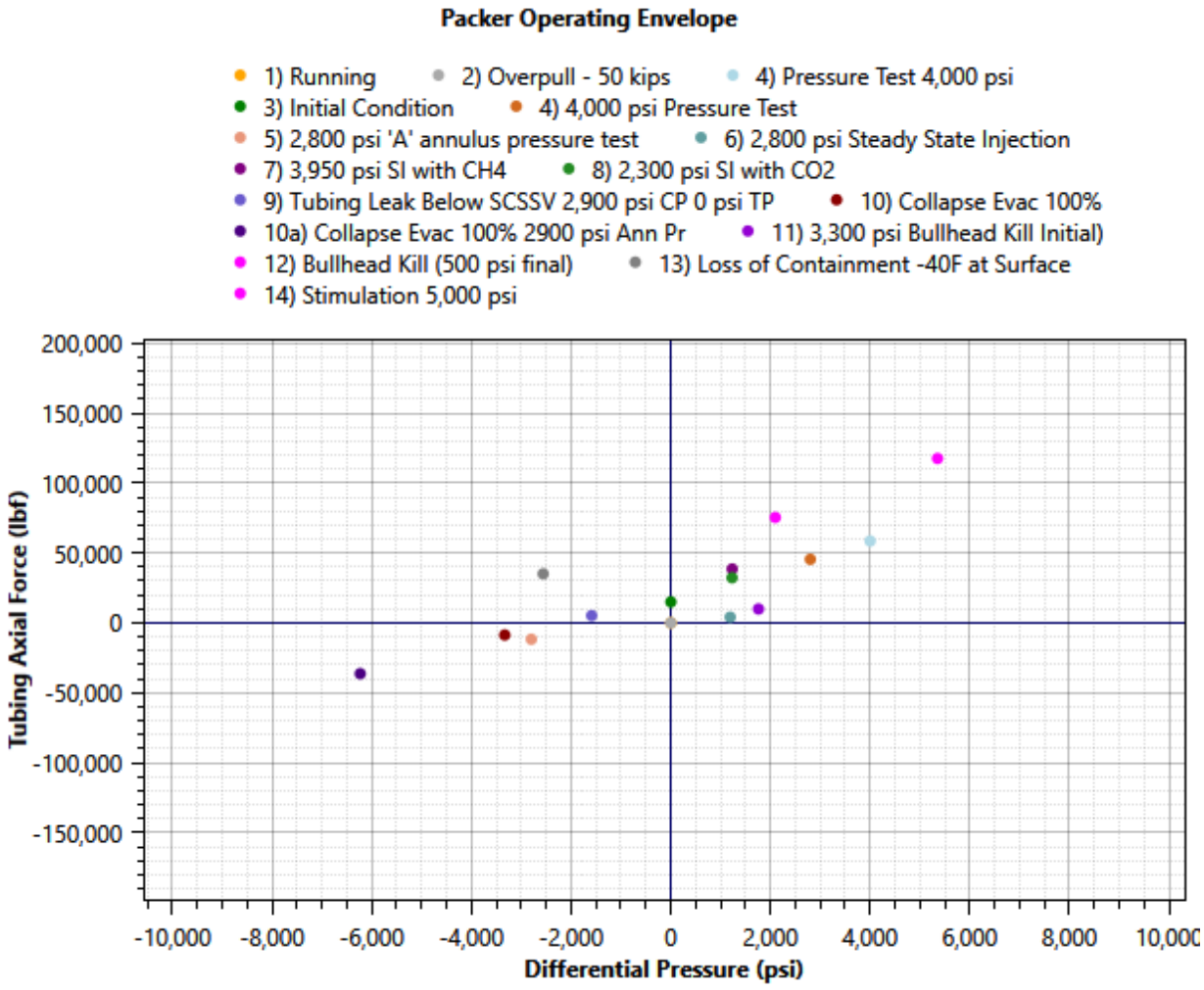

Figure 1: Packer Loads

CONSTRUCTION DETAILS

AERA ENERGY, LLC - CARBONFRONTIER

FACILITY INFORMATION

Facility name: CarbonFrontier
Well name: 64-35N Injection Well
API No.: 0402935091

Facility contact: Randy Hoyle, Chief Carbon Solutions Officer
10000 Ming Ave., Bakersfield, CA 93311
(661) 665-5000, RWHoyle@aeraenergy.com

Well location: Kern County, CA
35° 31’ 44.3600” N, 119° 46’ 44.9788” W

1. INTRODUCTION

The well construction details provided in this document are well-specific and supplement details presented in Construction Details (**Attachment K**) and **Section 5** of the **Application Narrative**. The well is an existing well that will be repurposed and converted to a CO_2 injection well. The well will be worked over and recompleted as an EPA Class VI CO_2 injection well.

2. WELL DESIGN

2.1 Well History

The original well was drilled in 1940. The surface casing as shown in the **Section 5** of the **Application Narrative** and **Attachment K** was set and cemented to surface. The intermediate casing and long-string casing details are included in **Section 5** of the **Application Narrative** and **Attachment K**.

2.2 Directional

The well was drilled as a vertical well. The directional surveys are included in **Table 11**.

2.3 Underground Sources of Drinking Water

The Tulare formation is the only potential underground source of drinking water but has an approved Aquifer Exemption.

2.4 Tubing and Packer

Injection will be through tubing and a packer per 40 CFR 146.86(c)(2). Materials for the tubing and packer are shown in **Section 5** of the **Application Narrative**, **Attachment K**, and **Table 10** respectively and were selected to ensure compatibility with the injected and reservoir fluids as required per 40 CFR 146.86(c)(1). The packer will be set in the casing opposite a cemented interval. The setting depth will be selected based on an evaluation of the cement bond log run after the inner casing is run and cemented.

The tubing size was selected based on the proposed injection rate, composition, and reservoir conditions. The fluid flow model PROSPER[1] was used to determine the pressure and temperature profiles for CO_2 injection. PROSPER has Pressure-Volume-Temperature (PVT) correlations that have been validated for CO_2 injection with a wide range of impurities.

The tubing wall thickness was selected to account for corrosion wall loss including upset conditions for the selected grade. Corrosion wall loss estimates were determined using OLI,[2] an industry-standard commercial thermodynamic corrosion analysis program for aqueous systems.

The maximum tubing injection and shut-in pressures are based on PROSPER flow assurance modeling. The maximum annulus pressure is higher than the maximum injection pressure as required by CFR 146.88(c).

2.5 Proposed Perforations

Table 1 shows the proposed perforations intervals for the well.

Table 1: Proposed Perforations

Zone	Perforations Top (ft)	Perforations Bottom (ft)
64 Zone Sandstone	7,650	7,757
64 Zone Sandstone	7,798	7,998

ft: feet

2.6 Maximum Surface Pressures and Mechanical Integrity

The operating injection pressure will depend on the reservoir pressure, the properties of the injected fluid, the wellbore friction, and the rate.

The annulus pressure will be maintained at a pressure higher than the tubing injection pressure as required per CFR 146.88(c). The design pressure loads on the injection tubing and tubing by casing annulus are as follows:

- Maximum tubing injection pressure 2,800 pounds per square inch (psi)
- Maximum annulus pressure 2,900 psi
- Maximum shut-in tubing pressure with methane (CH_4) 3,950 psi

The maximum tubing injection and shut-in pressures are based on PROSPER flow assurance modeling. The maximum annulus pressure is higher than the maximum injection pressure as required per CFR 146.88(c).

After each casing and liner is set and cemented, and after the tubing and packer are installed, they will be pressure tested to a pressure equal or greater than the design pressure for that component to demonstrate mechanical integrity.

[1] https://www.petex.com
[2] https://olisystems.com

2.7 Injection Well Casing, Liner, and Tubing Design

The new long string inner casing, liner, and tubing have been designed to withstand all expected loads during the life of the well including the maximum injection and annulus pressure loads. The materials selected for these items as shown in **Section 5** of the **Application Narrative** and **Attachment K** were based on corrosion analysis to ensure that the materials are compatible with the injected and reservoir fluids. The upper casing section will be carbon steel with a corrosion-resistant alloy (CRA) lower section for compatibility with the injected and reservoir fluids per CFR 146.86(b)(1). The flow-wetted lower part of the inner casing, liner, tubing, and packer will be CRA materials.

The loads were evaluated and compared to the strengths to determine an appropriate well design including safety factors. **Table 2** shows the design factors (minimum safety factors) used in the analysis.

Table 2: Design Factors

Failure Mode	Casing	Tubing
Triaxial (1)	1.25	1.25
Burst (2)	1.30	1.20
Collapse (3)	1.00	1.10
Axial – Tension (4)	1.60	1.40
Axial – Compression (4)	1.40	1.40
1. VME Criterion (YS derated for temperature) 2. API Minimum Internal Yield Pressure 3. API (Tension adjusted) Collapse 4. API Pipe Body Yield Strength API: American Petroleum Institute VME: Von Mises Equivalent YS: Yield Strength		

2.7.1 Design Results without Corrosion

The new long-string inner casing, liner, and tubing details are shown in **Section 5** of the **Application Narrative** and **Attachment K**.

A description of the dictating design loads and the design results for nominal wall thickness inner casing, liner, and tubing are included in **Table 3**, **Table 4**, **Table 5**, and **Table 6** respectively. All safety factors exceed the design factors. Additional details on the tubular design are available in the FEED Study for the Aera North Belridge CCS Project design report.

Table 3: 7-inch Inner Casing Nominal Wall Design Results Section 1

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.34	–	>3	–	2.50

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
3,950 psi Shut-in tubing pressure with methane to surface	1.72	–	>3	–	1.82

SF: safety factor

Table 4: 7-inch Inner Casing Nominal Wall Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.34	–	>3	>3	2.50
3,950 psi Shut-in tubing pressure with methane to surface	1.72	–	>3	>3	1.82

Table 5: 4.5-inch Liner Nominal Wall Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure	2.75	–	>3	–	3.00
3,950 psi Shut-in tubing pressure with methane to surface	2.68	–	>3	–	2.87

Table 6: 4.5-inch Tubing Nominal Wall Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure with 0 psi annulus pressure	2.69	–	>3	>3	2.73
3,950 psi Shut-in tubing pressure with methane to surface	1.97	–	2.40	–	1.98

2.7.2 Design Results with Corrosion

The wall thickness may reduce with time because of corrosion. Corrosion analysis using a corrosion model was used to estimate wall loss at the end of the injection period. The design results for the inner casing, inner liner, and tubing are included in **Table 7**, **Table 8**, and **Table 9**, respectively. All safety factors exceed the design factors at the end of the injection phase.

Table 7: 7-inch Inner Casing 77.7% RBW Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.08	–	>3	>3	1.93

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
3,950 psi Shut-in tubing pressure with methane to surface	1.53	–	>3	>3	1.40

Table 8: 4.5-inch Liner 74.3% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure	2.34	–	>3	–	2.22
3,950 psi Shut-in tubing pressure with methane to surface	2.28	–	>3	–	2.12

Table 9: 4.5-inch Tubing 73.2% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure with 0 psi annulus pressure	2.25	–	>3	>3	2.16
3,950 psi Shut-in tubing pressure with methane to surface	1.64	–	2.40	–	1.58

Table 10: Packer Information

Item	Value
Packer Setting Depth	7,550 ft
Packer material	Alloy 718 or equivalent
Packer element material	EPDM or HNBR
Packer type	Permanent or retrievable with latched seal assembly
Maximum casing ID	6.276 in. (nominal ID for 7 in. 26 ppf casing)
Minimum casing ID	6.151 in. (drift diameter for 7 in. 26 ppf casing)
Packer / seal assembly ID	4.500 in.
Packer rating	Differential pressure ±7,500 psi, axial capacity ±200,000 lbf, based on the packer loads in **Figure 1** .

EPDM: ethylene propylene diene monomer rubber
HNBR: hydrogenated nitrile butadiene rubber
ID: inner diameter
in: inches
lbf: pound-force
ppf: pounds per foot

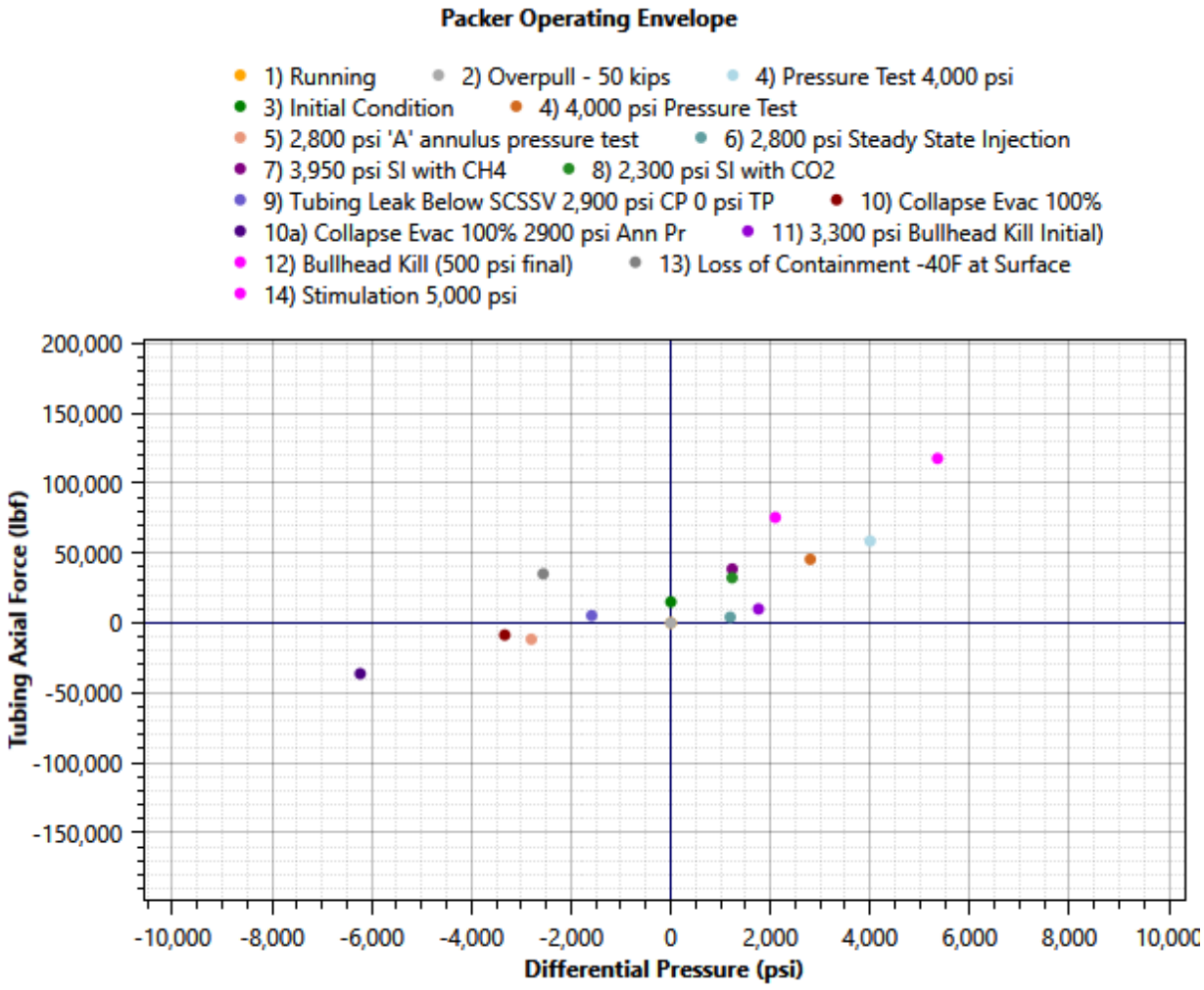

Figure 1: Packer Loads

Table 11: Directional Surveys

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
0	0.00	0.00	0.00	0	0.00	0.00	0.00
58	0.15	25.46	0.26	58	0.02	0.07	0.03
146	0.20	1.02	0.10	146	0.13	0.33	0.08
234	0.35	5.16	0.17	234	0.36	0.75	0.11
322	0.30	350.71	0.11	322	0.67	1.24	0.10
410	0.25	334.56	0.10	410	1.00	1.64	-0.02
498	0.20	307.71	0.13	498	1.33	1.91	-0.22
585	0.20	300.71	0.03	585	1.63	2.08	-0.48
673	0.30	293.71	0.12	673	2.01	2.25	-0.82
761	0.35	297.01	0.06	761	2.50	2.47	-1.27
849	0.35	299.01	0.01	849	3.03	2.72	-1.75
937	0.20	276.56	0.21	937	3.43	2.87	-2.13
1,025	0.20	264.46	0.05	1,025	3.67	2.87	-2.44
1,113	0.20	256.01	0.03	1,113	3.88	2.82	-2.74
1,201	0.15	256.01	0.06	1,201	4.05	2.75	-3.00
1,289	0.15	248.01	0.02	1,289	4.18	2.68	-3.22
1,377	0.00	1.02	0.17	1,377	4.24	2.64	-3.33
1,465	0.00	1.02	0.00	1,465	4.24	2.64	-3.33
1,553	0.00	1.02	0.00	1,553	4.24	2.64	-3.33
1,641	0.20	318.56	0.23	1,640	4.39	2.75	-3.43
1,728	0.20	315.71	0.01	1,728	4.70	2.98	-3.64
1,816	0.20	310.56	0.02	1,816	5.00	3.19	-3.86
1,904	0.20	291.56	0.07	1,904	5.30	3.34	-4.12
1,993	0.20	264.46	0.11	1,992	5.56	3.39	-4.42
2,080	0.25	252.31	0.08	2,080	5.79	3.31	-4.75
2,169	0.30	248.46	0.06	2,169	6.02	3.17	-5.15
2,257	0.25	241.16	0.07	2,257	6.22	2.99	-5.53
2,345	0.30	232.01	0.08	2,345	6.36	2.76	-5.88
2,433	0.25	239.31	0.07	2,433	6.49	2.52	-6.23
2,521	0.20	272.56	0.16	2,521	6.69	2.43	-6.55
2,609	0.20	279.71	0.03	2,609	6.95	2.46	-6.85
2,697	0.15	271.01	0.06	2,697	7.18	2.49	-7.12
2,785	0.00	1.02	0.17	2,785	7.27	2.49	-7.23
2,873	0.00	1.02	0.00	2,873	7.27	2.49	-7.23
2,961	0.15	73.46	0.17	2,960	7.21	2.52	-7.12
3,048	0.15	73.46	0.00	3,048	7.07	2.59	-6.90
3,137	0.25	63.16	0.12	3,136	6.92	2.71	-6.62
3,225	0.30	58.16	0.06	3,224	6.75	2.92	-6.25
3,313	0.30	59.01	0.01	3,312	6.58	3.16	-5.86
3,400	0.25	52.46	0.07	3,400	6.44	3.39	-5.51
3,488	0.20	56.31	0.06	3,488	6.34	3.59	-5.23
3,576	0.00	1.02	0.23	3,576	6.29	3.68	-5.10
3,664	0.00	1.02	0.00	3,664	6.29	3.68	-5.10
3,753	0.25	171.86	0.28	3,752	6.15	3.49	-5.08
3,840	0.25	151.71	0.10	3,840	5.84	3.13	-4.96
3,928	0.30	129.56	0.13	3,928	5.44	2.81	-4.69
4,016	0.35	119.56	0.09	4,016	4.94	2.53	-4.28
4,104	0.30	112.56	0.07	4,104	4.45	2.31	-3.83
4,192	0.20	110.01	0.11	4,192	4.08	2.17	-3.48
4,280	0.00	1.02	0.23	4,280	3.94	2.12	-3.33

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
4,368	0.00	1.02	0.00	4,368	3.94	2.12	-3.33
4,456	0.00	1.02	0.00	4,456	3.94	2.12	-3.33
4,544	0.15	300.01	0.17	4,544	4.05	2.18	-3.43
4,632	0.15	304.86	0.01	4,632	4.28	2.30	-3.63
4,720	0.30	317.01	0.18	4,720	4.62	2.54	-3.88
4,808	0.30	317.01	0.00	4,808	5.08	2.87	-4.19
4,896	0.30	288.56	0.17	4,896	5.52	3.11	-4.57
4,984	0.25	275.86	0.09	4,984	5.90	3.21	-4.98
5,072	0.20	266.16	0.07	5,072	6.19	3.22	-5.32
5,160	0.15	255.31	0.07	5,160	6.37	3.18	-5.59
5,248	0.15	251.01	0.01	5,248	6.51	3.11	-5.81
5,336	0.15	251.01	0.00	5,336	6.64	3.04	-6.02
5,424	0.15	251.01	0.00	5,424	6.77	2.96	-6.24
5,512	0.00	1.02	0.17	5,512	6.83	2.92	-6.35
5,600	0.00	1.02	0.00	5,600	6.83	2.92	-6.35
5,688	0.20	27.01	0.23	5,688	6.86	3.06	-6.28
5,776	0.45	21.16	0.29	5,776	6.98	3.52	-6.09
5,864	0.55	20.16	0.11	5,864	7.19	4.24	-5.82
5,952	0.50	16.01	0.07	5,952	7.45	5.00	-5.56
6,040	0.45	11.01	0.07	6,040	7.74	5.72	-5.39
6,129	0.45	0.01	0.10	6,129	8.11	6.40	-5.32
6,217	0.45	1.02	0.01	6,217	8.52	7.09	-5.32
6,305	0.40	1.02	0.06	6,305	8.90	7.75	-5.31
6,392	0.35	1.02	0.06	6,392	9.24	8.32	-5.30
6,480	0.30	356.71	0.06	6,480	9.54	8.82	-5.30
6,568	0.30	321.86	0.20	6,568	9.92	9.23	-5.46
6,657	0.30	309.01	0.08	6,657	10.37	9.56	-5.78
6,745	0.25	292.01	0.11	6,745	10.79	9.78	-6.14
6,833	0.20	280.86	0.08	6,833	11.11	9.88	-6.47
6,921	0.00	1.02	0.23	6,921	11.25	9.91	-6.62
7,009	0.00	1.02	0.00	7,009	11.25	9.91	-6.62
7,097	0.00	1.02	0.00	7,097	11.25	9.91	-6.62
7,185	0.20	13.16	0.23	7,185	11.31	10.06	-6.59
7,273	0.20	19.46	0.02	7,273	11.42	10.35	-6.50
7,361	0.25	1.02	0.10	7,360	11.58	10.69	-6.45
7,449	0.25	9.01	0.04	7,448	11.78	11.07	-6.41
7,536	0.40	8.31	0.17	7,536	12.02	11.56	-6.34
7,624	0.50	13.31	0.12	7,624	12.32	12.24	-6.21
7,712	1.10	25.01	0.70	7,712	12.65	13.38	-5.76
7,800	1.15	28.16	0.09	7,800	12.96	14.92	-4.99
8,156	1.15	28.16	0.00	8,156	14.06	21.22	-1.62

Azim.: azimuth
DLS: dogleg severity
N-S: north to south
E-W: east to west
Incl.: inclination
MD: measured depth
TVD: true vertical depth
Vert. Sec: vertical section

CONSTRUCTION DETAILS

AERA ENERGY, LLC - CARBONFRONTIER

FACILITY INFORMATION

Facility name: CarbonFrontier
Well name: 9-1N Injection Well
API No.: 0402935107

Facility contact: Randy Hoyle, Chief Carbon Solutions Officer
10000 Ming Ave., Bakersfield, CA 93311
(661) 665-5000, RWHoyle@aeraenergy.com

Well location: Kern County, CA
35° 31’ 31.6480” N, 119° 46’ 37.0154” W

1. INTRODUCTION

The well construction details provided in this document are well-specific and supplement details presented in Construction Details (**Attachment K**) and **Section 5** of the **Application Narrative**. The well is an existing well that will be repurposed and converted to a CO_2 injection well. The well will be worked over and recompleted as an EPA Class VI injection well.

2. WELL DESIGN

2.1 Well History

The original well was drilled in 1940–1941. The surface casing as shown in **Section 5** of the **Application Narrative** and **Attachment K** was set and cemented to surface. The intermediate casing, long-string casing, and liner details are included in **Section 5** of the **Application Narrative** and **Attachment K**.

2.2 Directional

The well was drilled as a vertical well. The directional surveys are included in **Table 11**.

2.3 Underground Sources of Drinking Water

The Tulare formation is the only potential underground source of drinking water but has an approved Aquifer Exemption.

2.4 Tubing and Packer

Injection will be through tubing and a packer per 40 CFR 146.86(c)(2). Materials for the tubing and packer are shown in **Section 5** of the **Application Narrative, Attachment K,** and **Table 10** respectively and were selected to ensure compatibility with the injected and reservoir fluids as required per 40 CFR 146.86(c)(1). The packer will be set in the casing opposite a cemented interval. The setting depth will be selected based on an evaluation of the cement bond log run after the inner casing is run and cemented.

The tubing size was selected based on the proposed injection rate, composition, and reservoir conditions. The fluid flow model PROSPER[1] was used to determine the pressure and temperature profiles for CO_2 injection. PROSPER has Pressure-Volume-Temperature (PVT) correlations that have been validated for CO_2 injection with a wide range of impurities.

The tubing wall thickness was selected to account for corrosion wall loss including upset conditions for the selected grade. Corrosion wall loss estimates were determined using OLI,[2] an industry standard commercial thermodynamic corrosion analysis program for aqueous systems.

2.5 Proposed Perforations

Table 1 shows the proposed perforations intervals for the well.

Table 1: Proposed Perforations

Zone	Perforations Top (ft)	Perforations Bottom (ft)
64 Zone Sandstone	7,860	7,932
64 Zone Sandstone	8,001	8,201

ft: feet

2.6 Maximum Surface Pressures and Mechanical Integrity

The operating injection pressure will depend on the reservoir pressure, the properties of the injected fluid, the wellbore friction, and the rate.

The annulus pressure will be maintained at a pressure higher than the tubing injection pressure as required per CFR 146.88(c). The design pressure loads on the injection tubing and tubing by casing annulus are as follows:

- Maximum tubing injection pressure 2,800 pounds per square inch (psi)
- Maximum annulus pressure 2,900 psi
- Maximum shut-in tubing pressure with methane (CH_4) 3,950 psi

The maximum tubing injection and shut-in pressures are based on PROSPER flow assurance modeling. The maximum annulus pressure is higher than the maximum injection pressure as required per CFR 146.88(c).

After each casing and liner is set and cemented, and after the tubing and packer are installed, they will be pressure tested to a pressure equal or greater than the design pressure for that component to demonstrate mechanical integrity.

2.7 Injection Well Casing, Inner Liner, and Tubing Design

The new long string inner casing, inner liner, and tubing have been designed to withstand all expected loads during the life of the well including the maximum injection and annulus pressure loads. The materials selected for these items as shown in **Attachment K** were based on corrosion

[1] https://www.petex.com
[2] https://olisystems.com

analysis to ensure that the materials are compatible with the injected and reservoir fluids. The upper casing section will be carbon steel with a corrosion-resistant alloy (CRA) lower section for compatibility with the injected and reservoir fluids per CFR 146.86(b)(1). The flow-wetted lower part of the inner casing, inner liner, tubing, and packer will be CRA materials.

The loads were evaluated and compared to the strengths to determine an appropriate well design including safety factors. **Table 2** shows the design factors (minimum safety factors) used in the analysis.

Table 2: Design Factors

Failure Mode	Casing	Tubing
Triaxial (1)	1.25	1.25
Burst (2)	1.30	1.20
Collapse (3)	1.00	1.10
Axial – Tension (4)	1.60	1.40
Axial – Compression (4)	1.40	1.40
1. VME Criterion (YS derated for temperature) 2. API Minimum Internal Yield Pressure 3. API (Tension adjusted) Collapse 4. API Pipe Body Yield Strength API: American Petroleum Institute VME: Von Mises Equivalent YS: Yield Strength		

2.7.1 Design Results without Corrosion

The new long-string inner casing, inner liner, and tubing details are shown in **Section 5** of the **Application Narrative** and **Attachment K**.

A description of the design loads and the design results for the inner casing, inner liner, and tubing are included in **Table 3**, **Table 4**, **Table 5**, and **Table 6**, respectively. All safety factors exceed the design factors. Additional details on the tubular design are available in the FEED Study for the Aera North Belridge CCS Project design report.

Table 3: 7-inch Inner Casing Design Results Section 1

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.34	–	>3	–	2.50
3,950 psi Shut-in tubing pressure with methane to surface	1.72	–	>3	–	1.82

SF: safety factor

Table 4: 7-inch Inner Casing Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.34	–	>3	>3	2.50
3,950 psi Shut-in tubing pressure with methane to surface	1.72	–	>3	>3	1.82

Table 5: 3.5-inch Inner Liner Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure	>3	–	>3	–	>3
3,950 psi Shut-in tubing pressure with methane to surface	>3	–	–	>3	>3

Table 6: 4.5-inch Tubing Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure with 0 psi annulus pressure	2.69	–	>3	>3	2.73
3,950 psi Shut-in tubing pressure with methane to surface	1.97	–	2.40	–	1.98

2.7.2 Design Results with Corrosion

The wall thickness may reduce with time because of corrosion. Corrosion analysis using a corrosion model was used to estimate wall loss at the end of the injection period. The design results for the inner casing, inner liner, and tubing with respective remaining body wall (RBW) estimates are included in **Table 7**, **Table 8**, and **Table 9**, respectively. All safety factors exceed the design factors at the end of the injection phase.

The liner corrosion is not considered in the design decision because it is entirely within the injection zone and well below the cap rock. The use of CRA materials and CO_2-resistant cement above the liner top ensure the pressure integrity of the well and the security of the storage reservoir.

Table 7: 7-inch Inner Casing 77.7% RBW Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.08	–	>3	>3	1.93
3,950 psi Shut-in tubing pressure with methane to surface	1.53	–	>3	>3	1.40

Table 8: 3.5-inch Inner Liner 73.5% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure with 0 psi annulus pressure	>3	–	>3	–	>3
3,950 psi Shut-in tubing pressure with methane to surface	>3	–	–	>3	>3

Table 9: 4.5-inch Tubing 73.2% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure with 0 psi annulus pressure	2.25	–	>3	>3	2.16
3,950 psi Shut-in tubing pressure with methane to surface	1.64	–	2.40	–	1.58

Table 10: Packer Information

Item	Value
Packer Setting Depth	7,550 ft
Packer material	Alloy 718 or equivalent
Packer element material	EPDM or HNBR
Packer type	Permanent or retrievable with latched seal assembly
Maximum casing ID	6.276 in. (nominal ID for 7 in. 26 ppf casing)
Minimum casing ID	6.151 in. (drift diameter for 7 in. 26 ppf casing)
Packer / seal assembly ID	4.500 in.
Packer rating	Differential pressure ±7,500 psi, axial capacity ±200,000 lbf, based on the packer loads in **Figure 1.**

EPDM: ethylene propylene diene monomer rubber
HNBR: hydrogenated nitrile butadiene rubber
ID: inner diameter
in: inches
lbf: pound-force
ppf: pounds per foot

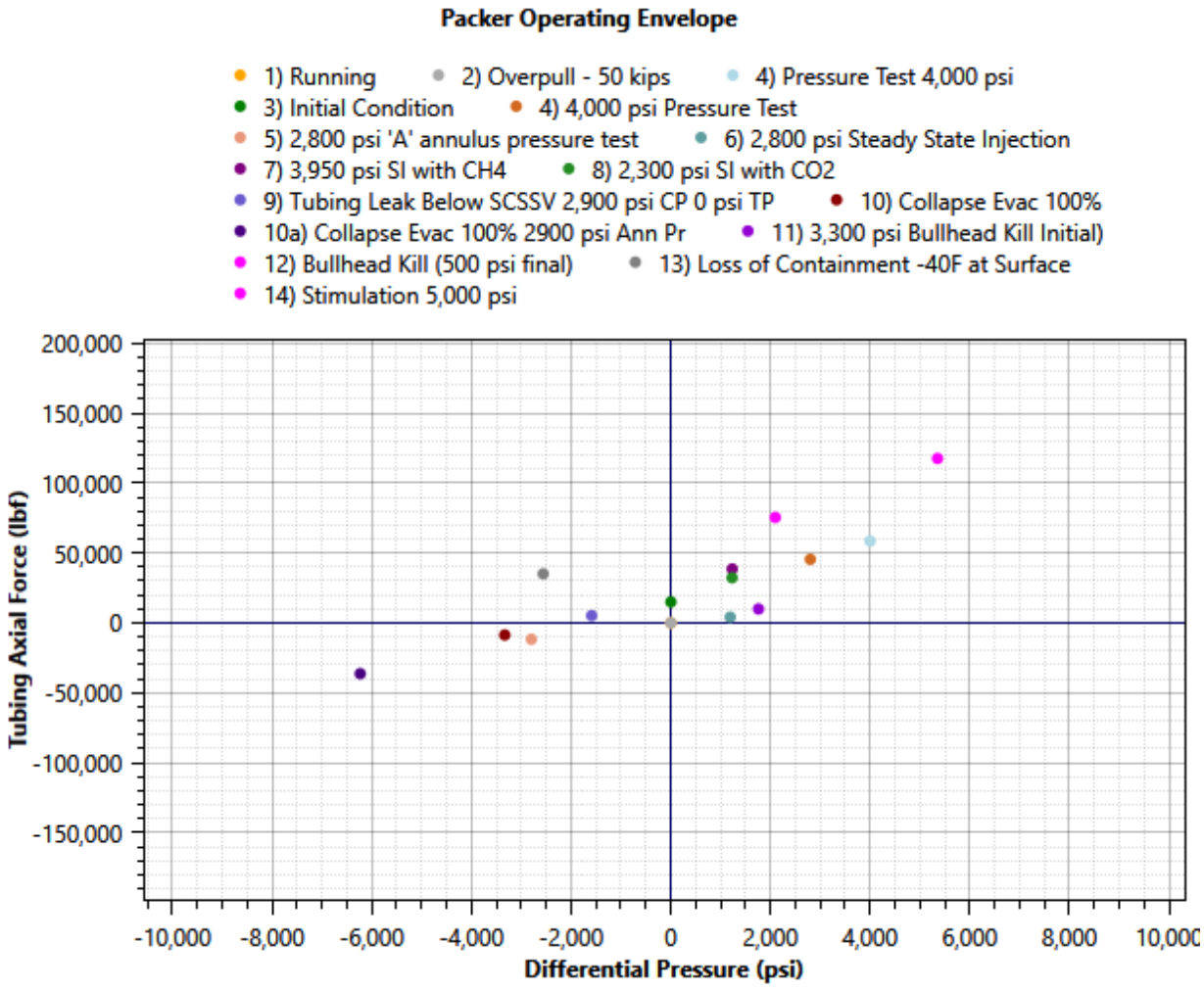

Figure 1: Packer Loads

Table 11: Directional Surveys

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
0	0.00	0.00	0.00	0	0	0	0
57	0.20	279.71	0.35	57	0	0	0
145	0.20	289.01	0.04	145	0	0	0
232.9	0.30	271.01	0.14	233	-1	0	-1
320.8	0.40	265.16	0.12	321	-1	0	-1
408.8	0.40	269.31	0.03	409	-1	0	-2
496.6	0.35	273.86	0.07	497	-2	0	-2
584.6	0.30	265.31	0.08	585	-2	0	-3
672.6	0.25	271.01	0.06	673	-3	0	-3
760.6	0.20	286.56	0.09	761	-3	0	-4
848.6	0.20	274.71	0.05	849	-3	0	-4
936.4	0.00	1.02	0.23	936	-3	0	-4
1,024.40	0.00	1.02	0.00	1,024	-3	0	-4
1,112.40	0.00	1.02	0.00	1,112	-3	0	-4
1,200.40	0.20	205.16	0.23	1,200	-3	0	-4
1,288.30	0.20	210.31	0.02	1,288	-4	0	-4
1,376.30	0.20	211.46	0.00	1,376	-4	0	-5
1,464.30	0.25	218.46	0.06	1,464	-4	-1	-5
1,552.20	0.30	220.01	0.06	1,552	-5	-1	-5
1,640.10	0.30	218.46	0.01	1,640	-5	-1	-5
1,728.30	0.25	196.16	0.13	1,728	-5	-2	-6
1,816.80	0.15	184.01	0.12	1,817	-6	-2	-6
1,904.90	0.00	1.02	0.17	1,905	-6	-2	-6
1,992.90	0.20	4.01	0.23	1,993	-6	-2	-6
2,080.90	0.30	353.86	0.12	2,081	-5	-2	-6
2,168.90	0.35	357.86	0.06	2,169	-5	-1	-6
2,256.80	0.40	355.56	0.06	2,257	-5	-1	-6
2,344.70	0.50	351.01	0.12	2,345	-4	0	-6
2,432.50	0.55	351.01	0.06	2,432	-4	1	-6
2,520.40	0.50	343.56	0.10	2,520	-4	2	-6
2,608.40	1.00	352.71	0.58	2,608	-3	3	-6
2,696.40	1.05	354.86	0.07	2,696	-2	4	-6
2,784.30	1.10	347.56	0.17	2,784	-1	6	-7
2,872.30	1.20	353.86	0.18	2,872	-1	8	-7
2,960.40	1.25	1.02	0.18	2,960	1	10	-7
3,048.30	1.40	1.02	0.17	3,048	2	12	-7
3,136.10	1.40	2.31	0.04	3,136	3	14	-7
3,224.40	1.40	17.16	0.41	3,224	5	16	-7
3,312.40	1.35	29.31	0.34	3,312	7	18	-6
3,400.30	1.20	34.46	0.21	3,400	9	19	-5
3,488.30	1.20	27.16	0.17	3,488	10	21	-4
3,576.20	1.05	25.46	0.17	3,576	12	23	-3
3,664.10	1.00	17.01	0.18	3,664	13	24	-2
3,752.00	0.40	3.31	0.70	3,752	14	25	-2
3,840.00	0.45	11.46	0.09	3,840	15	26	-2
3,927.90	0.45	28.46	0.15	3,928	15	26	-2
4,015.90	0.45	46.16	0.16	4,016	16	27	-1
4,103.70	0.40	71.31	0.22	4,103	16	27	-1
4,191.60	0.30	52.46	0.17	4,191	17	28	0
4,279.50	0.40	24.16	0.22	4,279	17	28	0

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
4,367.50	0.45	24.16	0.06	4,367	18	29	0
4,455.60	0.40	37.16	0.12	4,455	19	29	0
4,543.40	0.00	1.02	0.46	4,543	19	29	1
4,631.40	0.15	114.86	0.17	4,631	19	29	1
4,719.50	0.20	34.16	0.26	4,719	19	29	1
4,807.60	0.40	35.31	0.23	4,807	20	30	1
4,895.60	0.45	65.01	0.25	4,895	20	30	2
4,983.60	0.20	95.71	0.34	4,983	21	30	2
5,071.50	0.00	1.02	0.23	5,071	21	30	2
5,159.40	0.00	1.02	0.00	5,159	21	30	2
5,247.30	0.00	1.02	0.00	5,247	21	30	2
5,335.10	0.30	306.56	0.34	5,335	21	30	2
5,422.90	0.30	335.71	0.17	5,423	21	31	2
5,510.80	0.30	326.01	0.06	5,510	21	31	2
5,598.50	0.25	318.86	0.07	5,598	21	31	1
5,686.50	0.30	323.71	0.06	5,686	21	32	1
5,774.50	0.30	354.85	0.18	5,774	21	32	1
5,862.40	0.25	343.56	0.08	5,862	21	33	1
5,950.40	0.00	1.02	0.28	5,950	21	33	1
6,039.00	0.40	94.01	0.45	6,039	22	33	1
6,126.90	0.55	108.86	0.22	6,127	22	33	2
6,214.80	1.10	105.56	0.63	6,214	23	32	3
6,302.90	1.30	101.55	0.25	6,303	24	32	5
6,390.80	1.45	93.86	0.27	6,390	25	32	7
6,478.80	1.30	84.01	0.32	6,478	27	32	9
6,566.60	1.40	75.16	0.26	6,566	29	32	11
6,654.50	1.50	60.46	0.44	6,654	31	33	13
6,743.20	2.05	60.01	0.62	6,743	34	34	15
6,831.10	1.45	55.46	0.70	6,831	36	36	18
6,919.30	1.45	39.46	0.46	6,919	38	37	19
7,007.20	2.00	33.01	0.66	7,007	41	39	21
7,094.80	2.15	38.46	0.28	7,094	44	42	23
7,182.70	2.25	35.16	0.18	7,182	47	45	25
7,270.60	2.40	33.31	0.19	7,270	51	47	27
7,358.60	2.50	32.01	0.13	7,358	54	51	29
7,446.60	3.05	28.46	0.65	7,446	58	54	31
7,534.50	2.55	27.31	0.57	7,533	62	58	33
7,622.50	2.35	22.01	0.34	7,621	66	62	35
7,710.40	2.05	27.46	0.42	7,709	69	65	36
7,798.20	1.35	21.31	0.82	7,797	71	67	37
7,886.50	1.40	23.31	0.08	7,885	73	69	38
7,926.50	1.45	35.01	0.74	7,925	74	70	38
8,470.00	1.45	35.01	0.00	8,469	87	81	46

Azim.: azimuth
DLS: dogleg severity
E-W: east to west
N-S: north to south
Incl.: inclination
MD: measured depth
TVD: true vertical depth
Vert. Sec: vertical section

CONSTRUCTION DETAILS

AERA ENERGY, LLC - CARBONFRONTIER

FACILITY INFORMATION

Facility name: CarbonFrontier
Well name: 64-27N Injection Well
API No.: 0402935068

Facility contact: Randy Hoyle, Chief Carbon Solutions Officer
10000 Ming Ave., Bakersfield, CA 93311
(661) 665-5000, RWHoyle@aeraenergy.com

Well location: Kern County, CA
35° 32’ 38.0979” N, 119° 47’ 54.6576” W

1. INTRODUCTION

The well construction details provided in this document are well-specific and supplement details presented in Construction Details (**Attachment K**) and **Section 5** of the **Application Narrative**. The well is an existing well that will be repurposed and converted to a CO_2 injection well. The well will be worked over and recompleted as an EPA Class VI CO_2 injection well.

2. WELL DESIGN

2.1 Well History

The original well was drilled in 1940. The surface casing as shown in **Section 5** of the **Application Narrative** and **Attachment K** was set and cemented to surface. The intermediate casing and long-string casing details are included in **Section 5** of the **Application Narrative** and **Attachment K**.

2.2 Directional

The well was drilled as a vertical well.

2.3 Underground Sources of Drinking Water

The Tulare formation is the only potential underground source of drinking water but has an approved Aquifer Exemption.

2.4 Tubing and Packer

Injection will be through tubing and a packer per 40 CFR 146.86(c)(2). Materials for the tubing and packer are shown in **Section 5** of the **Application Narrative, Attachment K,** and **Table 10** respectively and were selected to ensure compatibility with the injected and reservoir fluids as required per 40 CFR 146.86(c)(1). The packer will be set in the casing opposite a cemented interval. The setting depth will be selected based on an evaluation of the cement bond log run after the inner casing is run and cemented.

The tubing size was selected based on the proposed injection rate, composition, and reservoir conditions. The fluid flow model PROSPER[1] was used to determine the pressure and temperature profiles for CO_2 injection. PROSPER has Pressure-Volume-Temperature (PVT) correlations that have been validated for CO_2 injection with a wide range of impurities.

The tubing wall thickness was selected to account for corrosion wall loss including upset conditions for the selected grade. Corrosion wall loss estimates were determined using OLI,[2] an industry standard commercial thermodynamic corrosion analysis program for aqueous systems.

2.5 Proposed Perforations

Table 1 shows the proposed perforations intervals for the well.

Table 1: Proposed Perforations

Zone	Perforations Top (ft)	Perforations Bottom (ft)
64 Zone Sandstone	7,558	7,647
64 Zone Sandstone	7,706	7,906

ft: feet

2.6 Maximum Surface Pressures and Mechanical Integrity

The operating injection pressure will depend on the reservoir pressure, the properties of the injected fluid, the wellbore friction, and the rate.

The annulus pressure will be maintained at a pressure higher than the tubing injection pressure as required per CFR 146.88(c). The design pressure loads on the injection tubing and tubing by casing annulus are as follows:

- Maximum tubing injection pressure 2,800 pounds per square inch (psi)
- Maximum annulus pressure 2,900 psi
- Maximum shut-in tubing pressure with methane (CH_4) 3,950 psi

The maximum tubing injection and shut-in pressures are based on PROSPER flow assurance modeling. The maximum annulus pressure is higher than the maximum injection pressure as required per CFR 146.88(c).

After each casing and liner is set and cemented, and after the tubing and packer are installed, they will be pressure tested to a pressure equal to or greater than the design pressure for that component to demonstrate mechanical integrity.

2.7 Injection Well Casing, Liner, and Tubing Design

The new long-string inner casing, liner, and tubing have been designed to withstand all expected loads during the life of the well including the maximum injection and annulus pressure loads. The materials selected for these items as shown in **Section 5** of the **Application Narrative** and

[1] https://www.petex.com
[2] https://olisystems.com

Attachment K were based on corrosion analysis to ensure that the materials are compatible with the injected and reservoir fluids. The upper casing section will be carbon steel with a corrosion-resistant alloy (CRA) lower section for compatibility with the injected and reservoir fluids per CFR 146.86(b)(1). The flow-wetted lower part of the inner casing, liner, tubing, and packer will be CRA materials.

The loads were evaluated and compared to the strengths to determine an appropriate well design including safety factors. **Table 2** shows the design factors (minimum safety factors) used in the analysis.

Table 2: Design Factors

Failure Mode	Casing	Tubing
Triaxial (1)	1.25	1.25
Burst (2)	1.30	1.20
Collapse (3)	1.00	1.10
Axial – Tension (4)	1.60	1.40
Axial – Compression (4)	1.40	1.40
1. VME Criterion (YS derated for temperature) 2. API Minimum Internal Yield Pressure 3. API (Tension adjusted) Collapse 4. API Pipe Body Yield Strength API: American Petroleum Institute VME: Von Mises Equivalent YS: Yield Strength		

2.7.1 Design Results without Corrosion

The new long string inner casing, liner, and tubing details are shown in **Section 5** of the **Application Narrative** and **Attachment K**.

A description of the dictating design loads and the design results for nominal wall thickness inner casing, liner, and tubing are included in **Table 3**, **Table 4**, **Table 5**, and **Table 6** respectively. All safety factors exceed the design factors. Additional details on the tubular design are available in the FEED Study for the Aera North Belridge CCS Project design report.

Table 3: 6.625-inch Inner Casing Nominal Wall Design Results Section 1

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.40	–	>3	–	2.57
3,950 psi Shut-in tubing pressure with methane to surface	1.77	–	>3	–	1.87

SF: safety factor

Table 4: 6.625-inch Inner Casing Nominal Wall Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.40	–	>3	>3	2.57
3,950 psi Shut-in tubing pressure with methane to surface	1.77	–	>3	>3	1.86

Table 5: 4.5-inch Liner Nominal Wall Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure	2.75	–	>3	–	3.00
3,950 psi Shut-in tubing pressure with methane to surface	2.68	–	>3	–	2.87

Table 6: 4.5-inch Tubing Nominal Wall Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure with 0 psi annulus pressure	2.69	–	>3	>3	2.73
3,950 psi Shut-in tubing pressure with methane to surface	1.97	–	2.40	>3	1.98

2.7.2 Design Results with Corrosion

The wall thickness may reduce with time because of corrosion. Corrosion analysis using a corrosion model was used to estimate wall loss at the end of the injection period. The design results for the inner casing, inner liner, and tubing are included in **Table 7**, **Table 8**, and **Table 9**, respectively. All safety factors exceed the design factors at the end of the injection phase.

Table 7: 6.625-inch Inner Casing 77.4% RBW Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,900 psi Annulus operating pressure	2.12	–	>3	>3	1.97
3,950 psi Shut-in tubing pressure with methane to surface	1.56	–	>3	>3	1.43

Table 8: 4.5-inch Liner 74.3% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure	2.34	–	>3	–	2.22
3,950 psi Shut-in tubing pressure with methane to surface	2.28	–	>3	–	2.12

Table 9: 4.5-inch Tubing 73.2% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
2,800 psi Injection pressure with 0 psi annulus pressure	2.25	–	>3	>3	2.16
3,950 psi Shut-in tubing pressure with methane to surface	1.64	–	2.40	–	1.58

Table 10: Packer Information

Item	Value
Packer Setting Depth	7,350 ft
Packer material	Alloy 718 or equivalent
Packer element material	EPDM or HNBR
Packer type	Permanent or retrievable with latched seal assembly
Maximum casing ID	5.901 in. (nominal ID for 6.625 in. 24.6 ppf casing)
Minimum casing ID	5.776 in. (drift diameter for 6.625 in. 24.6 ppf casing)
Packer / seal assembly ID	4.500 in.
Packer rating	Differential pressure ±6,000 psi, axial capacity ±200,000 lbf, based on the packer loads in **Figure 1**.

EPDM: ethylene propylene diene monomer rubber
HNBR: hydrogenated nitrile butadiene rubber
ID: inner diameter
in: inches
lbf: pound force
ppf: pounds per foot

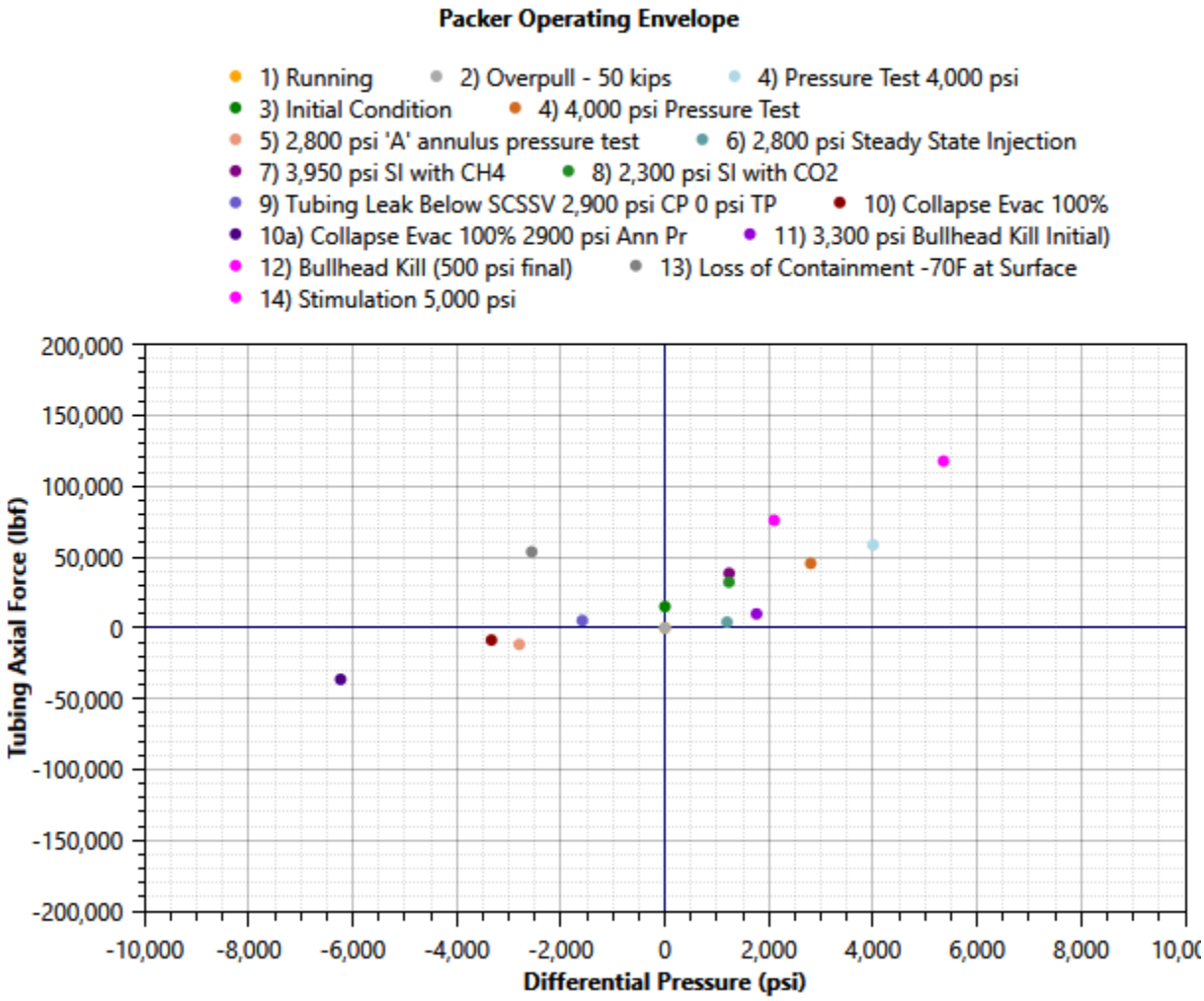

Figure 1: Packer Loads

CONSTRUCTION DETAILS

AERA ENERGY, LLC - CARBONFRONTIER

FACILITY INFORMATION

Facility name: CarbonFrontier
Well name: 1-28N (Monitoring Agua / 64 Sands)
API No.: 0402935069

Facility contact: Randy Hoyle, Chief Carbon Solutions Officer
10000 Ming Ave., Bakersfield, CA 93311
(661) 665-5000, RWHoyle@aeraenergy.com

Well location: Kern County, CA
35°33'22.7757"N, 119°48'51.4527"W

1. INTRODUCTION

The well construction details provided in this document are well-specific and supplement details presented in Construction Details (**Attachment K**) and **Section 5** of the **Application Narrative**. The well is an existing well that will be repurposed and converted to a CO_2 monitoring well. The well will be worked over and recompleted as an EPA Class VI monitoring well.

2. WELL DESIGN

2.1 Well History

The original well was drilled in 1937. The surface casing as shown in **Section 5** of the **Application Narrative** and **Attachment K** was set and cemented to surface. The intermediate casing and long-string casing details are included in **Section 5** of the **Application Narrative** and **Attachment K**. The 4.5-inch liner was run and cemented in 1940.

2.2 Directional

The well was drilled as a vertical well. The directional surveys are included in **Table 11**.

2.3 Underground Sources of Drinking Water

The Tulare formation is the only potential underground source of drinking water but has an approved Aquifer Exemption.

2.4 Tubing and Packer

The well will be completed with tubing and a packer. Materials for the tubing and packer are shown in **Section 5** of the **Application Narrative**, and **Attachment K**, and **Table 10** respectively and were selected to ensure compatibility with the injected and reservoir fluids as required per 40 CFR 146.86(c)(1). The packer will be set in the casing opposite a cemented interval. The setting depth

will be selected based on an evaluation of the cement bond log run after the inner casing is run and cemented.

The tubing size was selected to allow wireline tools to be run through the tubing for monitoring reservoir conditions as required per CFR 146.90.

2.5 Proposed Perforations

Table 1 shows the proposed perforations intervals for the well.

Table 1: Proposed Perforations

Zone	Perforations Top (ft)	Perforations Bottom (ft)
Agua	7,525	7,770
64 Zone Sandstone	8,029	8,069
64 Zone Sandstone	8,158	8,358

ft: feet

2.6 Maximum Surface Pressures and Mechanical Integrity

The surface pressure for monitoring wells will depend on the reservoir pressure and the fluid gradient in the tubing.

The maximum pressure loads on the monitoring well tubing and tubing by casing annulus are as follows:

- Maximum shut-in tubing pressure with CO_2 1,850 pounds per square inch (psi)
- Maximum shut-in tubing pressure with methane (CH_4) 3,950 psi

After each casing is set and cemented, and after the tubing and packer are installed, they will be pressure tested to a pressure equal to or greater than the design pressure for that component to demonstrate mechanical integrity.

2.7 Monitoring Well Casing and Tubing Design

The new long-string inner casing and tubing have been designed to withstand all expected loads during the life of the well, including the maximum surface pressure loads. The materials selected for these items as shown in **Section 5** of the **Application Narrative** and **Attachment K** respectively and were based on corrosion analysis to ensure that the materials are compatible with the injected and reservoir fluids. The upper casing section will be carbon steel with a corrosion-resistant alloy (CRA) lower section for compatibility with the injected and reservoir fluids per CFR 146.86(b)(1). The flow-wetted lower part of the inner casing, tubing, and packer will be CRA materials.

The loads were evaluated and compared to the strengths to determine an appropriate well design including safety factors. **Table 2** shows the design factors (minimum safety factors) used in the analysis.

Table 2: Design Factors

Failure Mode	Casing	Tubing
Triaxial (1)	1.25	1.25
Burst (2)	1.30	1.20
Collapse (3)	1.00	1.10
Axial – Tension (4)	1.60	1.40
Axial – Compression (4)	1.40	1.40

1. VME Criterion (YS derated for temperature)
2. API Minimum Internal Yield Pressure
3. API (Tension adjusted) Collapse
4. API Pipe Body Yield Strength

API: American Petroleum Institute
VME: Von Mises Equivalent
YS: Yield Strength

2.7.1 Design Results without Corrosion

The new long-string inner casing and tubing details are shown in **Section 5** of the **Application Narrative** and **Attachment K**.

A description of the design loads and the design results for the inner casing and tubing are included in **Table 3**, **Table 4**, **Table 5**, and **Table 6**, respectively. All safety factors exceed the design factors. Additional details on the tubular design are available in the FEED Study for the Aera North Belridge CCS Project design report.

Table 3: 7-inch Inner Casing Design Results Section 1

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
1,850 psi Shut-in Injection Tubing Leak (CO_2)	>3	–	>3	>3	>3
3,950 psi Shut-in Injection Tubing Leak (CH_4)	1.86	–	>3	–	1.98

SF: safety factor

Table 4: 7-inch Inner Casing Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
1,850 psi Shut-in Injection Tubing Leak (CO_2)	>3	–	–	>3	>3
3,950 psi Shut-in Injection Tubing Leak (CH_4)	1.86	–	>3	>3	1.97

Table 5: 3.5-inch Inner Casing Design Results Section 3

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
1,850 psi Shut-in Injection Tubing Leak (CO_2)	>3	–	–	>3	>3
3,950 psi Shut-in Injection Tubing Leak (CH_4)	>3	–	–	>3	>3

Table 6: 2.375-inch Tubing Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
Late life SI with CO_2 to Surface	>3	–	>3	>3	>3
Late life SI with CH_4 to Surface	>3	–	2.93	>3	2.70

SI: shut-in

2.7.2 Design Results with Corrosion

The wall thickness may reduce with time because of corrosion. Corrosion analysis using a corrosion model was used to estimate wall loss at the end of the injection period. The design results for the inner casing and tubing with respective remaining body wall (RBW) estimates are included in **Table 7**, **Table 8**, and **Table 9** respectively. All safety factors exceed the design factors at the end of the injection phase except load "3,950 psi Shut-in Injection Tubing Leak (CH_4)" as shown in **Table 7**.

The end-of-life triaxial safety factor is slightly less than the design factor of 1.25 for the conservative and unlikely load of methane to surface. If the surface pressure approaches the design load pressure, the well can be killed to maintain safe operations. Based on this unlikely load occurring and available mitigation, the design is considered acceptable.

Table 7: 7-inch Inner Casing 61.9% RBW Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
1,850 psi Shut-in Injection Tubing Leak (CO_2)	2.53	–	–	>3	2.24
3,950 psi Shut-in Injection Tubing Leak (CH_4)	1.31	–	>3	>3	1.20

Table 8: 3.5-inch Inner Casing 51.1% RBW Design Results Section 3

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
1,850 psi Shut-in Injection Tubing Leak (CO_2)	>3	–	–	>3	>3

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
3,950 psi Shut-in Injection Tubing Leak (CH_4)	>3	–	–	>3	>3

Table 9: 2.375-inch Tubing 38.8% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
Late life SI with CO_2 to Surface	2.67	–	>3	>3	2.49
Late life SI with CH_4 to Surface	1.36	–	2.93	3	1.33

Table 10: Packer Information

Item	Value
Packer Setting Depth	7,400 feet 7,850 feet
Packer material	Alloy 718 or equivalent
Packer element material	EPDM or HNBR
Packer type	Permanent or retrievable with latched seal assembly
Maximum casing ID	6.276 in. (nominal ID for 7 in. 26 ppf casing)
Minimum casing ID	6.151 in. (drift diameter for 7 in. 26 ppf casing)
Packer / seal assembly ID	1.995 in. (based on tubing drift ID)
Packer rating	Differential pressure ±7,500 psi, axial capacity ±40,000 lbf, based on the packer loads in **Figure 1** .

EPDM: ethylene propylene diene monomer rubber
HNBR: hydrogenated nitrile butadiene rubber
ID: inner diameter
in.: inches
lbf: pound force
ppf: pounds per foot

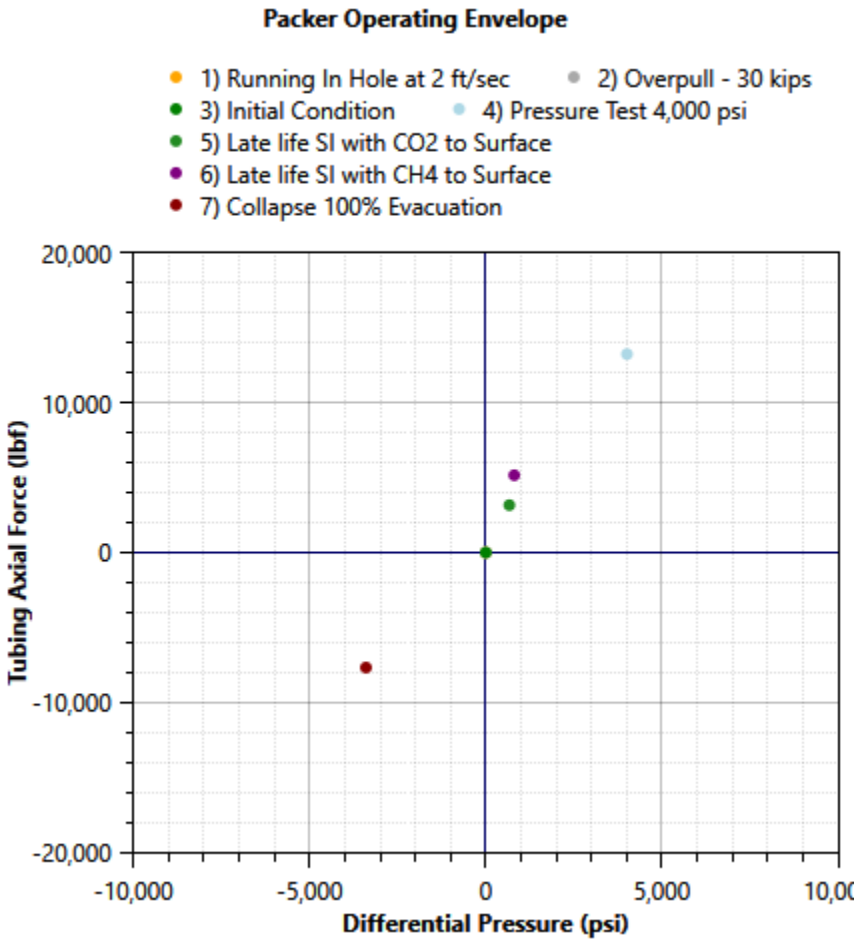

Figure 1: Packer Loads

Table 11: Directional Surveys

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
0	0	0	0.00	0	0.00	0.00	0.00
101.1	0.25	26.13	0.25	101	0.04	0.20	0.10
188.5	0.2	30.47	0.06	188	0.12	0.50	0.26
276	0	1.04	0.23	276	0.17	0.63	0.34
361.8	0	1.04	0.00	362	0.17	0.63	0.34
449.1	0.1	272.82	0.11	449	0.09	0.64	0.26
536.5	0	1.04	0.11	536	0.02	0.64	0.18
622.3	0	1.04	0.00	622	0.02	0.64	0.18
709.8	0	1.04	0.00	710	0.02	0.64	0.18
795.5	0.1	251.41	0.12	795	-0.05	0.62	0.11
880.2	0.2	235.4	0.13	880	-0.20	0.51	-0.08
965.5	0.15	209.52	0.11	965	-0.33	0.33	-0.26
1,053.10	0.2	214.55	0.06	1,053	-0.41	0.10	-0.40
1,139.60	0.2	182.26	0.13	1,140	-0.43	-0.17	-0.49
1,226.00	0.2	190.23	0.03	1,226	-0.39	-0.47	-0.52
1,313.50	0.2	175.01	0.06	1,313	-0.33	-0.78	-0.54
1,399.30	0.2	152.86	0.09	1,399	-0.18	-1.06	-0.46
1,485.70	0.2	146.48	0.03	1,486	0.04	-1.32	-0.30
1,573.20	0.25	132.83	0.08	1,573	0.32	-1.58	-0.08
1,660.70	0.3	135.53	0.06	1,661	0.68	-1.87	0.22
1,747.20	0.25	129.48	0.07	1,747	1.05	-2.15	0.52
1,834.80	0.3	133.77	0.06	1,835	1.42	-2.43	0.84
1,921.30	0.25	137.65	0.06	1,921	1.78	-2.73	1.13
2,007.80	0.5	169.5	0.37	2,008	2.09	-3.24	1.32
2,094.40	1	176.78	0.59	2,094	2.48	-4.36	1.44
2,181.80	1	187.25	0.21	2,182	2.81	-5.88	1.38
2,269.30	0.5	172.83	0.61	2,269	3.05	-7.02	1.33
2,356.70	1.2	120.85	1.12	2,357	4.07	-7.86	2.17
2,444.20	1.3	107.9	0.34	2,444	5.94	-8.64	3.90
2,531.30	1.3	86.1	0.56	2,531	7.86	-8.88	5.82
2,617.20	2	71.5	0.94	2,617	10.04	-8.33	8.22
2,703.60	2	64.18	0.30	2,703	12.46	-7.20	11.00
2,791.00	2	60.36	0.15	2,791	14.71	-5.78	13.70
2,878.40	1.5	63.53	0.58	2,878	16.67	-4.52	16.05
2,965.80	1.5	64.25	0.02	2,965	18.41	-3.51	18.11
3,053.70	1.45	66.31	0.08	3,053	20.16	-2.56	20.16
3,140.20	2	58.22	0.69	3,140	22.06	-1.33	22.45
3,226.20	2	60.6	0.10	3,226	24.18	0.20	25.03
3,312.60	1.45	69.54	0.71	3,312	26.16	1.32	27.37
3,400.10	2	74.29	0.65	3,400	28.39	2.12	29.87
3,486.60	2.45	85.48	0.72	3,486	31.44	2.68	33.17
3,574.10	3	87.57	0.64	3,573	35.40	2.92	37.32
3,661.50	3	84.25	0.20	3,661	39.74	3.25	41.88
3,748.80	3	87.42	0.19	3,748	44.06	3.58	46.44
3,836.20	2.5	86.17	0.58	3,835	48.06	3.81	50.63
3,923.70	2.3	92.58	0.38	3,923	51.59	3.86	54.28

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
4,011.10	2.3	93.61	0.05	4,010	55.03	3.67	57.79
4,098.60	2	89.08	0.39	4,097	58.22	3.58	61.06
4,183.80	1.45	92.66	0.66	4,183	60.71	3.56	63.63
4,270.10	1.5	89.26	0.12	4,269	62.87	3.52	65.85
4,355.90	1.5	92.88	0.11	4,355	65.05	3.48	68.09
4,441.60	2	91.95	0.58	4,440	67.61	3.37	70.71
4,528.00	2.15	87.03	0.27	4,527	70.63	3.40	73.83
4,615.40	2.3	86.34	0.17	4,614	73.86	3.60	77.22
4,701.10	2.45	88.46	0.20	4,700	77.25	3.76	80.77
4,787.70	3.1	97.89	0.91	4,786	81.36	3.49	84.94
4,875.10	3.3	99.02	0.24	4,873	86.21	2.77	89.76
4,961.50	3.2	88.59	0.69	4,960	91.00	2.44	94.63
5,049.00	2.5	77.5	1.01	5,047	95.05	2.91	98.93
5,136.50	2.1	68.08	0.63	5,134	98.04	3.92	102.28
5,223.90	1.5	68.31	0.69	5,222	100.26	4.94	104.83
5,311.40	1.35	73.57	0.23	5,309	102.06	5.66	106.89
5,398.80	1.3	80.11	0.18	5,397	103.85	6.12	108.85
5,486.30	1.1	83.3	0.24	5,484	105.54	6.39	110.66
5,572.70	1.1	77.11	0.14	5,570	107.05	6.67	112.29
5,660.20	1	77.32	0.11	5,658	108.47	7.02	113.86
5,746.80	1	76.54	0.02	5,745	109.81	7.37	115.33
5,833.10	0.5	87.37	0.60	5,831	110.84	7.56	116.44
5,920.40	0.5	89.37	0.02	5,918	111.57	7.58	117.20
6,007.60	0.45	77.35	0.13	6,005	112.24	7.66	117.91
6,095.10	0.4	60.34	0.15	6,093	112.77	7.89	118.51
6,182.30	0.4	51.15	0.07	6,180	113.17	8.23	119.02
6,269.80	1	59.34	0.69	6,267	113.89	8.81	119.91
6,357.30	1	46.4	0.26	6,355	114.83	9.72	121.12
6,444.70	1	42.11	0.09	6,442	115.58	10.82	122.18
6,529.40	0.5	43.35	0.59	6,527	116.11	11.63	122.93
6,615.80	0.45	36.46	0.09	6,613	116.41	12.18	123.39
6,702.20	0.4	22.1	0.14	6,700	116.58	12.73	123.71
6,789.60	0.4	31.55	0.08	6,787	116.71	13.27	123.98
6,877.10	1.15	34.53	0.86	6,875	117.10	14.26	124.64
6,964.60	1.45	32.47	0.35	6,962	117.74	15.92	125.73
7,050.90	1.3	35.05	0.19	7,048	118.42	17.64	126.88
7,136.70	1.1	25.43	0.33	7,134	118.92	19.18	127.79
7,224.10	0.35	23.26	0.86	7,222	119.12	20.18	128.26
7,311.60	0.3	77.44	0.34	7,309	119.37	20.48	128.59
7,399.10	0.35	69.15	0.08	7,397	119.79	20.62	129.06
7,482.20	0.45	93.8	0.24	7,480	120.32	20.69	129.62
7,568.00	0.4	112.57	0.17	7,566	120.94	20.55	130.24
7,653.30	1.1	114.92	0.82	7,651	122.04	20.09	131.26
7,739.00	1.4	113.8	0.35	7,737	123.89	19.33	132.96
7,825.30	1.3	110.87	0.14	7,823	125.90	18.55	134.84
7,912.60	1.15	107.99	0.19	7,910	127.76	17.93	136.60
7,987.90	1	104.5	0.22	7,985	129.17	17.53	137.95
8,450.00	1	104.5	0.00	8,447	137.23	15.51	145.76

Azim.: azimuth
DLS: dogleg severity
E-W: east to west
N-S: north to south
Incl.: inclination
MD: measured depth
TVD: true vertical depth
Vert. sec.: vertical section

CONSTRUCTION DETAILS

AERA ENERGY, LLC - CARBONFRONTIER

FACILITY INFORMATION

Facility name: CarbonFrontier
Well name: 25-26N (Monitoring Agua)
API No.: 0402935053

Facility contact: Randy Hoyle, Chief Carbon Solutions Officer
10000 Ming Ave., Bakersfield, CA 93311
(661) 665-5000, RWHoyle@aeraenergy.com

Well location: Kern County, CA
35°33'1.2506"N, 119°47'43.8785"W

1. INTRODUCTION

The well construction details provided in this document are well-specific and supplement details presented in Construction Details (**Attachment K**) and **Section 5** of the **Application Narrative**. The well is an existing well that will be repurposed and converted to a CO_2 monitoring well. The well will be worked over and recompleted as an EPA Class VI monitoring well.

2. WELL DESIGN

2.1 Well History

The original well was drilled in 1938–1939. The original 4.75-inch liner was plugged in 1939 due to high water cut. A whipstock was set in the 9-inch casing at 6,244 feet (ft) and sidetracked. A 6.625-inch casing was set at 8,133 ft. The sidetrack was completed in the lower 64 zone with a 4.75-inch slotted liner.

The surface casing as shown in the **Section 5** of the **Application Narrative** and **Attachment K** was set and cemented to surface. The intermediate casing and long string casing details are included in **Section 5** of the **Application Narrative** and **Attachment K**.

2.2 Directional

The well was drilled as a vertical well. A sidetrack was drilled 400 ft to the southwest to 8,300 ft through 9-inch casing at 6,244 ft. The directional surveys are included in **Table 9**.

2.3 Underground Sources of Drinking Water

The Tulare formation is the only potential underground source of drinking water but has an approved Aquifer Exemption.

2.4 Tubing and Packer

The well will be completed with tubing and a packer. Materials for the tubing and packer are shown in **Section 5** of the **Application Narrative**, **Attachment K**, and **Table 8** respectively and were selected to ensure compatibility with the injected and reservoir fluids as required by 40 CFR 146.86(c)(1). The packer will be set in the casing opposite a cemented interval. The setting depth will be selected based on an evaluation of the cement bond log run after the inner casing is run and cemented.

The tubing size was selected to allow wireline tools to be run through the tubing for monitoring reservoir conditions as required per CFR 146.90.

2.5 Proposed Perforations

Table 1 shows the proposed perforations intervals for the well.

Table 1: Proposed Perforations

Zone	Perforations Top (ft)	Perforations Bottom (ft)
Agua	7,687	7,749

2.6 Maximum Surface Pressures and Mechanical Integrity

The surface pressure for monitoring wells will depend on the reservoir pressure and the fluid gradient in the tubing. The maximum pressure loads on the monitoring well tubing and tubing by casing annulus are as follows:

- Maximum shut-in tubing pressure with CO_2 1,850 pounds per square inch (psi)
- Maximum shut-in tubing pressure with methane (CH_4) 3,950 psi

After each casing is set and cemented, and after the tubing and packer are installed, they will be pressure tested to a pressure equal or greater than the design pressure for that component to demonstrate mechanical integrity.

2.7 Monitoring Well Casing and Tubing Design

The new long string inner casing and tubing have been designed to withstand all expected loads during the life of the well including the maximum surface pressure loads. The materials selected for these items as shown in **Section 5** of the **Application Narrative** and **Attachment K** were based on corrosion analysis to ensure that the materials are compatible with the injected and reservoir fluids. The upper casing section will be carbon steel with a corrosion-resistant alloy (CRA) lower section for compatibility with the injected and reservoir fluids per CFR 146.86(b)(1). The flow-wetted lower part of the inner casing, tubing, and packer will be CRA materials.

The loads were evaluated and compared to the strengths to determine an appropriate well design including safety factors. **Table 2** shows the design factors (minimum safety factors) used in the analysis.

Table 2: Design Factors

Failure Mode	Casing	Tubing
Triaxial (1)	1.25	1.25
Burst (2)	1.30	1.20
Collapse (3)	1.00	1.10
Axial – Tension (4)	1.60	1.40
Axial – Compression (4)	1.40	1.40
1. VME Criterion (YS derated for temperature) 2. API Minimum Internal Yield Pressure 3. API (Tension adjusted) Collapse 4. API Pipe Body Yield Strength API: American Petroleum Institute VME: Von Mises Equivalent YS: Yield Strength		

2.7.1 Design Results without Corrosion

The new long string inner casing and tubing details are shown in **Section 5** of the **Application Narrative** and **Attachment K**.

A description of the design loads and the design results for the inner casing and tubing are included in **Table 3**, **Table 4**, and **Table 5**. All safety factors exceed the design factors. Additional details on the tubular design are available in the FEED Study for the Aera North Belridge CCS Project design report.

Table 3: 4.5-inch Inner Casing Design Results Section 1

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
1,850 psi Shut-in Injection Tubing Leak (CO_2)	>3	–	>3	>3	>3
3,950 psi Shut-in Injection Tubing Leak (CH_4)	1.99	–	>3	–	2.09

SF: safety factor

Table 4: 4.5-inch Inner Casing Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
1,850 psi Shut-in Injection Tubing Leak (CO_2)	>3	–	–	>3	>3
3,950 psi Shut-in Injection Tubing Leak (CH_4)	2.36	>3	>3	–	2.46

Table 5: 2.375-inch Tubing Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
Late life SI with CO_2 to Surface	>3	–	>3	>3	>3
Late life SI with CH_4 to Surface	>3	–	2.93	>3	2.70

SI: shut-in

2.7.2 Design Results with Corrosion

The wall thickness may reduce with time because of corrosion. Corrosion analysis using a corrosion model was used to estimate wall loss at the end of the injection period. The design results for the inner casing, inner liner, and tubing with respective remaining body wall (RBW) estimates are included in **Table 6** and **Table 7**. All safety factors exceed the design factors at the end of the injection phase except load "3950 psi Shut-in Injection Tubing Leak (CH_4)."

The triaxial safety factor is 1.22, which is slightly less than the design factor of 1.25. This conservative load is a design load than can be monitored. If the surface pressure approaches the design pressure, the well will be killed, and corrective action will take place to make the well safe. Based on this unlikely load occurring and available mitigation, the design is considered acceptable.

Table 6: 4.5-inch Inner Casing 50.5% RBW Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
1,850 psi Shut-in Injection Tubing Leak (CO_2)	2.63	–	–	>3	2.32
3,950 psi Shut-in Injection Tubing Leak (CH_4)	1.36	–	>3	–	1.22

Table 7: 2.375-inch Tubing 38.8% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
Late life SI with CO_2 to Surface	2.67	–	>3	>3	2.49
Late life SI with CH_4 to Surface	1.36	–	2.93	3	1.33

Table 8: Packer Information

Item	Value
Packer Setting Depth	7,600 ft
Packer material	Alloy 718 or equivalent
Packer element material	EPDM or HNBR
Packer type	Permanent or retrievable with latched seal assembly
Maximum casing ID	3.958 in. (nominal ID for 4.5 in. 12.6 ppf casing)

Item	Value
Minimum casing ID	3.833 in. (drift diameter for 4.5 in. 12.6 ppf casing)
Packer / seal assembly ID	1.995 in. (based on tubing drift ID)
Packer rating	Differential pressure ±7,500 psi, axial capacity ±40,000 lbf, based on the packer loads in **Figure 1** .

EPDM: ethylene propylene diene monomer rubber
HNBR: hydrogenated nitrile butadiene rubber
ID: inner diameter
in: inches
lbf: pound force
ppf: pounds per foot

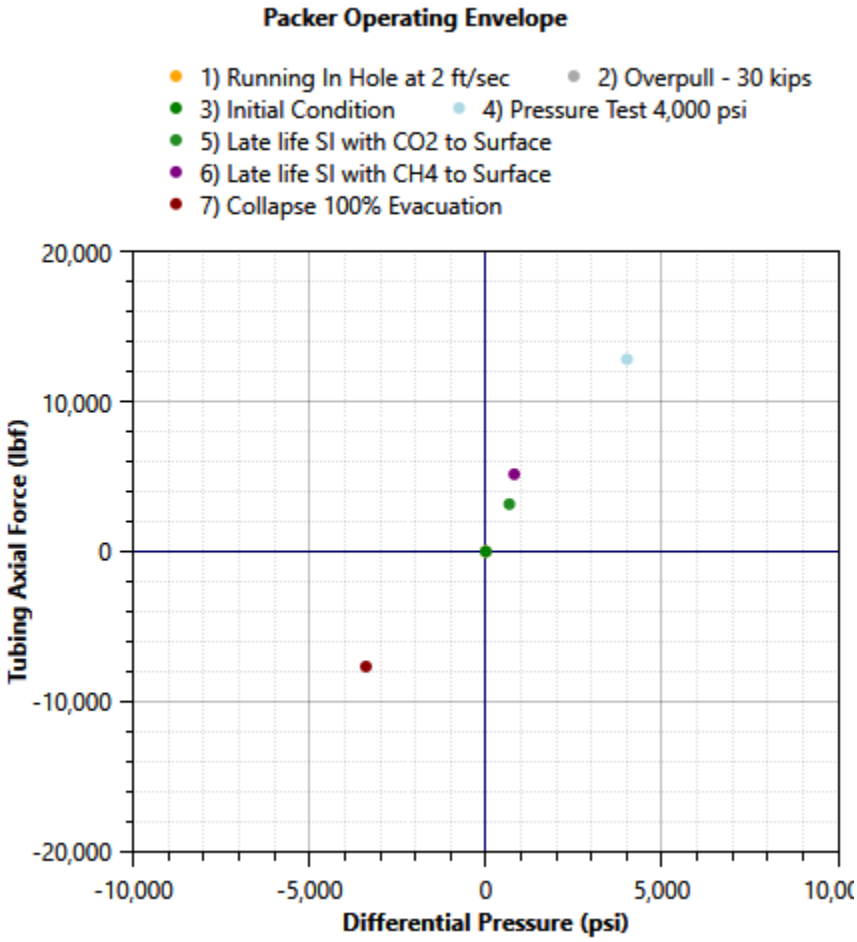

Figure 1: Packer Loads

Table 9: Directional Surveys

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
0.00	0.00	0.00	0.00	0	0.00	0.00	0.00
101.20	0.33	327.69	0.33	101	-0.07	0.25	-0.16
189.40	0.50	320.96	0.20	189	-0.19	0.76	-0.53
278.40	0.33	315.74	0.20	278	-0.25	1.25	-0.96
367.30	0.50	299.86	0.23	367	-0.17	1.62	-1.47
456.30	0.33	275.19	0.27	456	0.08	1.84	-2.06
545.30	0.42	253.21	0.19	545	0.52	1.77	-2.63
634.30	0.58	233.77	0.26	634	1.24	1.41	-3.31
723.20	0.50	236.34	0.09	723	2.06	0.93	-3.99
812.10	0.50	221.29	0.15	812	2.83	0.42	-4.57
900.30	0.50	219.71	0.02	900	3.60	-0.17	-5.07
989.30	0.67	225.52	0.20	989	4.51	-0.83	-5.69
1,076.60	0.83	220.36	0.20	1,077	5.65	-1.67	-6.47
1,165.50	0.67	219.16	0.18	1,165	6.81	-2.56	-7.21
1,254.40	0.75	200.96	0.27	1,254	7.87	-3.51	-7.75
1,343.30	0.75	185.57	0.23	1,343	8.86	-4.63	-8.01
1,432.20	0.67	178.74	0.13	1,432	9.70	-5.73	-8.06
1,521.10	0.75	172.36	0.13	1,521	10.43	-6.83	-7.97
1,610.00	0.67	173.77	0.09	1,610	11.14	-7.92	-7.83
1,699.00	0.67	172.49	0.02	1,699	11.80	-8.95	-7.71
1,787.90	0.83	176.29	0.19	1,788	12.57	-10.11	-7.60
1,876.90	1.00	184.19	0.24	1,877	13.61	-11.53	-7.61
1,965.10	1.00	184.96	0.02	1,965	14.81	-13.06	-7.74
2,054.00	1.17	185.29	0.19	2,054	16.14	-14.74	-7.89
2,142.80	1.08	186.86	0.11	2,143	17.53	-16.47	-8.07
2,231.80	1.50	188.89	0.47	2,232	19.16	-18.46	-8.35
2,320.70	1.50	182.82	0.18	2,320	21.01	-20.77	-8.59
2,409.60	1.75	181.66	0.28	2,409	22.91	-23.29	-8.69
2,497.70	2.00	177.82	0.32	2,497	24.99	-26.17	-8.67
2,586.60	2.50	178.79	0.56	2,586	27.46	-29.66	-8.57
2,675.50	2.58	176.46	0.15	2,675	30.21	-33.59	-8.40
2,764.40	2.75	174.77	0.21	2,764	32.99	-37.71	-8.08
2,853.30	3.08	175.87	0.38	2,853	36.02	-42.22	-7.72
2,942.20	3.33	179.87	0.38	2,941	39.51	-47.18	-7.54
3,031.10	3.42	178.91	0.12	3,030	43.28	-52.42	-7.48
3,119.60	3.83	184.36	0.60	3,118	47.47	-58.00	-7.66
3,208.50	4.25	184.51	0.47	3,207	52.35	-64.25	-8.14
3,297.50	4.50	184.36	0.28	3,296	57.64	-71.02	-8.67
3,386.40	5.00	189.59	0.74	3,384	63.57	-78.31	-9.58
3,475.30	4.50	189.91	0.56	3,473	69.71	-85.57	-10.82
3,564.20	4.42	190.71	0.11	3,562	75.51	-92.37	-12.06
3,653.10	4.00	191.57	0.48	3,650	81.03	-98.77	-13.32
3,741.20	3.58	187.04	0.59	3,738	85.86	-104.51	-14.27
3,830.20	3.50	184.97	0.17	3,827	90.23	-109.98	-14.85
3,919.10	3.17	180.67	0.47	3,916	94.17	-115.14	-15.11

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
4,008.00	3.00	177.69	0.26	4,005	97.61	-119.92	-15.05
4,096.90	2.83	174.87	0.25	4,093	100.69	-124.43	-14.76
4,185.80	2.67	175.72	0.19	4,182	103.55	-128.68	-14.41
4,273.90	2.67	172.47	0.17	4,270	106.23	-132.76	-13.98
4,362.80	2.58	175.52	0.19	4,359	108.88	-136.81	-13.56
4,451.70	2.50	181.54	0.31	4,448	111.67	-140.74	-13.45
4,540.70	2.42	184.46	0.17	4,537	114.58	-144.56	-13.65
4,629.70	2.50	182.37	0.14	4,626	117.51	-148.37	-13.88
4,718.60	2.75	177.47	0.38	4,714	120.46	-152.44	-13.86
4,807.50	2.83	173.92	0.21	4,803	123.38	-156.75	-13.54
4,896.40	2.75	174.49	0.10	4,892	126.21	-161.06	-13.10
4,985.30	2.58	164.96	0.53	4,981	128.67	-165.11	-12.38
5,074.30	2.67	162.14	0.18	5,070	130.72	-169.02	-11.22
5,162.40	3.00	161.56	0.38	5,158	132.80	-173.16	-9.86
5,251.30	2.92	161.16	0.09	5,247	134.96	-177.51	-8.39
5,340.30	2.75	164.54	0.27	5,335	137.13	-181.71	-7.09
5,429.20	2.00	158.61	0.89	5,424	138.90	-185.21	-5.96
5,518.10	1.50	161.87	0.57	5,513	140.12	-187.76	-5.03
5,607.00	1.25	166.19	0.30	5,602	141.20	-189.81	-4.44
5,696.00	1.00	169.87	0.29	5,691	142.19	-191.52	-4.07
5,784.10	0.75	177.34	0.31	5,779	143.05	-192.85	-3.91
5,873.00	0.50	197.24	0.37	5,868	143.81	-193.80	-3.99
5,961.90	0.42	214.31	0.18	5,957	144.48	-194.44	-4.29
6,050.10	0.58	208.74	0.19	6,045	145.23	-195.10	-4.69
6,139.00	1.00	203.52	0.48	6,134	146.39	-196.21	-5.22
6,227.90	1.17	211.27	0.25	6,223	148.01	-197.69	-6.00
6,257.00	1.14	212.06	-0.01	6,252	141.24	-201.60	8.03
6,336.80	5.17	199.19	5.10	6,331	145.30	-205.67	6.42
6,426.20	6.75	185.36	2.38	6,420	153.12	-214.71	4.61
6,513.30	5.25	195.17	2.08	6,507	160.68	-223.65	3.09
6,602.90	6.92	208.17	2.41	6,596	169.50	-232.36	-0.53
6,690.40	7.67	210.72	0.93	6,683	180.29	-242.03	-6.01
6,781.90	6.00	211.31	1.83	6,774	190.93	-251.37	-11.61
6,873.40	9.67	206.76	4.06	6,864	202.97	-262.31	-17.56
6,964.90	10.50	199.09	1.72	6,954	217.95	-277.05	-23.74
7,056.30	8.00	193.16	2.92	7,044	231.04	-291.12	-27.91
7,147.80	9.17	217.37	4.12	7,135	243.80	-303.11	-33.79
7,239.40	9.33	232.47	2.65	7,225	258.39	-313.43	-44.11
7,330.80	10.33	219.12	2.72	7,315	273.88	-324.31	-55.15
7,420.20	9.00	208.04	2.55	7,404	288.62	-336.70	-63.50
7,511.00	8.83	220.56	2.14	7,493	302.43	-348.26	-71.37
7,600.20	9.00	227.32	1.19	7,581	316.23	-358.19	-80.95
7,691.80	8.17	231.39	1.12	7,672	329.82	-367.11	-91.30
7,783.50	7.67	228.94	0.66	7,763	342.36	-375.19	-101.01
7,874.80	6.00	238.64	2.22	7,853	353.03	-381.68	-109.68
7,966.30	7.75	225.96	2.52	7,944	363.80	-388.46	-118.20
8,056.70	0.00	223.29	8.57	8,034	369.89	-392.69	-122.58

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
8,300.00	0.00	223.29	0.00	8,278	369.89	-392.69	-122.58

Azim.: azimuth
DLS: dogleg severity
E-W: east to west
Incl.: inclination
MD: measured depth
TVD: true vertical depth
Vert. Sec: vertical section

CONSTRUCTION DETAILS

AERA ENERGY, LLC - CARBONFRONTIER

FACILITY INFORMATION

Facility name: CarbonFrontier
Well name: 27-1N (Monitoring 64 Sands)
API No.: 0402935115

Facility contact: Randy Hoyle, Chief Carbon Solutions Officer
10000 Ming Ave., Bakersfield, CA 93311
(661) 665-5000, RWHoyle@aeraenergy.com

Well location: Kern County, CA
35°31'18.6498"N, 119°46'21.0202"W

1. INTRODUCTION

The well construction details provided in this document are well-specific and supplement details presented in Construction Details (**Attachment K**) and **Section 5** of the **Application Narrative**. The well is an existing well that will be repurposed and converted to a carbon dioxide (CO_2) monitoring well. The well will be worked over and recompleted as an EPA Class VI monitoring well.

2. WELL DESIGN

2.1 Well History

The original well was drilled in 1939. The surface casing, as shown in **Section 5** of the **Application Narrative** and **Attachment K,** was set and cemented to surface. The intermediate casing and long-string casing details are included in **Section 5** of the **Application Narrative** and **Attachment K**. The 5.5-inch liner was run and cemented in 1985.

2.2 Directional

The well was drilled as a vertical well. The directional surveys are included in **Table 11**.

2.3 Underground Sources of Drinking Water

The Tulare formation is the only potential underground source of drinking water but has an approved Aquifer Exemption.

2.4 Tubing and Packer

The well will be completed with tubing and a packer. Materials for the tubing and packer are shown in **Section 5** of the **Application Narrative**, **Attachment K**, and **Table 10** respectively and were selected to ensure compatibility with the injected and reservoir fluids as required per 40 CFR

146.86(c)(1). The packer will be set in the casing opposite a cemented interval. The setting depth will be selected based on an evaluation of the cement bond log run after the inner casing is run and cemented.

The tubing size was selected to allow wireline tools to be run through the tubing for monitoring reservoir conditions as required per CFR 146.90.

2.5 Proposed Perforations

Table 1 shows the proposed perforations intervals for the well.

Table 1: Proposed Perforations

Zone	Perforations Top (ft)	Perforations Bottom (ft)
64 Zone Sandstone	8,001	8,070
64 Zone Sandstone	8,102	8,302

ft: feet

2.6 Maximum Surface Pressures and Mechanical Integrity

The surface pressure for monitoring wells will depend on the reservoir pressure and the fluid gradient in the tubing.

The maximum pressure loads on the monitoring well tubing and tubing by casing annulus are as follows:

- Maximum shut-in tubing pressure with CO_2 1,850 pounds per square inch (psi)
- Maximum shut-in tubing pressure with methane (CH_4) 3,950 psi

After each casing is set and cemented, and after the tubing and packer are installed, they will be pressure tested to a pressure equal to or greater than the design pressure for that component to demonstrate mechanical integrity.

2.7 Monitoring Well Casing and Tubing Design

The new long-string inner casing and tubing have been designed to withstand all expected loads during the life of the well including the maximum surface pressure loads. The materials selected for these items as shown in **Section 5** of the **Application Narrative** and **Attachment K** were based on corrosion analysis to ensure that the materials are compatible with the injected and reservoir fluids. The upper casing section will be carbon steel with a corrosion-resistant alloy (CRA) lower section for compatibility with the injected and reservoir fluids per CFR 146.86(b)(1). The flow-wetted lower part of the inner casing, tubing, and packer will be CRA materials.

The loads were evaluated and compared to the strengths to determine an appropriate well design including safety factors. **Table 2** shows the design factors (minimum safety factors) used in the analysis.

Table 2: Design Factors

Failure Mode	Casing	Tubing
Triaxial (1)	1.25	1.25
Burst (2)	1.30	1.20
Collapse (3)	1.00	1.10
Axial – Tension (4)	1.60	1.40
Axial – Compression (4)	1.40	1.40

1. VME Criterion (YS derated for temperature)
2. API Minimum Internal Yield Pressure
3. API (Tension adjusted) Collapse
4. API Pipe Body Yield Strength

API: American Petroleum Institute
VME: Von Mises Equivalent
YS: Yield Strength

2.7.1 Design Results without Corrosion

The new long-string inner casing, and tubing details are shown in **Section 5** of the **Application Narrative** and **Attachment K**.

A description of the design loads and the design results for the inner casing and tubing are included in **Table 3**, **Table 4**, **Table 5**, and **Table 6**, respectively. All safety factors exceed the design factors. Additional details on the tubular design are available in the FEED Study for the Aera North Belridge CCS Project design report.

Table 3: 5.5-inch Inner Casing Design Results Section 1

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
1,850 psi Shut-in Injection Tubing Leak (CO_2)	>3	–	>3	–	>3
3,950 psi Shut-in Injection Tubing Leak (CH_4)	1.79	–	>3	–	1.90

SF: safety factor

Table 4: 5.5-inch Inner Casing Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
1,850 psi Shut-in Injection Tubing Leak (CO_2)	>3	–	–	>3	>3
3,950 psi Shut-in Injection Tubing Leak (CH_4)	1.98	–	>3	–	2.07

Table 5: 3.5-inch Inner Casing Design Results Section 3

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
Late life SI with CO_2 to Surface	>3	–	>3	–	>3
Late life SI with CH_4 to Surface	2.58	–	>3	–	2.66

SI: shut-in

Table 6: 2.375-inch Tubing Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
Late life SI with CO_2 to Surface	>3	–	>3	>3	>3
Late life SI with CH_4 to Surface	>3	–	2.93	>3	2.70

2.7.2 Design Results with Corrosion

The wall thickness may reduce with time because of corrosion. Corrosion analysis using a corrosion model was used to estimate wall loss at the end of the injection period. The design results for the inner casing and tubing with respective remaining body wall (RBW) estimates are included in **Table 7, Table 8**, and **Table 9**, respectively. All safety factors exceed the design factors at the end of the injection phase except the triaxial safety factor for load "3,950 psi Shut-in Injection Tubing Leak (CH_4)," as shown in **Table 7**.

The end-of-life triaxial safety factor for 5.5-inch inner casing is slightly less than the design factor of 1.25 for the conservative and unlikely load of methane to surface. If the surface pressure approaches the design load pressure, the well can be killed to maintain safe operations. Based on this unlikely load occurring and available mitigation, the design is considered acceptable.

Table 7: 5.5-inch Inner Casing 57.1% RBW Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
1,850 psi Shut-in Injection Tubing Leak (CO_2)	2.49	–	–	>3	2.22
3,950 psi Shut-in Injection Tubing Leak (CH_4)	1.29	–	>3	–	1.17

Table 8: 3.5-inch Inner Casing 51.1% RBW Design Results Section 3

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
Late life SI with CO_2 to Surface	2.92	–	–	>3	2.56
Late life SI with CH_4 to Surface	1.51	–	>3	>3	1.35

Table 9: 2.375-inch Tubing 38.8% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
Late life SI with CO_2 to Surface	2.67	–	>3	>3	2.49
Late life SI with CH_4 to Surface	1.36	–	2.93	>3	1.33

Table 10: Packer Information

Item	Value
Packer Setting Depth	7,800 feet
Packer material	Alloy 718 or equivalent
Packer element material	EPDM or HNBR
Packer type	Permanent or retrievable with latched seal assembly
Maximum casing ID	6.276 in. (nominal ID for 7 in. 26 ppf casing)
Minimum casing ID	6.151 in. (drift diameter for 7 in. 26 ppf casing)
Packer / seal assembly ID	1.995 in. (based on tubing drift ID)
Packer rating	Differential pressure ±7,500 psi, axial capacity ±40,000 lbf, based on the packer loads in **Figure 1** .

EPDM: ethylene propylene diene monomer rubber
HNBR: hydrogenated nitrile butadiene rubber
ID: inner diameter
in.: inches
lbf: pound force
ppf: pounds per foot

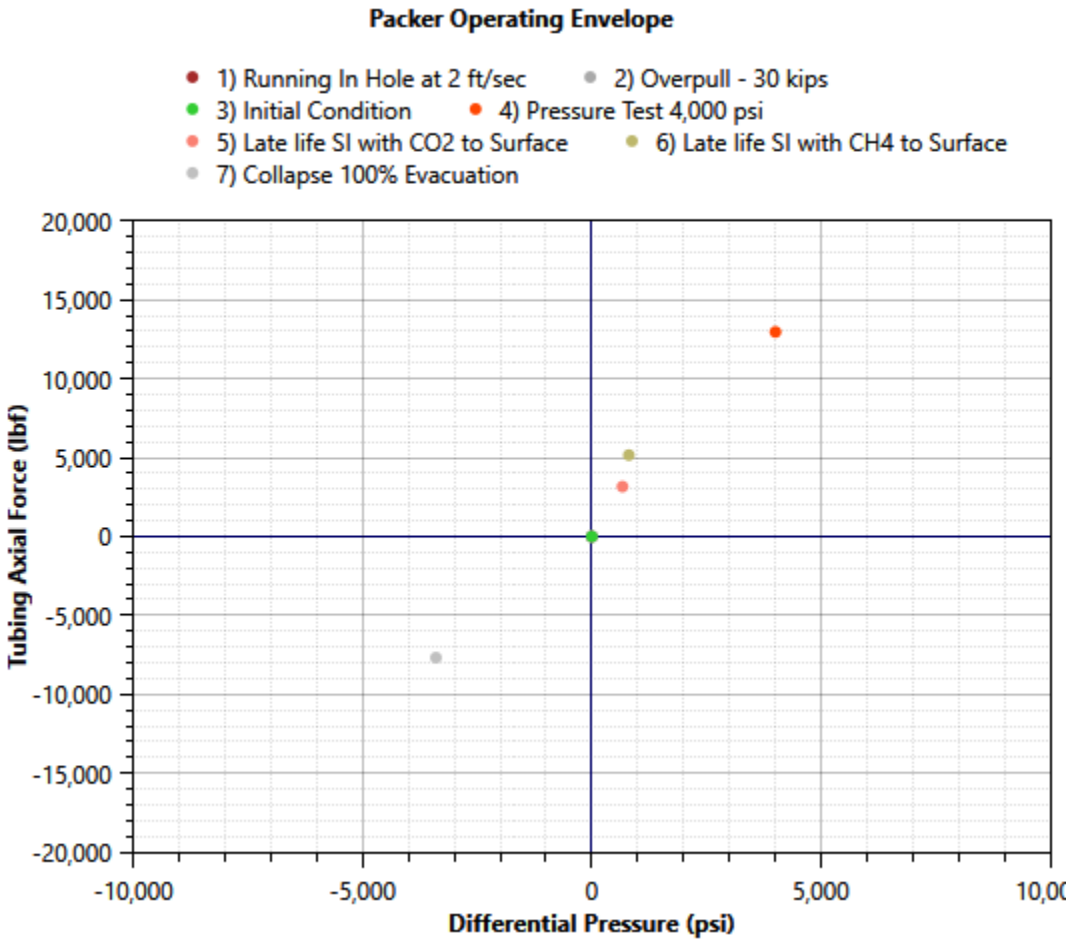

Figure 1: Packer Loads

Table 11: Directional Surveys

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
57	0.20	237.46	0.35	57	0.03	-0.05	-0.08
144	0.25	143.64	0.38	144	-0.09	-0.29	-0.10
233	0.30	132.63	0.08	232	-0.51	-0.60	0.19
320	0.30	121.00	0.07	320	-0.97	-0.87	0.55
408	0.45	97.56	0.24	408	-1.49	-1.04	1.09
495	0.40	83.08	0.13	495	-2.01	-1.05	1.73
583	0.25	78.01	0.17	583	-2.36	-0.97	2.23
672	0.30	72.27	0.06	672	-2.62	-0.86	2.63
759	0.30	58.15	0.08	759	-2.84	-0.67	3.05
848	0.25	41.37	0.11	848	-2.93	-0.40	3.37
936	0.30	30.53	0.08	936	-2.92	-0.06	3.62
1,024	0.25	30.28	0.06	1,024	-2.87	0.31	3.83
1,111	0.30	15.53	0.10	1,111	-2.77	0.69	3.99
1,197	0.30	355.84	0.12	1,197	-2.54	1.13	4.03
1,285	0.30	345.90	0.06	1,285	-2.21	1.58	3.96
1,373	0.35	341.00	0.06	1,373	-1.80	2.06	3.81
1,460	0.30	316.42	0.17	1,460	-1.36	2.48	3.57
1,548	0.30	319.53	0.02	1,548	-0.91	2.82	3.26
1,635	0.25	302.98	0.11	1,635	-0.50	3.10	2.96
1,723	0.30	281.55	0.13	1,723	-0.10	3.25	2.57
1,811	0.40	261.09	0.18	1,810	0.32	3.25	2.04
1,897	0.40	247.24	0.11	1,897	0.69	3.08	1.46
1,985	0.50	241.21	0.13	1,985	1.00	2.78	0.85
2,072	0.50	237.02	0.04	2,072	1.28	2.39	0.20
2,160	0.50	232.12	0.05	2,160	1.51	1.95	-0.43
2,247	1.10	230.57	0.69	2,247	1.81	1.18	-1.38
2,334	1.35	229.08	0.29	2,334	2.22	-0.02	-2.80
2,422	1.50	226.57	0.19	2,422	2.63	-1.49	-4.41
2,510	1.50	224.53	0.06	2,510	2.97	-3.10	-6.05
2,597	1.55	227.23	0.10	2,597	3.33	-4.71	-7.72
2,685	2.00	237.49	0.63	2,684	4.07	-6.34	-9.87
2,772	2.20	243.19	0.33	2,772	5.35	-7.92	-12.67
2,861	2.25	248.22	0.23	2,861	7.01	-9.33	-15.80
2,948	2.35	254.20	0.30	2,948	8.97	-10.45	-19.11
3,035	2.50	258.60	0.27	3,035	11.32	-11.32	-22.70
3,124	3.10	269.52	0.91	3,123	14.49	-11.72	-26.97
3,211	3.05	278.97	0.58	3,210	18.43	-11.37	-31.64
3,299	2.40	302.80	1.47	3,298	22.33	-10.01	-35.50
3,387	2.25	300.73	0.20	3,386	25.86	-8.14	-38.51
3,474	1.45	293.82	0.95	3,473	28.64	-6.82	-41.00
3,562	1.40	293.42	0.06	3,561	30.76	-5.95	-43.00
3,650	1.35	287.52	0.17	3,649	32.79	-5.21	-44.98
3,737	1.25	277.87	0.27	3,736	34.59	-4.77	-46.90
3,825	1.15	267.30	0.28	3,824	36.10	-4.68	-48.73
3,913	1.00	248.42	0.44	3,912	37.18	-5.00	-50.32
4,000	0.50	232.38	0.61	3,999	37.68	-5.51	-51.34
4,088	0.45	197.23	0.33	4,087	37.67	-6.08	-51.74
4,175	0.50	181.08	0.16	4,174	37.33	-6.78	-51.85
4,262	0.55	171.94	0.11	4,261	36.81	-7.58	-51.80

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
4,350	0.40	166.42	0.18	4,349	36.27	-8.30	-51.67
4,439	0.30	107.86	0.40	4,438	35.81	-8.67	-51.38
4,527	0.55	86.22	0.33	4,526	35.28	-8.71	-50.73
4,615	1.10	72.53	0.66	4,614	34.47	-8.43	-49.51
4,702	1.20	54.01	0.44	4,701	33.71	-7.64	-47.97
4,790	1.00	36.19	0.45	4,789	33.45	-6.49	-46.78
4,877	1.05	27.10	0.19	4,876	33.60	-5.15	-45.96
4,966	1.10	25.03	0.07	4,964	33.92	-3.67	-45.23
5,054	1.05	31.46	0.15	5,052	34.17	-2.22	-44.46
5,142	1.00	40.29	0.19	5,141	34.20	-0.94	-43.53
5,230	1.05	37.10	0.09	5,228	34.16	0.29	-42.56
5,316	1.00	31.52	0.13	5,315	34.23	1.57	-41.68
5,403	1.00	24.27	0.15	5,402	34.47	2.91	-40.97
5,491	0.45	25.19	0.63	5,490	34.71	3.92	-40.51
5,579	0.30	32.19	0.18	5,577	34.80	4.42	-40.24
5,667	0.25	21.46	0.08	5,665	34.87	4.80	-40.05
5,754	0.30	4.11	0.11	5,753	35.05	5.20	-39.96
5,841	0.25	326.56	0.21	5,840	35.35	5.59	-40.05
5,929	0.20	299.86	0.13	5,928	35.68	5.82	-40.29
6,016	0.40	319.68	0.26	6,015	36.13	6.13	-40.62
6,104	0.50	316.43	0.12	6,103	36.81	6.65	-41.08
6,192	0.45	313.90	0.06	6,190	37.53	7.16	-41.59
6,279	0.35	318.79	0.12	6,278	38.13	7.60	-42.02
6,367	0.25	341.91	0.18	6,366	38.55	7.99	-42.25
6,455	0.20	348.63	0.06	6,454	38.82	8.32	-42.34
6,542	0.25	325.73	0.12	6,541	39.12	8.62	-42.48
6,630	0.30	318.53	0.07	6,629	39.52	8.95	-42.74
6,718	0.55	310.78	0.29	6,716	40.17	9.40	-43.21
6,805	1.10	315.92	0.63	6,804	41.41	10.28	-44.11
6,892	1.30	322.87	0.28	6,891	43.19	11.66	-45.29
6,980	1.55	329.52	0.34	6,978	45.23	13.47	-46.49
7,067	1.50	338.63	0.28	7,066	47.31	15.57	-47.51
7,155	1.40	347.80	0.29	7,153	49.09	17.68	-48.15
7,242	0.55	346.83	0.97	7,241	50.22	19.13	-48.47
7,330	0.55	322.47	0.26	7,329	50.95	19.87	-48.82
7,417	1.20	304.69	0.80	7,416	52.27	20.73	-49.83
7,505	1.05	311.48	0.23	7,503	53.98	21.78	-51.18
7,592	0.55	334.83	0.67	7,591	55.16	22.69	-51.96
7,679	1.10	348.42	0.67	7,678	56.15	23.89	-52.31
7,767	1.05	359.99	0.25	7,765	57.26	25.51	-52.48
7,855	1.05	351.56	0.18	7,853	58.32	27.11	-52.60
7,942	1.00	12.30	0.43	7,941	59.21	28.65	-52.55
8,030	1.25	5.57	0.32	8,029	60.03	30.36	-52.29
8,109	1.30	358.55	0.21	8,108	61.04	32.11	-52.23
8,450	1.30	3.47	0.03	8,448	65.58	39.83	-52.10

Azim.: azimuth
DLS: dogleg severity
E-W: east to west
N-S: north to south
Incl.: inclination
MD: measured depth
TVD: true vertical depth

Vert. Sec: vertical section

CONSTRUCTION DETAILS

AERA ENERGY, LLC - CARBONFRONTIER

FACILITY INFORMATION

Facility name: CarbonFrontier
Well name: 35X-27N (Monitoring Lower Carneros)
API No.: 0402958271

Facility contact: Randy Hoyle, Chief Carbon Solutions Officer
10000 Ming Ave., Bakersfield, CA 93311
(661) 665-5000, RWHoyle@aeraenergy.com

Well location: Kern County, CA
35°32'59.2890"N, 119°48'2.9031"W

1. INTRODUCTION

The well construction details provided in this document are well-specific and supplement details presented in Construction Details (**Attachment K**) and **Section 5** of the **Application Narrative**. The well is an existing well that will be repurposed and converted to a CO_2 monitoring well. The well will be worked over and recompleted as a CO_2 above-zone monitoring well.

2. WELL DESIGN

2.1 Well History

The original well was drilled in 1978. The surface casing as shown in **Section 5** of the **Application Narrative** and **Attachment K** was set and cemented to surface. The intermediate casing and long-string casing details are included in **Section 5** of the **Application Narrative** and **Attachment K**.

2.2 Directional

The well was drilled as a vertical well. The directional surveys are included in **Table 6**.

2.3 Underground Sources of Drinking Water

The Tulare formation is the only potential underground source of drinking water but has an approved Aquifer Exemption.

2.4 Tubing and Packer

The well will be completed with tubing and a packer. Materials for the tubing and packer are shown in **Section 5** of the **Application Narrative**, **Attachment K**, and **Table 5**. This is an above-zone observation well completed in the Lower Carneros Sandstones. The tubing and packer will not be exposed to CO_2. The packer will be set in the casing opposite a cemented interval.

The tubing size was selected to allow wireline tools to be run through the tubing for monitoring reservoir conditions as required per CFR 146.90.

2.5 Proposed Perforations

Table 1 shows the proposed perforations intervals for the well.

Table 1: Proposed Perforations

Zone	Perforations Top (ft)	Perforations Bottom (ft)
Lower Carneros	6,566	6,690
Lower Carneros	6,755	6,938

ft: feet

2.6 Maximum Surface Pressures and Mechanical Integrity

The maximum pressure loads on the monitoring well tubing and casing are as follows:

- Maximum casing pressure test 1,000 pounds per square inch (psi)
- Maximum shut-in tubing pressure with CO_2 1,850 psi
- Maximum shut-in tubing pressure with methane (CH_4) 3,950 psi

2.7 Monitoring Well Casing and Tubing Design

The new tubing and casing have been designed to withstand all expected loads during the life of the well including the maximum surface pressure loads.

The loads were evaluated and compared to the strengths to determine an appropriate well design including safety factors. **Table 2** shows the design factors (minimum safety factors) used in the analysis.

Table 2: Design Factors

Failure Mode	Casing	Tubing
Triaxial (1)	1.25	1.25
Burst (2)	1.30	1.20
Collapse (3)	1.00	1.10
Axial – Tension (4)	1.60	1.40
Axial – Compression (4)	1.40	1.40

1. VME Criterion (YS derated for temperature)
2. API Minimum Internal Yield Pressure
3. API (Tension adjusted) Collapse
4. API Pipe Body Yield Strength

API: American Petroleum Institute
VME: Von Mises Equivalent
YS: Yield Strength

2.7.1 Design Results

The casing and tubing details are shown in **Section 5** of the **Application Narrative** and **Attachment K**.

A description of the design loads and the design results for the casing and tubing are included in **Table 3** and **Table 4**. All safety factors exceed the design factors. Additional details on the tubular design are available in the FEED Study for the Aera North Belridge CCS Project design report.

Table 3: 7-inch Casing Design Results

Casing Section	Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
1	Pressure test 1,000 psi	>3	–	>3	–	>3
2	Pressure test 1,000 psi	>3	–	>3	–	>3
3	Pressure test 1,000 psi	1.45	>3	>3	>3	1.54
4	Pressure test 1,000 psi	2.38	–	>3	>3	2.46

SF: safety factor

Table 4: 2.375-inch Tubing Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
Late life SI with CO_2 to Surface	>3	–	>3	>3	>3
Late life SI with CH4 to Surface	>3	–	>3	–	2.90

SI: shut-in

Table 5: Packer Information

Item	Value
Packer Setting Depth	6,450 ft
Packer material	Carbon steel
Packer element material	EPDM or HNBR
Packer type	Permanent or retrievable with latched seal assembly
Maximum casing ID	6.366 in. (nominal ID for 7 in. 23 ppf casing)
Minimum casing ID	6.241 in. (drift diameter for 7 in. 23 ppf casing)
Packer / seal assembly ID	1.995 in. (based on tubing drift ID)
Packer rating	Differential pressure ±7,500 psi, axial capacity ±150,000 lbf, based on the packer loads in **Figure 1 .**

EPDM: ethylene propylene diene monomer rubber
HNBR: hydrogenated nitrile butadiene rubber
ID: inner diameter
in.: inches
lbf: pound force
ppf: pounds per foot

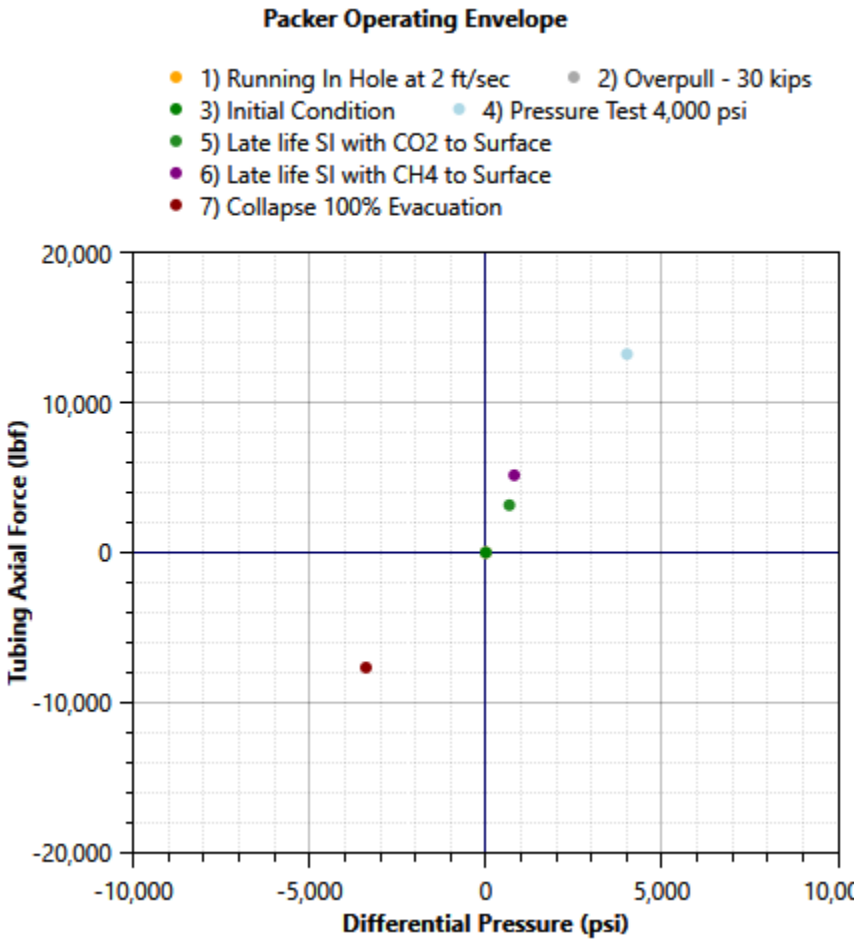

Figure 1: Packer Loads

Table 6: Directional Surveys

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
0	0.00	0.00	0.00	0	0.00	0.00	0.00
50	0.17	246.50	0.34	50	0.05	-0.03	-0.07
100	0.22	251.85	0.11	100	0.15	-0.09	-0.23
150	0.22	239.50	0.09	150	0.28	-0.17	-0.40
200	0.32	253.40	0.24	200	0.43	-0.26	-0.62
250	0.50	207.38	0.72	250	0.72	-0.49	-0.85
300	0.40	249.27	0.67	300	1.04	-0.75	-1.12
350	0.41	252.19	0.05	350	1.25	-0.86	-1.45
400	0.43	249.02	0.06	400	1.47	-0.98	-1.79
450	0.60	248.51	0.34	450	1.74	-1.15	-2.21
500	0.39	260.98	0.47	500	1.98	-1.27	-2.62
550	0.61	269.16	0.46	550	2.14	-1.30	-3.06
600	0.71	269.08	0.20	600	2.31	-1.31	-3.64
650	0.80	270.00	0.18	650	2.51	-1.31	-4.29
700	0.93	270.07	0.26	700	2.73	-1.31	-5.05
750	1.13	272.07	0.41	750	2.98	-1.30	-5.95
800	1.26	274.26	0.28	800	3.23	-1.24	-6.99
850	1.39	275.27	0.26	850	3.47	-1.14	-8.14
900	1.67	278.71	0.59	900	3.70	-0.97	-9.46
950	1.60	281.95	0.23	950	3.86	-0.72	-10.87
1000	1.76	281.41	0.32	1000	4.00	-0.42	-12.30
1050	1.77	282.77	0.09	1050	4.13	-0.10	-13.81
1100	1.86	281.03	0.21	1100	4.27	0.23	-15.36
1150	1.76	283.60	0.26	1150	4.40	0.56	-16.90
1200	1.79	281.90	0.12	1200	4.52	0.90	-18.41
1250	1.76	281.99	0.06	1250	4.66	1.22	-19.93
1300	1.81	279.32	0.19	1300	4.83	1.51	-21.46
1350	1.73	282.25	0.24	1350	5.00	1.80	-22.97
1400	1.67	279.21	0.22	1400	5.16	2.08	-24.43
1450	1.66	277.68	0.09	1450	5.37	2.29	-25.87
1500	1.65	275.57	0.12	1500	5.63	2.46	-27.30
1550	1.63	273.42	0.13	1550	5.94	2.57	-28.73
1600	1.60	270.80	0.16	1600	6.30	2.62	-30.14
1650	1.56	272.24	0.11	1650	6.67	2.66	-31.51
1700	1.60	266.52	0.33	1700	7.09	2.64	-32.89
1750	1.63	263.04	0.21	1750	7.62	2.51	-34.29
1800	1.68	258.86	0.26	1800	8.26	2.28	-35.72
1850	1.70	254.41	0.27	1850	9.00	1.94	-37.15
1900	1.71	253.62	0.05	1899	9.81	1.53	-38.58

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
1950	1.77	250.18	0.24	1949	10.69	1.06	-40.02
2000	1.84	248.41	0.18	1999	11.65	0.50	-41.50
2050	2.00	245.76	0.37	2049	12.73	-0.15	-43.04
2100	2.09	242.58	0.29	2099	13.94	-0.93	-44.64
2150	2.19	239.25	0.32	2149	15.28	-1.84	-46.27
2200	2.24	235.21	0.33	2199	16.76	-2.88	-47.90
2250	2.30	233.97	0.16	2249	18.33	-4.03	-49.51
2300	2.43	233.03	0.27	2299	19.99	-5.26	-51.17
2350	2.59	228.42	0.52	2349	21.81	-6.64	-52.86
2400	2.63	228.03	0.09	2399	23.76	-8.16	-54.56
2450	2.65	222.03	0.55	2449	25.79	-9.79	-56.19
2500	2.84	219.80	0.44	2499	27.98	-11.60	-57.75
2550	2.86	221.76	0.20	2549	30.25	-13.48	-59.38
2600	2.93	220.54	0.19	2599	32.55	-15.38	-61.04
2650	3.05	218.83	0.30	2649	34.96	-17.39	-62.70
2700	3.15	214.69	0.49	2699	37.50	-19.55	-64.32
2750	3.23	217.20	0.32	2749	40.13	-21.81	-65.95
2800	3.32	219.39	0.31	2799	42.80	-24.05	-67.72
2850	3.53	218.13	0.45	2849	45.57	-26.38	-69.59
2900	3.56	217.19	0.13	2898	48.46	-28.82	-71.48
2950	3.72	219.10	0.40	2948	51.42	-31.32	-73.44
3000	3.60	217.93	0.28	2998	54.39	-33.82	-75.43
3050	3.07	217.52	1.06	3048	57.11	-36.12	-77.21
3100	2.62	217.37	0.90	3098	59.44	-38.09	-78.72
3150	2.39	211.51	0.69	3148	61.52	-39.88	-79.96
3200	1.89	218.37	1.12	3198	63.29	-41.42	-81.01
3250	1.60	221.81	0.62	3248	64.70	-42.59	-81.99
3300	1.50	216.21	0.36	3298	65.95	-43.63	-82.84
3350	1.56	217.11	0.13	3348	67.20	-44.70	-83.64
3400	1.52	219.82	0.17	3398	68.45	-45.76	-84.48
3450	1.41	211.50	0.48	3448	69.66	-46.79	-85.22
3500	1.51	214.99	0.27	3498	70.88	-47.85	-85.92
3550	1.57	220.50	0.32	3548	72.14	-48.92	-86.74
3600	1.35	216.66	0.48	3598	73.32	-49.91	-87.54
3650	1.34	208.31	0.39	3648	74.45	-50.90	-88.17
3700	1.39	206.00	0.15	3698	75.62	-51.96	-88.71
3750	1.13	202.58	0.54	3748	76.71	-52.96	-89.17
3800	1.38	180.85	1.07	3798	77.78	-54.01	-89.37
3850	1.49	187.63	0.40	3848	79.00	-55.26	-89.46
3900	1.29	177.06	0.65	3898	80.17	-56.47	-89.52
3950	1.66	187.55	0.91	3948	81.41	-57.75	-89.58

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
4000	1.51	182.80	0.40	3998	82.77	-59.12	-89.71
4050	1.68	184.94	0.36	4048	84.12	-60.51	-89.81
4100	1.23	183.39	0.90	4098	85.36	-61.78	-89.90
4150	1.34	193.72	0.51	4148	86.47	-62.88	-90.07
4200	1.49	193.12	0.30	4198	87.70	-64.08	-90.36
4250	1.84	194.09	0.70	4248	89.15	-65.49	-90.70
4300	1.89	193.56	0.11	4298	90.77	-67.07	-91.09
4350	2.00	194.25	0.22	4348	92.47	-68.72	-91.50
4400	2.09	195.32	0.20	4398	94.25	-70.44	-91.95
4450	2.13	193.79	0.14	4448	96.09	-72.23	-92.42
4500	2.25	194.00	0.24	4497	98.00	-74.08	-92.88
4550	2.29	195.21	0.12	4547	99.98	-76.00	-93.37
4600	2.28	192.69	0.20	4597	101.97	-77.93	-93.86
4650	2.28	191.74	0.08	4647	103.95	-79.88	-94.28
4700	2.09	189.13	0.43	4697	105.84	-81.75	-94.62
4750	2.10	190.17	0.08	4747	107.65	-83.55	-94.93
4800	2.05	189.94	0.10	4797	109.45	-85.33	-95.25
4850	2.03	188.54	0.11	4847	111.22	-87.09	-95.53
4900	2.00	187.84	0.08	4897	112.95	-88.83	-95.78
4950	2.17	188.37	0.34	4947	114.75	-90.63	-96.04
5000	2.19	188.81	0.05	4997	116.63	-92.51	-96.32
5050	2.26	188.40	0.14	5047	118.55	-94.43	-96.61
5100	2.30	191.47	0.26	5097	120.53	-96.39	-96.96
5150	2.18	193.17	0.27	5147	122.47	-98.30	-97.37
5200	1.84	193.51	0.68	5197	124.22	-100.01	-97.78
5250	1.70	194.97	0.29	5247	125.76	-101.50	-98.16
5300	1.54	195.63	0.32	5297	127.18	-102.87	-98.53
5350	1.52	195.36	0.04	5347	128.51	-104.15	-98.89
5400	1.46	193.42	0.16	5397	129.81	-105.41	-99.21
5450	1.47	192.59	0.05	5447	131.09	-106.66	-99.50
5500	1.22	187.19	0.56	5497	132.25	-107.81	-99.70
5550	1.34	193.11	0.36	5547	133.36	-108.91	-99.90
5600	1.63	200.81	0.70	5597	134.65	-110.14	-100.29
5650	1.84	203.35	0.45	5647	136.16	-111.54	-100.86
5700	1.97	207.25	0.37	5697	137.80	-113.05	-101.57
5750	2.35	216.80	1.04	5747	139.61	-114.63	-102.58
5800	2.43	218.91	0.24	5797	141.56	-116.28	-103.86
5850	2.53	218.34	0.21	5847	143.57	-117.97	-105.21
5900	2.61	220.92	0.28	5897	145.64	-119.69	-106.64
5950	2.67	219.56	0.17	5947	147.76	-121.45	-108.13
6000	2.59	219.65	0.16	5997	149.87	-123.22	-109.59

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
6050	2.37	216.73	0.51	6046	151.89	-124.92	-110.93
6100	2.39	215.12	0.14	6096	153.85	-126.60	-112.15
6150	2.57	218.22	0.45	6146	155.89	-128.33	-113.44
6200	2.46	215.65	0.32	6196	157.95	-130.08	-114.76
6250	2.54	215.51	0.16	6246	160.02	-131.86	-116.03
6300	2.58	216.01	0.09	6296	162.13	-133.67	-117.33
6350	2.63	215.92	0.10	6346	164.28	-135.51	-118.67
6400	2.66	214.66	0.13	6396	166.47	-137.39	-120.00
6450	2.62	213.17	0.16	6446	168.68	-139.30	-121.28
6500	2.63	210.26	0.27	6496	170.89	-141.25	-122.49
6550	2.62	212.13	0.17	6546	173.11	-143.21	-123.67
6600	2.46	209.45	0.40	6596	175.26	-145.11	-124.81
6650	2.63	211.03	0.37	6646	177.42	-147.03	-125.93
6700	2.72	212.72	0.24	6696	179.68	-149.01	-127.16
6750	2.71	210.09	0.25	6746	181.97	-151.03	-128.39
6800	2.85	215.30	0.58	6796	184.30	-153.07	-129.70
6850	2.94	211.09	0.46	6846	186.72	-155.18	-131.09
6900	2.91	212.61	0.17	6896	189.19	-157.35	-132.43
6950	2.84	209.97	0.30	6945	191.62	-159.49	-133.73
7000	2.75	205.21	0.50	6995	194.01	-161.65	-134.86
7050	2.91	207.08	0.37	7045	196.45	-163.86	-135.95
7100	2.92	207.12	0.02	7095	198.95	-166.13	-137.11
7150	2.92	207.58	0.05	7145	201.46	-168.39	-138.28
7200	3.15	207.30	0.46	7195	204.06	-170.74	-139.50
7250	3.36	214.67	0.94	7245	206.81	-173.16	-140.96
7300	3.22	210.83	0.52	7295	209.57	-175.58	-142.52
7350	3.20	204.96	0.66	7345	212.32	-178.05	-143.83
7400	3.12	202.68	0.30	7395	215.05	-180.57	-144.94
7450	3.02	200.75	0.29	7445	217.72	-183.05	-145.93
7500	2.95	198.46	0.28	7495	220.32	-185.51	-146.80
7550	3.21	198.55	0.52	7545	223.01	-188.05	-147.66
7600	3.59	201.03	0.81	7595	225.97	-190.84	-148.66
7650	3.34	198.03	0.62	7644	228.99	-193.69	-149.68
7670	3.28	196.81	0.46	7665	230.15	-194.80	-150.03
7835	3.28	196.81	0.00	7829	239.58	-203.83	-152.75

Azim.: azimuth
DLS: dogleg severity
E-W: east to west
Incl.: inclination
N-S: north to south
MD: measured depth
TVD: true vertical depth
Vert. Sec: vertical section

CONSTRUCTION DETAILS

AERA ENERGY, LLC - CARBONFRONTIER

FACILITY INFORMATION

Facility name:	CarbonFrontier
Well name:	39-26N (Monitoring 64 Sands)
API No.:	0402935054
Facility contact:	Randy Hoyle, Chief Carbon Solutions Officer 10000 Ming Ave., Bakersfield, CA 93311 (661) 665-5000, RWHoyle@aeraenergy.com
Well location:	Kern County, CA 35°32'54.8149"N, 119°47'35.1082"W

1. Introduction

The well construction details provided in this document are well-specific and supplement details presented in Construction Details (**Attachment K**) and **Section 5** of the **Application Narrative**. The well is an existing well that will be repurposed and converted to a carbon dioxide (CO_2) monitoring well. The well will be worked over and recompleted as an EPA Class VI monitoring well.

2. Well Design

2.1 *Well History*

The original well was drilled in 1938. In 1939, the 9-inch casing was cut at 5,975 feet (ft) and pulled. A whipstock was set in the 11.75-inch casing at 5,765 ft, and the well was sidetracked. The 7-inch casing was run and cemented at 8,100 feet, and a 4.75-inch slotted liner was set at 8,232 ft.

The surface casing, as shown in **Section 5** of the **Application Narrative** and **Attachment K**, was set and cemented to surface. The long-string casing details are included in **Section 5** of the **Application Narrative** and **Attachment K**.

2.2 *Directional*

The well was drilled as a vertical well. The directional surveys are included in **Table 9**.

2.3 *Underground Sources of Drinking Water*

The Tulare formation is the only potential underground source of drinking water but has an approved Aquifer Exemption.

2.4 *Tubing and Packer*

The well will be completed with tubing and a packer. Materials for the tubing and packer are shown in **Section 5** of the **Application Narrative, Attachment K,** and **Table 8** and were selected to ensure compatibility with the injected and reservoir fluids as required per 40 CFR 146.86(c)(1). The packer will be set in the casing opposite a cemented interval. The setting depth will be selected based on an evaluation of the cement bond log run after the inner casing is run and cemented.

The tubing size was selected to allow wireline tools to be run through the tubing for monitoring reservoir conditions as required per CFR 146.90.

2.5 *Proposed Perforations*

Table 1 shows the proposed perforations intervals for the well.

Table 1: Proposed Perforations

Zone	Perforations Top (ft)	Perforations Bottom (ft)
64 Zone Sandstone	7,975	8,038
64 Zone Sandstone	8,105	8,243

2.6 *Maximum Surface Pressures and Mechanical Integrity*

The surface pressure for monitoring wells will depend on the reservoir pressure and the fluid gradient in the tubing.

The maximum pressure loads on the monitoring well tubing and tubing by casing annulus are as follows:

- Maximum shut-in tubing pressure with CO_2 1,850 pounds per square inch (psi)
- Maximum shut-in tubing pressure with methane (CH_4) 3,950 psi

After the casing is set and cemented, and after the tubing and packer are installed, they will be pressure tested to a pressure equal to or greater than the design pressure for that component to demonstrate mechanical integrity.

2.7 *Monitoring Well Casing and Tubing Design*

The new long-string inner casing and tubing have been designed to withstand all expected loads during the life of the well, including the maximum surface pressure loads. The materials selected for these items as shown in **Section 5** of the **Application Narrative** and **Attachment K** were based on corrosion analysis to ensure that the materials are compatible with the injected and reservoir fluids. The upper casing section will be carbon steel with a corrosion-resistant alloy (CRA) lower section for compatibility with the injected and reservoir fluids per CFR 146.86(b)(1). The flow-wetted lower part of the inner casing, tubing, and packer will be CRA materials.

The loads were evaluated and compared to the strengths to determine an appropriate well design, including safety factors. **Table 2** shows the design factors (minimum safety factors) used in the analysis.

Table 2: Design Factors

Failure Mode	Casing	Tubing
Triaxial (1)	1.25	1.25
Burst (2)	1.30	1.20
Collapse (3)	1.00	1.10
Axial – Tension (4)	1.60	1.40
Axial – Compression (4)	1.40	1.40
1. VME Criterion (YS derated for temperature) 2. API Minimum Internal Yield Pressure 3. API (Tension adjusted) Collapse 4. API Pipe Body Yield Strength API: American Petroleum Institute VME: Von Mises Equivalent YS: Yield Strength		

2.7.1 Design Results without Corrosion

A description of the design loads and the design results for the inner casing and tubing are included in **Table 3**, **Table 4**, and **Table 5,** respectively. All safety factors exceed the design factors. Additional details on the tubular design are available in the FEED Study for the Aera North Belridge CCS Project design report.

Table 3: 4.5-inch Inner Casing Design Results Section 1

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
1,850 psi Shut-in Injection Tubing Leak (CO_2)	>3	–	>3	>3	>3
3,950 psi Shut-in Injection Tubing Leak (CH_4)	1.99	–	>3	–	2.11

SF: safety factor

Table 4: 4.5-inch Inner Casing Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
1,850 psi Shut-in Injection Tubing Leak (CO_2)	>3	–	>3	>3	>3
3,950 psi Shut-in Injection Tubing Leak (CH_4)	2.36	–	>3	>3	2.48

Table 5: 2.375-inch Tubing Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
Late life SI with CO_2 to Surface	>3	–	>3	>3	>3
Late life SI with CH_4 to Surface	>3	–	2.92	>3	>3

SI: shut-in

2.7.2 Design Results with Corrosion

The wall thickness may reduce with time because of corrosion. Corrosion analysis using a corrosion model was used to estimate wall loss at the end of the injection period. The design results for the inner casing and tubing with remaining body wall (RBW) estimates are included in **Table 6** and **Table 7**, respectively. All safety factors exceed the design factors at the end of the injection phase except the triaxial safety factor for load "3950 psi Shut-in Injection Tubing Leak (CH_4)," as shown in **Table 6**.

The triaxial safety factor is slightly less than the design factor of 1.25. The conservative design load can be monitored. If this load approaches the design pressure, the well will be killed, and corrective action will take place to make the well safe. Based on this conservative load assumption and available mitigation, the design is considered acceptable.

Table 6: 4.5-inch Inner Casing 50.5% RBW Design Results Section 2

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
1850 psi Shut-in Injection Tubing Leak (CO_2)	1.75	–	>3	>3	1.55
3950 psi Shut-in Injection Tubing Leak (CH_4)	1.36	–	>3	–	1.23

Table 7: 2.375-inch Tubing 38.8% RBW Design Results

Load	Burst SF	Collapse SF	Tension SF	Compression SF	Triaxial SF
Late life SI with CO_2 to Surface	2.64	–	>3	>3	2.47
Late life SI with CH_4 to Surface	1.34	–	2.92	3	1.32

Table 8: Packer Information

Item	Value
Packer Setting Depth	7,850 ft
Packer material	Alloy 718 or equivalent
Packer element material	EPDM or NHBR
Packer type	Permanent or retrievable with latched seal assembly
Maximum casing ID	4.000 in. (nominal ID for 4.5 in. 11.6 ppf casing)
Minimum casing ID	3.875 in. (drift diameter for 4.5 in. 11.6 ppf casing)
Packer / seal assembly ID	1.995 in. (based on tubing drift ID)
Packer rating	Differential pressure ±7,500 psi, axial capacity ±40,000 lbf, based on the packer loads in **Figure 1** .

EPDM: ethylene propylene diene monomer rubber
HNBR: hydrogenated nitrile butadiene rubber
ID: inner diameter
in.: inches
lbf: pound force
ppf: pounds per foot

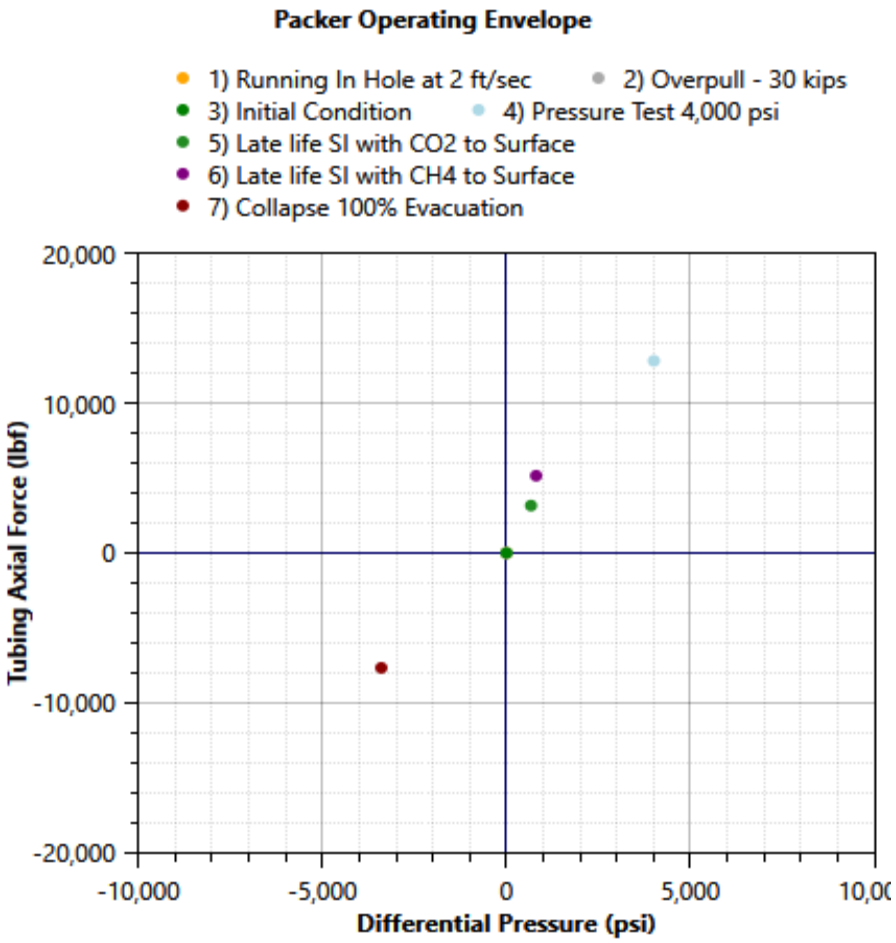

Figure 1: Packer Loads

Table 9: Directional Surveys

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
254.6	0.42	51.59	0.16	255	-0.59	0.58	0.73
342.3	0.42	59.76	0.07	342	-0.96	0.94	1.26
430.1	0.25	79.11	0.23	430	-1.17	1.14	1.73
517.9	0.33	94.29	0.13	518	-1.20	1.16	2.17
606.2	0.42	81.24	0.14	606	-1.24	1.19	2.74
694.2	0.42	74.01	0.06	694	-1.38	1.33	3.37
781.8	0.33	78.34	0.11	782	-1.53	1.46	3.93
869.1	0.42	57.66	0.18	869	-1.77	1.69	4.44
956.4	0.33	50.66	0.12	956	-2.10	2.02	4.91
1,044.20	0.5	45.79	0.20	1,044	-2.54	2.44	5.38
1,131.20	0.5	45.06	0.01	1,131	-3.08	2.98	5.92
1,218.50	0.5	53.26	0.08	1,218	-3.59	3.47	6.49
1,306.20	0.5	59.06	0.06	1,306	-4.03	3.90	7.13
1,393.50	0.5	57.02	0.02	1,393	-4.44	4.30	7.77
1,481.20	0.5	56.79	0.00	1,481	-4.87	4.72	8.41
1,568.80	0.42	54.96	0.09	1,569	-5.27	5.11	9.00
1,656.50	0.5	72.11	0.18	1,656	-5.59	5.42	9.62
1,743.90	0.5	101.42	0.29	1,744	-5.64	5.46	10.36
1,831.50	0.83	123.57	0.47	1,831	-5.23	5.03	11.26
1,918.90	0.83	134.17	0.18	1,919	-4.46	4.24	12.25
2,005.70	0.83	138.57	0.07	2,006	-3.56	3.33	13.11
2,094.20	1	155.57	0.36	2,094	-2.39	2.15	13.86
2,182.60	1.5	161.34	0.58	2,182	-0.61	0.35	14.55
2,271.00	1.58	160.39	0.09	2,271	1.62	-1.90	15.32
2,358.30	1.75	158.32	0.21	2,358	3.98	-4.27	16.22
2,445.80	2.08	162.57	0.41	2,446	6.72	-7.02	17.19
2,532.70	2.83	168.86	0.92	2,532	10.31	-10.63	18.08
2,620.00	3	167.77	0.20	2,620	14.64	-14.98	18.98
2,707.60	3.5	164.31	0.61	2,707	19.43	-19.80	20.19
2,794.90	3.67	162.76	0.22	2,794	24.64	-25.03	21.74
2,882.10	4	163.31	0.38	2,881	30.19	-30.61	23.44
2,969.20	4.25	164.31	0.30	2,968	36.17	-36.63	25.18
3,057.00	4.42	172.96	0.77	3,056	42.64	-43.11	26.48
3,144.20	4.67	176.51	0.43	3,143	49.50	-49.99	27.10
3,231.70	5	178.47	0.42	3,230	56.86	-57.36	27.42
3,319.20	4.92	179.47	0.13	3,317	64.42	-64.92	27.56
3,406.40	4.5	181.86	0.53	3,404	71.58	-72.08	27.48
3,493.90	3.42	186.36	1.28	3,491	77.61	-78.11	27.08
3,582.00	3	184.82	0.49	3,579	82.53	-83.02	26.60
3,669.70	3	182.22	0.16	3,667	87.11	-87.60	26.32
3,756.50	2.83	176.69	0.38	3,753	91.52	-92.00	26.35
3,843.80	2.5	175.11	0.39	3,841	95.56	-96.05	26.64
3,931.60	2	174.56	0.57	3,928	98.99	-99.49	26.95
4,018.90	2	175.16	0.02	4,015	102.02	-102.52	27.22

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
4,106.30	2	175.86	0.03	4,103	105.06	-105.56	27.46
4,194.00	1.67	172.34	0.40	4,190	107.84	-108.35	27.74
4,281.40	1.33	171.72	0.39	4,278	110.10	-110.62	28.05
4,369.00	1.25	169.72	0.10	4,365	112.04	-112.57	28.37
4,456.00	1.33	175.09	0.17	4,452	113.98	-114.51	28.63
4,543.40	1.5	180.97	0.26	4,540	116.13	-116.66	28.69
4,630.60	1.67	180.72	0.20	4,627	118.54	-119.07	28.66
4,717.80	1.75	168.22	0.44	4,714	121.11	-121.65	28.92
4,805.60	2	156.01	0.54	4,802	123.81	-124.36	29.81
4,893.10	1.83	149.12	0.33	4,889	126.38	-126.95	31.15
4,980.90	1.5	142.06	0.44	4,977	128.46	-129.06	32.58
5,068.10	1.25	149.94	0.36	5,064	130.16	-130.78	33.75
5,155.20	1.33	159.32	0.26	5,151	131.92	-132.55	34.59
5,242.60	1.5	160.09	0.20	5,239	133.93	-134.58	35.33
5,330.10	1.67	152.71	0.30	5,326	136.12	-136.79	36.31
5,417.50	1.5	146.47	0.28	5,414	138.18	-138.87	37.52
5,505.50	1.25	145.76	0.28	5,502	139.91	-140.63	38.70
5,593.10	1	145.11	0.29	5,589	141.31	-142.04	39.68
5,681.00	1	154.62	0.19	5,677	142.62	-143.37	40.44
5,768.50	0.92	165.54	0.23	5,764	143.98	-144.74	40.95
5,778.00	0.92	165.54	-0.07	5,774	138.53	-139.46	50.66
5,796.00	2.08	242.02	11.49	5,792	138.83	-139.75	50.41
5,826.00	2.08	256.02	1.69	5,822	139.24	-140.14	49.40
5,881.00	3	296.02	3.53	5,877	138.89	-139.75	47.14
5,934.00	4.17	228.02	7.78	5,930	139.61	-140.43	44.46
6,000.00	5.83	226.02	2.53	5,996	143.62	-144.36	40.27
6,084.00	6.67	226.02	1.00	6,079	150.09	-150.71	33.69
6,136.00	7	229.02	0.93	6,131	154.34	-154.89	29.12
6,227.00	7.75	230.02	0.84	6,221	162.08	-162.47	20.23
6,328.00	6.67	223.02	1.38	6,321	170.91	-171.13	11.01
6,430.00	7.58	221.02	0.92	6,423	180.46	-180.54	2.56
6,530.00	7	221.02	0.58	6,522	190.18	-190.11	-5.77
6,635.00	6.25	221.02	0.71	6,626	199.46	-199.25	-13.72
6,750.00	6.75	212.02	0.99	6,740	210.05	-209.70	-21.41
6,837.00	6.17	212.02	0.67	6,827	218.44	-218.00	-26.60
6,879.00	5.67	212.02	1.19	6,869	222.15	-221.67	-28.90
6,936.00	5.92	211.02	0.47	6,925	227.11	-226.58	-31.91
6,984.00	6.25	217.02	1.49	6,973	231.37	-230.79	-34.76
7,050.00	6.92	213.02	1.23	7,039	237.65	-236.99	-39.09
7,150.00	7.17	203.02	1.25	7,138	248.54	-247.78	-44.81
7,210.00	7.58	207.02	1.09	7,197	255.57	-254.76	-48.07
7,240.00	7.75	211.02	1.87	7,227	259.10	-258.25	-50.01
7,300.00	6.75	213.02	1.72	7,287	265.60	-264.68	-54.02
7,375.00	6.33	223.02	1.62	7,361	272.41	-271.39	-59.24
7,443.00	6.5	225.02	0.41	7,429	277.96	-276.86	-64.52
7,510.00	5.5	228.02	1.56	7,495	282.88	-281.68	-69.59
7,565.00	4	231.02	2.76	7,550	285.91	-284.65	-73.04

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
7,590.00	3.92	231.02	0.32	7,575	287.02	-285.74	-74.38
7,674.00	4.83	230.02	1.09	7,659	291.18	-289.82	-79.33
7,711.00	5	231.02	0.51	7,696	293.24	-291.83	-81.77
7,737.00	5.17	230.02	0.74	7,721	294.74	-293.30	-83.55
7,790.00	5	226.02	0.74	7,774	297.94	-296.44	-87.04
7,822.00	5.25	224.02	0.96	7,806	300.00	-298.46	-89.06
7,878.00	6.25	221.02	1.86	7,862	304.21	-302.60	-92.85
7,939.00	6.5	224.02	0.68	7,922	309.27	-307.59	-97.42
7,995.00	7.25	224.02	1.34	7,978	314.18	-312.41	-102.08
8,100.00	7.25	181.02	5.05	8,082	325.65	-323.80	-106.80
8,243.00	7.25	181.02	0.00	8,224	343.69	-341.84	-107.13

Azim.: azimuth
DLS: dogleg severity
E-W: east to west
N-S: north to south
Incl.: inclination
MD: measured depth
TVD: true vertical depth
Vert. Sec: vertical section

MD (ft)	Incl. (°)	Azim. (°)	DLS (°/100 ft)	TVD (ft)	Vert. Sec. (ft)	N-S (ft)	E-W (ft)
7,590.00	3.92	231.02	0.32	7,575	287.02	-285.74	-74.38
7,674.00	4.83	230.02	1.09	7,659	291.18	-289.82	-79.33
7,711.00	5	231.02	0.51	7,696	293.24	-291.83	-81.77
7,737.00	5.17	230.02	0.74	7,721	294.74	-293.30	-83.55
7,790.00	5	226.02	0.74	7,774	297.94	-296.44	-87.04
7,822.00	5.25	224.02	0.96	7,806	300.00	-298.46	-89.06
7,878.00	6.25	221.02	1.86	7,862	304.21	-302.60	-92.85
7,939.00	6.5	224.02	0.68	7,922	309.27	-307.59	-97.42
7,995.00	7.25	224.02	1.34	7,978	314.18	-312.41	-102.08
8,100.00	7.25	181.02	5.05	8,082	325.65	-323.80	-106.80
8,243.00	7.25	181.02	0.00	8,224	343.69	-341.84	-107.13

Azim.: azimuth
DLS: dogleg severity
E-W: east to west
N-S: north to south
Incl.: inclination
MD: measured depth
TVD: true vertical depth
Vert. Sec: vertical section

Appendix 5B

FEED Study for the Aera North Belridge CCS Project

Final Report

FEED Study for the Aera North Belridge CCS Project

Prepared for:
Aera Energy

Purpose:
Document the injection well design study results, recommendations, and analyses for the North Belridge CCS project.

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Date: December 20, 2023

Version: 3

Project Number: AER-22-011

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Version Record

Version	Issue Date	Issued As/ Type of Version	Authors	Checked By	Project Leader
1	Sep. 21, 2022	Final Report	RLR, PVS, GA, NC	PVS	PVS
2	Nov. 11, 2022	Final Report	RLR, RMK	RLR	PVS
3	Dec. 20, 2023	Final Report	RLR, GA	RLR	PVS

Version History

Version	Date	Description of Change
2	Nov. 11, 2022	Updated to reflect changes in the well proposed for repurposing. Removed the Option 2 well designs (long string casing set through the injection zone). Added load analysis for 9 in. casing. Added Well Construction Components materials recommendations.
3	Dec. 20, 2023	Updated the final reservoir pressure to 4,350 psi at 7,007 ft and the injection temperature to 180°F and re-ran PROSPER analysis. Removed the big bore new drill option. Updated the wellbore schematics. Re-ran and updated the well design results. The updated results were used to update the EPA well construction permitting documents.

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1 Executive Summary

Aera Energy (Aera) is pursuing a project to sequester CO_2 in the depleted 64 Zone oil sands of their North Belridge field. The field is located northwest of Bakersfield, California in Kern County. Initially, CO_2 emissions from produced gas will be injected. Longer term plans include injection of post-combustion CO_2. In addition to repurposing existing wells as injectors or monitoring wells, Aera are also considering new drill wells for injection.

Blade Energy Partners (Blade) was contracted to provide a comprehensive Front-End Engineering and Design (FEED) study in support of Aera's planned Class VI well permit application for a Carbon Capture and Sequestration (CCS) project. Blade was also commissioned to write the permit documents for the well construction package to be submitted to EPA. This report covers the FEED study.

The integrated, multi-disciplinary study was conducted using Blade's rigorous Front-End Engineering and Design (FEED) process, and focused on the following interconnected areas of work:

- Well performance analysis and flow assurance,
- Corrosion analysis and Materials selection, and
- Injection well design and analysis, for both repurposed and new-drill wells

Aera has provided extensive well and field data, and other source material. These were used to prepare the design premise document (DPD). Version 5 of the DPD, *Aera CO2 North Belridge Injection Wells Design DPD* [1] was approved by Aera and formed the basis for this study. The DPD includes the data and assumptions, and casing, tubing, and liner design loads that were used in the analysis. All aspects of the study used these assumptions to maintain consistency across disciplines.

The North Belridge Field consists of many existing wells, and most of the wells were drilled in the 1930s and 1940s timeframe. Aera wishes to repurpose existing wells for CO_2 injection and observation (monitoring) wells. Some of the wells were completed with non-API 9 in. OD production casing. For repurposing, candidate wells that have usable wellbores and are located where it is desirable to inject and monitor the injection of CO_2 were selected from the existing well database. The repurposed wells will have inner casing and liners cemented inside existing wellbores to result in a well that meets EPA Class VI requirements. Some of the existing wells have cemented liners and some have un-cemented liners. Wells with cemented liners well be repurposed by cementing corrosion resistant alloy (CRA) inner liners to isolate the carbon steel liners. Un-cemented liners will be pulled and replaced with cemented liners. In addition to evaluating well designs for repurposed wells, well designs for new drill wells are included in case there is a need to add new injection wells. A list of the proposed repurposed wells is shown in Table 2.

The first step in Blade's study was well performance and flow assurance analysis. PROSPER[i], a commercial production engineering program, was used to model the injection of CO_2 with impurities. Analysis was performed for the repurposed wells and for the new drills. The target injection rate for wells with 4 1/2 in. tubing is 20 MMscf/day. The estimated injection pressure at surface is assumed to be 2,400 psig, with an injection temperature of 94°F for a final reservoir pressure of 4,200 psi. In all cases, the estimated starting reservoir pressure is assumed to be 700 psig. Based on the analysis, the optimal choice for tubing size for the repurposed wells is 4 1/2 inch OD. For the new drill wells, the recommended tubing size is also 4 1/2 inch OD based on discussions with Aera. It is shown that injection

[i] https://www.petex.com/products/ipm-suite/prosper/. PROSPER has PVT models that have been validated for CO_2 injection with a wide range of impurities.

stream temperature has a substantial impact on the stability of injection flow, and inlet temperature management will be required to provide flow assurance.

The well performance evaluation also included an analysis of historical injectivity tests for five wells to estimate the permeability thickness of the reservoir rock and injectivity. Results from this analysis were used to define the assumptions and sensitivity ranges for flow performance and assurance analysis. Well injection sensitivity charts are presented to assist in reservoir modeling. The wells investigated showed that 10 to 30 MMscf/D could be injected per well in a repurposed well. However, it should be noted that the presence of water can significantly reduce the relative permeability of CO_2, and thus adversely affect injection rates. Field injection tests are recommended to determine a well's injection area permeability to CO_2, skin, and average pressure. An injection test design is included as part of the study.

Corrosion is one of the key factors considered in selecting the tubing (and liner/casing) material appropriate for carbon capture and storage (CCS) well applications. The commercial thermodynamic modeling software OLI[ii] was utilized to quantify the corrosion rates for carbon steel, and corrosion resistant materials. This was supplemented by research into current literature, especially experimental work on corrosion in CO_2 rich flow streams. First, water solubility in supercritical (dense phase) CO_2 with and without impurities was established and contextualized to existing literature. Impurities decrease the solubility of water in dense phase CO_2, leading to precipitation of water and creation of a corrosive, low pH fluid. Next, corrosion analysis was performed, using OLI and results from the well performance analysis, for a wide range of materials in wet CO_2, with and without impurities. With dry injectate (containing less than 500 ppm H_2O), the corrosion rate is negligible. However, it is important to consider the presence of water during upset conditions. Finally, corrosion due to exposure to reservoir fluid with wet CO_2 was investigated for a range of mixing conditions. Based on this analysis, it was concluded that modified 13Cr is suitable for CCS injection wells. The casing and tubing design analysis in this report is based on modified 13Cr80 and 13Cr110 material depending on the load requirements. Recommendations are included for other flow wetted components including the wellhead, packer, and downhole completion equipment.

Well design (tubulars and connections) was performed using StrinGnosis[iii], a commercial wellbore thermal analysis and tubular design software program. StrinGnosis has the capability to evaluate anisotropic materials and conduct reliability-based design (RBD), both of which are important for CCS well engineering. An overview of RBD is included in Section 10. RBD was used to determine the probability of exceedance and failure if the safety factor was less than the design factor. EPA Class VI injection wells require holding annulus pressure higher than the tubing injection pressure. API RP 90-2 provides recommended derating factors for casing and tubing to calculate the maximum allowable wellhead operating pressure (MAWOP) for wells operated with annulus pressure. The injection casing and tubing designs were evaluated to determine the MAWOP that meet RP 90-2 requirements for various operating scenarios that considered wall thickness, grade, wall loss from corrosion, and annulus pressure.

Repurposed wells are being considered for use as CO_2 injection wells. The 9 in. and 8 1/8 in. production casing in existing wells was evaluated for injection well loads and found to be inadequate in burst strength to meet the design requirements. The wells being considered were drilled in the 1930s and 1940s using non-API casing. Based on the design load analysis and the age of the wells, the recommendation is to install new inner casing with cement to surface which results in a well design that

[ii] OLIsystems.com

[iii] StrinGnosis was developed and is marketed by Blade Technology Corporation, a wholly owned subsidiary of Blade Energy Partners.

meets EPA Class IV requirements. The results presented in this report are based on repurposing wells with an inner casing.

Multiple well types were evaluated in this document. The nomenclature used for the well types include:

- Well type: Repurposed wells with a cemented liner
- Well type: Repurposed wells with an un-cemented liner
- Well type: New drill well with 7 in. casing and a 4 1/2 in. liner

This document covers the well design analysis for a total of four injection well types. It is planned to use this document as the basis for writing the Well Construction permit documents. Well design analysis results for repurposed observation wells are presented in a separate report *Aera North Belridge CCS Observation Well Design Analysis* [1].

Key conclusions and recommendations of the FEED study are presented in the following section.

November 2023 update. The design reservoir pressure was updated to 4,340 psi and the injection temperature at the wellhead was changed to 180°F. Flow assurance was evaluated based on the revised injection parameters to determine the pressure and temperature profiles to update the design loads. This FEED study report was updated with the well design results.

2 Conclusions and Results

The main conclusions and recommendations are summarized in this section. Additional details can be found in the body of the report.

2.1 Well Performance Analysis

The well performance analysis study on the Belridge 64-Zone includes the following:

- CO_2 injectivity for three wells with sufficient data to model injectivity
- CO_2 injection test design for measuring injectivity of wells
- CO_2 injectivity modeling in support of Aera's reservoir simulation modeling

A number of sensitivities are performed to determine the feasible injection rates. The effect of increasing reservoir pressure with time is investigated, and it is shown that inlet temperature management will be required to assure stable injection. The wells investigated show that 10 to 30 MMscf/D can be injected per well in a repurposed well. The optimum tubing size for a repurposed well is 4 1/2 in. because this reduces friction compared to smaller tubing sizes that would otherwise require an increase in compression. Some locations have injectivity that could support greater rates for new wells drilled with bigger wellbores. The ability to sustain rates is an issue Aera is investigating through reservoir simulation.

The reservoir pressure and injection temperature were revised in November 2023, and the PROSPER results were updated to reflect the changes.

2.2 Material Selection

The materials for the CCS wells were selected based on resistance to corrosion. There is negligible corrosion for CO2 with low water content (<258 ppm), as the injected CO_2 does not form a separate aqueous phase. However, a very corrosive electrolyte forms when water precipitates out of the dense phase CO_2. Blade evaluated the solubility of water in dense phase CO_2 to determine how much water dense phase CO_2 can hold before water condenses. The effects of different impurities, temperature and pressure were considered in the analysis. Results show that presence of impurities lowers the solubility limit of water in dense phase CO_2. The solubility limit of water in dense phase CO_2 is clearly dependent on temperature and pressure of the system.

Thermodynamic modelling was used to establish and assess the environment inside the CCS well. The pH of the environment was estimated and corrosion resistance for different materials such as carbon steel, regular 13Cr, modified 13Cr, modified 17Cr, and 22Cr were determined. Various scenarios were considered, viz., corrosion due to injection alone, and corrosion when injected gas mixes with reservoir fluids. A sensitivity study was completed to determine the influence of impurities on the corrosion of materials and the pH of the environment. In addition, an extensive literature review was conducted, to confirm the results of the model. Results of analysis show that carbon steel will not withstand corrosion brought by any upset in the system such as water phase precipitation, since the corrosion rate of carbon steel in the aqueous phase is far greater than 10 milli-inches per year (mpy), based on the model and the data obtained in the literature. When wet injectate is unavoidable and water precipitates as second phase, modified 13Cr can be used. Both the model and the literature data show corrosion rates that are below four mpy for shut-in conditions and 1.3 for injection conditions (Figure 39).

Formation of elemental sulfur due to the presence of H_2S and O_2 were reported in the literature and may cause a further increase in the corrosion rate predicted by the models. If elemental sulfur is anticipated, further testing is recommended and nickel-based alloys or austenitic stainless steels such as Alloy 28 may be options.

The key conclusions from thermodynamic modeling and literature review are as follows:

- Liquid water (aqueous) phase may precipitate when the amount of water goes beyond the solubility limit. This may occur during upset conditions or shut-in conditions.
- Corrosion of materials in dense phase CO_2 undersaturated water is minimal, but corrosion in the liquid water (aqueous) phase formed from the injection stream is extremely high for carbon steel and 13Cr.
- Low carbon steels and standard 13 Cr grades exhibit alarmingly high rates of corrosion and are not recommended for use in the Aera CCS project.
- Modified 13Cr exhibits a corrosion rate of ~1.3 mpy during injection and ~3.7 mpy during shut-in conditions. 22Cr has the lowest corrosion rate during injection and shut-in (0.4 mpy) for the materials evaluated. Based on these rates, Modified 13Cr is a reasonable choice for material grade.
- Presence of elemental sulfur from the pre-combustion injection stream, and from the reaction of the impurities in the injection stream, may cause further increase in the corrosion rate predicted by the models, and may drive the selection of higher grades (such as 22 Cr). Proper assessment of the chosen alloy, either modified 13Cr or 22Cr, would require testing in the presence of sulfur to investigate corrosion and possibly cracking.

A detailed discussion of Material Selection is provided in Section 5. Table 22 shows a summary of materials recommendations for injection and observation wells.

2.3 Well Design Overview

Repurposed wells are being considered for use as CO_2 injection wells. The 9 in. and 8 1/8 in. production casing in existing wells was evaluated for injection well loads and found to be inadequate in burst strength to meet the design requirements. Design results for the 9 in. casing with nominal wall can be found in Section 14. The wells being considered were drilled in the 1930s and 1940s using non-API casing. Based on the design load analysis and the age of the wells, the recommendation is to install new inner casing with cement to surface which results in a well design that meets EPA Class IV requirements. The results presented in this report are based on repurposing wells with an inner casing.

The design results for several well types are summarized at a high level in this section with details in the body of the report. The objective of the well design analysis was to access the load conditions throughout the life of the injection well and make recommendations for the size, weight (wall thickness), and grade for the casing strings, liners, and tubing.

Well design analyses were performed for several well types that were proposed for this CCS project. The well types and details are specified in the design premise document *Aera CO_2 North Belridge Injection Wells Design DPD* [2]. Well types include repurposed wells and new drill wells. The proposed well design is based on the injection casing set above the injection zone, improving the chance of cementing the casing to surface which is a regulatory requirement. After the injection casing is set, an injection liner will be run and cemented through the injection zone. The completion design includes a tubing and packer as required by regulation for CO_2 injection.

The well design results were updated using the updated PROSPER results in November 2023.

Table 1 shows a summary the well types and design strings included in the design analysis.

Table 1: Well Types and Design Strings

Well Type	Design Strings
Repurposed with a cemented liner (based on well 9-1N)	• 7 in. inner casing set above the existing liner near the base of the Lower Santos Shale • 3 1/2 in. inner liner (wells with a 5 1/2 in. cemented liner) • 4 1/2 in. inner liner (wells with a larger OD cemented liner) • 4 1/2 in. tubing
Repurposed with an un-cemented liner (based on well 64-35N)	• 7 in. or 6 5/8 in. inner casing set near the existing casing shoe • 4 1/2 in. open hole liner • 4 1/2 in. tubing
New drill	• 13 3/8 in. surface casing • 9 5/8 in. intermediate casing • 7 in. casing set near the base of the Lower Santos Shale • 4 1/2 in. open hole liner • 4 1/2 in. tubing

2.3.1 Well Design Summary Results

Table 2 shows a summary of the well designs and proposed inner casings, liners, and tubing for the injection wells. Note that the 4 1/2 in. open hole liners are 12.6 ppf Modified 13Cr110 compared to the 4 1/2 in. 11.6 ppf Modified 13Cr80 tubing and cased hole liners.

Table 2: Injection Well Design Summary

Well	Existing Casing OD (in.)	Existing Liner OD (in.)	Proposed Inner Casing	Proposed Liner	Proposed Tubing
27R-27N	9	6.625 in. Cemented	7 in. 26 ppf L80 7 in. 26 ppf Mod13Cr80	4.5 in. 11.6 ppf Mod13Cr80	4.5 in. 11.6 ppf Mod13Cr80
64-27N	8.125	4.75 in. Uncemented	6.625 in. 24 ppf L80 6.625 in. 24 ppf Mod13Cr80	4.5 in. 12.6 ppf Mod13Cr110	4.5 in. 11.6 ppf Mod13Cr80
55-26N	9	5.5 in. Cemented	7 in. 26 ppf L80 7 in. 26 ppf Mod13Cr80	None	4.5 in. 11.6 ppf Mod13Cr80
64-35N	9	4.75 in. Uncemented	7 in. 26 ppf L80 7 in. 26 ppf Mod13Cr80	4.5 in. 12.6 ppf Mod13Cr110	4.5 in. 11.6 ppf Mod13Cr80
9-1N	9	5.5 in. Cemented	7 in. 26 ppf L80 7 in. 26 ppf Mod13Cr80	3.5 in. 9.2 ppf Mod13Cr80	4.5 in. 11.6 ppf Mod13Cr80
New Drill	None	None	7 in. 26 ppf L80 7 in. 29 ppf Mod13Cr110	4.5 in. 12.6 ppf Mod13Cr110	4.5 in. 11.6 ppf Mod13Cr80

The well design results for each well type are summarized in a tabular format. The safety factors (SF) for critical and design loads are included in the tables. The SFs for all design loads are included in the body of the report.

The SFs in red font are less than the design factors (DF) that are specified in the DPD and in Section 6.1.1. As seen in the results, the stimulation load is a high burst load and governs many of the designs.

The summary results show the SFs for loads when the wall thickness is nominal and when the wall thickness is reduced because of corrosion. Cumulative wall loss was estimated for 25 years of service, based on the corrosion analysis results. Injection is assumed to end around year 25. RBW is the remaining body wall based on years of service. The burst SF is the ratio of the API burst strength to the burst load. The triaxial SF is the ratio of the minimum yield strength to the combined stresses created by the load conditions.

The Aera design factor for burst is 1.30. A typical industry DF for burst is 1.10. Where Aera's DF are not satisfied, the loads were evaluated using reliability based design. The triaxial design factor is 1.25.

Repurposed Wells Design Summary Results

Well 9-1N was evaluated as a representative well for the design of all repurposed wells. Table 38 shows the details for the 9-1N well design. Repurposed wells with an existing 9 in. casing and 7 in. inner casing well design similar to 9-1N can use the same design results. The design for repurposed wells also includes 6 5/8 in. inner casing for well 64-27N. The formation tops vary some among the repurposed wells but the loads are similar so the results are valid for all repurposed wells. The tables that follow show the SFs for some of the key pressure containing loads. The SFs for all design loads are included in the body of the report.

The proposed 7 in. inner casing design is an upper Section 1 with L80 grade casing and a Section 2 corrosion resistant alloy (CRA) casing on bottom. The top of the CRA section will be above the top of the confining layer.

The Section 1 inner casing design meets or exceeds all the load safety factors. Table 3 shows a summary of the 7 in. injection casing Section 1 safety factors.

Table 3: 7 in. 26 ppf L80 Inner Casing Section 1 Design Summary

Critical / Design Loads	Year	% RBW	Burst SF	Triaxial SF
6 Annulus operating pressure for injection 2,900 psi	0	87.5	2.34	2.50
9 Tubing leak shut in with methane to surface 3,950 psi	0	87.5	1.72	1.82
14 Stimulation tubing leak	0	87.5	1.40	1.54

Table 4 shows a summary of the inner casing design analysis for Section 2 including remaining body wall (RBW) because of possible corrosion wall loss in late life. SFs for all loads are shown in the body of the report. The inner casing cemented to surface is planned for isolating the existing production casing.

The design results from Table 3 and Table 4 will be used for all repurposed wells with 7 in. inner casing.

Table 4: 7 in. 26 ppf Modified 13Cr80 Inner Casing Section 2 Design Summary

Critical / Design Loads	Year	% RBW	Burst SF	Triaxial SF
6 Annulus operating pressure for injection 2,900 psi	0	87.5	2.34	2.50
	25	77.7	2.08	1.93
9 Tubing leak shut in with	0	87.5	1.72	1.82

Critical / Design Loads	Year	% RBW	Burst SF	Triaxial SF
methane to surface 3,950 psi	25	77.7	1.53	1.40
14 Stimulation tubing leak	0	87.5	1.40	1.54

Table 5 shows the summary of the tubing design analysis. The 4 1/2 in. tubing analysis is valid for the well types that have 4 1/2 in. tubing. The wells have similar setting depths for the packer and tubing. The design results from Table 5 will be used for all wells with 4 1/2 in. tubing. The stimulation load is not included in the summary table. It is assumed the stimulation treatment will use a frac string.

Table 5: 4 1/2 in. 11.6 ppf Modified 13Cr80 Tubing Design Summary

Critical / Design Loads	Year	% RBW	Burst SF	Triaxial SF
6 Injection Steady State 2,800 psi	0	87.5	2.69	2.73
	25	73.2	2.25	2.16
7 Shut-in tubing pressure with methane to surface 3,950 psi	0	87.5	1.97	1.98
	25	73.2	1.64	1.58

Table 6 shows the summary of the 3 1/2 in. inner liner design analysis. The 3 1/2 in. inner liner is an option for cementing inside existing carbon steel cemented liners to isolate the carbon steel liner from the CO_2.

Table 6: 3 1/2 in. 9.2 ppf Modified 13Cr80 Inner Liner Design Summary

Critical / Design Loads	Year	% RBW	Burst SF	Triaxial SF
5 Steady state CO_2 injection 2,800 psi	0	87.5	>3	>3
	25	73.5	>3	>3
10 Shut-in tubing pressure with methane to surface 3,950 psi	0	87.5	>3	>3
	25	73.5	>3	>3
9 Stimulation 5,000 psi	0	87.5	1.79	1.89

Table 7 shows the summary of the 4 1/2 in. inner liner design analysis. The 4 1/2 in. inner liner is a design for wells with existing cemented liners that can accommodate a 4 1/2 in. inner liner to isolate the existing carbon steel liner.

Table 7: 4 1/2 in. 11.6 ppf Modified 13Cr80 Inner Liner Design Summary

Critical / Design Loads	Year	% RBW	Burst SF	Triaxial SF
5 Steady state CO_2 injection 2,800 psi	0	87.5	>3	>3
	25	74.3	>3	>3
10 Shut-in tubing pressure with methane to surface 3,950 psi	0	87.5	>3	>3
	25	74.3	>3	>3
9 Stimulation 5,000 psi	0	87.5	1.37	1.46

The proposed 6 5/8 in. inner casing design is an upper Section 1 with L80 grade casing and a Section 2 corrosion resistant alloy (CRA) casing on bottom. The top of the CRA section will be above the top of the confining layer.

The Section 1 inner casing design meets or exceeds all the load safety factors. Table 8 shows a summary of the 7 in. injection casing Section 1 safety factors.

Table 8: 6 5/8 in. 24 ppf L80 Inner Casing Section 1 Design Summary

Critical / Design Loads	Year	% RBW	Burst SF	Triaxial SF
6 Annulus operating pressure for injection 2,900 psi	0	87.5	2.40	2.57
9 Tubing leak shut in with methane to surface 3,950 psi	0	87.5	1.77	1.87
14 Stimulation tubing leak	0	87.5	1.44	1.58

Table 9 shows a summary of the inner casing design analysis for Section 2 including remaining body wall (RBW) because of possible corrosion wall loss in late life. SFs for all loads are shown in the body of the report. The inner casing cemented to surface is planned for isolating the existing production casing.

Table 9: 6 5/8 in. 24 ppf Modified 13Cr80 Inner Casing Section 2 Design Summary

Critical / Design Loads	Year	% RBW	Burst SF	Triaxial SF
6 Annulus operating pressure for injection 2,900 psi	0	87.5	2.40	2.57
	25	77.7	2.12	1.97
9 Tubing leak shut in with methane to surface 3,950 psi	0	87.5	1.77	1.86
	25	77.7	1.56	1.43
14 Stimulation tubing leak	0	87.5	1.44	1.58

New Drill Summary Results

The new drill well design includes the surface casing and intermediate casing. The details of the surface casing design are shown in Table 62 and the minimum safety factors are shown in Table 63. The details of the intermediate casing are shown in Table 62 and the minimum SFs are in Table 64.

The well design is 7 in. injection casing set near the base of the Lower Santos Shale with a 4 1/2 in. injection liner run and cemented through the injection zone. The completion is 4 1/2 in. tubing.

Table 62 shows the well design details for the new drill wells.

The 4 1/2 in. tubing design results are the same as Table 5.

Table 10 shows the summary of the 7 in. casing design analysis for Section 1.

Table 10: New Drill 7 in. 26 ppf Modified 13Cr80 Section 1 Casing Design Summary

Critical / Design Loads	Year	% RBW	Burst SF	Triaxial SF
6 Annulus operating pressure for injection 2,900 psi	0	87.5	2.36	2.53
9 Tubing leak shut in with methane to surface 3,950 psi	0	87.5	1.74	1.89
14 Stimulation tubing leak	0	87.5	1.41	1.55

Table 11 shows the summary of the 7 in. casing design analysis for Section 2.

Table 11: New Drill 7 in. 29 ppf Modified 13Cr110 Section 2 Casing Design Summary

Critical / Design Loads	Year	% RBW	Burst SF	Triaxial SF
6 Annulus operating pressure for injection 2,500 psi	0	87.5	1.96	2.09
	25	78.8	1.76	1.63
9 Tubing leak shut in with methane to surface 3,650 psi	0	87.5	1.64	1.74
	25	78.8	1.48	1.36
14 Stimulation tubing leak	0	87.5	1.48	1.62

Table 12 shows the summary of the 4 1/2 in. open hole liner design analysis.

Table 12: New Drill 4 1/2 in. 12.6 ppf Modified 13Cr110 Open Hole Liner Design Summary

Critical / Design Loads	Year	% RBW	Burst SF	Triaxial SF
5 Steady state CO_2 injection 2,800 psi	0	87.5	2.75	3.00
	25	74.3	2.34	2.22
10 Shut-in tubing pressure with methane to surface 3,950 psi	0	87.5	2.68	2.87
	25	74.3	2.28	2.12
9 Stimulation 5,000 psi	0	87.5	2.68	2.87

2.3.2 Collapse Load Analysis

Collapse loads for the tubing, casing, and liners as described in the DPD were evaluated as part of the well design analysis. The DFs for collapse are included in the body of the report. It is typical for the collapse to meet the design factor when the pipe is new and has the nominal wall thickness and a full evacuation load is assumed. However, when reduced wall thickness because of corrosion is assumed, the collapse SF can be reduced to less than the DF. An argument can be made that full evacuation and even 50% evacuation is not a valid assumption for late life loads for CCS wells where the reservoir pressure is increasing because of CO_2 injection. Therefore, it is reasonable to assume the full evacuation collapse SF is a design check rather than a design requirement. Based on this, the collapse requirements for the casing, liners, and tubing are met in early life and late life collapse safety factors are reported for information.

2.3.3 API RP 90-2 MAWOP

Maximum allowable wellhead operating pressure (MAWOP) analysis for the well design with 7 in. casing and 4 1/2 in. tubing meets the requirements for 2,900 psi annulus pressure.

Additional details of API RP 90-2 analysis are included in Section 6.11.

2.3.4 Evaluation of Corrosion and Wall Thickness on Well Designs

CCS well design requires an evaluation of the casing, tubing, and liners during and at the end of the injection phase, where the well has been in injection service and the BHP and burst loads on the well tubulars are increasing with time and reach the maximum pressure at the end of the injection phase. The corrosion wall loss and the pressure are therefore at their highest at the end of the injection phase. This is different from oil and gas well designs where the maximum loads occur at the beginning of the well life and the tubulars are newly manufactured to API specifications.

The modeling results for corrosion wall loss vs. time for 25 years of service are summarized in Section 6.3.

2.3.5 Casing and Tubing Connections

Connections with a metal-to-metal seal and 100% pipe body strength are recommended for the new injection casing, tubing, and liners planned for the repurposed wells and new drill wells. If reduced OD connections are needed because of tight clearances, the tension and compression safety factors should be checked. API connections are adequate for the drilling casing for the new drill wells. The number of connections for the new tubing, liner, and casing is relatively small and the additional cost for high quality connections can be justified by having long term injection wells with a low risk of a connection leak.

2.3.6 Annular Pressure Management

Class VI requirements include maintaining tubing × casing annulus pressure higher than the tubing injection pressure. The implication of this requirement is that an annulus pressure management (APM) system must be included, to maintain the annulus pressure within a range that also considers changes in the annulus fluid temperature during injection and shut-in conditions. A discussion of APM is included in Section 6.14.

3 Introduction

The Aera North Belridge CCS project will permanently sequester CO_2 in the depleted 64 oil sands. It is planned to inject up to 1.6 million Mt (metric tons) per year when the project is completed. The field has many existing wells, with some of the wells drilled in the 1930s and 1940s. The 64U and 64W zones have been produced for decades, and the current reservoir pressure is around 700 psi. Water injection has been used in the field, implying that water may be present in the sands. Other zones including the Temblor sands are hydrocarbon bearing. The 64 sands are the target sequestration zone. The Lower Santos Shale immediately above the 64U sand is the primary confining layer. The Agua sands zone is the dissipation layer. Figure 1 shows the generalized North Belridge Field stratigraphy. The field structure is an anticline oriented north-west to south-east. Figure 2 shows the field structure map and a cross section.

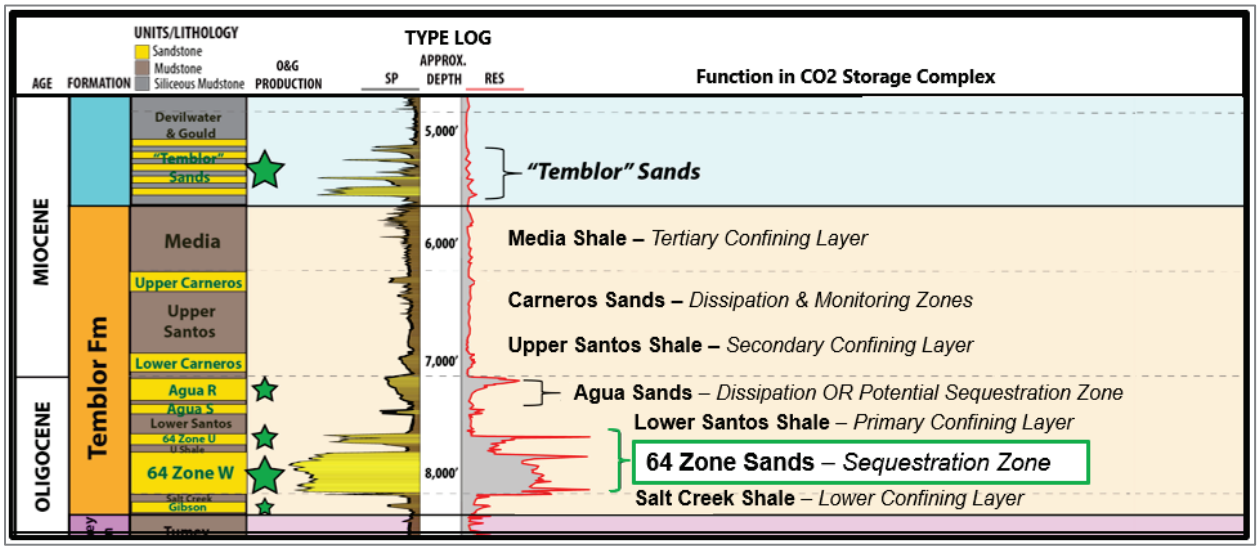


Figure 1: North Belridge Stratigraphy

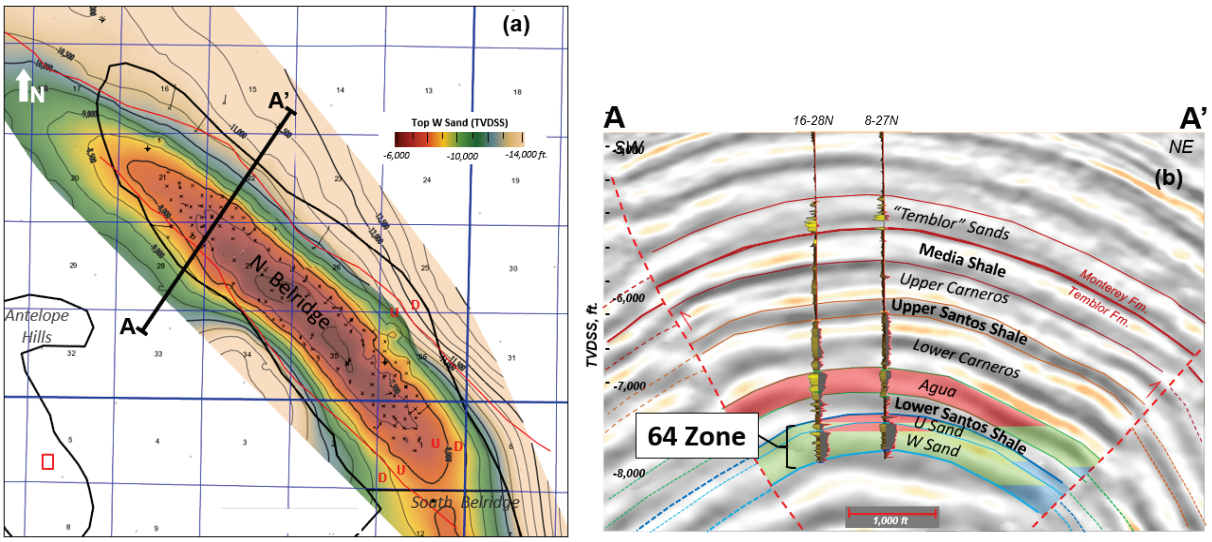


Figure 2: North Belridge Structure Map (a) and Cross Section (b)

Preparation of permit applications for the repurposed wells and new drill wells is in progress. Five existing wells are being considered for repurposing to injection wells. The current list of wells planned for repurposing as injectors is as follows:

- 9-1N
- 64-35N
- 64-27N
- 55-26N
- 27R-27N

Blade was contracted by Aera to conduct this FEED study including well performance and flow assurance, materials selection, and corrosion analysis, and well design for repurposed injection and new drill wells. The FEED study was performed using Blade's rigorous, multidisciplinary FEED process for CCS projects. The work was done in mid-2022 and updated in November 2023.

This report includes the details of the study, technical approach, analysis, results, conclusions, and recommendations. The input data and assumptions are included in the DPD [2]. The report is organized as follows:

- Section 1 is an executive summary
- Section 2 summarizes the key conclusions and recommendations
- Section 3 is an introduction to the work
- Section 4 includes details of the well performance and flow assurance analysis. The results of this work were used in the well design analysis to define the pressure and temperature profiles for tubing and casing loads, and to define conditions for materials selection and corrosion rate. CO_2 injectivity for three wells was evaluated, an injection test was developed, and injection modeling was performed to support Aera reservoir simulation modeling.
- Section 5 covers the materials selection and corrosion analysis. Expected corrosion rates and recommended tubular grades are the main outcome of this section.
- Section 6 presents a detailed treatment of the well design and analysis. The results of the previous two sections were used to perform design checks of the various tubulars for both new drills and repurposed injectors. Corrosion rates from the materials selection study were considered in establishing well integrity for the life of injection. High-level procedures for conversion of existing wells into CO_2 injectors are included in the DPD. Cement recommendations are also included in this section.
- Several appendices are included with design data and additional information and details.

The findings of this study are expected to guide the permitting and detailed well engineering, well construction, and CCS operations in the field.

4 Well Performance

Well performance and flow assurance analyses were performed using Petroleum Experts PROSPER application. CO_2 is a unique gas in that its PVT (Pressure Volume Temperature) behavior differs from an oil or gas stream, and its unique behavior determines the well performance. Petroleum Experts specifically developed an EOS (Equation of State) model for a CO_2 stream with and without impurities. For other clients, Blade has validated the Petroleum Experts EOS model results to field data, and Blade therefore recommends PROSPER for well performance studies for CO_2 streams in this work.

4.1 Defining PROSPER Well Models for CO_2

The goal of a well model is to aid in the determination of the appropriate tubing sizes to meet the project CO_2 sequestration objectives. For more than eight years, Blade has utilized Petroleum Experts software. Blade has validated the software and its PVT models across a variety of CO_2 stream compositions for multiple clients.

Understanding CO_2 wells means understanding that although CO_2 is a gas, its flow characteristics are unlike traditional gas wells. CO_2 flow and phase are sensitive to pressure like gas wells, and more sensitive to temperature than gas wells. Figure 3 shows the phase diagram for a pure CO_2 stream, a CO_2 stream with 4% N_2, and a CO_2 stream with 4% CH_4. CO_2 streams from anthropogenic sources are likely to be nitrogen dominate, and CO_2 streams from the processing of hydrocarbons are likely to be methane dominate. Pure CO_2, shown in black as a single line, goes directly from liquid to gas and gas to liquid. The addition of impurities opens the phase envelope where both gas and liquid phases coexist. The addition of impurities shown decreases the supercritical temperatures and increases the supercritical pressures. This study focuses on the PVT changes due to any impurities as it affects flow.

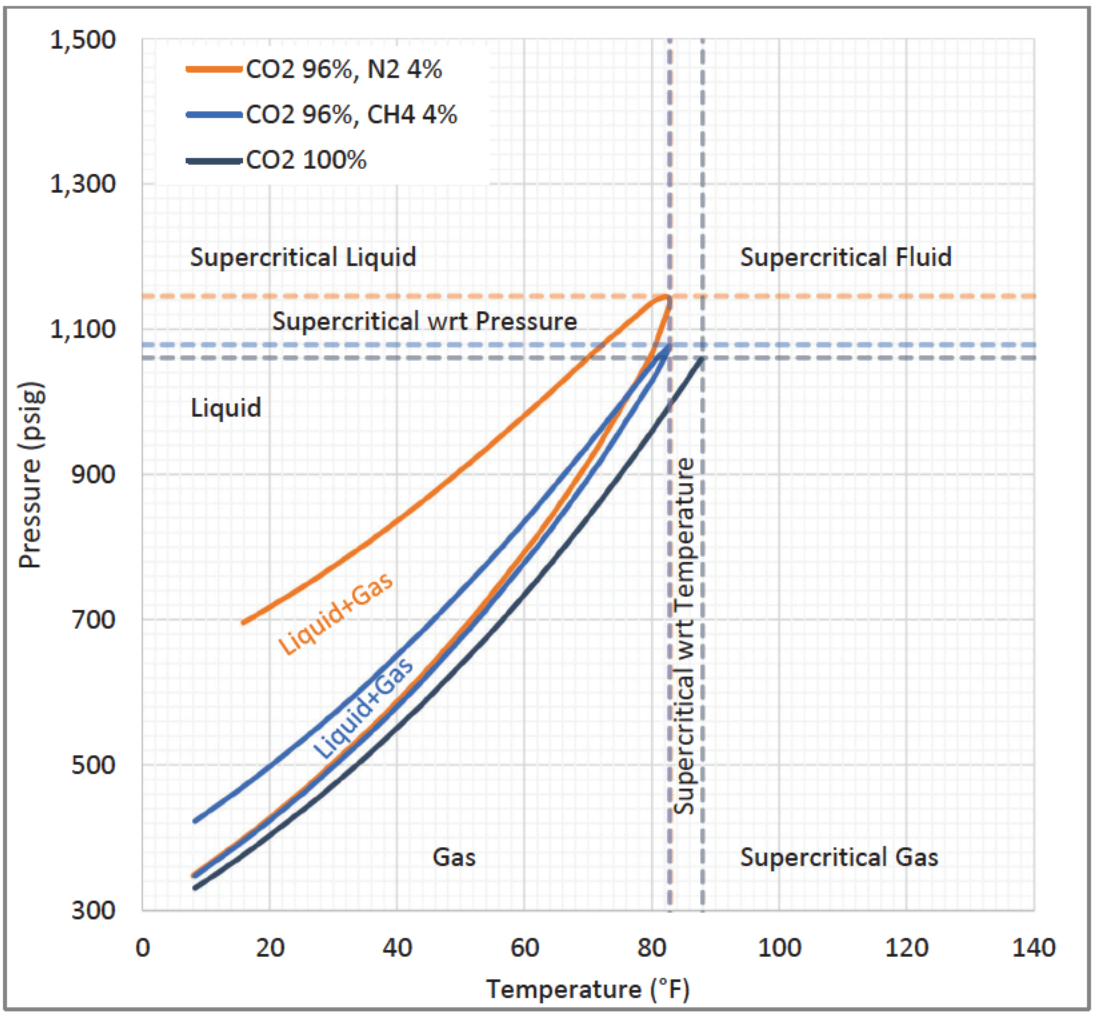


Figure 3: CO_2 Phase Diagram

Typical CO_2 transport lines maintain a minimum pressure such that the stream flows as a supercritical fluid to maximize density and minimize pipeline sizes. Minimizing impurities reduces the minimum line pressure for transport.

Well injection is best if the flow temperature and pressure conditions from the wellhead to the bottomhole do not cross the phase boundaries. Injection becomes unstable when crossing the phase boundary. Pseudo-steady state well performance applications, such as PROSPER, can be misleading in that they calculate an averaged well response, and the well can be more unstable than predicted as slugs vary in time. The difficulty will lie with facilities that have to manage varying injection rates with too great a rate variance. Blade has worked for clients where the design of facilities did not manage the swings, and the client shut down the operations.

For this initial study, exact facility delivery conditions were not available. Therefore, this study held the minimum injection temperature at 94°F to avoid the phase boundary issue. The reservoir pressure is well below the critical pressure and hence pressure control was not possible. Designing the CO_2 sequestration network with facilities and wells would enable a detailed study of operating conditions to keep injection stable. Note that this stability does not affect the wellbore design but affects the operation of the injection network. For example, the facilities network may deliver the CO_2 stream to the injection manifold for the wells at a temperature and pressure not optimal for injection. This work

assumes the optimal conditions at the wellhead for injection. Optimal field operation is an issue for later.

Figure 4 shows how the PROSPER density plot of CO_2 sequestration stream can change versus pressure for various temperatures. In this figure, the lower the temperature the higher the density (PROSPER set each line to the same line and marker). At sub-critical pressures (1,000 psig and lower), the density of the injection stream varies minimally with respect to temperature, and the CO_2 stream behaves more like a normal gas stream. The CO_2 stream becomes liquid-like as the pressure increases.

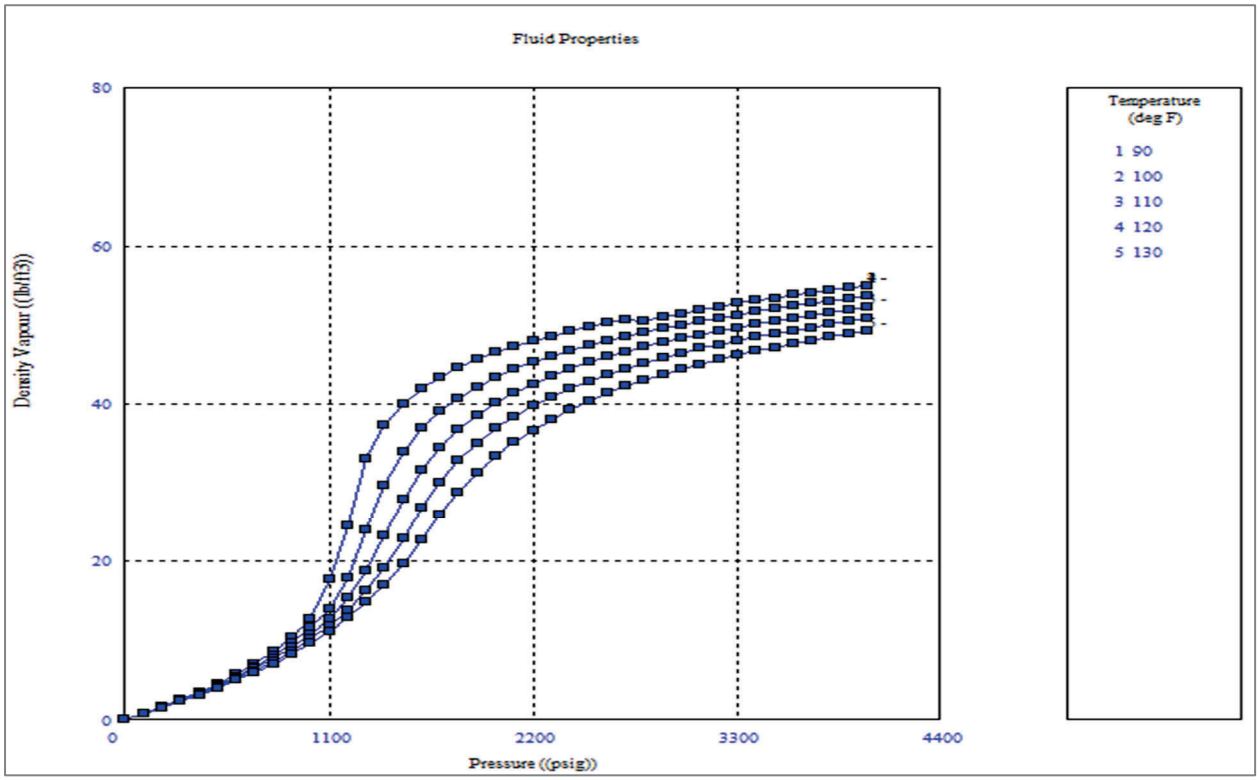


Figure 4: Pure CO_2 Density versus Pressure at Possible Injection Temperatures

This wide variance of density leads to operational situations not found with traditional gas or liquid wells. The tubing size must flow a constant mass rate of injection per day over its life. This means:

- At sub-critical conditions, the injection stream flows more gas-like and benefits from larger tubing.
- At super-critical conditions, the injection stream flows more liquid-like and can use smaller tubing.

Well performance models in PROSPER can assess the wells under expected pressure, temperature, and rate conditions. The steps to build the well models were as follows:

1. The fluid method must always be Equation of State rather than Black Oil.
    a. Blade recommends the Peng Robinson EOS which is the default EOS in PROSPER. The other is Soave Redlich Kwong. The Peng Robinson recommendation is based on successful matching for a large amount of field data.
    b. Blade recommends using the volume shift for full composition and to correct CO_2 density. Blade learned through personal communication with Petroleum Experts that they contracted Heriot Watt University to conduct laboratory PVT experiments for various CO_2 compositions. These

experiments formed the basis of the CO_2 corrections to the equation of state model in Petroleum Experts software.

c. Define the composition. A CO_2 stream is typically CO_2 dominant with select impurities such as N_2 and CH_4. The stream is typically gaseous components with no condensate or liquid components that form at injection temperatures and pressures. Input simple CO_2 streams directly into PROSPER, and let it fill in the table as PVT matching is not typically necessary.

d. Do not enter water into the CO_2 stream composition. Use the water to gas ratio to account for the water.

e. Model only the CO_2 stream components that are of high enough mole percent to affect the PVT outputs, such as viscosity and density. Conduct separate corrosion studies.

2. The inflow model is the resistance to injection, and the key is to match the resistance at points in time over the injection life of the well.

   a. All inflow models require a reservoir or layer pressure. The pressure input should be the injection area average pressure. As CO_2 injection proceeds and the CO_2 plume spreads from the wellbore, it is the average pressure of this plume that is the resistance. The initial pressure can be the reservoir pressure, and the final pressure remains below fracturing pressure. The design considers the initial and final pressures and selected pressures in between. The progression in time between the initial and final pressure is outside the scope for this work. If modeling facilities are required, it is necessary to determine wellhead injection pressures over time, and this requires the injection area average pressure progression in time that reservoir simulation can solve.

   b. This work used Darcy-based inflow models with permeability as the resistance factor. These models are based on net permeability thickness, and it is the CO_2 effective permeability to the reservoir conditions at a time point of interest. For instance, the permeability is highest if the reservoir is gas-saturated, and the permeability is the lowest if the reservoir is water saturated. This effective permeability can change in time. The importance of effective permeability is dependent on the CO_2 injection requirements of a well. Greater injection pressure can always be low permeability, but that may conflict with facilities requirements and fracture initiation pressure.

3. The equipment data should reflect the repurposed or new well.

   a. The well's deviation survey.

   b. The downhole equipment along the injection flow path.

   c. The geothermal temperature gradient. Temperature is more important for CO_2 flow than oil, gas, and water flow. Hence, do not simplify this gradient.

   d. Overall heat transfer coefficient along injection flow path. A rule of thumb for dry and wet gas is 1 to 3 BTU/hr.ft^2.°F. For multiple clients where Blade has matched against measured flowing gradients, a rule of thumb for CO_2 flow is 1.5 BTU/hr.ft^2.°F.

4. The downflow/upflow model selected must always be mechanistic—never use a correlation. Mechanistic models account for the fundamentals of flow while correlations are for specific fluids where none of the fluids were CO_2.

4.2 64-Zone Well Match and Injectivity Model

The Belridge 64-Zone wells have limited data to determine injectivity. Aera presented five wells with the best available data. A well match and injectivity analysis was performed for these wells, to provide a basis for repurposed CO_2 sequestration wells.

- 64-35N, detailed match of three-point test for injectivity, detailed injectivity study
- 64-27N, match of three injectivity tests, injectivity study
- 63-35N, not sufficient data for matching inflow model, no injectivity study
- 51-35N, not sufficient data for matching inflow model, no injectivity study
- 49-35N, match of injection points, injectivity akin to 64-35N

The injectivity modeling includes the facility delivery conditions to well conditions, and on to reservoir conditions:

- Facilities
  - Minimum delivery pressure—pipelines typically deliver above supercritical conditions (if the injection wellhead pressure is below critical, the delivered gas is typically choked at the field to reduce to injection pressure which also reduces the temperature).
  - Maximum delivery pressure determined from reservoir and well
- Well
  - Repurposed existing wells with limit to tubing ID
  - Minimize friction for project rate within facility constraints
- Reservoir
  - Permeability Resistance: relative permeability to CO_2 affected by fluids previously in formation
  - Pressure Resistance: Injection area average reservoir pressure over time

Injection of CO_2 forms a plume around the well that becomes the resistance to injection. The average injection area pressure of the plume is the pressure to model rather than the average reservoir pressure of the entire reservoir. This work models the injection by varying the average injection area pressure. Modeling the plume growth in time requires reservoir simulation and is outside the scope of this work.

The well injection of CO_2 into the reservoir depends on the state of the reservoir around the well:

- If the reservoir is depleted gas, the relative permeability to CO_2 is high.
- If the reservoir has been invaded by water, the relative permeability to CO_2 is low and depends on the water saturation.

4.3 Well 64-35N Match and CO_2 Injectivity Study

This section first presents the 64-35N well match, and secondly presents the injectivity study.

4.3.1 Well 64-35N Match

The task and available sources for building the PROSPER well model were:

- Built well model per pressure survey of 1950—Figure 5 shows the original data
- Built inflow model per injection test of 1980—Figure 6 shows the original data
- Checked shut-in survey and flow test of 1940—Figure 7 shows the original data

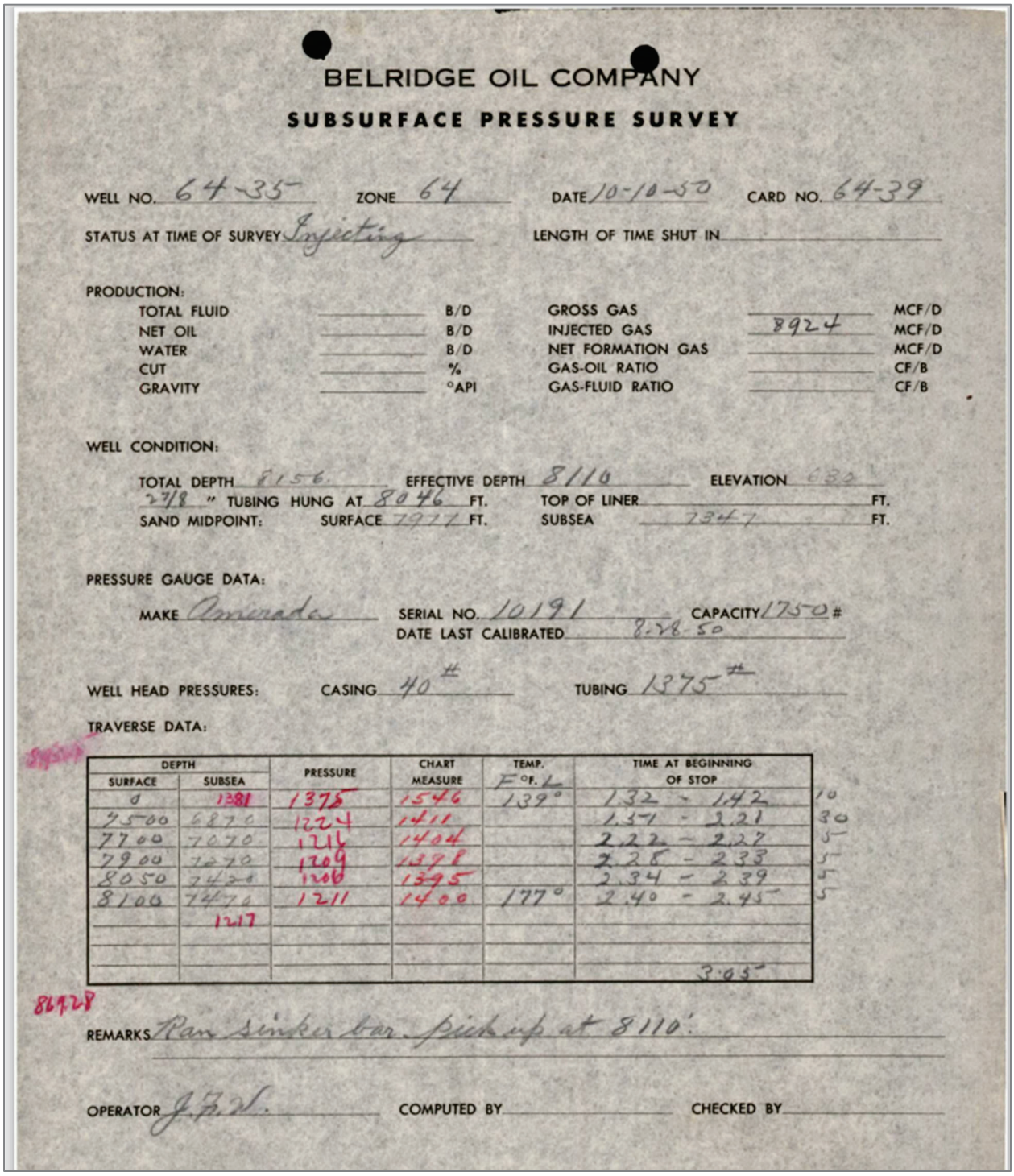
The match of the injectivity test of 1980 converted the wellhead pressures to bottomhole pressures for the match. Table 13 lists the converted pressures, and Figure 8 charts the analysis. Based on wellhead pressures, the original analysts considered the second flowing point bad, but converting to bottomhole pressures indicates it's more likely that the third flowing point is bad. For this type of analysis, the permeability thickness and skin cannot be uniquely separated. Either a skin is assumed, and the permeability thickness determined, or the permeability thickness is assumed, and the skin determined. Figure 8 shows possible solutions to be:

- kh = 3,700 mD.ft with s = 0
- kh = 4,600 mD.ft with s = 2

Figure 9 shows a typical 64 W sand layered model with a total permeability thickness of 5,200 mD.ft. The Type 1 and Type 2 rocks have the highest permeability and will contribute more to the flow than the lower permeability zones. A layered model built per Figure 9 shows that the Type 4 rock essentially does not contribute, and that Type 3 rock contributes only a few percent of total flow. This shows that analysis of the three point test is in alignment with the most recent field model.

Table 13: 64-35 1980 Injection Test WHP to BHP

Measured Q (MMscf/D)	Measured WHP (psig)	Measured BHP (psig)
0.00	924	1,068
1.43	948	1,084
3.00	1,002	1,107
3.90	1,007	1,075



BELRIDGE OIL COMPANY

SUBSURFACE PRESSURE SURVEY

WELL NO. 64-35 ZONE 64 DATE 10-10-50 CARD NO. 64-39

STATUS AT TIME OF SURVEY Injecting LENGTH OF TIME SHUT IN

PRODUCTION:

TOTAL FLUID		B/D	GROSS GAS		MCF/D
NET OIL		B/D	INJECTED GAS	8924	MCF/D
WATER		B/D	NET FORMATION GAS		MCF/D
CUT		%	GAS-OIL RATIO		CF/B
GRAVITY		°API	GAS-FLUID RATIO		CF/B

WELL CONDITION:

TOTAL DEPTH 8156 EFFECTIVE DEPTH 8110 ELEVATION 633

2 7/8 " TUBING HUNG AT 8046 FT. TOP OF LINER FT.

SAND MIDPOINT: SURFACE 7977 FT. SUBSEA 7347 FT.

PRESSURE GAUGE DATA:

MAKE Amerada SERIAL NO. 10191 CAPACITY 1750 #

DATE LAST CALIBRATED 8-28-50

WELL HEAD PRESSURES: CASING 40 # TUBING 1375 #

TRAVERSE DATA:

DEPTH SURFACE	DEPTH SUBSEA	PRESSURE	CHART MEASURE	TEMP. F°.	TIME AT BEGINNING OF STOP	
0	1381	1375	1546	139°	1.32 - 1.42	10
7500	6870	1224	1411		1.37 - 2.21	30
7700	7070	1214	1404		2.22 - 2.27	5
7900	7270	1209	1398		2.28 - 2.33	5
8050	7420	1206	1395		2.34 - 2.39	5
8100	7470	1211	1400	177°	2.40 - 2.45	5
	1217					
					3.05	

8472?

REMARKS Ran sinker bar. Pick up at 8110'.

OPERATOR J.F.N. COMPUTED BY CHECKED BY

Figure 5: 64-35N Source Data: Pressure Survey—1950

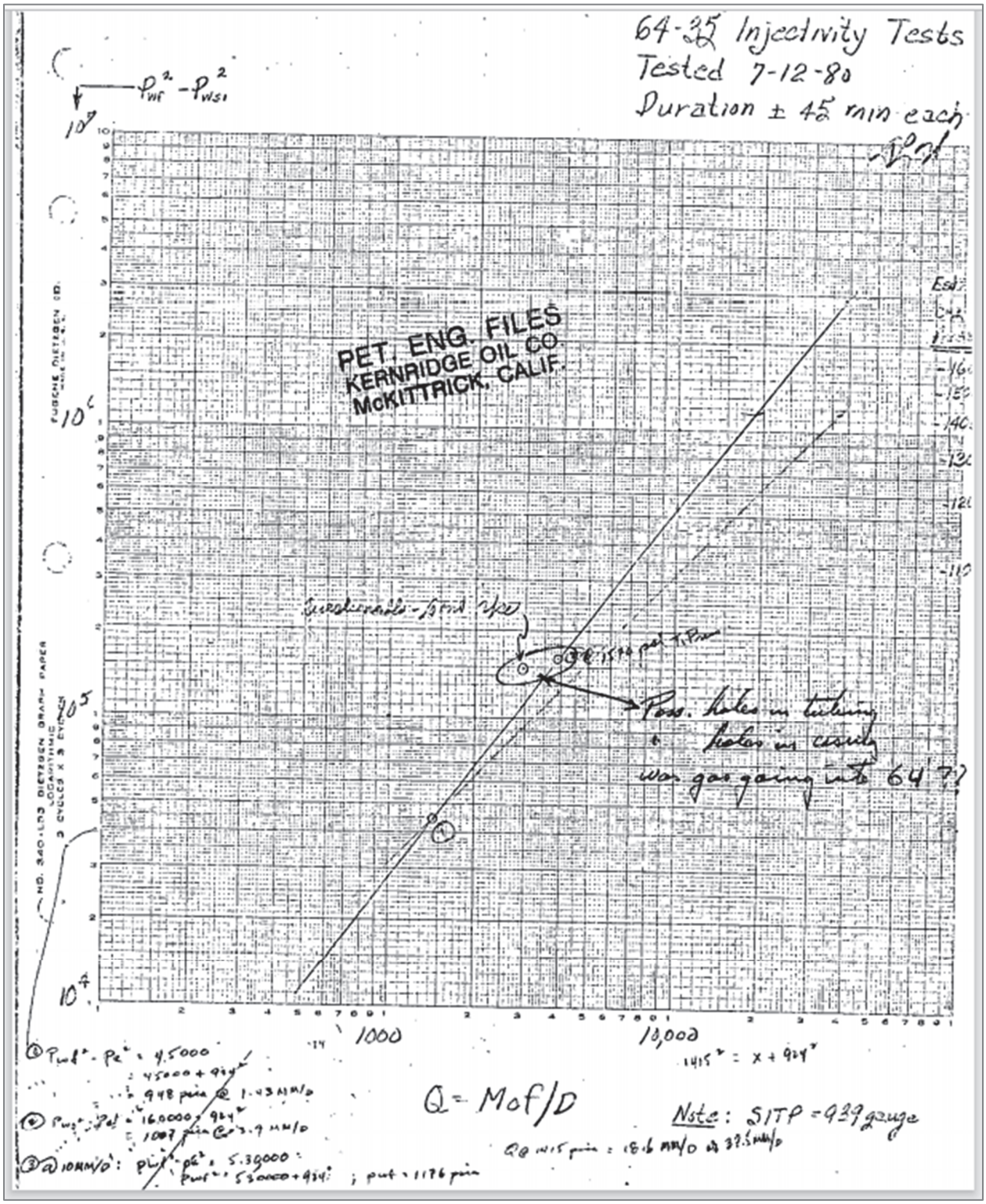


Figure 6: 64-35N Source Data: Injection Test—1980

CENTRAL COMMITTEE OF
CALIF. OIL PRODUCERS
OFFICE OF OIL UMPIRE
1660 SUBWAY TERMINAL BLDG.
LOS ANGELES, CALIFORNIA

SUBSURFACE PRESSURE TEST DATA

FLOWING F 17
6 5 40

POTENTIAL DETERMINATION FOR FLOWING AND GAS LIFT WELLS

(INFORMATION CONFIDENTIAL)

COMPANY Belridge Oil Company FIELD North Belridge

LEASE & WELL NO. Well 64-35 POOL Wagonwheel

AVERAGE PRODUCTION ____ DAYS PRIOR TO TEST

GROSS FLUID, B/D ____ NET OIL, B/D ____ TOTAL CUT, % ____

CASING RECORD (ANY ADDITIONAL CASING DETAILS SHOW ON SEPARATE SHEET) TUBING RECORD

TOTAL DEPTH 8156 FT. PLUG DEPTH ____ FT. SIZE 2½ " DEPTH 8046 FT.

WATER STRING 9" " CEMENTED AT 7820 FT. ____ " ____ FT.

OIL STRING ____ " LANDED AT ____ FT. ____ " ____ FT.

369 FT. 4-3/4 " LINER TOP AT 8156 FT. PACKER AT 7747 FT.

EFFECTIVE PERFORATIONS ZONE SIZE & TYPE OF PERFORATIONS

FROM ____ FT. TO ____ FT. ____ ____

____ FT. TO ____ FT. ____ ____

DATE OF TEST		10/29/40				
SIZE OF BEAN		0	53/64"			
LENGTH OF STABILIZATION PERIOD, HRS.		24 hrs.	3 hrs.			
PRODUCTION	GROSS FLUID B/D	0	129			
	TOTAL CUT, %	0	0.3			
	NET OIL, B/D	0	129			
	STEADINESS OF FLOW		Steady			
	FLOWING THRU ~~TBG.~~		2½" tubing			
	OIL GRAVITY (DRY °API		44.0			
	TOTAL GAS, MCF/D		12984			
	CIRCULATED GAS, MCF/D		0			
	FORMATION GAS, MCF/D		12984			
	TOTAL GAS-FLUID RATIO		100000			
PRESSURES P.S.I.	CASINGHEAD	0	0			
	TUBINGHEAD TEST GAUGE	1650 #	745 #			
	RECORDER AT 0 FT.	1650				
	1500 FT.	1700				
	3000 FT.	1750				
	4500 FT.	1810				
	6000 FT.	1850				
	7000 FT.	1890				
	7500 FT.	1900				
	7750 FT.	1910				
	7990 FT.	1915				
	8080 FT.	1920	1915			
	MEAN FORMATION	1915	1910			
MAXIMUM BOTTOM HOLE TEMPERATURE °F		220°				

COMPUTED RESULTS

GROSS PRODUCTIVITY INDEX: 25.8 CALCULATION: 129 ÷ 5 = 25.8

CALCULATED POTENTIAL: ____ B/D GROSS ____ B/D NET

POTENTIAL FACTOR: ____ B/D GROSS ____ B/D NET

REMARKS ____

COMPANY TAKING MEASUREMENTS M. O. Johnston BY R. B. Trimble

DATA WITNESSED BY ____ CERTIFIED BY ____ DATE ____

POTENTIAL FACTOR ____ ASSIGNED FOR MONTH OF ____

Figure 7: 64-35N Source Data: Shut-In Survey and Flow—Test 1940

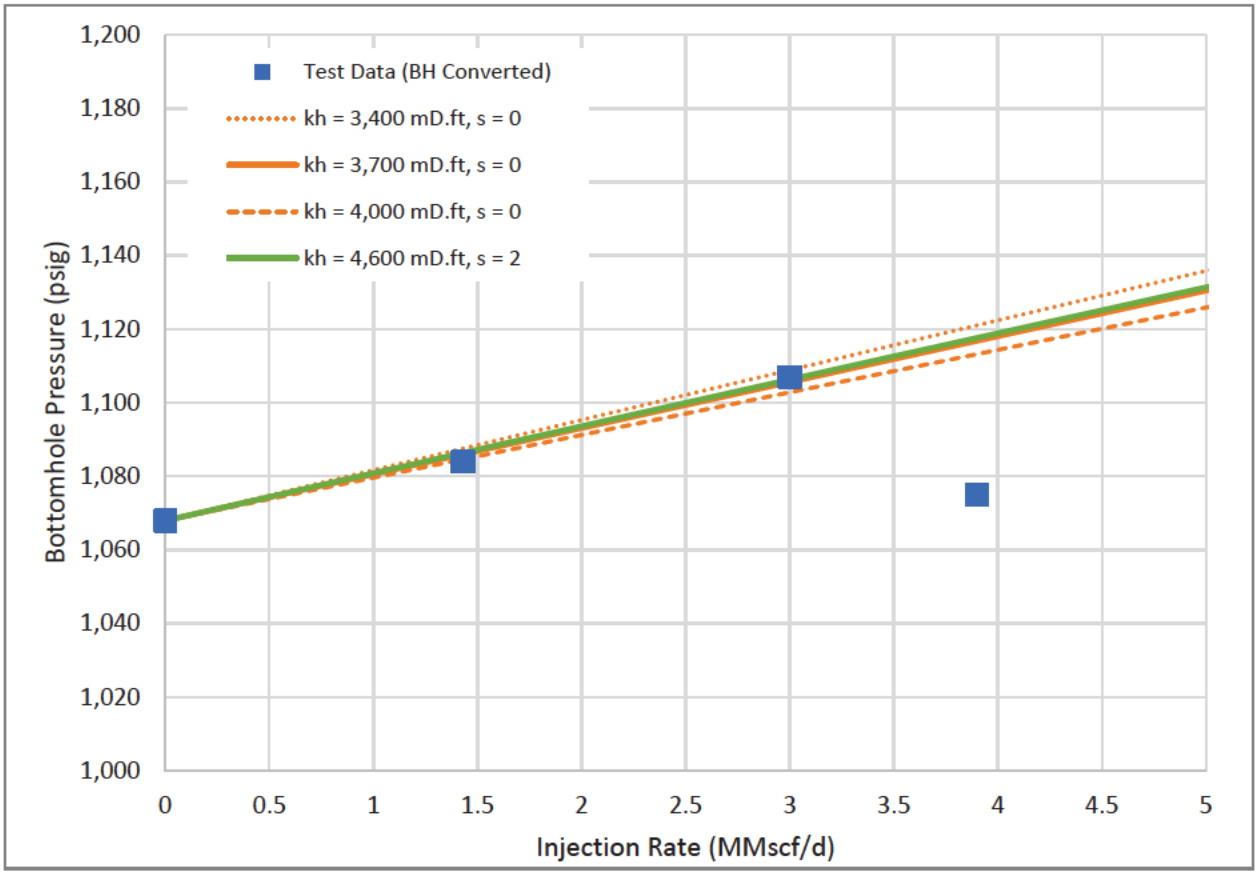


Figure 8: 64-35N: Matched Three Point Injection Test—1980

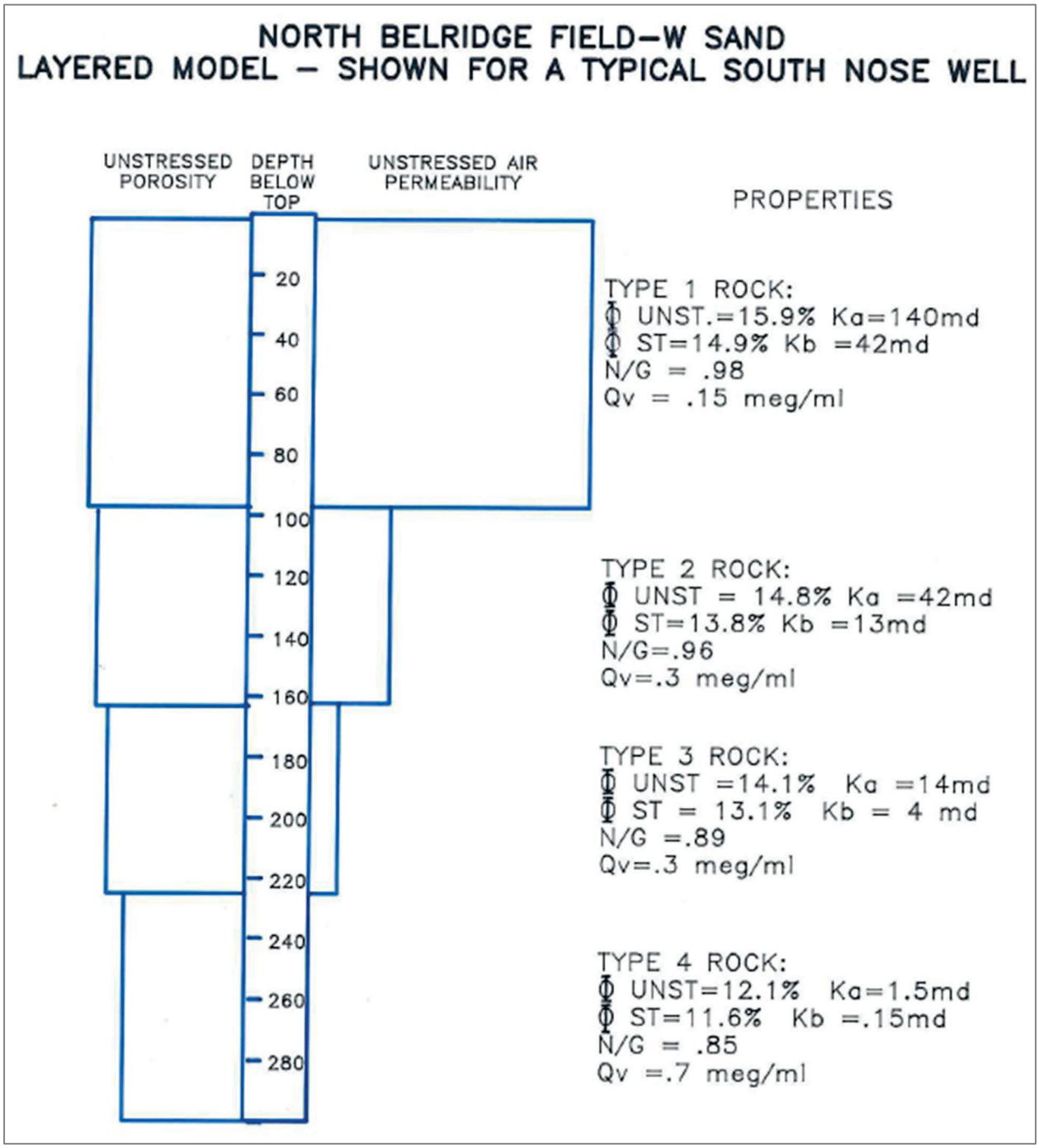


Figure 9: 1986 Belridge_64_Dev_engineering_Review.pdf

Figure 10 shows the match from the 1980 test applied to the shut-in and flowing test from 1940. The 1940 shut-in determines the reservoir pressure. The flow test had measured gas-rate and pressure at the wellhead. A flowing gradient model determined the bottomhole pressure, and a shut-in gradient model determined the wellhead pressure. The match of the two gradients indicates the match from 1980 is valid, and furthermore indicates there was no increase in wellbore skin over 40 years.

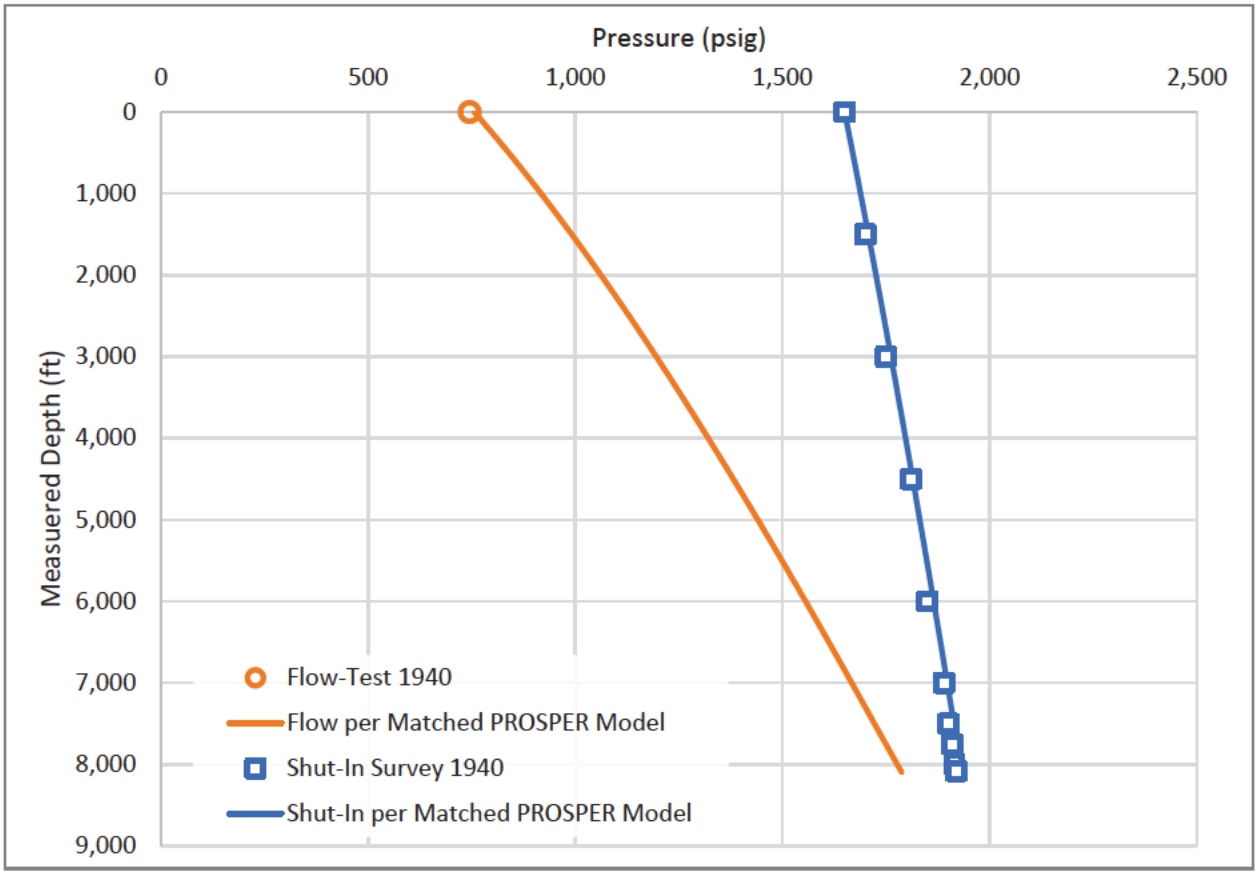


Figure 10: 64-35N: Shut-In and Flow Test—1940

4.3.2 Well 64-35N CO_2 Injectivity Study

An injectivity study was performed for different tubing sizes, with the following assumptions:

- Permeability thickness: kh = 3,700 mD.ft
- Skin: 0
- Tubing sizes: 2 7/8, 3 1/2, 4 1/2, and 5 1/2 in. (sizes that can be installed in well)
- Average injection-area pressures: 700, 2,000, and 3,500 psig
- Injection stream temperature: 90 °F

Figure 11, Figure 12, and Figure 13 show the required well injection stream pressure versus injection stream rate for the different tubing sizes at 700, 2,000, and 3,500 psig respectively. Conclusions are:

- 2 7/8 in., the original tubing size, leads to excessive friction that wastes compression
- 4 1/2 in. yields a good injection rate range with reasonable friction
- 5 1/2 in. yields minimally less friction pressure at the anticipated injection rate, and it is not necessary unless those rates per well were to increase.

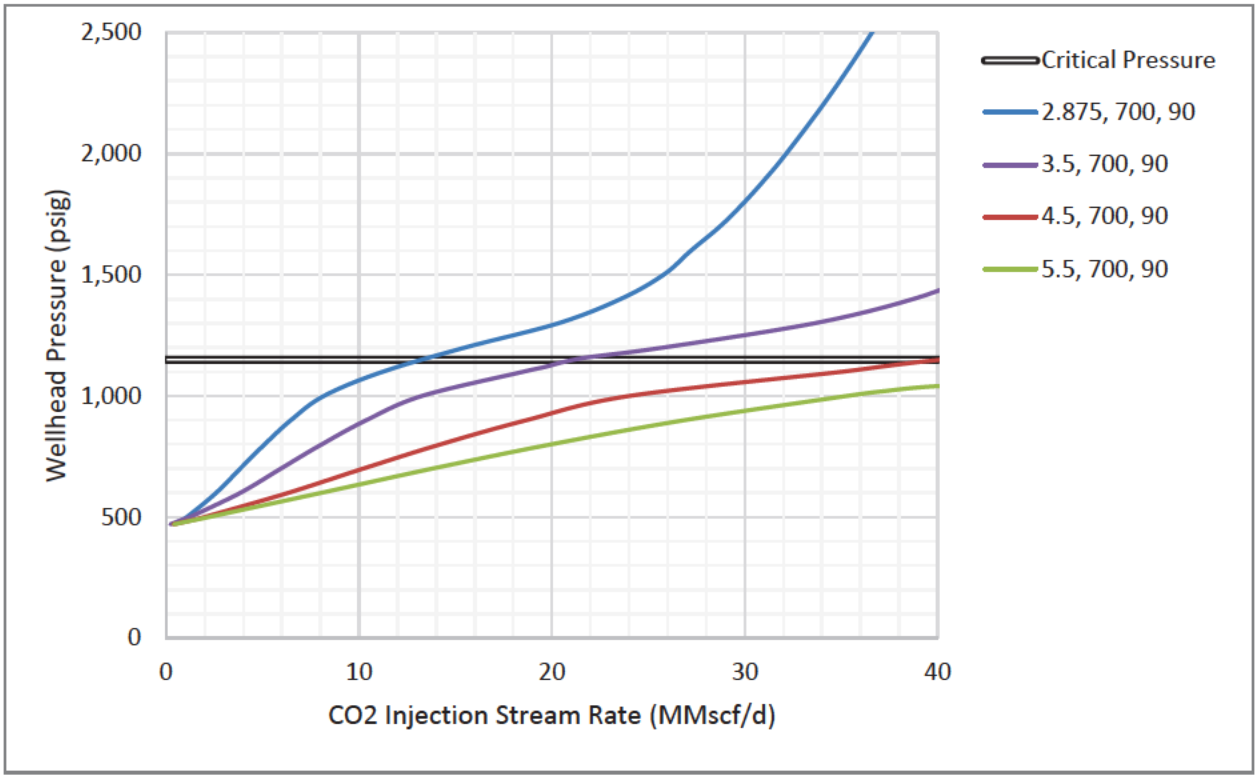


Figure 11: 64-35N CO_2 Injection: Tubing Sensitivity at Pavg = 700 psig, Tinj = 90°F

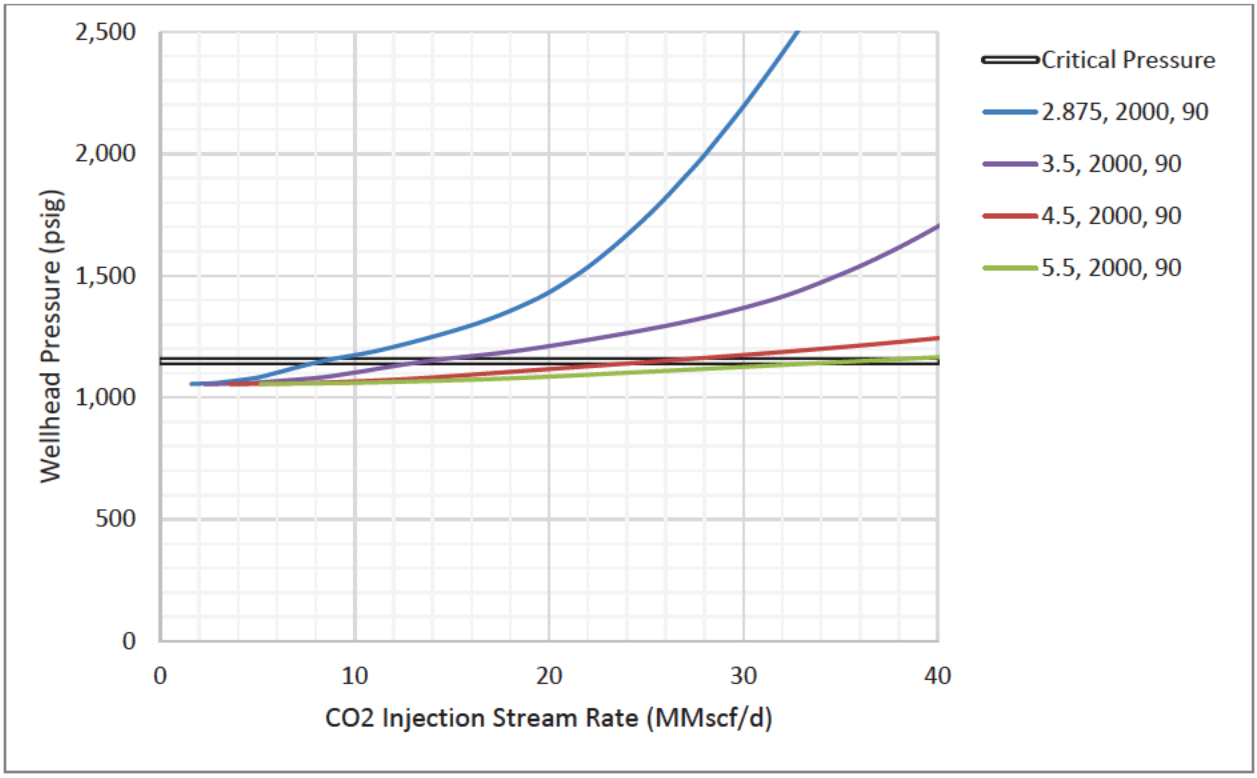


Figure 12: 64-35N CO_2 Injection: Tubing Sensitivity at Pavg = 2000 psig, Tinj = 90°F

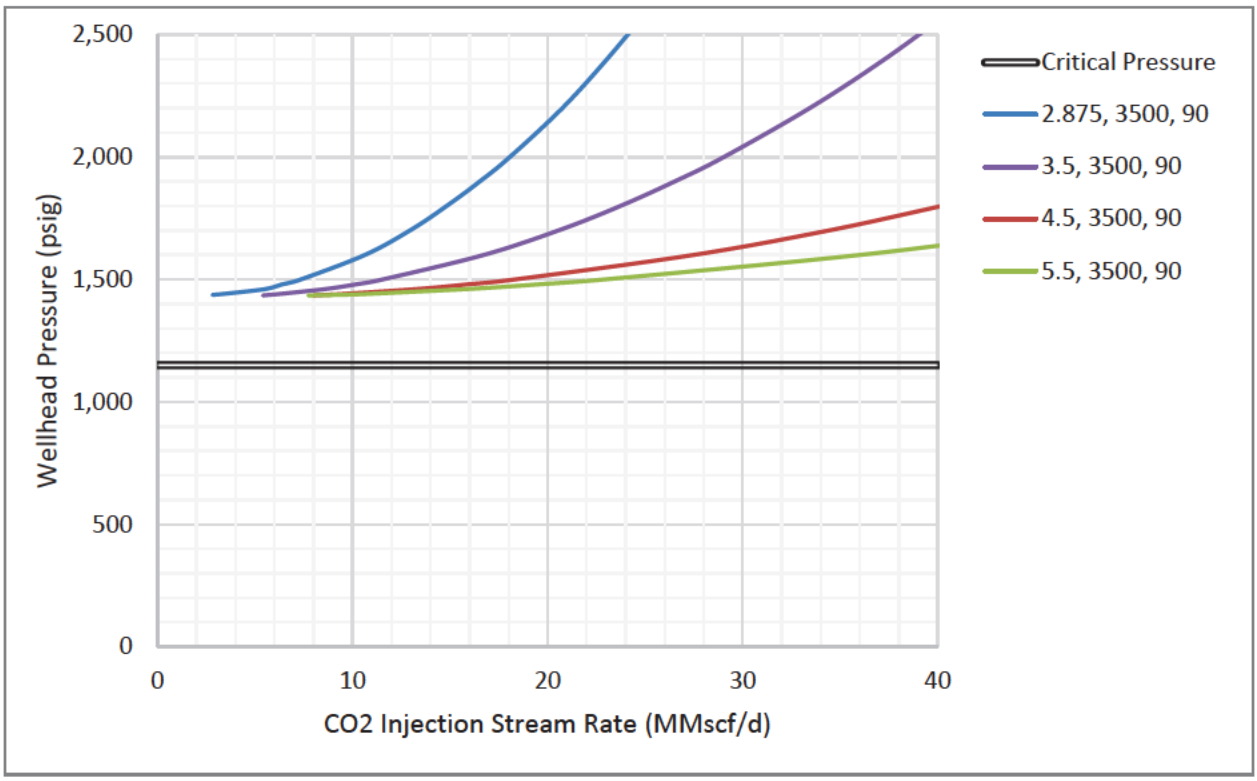


Figure 13: 64-35N CO_2 Injection: Tubing Sensitivity at Pavg = 3500 psig, Tinj = 90°F

An injectivity study reviewed injection temperatures with the following assumptions:

- Permeability thickness: kh = 3,700 mD.ft
- Skin: 0
- Tubing size: 4 ½ in.
- Average injection-area pressures: 700, 2,000, and 3,500 psig
- Injection stream temperatures: 70, 90, and 110°F

Figure 14 shows the required well injection stream pressure versus injection stream rate for the different injection temperature and average pressures. Conclusions are:

- Wellhead pressure requirements, hence, compression, are greater with increasing temperature. It is therefore necessary to balance compression costs versus cooling costs.
- Cooling the injection stream increases the minimum stable injection rate for the well
  - For example, if the reservoir pressure is 3,500 psig, an injection stream at 70°F must inject at least 10 MMscf/d, whereas an injection stream at 110°F can inject at any rate
  - Cooling the injection stream greatly minimizes the wellhead pressure required
  - But use caution when cooling below 90°F at a reservoir pressure of 2,000 psig or less because flow in the wellbore could cross the phase envelope and cause flow instabilities

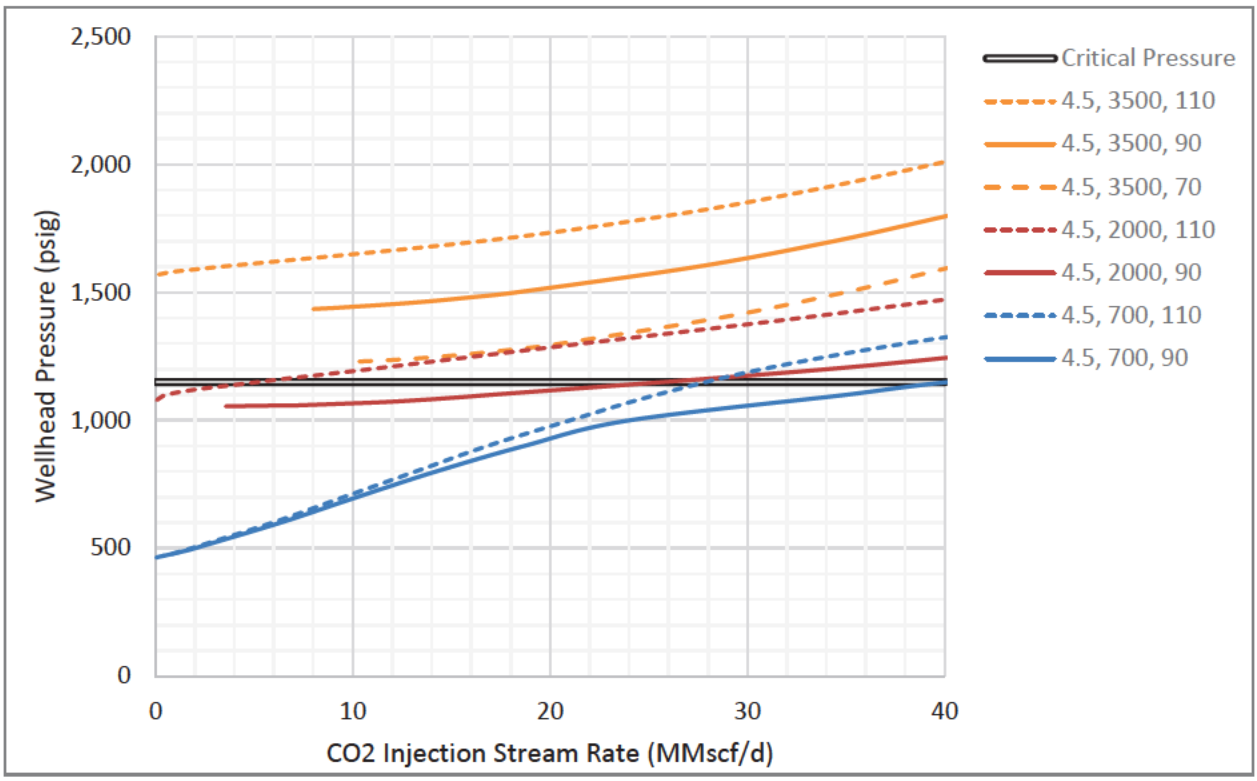


Figure 14: 64-35N CO_2 Injection: Injection Temperature Sensitivity

An injectivity study reviewed relative permeability with the following assumptions:

- Permeability thicknesses:
  - kh = 370 mD.ft — CO_2 rel perm reduced in presence of water
  - kh = 3,700 mD.ft — CO_2 rel perm highest if gas cap only
- Skin: 0
- Tubing size: 4 1/2 in.
- Average injection-area pressures: 700, 2,000, and 3,500 psig
- Injection stream temperature: 90°F

Figure 15 shows the required well injection stream pressure versus injection stream rate for the permeability thicknesses. Conclusions are:

- At kh = 3,700 mD.ft, a reasonable average injection rate is 30 MMscf/d
- At kh = 370 mD.ft, a reasonable average injection rate is 10 MMscf/d

The presence of water around the wellbore will reduce the relative permeability to CO_2 and decrease the injectivity into a well. This will require more wells to meet the same field injection target. This may be an issue since the 64-zone has been used for water disposal. This is one of the reasons that an injectivity test in the field is recommended (see section 4.6).

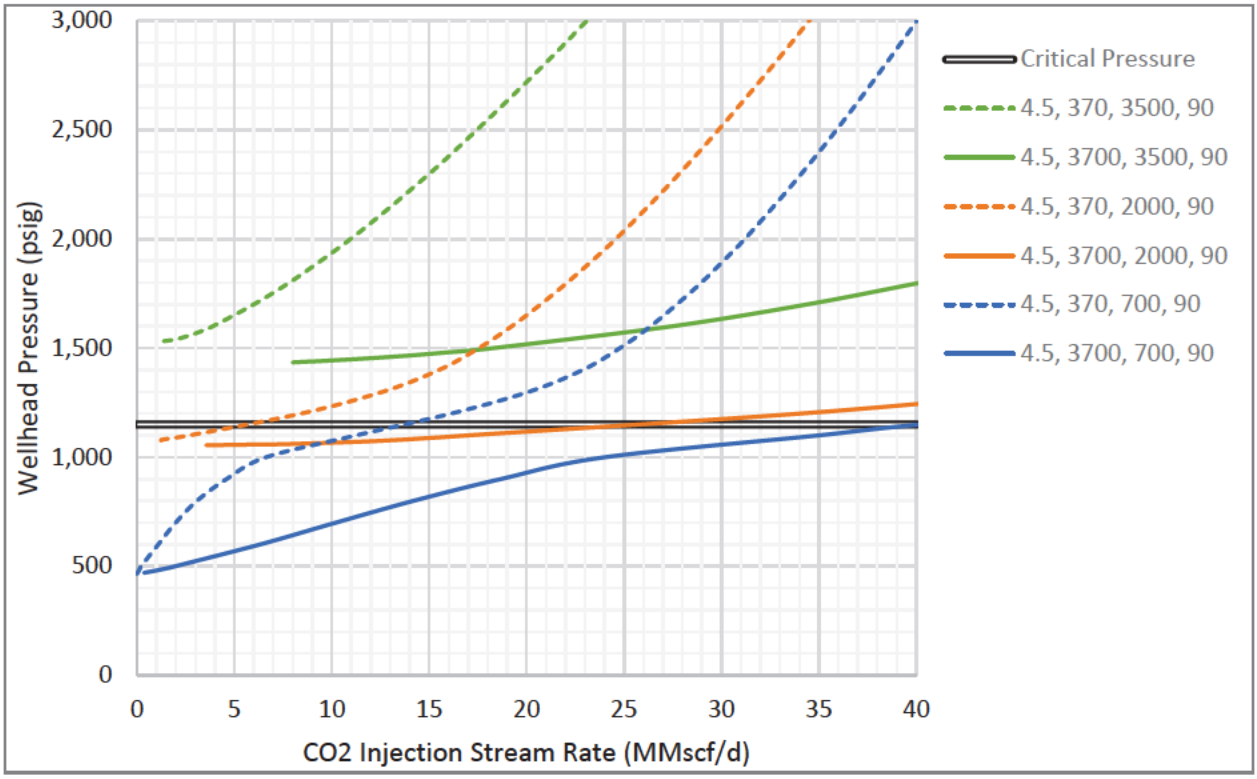


Figure 15: 64-35N CO_2 Injection: Permeability Thickness Sensitivity

A drop in relative permeability lowers the injectivity which then may lower the optimum tubing size from 4 1/2 to 3 1/2 in. An injectivity study reviewed this change with the following assumptions:

- Permeability thicknesses: kh = 370 mD.ft and 3,700 mD.ft
- Skin: 0
- Tubing sizes: 3 1/2 and 4 1/2 in.
- Average injection-area pressures: 700, 2,000, and 3,500 psig
- Injection stream temperature: 90°F

Figure 16 and Figure 17 show the required well injection stream pressure versus injection stream rate for the permeability thicknesses. Conclusions are:

- 3,700 mD.ft is best with 4 1/2 rather 3 1/2 in. tubing
- 370 mD.ft is best with 3 1/2 rather 4 1/2 in. tubing

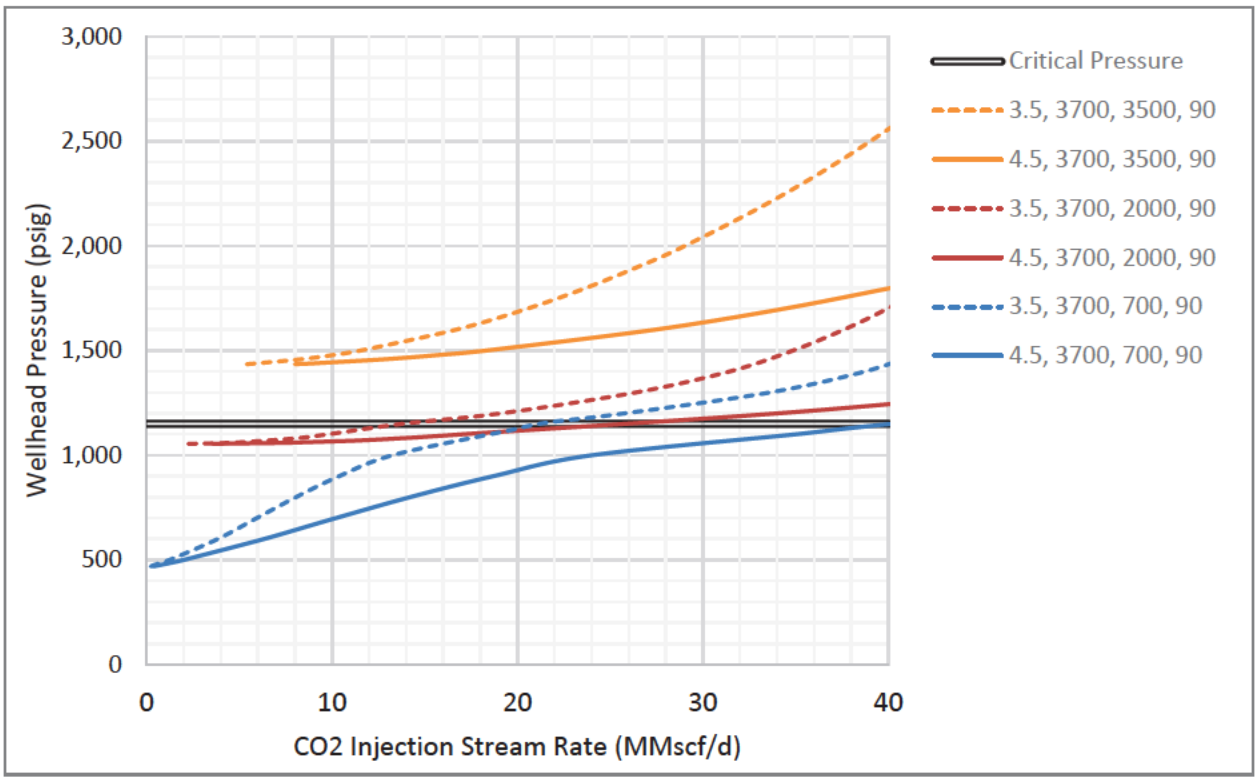


Figure 16: 64-35N CO_2 Injection: High Permeability Thickness and Tubing Sensitivity

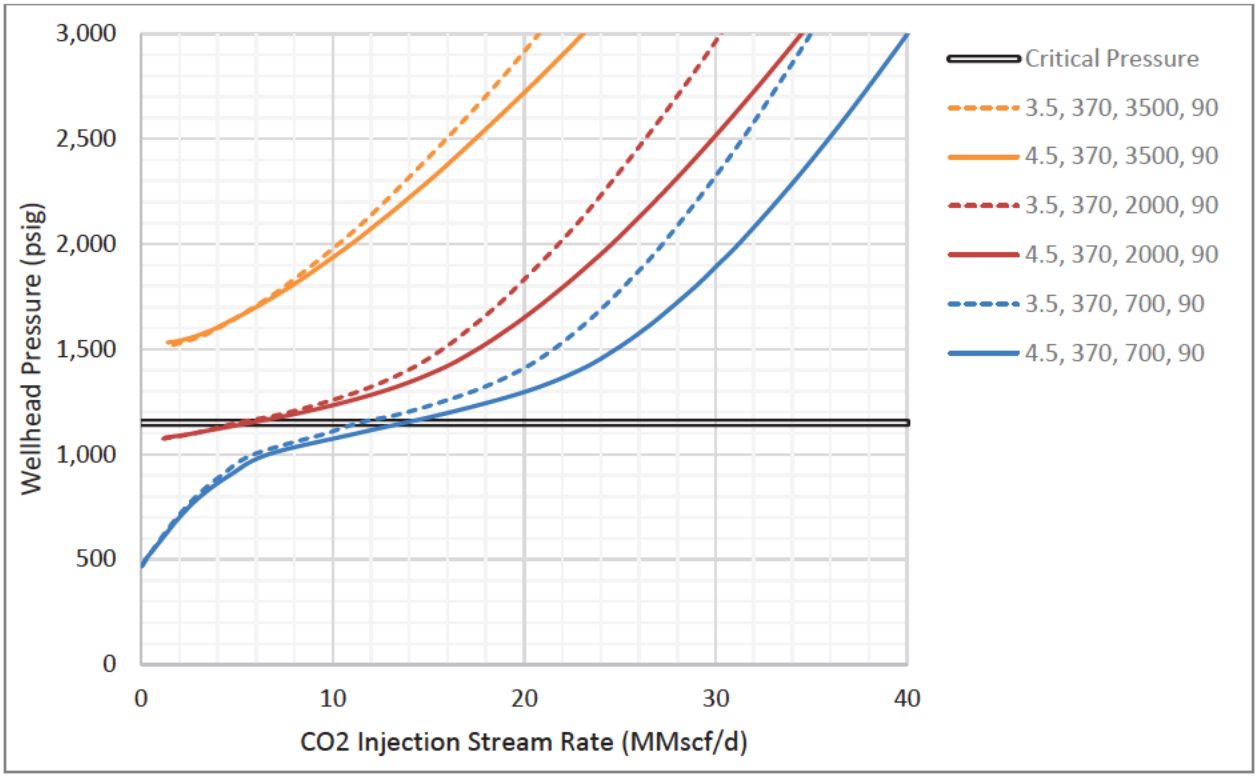


Figure 17: 64-35N CO_2 Injection: Low Permeability Thickness and Tubing Sensitivity

4.4 Well 64-27N Match and CO_2 Injectivity Study

This section first presents the 64-27N well match and secondly presents the injectivity study.

4.4.1 Well 64-27N Match

Table 14 lists three injection gradients from 1950 for well 64-27N. The reservoir pressure is from an Aera material balance model for the 64-zone (>300 Reference Documents>Reservoir Engineering>2021_09_29 Historical Gas Injection>2002 Material Balance>64zoneMatbal.xls).

Table 14: 64-27N: Measured Injection Gradients — 1950

Date	Measured Q (MMscf/D)	Measured BHP (psig)	Modeled BHP (psig)
	0.00		1,150
10/10/1950	8.895	1,641	
10/12/1950	6.286	1,463	
10/16/1950	7.208	1,612	

Figure 18 shows two equivalent matches for the measured injection gradients, and these are:

- kh = 740 mD.ft with skin = 0
- kh = 3,700 mD.ft with skin = 34

Single point measured injection gradients cannot determine kh and skin separately—that requires a pressure transient test. Petrophysical analysis of the well could also be useful. This study uses the skin = 0 solution. This is acceptable as the modeling is for the wellbore and the reservoir, essentially a resistance to injection. Details of flow in the reservoir are to be covered by Aera's reservoir simulation work.

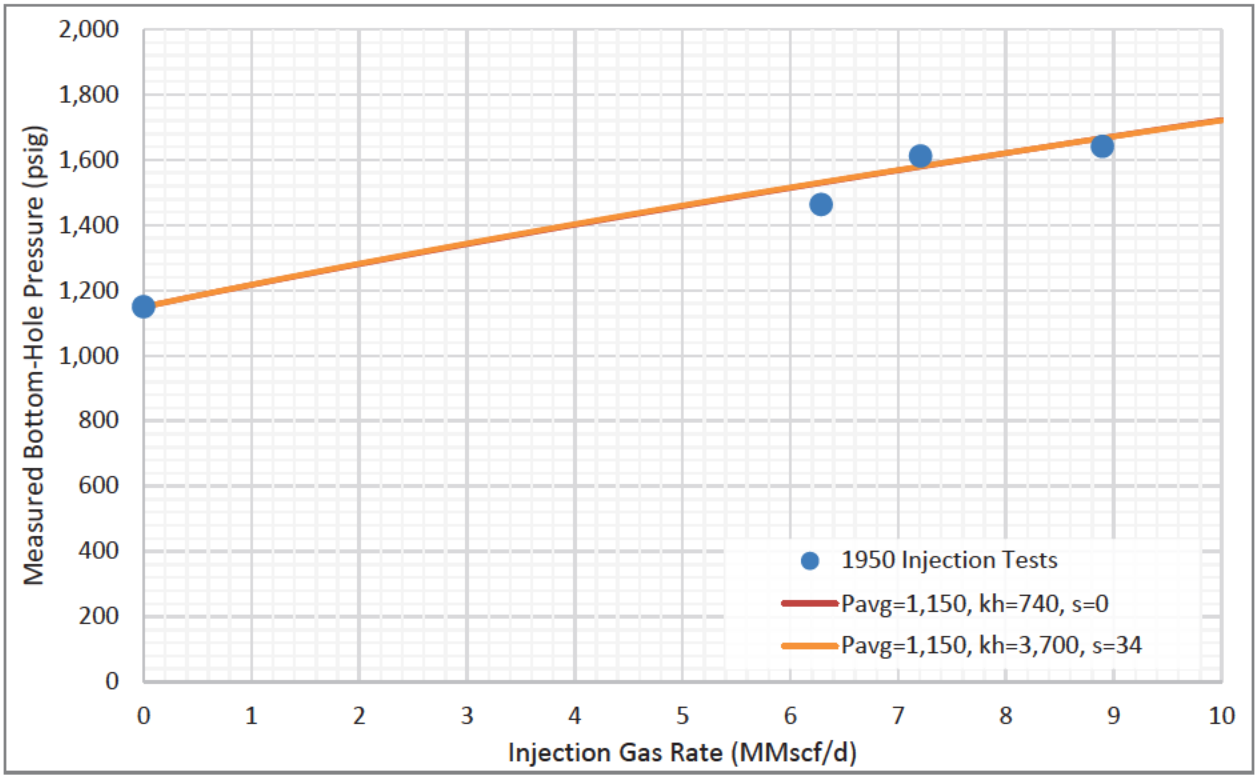


Figure 18: 64-27N: Matched Measured Injection Gradients—1950

4.4.2 Well 64-27N CO_2 Injectivity Study

This last measured data from the well was over 70 years ago, and that creates uncertainty for the injectivity for this well. Assume the well had no skin, and then the best estimate of permeability thickness is 740 mD.ft. If disposal water is around this well, relative permeability effects could drop the effective permeability to 1/10 (74 mD.ft).

Figure 19 and Figure 20 show the required well injection stream pressure versus injection stream rate for the permeability thicknesses. Conclusions are:

- 740 mD.ft is still best with 4 1/2 rather 3 1/2 in. tubing
- 74 mD.ft is best with 2 7/8 rather 3 1/2 in. tubing – if disposal water is in the zone around a well, it will negatively affect the injectivity of the well.

Reservoir simulation is important to understand if a well may be wet. If possible, it is recommended to perform a gradient survey to check if a well is wet prior to repurposing to a CO_2 injection stream well.

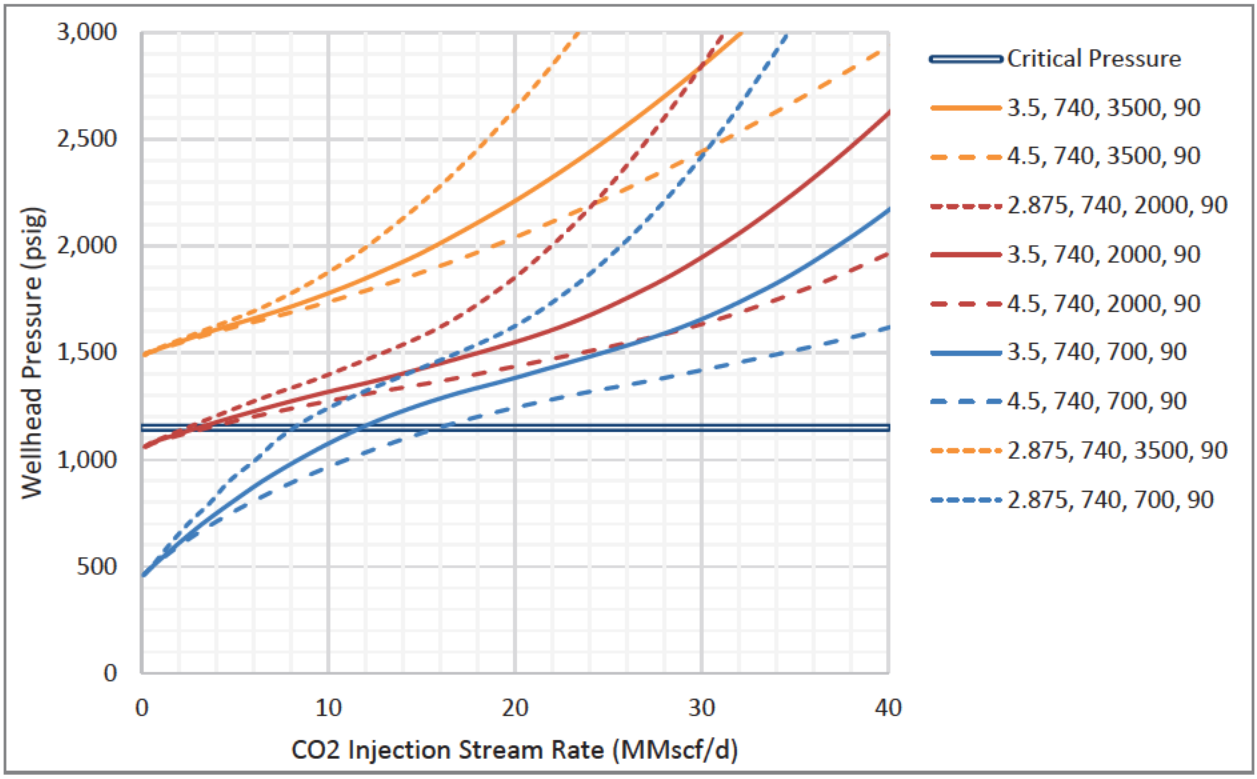


Figure 19: 64-27N CO_2 Injection: High Permeability Thickness and Tubing Sensitivity

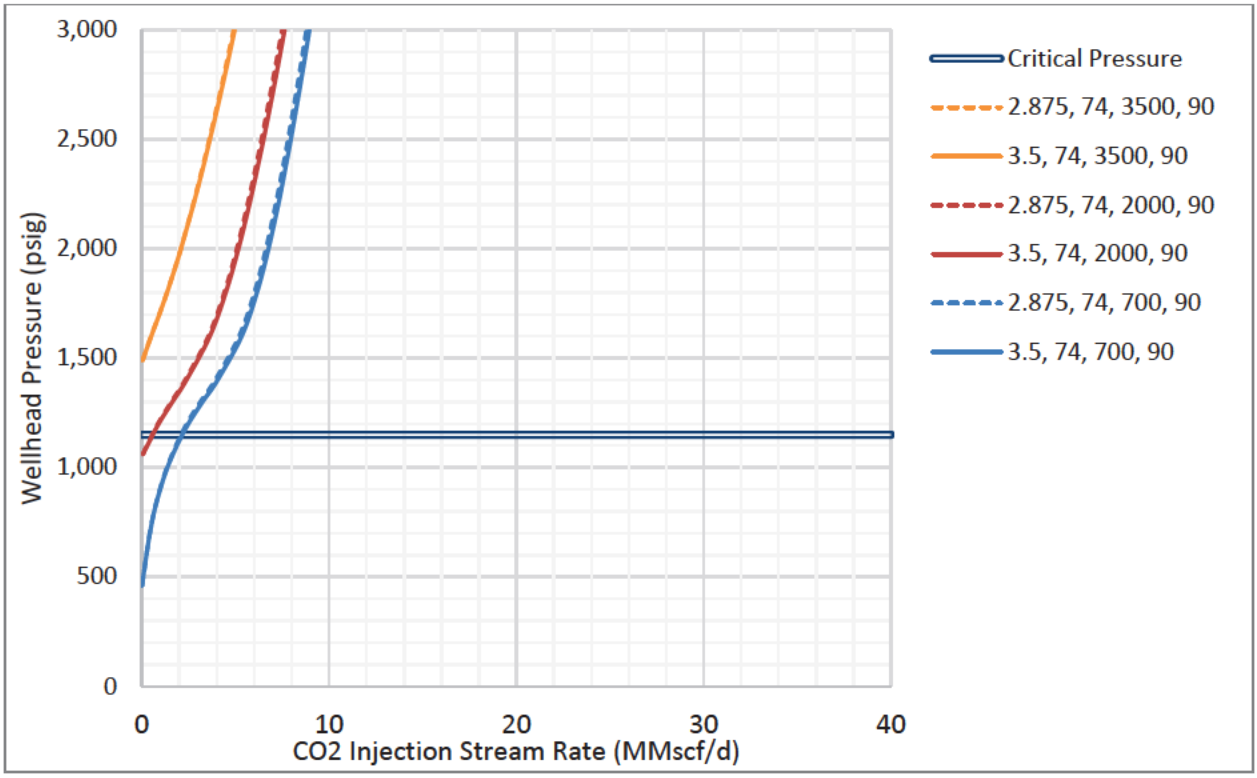


Figure 20: 64-27N CO_2 Injection: Low Permeability Thickness and Tubing Sensitivity

4.5 Well 49-35N Match and CO_2 Injectivity Study

This section first presents the well 49-35N match and secondly presents the injectivity study.

4.5.1 Well 49-35N Match

Table 15 lists measured injection points from 1981 for well 49-35N. The reservoir pressure is from an Aera material balance model for the 64-zone (>300 Reference Documents>Reservoir Engineering>2021_09_29 Historical Gas Injection>2002 Material Balance>64zoneMatbal.xls.

Table 15: 49-35N: Measured Injection Points — 1981

Date	Measured Q (MMscf/D)	Measured WHP (psig)	Modeled BHP (psig)
	0.00		1,255
Sep-1981	3.65	1,050	1,175
Oct-1981	3.40	1,050	1,185
Oct-1981	3.40	1,150	1,310
Dec-1981	5.10	1,220	1,330
Dec-1981	4.80	1,180	1,291
Dec-1981	3.35	1,180	1,350

Figure 21 shows the match from the 1981 test points applied to the shut-in and flowing test from 1981. The best estimate permeability thickness is 3,700 mD.ft, for a skin of 0. This is the same kh estimated for well 64-35N.

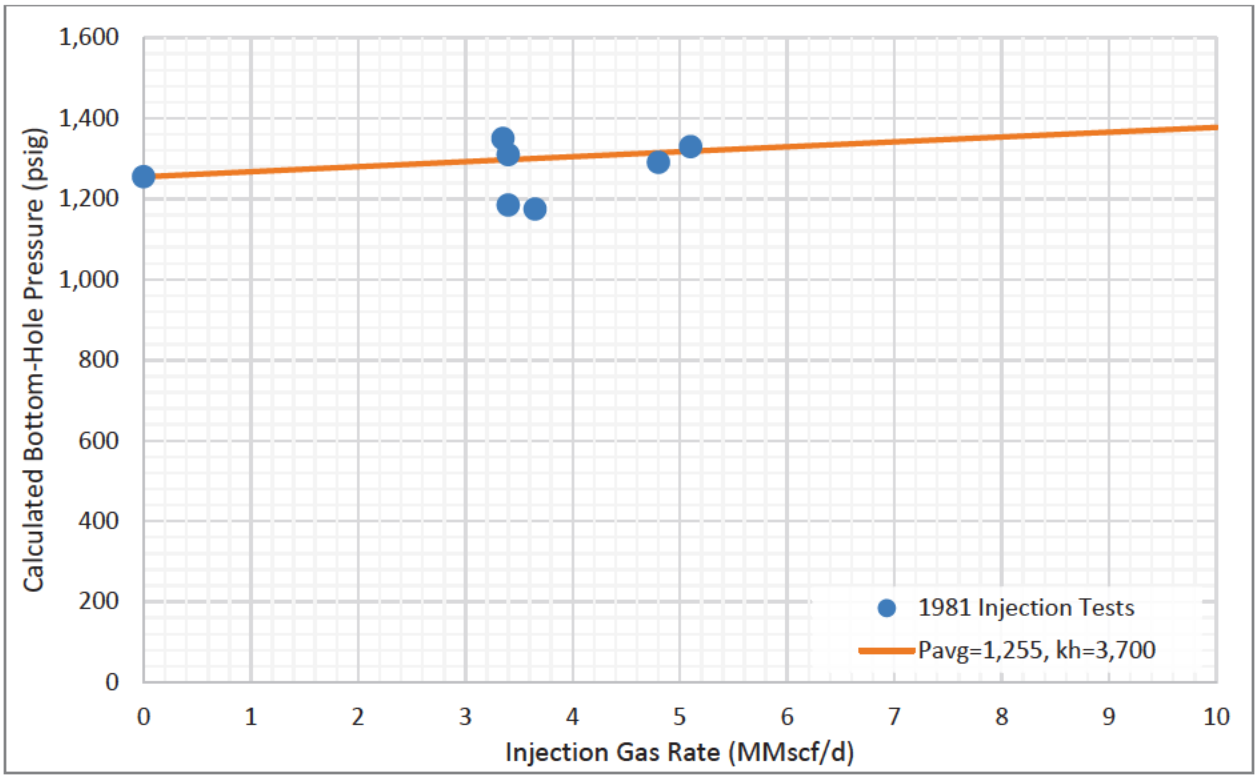


Figure 21: 64-35N: Matched Injection Points—1981

4.5.2 Well 49-35N CO_2 Injectivity Study

Well 49-35N has the same injectivity as 64-35N, hence the previous injectivity study holds for this well.

4.6 64-Zone Injection Test Design

Injection tests are recommended for the determination of a well's injection area permeability to CO_2, skin, and average pressure. The previous nodal modeling highlighted the uncertainty in the permeability to CO_2 using high and low permeability thickness cases. Nodal modeling cannot independently determine permeability thickness and skin. A three-rate step-rate test could investigate the layer properties and the completion skin. If possible, it is best to inject a CO_2 stream into the formation as planned for the injection wells.

Kappa Engineering's SAPHIR software was used for test design assuming pure CO_2. The source of the CO_2 for an injection test is to be determined. The reservoir pressure for this study is 700 psig. The steps for the test are:

- Use properties of well 64-35N—permeability thicknesses of 3,700 and 370 mD.ft.
- Injection rates of 10, 20, and 30 MMscf/D as these are likely injection rates for a storage well.
- Injection time the same for each rate. Total injection times considered were 9 and 24 hours.

Figure 22 show the injection pressure response for cases injecting 9 and 24 hours for the 370 mD.ft case. The total injection time of 9 hours yields a BHP max = 3,100 psig with injection at WHP = 1,200 psig and WHT = 90 °F. The total injection time of 24 hours yields a BHP max = 3,500 psig with injection at WHP = 1,300 psig and WHT = 90 °F.

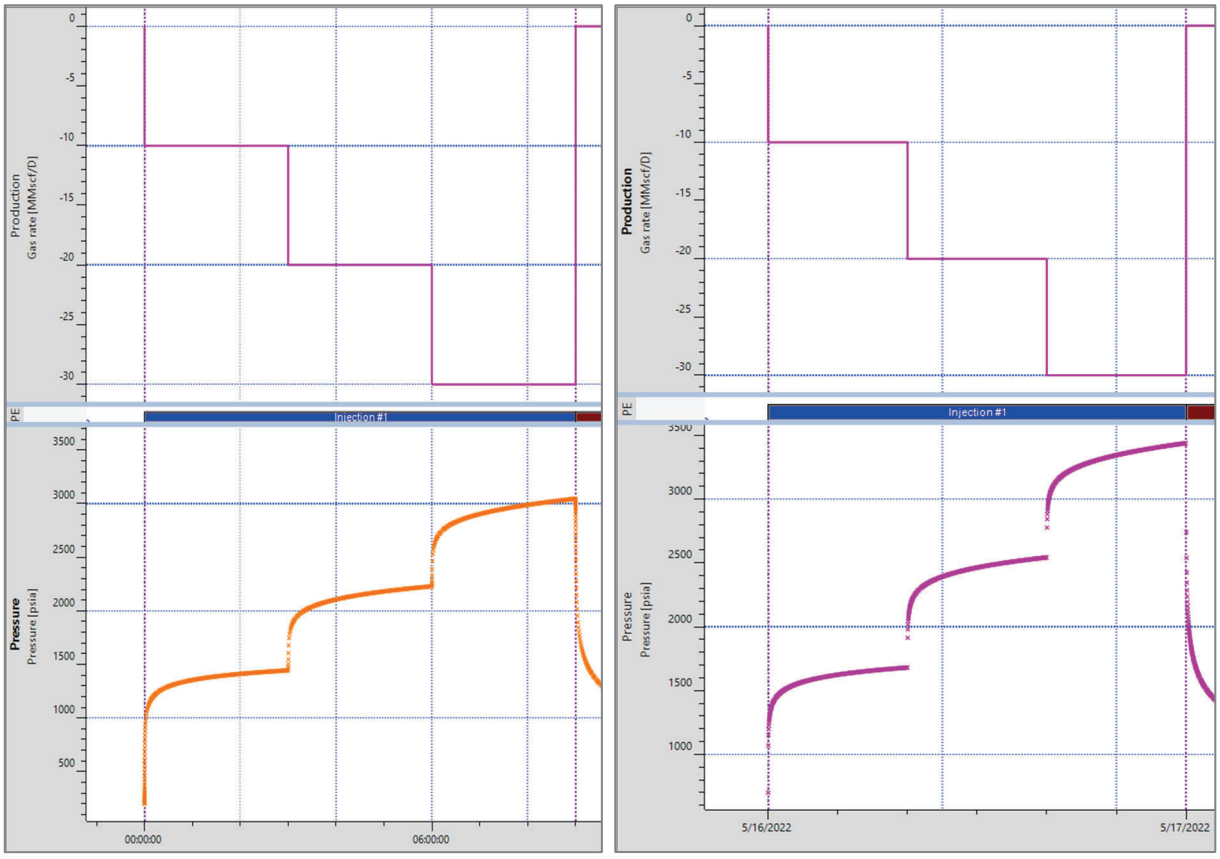


Figure 22: 64-Zone Injection Test: Injection Responses for 9 and 24 Hours

Figure 23 show the falloff pressure-derivative charts for 4 falloff tests. These falloffs exhibit layered responses with the lower permeability thickness exhibiting the greatest response. These falloffs show that it can take longer shut-in times compared to the injection time for conclusive layer differentiation.

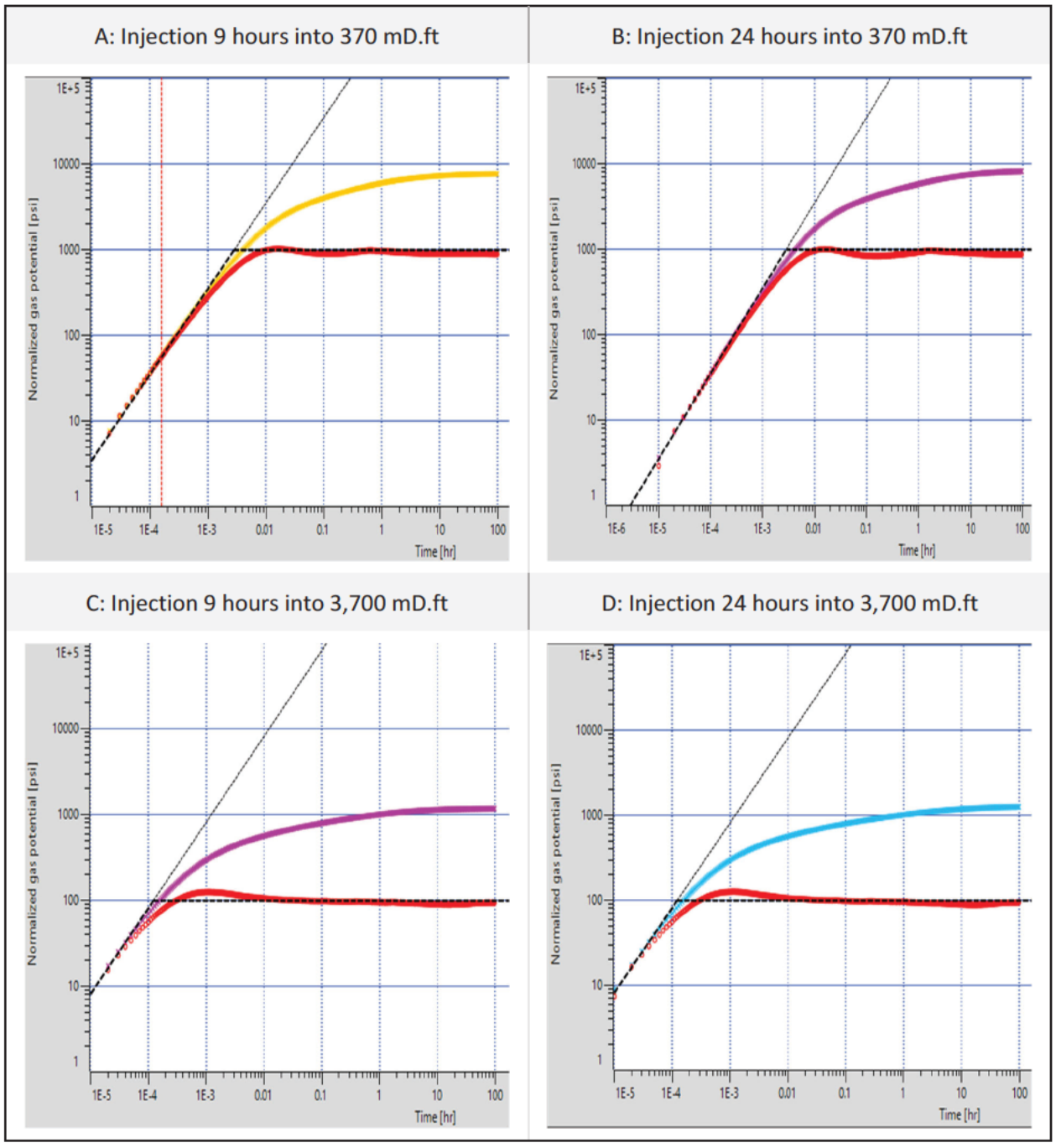


Figure 23: 64-Zone Injection Test: Injection Fall off Responses

Figure 24 shows the layer injection rates for Type 1, 2, 3, and 4 rocks assuming all layer types are at the same initial pressure for the 9 hour injections. In this figure, Type 1 is the green line, Type 2 is the dark blue line, Type 3 is the magenta line, and Type 4 is the blue line. The Type 1 rock takes most of the flow and Type 4 rock takes essentially no flow. There are wells where the Type 3 and Type 4 rocks were not produced, and hence their pressures are higher and their ability to take rate even less. Type 1 and Type 2 rocks will dominate the injectivity test analysis.

Figure 25 shows the layer cross flow rates for Type 1, 2, 3, and 4 rocks assuming all layer types are at the same initial pressure. The colors of the lines are the same as in Figure 24. Gas from the Type 1 rock layer flows out and into the Type 2, 3, and 4 rocks. Layer crossflow can obscure the falloff analysis, and it is best to stay shut-in until crossflow is minimal. In this case, that would be about 18 hours, or twice the time of the injection period.

For an injection time of X hours, the shut-in time should be 2X hours. Therefore:

- For an injection of 9 hours, the shut-in should be at least 18 hours.
- For an injection of 24 hours, the shut-in should be at least 48 hours.

The longer the test, the better the layered diagnosis.

Figure 26 and Figure 27 show the percentage of total flow to each layer for 9-hour and 24-hour injections. The time length of the injection steps doesn't affect the contribution per layer during a Pressure Transient Test (PTA). Injection change per layer is a long-term consideration not possible prior to converting the field to CO_2 sequestration. Note that the Type 4 rock does not take the injection fluid, and therefore those wells that did not produce this rock do not need to be redrilled to include that rock.

Figure 28 show the area of investigation for the same injection conditions of previous. Total injection time and permeability affects the radius of injection.

- The radius of investigation increases with the square root of time.
- The radius of investigation increases with the square root of permeability.

The cases yield the following radius of investigation:

- Permeability thickness = 370 mD.ft
  - For 9 hours of injection, radius = 116 ft.
  - For 24 hours of injection, radius = 253 ft.
- Permeability thickness = 3,700 mD.ft
  - For 9 hours of injection, radius = 318 ft.
  - For 24 hours of injection, radius = 446 ft.

Past production history gives reasonable certainty re the best test design. There is not a requirement for excessive injection times. The recommended range of tests are:

- Minimum recommendation is a 9 hour three-step test with each step of 3 hours at rates of 10, 20, 30 MMscf/D, followed by a 15 hour shut-in
- Maximum recommendation is a 24 hour three-step test with each step of 8 hours at rates of 10, 20, 30 MMscf/D, followed by a 24 hour shut-in

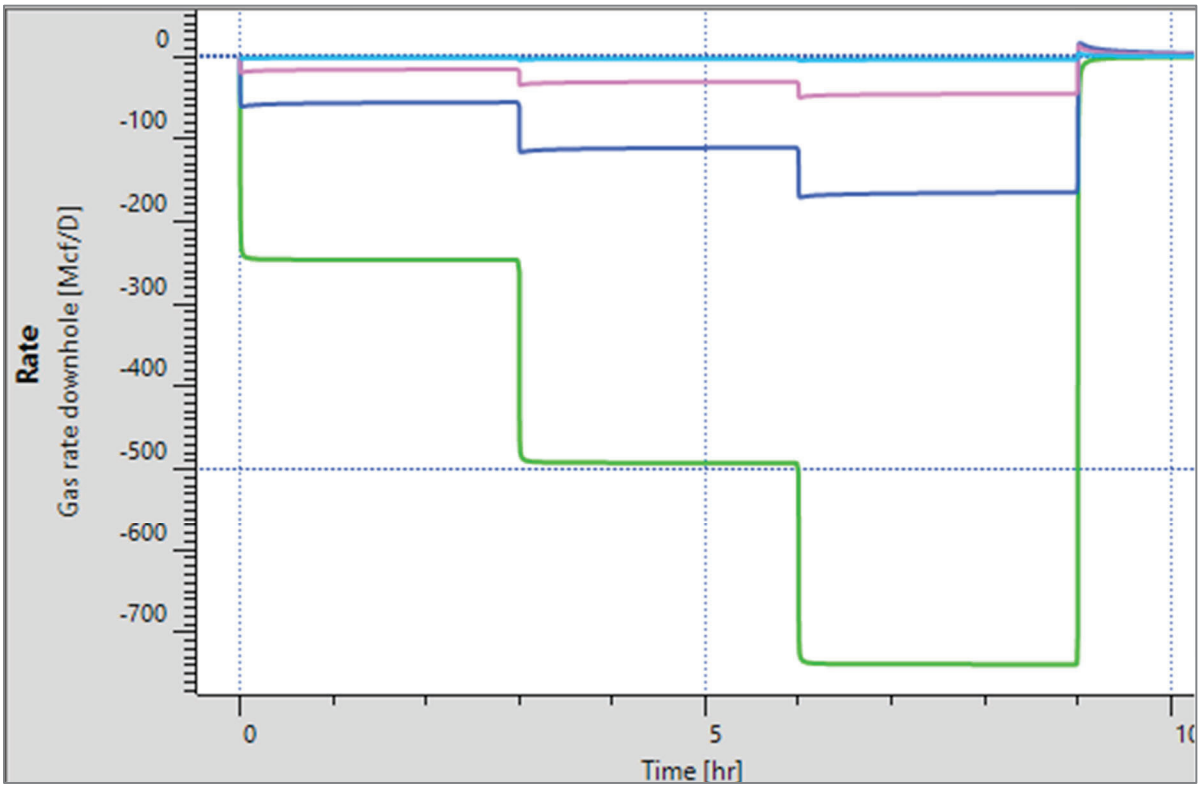


Figure 24: 64-Zone Injection Test: Layer Response During Injection

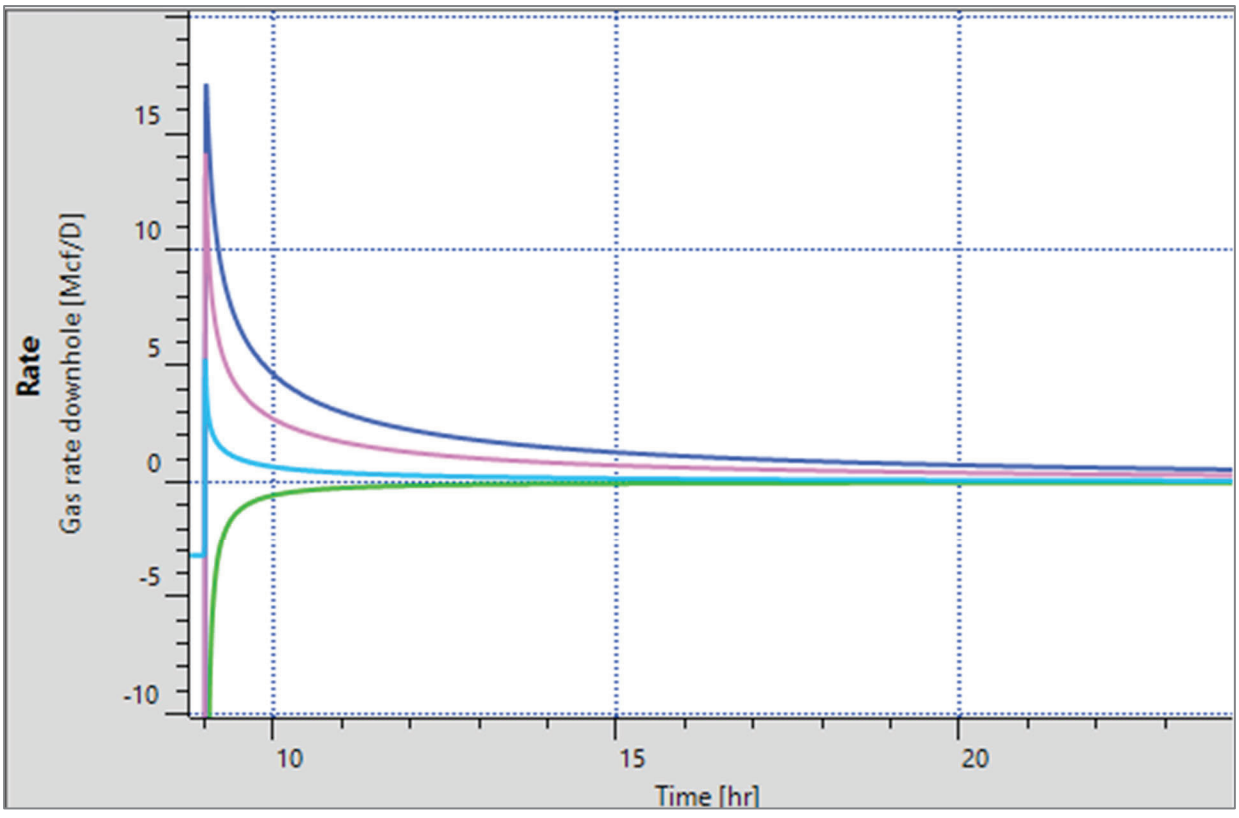


Figure 25: 64-Zone Injection Test: Layer Response During Falloff

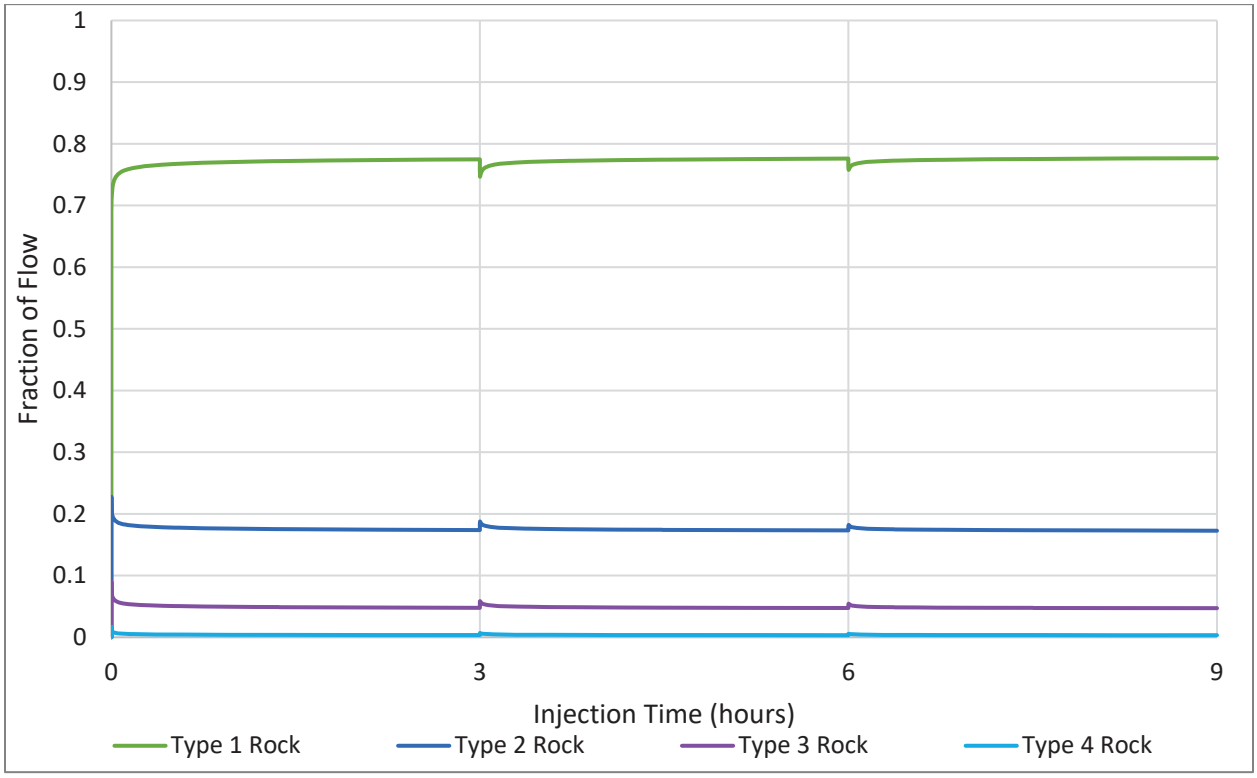


Figure 26: 64-Zone Injection Test: Layer Fraction Response During 9-Hour Injection

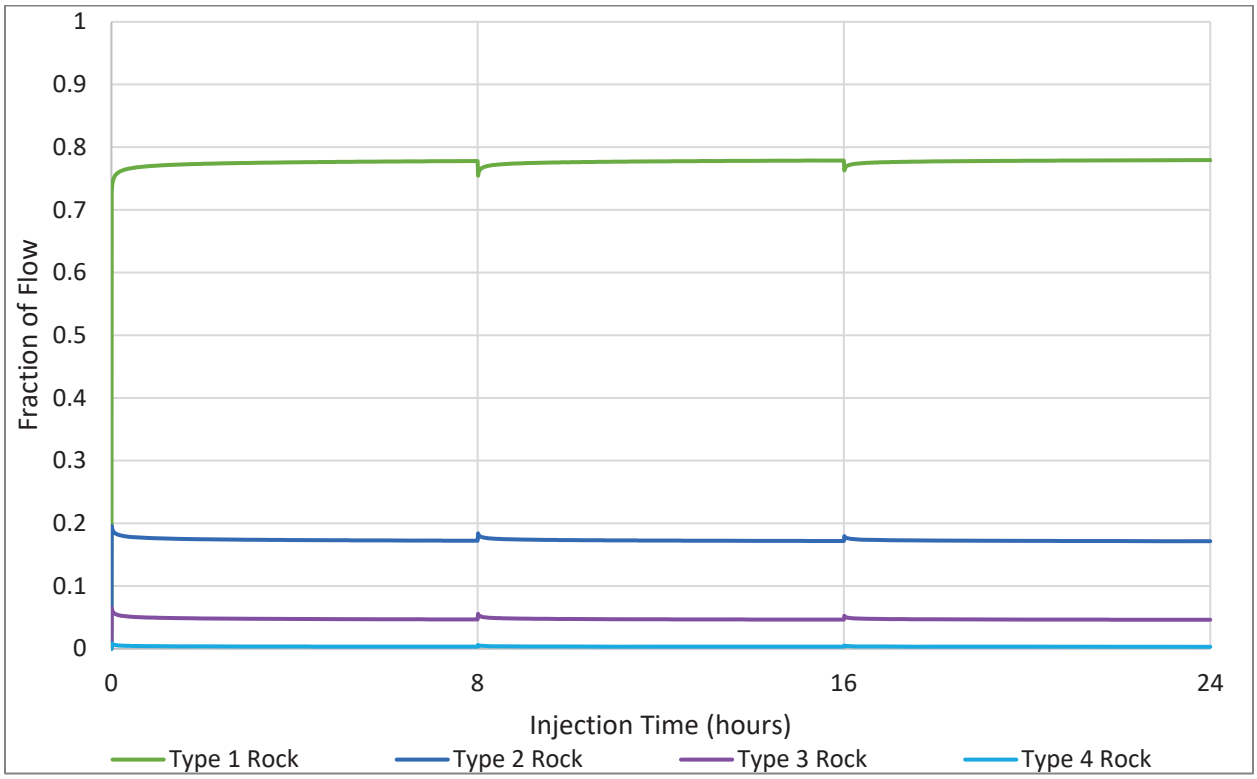


Figure 27: 64-Zone Injection Test: Layer Fraction Response During 24-Hour Injection

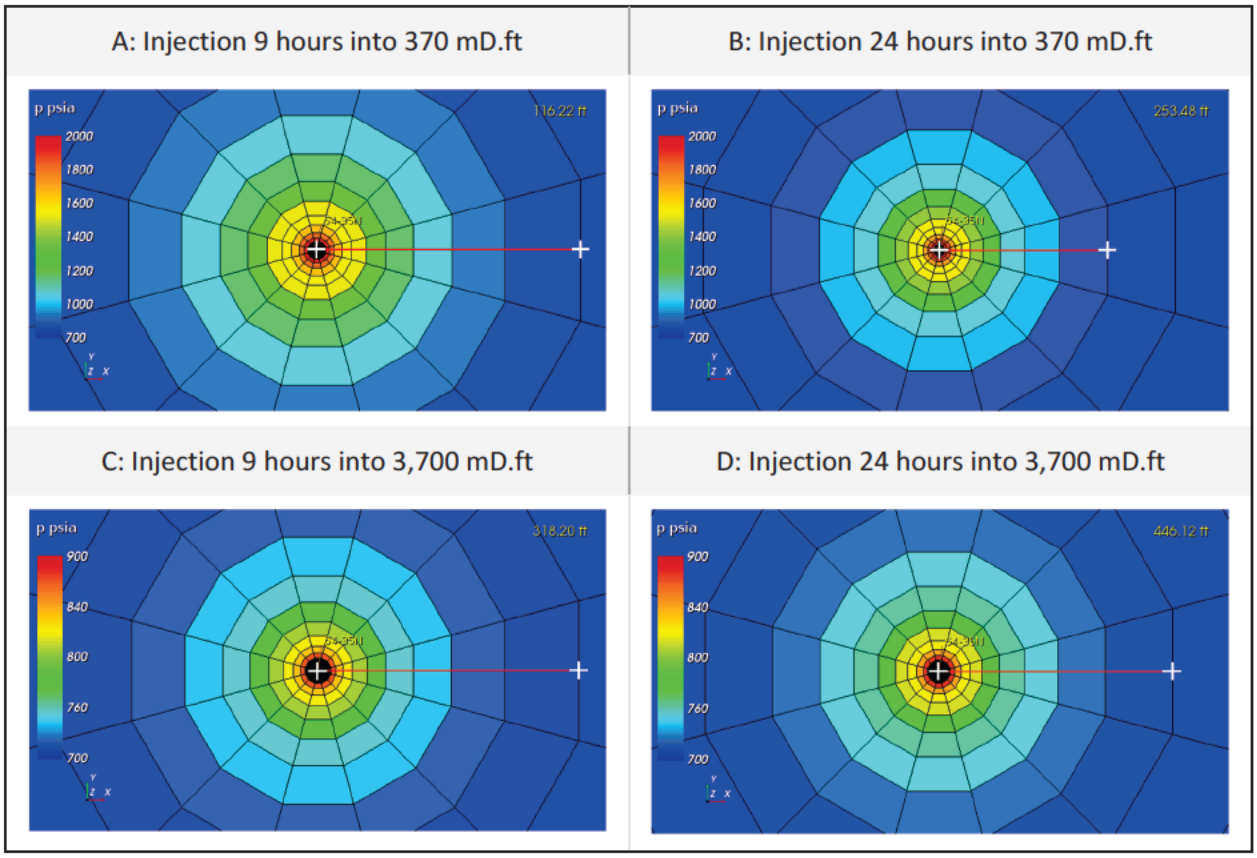


Figure 28: 64-Zone Injection Test: Area of Investigation

4.7 64-Zone Injection Sensitivity for Reservoir Modeling

To assist with the reservoir simulation modeling, Aera's reservoir modelers requested well injection sensitivity charts for the following combinations:

- Average area injection pressure = 400, 2,800, and 4,200 psig
- Permeability thickness = 1,000 and 3,000 mD.ft
- Skin = –5, 0, and 5
- The well model is per Blade's average well design recommendation documented separately

This section presents the injection sensitivity charts.

Figure 29 and Figure 30 show the required well injection stream pressure versus injection stream rate for the different injection temperature and average pressures for cases of 1,000 and 3,000 mD.ft respectively. The data for these charts was provided to Aera in a Microsoft Excel workbook.

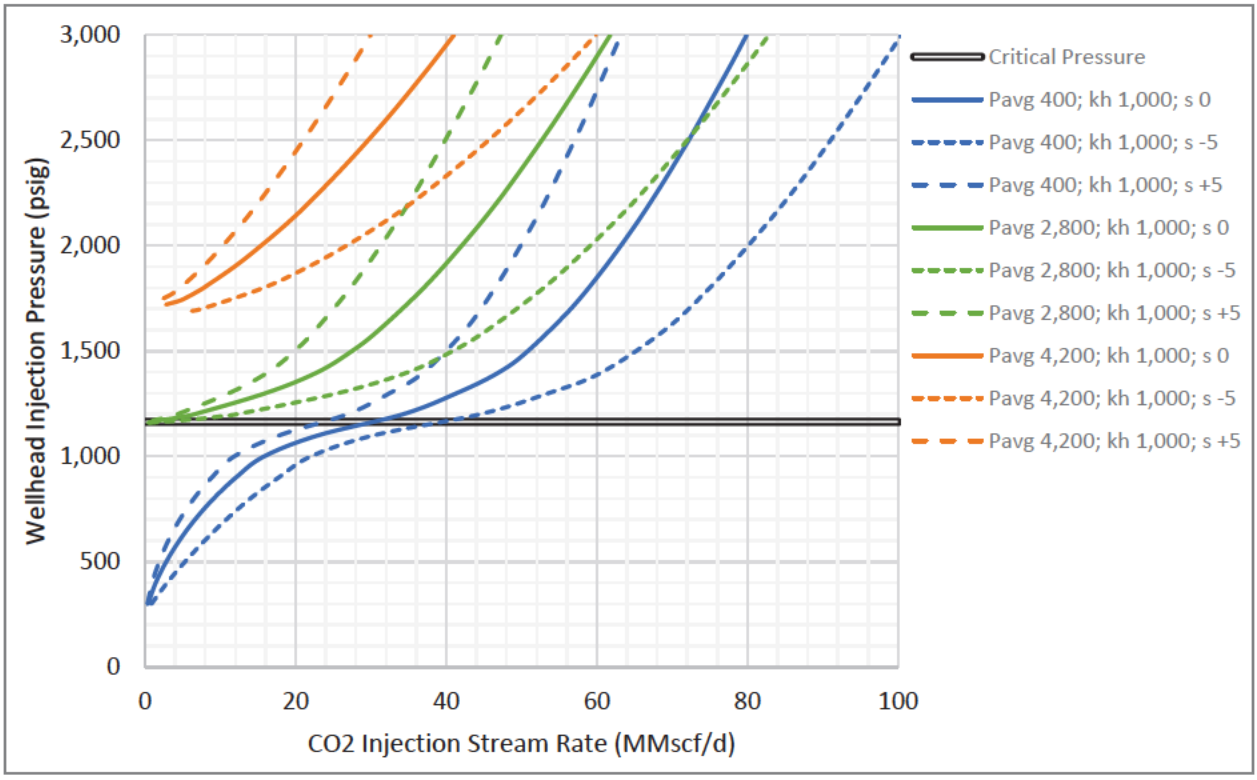


Figure 29: 64-Zone Injection Sensitivity: 1,000 mD.ft

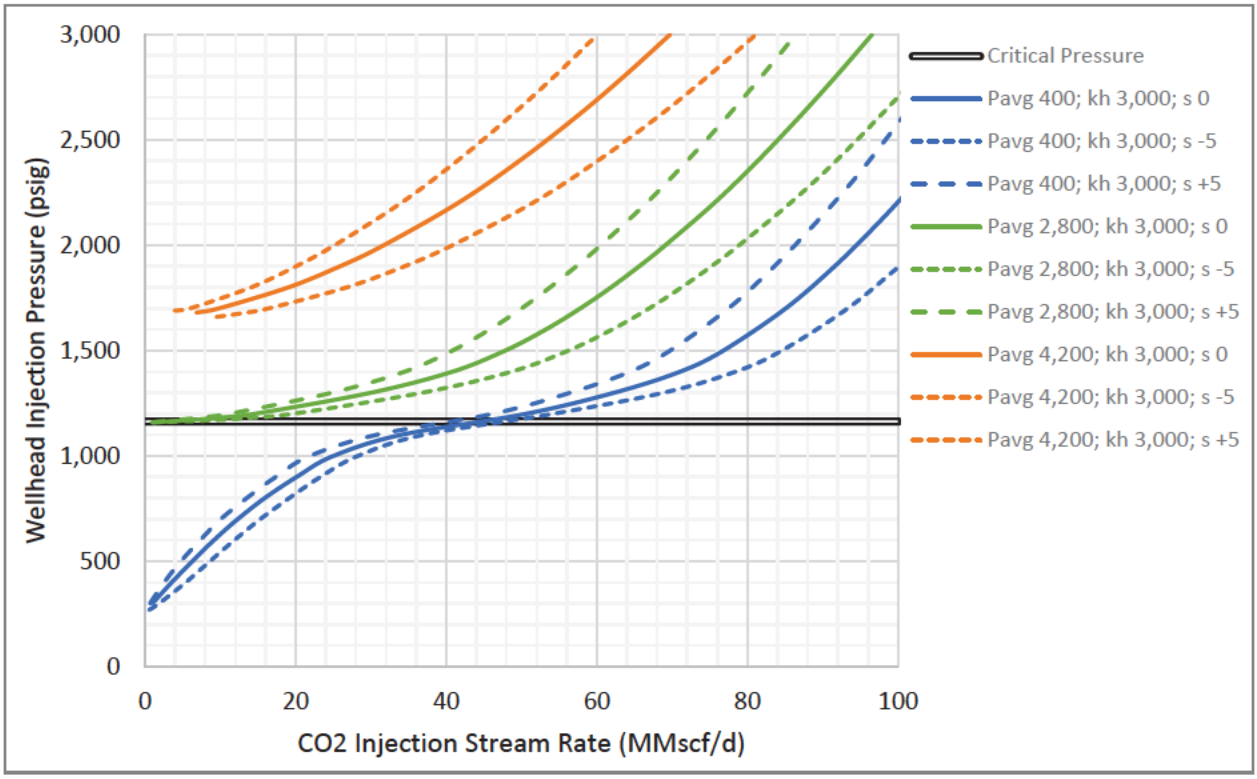


Figure 30: 64-Zone Injection Sensitivity: 3,000 mD.ft

4.8 Temperature and Pressure Update for 64-25N

In November 2023, Aera updated the maximum wellhead injection temperature to 180°F and the maximum injection bottomhole pressure to 80% of the fracture gradient. For well 64-35N, the maximum reservoir pressure at the mid-point of the injection zone (average reservoir pressure of injection plume) is then 4,470 psig. Previously, the maximum temperature was 110 °F and the maximum pressure was 4,200 psig. The increase in temperature and pressure means that the well design needed to be checked, and Table 16 shows the required profiles. The injection is the same CO2 stream presented earlier.

Table 16: 64-25 Updated Well Gradient Conditions

	WHT (°F)	WHP (psig)	Q (MMscf/d)	P,avg (psig)	kh (mD.m)
Final Injection	180	2,784	20	4,470	3,700
Initial Injection	180	1,060	20	700	3,700
Final Shut in	80	2,290	0	4,470	3,700
Shut in (if CH4 charged)	80	3,943	0	4,470	3,700
Final Blowout	-70	0	73	4,470	3,700
Blowout (if CH4 charged)	118	0	74	4,470	3,700

Figure 31 and Figure 32 show the updated pressure and temperature gradients respectively for CO2 stream.

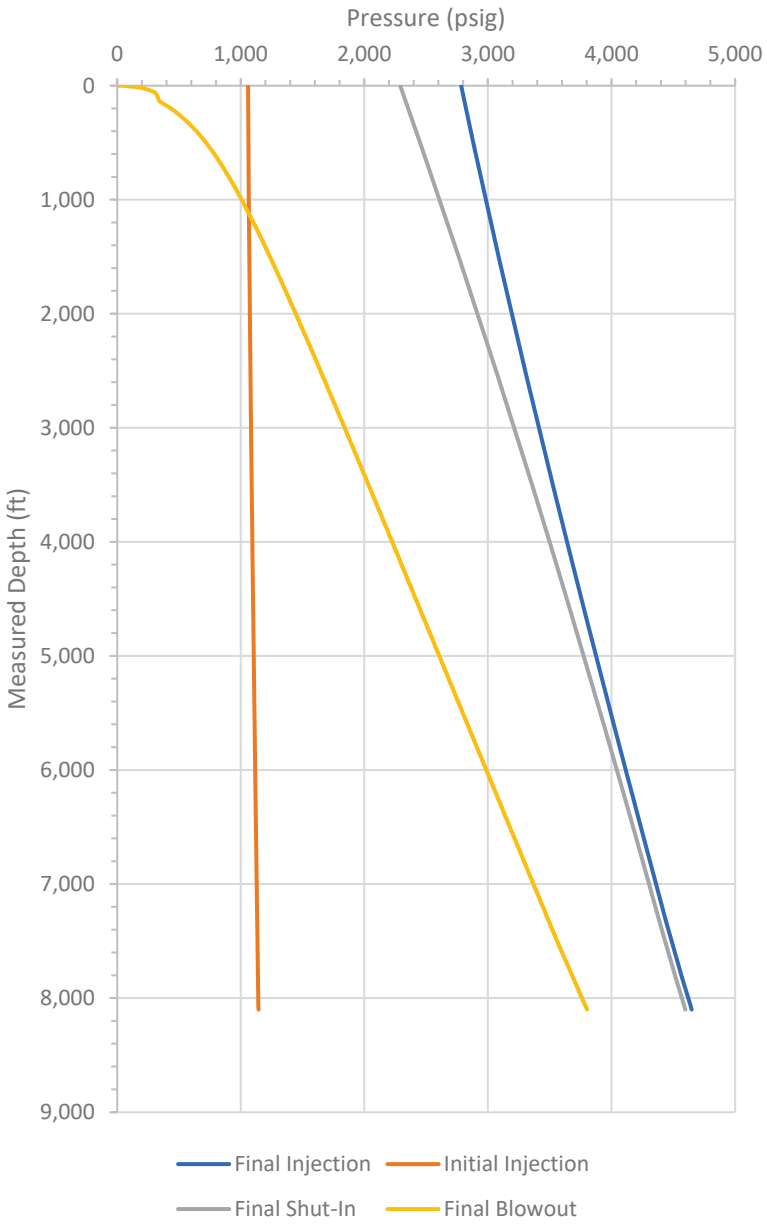


Figure 31: 64-25 Updated Pressure Gradients for CO2 Injection Stream

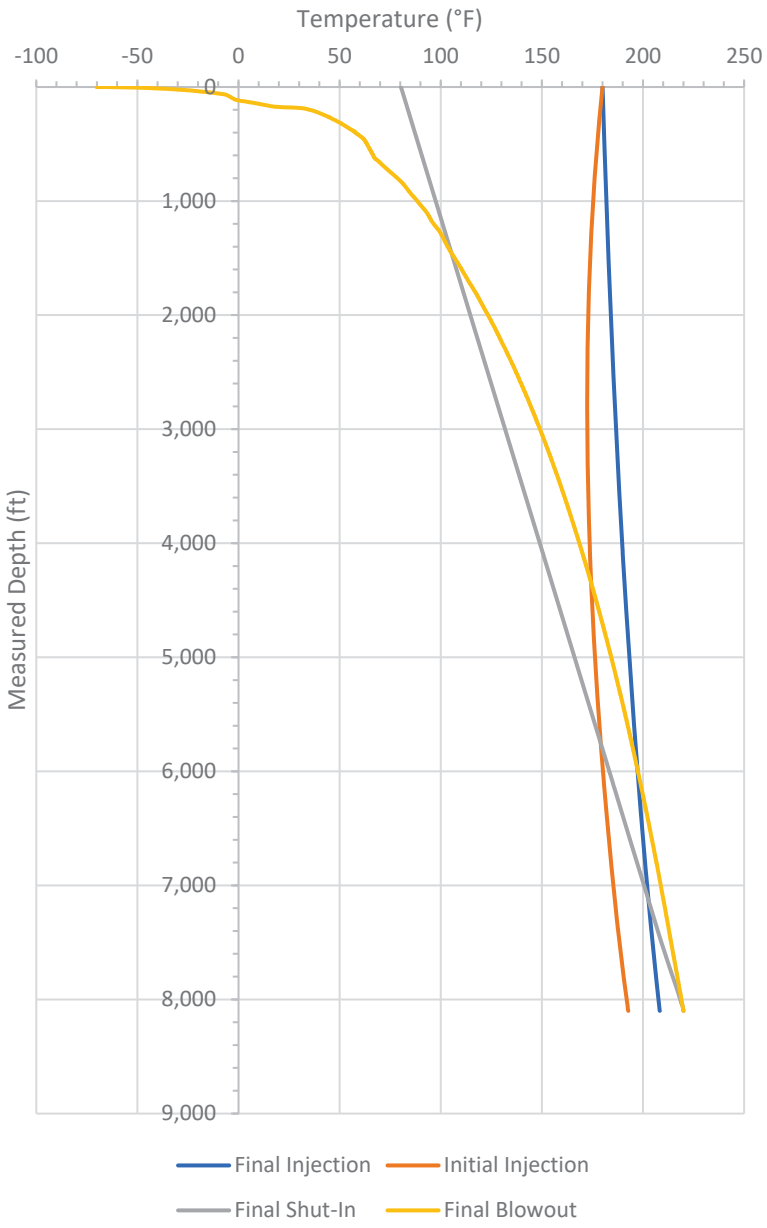


Figure 32: 64-25 Updated Temperature Gradients for CO2 Injection Stream

5 Materials Selection

5.1 Background

Literature indicates that corrosion in dense phase CO_2 is almost negligible if the water content in the injectate is below the water solubility limit. However, corrosion poses a threat when the water condenses and forms a separate liquid (aqueous) phase. Corrosion resistance in carbon capture and storage (CCS) wells is one of the key factors that determines the appropriate material for casing, tubing, and liners in CCS applications.

Aera indicated that there are two injection streams considered in their CCS project. Table 17 shows the proposed CO_2 injection stream components and composition concentrations [3] considered in this study. Aera also indicated that CO_2 injection starts with the pre-combustion stream only and is then mixed with post combustion stream afterwards. The target injection rates are as follows:

- End of 1st Quarter 2026: Pre-combustion stream at 10 MMscf/D
- May 1st 2026: Pre combustion stream at 10 MMscf/D + Post combustion stream at 23 MMscf/D
- May 1st 2027: Pre combustion stream at 10 MMscf/D + Post combustion stream at 70 MMscf/D

Table 17: CO_2 Injection Stream Composition

Component	Pre-Combustion	Post-Combustion
CO_2	95 – 99.9%	98 – 99.9%
CH_4	0.05 – 2.0%	0%
C_2	0.02 – 1.0%	0%
C_3	0.03 – 1.0%	0%
C_4	0.02 – 1.0%	0%
C_5+	0.01 – 0.5%	0%
Lube Oils	5 – 10 ppm (m)	5 – 10 ppm (m)
N_2	0 – 0.05%	0 – 0.05%
O_2	<50 ppm (v)	<50 ppm (v)
CO	0	<100 ppm (v)
NO_x	0	<150 ppm (v)
SO_2	0	<10 ppm (v)
NH_3	0 – 10 ppm (v)	0 – 10 ppm (v)
H_2S	2 – 10 ppm (v)	0
Sulfur	3 – 30 ppm (v)	0
Ar	0	0 – 10 ppm (v)
H_2O	<258 ppm (m)	<258 ppm (m)

Blade undertook the following steps to assess the materials for the casing, tubing, and liners:

- Evaluate the water solubility in pre-combustion, and post-combustion injectates

- Identify the materials that can demonstrate resistance in wet CO_2
- Identify the materials that can demonstrate resistance in mixed reservoir fluid – CO_2 conditions

The water solubility and corrosion rates were determined using a thermodynamic modeling software called OLI v. 11. Corrosion resistance of carbon steel, 13Cr, modified 13Cr, modified 17 Cr and 22Cr in the environment that develops in the CCS well was studied.

5.2 H_2O Solubility in Super Critical CO_2

The solubility limit of water in super critical CO_2 dictates the maximum amount of water that can be held in the super critical CO_2 phase without condensing a separate liquid (aqueous) phase. Once the water in the system exceeds the water solubility limit at a particular temperature and pressure, a separate liquid water (aqueous) phase saturated with CO_2 forms. This separate liquid water (aqueous) phase due to its high acidity (low pH) is very corrosive to carbon steels and stainless steels.

Figure 33 shows the water solubility limit in dense phase CO_2 for pre-combustion and post-combustion streams at the injection temperature of 94°F, and at varying pressures of 0 to 5,000 psig. The figure shows that the composition of the injection stream affects the amount of water that can be held in the dense phase CO_2. At injection pressure of ~2,000 psig, the post-combustion injection stream can hold more water in the condensed phase (0.45 mol%) than in the pre-combustion injection stream (0.40 mol%). The figure also shows that the pre-combustion and post-combustion injection stream can hold at least 0.18 mol% H_2O at ~1,000 psi. This is the least amount of water that the pre-combustion stream and the post-combustion stream can hold at the injection temperature of 94°F. This implies that with the amount of H_2O in the pre-combustion and post-combustion injection streams, the water will remain in the dense phase CO_2 during injection.

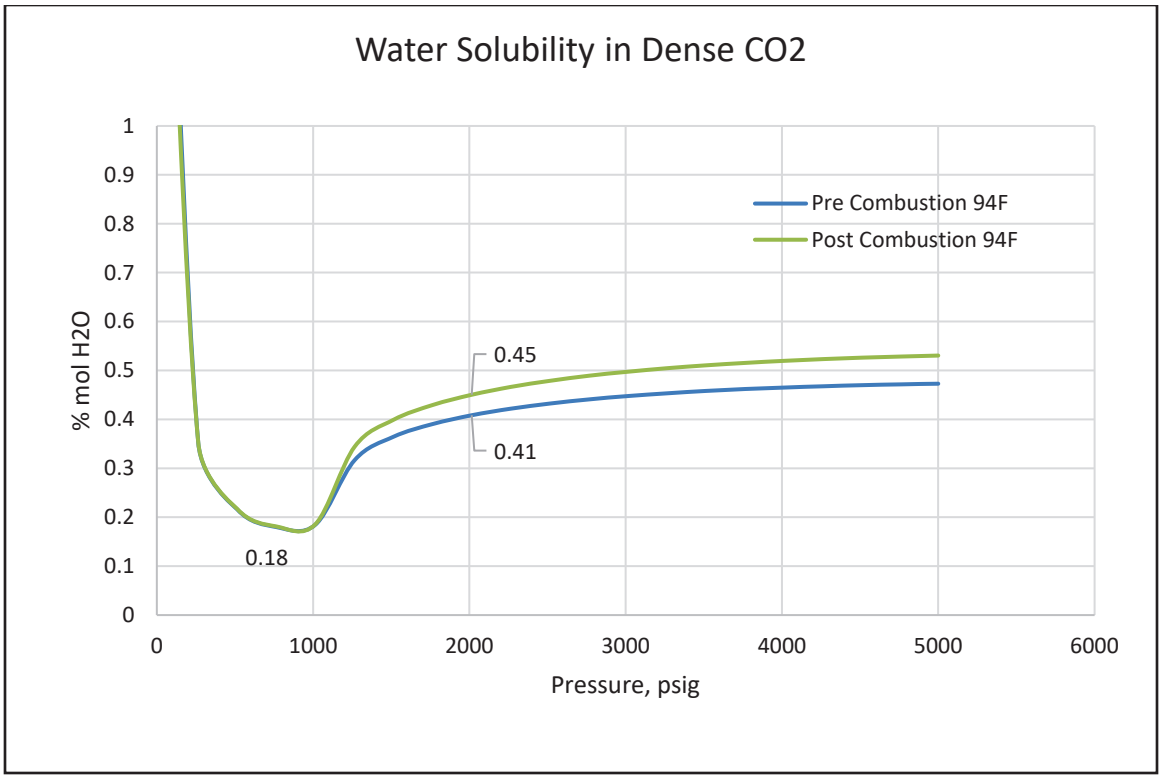


Figure 33: Water Solubility in Dense Phase CO_2 at Injection Temperature of 94°F

The temperature inside the well varies and may reach 241°F at the bottom of the well. Figure 34 shows the water solubility in dense phase pure CO_2, in the pre-combustion injection stream, and the post combustion injection stream at temperatures 94°F and 241°F. The figure shows that as the temperature increases, the water solubility in dense phase CO_2 also increases. This implies that the injectate will remain dry inside the well during injection if the water content in the injection stream is maintained at the level indicated in the proposed injection stream composition (Table 17). There should be no corrosion since the water in the dense phase CO_2 is way below the solubility limit.

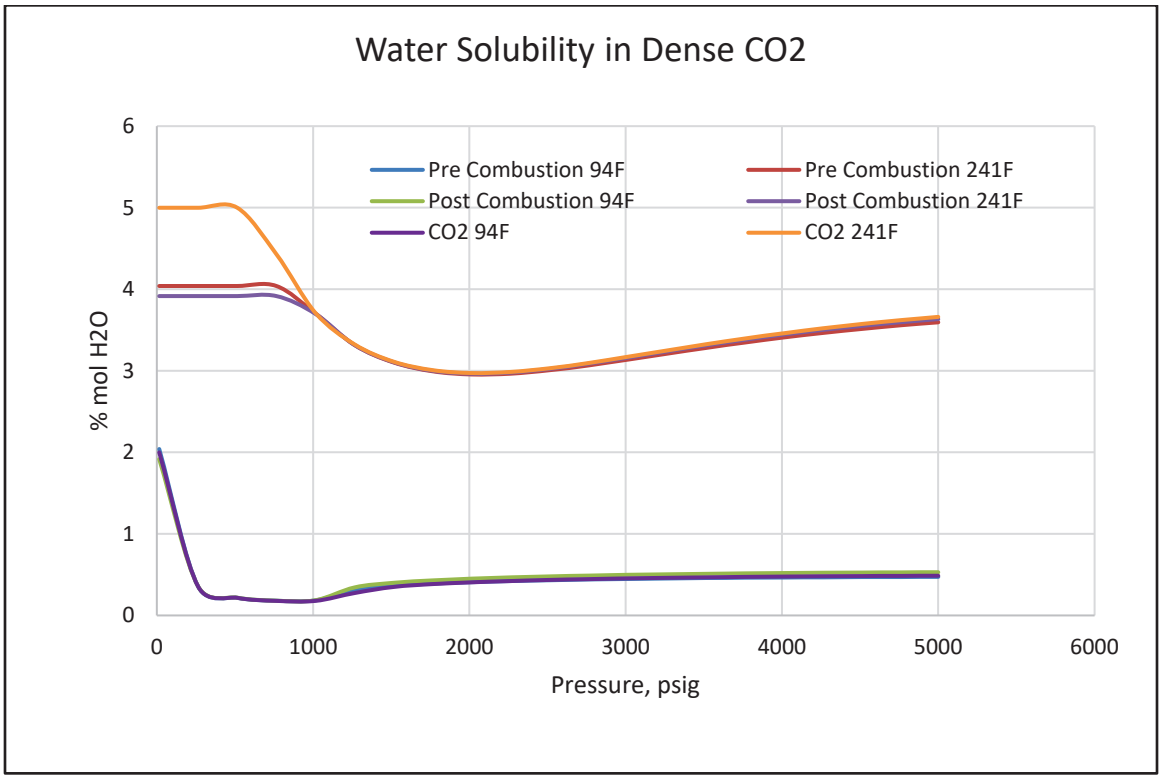


Figure 34: Water Solubility in Dense Phase CO_2 at Different Temperatures

Literature confirms that corrosion of carbon steel in super critical CO_2 containing 500 to 1,000 ppm H_2O is negligible [4] [5] [6]. This indicates that for the conditions that corrosion tests were carried out, the H_2O has not condensed out of the dense CO_2 fluid, and that the highly corrosive aqueous phase with super saturated CO_2 has not formed, i.e., no separate water phase has formed. For this same reason, the existing carbon steel pipelines used in CCS projects can transport super critical CO_2 without having corrosion issues.

5.3 Corrosion Evaluation

A corrosive aqueous phase with super saturated CO_2 may form in extreme cases and upset conditions when water in the injection stream exceeds the solubility limit at given temperature and pressure inside the well. This study estimates the corrosion rate during upset conditions when corrosive aqueous phase forms during injection and during shut in. The following materials were investigated:

- Carbon steel
- 13Cr
- Modified 13Cr
- Modified 17Cr
- 22Cr

The compositions of these materials considered in the thermodynamic model are reported in Section 9 Appendix A—Materials .

5.3.1 General Approach

Since the injected CO_2 will remain dry during injection period, there will be no separate liquid water (aqueous) phase that may lead to corrosion. However, there might be instances when upset conditions occur where H_2O in the injectate exceeds the maximum solubility indicated in Figure 33, and the liquid water (aqueous) phase precipitates from dense phase CO_2. Blade modeled the corrosion of candidate materials in the upset conditions during injection and during shut in. The following upset conditions were assumed:

- Excess water in the injection stream resulting in a separate liquid water (aqueous) phase
- Reservoir flow back into the well causing mixing of the injection stream with reservoir fluid

Thermodynamic models were built using the OLI MSE-SRK framework to establish the injectate and liquid phase compositions and the corrosion rates were estimated using the OLI Aqueous framework. The corrosion rates for candidate materials were determined based on thermodynamic prediction of the stability of metals, metal ions, oxides as function of temperature, pressure, and solution composition [7].

Figure 35 shows an example of injection time curve projected for Aera CCS well. Blade used the injection time curves for PROSPER analysis. Table 18 lists the conditions assumed in generating the temperature and pressure profiles. These profiles generated from PROSPER analysis were then used as inputs to the thermodynamic models. Table 74 and Table 75 in Section 9 Appendix A—Materials Additional Information, show the temperature and pressure values used in the OLI thermodynamic models.

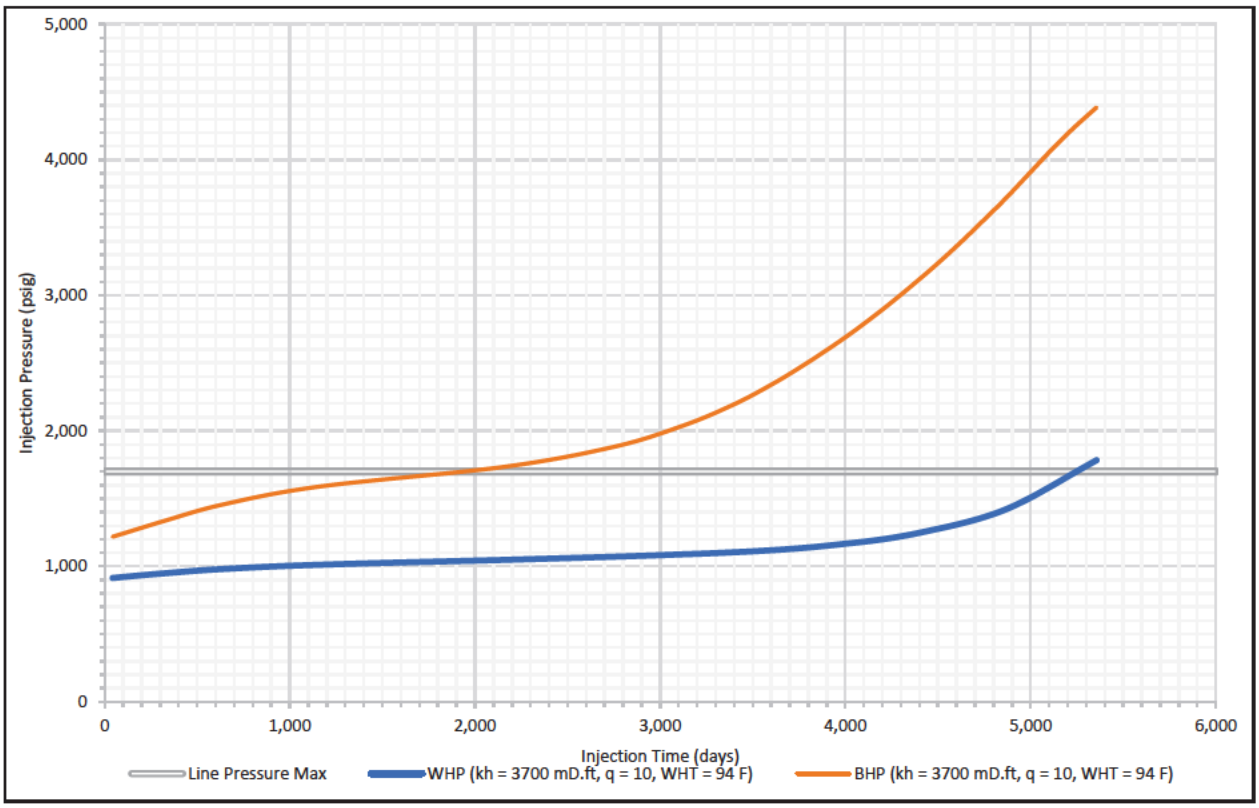


Figure 35: Injection Time Curve

Table 18: Temperature and Pressure Profile Codes

T/P Profile Code	Pavg	Q	kh	BHP
	psig	MMscf/d	md.ft	psig
KLo-10-1	400	10	740	1,552
KLo-20-1	400	20	740	2,220
KHi-20-1	400	20	3,700	1,046
KHi-20-2	1,500	20	3,700	1,783
KHi-20-3	2,600	20	3,700	2,800
KHi-20-4	3,700	20	3,700	3,887
KHi-20-5	4,200	20	3,700	4,387
Shut-in	3,700	0	N/A	4,200

5.3.2 Corrosion During Injection Alone

The water solubility curves in Figure 33 indicate that the pre injection and post injection streams will be dry i.e., no liquid water (aqueous) phase will form at the injection temperature of 94°F and estimated initial injection pressure of 2,000 psig. However, as previously discussed, upset conditions where excess water in the injectate may cause formation of a separate liquid water (aqueous) phase. In order to model the upset condition and determine the corrosion rate, the injection stream composition indicated in Table 19 were used in the thermodynamic model to establish the electrolyte chemistry. H_2O in the injectate was assumed to be equal to 4 mol% in order to form a separate liquid water (aqueous) phase.

Table 19: Injection Stream Composition Used in Thermodynamic Models

Component	Pre-Combustion	Post-Combustion
CO_2	95%	96%
CH_4	0.5 %	0%
C_2	0.1%	0%
C_3	0.1%	0%
C_4	0.1%	0%
C_5+	0.1%	0%
N_2	0.05%	0 – 0.05%
O_2	50 ppm (v)	50 ppm (v)
CO	0	100 ppm (v)
NO_x	0	150 ppm (v)
SO_2	0	10 ppm (v)
NH_3	0-10 ppm (v)	0 – 10 ppm (v)
H_2S	10 ppm (v)	0
Sulfur	30 ppm (v)	0
Ar	0	10 ppm (v)
H_2O	4%	4%

A separate analysis showed that the amount of NH_3 in the injection stream affects the pH and the corrosion rate of carbon steel, and 13Cr, but it has no effect on the corrosion rate of modified 13Cr, modified 17Cr, and 22Cr. The pH and corrosion rate comparison are included in the Section 9 Appendix A—Materials Additional Information. 0 ppm NH_3 in the injection stream lowers the pH and increases the corrosion rate of carbon steel and 13Cr. To be more conservative in the corrosion analysis, it was assumed that the injection streams have no NH_3 (0 ppm NH_3). In addition to the effects of NH_3 in the injection stream, the thermodynamic model also considers the effect of elemental sulfur with a particle size of 0.1 mm.

10 MMscf/D Pre-combustion Injection

The injection starts with the pre-combustion stream at injection rate of 10 MMscf/D. The facilities function in OLI was used to equilibrate the composition of the pre-combustion injection stream at different temperature and pressure conditions. The resulting liquid water phase chemistry was used to determine the pH and corrosion rates of carbon steel, 13Cr, modified 13Cr, modified 17Cr and 22 Cr at different temperature and pressure conditions. Figure 36 shows the estimated pH of the resulting liquid phase forming from the pre-combustion stream at different temperature and pressure conditions during injection and during shut-in conditions. Results show that pH ranges from 3.0 to 3.2 and the lowest pH occurs during shut-in conditions.

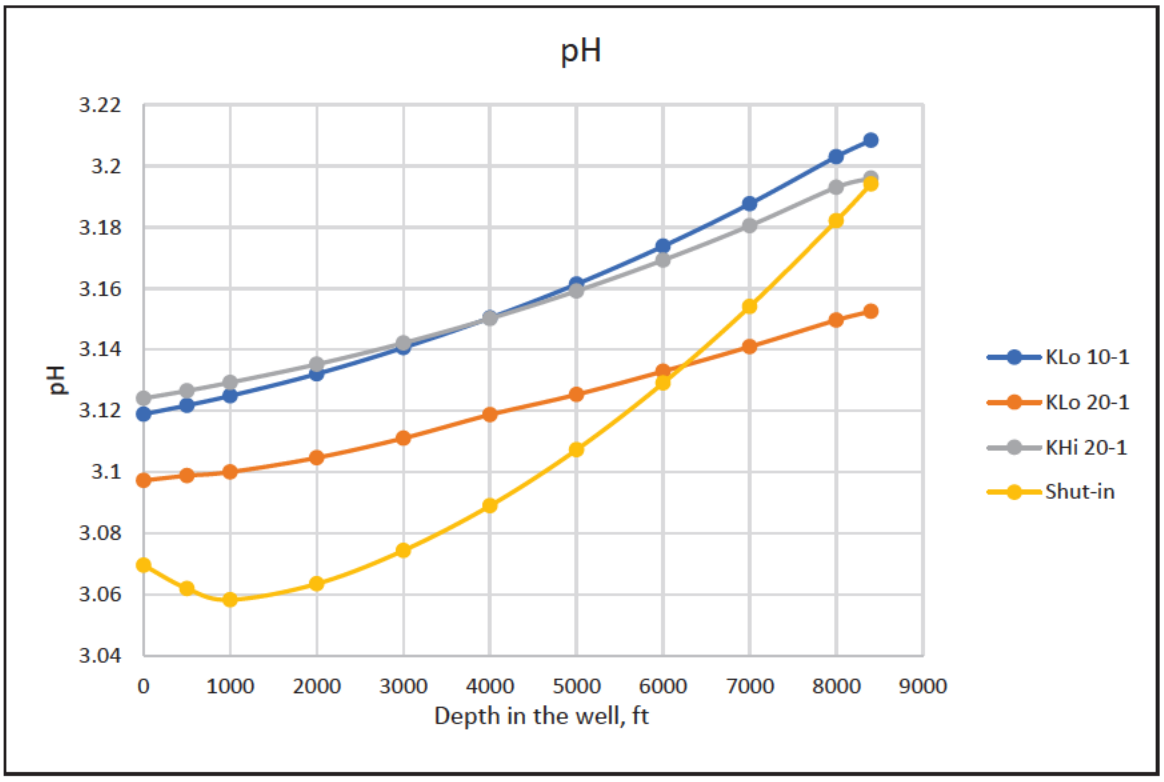


Figure 36: pH of Aqueous Phase from Pre-Combustion Injectate

Figure 37 shows the estimated corrosion rate of carbon steel in the aqueous phase forming from the dense phase pre-combustion stream. The corrosion rate of carbon steel is extremely high, greater than 500 mpy for injection and shut-in conditions. This implies that any upset condition in the system is extremely corrosive for carbon steel. Therefore, carbon steel is not suitable for casing, tubing, liners and exposed equipment in CCS wells.

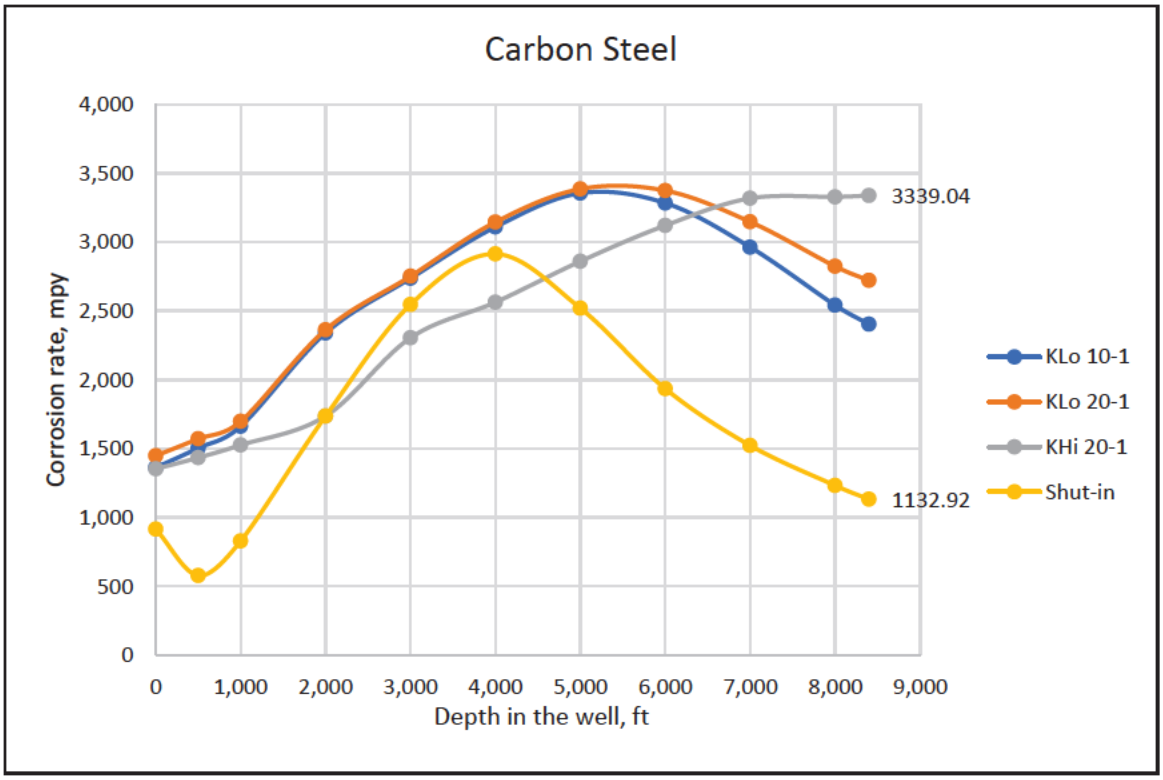


Figure 37: Corrosion of Carbon Steel in the Aqueous Phase from Pre-Combustion Injectate

Figure 38 shows the corrosion rate for 13Cr in the liquid (aqueous) phase formed from the pre-combustion stream at the start of injection and during shut-in. The corrosion rate of 13Cr reaches 24 mpy based on the Klo-10-1 temperature and pressure conditions during injection. The maximum corrosion rate estimated for 13Cr during shut-in is up to 99 mpy. Due to high corrosion rate of 13Cr during injection and shut-in, it is not suitable material for tubing and liner applications.

Figure 39 shows the corrosion rate for modified 13Cr in the liquid (aqueous) phase from the pre-combustion stream at the start of injection and during shut-in. The corrosion rate of modified 13Cr is lower than the corrosion rate of carbon steel and 13Cr, with the maximum corrosion rate of 3.93 during shut in. The estimated corrosion rate for modified 13Cr during injection is ~1.34 mpy at the bottom of the well.

The corrosion rate of modified 17Cr and 22 Cr are shown in Figure 40 and Figure 41, respectively. The corrosion rate of 17Cr is slightly lower than modified 13Cr, with 2.18 mpy corrosion rate in the shut-in condition and 0.74 mpy corrosion rate during injection. The results of the analysis indicate that 22Cr has the highest corrosion resistance among the materials analyzed. The maximum corrosion rate of 22Cr is less than 1 mpy in both injection and shut-in conditions.

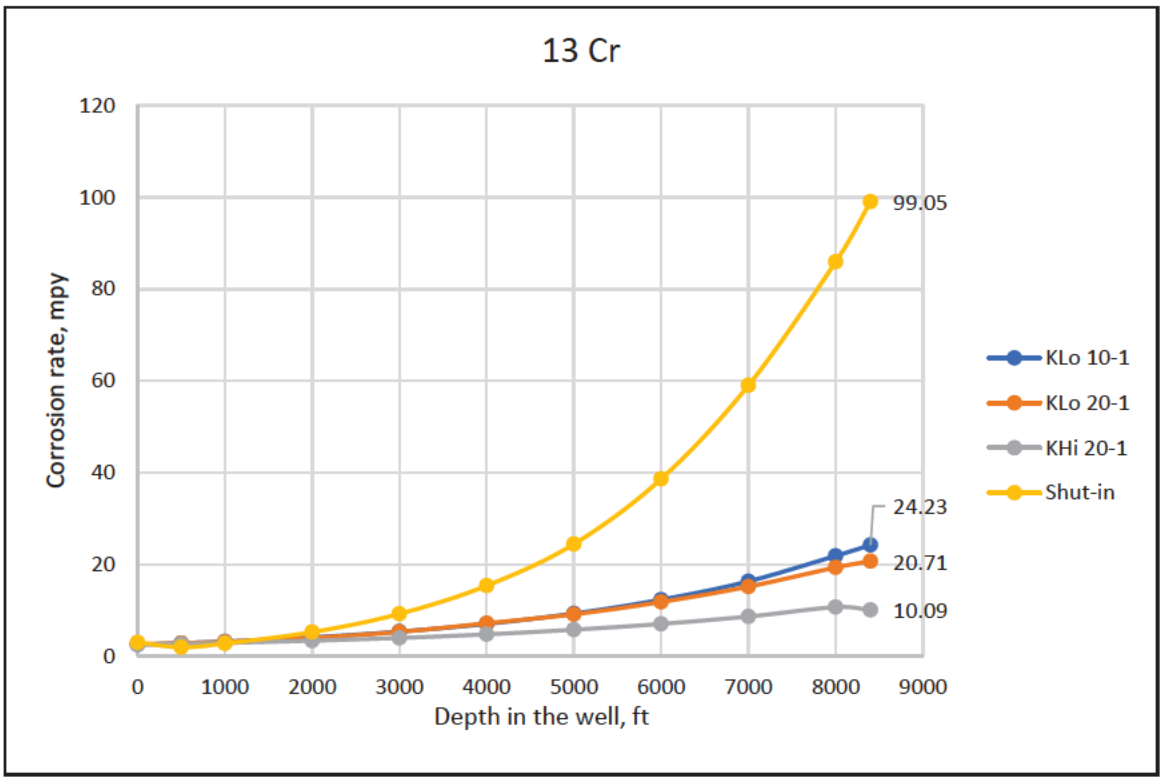


Figure 38: Corrosion of 13 Cr in the Aqueous Phase from Pre-Combustion Injectate

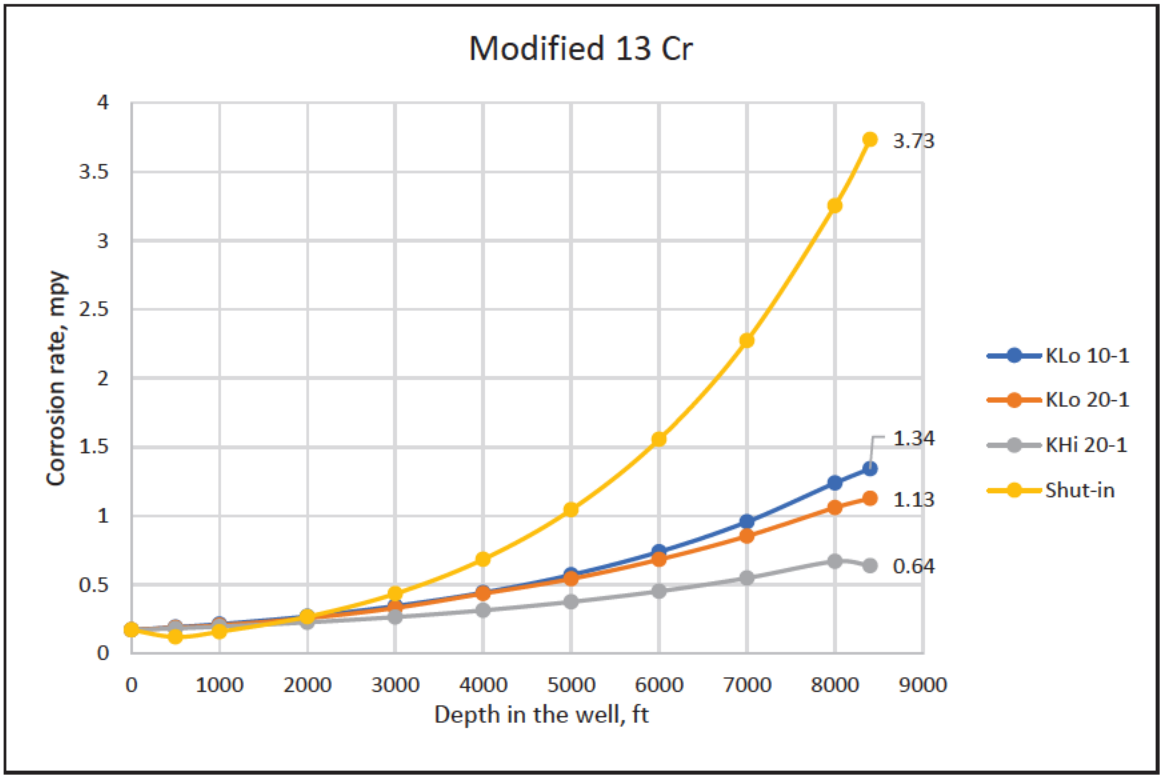


Figure 39: Corrosion of Modified 13 Cr in the Aqueous Phase from Pre-Combustion Injectate

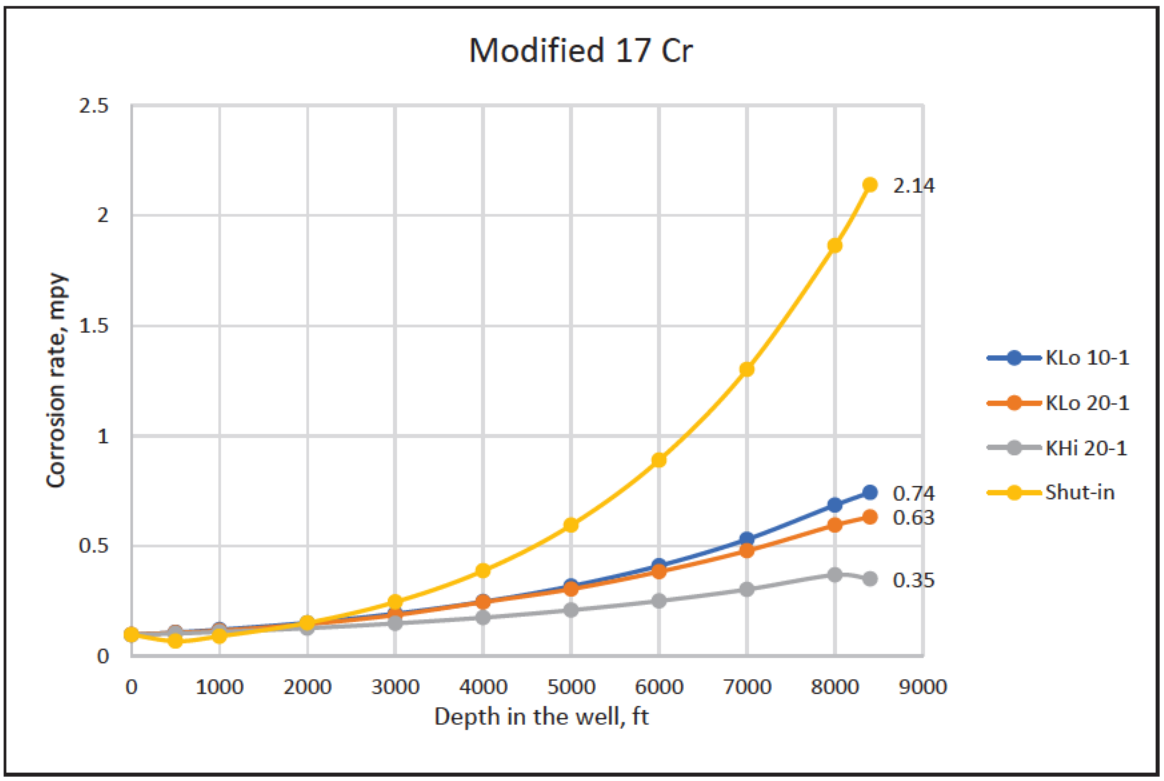


Figure 40: Corrosion of Modified 17 Cr in the Aqueous Phase from Pre-Combustion Injectate

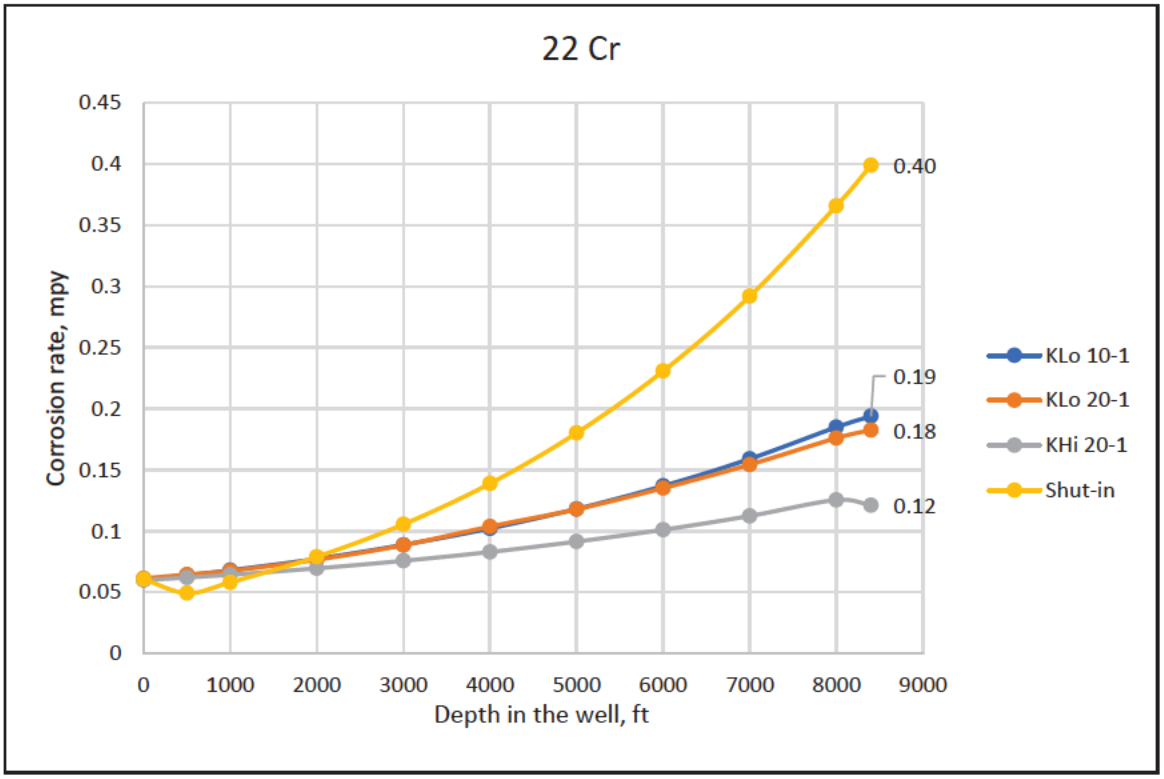


Figure 41: Corrosion of 22 Cr in the Aqueous Phase from Pre-Combustion Injectate

33 MMscf/D Combined Pre-combustion and Post-combustion Injection

The corrosion rate for combined pre-combustion and post-combustion injection streams was also determined. It was assumed that the pre-combustion injection stream at 10 MMscf/D mixes with 23 MMscf/D post-combustion injection stream. The mixing is done at a temperature of 94°F and a pressure of 2,000 psig using the saturator function in OLI. The corrosion rates were estimated at different temperature and pressure conditions.

Figure 42 shows the corrosion rate of modified 13Cr in the liquid phase formed from combined pre-combustion and post combustion injection streams. The maximum corrosion rate of modified 13Cr during injection is 1.04 mpy, and 3.56 mpy during shut-in. The corrosion rate of modified 13Cr in the liquid from combined pre-combustion and post combustion injection stream is slightly lower than the corrosion in the liquid forming from pre-combustion alone. This increase in corrosion rate may be attributed to the presence of elemental sulfur in the pre-combustion stream.

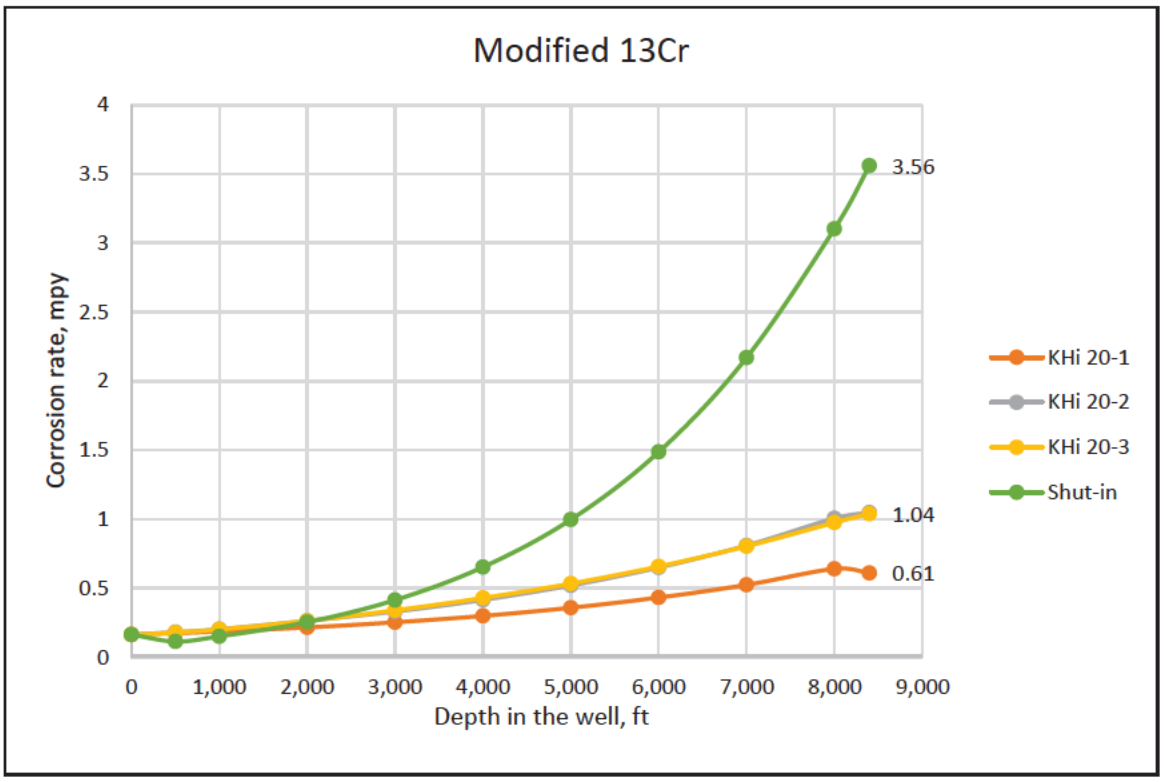


Figure 42: Corrosion of Modified 13 Cr in the Aqueous Phase from Mixture of Pre-Combustion and Post-Combustion Injectate (33 MMsdf/D)

Figure 43 shows the corrosion rate for 22Cr in the liquid water (aqueous) phase formed from the combined pre-combustion and post combustion injection streams. The corrosion rates were estimated based on the temperature and pressure conditions during injection and during shut-in. The highest corrosion rate occurs during shut-in. The estimated corrosion rate of 22Cr for the combined pre-combustion and post-combustion injection streams is slightly lower than the corrosion rate of 22Cr in the pre-combustion stream alone.

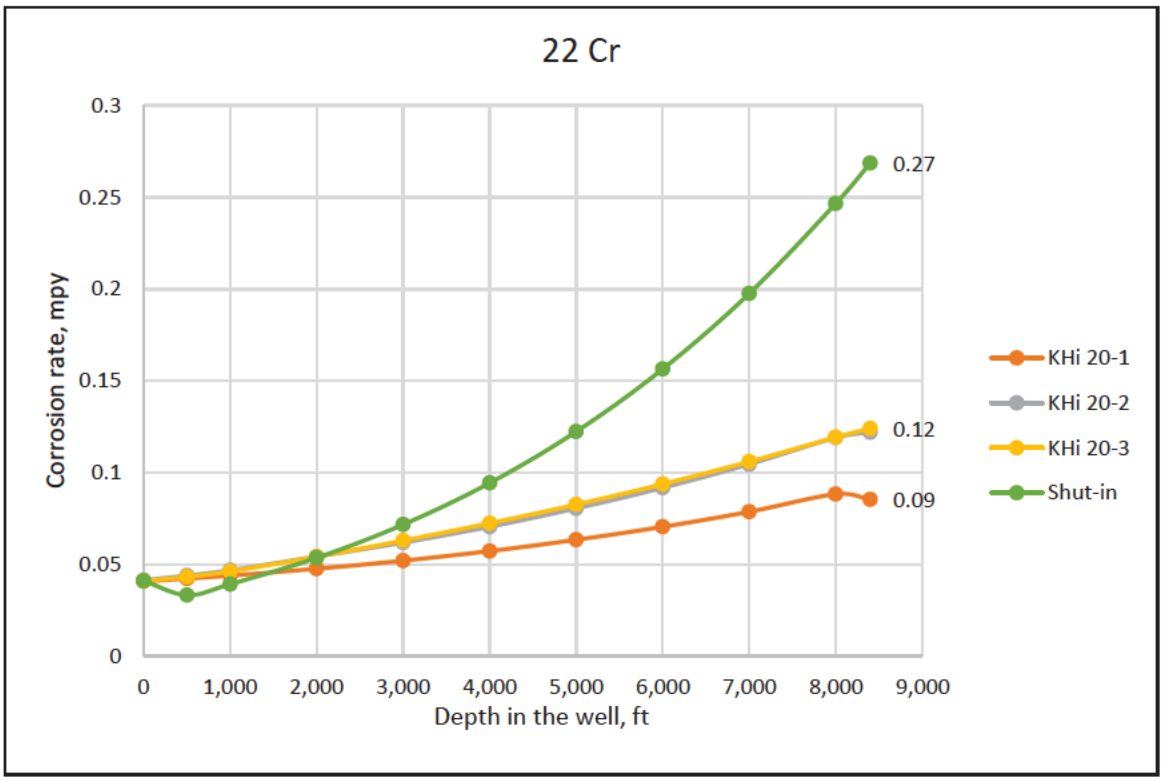


Figure 43: Corrosion of 22 Cr in the Aqueous Phase from Mixture of Pre-Combustion and Post-Combustion Injectate (33 MMscf/D)

80 MMscf/D Combined Pre-combustion and Post Combustion Injection

The corrosion rate for combined pre-combustion and post-combustion injection streams was also determined. It was assumed that the pre-combustion injection stream at 10 MMscf/D mixes with 70 MMscf/D post-combustion injection stream. The mixing was done at a temperature of 94°F and pressure of 2,000 psig using the saturator function in OLI. The corrosion rates were estimated at different temperature and pressure conditions.

Figure 44 shows the corrosion rate for modified 13 Cr in the liquid phase formed from combined pre-combustion and post combustion injection stream at 80 MMscf/D. The maximum corrosion rate for modified 13Cr during injection is 1.02 mpy, and 3.48 mpy during shut-in. Figure 45 shows the corrosion rate for 22 Cr in the liquid phase formed from a combined pre-combustion and post combustion injection stream at 80 MMscf/D. The maximum corrosion rate of modified 13Cr during injection is 0.11 mpy, and 0.23 mpy during shut-in. These estimated corrosion values are slightly lower compared to the corrosion at 33 MMscf/D total injection rate.

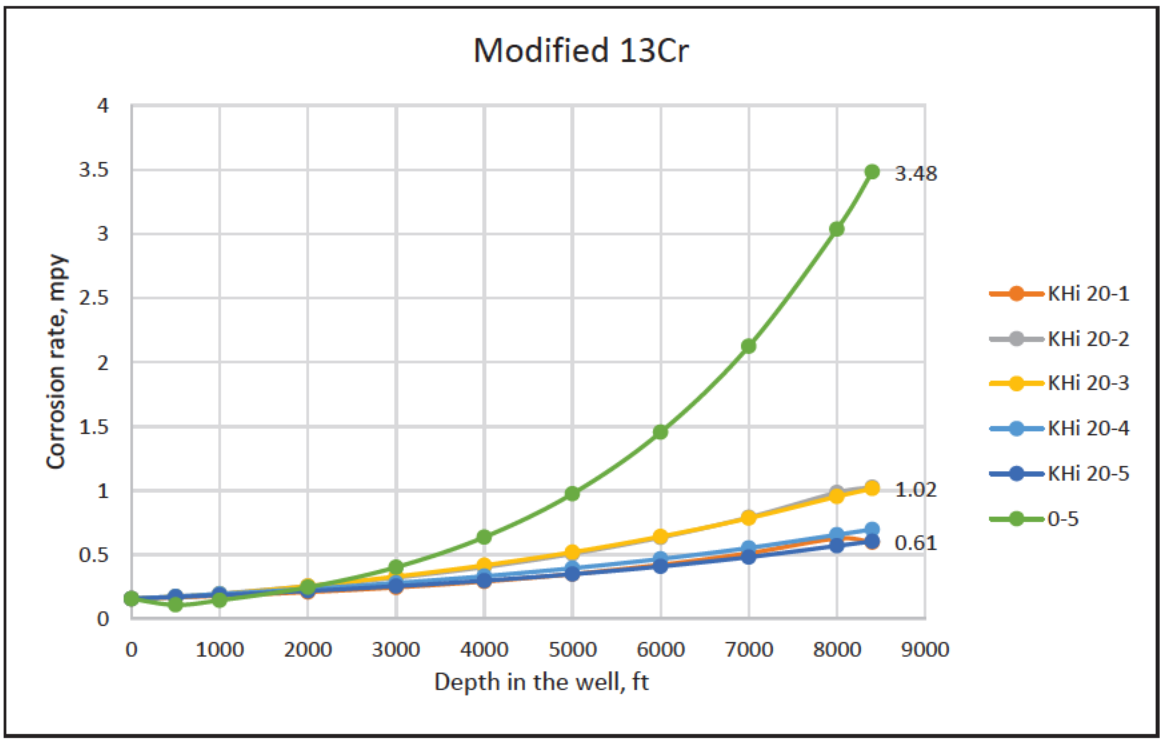


Figure 44: Corrosion of Modified 13 Cr in the Aqueous Phase from Mixture of Pre-Combustion and Post-Combustion Injectate (80 MMscf/D)

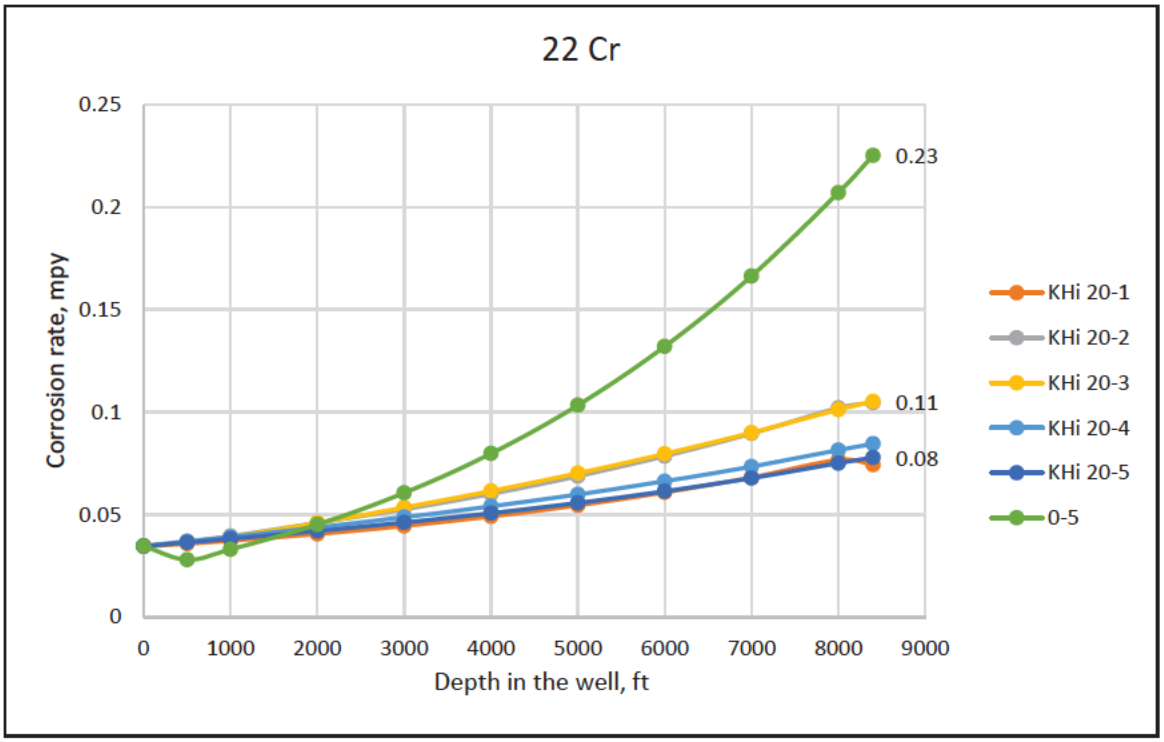


Figure 45: Corrosion of 22 Cr in the Aqueous Phase from Mixture of Pre-Combustion and Post-Combustion Injectate (80 MMscf/D)

5.3.3 Corrosion Due to Injected Gas Mixing with Reservoir Fluid

Upset conditions such as reservoir backflow during shut-in period or reservoir mixing with injection gas at the bottom of the well was also studied. Corrosion rates were predicted using a thermodynamic model of a case where injected gas mixes with the reservoir fluid. The reservoir fluid was modeled by using the brine composition listed in Table 20 and the gas composition listed in Table 21. The brine and the gas were mixed in the saturator function of OLI at temperature of 241°F and pressure of 4,125 psi. The stream has 69% gas saturation and 31% brine. The resulting mixture was used as the reservoir stream input to the thermodynamic model. The reservoir stream was mixed with pre-combustion stream and post combustion stream at the following ratios:

- 100 parts injection stream
- 1 part injection stream to 100 parts reservoir stream
- 50 parts injection stream to 50 parts reservoir stream
- 100 parts injection stream to 1 part reservoir stream

Table 20: Reservoir Brine Composition

Cations (mg/L)	
Na+1	11,000
K+1	210
Ca+2	660
Mg+2	82
Sr+2	36
Ba+2	0.33
Fe+2	22
Mn+2	0.4
Anions (mg/L)	
Cl-1	19,000
HCO_3-1	420
SO_4-2	940
Others (mg/L)	
SiO_2	67
B as B(OH)3	54

Table 21: Estimated Gas Composition

Component	Reconciled Gas (Mole %)
N2	1.730
CO_2	2.250

Component	Reconciled Gas (Mole %)
H_2S	7.00e-3
CH_4	96.013

The resulting mixture of the reservoir and the injectate has a pH range between 3.5 to 4.5, which is slightly higher than the pH of the injectate alone. Figure 46 shows the variation in the pH with the mixing ratio of the injectate stream and the reservoir stream.

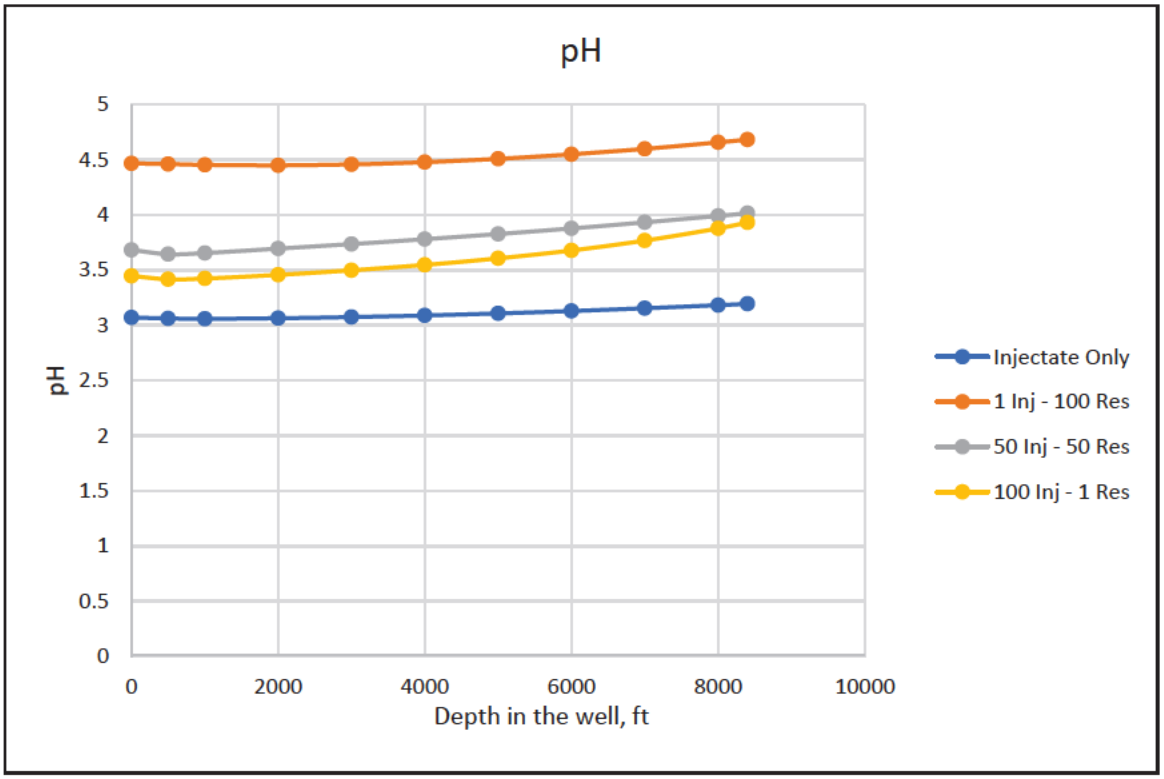


Figure 46: pH of Injectate and Reservoir Mixture

The corrosion rates were determined at different depths inside the injection well when the injectate mixes with the reservoir fluid at different volume ratios. Figure 47, Figure 48, Figure 49, Figure 50, and Figure 51 show the corrosion rate of carbon steel, 13Cr, modified 13Cr, modified 17Cr, and 22 Cr respectively. These corrosion rates were determined using only pre-combustion injection stream mixing with the reservoir fluid. The corrosion rates in pre-combustion injection stream together with post-combustion injection stream mixing with the reservoir fluid were also studied. However, the results were not presented here since the corrosion rates from these models were slightly lower than the corrosion rates presented in Figure 47 to Figure 51. Results show that the corrosion rate of the materials in the injection stream alone are highest compared to the corrosion in the injectate and reservoir mixture.

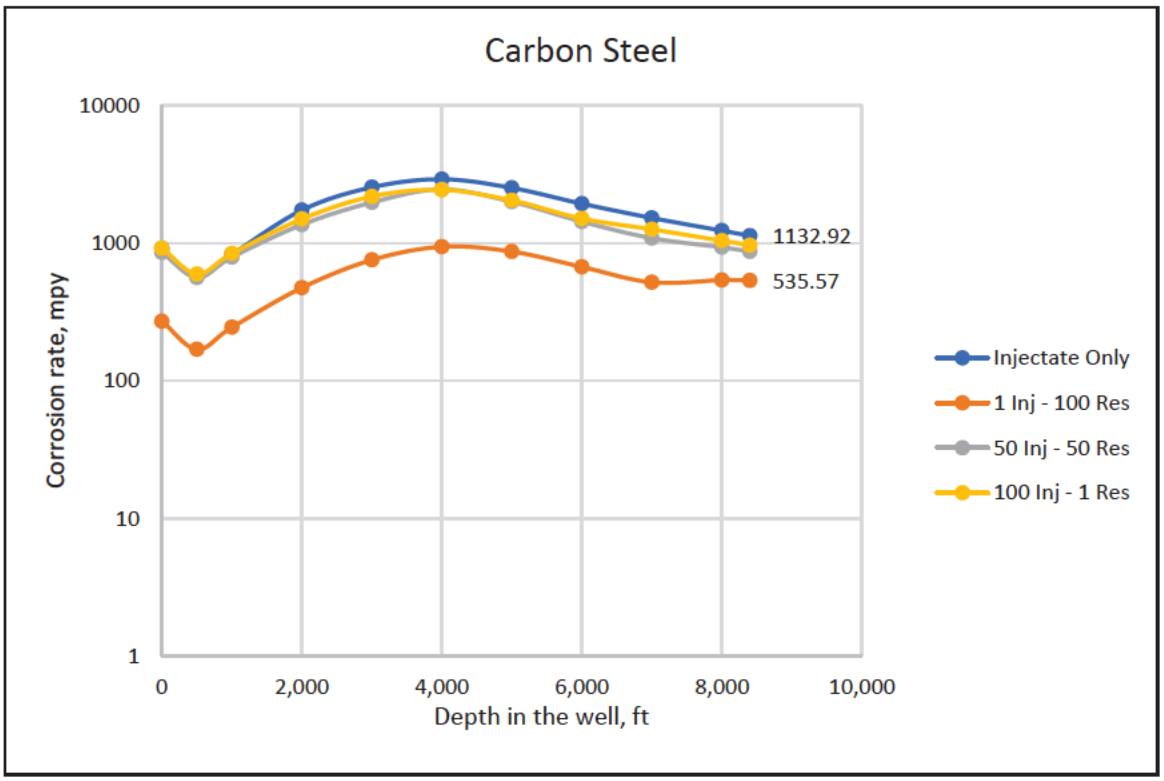


Figure 47: Corrosion of Carbon Steel in the Aqueous Phase from Mixture of Injectate and Reservoir

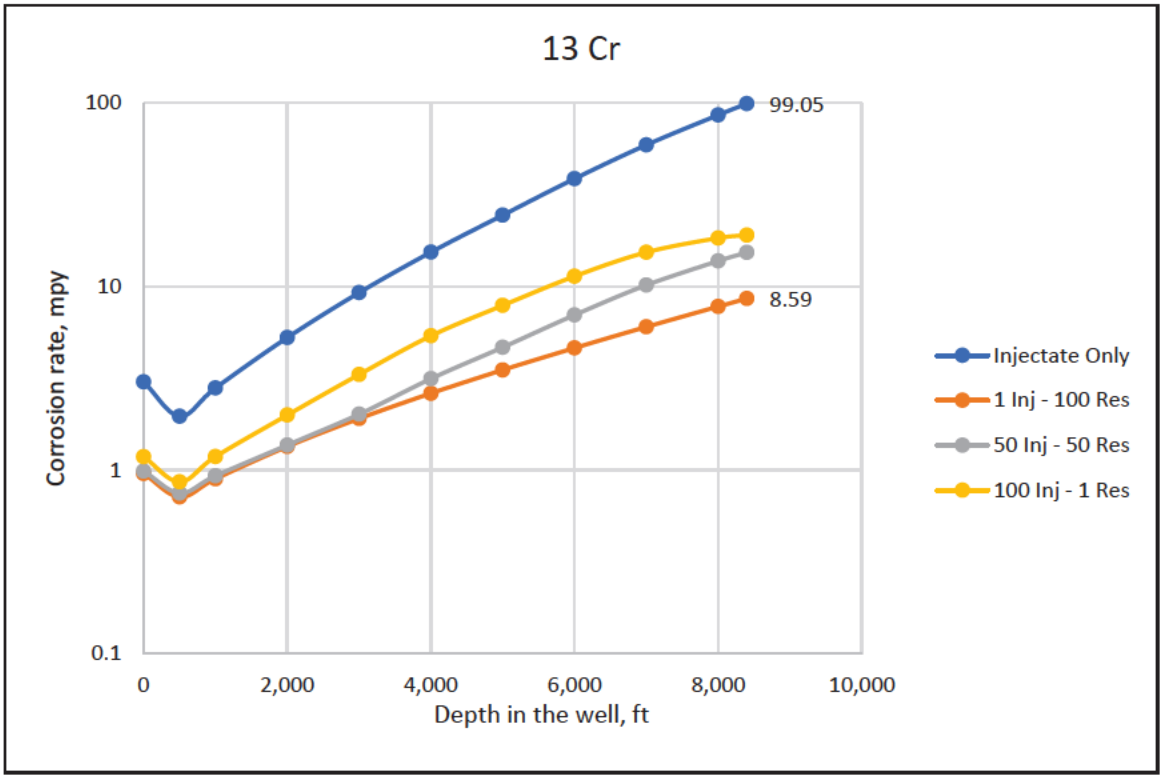


Figure 48: Corrosion of 13 Cr in the Aqueous Phase from Mixture of Injectate and Reservoir

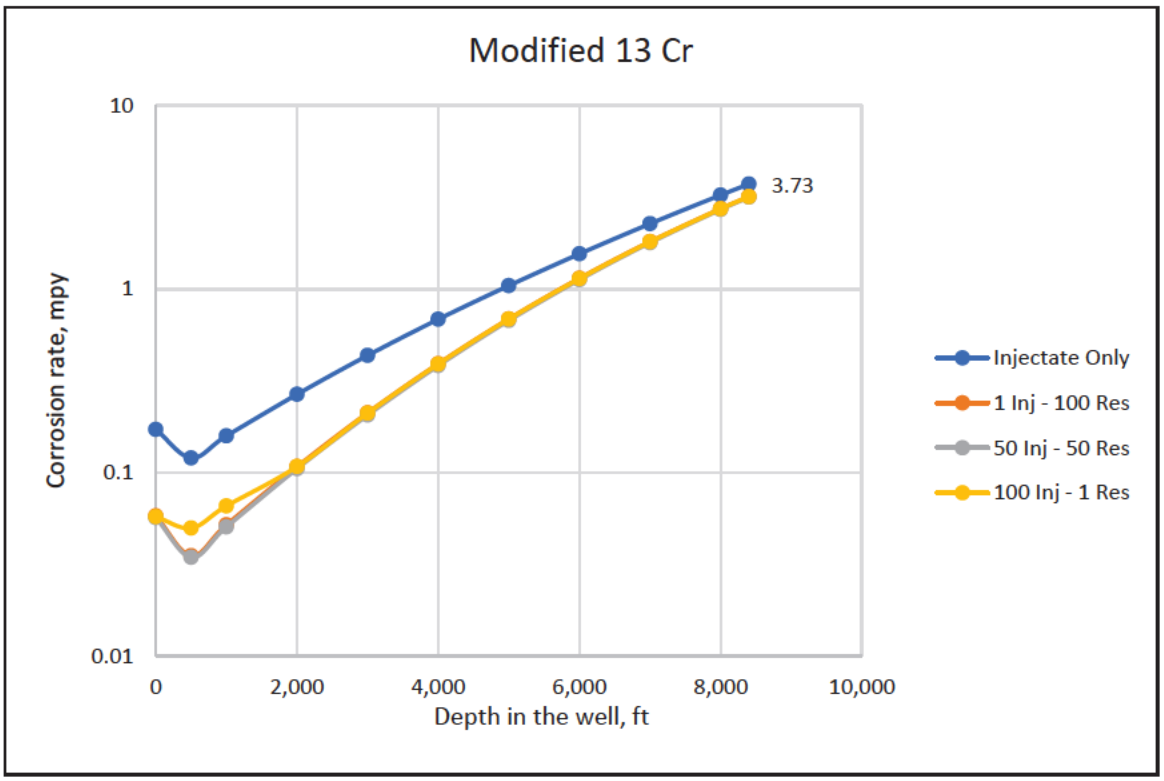


Figure 49: Corrosion of Modified 13 Cr in the Aqueous Phase from Mixture of Injectate and Reservoir

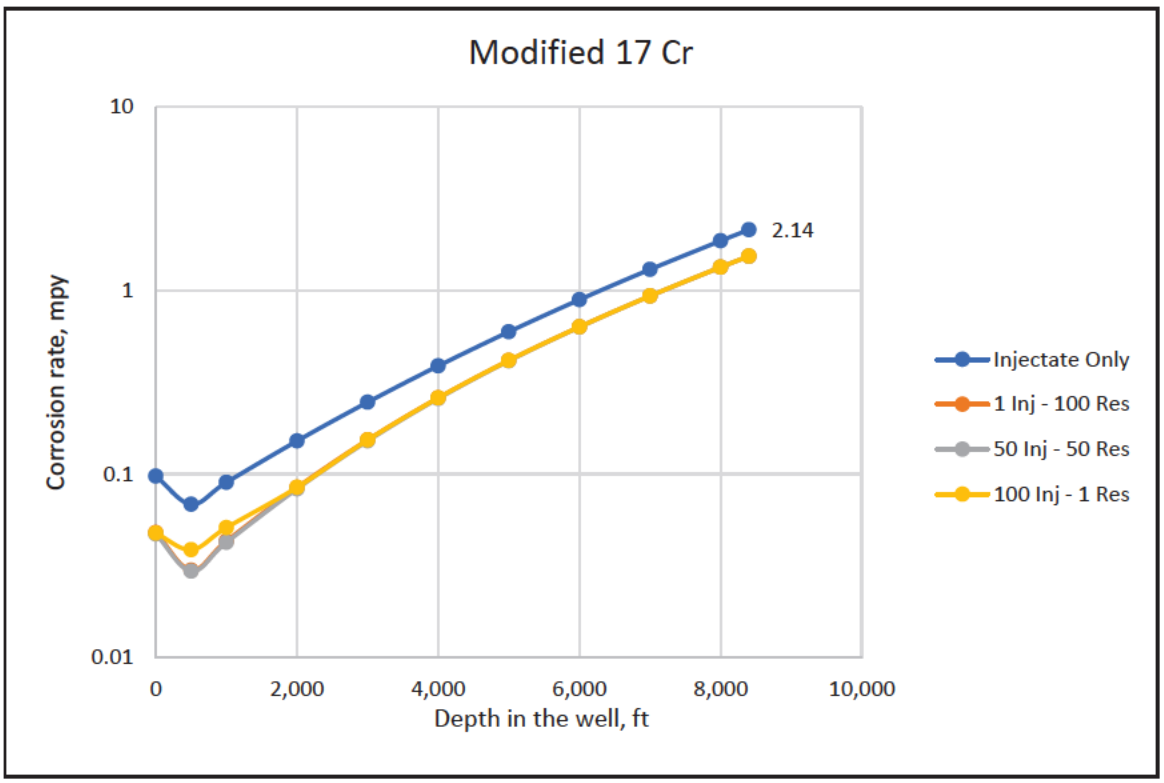


Figure 50: Corrosion of Modified 17 Cr in the Aqueous Phase from Mixture of Injectate and Reservoir

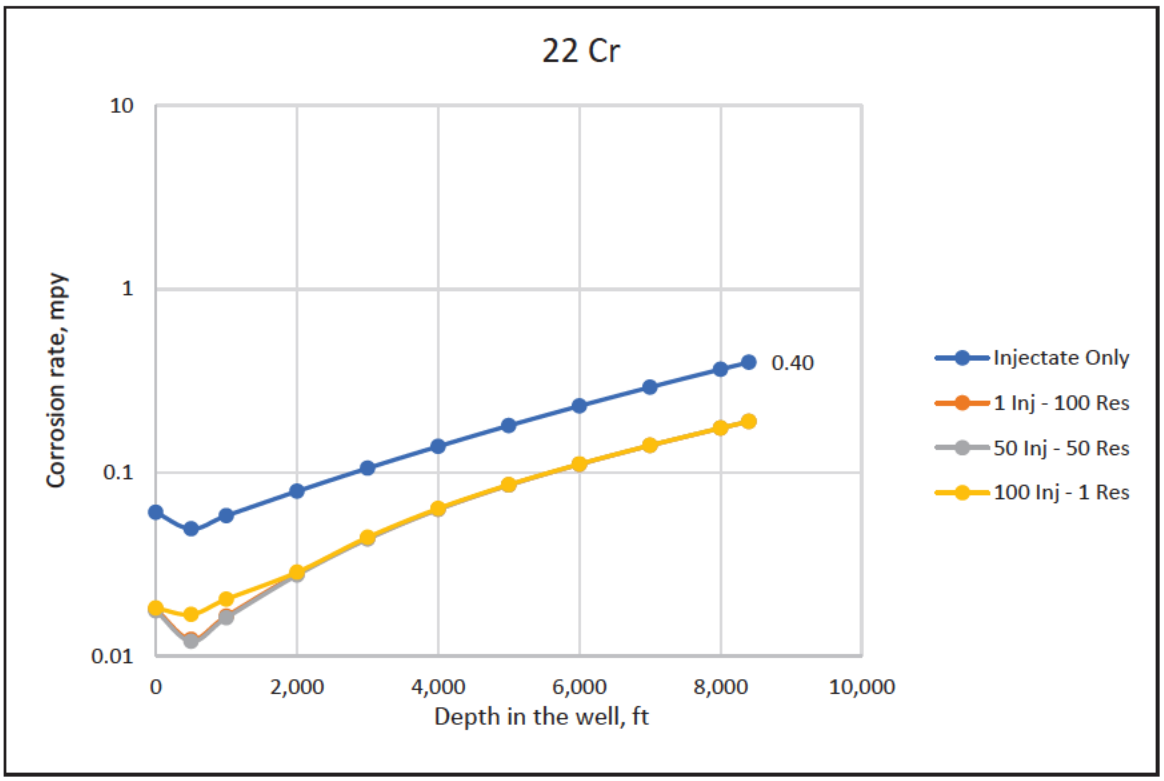


Figure 51: Corrosion of 22 Cr in the Aqueous Phase from Mixture of Injectate and Reservoir

5.4 Well Construction Components

5.4.1 Metallic Components

The environment described in Table 19 was assumed to be exposed to these components. Further, depending on the type of well, the materials selection may vary. Table 22 shows the recommended materials.

The injection well components are expected to be exposed to CO_2 with water below the solubility limit. Any reservoir ingress would be further down in the well. Consequently, the recommendation for the tree and its components is F6NM a martensitic stainless steel. However, further down in the well there is a risk of CO_2 and other components being wet due to the reservoir fluids; consequently, components are recommended to be precipitation hardened nickel-based alloys, such as Alloy 718.

The observation wells may be exposed to CO_2 and the impurities along with reservoir water all the way to the surface. Consequently, the tree is recommended to be F22 material clad with Alloy 625. The lower completion equipment materials should be Alloy 718, a precipitation hardened nickel alloy.

Table 22: Summary of Materials Recommendations for Injection and Observation Wells

Well Type	Components	Recommended Material
Injection	Flow wetted wellhead components (tree valves, flow cross, tubing hanger, etc.)	F6NM
Injection	CRA material for tubing, casing, and liners	Modified 13Cr
Injection	Packer and downhole components	Alloy 718

Well Type	Components	Recommended Material
Observation	Flow wetted wellhead components (tree valves, flow cross, tubing hanger, etc.)	F22 with Alloy 625 Clad
Observation	CRA material for tubing, casing, and liners	Modified 13Cr
Observation	Packer and downhole components	Alloy 718 or equivalent
Injection and Observation	Elastomer for tubing hanger seals (1)	HNBR/Teflon/PEEK
Injection and Observation	Elastomer for packer element (1)	EPDM
Injection and Observation	Elastomer for other downhole seals (1)	HNBR/Teflon/PEEK
Notes: (1) All seals should be evaluated for rapid gas decompression (RGD) capability. No chemical reaction is expected for this type of material with dense phase CO_2.		

5.4.2 Elastomers

The small cross section seals can be sourced from a proven rapid gas decompression (RGD) resistant seal set of a combination of HNBR, PTFE and PEEK (as the tool's seal design requires). These materials will be stable at the expected temperature, pressure, and chemical make-up of the fluid to be injected, including a small amount of H_2S. O-rings, depending on the equipment design may or may not have a back-up ring. If those are in the design, 25% GF PTFE should be adequate at the given temperature and pressure and in some cases a virgin or 30% GF (glass filled) PEEK can also be used. For the packer element, the primary recommendation is EPDM as the wells are primarily CO_2 injection with minor amounts of impurities. EPDM does very well in CO_2 applications and is one of the better materials in resisting expansion after CO_2 pressure is released, i.e., after the packer is unset and pulled from the well. A proven RGD resistant material HNBR is an option as well for the packer element.

5.5 Discussion

Experimental results published in the literature show that the corrosion of carbon steel and corrosion resistant alloys (CRA) in super critical CO_2 are very low. Some papers report corrosion rates of 1.2 – 1.7 mpy (33 – 43 µm/yr) for carbon steel and 0.1 – 0.35 mpy (3 – 9 µm/yr) for 13Cr when the water phase is in equilibrium with super critical CO_2 phase (water entrained in the super critical CO_2 phase) [5]. The corrosion rate of carbon steel in dry supercritical CO_2 is very low, which is generally observed in the field. Pipelines in service with high pressure dry CO_2 have corrosion rates between 0.02 – 0.1 mpy (0.5 – 2.5 µm/yr) [5] [8] [9] [10]. Very high corrosion rates of carbon steel up to 79 mpy (2 mm/yr) in super critical CO_2 with low amount of dissolved water were also reported in the literature [11] [12]. Authors have argued that these very high corrosion rates are most likely artifacts of the experimental procedure [11].

Based on published data, the corrosion rate of carbon steel and 13Cr can be as high as 197 – 551 mpy (5 – 14 mm/yr) and 11 – 32 mpy (0.3 – 0.8 mm/yr), respectively, only when the water phase precipitates out of the super critical CO_2 [5]. These values are within the range of the thermodynamic prediction of

corrosion rates for carbon steel and 13Cr in the liquid water (aqueous) phase precipitating from the injection stream.

Literature also reports the corrosion rates of carbon steel and CRAs in aqueous phase that precipitate out of the dense CO_2 stream containing impurities including SO_2, NO_2, H_2S, O_2. Xiang et al., provided a summary of corrosion rates based on available literature [13]. The reported corrosion rates are generally smaller compared to the results of the thermodynamic modeling.

Results of the thermodynamic modeling show that the corrosion rate of materials in the liquid water (aqueous) phase forming from the pre-combustion stream alone is higher than the electrolyte forming when pre-combustion is mixed with post-combustion stream. This can be due to the presence of elemental sulfur in the pre-combustion injection stream.

The formation of elemental sulfur has been discussed in the literature. However, there is a lack of understanding on the exact formation mechanism for elemental sulfur and how it affects the corrosion of materials. Several possible chemical reactions have been presented in the literature; some are listed below. Elemental sulfur can be produced when H_2S interacts with O_2 as shown in equation 1 [14] or when H_2S and SO_2 interacts based on equation 3 below. Elemental sulfur and SO_2 can be produced with H_2S and O_2 or NO_2 reactions, which can create more H_2SO_4 and H_2SO_3 based on equations 4, 5 and 8 listed below, which can create a more acidic environment. When the elemental sulfur remains dissolved in the bulk dense CO_2 phase, authors have indicated that it will probably not cause problems, but if it precipitates as a solid, it may create a particulate problem [15] or possibly enhance corrosion or cause pitting [16] [17] [18]. Results of the thermodynamic model did not predict the formation of pits for 13Cr, modified 13Cr, modified 17 Cr and 22 Cr. Further testing will be needed to look at the effect of elemental sulfur formation as well as the oxidized compounds of sulfur.

$$2\ H_2S + 2\ O_2 \rightarrow 2\ H_2O + 1/n\ S_n + SO_2 \quad (1)$$

$$2\ H_2S + SO_2 \rightarrow 3/x\ S_x + 2\ H_2O \quad (2)$$

$$H_2S + 2\ NO_2 \rightarrow ½\ SO_2 + 2\ NO + H_2O + ½\ S \quad (3)$$

$$NO_2 + SO_2 + H_2O \rightarrow NO + H_2SO_4 \quad (4)$$

$$SO_2 + ½\ O_2 + H_2O \rightarrow H_2SO_4 \quad (5)$$

$$H_2S + H_2SO_4 \rightarrow S + SO_2 + 2\ H_2O \quad (6)$$

$$H_2S + HNO_3 \rightarrow 3S + 2\ NO + 4\ H_2O \quad (7)$$

$$SO_2 + H_2O \rightarrow H_2SO_3 \quad (8)$$

5.6 Conclusions

The key conclusions from thermodynamic modeling and literature review are as follows:

- Liquid water (aqueous) phase may precipitate when the amount of water goes beyond the solubility limit. This may occur during upset conditions or shut-in conditions.
- Corrosion of materials in dense phase CO_2 undersaturated water is minimal, but corrosion in the liquid water (aqueous) phase formed from the injection stream is extremely high for carbon steel and 13Cr.
- Modified 13Cr exhibits a corrosion rate of ~1.3 mpy during injection and ~3.7 mpy during shut-in conditions. 22Cr has the lowest corrosion rate during injection and shut-in for the materials evaluated.

- Based on the assumed compositions for the injectate and reservoir, modified 13 Cr is adequate for this application.
- The presence of elemental sulfur from the pre-combustion injection stream, and from the reaction of the impurities in the injection stream may cause further increase in the corrosion rate predicted by the models, driving the selection of higher grades (22Cr). Assessment of the chosen alloy, either modified 13Cr or 22Cr, would require testing in the presence of sulfur to investigate corrosion and possibly cracking.

6 Injection Wells Design and Analysis

6.1 Design Approach

6.1.1 Working Stress Design Factors

Working stress design (WSD) is the traditional method of casing and tubing design used commonly for oil and gas well design. It is the basis of design for the current work. Load and stress analysis were performed using StrinGnosis, a commercial tubular mechanics and thermal analysis program. Loads and strengths were determined and used to compare the loads to the pipe strength. A safety factor was calculated as the ratio of the (minimum) strength to the (conservatively estimated) load and was compared to a minimum safety factor, also referred to as the design factor. Table 23 shows the design factors (minimum safety factors) that were used for the WSD analysis.

Table 23: Aera Design Factors

Failure Mode	Casing	Tubing (6)	Loss of Containment
Triaxial	1.25	1.25	1.00
Burst	1.30	1.20	1.00
Collapse	1.00	1.10	1.00
Axial – Tension	1.60	1.40	1.00
Axial – Compression	1.40	1.40	1.00

The Aera burst design factor of 1.30 and tension DF of 1.60 are higher than the DFs used by many oil and gas operators. Table 24 shows typical industry design factors for comparison. The design results will be evaluated using the Aera DFs and if the safety factors are less than Aera's DFs, the results will be compared to the typical design factors. Implications of the DFs will be discussed in the design report results.

Table 24: Typical Industry Design Factors

Failure Mode	Casing	Tubing (6)	Loss of Containment
Triaxial	1.25	1.25	1.00
Burst	1.10	1.20	1.00
Collapse	1.00	1.10	1.00
Axial – Tension	1.40	1.40	1.00
Axial – Compression	1.40	1.40	1.00

6.1.2 Reliability Based Design

Designs that do not meet the design factor requirements will be evaluated using Reliability Based Design (RBD) methods to determine the probability of failure (POF) or probability of exceedance (POE), i.e., yielding but not failing the pipe body. RBD Level 4 analysis for isotropic material is part of StrinGnosis, the program used for design analysis. Section 9 provides an overview of RBD. In Level 4 RBD, the load is assumed as deterministic at the extreme magnitude used in WSD, while the strength is stochastic. The

probability distribution of strength is constructed from statistical data on the underlying strength parameters, which are in turn obtained from ISO TR 10400 (API TR 5C3), or manufacturer data where possible. The design criteria for RBD are shown in Table 25.

Table 25: Level-4 RBD Design Criterion

Failure Mode and Load Type	Minimum Design Criterion
Probability of Exceedance (VME)	
Service Loads	$\leq 10^{-4}$
Survival Loads	$\leq 10^{-3}$
Probability of Failure (Burst-Tension)	
Service Loads	$\leq 10^{-6}$
Survival Loads	$\leq 10^{-5}$
Probability of Failure (Collapse)	
Service Loads	$\leq 10^{-3}$
Survival Loads	$\leq 10^{-2}$

RBD analysis explicitly quantifies the risk of failure of a given design. It allows the risk to be compared between different designs, whereas WSD analysis would show a change in the safety factor but no quantitative assessment of the change in the risk of failure. RBD is commonly used in structural design codes for other industries. RBD has been implemented in casing design programs by constructing resistance distributions using limit state equations such as the Klever-Stewart Rupture Limit and the Klever-Tamano Collapse Limit and strength parameter data from API TR 5C3 (ISO TR 10400), manufacturer reports or direct material and dimensional measurements. In addition to the RBD overview in Section 9 in this document, more details on the concept and use of RBD can be found in the literature including *IADC/SPE-178907-MS A Reliability-Based Approach for Survival Design in Deepwater and High Pressure/High Temperature Wells* [19].

6.1.3 Annular Pressure Management (API RP 90-2)

Wells can be operated safely with sustained annulus casing pressure. API Recommended Practice 90-2 (RP 90-2) [20], *Annular Casing Pressure Management for Onshore Wells* provides recommendations for operating wells with annulus pressure. The recommended practice document defines the maximum allowable wellhead operating pressure (MAWOP) for an annulus.

RP 90-2 needs to be considered as part of the casing and tubing design for CCS wells because of the EPA requirement to maintain annulus pressure on CCS wells while injecting. Meeting RP 90-2 recommendations requires an evaluation of the annulus pressure loads compared to the API minimum internal yield pressure (MIYP) of the casing and minimum collapse pressure (MCP) of the tubing.

API RP 90-2 has several methods to determine the allowable annulus pressure. Two of the methods are appropriate for CO_2 injection wells.

Simple De-rating Method

A summary of the relevant derating and design factors for a CCS well with annulus pressure is as follows:

- 50% of the MIYP of the injection casing string being evaluated
- 75% of the MPC of the tubing string

For the MAWOP calculation, the safety factor takes into account the following considerations:

- The minimum pressure rating of the casing string (including couplings) as per API 5 CT
- Unknown erosion or corrosion of the pipe

Explicit De-rating Method

If the wall thickness measurements are available, this method can be used to evaluate the casing MIYP. A summary of the derating and design factors follows:

- 80% of the adjusted MIYP of the injection casing string
- 80% of the adjusted MCP of the tubing string
- 100% of the adjusted MIYP of the next outer tubular string

6.2 Design Load Cases

6.2.1 Summary of Design Pressures

Table 26 shows a summary of the key design pressures used in the analysis.

Table 26: Design Pressures

Description	Value	Comments
Maximum tubing injection pressure	2,800 psi	PROSPER Modeling
Maximum annulus surface pressure	2,900 psi	Regulatory requirement for annulus pressure greater than injection pressure
SITP with methane to surface	3,950 psi	PROSPER Modeling
SITP with CO_2 to surface	2,300 psi	PROSPER Modeling
Maximum reservoir pressure	4,340 psi at 7,007 ft	Email from CA Moran November 30, 2023

6.2.2 7 in. Injection Casing Load Cases

Table 27 shows the injection casing loads description with the internal and external pressure and temperature profiles. The injection casing is defined as the casing outside the injection tubing. The existing casing for repurposed wells will be evaluated using these loads to determine which wells may have casing with sufficient strength for casing loads caused by CCS operations. These loads will also be used to design inner casing strings.

Table 27: Injection Casing Loads Description

No.	Casing Load	Internal Pressure	External Pressure	Temperature Profile
1	Running	Zero surface pressure + drilling fluid hydrostatic pressure	Zero surface pressure + drilling fluid hydrostatic pressure	Geothermal
2	Overpull (100 kips)	Zero surface pressure + drilling fluid hydrostatic pressure	Zero surface pressure + drilling fluid hydrostatic pressure	Geothermal
3	Initial condition	Drilling fluid hydrostatic pressure	Mud density hydrostatic pressure to the TOC + cement density hydrostatic pressure to the shoe	Geothermal
4	Kick—Gas to Surface	Kick surface pressure based on the lessor of frac at shoe or gas to surface	Zero surface pressure + drilling fluid pressure to TOC + mix water pressure to previous shoe. Pore pressure below previous shoe.	Geothermal

No.	Casing Load	Internal Pressure	External Pressure	Temperature Profile
5	Drilling casing pressure	Surface pressure + drilling fluid hydrostatic pressure not to exceed 70% of MIYP.	Zero surface pressure + drilling fluid pressure to TOC + mix water pressure to previous shoe. Pore pressure below previous shoe.	Geothermal
6	Casing pressure for injection[iv]	Maximum surface injection pressure + 100 psi + packer fluid hydrostatic pressure	Zero surface pressure + drilling base fluid pressure to TOC + mix water pressure to previous shoe. Pore pressure below previous shoe.	Long term injection profile (lowest temperature)
7	Tubing leak—Injection	Maximum surface injection pressure + packer fluid hydrostatic pressure.	Zero surface pressure + drilling base fluid pressure to TOC + mix water pressure to previous shoe. Pore pressure below previous shoe.	Long term injection profile (lowest temperature)
8	Tubing leak—shut-in (CO_2)	SITP based on maximum reservoir pressure minus the injection stream composition gradient + packer fluid hydrostatic pressure	Zero surface pressure + drilling base fluid pressure to TOC + mix water pressure to previous shoe. Pore pressure below previous shoe.	Geothermal
9	Tubing leak—shut-in (CH_4)	SITP based on maximum reservoir pressure minus a methane gradient + packer fluid hydrostatic pressure	Zero surface pressure + drilling base fluid pressure to TOC + mix water pressure to previous shoe. Pore pressure below previous shoe.	Geothermal
10	Collapse evacuation	Zero pressure to top of fluid with up to full evacuation of packer fluid hydrostatic pressure to shoe	Original drilling fluid	Geothermal
11	Bullhead kill—Initial	500 psi + maximum surface injection pressure + packer fluid hydrostatic pressure	Zero surface pressure + drilling base fluid pressure to TOC + mix water pressure to previous shoe. Pore pressure below previous shoe.	Minimum long term injection profile
12	Bullhead kill—Final	500 psi + kill fluid hydrostatic pressure based on maximum BHP	Zero surface pressure + drilling base fluid pressure to TOC + mix water pressure to previous shoe. Pore pressure below previous shoe.	Bullhead kill injection profile for 2 casing volumes at 3 fps

[iv] The EPA requires the tubing-casing annulus pressure to be higher than the tubing injection pressure for monitoring purposes for Class IV wells.

No.	Casing Load	Internal Pressure	External Pressure	Temperature Profile
13	Loss of containment	50% evacuated with packer fluid below top of fluid	Original drilling fluid	–40°F at surface. Geothermal temperature at total depth.
14	Stimulation tubing leak	Stimulation surface pressure + packer fluid hydrostatic pressure	Zero surface pressure + drilling base fluid pressure to TOC + mix water pressure to previous shoe. Pore pressure below previous shoe.	Stimulation

6.2.3 Liner Loads

Table 28 shows the liner loads and descriptions to be used to evaluate the liner designs.

Table 28: Liner Loads Description

No.	Liner Load	Internal Pressure	External Pressure	Temperature Profile
1	Running at 2 ft/sec	Zero surface pressure + drilling fluid hydrostatic pressure	Zero surface pressure + drilling fluid hydrostatic pressure	Geothermal
2	Overpull (50 kips ≤4.5 in. OD 100 kips >4.5 in. OD)	Zero surface pressure + drilling fluid hydrostatic pressure	Zero surface pressure + drilling fluid hydrostatic pressure	Geothermal
3	Initial condition	Zero surface pressure + drilling fluid hydrostatic pressure	Wellbore fluid hydrostatic pressure to the TOC. Cement hydrostatic pressure to the shoe.	Geothermal
4	Pressure test	Surface pressure + internal fluid hydrostatic pressure not to exceed 70% of MIYP	Pore pressure at the previous shoe minus drilling fluid gradient to the TOL. Pore pressure below the previous shoe.	Geothermal
5	Injection Steady State	Maximum surface injection pressure + internal injection fluid hydrostatic pressure	Pore pressure at the previous shoe minus drilling fluid gradient to the TOL. Pore pressure below the previous shoe.	Long term injection profile
6	Bullhead kill—Initial	Surface pressure 500 psi + maximum surface injection pressure + injection fluid hydrostatic pressure	Pore pressure at the previous shoe minus drilling fluid gradient to the TOL. Pore pressure below the previous shoe.	Long term injection profile

No.	Liner Load	Internal Pressure	External Pressure	Temperature Profile
7	Bullhead kill—Final	Surface pressure 500 psi + kill fluid hydrostatic pressure	Pore pressure at the previous shoe minus drilling fluid gradient to the TOL. Pore pressure below the previous shoe.	Bullhead kill injection profile for 2 tubing volumes
8	Collapse evacuation	Up to full evacuation with 8.3 ppg internal fluid hydrostatic pressure	Original drilling fluid hydrostatic pressure	Geothermal
9	Stimulation	Stimulation surface pressure + stimulation fluid hydrostatic pressure	Pore pressure at the previous shoe minus drilling fluid gradient to the TOL. Pore pressure below the previous shoe.	Stimulation
10	Late life SITP CH_4 to surface	Maximum reservoir pressure minus a methane gradient to surface	Pore pressure at the previous shoe minus drilling fluid gradient to the TOL. Pore pressure below the previous shoe.	Geothermal
11	Late life SITP CO_2 to surface	Maximum reservoir pressure minus a CO_2 gradient to surface	Pore pressure at the previous shoe minus drilling fluid gradient to the TOL. Pore pressure below the previous shoe.	Geothermal

6.2.4 Tubing Loads

Table 29 shows the tubing loads for CCS wells. The loads include installation, operational, and upset loads that could occur during the life of the well. Injection of mixtures of CO_2 and methane were modeled in the production engineering program PROSPER to predict pressure and temperature profiles for the tubing under injection conditions. The pressure and temperature profiles were used in the tubing stress analysis. Most stress analysis programs do not have models to handle the phase behavior of CO_2, especially with impurities. Therefore, in this work, PROSPER was used to perform the PVT analyses for injection, shut-in, and blowout modeling. Results from the PROSPER modeling were used to construct the appropriate loads in StrinGnosis.

Table 29: Tubing Loads Description

No.	Tubing Load	Internal Pressure	External Pressure	Temperature Profile
1	Running	Zero surface pressure. Completion fluid hydrostatic pressure.	Zero surface pressure. Completion fluid hydrostatic pressure.	Geothermal
2	Overpull (50 kips OD ≤4.5 in. 100 kips OD >4.5 in.)	Zero surface pressure. Completion fluid hydrostatic pressure.	Zero surface pressure. Completion fluid hydrostatic pressure.	Geothermal
3	Initial Condition	Zero surface pressure. Packer fluid hydrostatic pressure.	Zero surface pressure. Packer fluid hydrostatic pressure.	Geothermal

No.	Tubing Load	Internal Pressure	External Pressure	Temperature Profile
4	Pressure test	Surface test pressure + packer fluid hydrostatic pressure	Zero surface pressure. Packer fluid hydrostatic pressure.	Geothermal
5	A-annulus pressure test—maximum surface injection pressure	Zero surface pressure + packer fluid hydrostatic pressure	Maximum surface injection pressure + packer fluid hydrostatic pressure	Geothermal
6	Injection Steady State	Maximum surface injection surface pressure + injection fluid pressure profile	Zero surface pressure. Packer fluid hydrostatic pressure.	Long term injection profile
7	Late life SITP CH_4 to surface	Maximum reservoir pressure minus the natural gas gradient to surface	Zero surface pressure. Packer fluid hydrostatic pressure.	Geothermal
8	Late life SITP CO_2 to surface	Maximum reservoir minus a CO_2 gradient to surface	Zero surface pressure. Packer fluid hydrostatic pressure.	Geothermal
9	Tubing leak below SCSSV with SCSSV closed	Zero psi to SCSSV. Maximum reservoir pressure minus a CO_2 gradient below the closed valve	Surface pressure based on maximum reservoir pressure + packer fluid hydrostatic pressure	Geothermal
10	Tubing evacuation (zero annulus pressure)	Up to full evacuation with 8.3 ppg internal fluid	Zero surface pressure + packer fluid hydrostatic pressure	Geothermal
10 a	Tubing evacuation (operating annulus pressure)	Up to full evacuation with 8.3 ppg internal fluid	Operating surface pressure + packer fluid hydrostatic pressure	Geothermal
11	Bullhead kill—Initial	500 psi above the maximum surface injection pressure + injection fluid pressure profile	Zero surface pressure + packer fluid hydrostatic pressure	Long term injection profile
12	Bullhead kill—Final	500 psi surface pressure + kill fluid hydrostatic pressure	Zero surface pressure + packer fluid hydrostatic pressure	Bullhead kill injection profile for 2 tubing volumes at 3 fps velocity
13	Loss of containment CO_2	Pressure from PROSPER based on the injection stream composition at maximum reservoir pressure	Zero surface pressure + packer fluid hydrostatic pressure	PROSPER analysis
14	Transient Startup	Initial surface injection pressure + internal injection fluid pressure	Zero surface pressure + packer fluid hydrostatic pressure	–4°F at Surface. Early life injection temperature lower 2/3 of MD.

No.	Tubing Load	Internal Pressure	External Pressure	Temperature Profile
15	Stimulation	Stimulation surface pressure + stimulation fluid hydrostatic pressure	Zero surface pressure + packer fluid hydrostatic pressure	Stimulation

6.2.5 Drilling Casing Loads

Table 30 shows the drilling casing loads description with the internal and external pressure and temperature profile. The drilling casing is defined as the casing above the injection casing.

Table 30: Drilling Casing Loads Description

No.	Casing Load	Internal Pressure	External Pressure	Temperature Profile
1	Running at 2 ft/sec	Zero surface pressure + drilling fluid hydrostatic pressure	Zero surface pressure + drilling fluid hydrostatic pressure	Geothermal
2	Overpull (100 kips)	Zero surface pressure + drilling fluid hydrostatic pressure	Zero surface pressure + drilling fluid hydrostatic pressure	Geothermal
3	Initial condition	Mud density hydrostatic pressure	Mud density hydrostatic pressure to the TOC + cement density hydrostatic pressure to the shoe	Geothermal
4	Kick—Gas to Surface	Kick surface pressure based on the lessor of frac at shoe or reservoir pressure gas to surface	Zero surface pressure + drilling fluid pressure to TOC + mix water pressure to previous shoe. Pore pressure below previous shoe.	Geothermal
5	Drilling casing pressure	Surface pressure + drilling fluid pressure not to exceed 70% of MIYP	Zero surface pressure + drilling fluid pressure to TOC + mix water pressure to previous shoe. Pore pressure below previous shoe.	Geothermal
6	Collapse 50% evacuation	Zero pressure to the top of fluid. Drilling fluid pressure to the shoe.	Original drilling fluid.	Geothermal

6.3 Remaining Wall Thickness Results Summary

This section includes a summary of the corrosion analysis and wall loss / remaining body wall (RBW) vs. time. The RBW results were used to evaluate the casing, liner, and tubing safety factors vs. time. The modeled RBW at 25 years of injection was used to confirm the designs are safe and reliable at the end of the injection phase. It is assumed that the injection wells will be plugged and abandoned within a year or two after injection stops.

The cumulative corrosion is based on a combination of injection and shut-in corrosion rates from the material selection study in Section 5. The corrosion rates used in the well design analysis are as follows:

- 1.3 mpy Injection corrosion rate
- 3.7 mpy Shut-in corrosion rate

Shut-in periods assume the following for routine maintenance and unplanned shut-ins:

- Shut-in 10 days per year for routine maintenance
- Shut-in 30 days per 15 year period or partial 15 year period for unplanned shut-ins

6.3.1 3 1/2 in. 9.2 ppf Liner

Table 31 shows the RBW for 3 1/2 in. OD 9.2 ppf 0.254 in. wall thickness based on years of service. The corrosion modeling wall loss results are based on the temperature and pressure at the liner. Year 25 is assumed as the end of injection.

Table 31: Corrosion RBW vs. Time for 3 1/2 in. 9.2 ppf Modified 13Cr

Year	Cumulative Corrosion (mils)	Wall Loss (in.)	RBW (%)	Remaining Wall (in.)	RBW (%)
–	–	–	Nominal	0.2540	100.00
0	0	–	87.50%	0.2223	87.50
25	35.6	0.0356	–	0.1866	73.5

6.3.2 4 1/2 in. 11.6 ppf Tubing

Table 32 shows the RBW for the 4 1/2 in. OD 11.6 ppf 0.250 in. wall thickness tubing based on years of injection. The corrosion modeling wall loss results are based on the temperature and pressure at the bottom of the tubing. Year 25 is assumed as the end of injection.

Table 32: Corrosion RBW vs. Time for 4 1/2 in. 11.6 ppf Modified 13Cr

Year	Cumulative Corrosion (mils)	Wall Loss (in.)	RBW (%)	Remaining Wall (in.)	RBW (%)
–	–	–	Nominal	0.2500	100.00
0	0	–	87.50%	0.2188	87.50
25	35.6	0.0356	–	0.1831	73.2

6.3.3 4 1/2 in. 12.6 ppf Liner

Table 33 shows the RBW for 4 1/2 in. OD 12.6 ppf 0.271 in. wall thickness based on years of service. The corrosion modeling wall loss results are based on the temperature and pressure at the liner. Year 25 is assumed as the end of injection.

Table 33: Corrosion RBW vs. Time for 4 1/2 in. 12.6 ppf Modified 13Cr

Year	Cumulative Corrosion (mils)	Wall Loss (in.)	RBW (%)	Remaining Wall (in.)	RBW (%)
–	–	–	Nominal	0.2710	100.00
0	0	–	87.50%	0.2371	87.50
25	35.6	0.0356	–	0.2015	74.3

6.3.4 6 5/8 in. 24 ppf Casing

Table 34 shows the RBW for 6 5/8 in. OD 24.0 ppf 0.352 in. wall thickness based on years of service. The corrosion modeling wall loss results are based on the temperature and pressure at the liner. Year 25 is assumed as the end of injection.

Table 34: Corrosion RBW vs. Time for 6 5/8 in 24 ppf Modified 13Cr

Year	Cumulative Corrosion (mils)	Wall Loss (in.)	RBW (%)	Remaining Wall (in.)	RBW (%)
–	–	–	Nominal	0.3520	100.00
0	0	–	87.50%	0.3080	87.50
25	35.6	0.0356	–	0.2724	77.4

6.3.5 7 in. 26 ppf Casing

Table 35 shows the RBW for 7 in. OD 26 ppf 0.362 in. wall thickness based on years of service. The corrosion modeling wall loss results are based on the temperature and pressure at the bottom of the casing. Year 25 is assumed as the end of injection.

Table 35: Corrosion RBW vs. Time for 7 in. 26 ppf Modified 13Cr

Year	Cumulative Corrosion (mils)	Wall Loss (in.)	RBW (%)	Remaining Wall (in.)	RBW (%)
–	–	–	Nominal	0.3620	100.00
0	0	–	87.50%	0.3168	87.5
25	35.6	0.0356	–	0.2811	77.7

6.3.6 7 in. 29 ppf Casing

Table 36 shows the RBW for 7 in. OD 29 ppf 0.408 in. wall thickness based on years of service. The corrosion modeling wall loss results are based on the temperature and pressure at the bottom of the casing. Year 25 is assumed as the end of injection.

Table 36: Corrosion RBW vs. Time for 7 in. 29 ppf Modified 13Cr

Year	Cumulative Corrosion (mils)	Wall Loss (in.)	RBW (%)	Remaining Wall (in.)	RBW (%)
–	–	–	Nominal	0.408	100.00
0	0	–	87.50%	0.357	87.5
25	35.6	0.0356	–	0.321	78.8

6.3.7 9 5/8 in. 47 ppf Casing

Table 37 shows the RBW for 9 5/8 in. OD 47 ppf 0.472 in. wall thickness based on years of service. The corrosion modeling wall loss results are based on the temperature and pressure at the liner. Year 25 is assumed as the end of injection.

Table 37: Corrosion RBW vs. Time for 9 5/8 in 47 ppf Modified 13Cr

Year	Cumulative Corrosion (mils)	Wall Loss (in.)	RBW (%)	Remaining Wall (in.)	RBW (%)
–	–	–	Nominal	0.4720	100.00
0	0	–	87.50%	0.4130	87.50
25	35.6	0.0356	–	0.3774	79.9

6.4 PROSPER Analysis for Well Design Loads

6.4.1 7 in. Casing x 4 1/2 in. Tubing Completions

PROSPER flow modeling was used to develop the pressure and temperature profiles for the casing and tubing load cases. Well conditions include injecting, shut-in with CO_2 and CH_4 to surface, and loss of containment (blow-out). Figure 52 shows the injection temperature and pressure profiles for injecting 20 MMscf/D in an injection well with 4 1/2 in. tubing.

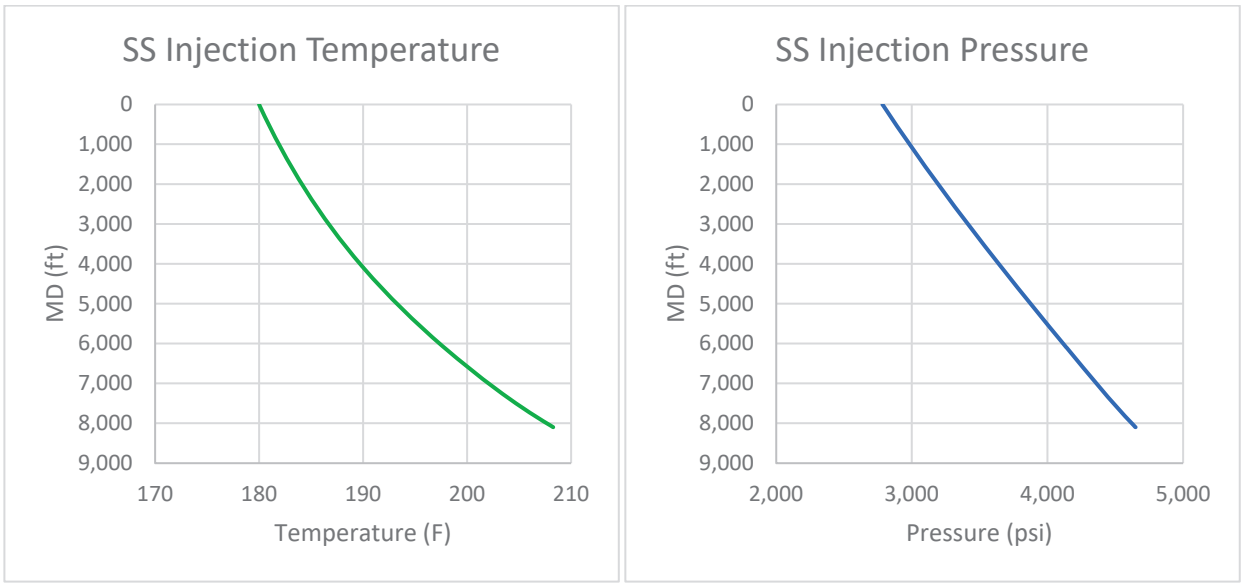


Figure 52: CO_2 Injection Temperature and Pressure Profiles for 20 MMscf/D for a 4 1/2 in. Completion

Figure 53 shows the pressure profiles for shut-in wells with a column of CO_2 and CH_4 based on the final reservoir pressure.

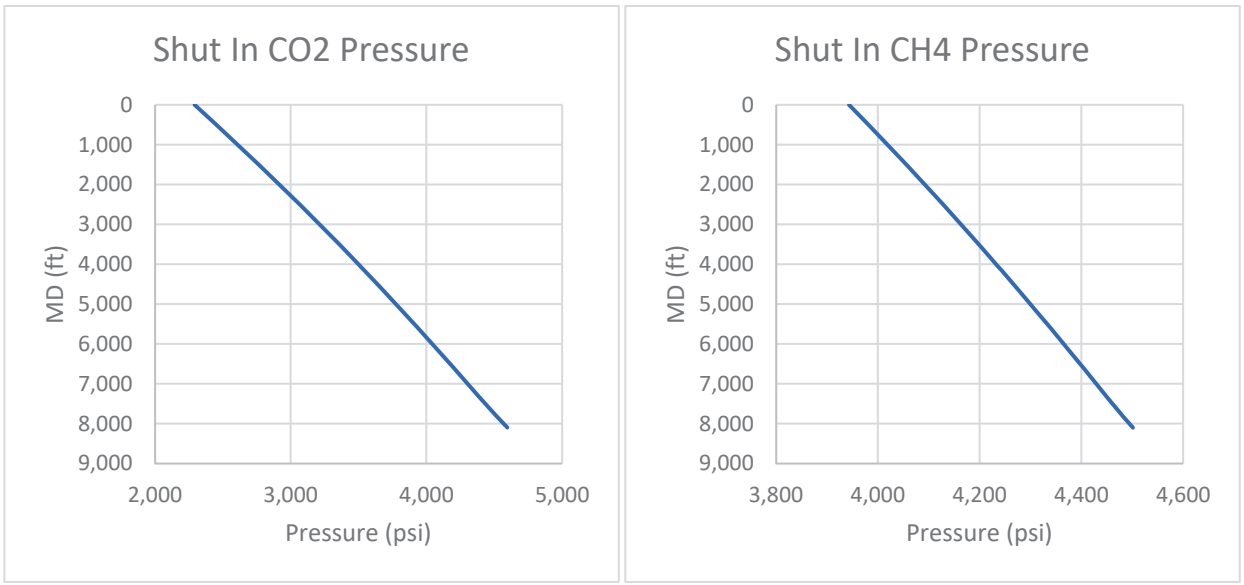


Figure 53: Pressure Profiles for Shut-in CO_2 (left) and CH_4 (right)

Figure 54 shows the temperature profile for loss of containment (blow-out) for CO_2 based on the final reservoir pressure.

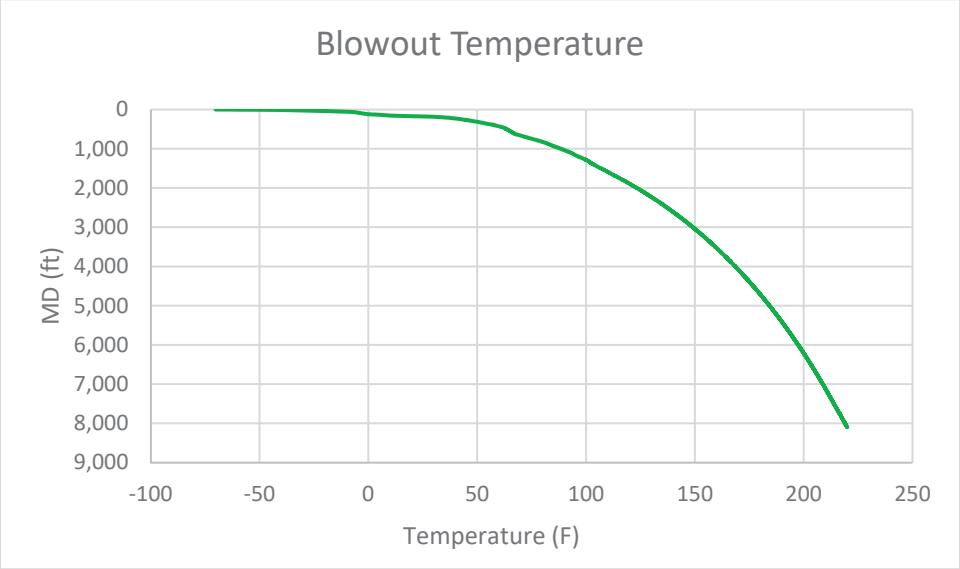


Figure 54: Pressure Profiles for Loss of Containment CO_2

6.5 Well 9-1N Repurposed Well Design

The proposed repurposed wells have similar casing setting depths and packer depths. Well 9-1N was evaluated in detail for all casing, liner, and tubing loads. The design results for 9-1N apply to the other wells where the casing OD is the same. The repurposed wells have different liner sizes and some are cased hole liners and some are open hole liners. Open hole liners were evaluated using the new drill well loads which are open hole liners. The tubing design is the same for repurposed and new drill wells.

Figure 55 shows the 9-1N wellbore after repurposing to a CO_2 injector. A new 7 in. inner casing with a section of CRA casing on bottom is proposed to isolate the existing 9 in. casing. The well has a cemented liner and a CRA inner liner is proposed to isolate the carbon steel liner. The completion includes a packer and CRA tubing to isolate the injected CO_2 from the casing. Monitoring equipment including fiber optic cable and downhole gauges are indicated.

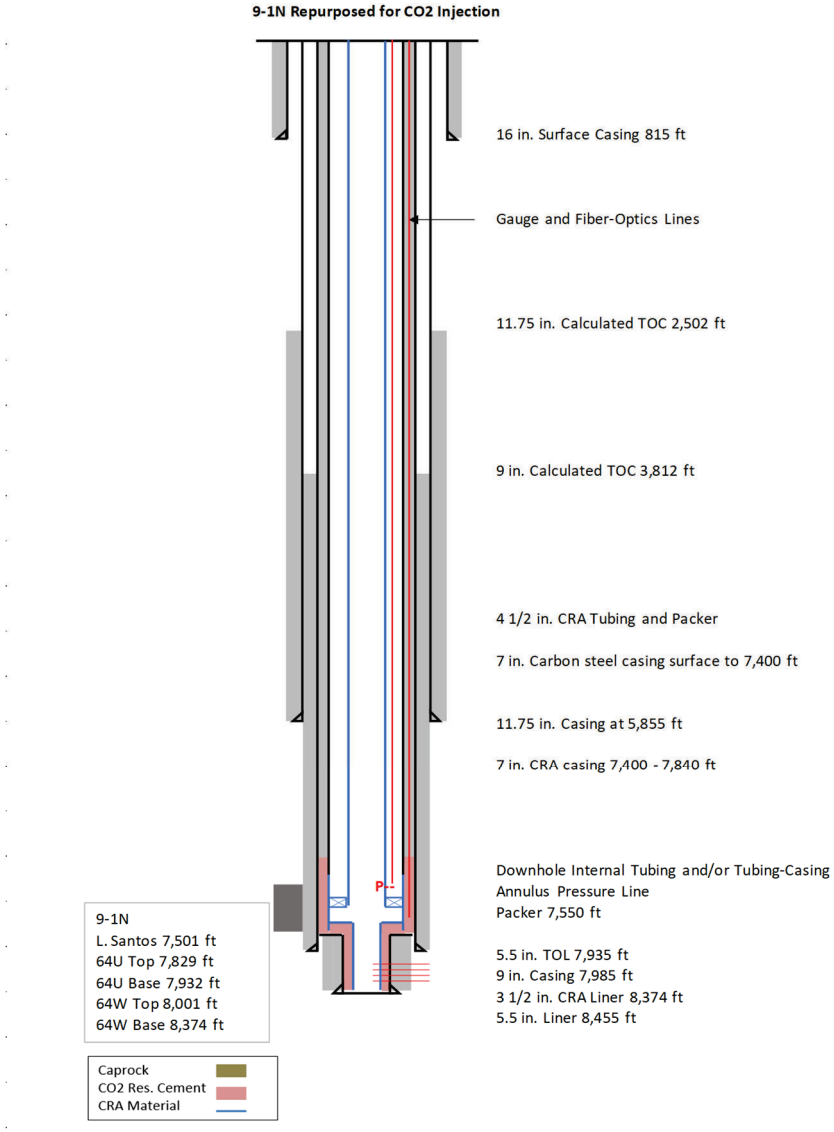


Figure 55: 9-1N Repurposed to CO_2 Injection Wellbore Schematic

6.5.1 Design Details and Assumptions

Table 38 shows the existing casing details, the proposed inner casing and liner and the proposed tubing design in rows 1 – 9. The design depths for the casing, liner, and tubing are approximate and can be adjusted based on requirements for the final well construction and completion depths.

A 3 1/2 in. OD liner is planned to isolate the existing liner in 9-1N. The inner liner will cover the existing perforations. It will be cemented with CO_2 resistant cement. The corrosion rate modeling summary results are included in Section 6.3. Row 10 shows the 4 1/2 in. liner details for repurposed wells with an inner liner for cementing inside an existing liner. Row 11 shows the design for an open hole liner.

Table 38: 9-1N Casing, Liner, and Tubing

Row	Name	Type	OD (in.)	Weight (ppf)	ID (in.)	WT (in.)	Grade	Conn.	Top MD (ft)	Bottom MD (ft)
1	Conductor	Casing	–	–	–	–	–	–	0	52
2	Surface	Casing	16	72.72	15.124	0.438	–	–	0	815
3	Intermediate	Casing	11.75	61	10.772	0.489	J55	LTC	0	5,855
4	Production	Casing	9	46.1	8.032	0.500	J55	LTC	0	5,661
5	Production	Casing	9	45	8.032	0.500	J55	Speedtite	5,661	7,840
6	Injection	Casing	7	26	6.276	0.362	L80	Proprietary (1)	0	7,400
7	Injection	Casing	7	26	6.276	0.362	Mod 13Cr80	Proprietary (1)	7,400	7,935
8	Injection	Liner	3.5	9.2	2.992	0.254	Mod 13Cr80	Proprietary (1)	7,930	8,374
9	Injection	Tubing	4.5	11.6	4.000	0.250	Mod 13Cr80	Proprietary (1)	0	7,550
10	Injection	Liner (2)	4.5	11.6	4.000	0.250	Mod 13Cr80	Proprietary (1)	7,930	8,374
11	Injection	Liner (3)	4.5	12.6	3.958	0.271	Mod 13Cr110	Proprietary (1)	7,930	8,374

Notes:
(1) Proprietary connection indicates a connection with a metal-to-metal seal and strengths equivalent to the pipe body.
(2) Liner design for an inner liner.
(3) Liner design for an open hole liner.

Directional Profile for 9-1N

The well was drilled as a vertical well.

Undisturbed Temperature Profile

The undisturbed temperature profile is shown in Section 11 Appendix C—Undisturbed Temperature Profile.

Pore Pressure and Fracture Pressure

The pore and fracture pressure data used in the analysis is included in Section 12 Appendix D—Pore Pressure.

Cementing

Cementing design assumptions are included in Section 13 Appendix E—Cementing Design Assumptions.

Completion and Packer Fluid

An unweighted clear fluid such as fresh water with 3% KCl (8.5 ppg) treated with inhibitors was assumed as the completion and packer fluid for design purposes.

6.5.2 9-1N Design Results

This section includes the results of the design analysis for the repurposed wells. The analysis includes the 7 in. inner casing, inner 3 1/2 in. and 4 1/2 in. liner, and 4 1/2 in. tubing. A CRA material grade was evaluated for the lower section of casing, liners, and tubing loads and is recommended to meet the requirements for limiting corrosion during the life of the well. Refer to Section 5 for details on materials selection.

7 in. Inner Injection Casing with Nominal Wall

Table 39 shows the minimum safety factors for the 7 in. L80 Section 1 casing loads. The load number corresponds to the load numbers in Section 6.2. The safety factors assume nominal wall thickness with a tolerance of –12.5% resulting in remaining body wall (RBW) of 87.5%. The minimum safety factors all meet or exceed the design factors shown in Table 23.

Table 40 shows the minimum SFs for Section 2. The SFs meet the DFs.

Table 39: Minimum Safety Factors for the 7 in. 26 ppf L80 Section 1 Injection Casing with Nominal Wall

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1) Running	--	--	>3	0	2.92	0	--	--	2.91	0
2) Overpull (100 kips)	--	--	>3	0	2.15	0	--	--	2.15	0
3) Initial Condition	--	--	>3	7,400	>3	0	>3	7,400	>3	7,400
4) Kick: Casing Full of Gas	1.40	0	--	--	2.87	0	--	--	1.54	0
5) Pressure Test 4,000 psi	1.70	7,400	--	--	>3	0	--	--	1.80	7,400
6) 2,900 psi Annulus Operating Pressure	2.34	7,400	--	--	>3	52	--	--	2.50	7,400
7) 2,800 psi Injection Tubing Leak	2.41	7,400	--	--	>3	0	--	--	2.54	7,400
8) 2,300 psi Shut-in CO2 Tubing Leak	2.92	7,400	--	--	>3	0	--	--	>3	7,400
9) 3,950 psi Shut-in Tubing Leak (CH4)	1.72	7,400	--	--	>3	0	--	--	1.82	7,400
10) Collapse Evac 50%	--	--	2.95	7,400	>3	0	>3	7,400	>3	3,968
10a) Collapse Evac 100%	--	--	1.62	7,400	>3	0	>3	7,400	2.31	7,400

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
11) Bullhead Kill Initial (3,300 psi)	2.06	7,400	--	--	>3	52	--	--	2.21	7,400
12) Bullhead Kill (500 psi final)	>3	7,400	--	--	>3	5,855	--	--	>3	7,400
13) Loss of Containment 50% Evac	--	--	2.94	3,968	2.06	0	>3	7,400	2.06	0
14) Stimulation 5,000 psi with Tubing Leak	1.40	7,400	--	--	2.92	0	--	--	1.54	7,400

Table 40: Minimum Safety Factors for the 7 in. 26 ppf Modified 13Cr80 Section 2 Injection Casing with Nominal Wall

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1) Running	--	--	--	--	>3	7,400	--	--	>3	7,400
2) Overpull (100 kips)	--	--	--	--	>3	7,400	--	--	>3	7,400
3) Initial Condition	--	--	>3	7,935	--	--	>3	7,935	>3	7,935
4) Kick: Casing Full of Gas	2.55	7,400	--	--	>3	7,400	>3	7,699	2.68	7,400
5) Pressure Test 4,000 psi	1.69	7,935	--	--	>3	7,400	--	--	1.78	7,935
6) 2,900 psi Annulus Operating Pressure	2.34	7,550	--	--	>3	7,400	>3	7,930	2.50	7,538
7) 2,800 psi Injection Tubing Leak	2.41	7,550	--	--	>3	7,400	>3	7,935	2.52	7,550
8) 2,300 psi Shut-in CO_2 Tubing Leak	2.92	7,550	--	--	>3	7,400	>3	7,935	>3	7,550
9) 3,950 psi Shut-in Tubing Leak (CH_4)	1.72	7,550	--	--	>3	7,400	>3	7,935	1.82	7,550
10) Collapse Evac 50%	--	--	2.94	7,935	--	--	>3	7,935	>3	7,935
10a) Collapse Evac 100%	--	--	1.50	7,935	--	--	>3	7,935	2.15	7,935

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
11) Bullhead Kill Initial (3,300 psi)	2.06	7,550	--	--	>3	7,400	>3	7,930	2.21	7,538
12) Bullhead Kill (500 psi final)	>3	7,935	--	--	>3	7,930	--	--	2.85	7,930
13) Loss of Containment 50% Evac	--	--	2.94	7,935	--	--	>3	7,935	>3	7,400
14) Stimulation 5,000 psi with Tubing Leak	1.40	7,550	--	--	2.66	7,930	--	--	1.54	7,550

7 in. Injection Casing with Nominal Wall VME Plots

Figure 56 shows the VME plot for the design loads.

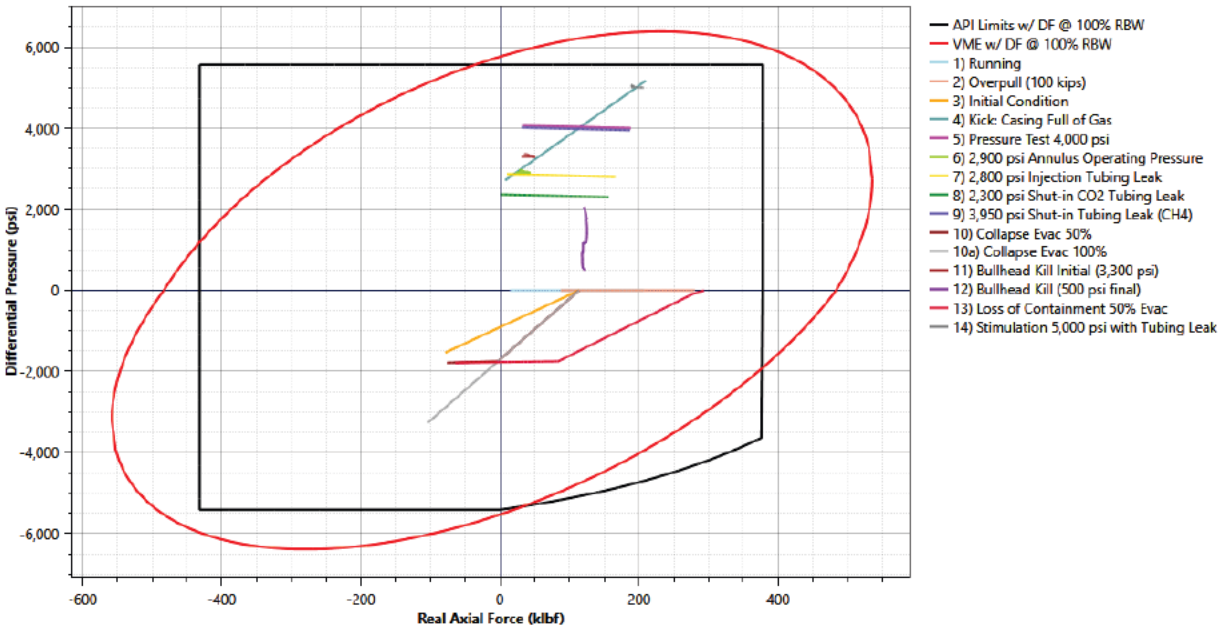


Figure 56: 7 in. Injection Casing with Nominal Wall Section 1 VME

Figure 57 shows the VME plot for the design loads.

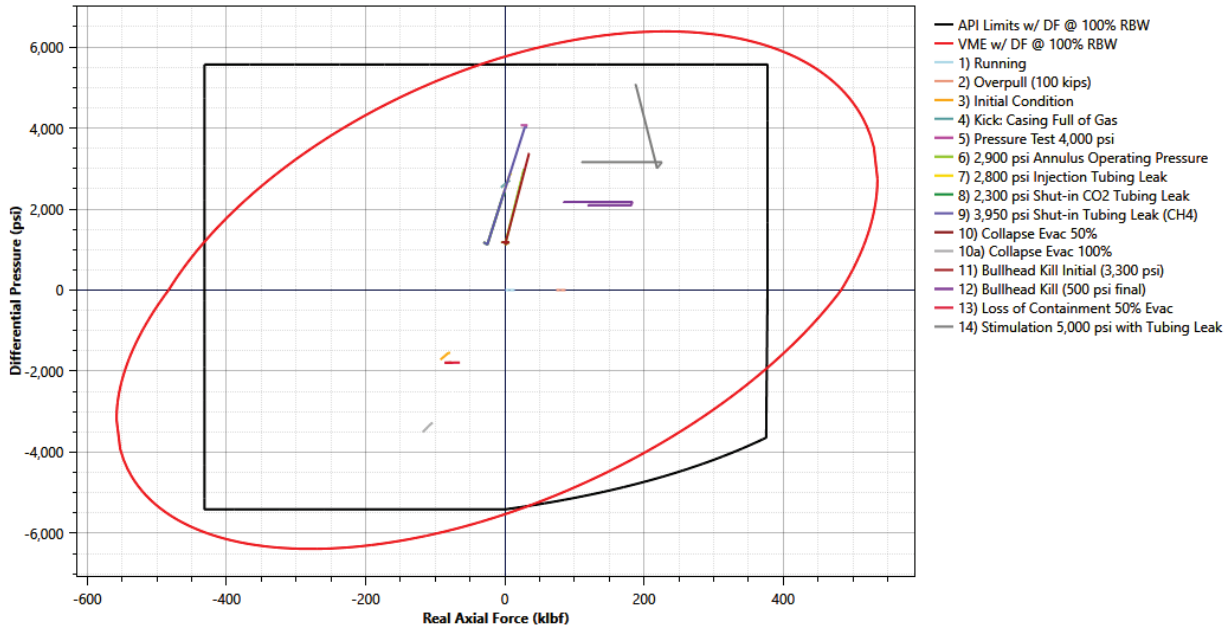


Figure 57: 7 in. Injection Casing with Nominal Wall Section 2 VME

7 in. Casing Wall with RBW 77.7% (25 years of service)

Table 41 shows the results for 77.7% RBW based on the wall loss shown in Section 6.3. Several loads have SFs less than the DFs. The SFs in red font are less than the DF for the load design failure mode.

The collapse SF is less than the DF of 1.00. Full evacuation of the casing after 25 years of service is an unlikely load and can be considered a design check for information. The stimulation load is an early life load and is not planned for late life. The results are shown for information.

Table 42 shows the RBD results. The load with high probability of failure is "10a) Collapse Evac 100%" which is not relevant to late life loads. The other loads meet the RBD acceptance shown in Table 76. The design meets the requirements for the relevant late life loads.

Table 41: Minimum Safety Factors for the 7 in. 26 ppf Modified 13Cr80 Section 2 Injection Casing with 77.7% RBW

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1) Running	--	--	--	--	>3	7,400	--	--	>3	7,400
2) Overpull (100 kips)	--	--	--	--	>3	7,400	--	--	>3	7,400
3) Initial Condition	--	--	1.68	7,935	--	--	>3	7,935	>3	7,935
4) Kick: Casing Full of Gas	2.27	7,400	--	--	>3	7,400	>3	7,699	2.07	7,400
5) Pressure Test 4,000 psi	1.50	7,935	--	--	>3	7,400	--	--	1.37	7,935
6) 2,900 psi Annulus Operating Pressure	2.08	7,550	--	--	>3	7,400	>3	7,930	1.93	7,538
7) 2,800 psi Injection Tubing Leak	2.14	7,550	--	--	>3	7,400	>3	7,935	1.95	7,550
8) 2,300 psi Shut-in CO2 Tubing Leak	2.59	7,550	--	--	>3	7,400	>3	7,935	2.35	7,550
9) 3,950 psi Shut-in Tubing Leak (CH4)	1.53	7,550	--	--	>3	7,400	>3	7,935	1.40	7,550
10) Collapse Evac 50%	--	--	1.61	7,935	--	--	>3	7,935	>3	7,400
10a) Collapse Evac 100%	--	--	0.82	7,935	--	--	>3	7,935	1.66	7,935
11) Bullhead Kill Initial (3,300 psi)	1.83	7,550	--	--	>3	7,400	>3	7,930	1.70	7,538
12) Bullhead Kill (500 psi final)	2.87	7,935	--	--	>3	7,930	--	--	2.55	7,930

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
13) Loss of Containment 50% Evac	--	--	1.61	7,935	--	--	>3	7,935	>3	7,400
14) Stimulation 5,000 psi with Tubing Leak	1.25	7,550	--	--	2.66	7,930	--	--	1.21	7,550

Table 42: RBD Results for the 7 in. Casing with 77.7% RBW

Load Name	Section	Grade	MD (ft)	TVD (ft)	Fail Mode	Min SF	Prob. of Failure / Exceedance (10^{*})	Failure Rate (1 in -)
10a) Collapse Evac 100%	2	L80 13CR	7,935	7,935	Collapse	0.82	-1.24	18
14) Stimulation 5,000 psi with Tubing Leak	2	L80 13CR	7,550	7,550	Ductile Burst	1.25	< -9	> 1 bil
14) Stimulation 5,000 psi with Tubing Leak	2	L80 13CR	7,550	7,550	Triaxial	1.21	-7.72	52,269,949

7 in. Injection Casing with 77.7% Wall VME Plots

Figure 58 shows the VME plot for the design loads.

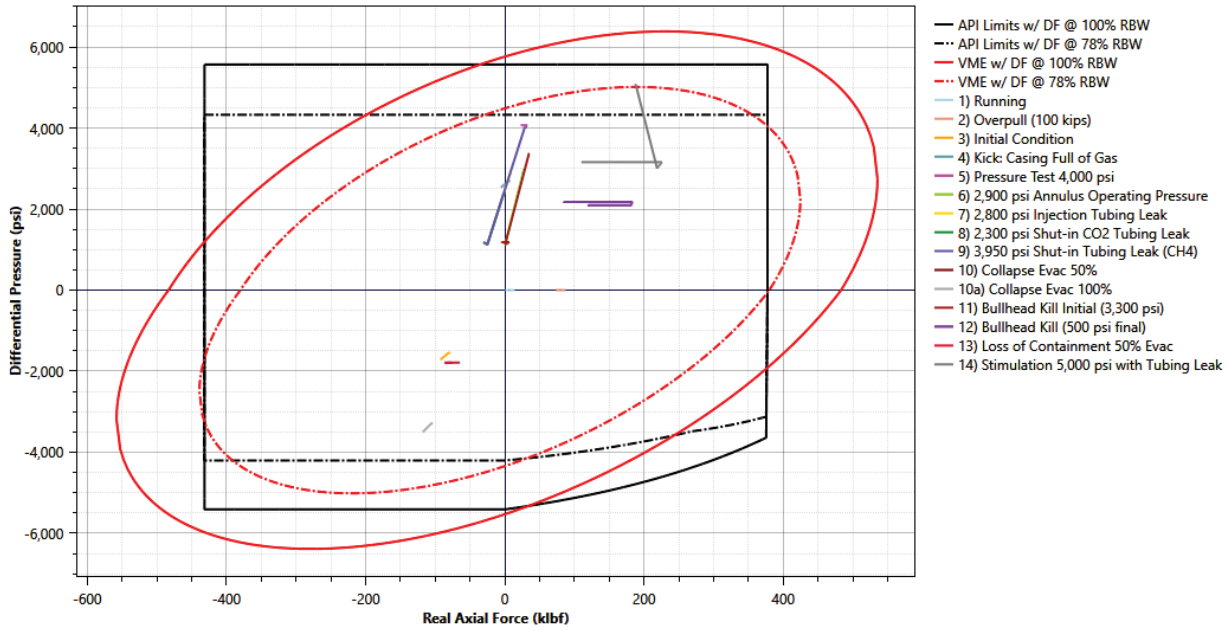


Figure 58: 7 in. Injection Casing with 77.7% RBW Section 2 VME

4 1/2 in. Tubing—New with 87.5% RBW

Table 43 shows the minimum safety factors for the 4 1/2 in. 11.6 ppf modified 13Cr80 tubing loads. New tubing was assumed with 87.5% remaining body wall (RBW). The safety factors exceed the design factors for the tubing design except for the load "10a) Collapse Evac 100% 2900 psi Ann Pr" which is an unlikely load that can be mitigated by managing and bleeding off the annulus pressure when the tubing pressure is reduced.

Table 44 shows the RBD analysis results. The RBD results do not meet the acceptance criteria so the annulus pressure needs to be managed.

Table 43: Minimum Safety Factors for the 4 1/2 in. 11.6 ppf Modified 13Cr80 Tubing

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft	SF	MD (ft)	SF	MD (ft)
1) Running	--	--	--	--	>3	0	--	--	>3	0
2) Overpull - 50 kips	--	--	--	--	2.11	0	--	--	2.11	0
4) Pressure Test 4,000 psi	1.86	7,550	--	--	2.19	0	--	--	1.91	0
3) Initial Condition	--	--	--	--	2.91	0	--	--	2.91	0
4) 4,000 psi Pressure Test	2.65	7,550	--	--	2.37	0	--	--	2.36	0
5) 2,800 psi 'A' annulus pressure test	--	--	2.05	0	>3	0	>3	7,550	1.84	0
6) 2,800 psi Steady State Injection	2.69	0	--	--	>3	0	>3	7,550	2.73	0
7) 3,950 psi SI with CH4	1.97	0	--	--	2.40	0	--	--	1.98	0
8) 2,300 psi SI with CO2	>3	0	--	--	2.54	0	--	--	2.64	0
9) Tubing Leak Below SCSSV 2,900 psi CP 0 psi TP	--	--	1.86	296	>3	0	>3	7,550	1.67	296
10) Collapse Evac 100%	--	--	1.85	7,550	>3	0	>3	7,550	2.19	7,550
10a) Collapse Evac 100% 2900 psi Ann Pr	--	--	0.99	7,550	>3	0	>3	7,550	1.22	7,550
11) 3,300 psi Bullhead Kill Initial)	2.28	0	--	--	>3	0	>3	7,550	2.39	0
12) Bullhead Kill (500 psi final)	>3	7,550	--	--	1.84	0	--	--	1.92	0
13) Loss of Containment -70F at Surface	--	--	2.41	7,550	>3	0	>3	7,550	2.86	7,550

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft	SF	MD (ft)	SF	MD (ft)
14) Transient Startup	--	--	2.25	7,550	>3	0	>3	7,550	2.62	7,550
15) Stimulation 5,000 psi	1.45	7,550	--	--	1.51	0	--	--	1.43	0

Table 44: RBD Results for the 4.5 in. Tubing with Nominal Wall

Load Name	Section	Grade	MD (ft)	TVD (ft)	Fail Mode	Min SF	Prob. of Failure / Exceedance (10^)	Failure Rate (1 in -)
10a) Collapse Evac 100% 2900 psi Ann Pr	1	L80 13CR	7,550	7,550	Collapse	0.99	-2.02	106
10a) Collapse Evac 100% 2900 psi Ann Pr	1	L80 13CR	7,550	7,550	Triaxial	1.22	-8.02	104,034,149

4 1/2 in. Modified 13Cr80 Tubing VME Plot

Figure 59 shows the VME plot for the design loads.

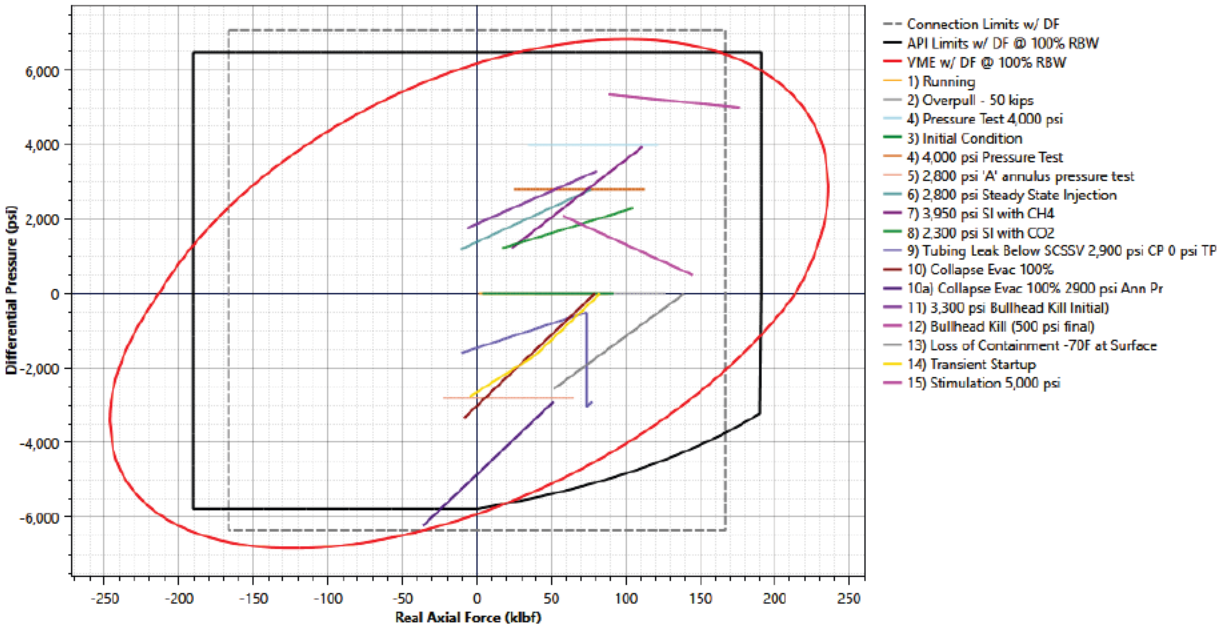
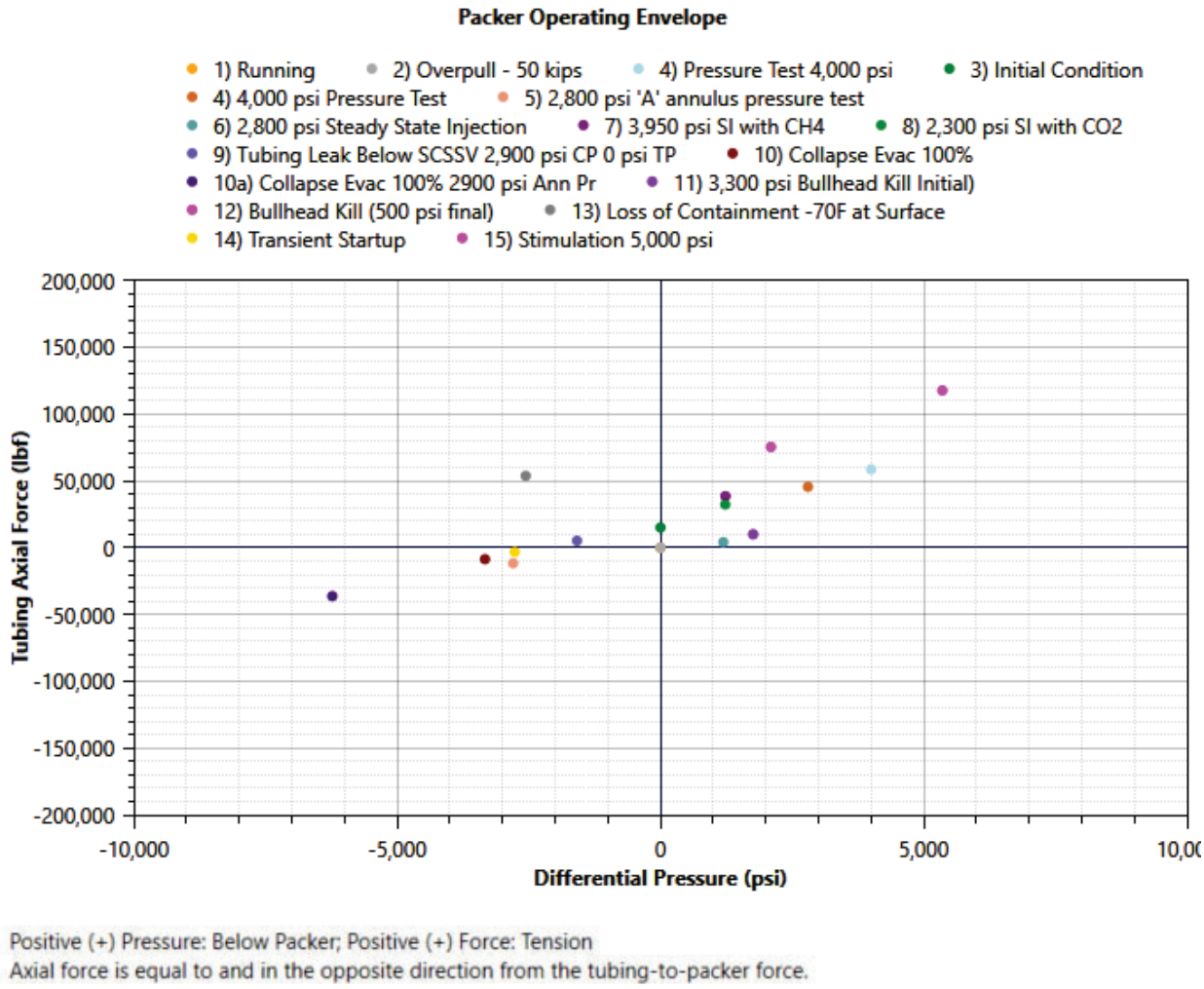


Figure 59: 4 1/2 in. Modified 13Cr80 Tubing VME with Nominal Wall

Packer Loads for a Fixed Packer

Figure 60 shows the packer loads for a hydraulically set fixed packer with a 4.5 in. seal bore ID. The packer loads should be rechecked when the packer is selected. A packer with an operating envelope exceeding the design loads should be selected for the completion equipment.



Positive (+) Pressure: Below Packer; Positive (+) Force: Tension
Axial force is equal to and in the opposite direction from the tubing-to-packer force.

Figure 60: 9-1N Packer Loads

Table 45 shows the tubing to packer force, differential pressure, packer to casing force, and temperature at the packer for each load.

Table 45: 373-35R Packer Forces

Load Name	Tubing to Packer Force (lbf)	Differential Pressure (psi)	Packer to Casing Force (lbf)	Temp. (°F)
4) Pressure Test 4,000 psi	-58,607	4,000	-122,305	222
3) Initial Condition	-15,080	0	-15,080	222
4) 4,000 psi Pressure Test	-45,538	2,800	-90,127	222
5) 2,800 psi 'A' annulus pressure test	11,640	-2,800	56,229	222
6) 2,800 psi Steady State Injection	-4,168	1,192	-23,149	205
7) 3,950 psi SI with CH4	-38,572	1,232	-58,191	222
8) 2,300 psi SI with CO2	-32,331	1,229	-51,907	222
9) Tubing Leak Below SCSSV 2,900 psi CP 0 psi TP	-5,227	-1,588	20,057	222
10) Collapse Evac 100%	8,616	-3,334	61,705	222
10a) Collapse Evac 100% 2900 psi Ann Pr	36,289	-6,234	135,559	222
11) 3,300 psi Bullhead Kill Initial)	-10,009	1,759	-38,014	205
12) Bullhead Kill (500 psi final)	-75,397	2,096	-108,780	100.9
13) Loss of Containment -70F at Surface	-53,760	-2,561	-12,975	222
14) Transient Startup	3,150	-2,768	47,222	188.7
15) Stimulation 5,000 psi	-117,617	5,353	-202,861	88.2

4 1/2 in. Tubing—with 73.2% RBW (25 years of service)

The possible remaining wall at the end of 25 years of service for the 4 1/2 in. tubing is 73.2% of nominal based on wall loss from Section 6.3. Table 47 shows the minimum safety factors for the 4 1/2 in. 11.6 ppf modified 13Cr80 tubing loads, with 73.2% RBW. Several of the loads have SFs that are less than the DFs. However, the loads with low SFs are not realistic late life loads or can be easily mitigated. A summary of these unlikely loads follows in Table 46.

Table 48 shows the RBD results for information.

Table 46: Summary of Unlikely Loads

Load Name	Comments
5) 2,800 psi 'A' annulus pressure test	An annulus pressure test in late life is not a realistic load.
9) Tubing Leak Below SCSSV 2,900 psi CP 0 psi TP	The load can be managed by not bleeding off the internal tubing pressure in the event of a tubing leak.
10) Collapse Evac 100%	Full evacuation of the tubing is not realistic in late life and the annulus pressure must be managed and bled off when the tubing pressure is bled off.
10a) Collapse Evac 100% 2900 psi Ann Pr	Not a likely event and the annulus pressure must be managed and bled off when the tubing pressure is bled off.
14) Transient Startup	Not a late life load.
15) Stimulation 5,000 psi	Stimulation is not planned for late life.

The loads that are relevant in late life have acceptable safety factors and include the following:

- 6) Injection Steady State with 0 psi 'A' annulus pressure
- 7) Late life SI with CH_4 to surface
- 8) Late life SI with CO_2 to surface

In addition to the above discussion the tubing can be replaced if it is found to have a wall thickness that creates a risk. A periodic tubing inspection program is recommended to validate the corrosion modeling results.

Table 47: Minimum Safety Factors for the 4 1/2 in. 11.6 ppf Modified 13Cr80 Tubing with 73.2% RBW

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft	SF	MD (ft)	SF	MD (ft)
1) Running	--	--	--	--	>3	0	--	--	>3	0
2) Overpull - 50 kips	--	--	--	--	2.11	0	--	--	2.11	0
4) Pressure Test 4,000 psi	1.55	7,550	--	--	2.19	0	--	--	1.47	7,550
3) Initial Condition	--	--	--	--	2.91	0	--	--	2.91	0
4) 4,000 psi Pressure Test	2.22	7,550	--	--	2.37	0	--	--	2.06	0

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft	SF	MD (ft)	SF	MD (ft)
5) 2,800 psi 'A' annulus pressure test	--	--	1.00	0	>3	0	>3	7,550	1.50	0
6) 2,800 psi Steady State Injection	2.25	0	--	--	>3	0	>3	7,550	2.16	0
7) 3,950 psi SI with CH4	1.64	0	--	--	2.40	0	--	--	1.58	0
8) 2,300 psi SI with CO2	2.82	0	--	--	2.54	0	--	--	2.38	0
9) Tubing Leak Below SCSSV 2,900 psi CP 0 psi TP	--	--	0.91	296	>3	0	>3	7,550	1.37	296
10) Collapse Evac 100%	--	--	0.89	7,550	>3	0	>3	7,550	1.61	7,550
10a) Collapse Evac 100% 2900 psi Ann Pr	--	--	0.47	7,550	>3	0	>3	7,550	0.89	7,550
11) 3,300 psi Bullhead Kill Initial)	1.91	0	--	--	>3	0	>3	7,550	1.85	0
12) Bullhead Kill (500 psi final)	>3	7,550	--	--	1.84	0	--	--	1.93	0
13) Loss of Containment -70F at Surface	--	--	1.16	7,550	>3	0	>3	7,550	2.10	7,550
14) Transient Startup	--	--	1.07	7,550	>3	0	>3	7,550	1.94	7,550
15) Stimulation 5,000 psi	1.21	7,550	--	--	1.51	0	--	--	1.18	7,550

Table 48: RBD Results for the 4.5 in. Tubing with 74.3% Wall

Load Name	Section	Grade	MD (ft)	TVD (ft)	Fail Mode	Min SF	Prob. of Failure / Exceedance (10^)	Failure Rate (1 in -)
5) 2,800 psi 'A' annulus pressure test	1	L80 13CR	0	0	Collapse	1.00	-2.56	362
9) Tubing Leak Below SCSSV 2,900 psi CP 0 psi TP	1	L80 13CR	296	296	Collapse	0.91	-1.69	49

Load Name	Section	Grade	MD (ft)	TVD (ft)	Fail Mode	Min SF	Prob. of Failure / Exceedance (10^)	Failure Rate (1 in -)
10) Collapse Evac 100%	1	L80 13CR	7,550	7,550	Collapse	0.89	-1.76	58
10a) Collapse Evac 100% 2900 psi Ann Pr	1	L80 13CR	7,550	7,550	Collapse	0.47	0.00	1
10a) Collapse Evac 100% 2900 psi Ann Pr	1	L80 13CR	7,550	7,550	Triaxial	0.89	-1.08	12
14) Transient Startup	1	L80 13CR	7,550	7,550	Collapse	1.07	-3.50	3,152
15) Stimulation 5,000 psi	1	L80 13CR	7,550	7,550	Triaxial	1.18	-6.89	7,723,897

4 1/2 in. Modified 13Cr80 Tubing VME Plot

Figure 61 shows the VME plot for the design loads. As expected, many of the loads are outside the 73.2% VME ellipse as discussed above.

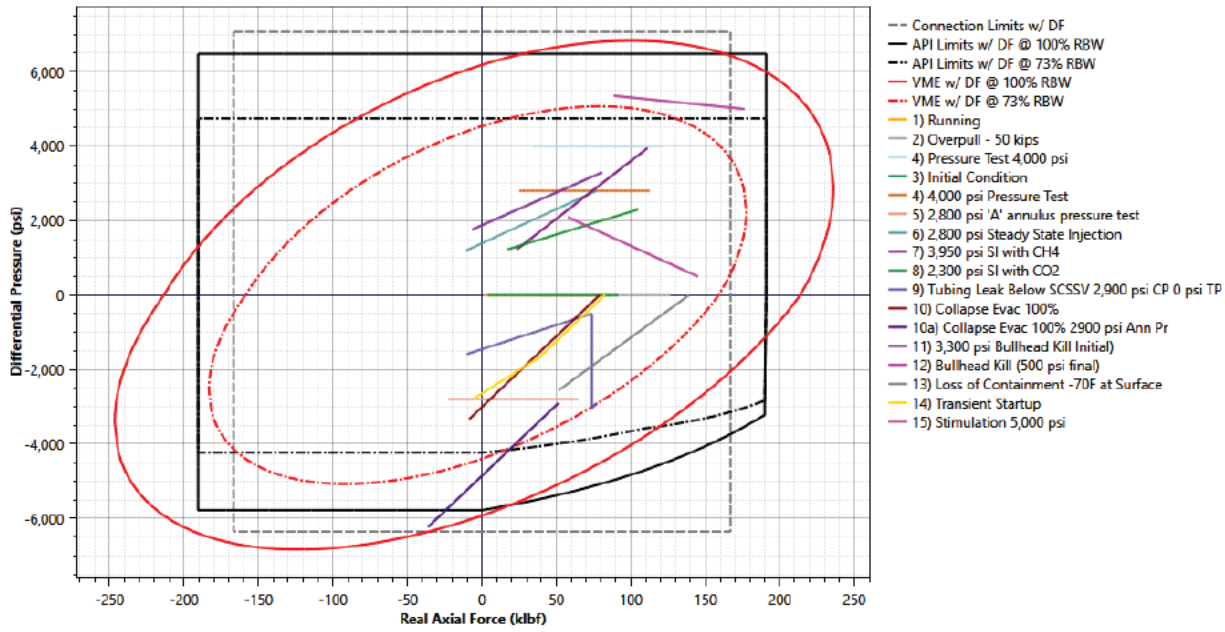


Figure 61: 4 1/2 in. Modified 13Cr80 Tubing VME with 73.2% RBW

3 1/2 in. Inner Liner with Nominal Wall

Table 49 shows the minimum safety factors for the 3 1/2 in. 9.2 ppf modified 13Cr80 liner loads. All SFs meet or exceed the design factors.

Table 49: Minimum Safety Factors for the 3 1/2 in. 9.2 ppf Modified 13Cr80 Liner with Nominal Wall

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1) Running	>3	7,930	--	--	>3	7,930	--	--	>3	7,930
2) Overpull (50 kips)	--	--	--	--	>3	7,930	--	--	>3	7,930
3) Initial Condition	--	--	>3	8,455	--	--	>3	8,455	>3	7,930
4) Pressure Test 4,000 psi	2.41	8,455	--	--	>3	7,930	--	--	2.54	8,455
5) 2,800 psi Steady State Inj	>3	7,930	--	--	>3	7,930	--	--	>3	7,930
6) 3,300 psi Bullhead Kill Initial	2.16	7,935	--	--	>3	7,935	--	--	2.33	7,935
7) 500 psi Bullhead Kill	>3	8,455	--	--	>3	7,930	--	--	>3	8,455
8) Collapse Evac 50%	--	--	>3	8,455	--	--	>3	8,455	>3	7,930
8a) Collapse Evac 100%	--	--	2.73	8,455	--	--	>3	8,455	2.76	8,455
9) Stimulation 5,000 psi	1.79	8,455	--	--	>3	7,930	--	--	1.89	8,455
10) 3,950 psi SITP CH4	>3	7,930	--	--	--	--	>3	8,455	>3	7,930

3 1/2 in. Modified 13Cr80 Inner Liner VME Plot

Figure 62 shows the VME plot for the design loads.

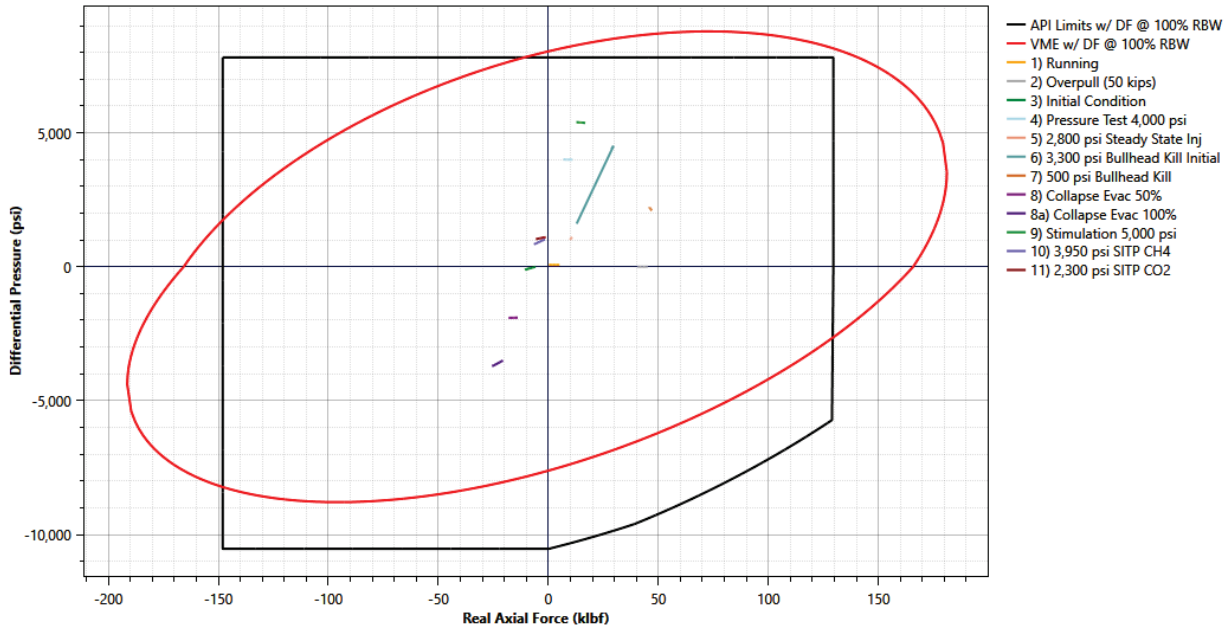


Figure 62: 3 1/2 in. Modified 13Cr80 Inner Liner with Nominal Wall VME

3 1/2 in. Inner Liner with 73.6% RBW (25 years of service)

Table 50 shows the minimum safety factors for the 3 1/2 in. 9.2 ppf modified 13Cr80 inner liner loads with 73.5% RBW based on wall loss from Section 6.3. All SFs exceed the design factors.

Table 50: Minimum Safety Factors for the 3 1/2 in. 9.2 ppf Modified 13Cr80 Liner with 73.5% RBW

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1) Running	>3	7,930	--	--	>3	7,930	--	--	>3	7,930
2) Overpull (50 kips)	--	--	--	--	>3	7,930	--	--	>3	7,930
3) Initial Condition	--	--	>3	8,455	--	--	>3	8,455	>3	7,930
4) Pressure Test 4,000 psi	2.03	8,455	--	--	>3	7,930	--	--	1.86	8,455
5) 2,800 psi Steady State Inj	>3	7,930	--	--	>3	7,930	--	--	>3	7,930
6) 3,300 psi Bullhead Kill Initial	1.82	7,935	--	--	>3	7,935	--	--	1.71	7,935
7) 500 psi Bullhead Kill	>3	8,455	--	--	>3	7,930	--	--	>3	8,455
8) Collapse Evac 50%	--	--	2.96	8,455	--	--	>3	8,455	>3	7,930
8a) Collapse Evac 100%	--	--	1.53	8,455	--	--	>3	8,455	2.02	8,455
9) Stimulation 5,000 psi	1.50	8,455	--	--	>3	7,930	--	--	1.38	8,455
10) 3,950 psi SITP CH4	>3	7,930	--	--	--	--	>3	8,455	>3	7,930

3 1/2 in. Modified 13Cr80 Inner Liner VME Plot

Figure 63 shows the VME plot for the design loads. The stimulation load is outside the 73.6% ellipse.

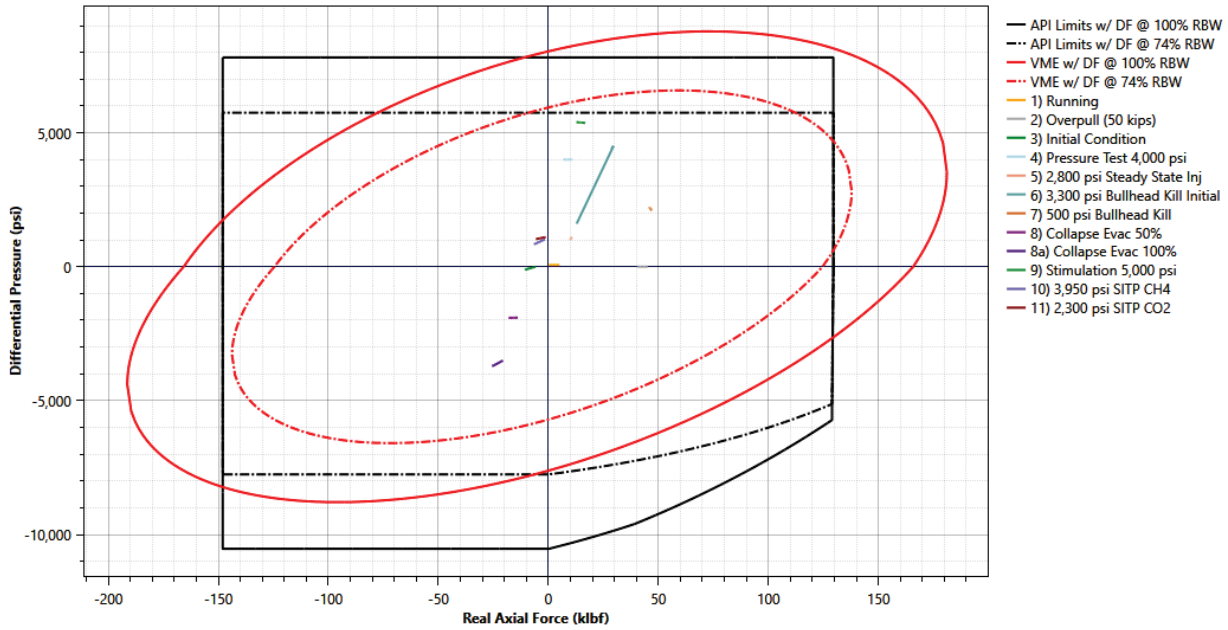


Figure 63: 3 1/2 in. Modified 13Cr80 Liner VME with 73.6% RBW

4 1/2 in. Inner Liner with Nominal Wall

A 4 1/2 in. inner liner design was evaluated for repurposed wells that may have an existing liner that allows running and cementing a 4 1/2 in. OD inner liner.

Table 51 shows the minimum safety factors for the 4 1/2 in. 11.6 ppf modified 13Cr80 liner loads. All SFs meet or exceed the design factors.

Table 51: Minimum Safety Factors for the 4 1/2 in. 11.6 ppf Modified 13Cr80 Liner with Nominal Wall

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1) Running	>3	7,930	--	--	>3	7,930	--	--	>3	7,930
2) Overpull (50 kips)	--	--	--	--	>3	7,930	--	--	>3	7,930
3) Initial Condition	--	--	>3	8,455	--	--	>3	8,455	>3	7,930
4) Pressure Test 4,000 psi	1.84	8,455	--	--	>3	7,930	--	--	1.97	8,455
5) 2,800 psi Steady State Inj	>3	7,930	--	--	>3	7,930	--	--	>3	7,930
6) 3,300 psi Bullhead Kill Initial	1.65	7,935	--	--	>3	7,935	--	--	1.80	7,935
7) 500 psi Bullhead Kill	>3	8,455	--	--	>3	7,930	--	--	>3	8,455
8) Collapse Evac 50%	--	--	>3	8,455	--	--	>3	8,455	>3	7,930
8a) Collapse Evac 100%	--	--	1.66	8,455	--	--	>3	8,455	2.14	8,455
9) Stimulation 5,000 psi	1.37	8,455	--	--	>3	7,930	--	--	1.46	8,455
10) 3,950 psi SITP CH4	>3	7,930	--	--	--	--	>3	8,455	>3	7,930

4 1/2 in. Modified 13Cr80 Inner Liner VME Plot

Figure 64 shows the VME plot for the design loads.

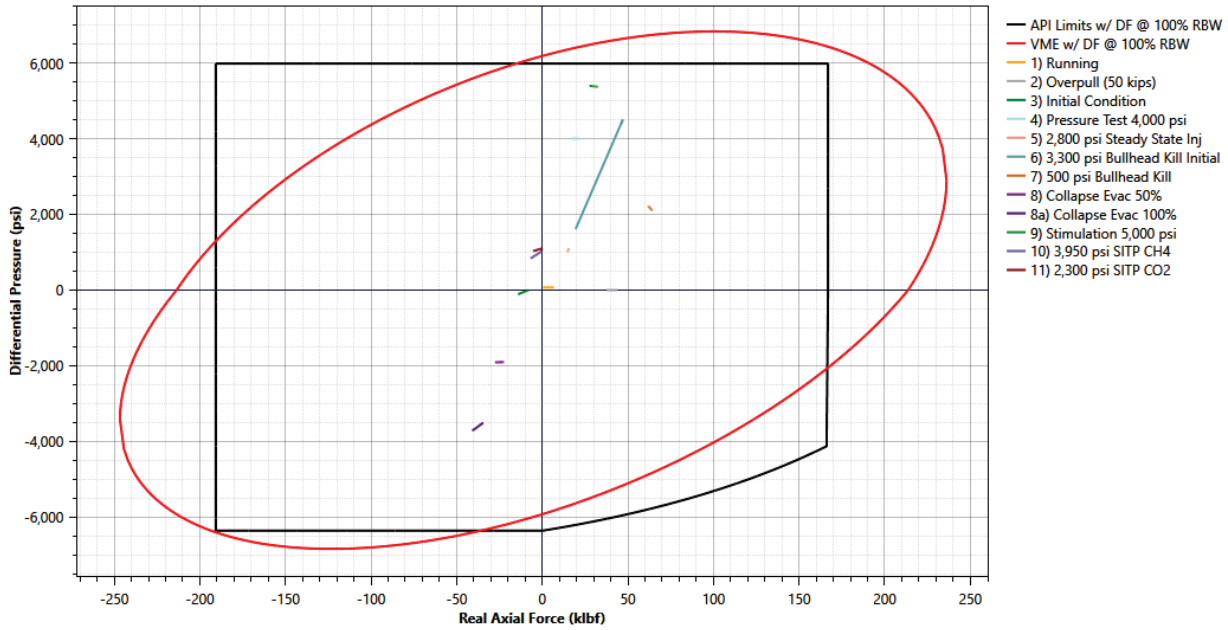


Figure 64: 4 1/2 in. Modified 13Cr80 Inner Liner with Nominal Wall VME

4 1/2 in. Inner Liner with 73.2% RBW (25 years of service)

Table 53 shows the RBD results are shown for information.

Table 52 shows the minimum safety factors for the 4 1/2 in. 11.6 ppf modified 13Cr80 liner loads with wall loss from Section 6.3. All SFs meet or exceed the design factors except load "8a) Collapse Evac 100%" which is an unlikely load. The results are shown for information.

Table 53 shows the RBD results are shown for information.

Table 52: Minimum Safety Factors for the 4 1/2 in. 11.6 ppf Modified 13Cr80 Liner with 73.2% RBW

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1) Running	>3	8,455	--	--	>3	7,930	--	--	>3	7,930
2) Overpull (50 kips)	--	--	--	--	>3	7,930	--	--	>3	7,930
3) Initial Condition	--	--	>3	8,455	--	--	>3	8,455	>3	8,455
4) Pressure Test 4,000 psi	1.54	8,455	--	--	>3	7,930	--	--	1.43	8,455
5) 2,800 psi Steady State Inj	>3	7,930	--	--	>3	7,930	--	--	>3	7,930
6) 3,300 psi Bullhead Kill Initial	1.38	7,935	--	--	>3	7,935	--	--	1.31	7,935
7) 500 psi Bullhead Kill	2.86	8,455	--	--	>3	7,930	--	--	2.67	8,455
8) Collapse Evac 50%	--	--	1.55	8,455	--	--	>3	8,455	2.99	7,930
8a) Collapse Evac 100%	--	--	0.80	8,455	--	--	>3	8,455	1.55	8,455
9) Stimulation 5,000 psi	1.14	8,455	--	--	>3	7,930	--	--	1.06	8,455
10) 3,950 psi SITP CH4	>3	7,930	--	--	--	--	>3	8,455	>3	7,930

Table 53: RBD Results for the 4.5 in. Liner with 74.3% Wall

Load Name	Section	Grade	MD (ft)	TVD (ft)	Fail Mode	Min SF	Prob. of Failure / Exceedance (10^)	Failure Rate (1 in -)
8a) Collapse Evac 100%	1	L80 13CR	8,455	8,455	Collapse	0.80	-1.05	11
9) Stimulation 5,000 psi	1	L80 13CR	8,455	8,455	Ductile Burst	1.14	-7.24	17,575,527

Load Name	Section	Grade	MD (ft)	TVD (ft)	Fail Mode	Min SF	Prob. of Failure / Exceedance (10^)	Failure Rate (1 in -)
9) Stimulation 5,000 psi	1	L80 13CR	8,455	8,455	Triaxial	1.06	-4.37	23,501

4 1/2 in. Modified 13Cr80 Inner Liner VME Plot

Figure 65 shows the VME plot for the design loads.

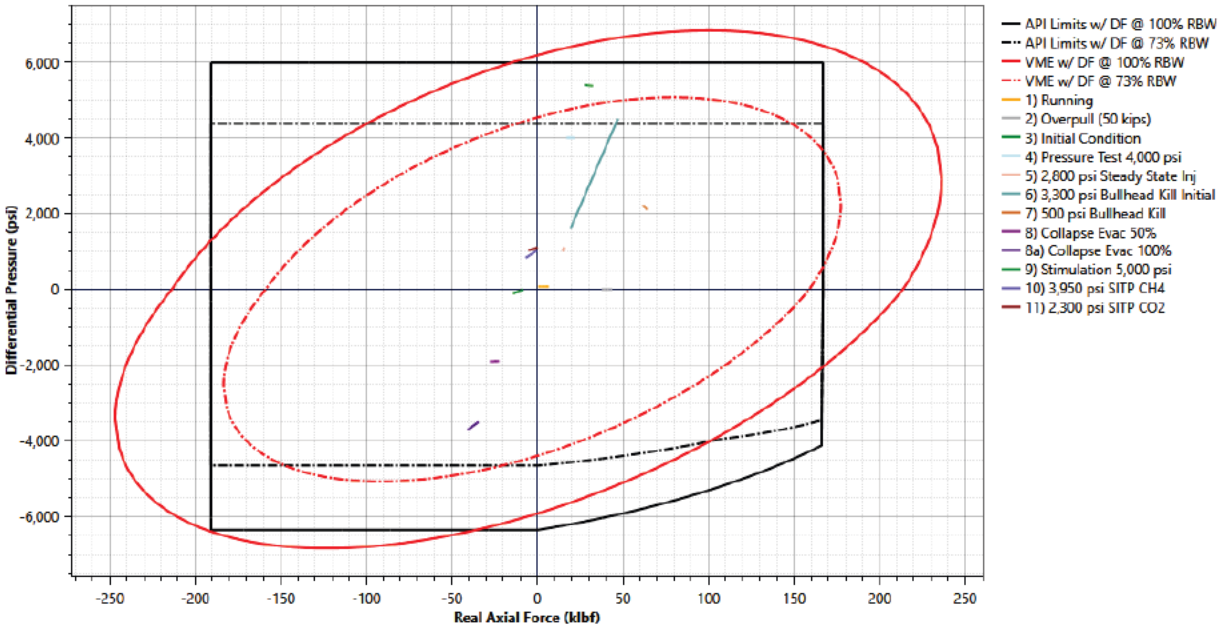


Figure 65: 4 1/2 in. Modified 13Cr80 Inner Liner with 73.2% RBW VME

6.6 Well 64-35N Repurposed Well Design

Well 64-35N has an un-cemented liner that will be removed leaving open hole through the injection zone. The well design is to run and cement 7 in. casing above the injection zone, set a 4 1/2 in. liner through the injection zone, and complete with 4 1/2 in. tubing.

Figure 66 shows the 64-35N wellbore after conversion to a CO_2 injector. A new 7 in. inner casing with a section of CRA casing on bottom is proposed to isolate the existing 9 in. casing with the 7 in. inner casing set near the shoe of the 9 in. casing. This design has a good chance of cementing the 7 in. casing to surface as required by the EPA and CARB because the low pressure injection zone can be temporarily isolated for running and cementing the 7 in. casing.

After the 7 in. inner casing is run and cemented, the open hole through the injection zone can be cleaned out and a 4 1/2 in. CRA liner can be run and cemented.

The completion includes a packer and CRA tubing to isolate the injected CO_2 from the casing. Monitoring equipment including fiber optic cables and downhole gauges are indicated.

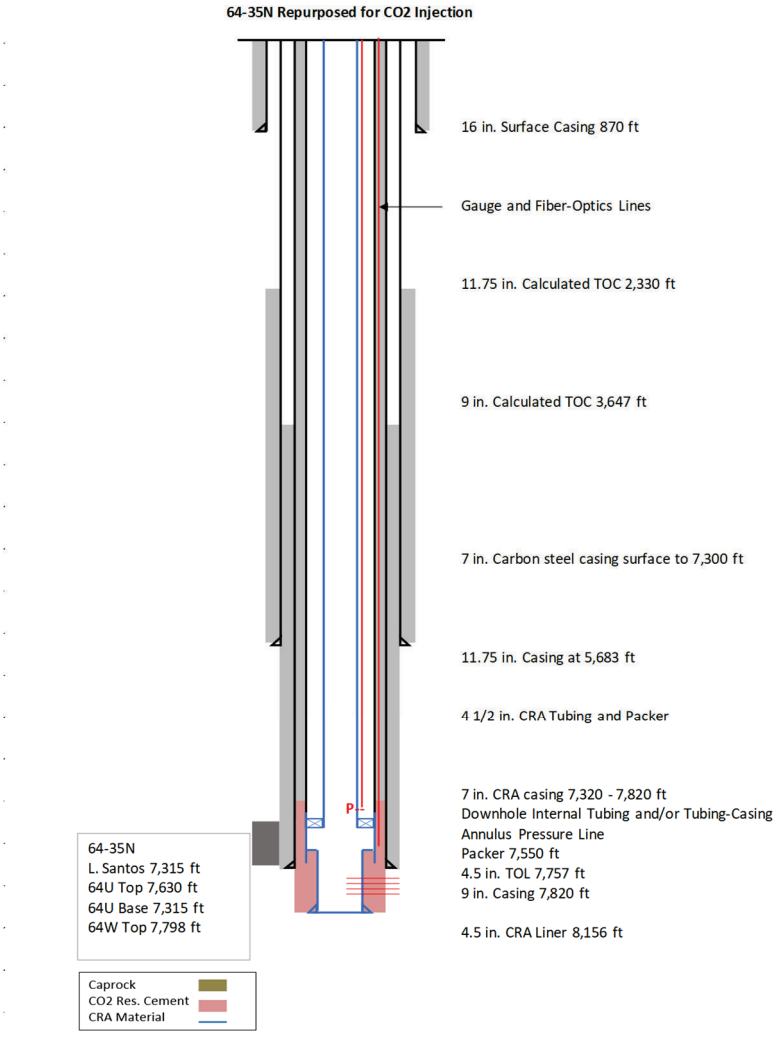


Figure 66: 64-35N Repurposed to CO_2 Injection Wellbore Schematic

6.6.1 Design Details and Assumptions

Table 54 shows the existing casing details with the un-cemented liner removed, the proposed inner casing, liner, and the proposed tubing design. The upper part of the table shows the existing casings and liner. The lower part of the table shows the proposed casing, liner, and tubing. The design depths for the casing, liner, and tubing are approximate and can be adjusted based on requirements for the final well construction and completion depths.

Table 54: 64-35N Casing, Liner, and Tubing

Sec	Name	Type	OD (in.)	Weight (ppf)	ID (in.)	WT (in.)	Grade	Conn.	Top MD (ft)	Bottom MD (ft)
1	Conductor	Casing	20						0	89
1	Surface	Casing	16	72.72	15.124	0.438	–	–	0	870
1	Intermediate	Casing	11.75	61	10.772	0.489	J55	LTC	0	5,683
1	Production	Casing	9	46.1	8.032	0.484	J55	LTC	0	5,631
2	Production	Casing	9	45	8.032	0.484	J55	Speedtite	5,631	7,820
1	Injection	Casing	7	26	6.276	0.362	L80	Proprietary (1)	0	7,300
2	Injection	Casing	7	26	6.276	0.362	Mod 13Cr80	Proprietary (1)	7,300	7,820
1	Injection	Liner	4 1/2	12.6	3.958	0.271	Mod 13Cr110	Proprietary (1)	7,757	8,156
1	Injection	Tubing	4 1/2	11.6	4.000	0.250	Mod 13Cr110	Proprietary (1)	0	7,550

Notes:

(1) Proprietary connection indicates a connection with a metal-to-metal seal and strengths equivalent to the pipe body.

Directional Profile for 64-35N

The well was drilled as a vertical well.

Other Design Assumptions

The assumptions for the undisturbed temperature, pore pressure, fracture pressure, cement, and completion and packer fluid are the same as shown in Section 6.5.1.

6.6.2 64-35N Design Results

7 in. Inner Injection Casing

The design results and analyses for well 9-1N are valid for the 7 in. inner casing for this well. The 7 in. inner casing setting depths for both wells are very similar.

4 1/2 in. Tubing

The design results and analyses for well 9-1N are valid for the 4 1/2 in. tubing for this well. The 4 1/2 in. tubing setting depths for both wells are very similar.

4 1/2 in. Open Hole Liner

The design results and analyses for the new drill well are valid for the 4 1/2 in. liner for this well. The 4 1/2 in. liner setting depths for both wells are similar and the loads are the same.

6.7 Well 64-27N Repurposed Well Design

Well 64-27N has an un-cemented 4 3/4 in. liner and tieback casing that will be removed leaving open hole through the injection zone.

Figure 67 shows the 64-27N wellbore after conversion to a CO_2 injector. A new 6 5/8 in. inner casing with a section of CRA casing on bottom is proposed to isolate the existing 8 1/8 in. casing with the 6 5/8 in. inner casing set at the base of the Lower Santos confining layer. This design has a good chance of cementing the 6 5/8 in. casing to surface as required by the EPA and CARB because the low pressure injection zone can be temporarily isolated for running and cementing the 6 5/8 in. casing.

After the 6 5/8 in. inner casing is run and cemented, the open hole through the injection zone will be cleaned out and a 4 1/2 in. CRA liner can be run and cemented.

The completion includes a packer and CRA tubing to isolate the injected CO_2 from the casing. Monitoring equipment including fiber optic cable and downhole gauges are indicated.

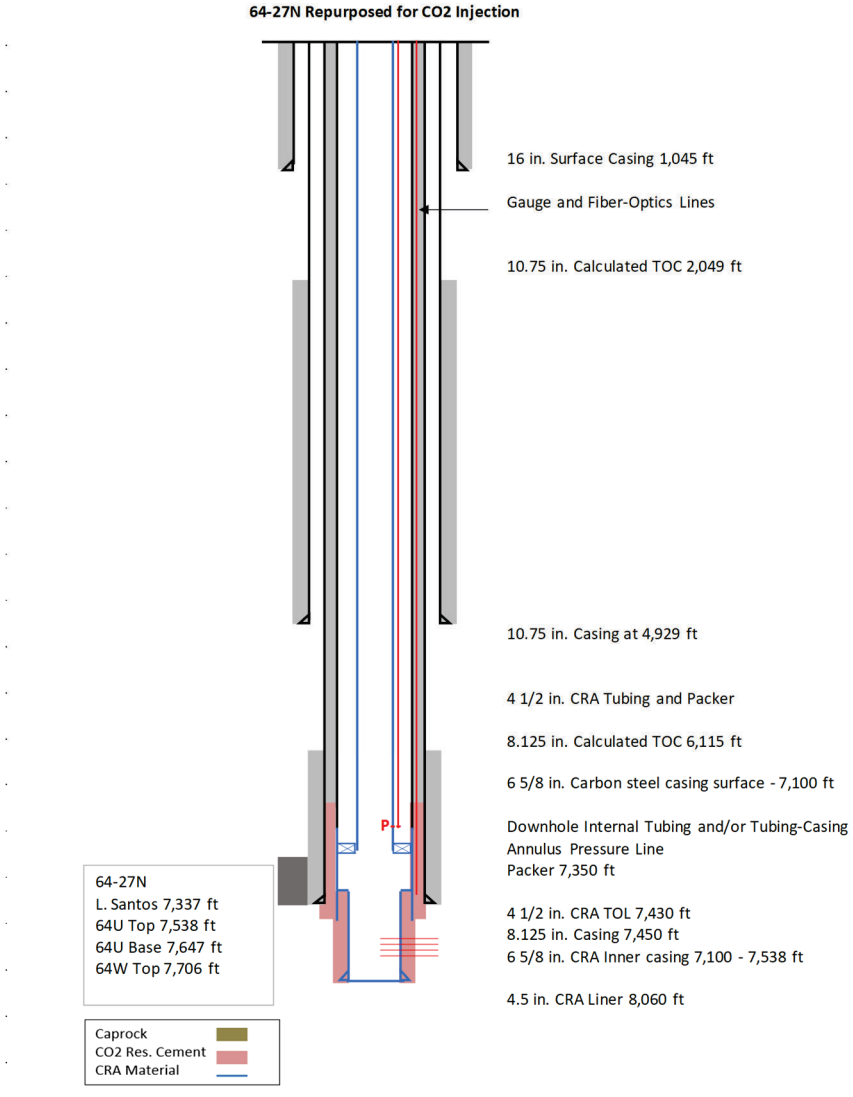


Figure 67: 64-27N Repurposed to CO_2 Injection Wellbore Schematic

6.7.1 Design Details and Assumptions

Table 55 shows the existing casing details with the un-cemented liner removed, the proposed inner casing, liner, and the proposed tubing design. The upper part of the table shows the existing casings and liner. The lower part of the table shows the proposed casing, liner, and tubing. The design depths for the casing, liner, and tubing are approximate and can be adjusted based on requirements for the final well construction and completion depths.

Table 55: 64-27N Casing, Liner, and Tubing

Sec	Name	Type	OD (in.)	Weight (ppf)	ID (in.)	WT (in.)	Grade	Conn.	Top MD (ft)	Bottom MD (ft)
1	Surface	Casing	16	72.72	15.124	0.438	–	–	0	1,045
1	Intermediate	Casing	10.75	45.5	9.950	0.400	D	Not Reported	0	4,929
1	Production	Casing	8.125	35.5	7.285	0.420	D	STC Flush Joint	0	7,450
1	Injection	Casing	6.625	24	5.921	0.352	L80	Proprietary (1)	0	7,100
2	Injection	Casing	6.625	24	5.921	0.352	Mod 13Cr80	Proprietary (1)	7,100	7,538
1	Injection	Liner	4 1/2	12.6	3.958	0.271	Mod 13C110	Proprietary (1)	7,430	8,060
1	Injection	Tubing	4 1/2	11.6	4.000	0.250	Mod 13Cr80	Proprietary (1)	0	7,350

Notes:
(1) Proprietary connection indicates a connection with a metal-to-metal seal and strengths equivalent to the pipe body.

Directional Profile for 64-27N

The well was drilled as a vertical well.

Other Design Assumptions

The assumptions for the undisturbed temperature, pore pressure, fracture pressure, cement, and completion and packer fluid are the same as shown in Section 6.5.1.

6.7.2 64-27N Design Results

This section includes the results of the design analysis for the well. The analysis includes the 6 5/8 in. inner casing. A CRA material grade was evaluated for the lower section of casing and is recommended to meet the requirements for limiting corrosion during the life of the well. Refer to Section 5 for details on materials selection.

4 1/2 in. Tubing

The design results and analyses for well 9-1N are valid for the 4 1/2 in. tubing for this well. The 4 1/2 in. tubing setting depths for both wells are similar and the loads are the same.

4 1/2 in. Liner

The design results and analyses for the new drill well are valid for the 4 1/2 in. liner for this well. The 4 1/2 in. liner setting depths for both wells are similar and the loads are the same.

6 5/8 in. Inner Injection Casing with Nominal Wall

Table 56 shows the minimum safety factors for the 6 5/8 in. L80 Section 1 casing loads. The load number corresponds to the load number in Section 6.2. The safety factors assume nominal wall thickness with a tolerance of –12.5% resulting in remaining body wall (RBW) of 87.5%. The minimum safety factors all meet or exceed the design factors shown in Table 23.

Table 57 shows the minimum SFs for Section 2. The SFs meet the DFs.

Table 56: Minimum Safety Factors for the 6 5/8 in. 24 ppf L80 Section 1 Injection Casing with Nominal Wall

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1) Running	--	--	>3	0	2.90	0	--	--	2.90	0
2) Overpull (100 kips)	--	--	>3	0	2.08	0	--	--	2.08	0
3) Initial Condition	--	--	>3	7,400	>3	0	>3	7,400	>3	7,400
4) Kick: Casing Full of Gas	1.44	0	--	--	2.88	0	--	--	1.58	0
5) Pressure Test 4,000 psi	1.75	7,400	--	--	>3	0	--	--	1.85	7,400
6) 2,900 psi Annulus Operating Pressure	2.40	7,400	--	--	>3	12	--	--	2.57	7,400
7) 2,800 psi Injection Tubing Leak	2.48	7,400	--	--	>3	0	--	--	2.60	7,400
8) 2,300 psi Shut-in CO2 Tubing Leak	3.00	7,400	--	--	>3	0	--	--	>3	7,400

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
9) 3,950 psi Shut-in Tubing Leak (CH4)	1.77	7,400	--	--	>3	0	--	--	1.87	7,400
10) Collapse Evac 50%	--	--	>3	7,400	>3	0	>3	7,400	>3	3,968
10a) Collapse Evac 100%	--	--	1.72	7,400	>3	0	>3	7,400	2.37	7,400
11) Bullhead Kill Initial (3,300 psi)	2.12	7,400	--	--	>3	12	--	--	2.27	7,400
12) Bullhead Kill (500 psi final)	>3	7,400	--	--	>3	5,855	--	--	>3	7,400
13) Loss of Containment 50% Evac	--	--	>3	3,968	2.04	0	>3	7,400	2.04	0
14) Stimulation 5,000 psi with Tubing Leak	1.44	7,400	--	--	2.92	0	--	--	1.58	7,400

Table 57: Minimum Safety Factors for the 6 5/8 in. 24 ppf Modified 13Cr80 Section 2 Injection Casing with Nominal Wall

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1) Running	--	--	--	--	>3	7,400	--	--	>3	7,400
2) Overpull (100 kips)	--	--	--	--	>3	7,400	--	--	>3	7,400
3) Initial Condition	--	--	>3	7,935	--	--	>3	7,935	>3	7,935
4) Kick: Casing Full of Gas	2.62	7,400	--	--	>3	7,400	>3	7,935	2.75	7,400
5) Pressure Test 4,000 psi	1.74	7,935	--	--	>3	7,400	--	--	1.83	7,935
6) 2,900 psi Annulus Operating Pressure	2.40	7,550	--	--	>3	7,400	>3	7,935	2.57	7,538
7) 2,800 psi Injection Tubing Leak	2.48	7,550	--	--	>3	7,400	>3	7,935	2.59	7,550
8) 2,300 psi Shut-in CO2 Tubing Leak	3.00	7,550	--	--	>3	7,400	>3	7,935	>3	7,550

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
9) 3,950 psi Shut-in Tubing Leak (CH4)	1.77	7,550	--	--	>3	7,400	>3	7,935	1.86	7,550
10) Collapse Evac 50%	--	--	>3	7,935	--	--	>3	7,935	>3	7,935
10a) Collapse Evac 100%	--	--	1.60	7,935	--	--	>3	7,935	2.21	7,935
11) Bullhead Kill Initial (3,300 psi)	2.12	7,550	--	--	>3	7,400	>3	7,935	2.27	7,538
12) Bullhead Kill (500 psi final)	>3	7,935	--	--	>3	7,930	--	--	2.84	7,930
13) Loss of Containment 50% Evac	--	--	>3	7,935	--	--	>3	7,935	>3	7,400
14) Stimulation 5,000 psi with Tubing Leak	1.44	7,550	--	--	2.65	7,930	--	--	1.58	7,550

6 5/8 in. Injection Casing with Nominal Wall VME Plots

Figure 68 shows the VME plot for the design loads.

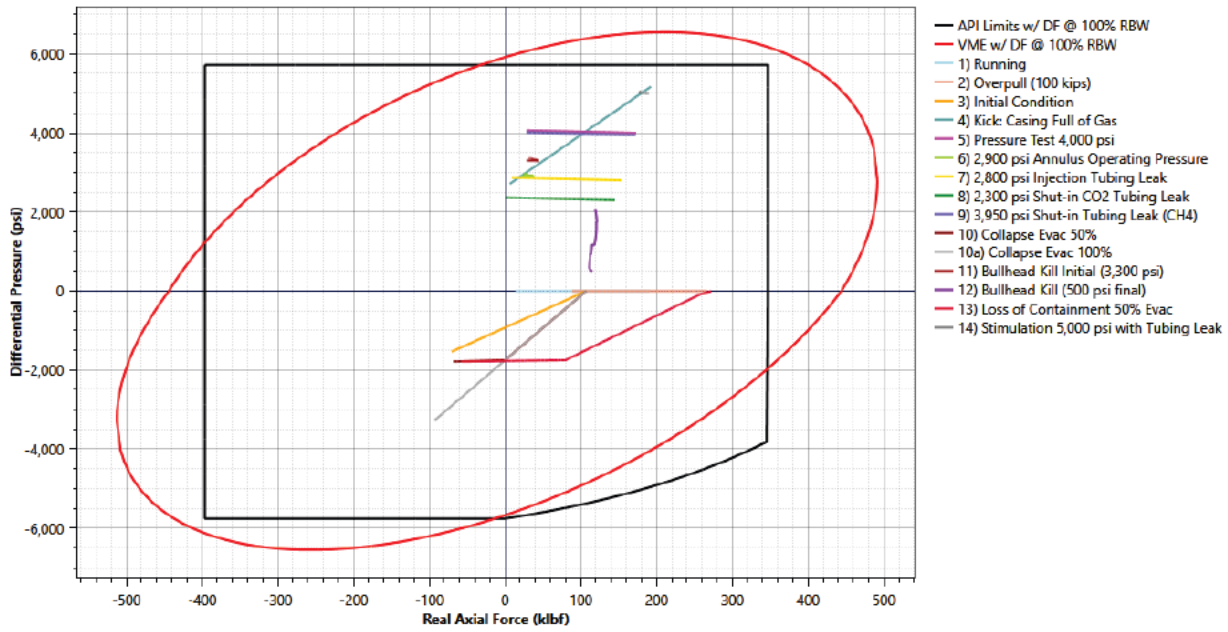


Figure 68: 6 5/8 in. Injection Casing with Nominal Wall Section 1 VME

Figure 69 shows the VME plot for the design loads.

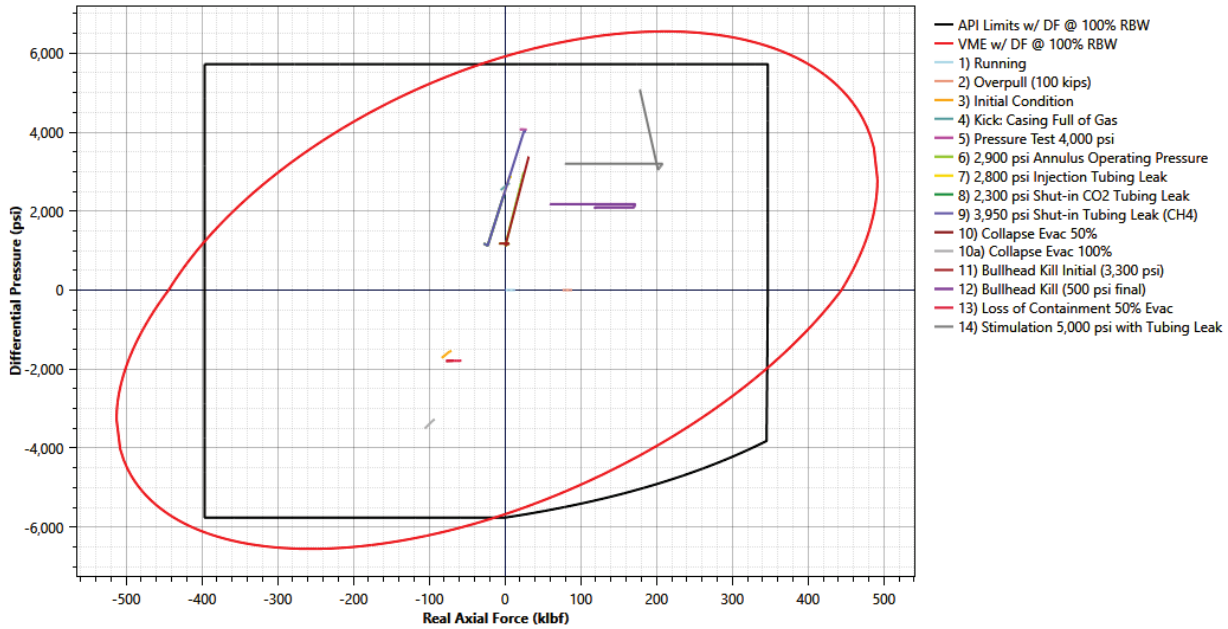


Figure 69: 6 5/8 in. Injection Casing with Nominal Wall Section 2 VME

6 5/8 in. Casing Wall with RBW 77.4% (25 years of service)

Table 59 shows the RBD results for information.

Table 58 shows the results for 77.4% RBW based on wall loss from Section 6.3. The SFs meet the DFs except for load "11) Collapse - Full Evacuation" and load "16) Stimulation 5,000 psi with Tubing Leak". The SFs in red font are less than the DF for the load design failure mode.

The collapse SF is less than the DF of 1.00. Full evacuation of the casing after 25 years of service is an unlikely load and can be considered a design check for information. The stimulation load is an early life load and is not planned for mid or late life. The results are shown for information.

Table 59 shows the RBD results for information.

Table 58: Minimum Safety Factors for the 6 5/8 in. 24 ppf Modified 13Cr80 Section 2 Injection Casing with 77.4% RBW

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1) Running	--	--	--	--	>3	7,400	--	--	>3	7,400
2) Overpull (100 kips)	--	--	--	--	>3	7,400	--	--	>3	7,400
3) Initial Condition	--	--	1.76	7,935	--	--	>3	7,935	>3	7,935
4) Kick: Casing Full of Gas	2.32	7,400	--	--	>3	7,400	>3	7,935	2.11	7,400
5) Pressure Test 4,000 psi	1.54	7,935	--	--	>3	7,400	--	--	1.40	7,935
6) 2,900 psi Annulus Operating Pressure	2.12	7,550	--	--	>3	7,400	>3	7,930	1.97	7,538
7) 2,800 psi Injection Tubing Leak	2.19	7,550	--	--	>3	7,400	>3	7,935	1.99	7,550
8) 2,300 psi Shut-in CO2 Tubing Leak	2.65	7,550	--	--	>3	7,400	>3	7,935	2.40	7,550
9) 3,950 psi Shut-in Tubing Leak (CH4)	1.56	7,550	--	--	>3	7,400	>3	7,935	1.43	7,550
10) Collapse Evac 50%	--	--	1.69	7,935	--	--	>3	7,935	>3	7,400
10a) Collapse Evac 100%	--	--	0.86	7,935	--	--	>3	7,935	1.70	7,935
11) Bullhead Kill Initial (3,300 psi)	1.87	7,550	--	--	>3	7,400	>3	7,930	1.74	7,538
12) Bullhead Kill (500 psi final)	2.94	7,935	--	--	>3	7,930	--	--	2.57	7,930

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
13) Loss of Containment 50% Evac	--	--	1.69	7,935	--	--	>3	7,935	>3	7,400
14) Stimulation 5,000 psi with Tubing Leak	1.28	7,550	--	--	2.66	7,930	--	--	1.24	7,550

Table 59: RBD Results for the 6 5/8 in. Casing with 77.4% Wall

Load Name	Section	Grade	MD (ft)	TVD (ft)	Fail Mode	Min SF	Prob. of Failure / Exceedance (10^)	Failure Rate (1 in -)
10a) Collapse Evac 100%	2	L80 13CR	7,935	7,935	Collapse	0.86	-1.68	48
14) Stimulation 5,000 psi with Tubing Leak	2	L80 13CR	7,550	7,550	Ductile Burst	1.28	< -9	> 1 bil
14) Stimulation 5,000 psi with Tubing Leak	2	L80 13CR	7,550	7,550	Triaxial	1.24	-8.40	250,893,854

6 5/8 in. Injection Casing with 77.4% Wall VME Plots

Figure 70 shows the VME plot for the design loads.

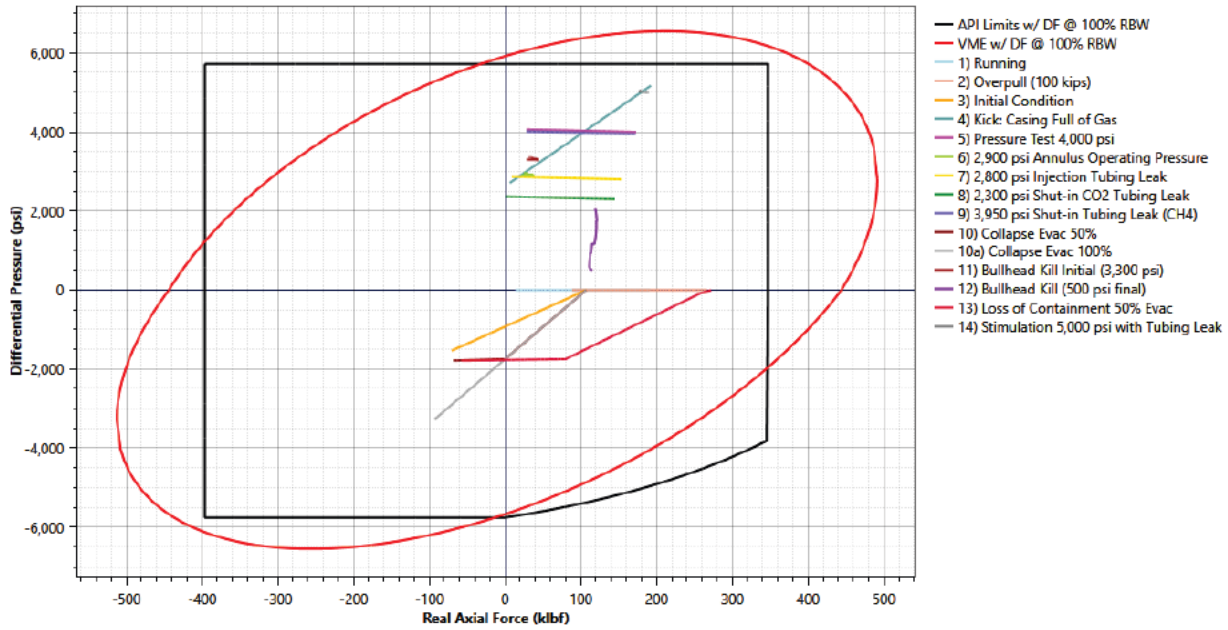


Figure 70: 7 in. Injection Casing with 77.4% RBW Section 2 VME

6.8 Well 27R-27N Repurposed Well Design

Well 27R-27N will be cleaned out below the proposed injection perforations. Part of the existing 6 5/8 in. casing stub will be cut and removed.

Figure 73 shows the 27R-27N wellbore after conversion to a CO_2 injector. 7 in. injection casing will be run and cemented to surface in the 9 in. casing. A 4 1/2 in. CRA liner will be run and cemented.

The completion includes a packer and CRA tubing to isolate the injected CO_2 from the casing. Monitoring equipment including fiber optic cable and downhole gauges are indicated.

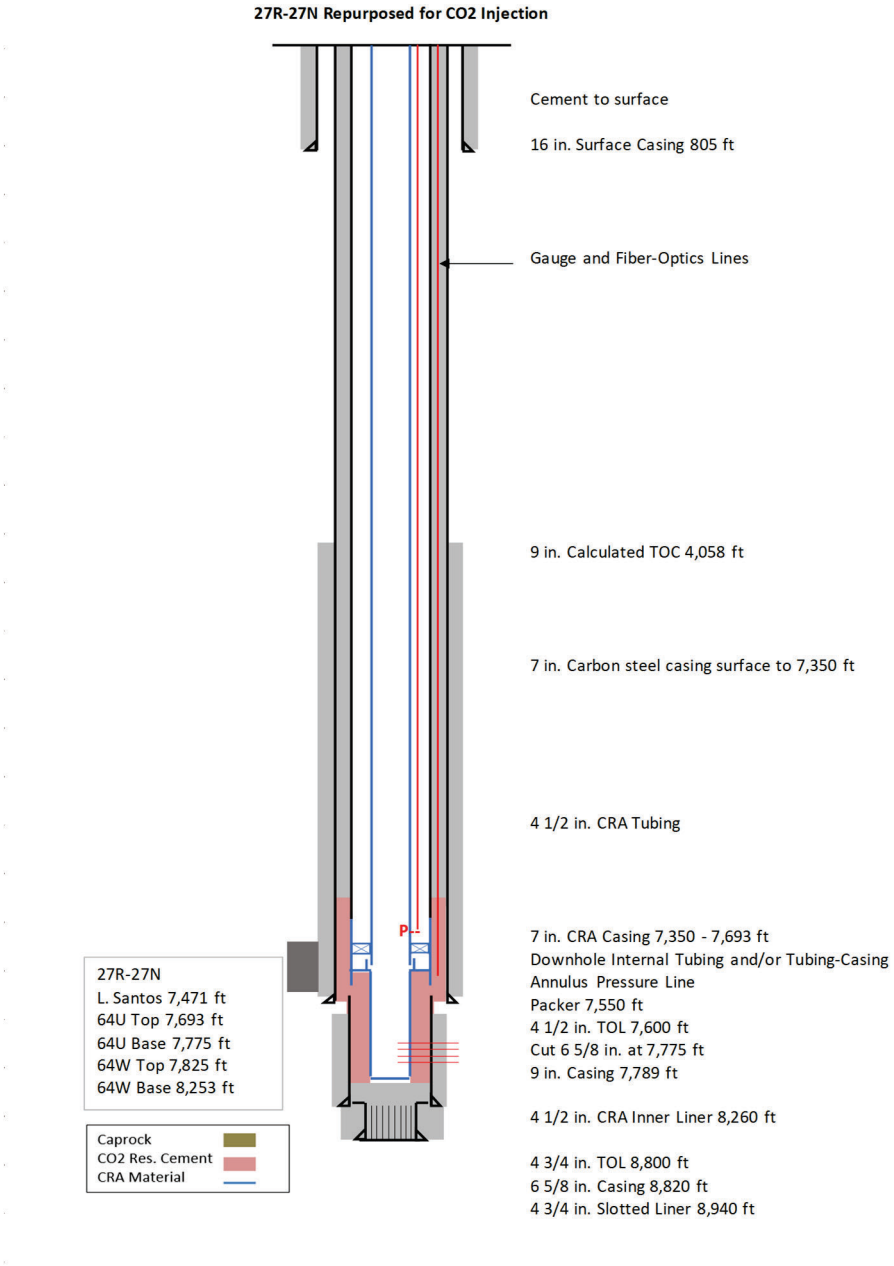


Figure 71: 27R-27N Repurposed to CO_2 Injection Wellbore Schematic

6.8.1 Design Details and Assumptions

Table 60 shows the existing casing details with the un-cemented liner removed, the proposed inner casing, liner, and the proposed tubing design. The upper part of the table shows the existing casings and liner. The lower part of the table shows the proposed casing, liner, and tubing. The design depths for the casing, liner, and tubing are approximate and can be adjusted based on requirements for the final well construction and completion depths.

Table 60: 27R-27N Casing, Liner, and Tubing

Sec	Name	Type	OD (in.)	Weight (ppf)	ID (in.)	WT (in.)	Grade	Conn.	Top MD (ft)	Bottom MD (ft)
1	Surface	Casing	16	72.72	15.124	0.438	–	–	0	805
1	Production	Casing	9	45	8.032	0.484	J55	Speedtite	0	7,789
1	Cutoff	Casing	6.625	26	5.885	0.370	N80	Speedtite	7,680	8,820
1	Injection	Casing	7	26	6.276	0.362	L80	Proprietary (1)	0	7,350
2	Injection	Casing	7	26	6.276	0.362	Mod 13Cr80	Proprietary (1)	7,350	7,693
1	Injection	Liner	4 1/2	11.6	4.000	0.250	Mod 13Cr80	Proprietary (1)	7,600	8,260
1	Injection	Tubing	4 1/2	11.6	4.000	0.250	Mod 13Cr80	Proprietary (1)	1	7,550

Notes:
(1) Proprietary connection indicates a connection with a metal-to-metal seal and strengths equivalent to the pipe body.

Directional Profile for 64-27N

The well was drilled as a vertical well.

Other Design Assumptions

The assumptions for the undisturbed temperature, pore pressure, fracture pressure, cement, and completion and packer fluid are the same as shown in Section 6.5.1.

6.8.2 27R-27N Design Results

7 in. Casing

The design results and analyses for well 9-1N are valid for the 7 in. inner casing for this well. The 7 in. inner casing setting depths for both wells are very similar.

4 1/2 in. Tubing

The design results and analyses for well 9-1N are valid for the 4 1/2 in. tubing for this well. The 4 1/2 in. tubing setting depths for both wells are similar and the loads are the same.

4 1/2 in. Liner

The design results and analyses for the 4 1/2 in. liner evaluated in Section 6.5 are valid for the 4 1/2 in. tubing for this well. The 4 1/2 in. liner setting depths for both wells are similar and the loads are the same.

6.9 Well 55-26N Repurposed Well Design

Well 55-26N will be cleaned out to below the proposed injection perforations.

Figure 72 shows the 55-26N wellbore after conversion to a CO_2 injector. 7 in. injection casing will be run and cemented to surface in the 9 in. casing.

The completion includes a packer and CRA tubing to isolate the injected CO_2 from the casing. Monitoring equipment including fiber optic cable and downhole gauges are indicated.

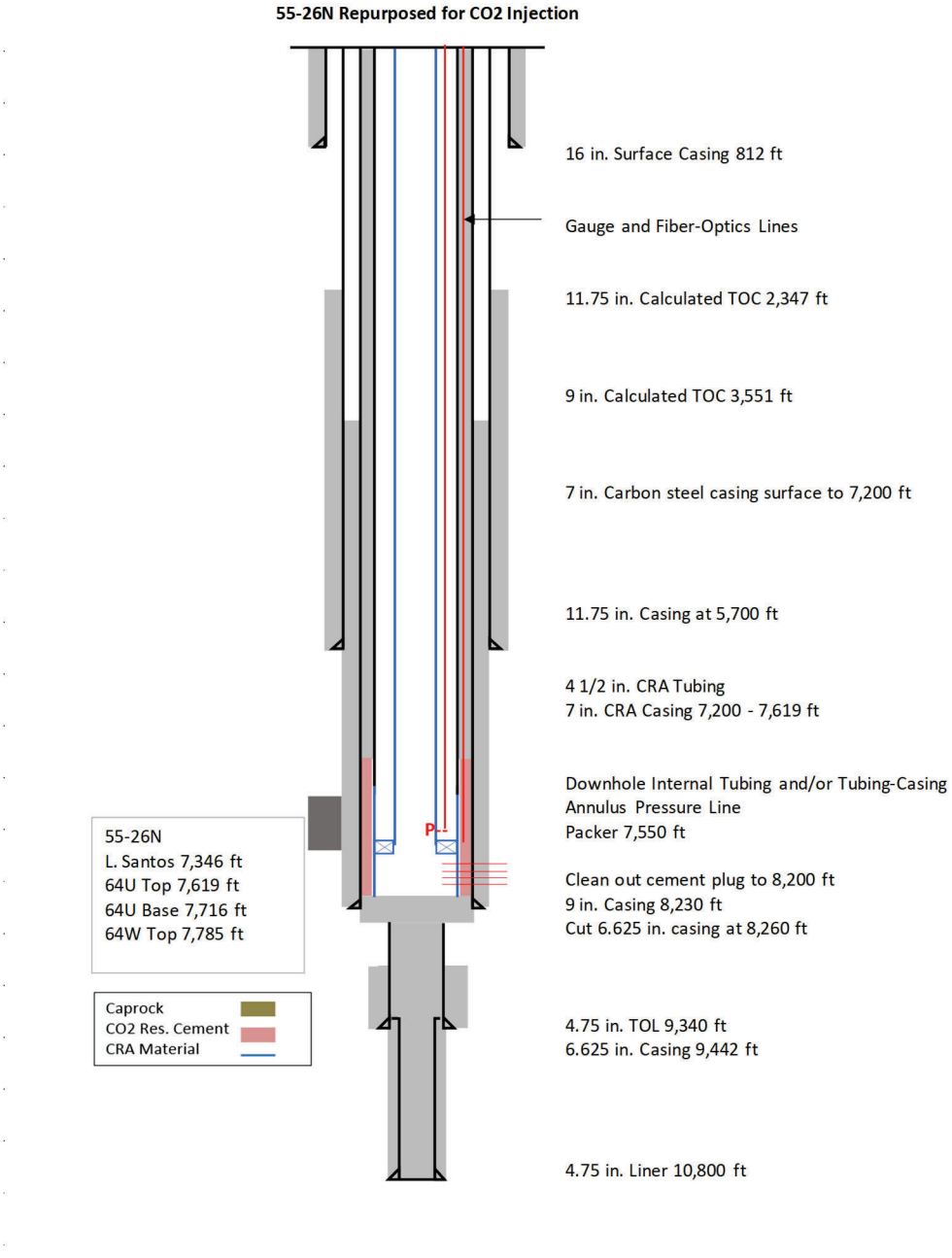


Figure 72: 55-26N Repurposed to CO_2 Injection Wellbore Schematic

6.9.1 Design Details and Assumptions

Table 61 shows the existing casing details with the un-cemented liner removed, the proposed inner casing, liner, and the proposed tubing design. The upper part of the table shows the existing casings and liner. The lower part of the table shows the proposed casing, liner, and tubing. The design depths for the casing, liner, and tubing are approximate and can be adjusted based on requirements for the final well construction and completion depths.

Table 61: 55-26N Casing, Liner, and Tubing

Sec	Name	Type	OD (in.)	Weight (ppf)	ID (in.)	WT (in.)	Grade	Conn.	Top MD (ft)	Bottom MD (ft)
1	Surface	Casing	16	72.72	15.124	0.438	–	–	0	812
1	Intermediate	Casing	11.75	61	10.772	0.489	J55	8 Round	0	5,700
1	Production	Casing	9	45	8.032	0.484	J55	Speedtite	0	8,230
1	Cutoff	Casing	6.625	26	5.885	0.370	N80	Speedtite	8,260	9,442
1	Production	Liner	4.75	16	4.082	0.334	J55	Flush Joint	9,340	10,800
1	Injection	Casing	7	26	6.276	0.362	L80	Proprietary (1)	0	7,200
2	Injection	Casing	7	26	6.276	0.362	Mod 13Cr80	Proprietary (1)	7,200	8,200
1	Injection	Tubing	4 1/2	11.6	4.000	0.250	Mod 13Cr80	Proprietary (1)	0	7,550

Notes:
(1) Proprietary connection indicates a connection with a metal-to-metal seal and strengths equivalent to the pipe body.

Directional Profile for 64-27N

The well was drilled as a vertical well.

Other Design Assumptions

The assumptions for the undisturbed temperature, pore pressure, fracture pressure, cement, and completion and packer fluid are the same as shown in Section 6.5.1.

6.9.2 55-26N Design Results

7 in. Casing

The design results and analyses for the liner evaluated in Section 6.5 are valid for the 7 in. inner casing for this well. The 7 in. inner casing setting depths for both wells are very similar.

4 1/2 in. Tubing

The design results and analyses for well 9-1N are valid for the 4 1/2 in. tubing for this well. The 4 1/2 in. tubing setting depths for both wells are similar and the loads are the same.

6.10 New Drill Injection Well Design

A new drill injection well design was conducted as part of the study. The well design is to run and cement 7 in. injection casing above the injection zone, set a 4 1/2 in. liner through the injection zone, and complete with 4 1/2 in. tubing.

Figure 73 shows the proposed well design. 7 in. injection casing with a section of CRA casing on bottom is proposed. This design improves the chances of cementing the 7 in. casing to surface as required by the EPA and CARB.

After the 7 in. injection casing is run and cemented, the injection zone will be drilled and a 4 1/2 in. CRA liner will be run and cemented.

The completion includes a packer and CRA tubing to isolate the injected CO_2 from the casing. Monitoring equipment including distributed temperature sensing (DTS) and downhole gauges are indicated in the figure.

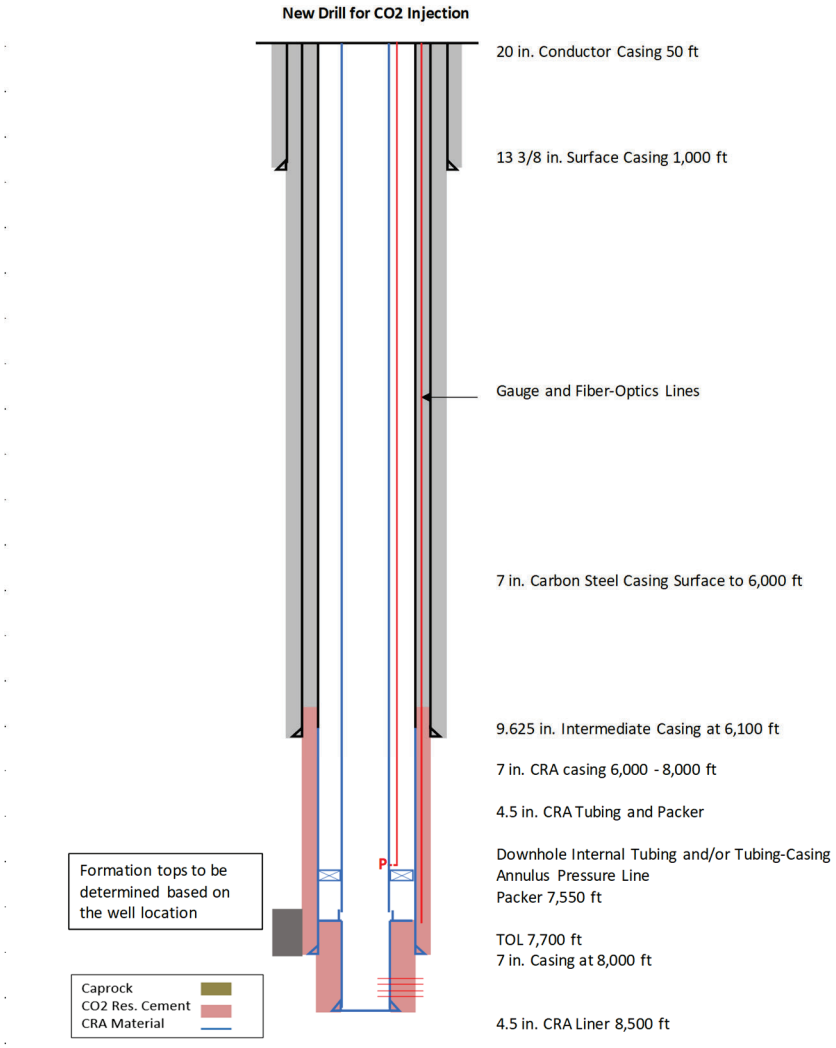


Figure 73: New Drill CO_2 Injection Wellbore Schematic

6.10.1 Design Details and Assumptions

Table 62 shows the new drill well design with the proposed upper casing strings, injection casing, liner, and the proposed tubing. The design depths for the casings, liner, and tubing are approximate and can be adjusted based on requirements for the final well construction and completion depths.

Table 62: New Drill Casing, Liner, and Tubing

Sec	Name	Type	OD (in.)	Weight (ppf)	ID (in.)	WT (in.)	Grade	Conn.	Top MD (ft)	Bottom MD (ft)
1	Conductor	Casing	20					–	0	50
1	Surface	Casing	13.375	54.5	12.615	0.380	K55	BTC	0	1,000
1	Intermediate	Casing	9.625	40	8.835	0.395	K55	LTC	0	6,100
1	Injection	Casing	7	26	6.276	0.362	L80	Proprietary (1)	0	6,000
2	Injection	Casing	7	29	6.184	0.408	Mod 13Cr110	Proprietary (1)	6,000	8,000
1	Injection	Liner	4 1/2	12.6	3.958	0.271	Mod 13Cr110	Proprietary (1)	7,700	8,500
1	Injection	Tubing	4 1/2	11.6	4.000	0.250	Mod 13Cr80	Proprietary (1)	0	7,700

Notes:

(1) Proprietary connection indicates a connection with a metal-to-metal seal and strengths equivalent to the pipe body.

Directional Profile for New Drill Wells

The wells will be drilled as vertical wells.

Other Design Assumptions

The assumptions for the undisturbed temperature, pore pressure, fracture pressure, cement, and completion and packer fluid are the same as shown in Section 6.5.1.

6.10.2 New Drill Well Design Results

This section includes the design results for the new drill well design with 7 in. casing set at the base of the Lower Santos shale, a 4 1/2 in. liner set through the injection zone with a 4 1/2 in. tubing and packer completion.

13 3/8 in. Surface Casing

Table 63 shows the design results for the 13 3/8 in. surface casing. The SFs meet or exceed the DFs.

Table 63: Minimum Safety Factors for the 13 3/8 in. Surface Casing

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1. Running in Hole at 2 ft/s	--	--	--	--	>3	0	--	--	>3	0
2. Overpull w/ 100 kips	--	--	--	--	>3	0	--	--	>3	0
3. Initial Condition	--	--	>3	1,000	>3	0	>3	1,000	>3	1,000
4. Casing Full of Gas with 0.13 psi/ft from 6,100 ft	>3	0	--	--	>3	0	--	--	>3	0
5. Pressure Test to 1,000 psi	2.54	1,000	--	--	>3	0	--	--	2.75	1,000
6. 50% Evacuation	--	--	>3	500	>3	0	>3	1,000	>3	500

9 5/8 in. Intermediate Casing

Table 64 shows the design results for the 9 5/8 in. intermediate casing. The SFs meet or exceed the DFs except load "4. Casing Full of Gas w/ 0.13 psi/ft from 7500 ft (No Frac, Geo Temp)" where the burst SF is less than the DF of 1.30 but exceeds the typical industry DF of 1.10.

Table 64: Minimum Safety Factors for the 9 5/8 in. Intermediate Casing

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1. Running In Hole at 2ft/s	--	--	>3	0	2.53	0	--	--	2.53	0
2. Overpull with 100kips	--	--	>3	0	2.04	0	--	--	2.04	0
3. Initial Condition	--	--	3.00	6,100	>3	0	>3	6,100	>3	0
4. Casing Full of Gas w/ 0.13psi/ft from 7500ft (No Frac, Geo Temp)	1.22	0	--	--	2.37	0	>3	6,100	1.36	0
5. Burst: Pressure Test to 1,000 psi	1.45	5,296	--	--	>3	0	>3	6,100	1.56	5,296
6. 50% Evacuation	--	--	1.60	6,100	>3	0	>3	6,100	2.43	3,050

4 1/2 in. Tubing

The design results and analyses for well 9-1N are valid for the 4 1/2 in. tubing for the new drill wells. The 4 1/2 in. tubing setting depths for the wells are similar.

7 in. Casing with Nominal Wall

Table 65 shows the minimum safety factors for the 7 in. 26 ppf L80 casing Section 1 loads. The load number corresponds to the load number in Section 6.2. The safety factors assume nominal wall thickness with a tolerance of –12.5% resulting in remaining body wall (RBW) of 87.5%. All load SFs meet the DFs for Section 1.

Table 66 shows the minimum safety factors for Section 2 of the casing. All DFs are meet or exceed the design factors shown in Table 23.

Table 65: Minimum Safety Factors for the 7 in. 26 ppf L80 Section 1 Injection Casing with Nominal Wall

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1. Running	--	--	--	--	2.89	0	--	--	2.89	0
2. Overpull 100kips	--	--	--	--	2.14	0	--	--	2.14	0
3. Initial Condition	--	--	>3	6,000	>3	0	>3	6,000	>3	0
4. Kick – Gas to Surface	>3	0	2.67	6,000	>3	0	>3	6,000	>3	6,000
5. 4,000 psi Pressure Test	1.72	6,000	--	--	2.88	0	--	--	1.87	6,000
6. 2,900 psi Annulus Oper Pressure	2.36	6,000	--	--	>3	45	--	--	2.53	0
7. 2,800 psi Tubing leak Injection	2.45	6,000	--	--	>3	0	--	--	2.64	0
8. 2,300 psi Shut-In CO2	2.97	6,000	--	--	>3	0	--	--	>3	0
9. 3,950 psi SI CH4	1.74	6,000	--	--	2.89	0	--	--	1.89	6,000
10. Collapse Evac 50%	--	--	2.22	6,000	>3	0	>3	6,000	>3	6,000
10a. Collapse Evac 100%	--	--	1.70	6,000	>3	0	>3	6,000	2.35	6,000
11. 3,300 psi Bullhead Kill Initial	2.08	6,000	--	--	>3	45	--	--	2.23	0
12. 500 psi Bullhead Kill Final	>3	6,000	--	--	>3	5,867	--	--	>3	6,000
13. Loss of Containment	--	--	2.37	6,000	1.67	0	--	--	1.67	0
14. 5,000 psi Stimulation	1.41	6,000	--	--	2.61	0	--	--	1.55	6,000

Table 66: Minimum Safety Factors for the 7 in. 26 ppf Modified 13Cr110 Section 2 Injection Casing with Nominal Wall

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1. Running	--	--	--	--	>3	6,000	>3	7,833	>3	6,000
2. Overpull 100kips	--	--	--	--	>3	6,000	--	--	>3	6,000
3. Initial Condition	--	--	>3	8,000	--	--	>3	8,000	>3	8,000
4. Kick – Gas to Surface	>3	7,700	2.58	7,498	--	--	>3	7,498	>3	7,498
5. 4,000 psi Pressure Test	1.54	8,000	--	--	>3	6,297	--	--	1.63	8,000
6. 2,900 psi Annulus Oper Pressure	1.96	7,100	--	--	>3	7,100	--	--	2.09	7,100
7. 2,800 psi Tubing leak Injection	1.99	7,100	--	--	>3	6,297	>3	7,550	2.11	7,100
8. 2,300 psi Shut-In CO2	2.19	7,100	--	--	>3	6,297	>3	7,550	2.32	7,100
9. 3,950 psi SI CH4	1.64	7,100	--	--	>3	6,297	>3	7,550	1.74	7,100
10. Collapse Evac 50%	--	--	>3	8,000	--	--	>3	8,000	>3	8,000
10a. Collapse Evac 100%	--	--	1.99	8,000	--	--	>3	8,000	2.77	8,000
11. 3,300 psi Bullhead Kill Initial	1.82	7,100	--	--	>3	7,100	--	--	1.95	7,100
12. 500 psi Bullhead Kill Final	2.19	8,000	--	--	>3	7,700	--	--	2.39	8,000
13. Loss of Containment	--	--	>3	8,000	>3	6,000	>3	8,000	>3	6,000
14. 5,000 psi Stimulation	1.48	7,100	--	--	>3	7,700	--	--	1.62	7,100

7 in. Injection Casing with Nominal Wall VME Plots

Figure 74 shows the VME plot for the design loads.

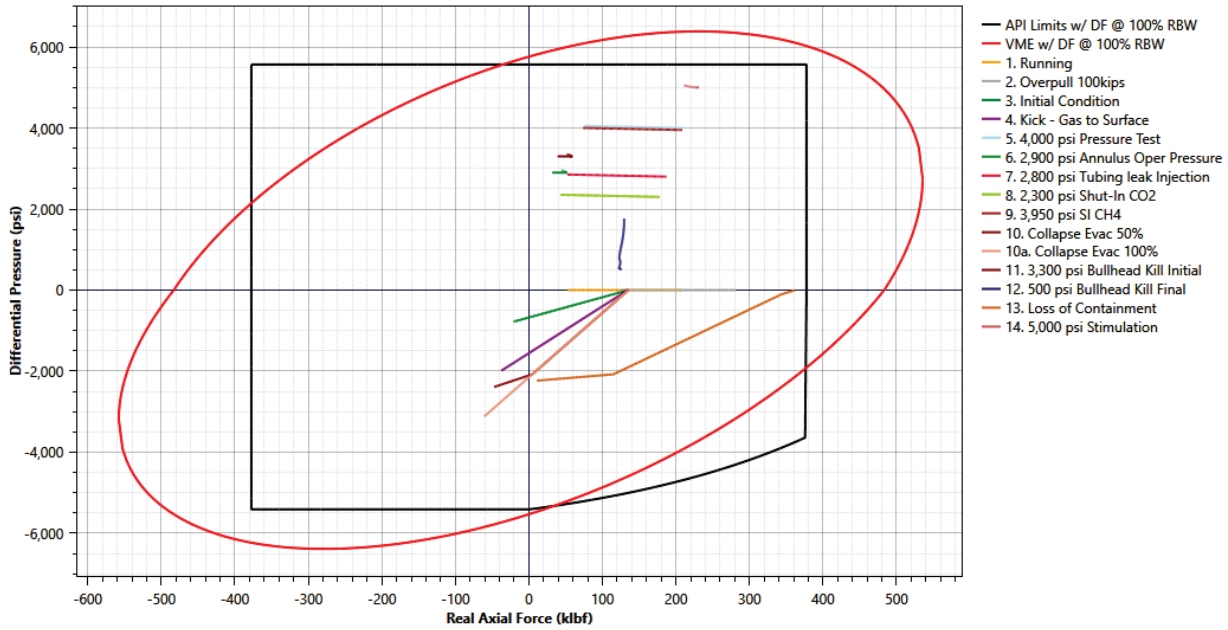


Figure 74: 7 in. Injection Casing with Nominal Wall Section 1 VME

Figure 75 shows the VME plot for the design loads.

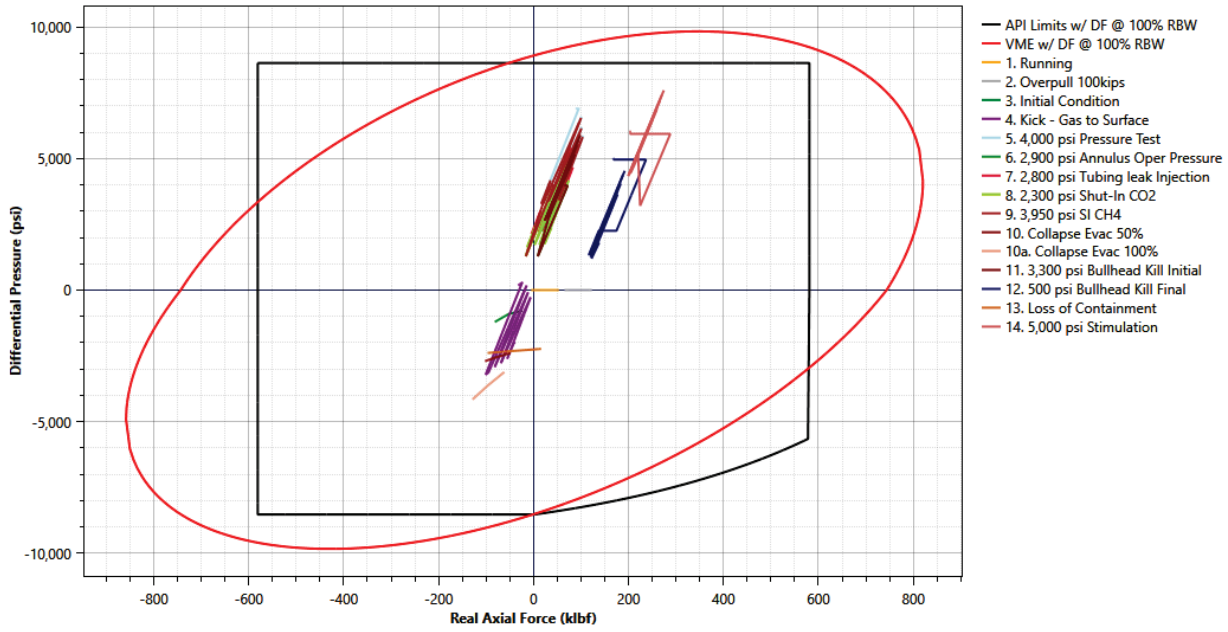


Figure 75: 7 in. Injection Casing with Nominal Wall Section 2 VME

7 in. Casing Wall RBW 77.7% (25 years of service)

Table 67 shows the results for 77.5% RBW based on wall loss from Section 6.3. The design meets or exceeds the design requirements.

Table 67: Minimum Safety Factors for the 7 in. Modified 13Cr110 Section 2 Injection Casing with 77.7% RBW

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1. Running	--	--	--	--	>3	6,000	>3	7,833	>3	6,000
2. Overpull 100kips	--	--	--	--	>3	6,000	--	--	>3	6,000
3. Initial Condition	--	--	>3	8,000	--	--	>3	8,000	>3	8,000
4. Kick – Gas to Surface	>3	7,700	1.35	7,498	--	--	>3	7,498	2.77	7,498
5. 4,000 psi Pressure Test	1.37	8,000	--	--	>3	6,297	--	--	1.26	8,000
6. 2,900 psi Annulus Oper Pressure	1.74	7,100	--	--	>3	7,100	--	--	1.61	7,100
7. 2,800 psi Tubing leak Injection	1.76	7,100	--	--	>3	6,297	>3	7,550	1.63	7,100
8. 2,300 psi Shut-In CO2	1.94	7,100	--	--	>3	6,297	>3	7,550	1.79	7,100
9. 3,950 psi SI CH4	1.45	7,100	--	--	>3	6,297	>3	7,550	1.34	7,100
10. Collapse Evac 50%	--	--	1.61	8,000	--	--	>3	8,000	>3	8,000
10a. Collapse Evac 100%	--	--	1.04	8,000	--	--	>3	8,000	2.14	8,000
11. 3,300 psi Bullhead Kill Initial	1.62	7,100	--	--	>3	7,100	--	--	1.50	7,100
12. 500 psi Bullhead Kill Final	1.94	8,000	--	--	>3	7,700	--	--	1.87	8,000
13. Loss of Containment	--	--	1.82	8,000	>3	6,000	>3	8,000	>3	6,000
14. 5,000 psi Stimulation	1.31	7,100	--	--	>3	7,700	--	--	1.26	7,100

7 in. Injection Casing with 77.7% Wall VME Plots

Figure 76 shows the VME plot for the design loads.

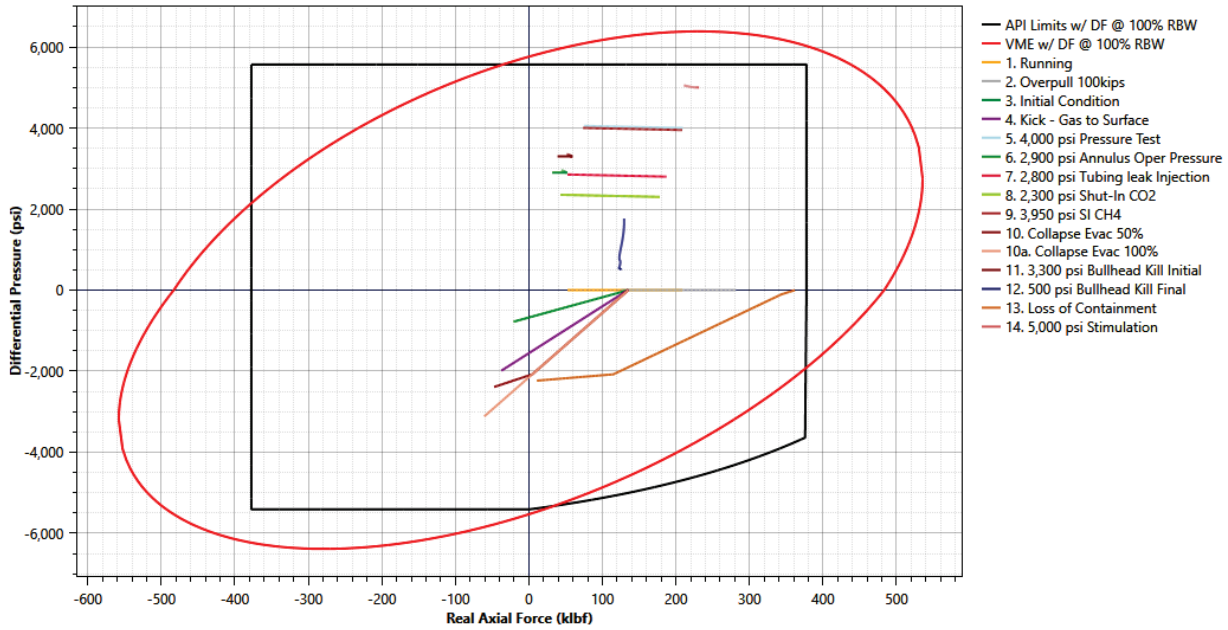


Figure 76: 7 in. Injection Casing with 77.7% Wall Section 2 VME

4 1/2 in. Injection Liner with Nominal Wall

Table 68 shows the minimum safety factors for the 4 1/2 in. 12.6 ppf modified 13Cr110 liner loads. All SFs exceed the design factors.

Table 68: Minimum Safety Factors for the 4 1/2 in. 12.6 ppf Modified 13Cr110 Liner with Nominal Wall

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1. Running	--	--	--	--	>3	7,700	--	--	>3	7,700
2. Overpull of 50 kips	--	--	--	--	>3	7,700	--	--	>3	7,700
3. Initial Condition	--	--	>3	8,500	--	--	>3	8,500	>3	8,500
4. 4,000 psi Pressure Test	1.75	8,000	--	--	>3	7,700	--	--	1.87	8,500
5. 2,800 psi Steady State Injection	2.75	7,700	--	--	>3	7,700	--	--	3.00	7,700
6. 3,300 psi Bullhead Kill Initial	2.45	7,700	--	--	>3	7,700	--	--	2.66	7,700
7. 500 psi Bullhead Kill Final	2.23	8,500	--	--	>3	7,700	--	--	2.41	8,500
8. Collapse Evac 50%	--	--	>3	8,500	--	--	>3	8,500	>3	7,700
8a. Collapse Evac 100%	--	--	2.88	8,500	--	--	>3	8,500	>3	8,500
9. 5,000 psi Stimulation	1.40	8,494	--	--	2.36	8,500	--	--	1.50	8,500
10. 3,950 psi SITP CH4	2.68	7,700	--	--	>3	7,700	--	--	2.87	7,700
11. 2,300 psi SITP CO2	2.74	7,700	--	--	>3	7,700	--	--	2.93	8,000

4 1/2 in. Modified 13Cr110 Liner VME Plot

Figure 77 shows the VME plot for the design loads.

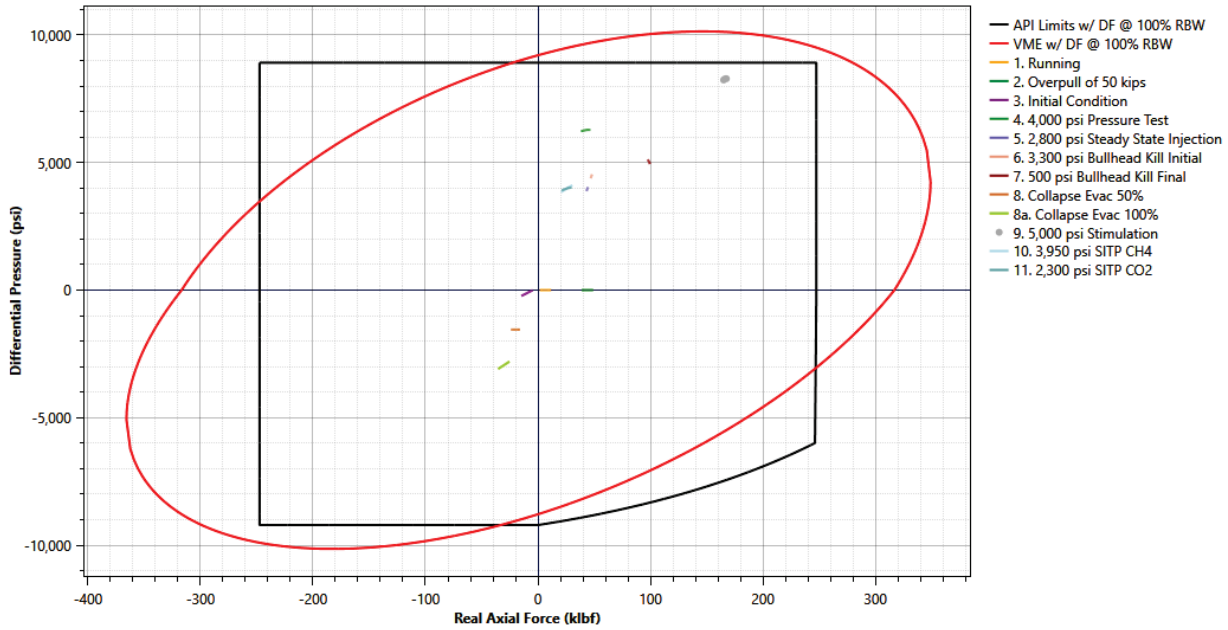


Figure 77: 4 1/2 in. Modified 13Cr110 Liner with Nominal Wall VME

4 1/2 in. Liner with 74.3% RBW (25 years of service)

Table 69 shows the minimum safety factors for the 4 1/2 in. 12.6 ppf modified 13Cr110 liner loads with 74.5% RBW based on wall loss from Section 6.3. All SFs exceed the design factors except the stimulation load. Stimulation is planned for early life and the results are shown for information.

Table 70 shows the RBD results meet the design criteria in Table 76.

Table 69: Minimum Safety Factors for the 4 1/2 in. 12.6 ppf Modified 13Cr110 Liner with 74.3% RBW

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
1. Running	--	--	--	--	>3	7,700	--	--	>3	7,700
2. Overpull of 50 kips	--	--	--	--	>3	7,700	--	--	>3	7,700
3. Initial Condition	--	--	>3	8,500	--	--	>3	8,500	>3	8,500
4. 4,000 psi Pressure Test	1.49	8,000	--	--	>3	7,700	--	--	1.38	8,304
5. 2,800 psi Steady State Injection	2.34	7,700	--	--	>3	7,700	--	--	2.22	7,700
6. 3,300 psi Bullhead Kill Initial	2.08	7,700	--	--	>3	7,700	--	--	1.97	7,700
7. 500 psi Bullhead Kill Final	1.90	8,500	--	--	>3	7,700	--	--	1.84	8,500
8. Collapse Evac 50%	--	--	2.73	8,500	--	--	>3	8,500	>3	7,700
8a. Collapse Evac 100%	--	--	1.36	8,500	--	--	>3	8,500	2.80	8,500
9. 5,000 psi Stimulation	1.19	8,494	--	--	2.36	8,500	--	--	1.15	8,500
10. 3,950 psi SITP CH4	2.28	7,700	--	--	>3	7,700	--	--	2.12	7,700
11. 2,300 psi SITP CO2	2.33	7,700	--	--	>3	7,700	--	--	2.16	8,000

Table 70: RBD Results for the 4.5 in. Liner with 74.3% Wall

Load Name	Section	Grade	MD (ft)	TVD (ft)	Fail Mode	Min SF	Prob. of Failure / Exceedance (10^)	Failure Rate (1 in -)
9. 5,000 psi Stimulation	1	13CR-110	8,494	8,494	Ductile Burst	1.19	-5.65	450,010
9. 5,000 psi Stimulation	1	13CR-110	8,500	8,500	Triaxial	1.15	-7.94	87,705,294

4 1/2 in. Modified 13Cr110 Inner Liner VME Plot

Figure 78 shows the VME plot for the design loads.

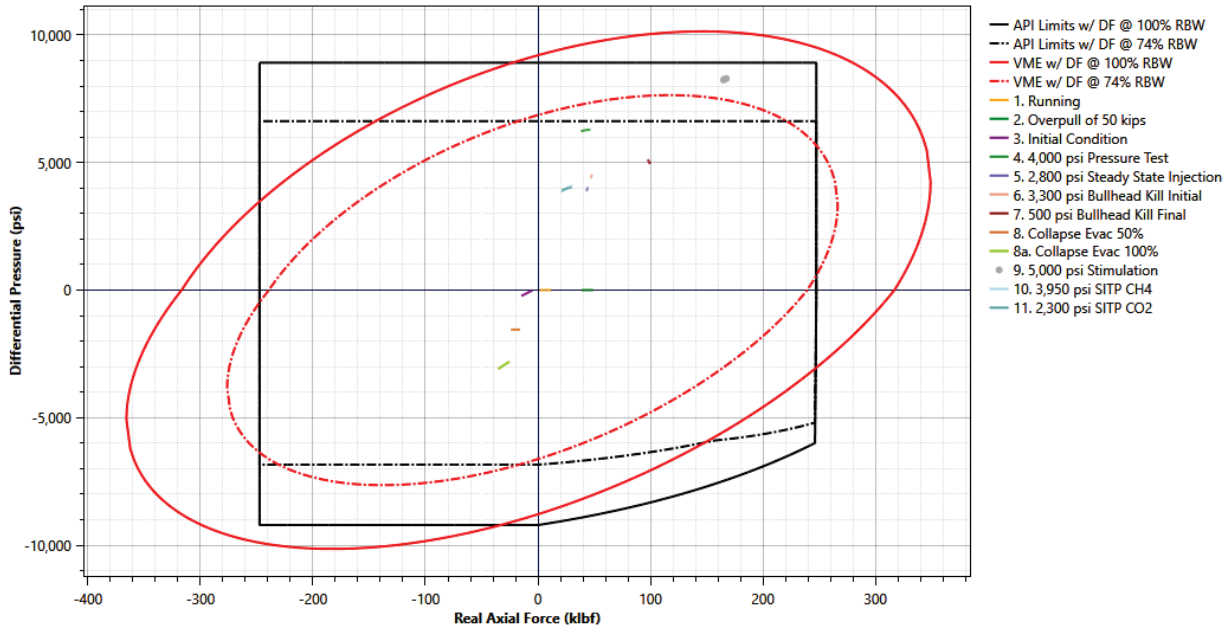


Figure 78: 4 1/2 in. Modified 13Cr110 Liner VME with 74.3% RBW

6.11 API RP 90-2 MAWOP Analysis

As discussed in Section 6.1.3, when wells are operated with annulus pressure, a MAWOP can be calculated according to RP 90-2 requirements.

6.11.1 7 in. Casing x 4 1/2 in. Liner x 4 1/2 in. Tubing Well Design

Wells can be operated safely with sustained annulus pressure. API Recommended Practice 90-2 [20], Annular Casing Pressure Management for Onshore Wells provides recommendations for operating wells with annulus pressure. The recommended practice document defines the maximum allowable wellhead operating pressure (MAWOP) for an annulus.

The proposed maximum annulus pressure is 2,900 psi based on the tubing injection pressure of 2,800 psi. Table 71 shows the allowable annulus pressure based on the derating criteria of the casing and tubing using the simple derating method defined in RP 90-1. The maximum allowable wellhead pressure (MAWOP) is the minimum of the allowable annulus pressures. The MAWOP is 3,160 psi compared to the proposed annulus pressure of 2,900 psi. Therefore, the design meets the RP 90-2 requirements.

Table 71: API RP 90-1 Allowable Annulus Pressure

RP 90-1 Derating Criteria	Tubular	API Burst or Collapse (psi)	Allowable Annulus Pressure (psi)
75% of inner tubular collapse rating	4 1/2 in. 11.6 ppf 13Cr80	6,350	4,763
50% of outer tubular burst rating	7 in. 26 ppf L80	7,240	3,620
80% of next outer tubular burst rating	9 5/8 in. 40 ppf K55	3,950	3,160

6.12 Cementing Comments and Recommendations

The following are general comments and recommendations regarding cementing the casing and liners in the various well types. Cementing to surface the surface casing and injection long string casing is a regulatory requirement. Cementing the intermediate casing to surface has the advantage of simplifying the future abandonment.

A well design with a liner set through the injection zone and a long string casing set above the injection zone has an advantage of less differential pressure across the depleted 64 Zone Sands, helping to ensure good mud displacement by the cement and resulting in a well design with cement circulated to surface as required.

6.12.1 Surface Casing Cementing

Cemented with a light-weight lead and tail slurries. Top of cement at surface.

Lead Slurry: 12.5 ppg extended Class G + (lost circulation material) LCM and fluid loss additives

Tail Slurry: 13.5 ppg extended Class G + LCM and fluid loss additives

General slurry comments: The need for accelerators or retarders will be determined during pilot testing. Choice of extender and mix water ratio must consider the minimization of free water. Centralize casing to provide 70% stand-off.

Cementing pressure calculations indicate that the pressure profile remains above the pore pressure, but the fracture pressure will be exceeded by approximately 120 psi during displacement.

Pump 50 – 100% excess slurry volume to ensure cement is circulated to surface. Excess will depend on hole conditions specific to the well.

Plan for a top job in the event the cement top drops after displacement.

6.12.2 Intermediate Casing Cementing

Cemented in two stages with the stage collar at 2,000 ft.

The first (bottom) stage will be cemented with a light-weight lead slurry and standard weight tail slurry.

The second (upper) stage will be cemented with a light-weight slurry. Top of cement at surface.

Stage 1 Lead Slurry: 12.5 ppg extended Class G + lost circulation material (LCM) and fluid loss additives.

Stage 1 Tail Slurry: 15.8 ppg Class G cement system + LCM and fluid loss additives.

Stage 2 Slurry: 12.5 ppg extended Class G + LCM and fluid loss additives.

General slurry comments: The need for accelerators or retarders will be determined during pilot testing. Choice of extender and mix water ratio must consider the minimization of free water. The casing will be centralized to provide 70% stand-off.

Cementing pressure calculations indicate that the pressure profile remains within the pore and fracture pressure window, for the first stage. The fracture gradient is exceeded by approximately 200 psi during the second stage.

Pump 25% excess slurry volume for the first stage.

Pump 50 – 100% excess slurry volume for the second stage to ensure cement is circulated to surface. Excess volume will be determined based on hole conditions while drilling specific to the well.

A top job should be planned in the event the cement top drops after displacement.

6.12.3 Injection Casing Cementing

Cemented with a light-weight lead slurry and standard weight tail slurry. Top of cement at surface.

Lead Slurry: 12.5 ppg extended Class G + LCM and fluid loss additives

Tail Slurry: 15.8 ppg CO_2-Resistant cement system + LCM and fluid loss additives

General slurry comments: The need for accelerators or retarders will be determined as part of the slurry design and during pilot testing. Choice of the extender and mix water ratio will be considered to minimize free water. The casing will be centralized to provide 70% stand-off.

CO_2-Resistant cement systems considered for the tail slurry include densified 50:50 Fly-Ash and Portland cement, Portland cement with Latex, and proprietary CO_2-Resistant blends.

Densified 50:50 Fly-Ash and Portland cement is recommended for the following reasons:

- The reactive Portland cement content is reduced by 50%
- Exposure to CO_2 is limited to the annular cross-section at the casing shoe (vertical attack) under static conditions
- Cost effective for large slurry volumes

Cementing pressure calculations indicate that the pressure profile remains within the pore and fracture pressure window, providing the depleted zone is not penetrated during drilling.

Pump 25% excess slurry volume to ensure cement is circulated to surface for new drill wells.

Pump 10 – 15% excess slurry volume to ensure cement is circulated to surface for pipe-in-pipe repurposed wells.

Confirm that the open hole formation integrity is sufficient to support the cement job pressures before casing is run. An open-hole bottom plug may be required to isolate the low pressure injection zone.

6.12.4 Injection Liner Cementing

No lead slurry. Tail (single) slurry cemented to the top of the liner.

Slurry: Light-weight CO_2-Resistant cement system

General slurry comments:

Managed Pressure Cementing (MPC) with foamed water pumped ahead of the slurry to reduce the amount of differential pressure across the depleted 64 Zone sands will be considered based on the specific actual well conditions. UIC Program Director approval for using MPC will be requested.

The liner will be centralized to provide 70% stand-off.

CO_2-Resistant cement systems considered include proprietary CO_2-Resistant blends, calcium aluminate cement (CAC), and resin cements.

Resin cement is recommended for the following reasons:

- No reactive species present (very high CO_2 resistance).

- More ductile than conventional cements, making it more durable under cyclic loading conditions.
- Can be mixed as light as 9.0 ppg, making a good candidate for cementing the depleted 64 Zone Sands.

Cementing pressure calculations indicate that the cement pressure profile is far above the pore pressure profile except for the open hole above the depleted zone. The high differential pressure suggests that fluid losses to the depleted zone with conventional cement slurries is likely.

The recommended excess volume is 25% for a liner cement job in open hole based on the caliper log.

The recommended excess volume is 10 – 15% for a liner cement job pipe-in-pipe.

A liner top packer should be run to ensure liner lap isolation.

6.13 Casing and Tubing Connections

6.13.1 Repurposed Wells

The recommended connections for the new injection inner casing, liners, tubing, and completion equipment are connections with metal-to-metal seals and full pipe body strength. The design results in this report assume full pipe body strength for the connections. If there is a need to use connections with reduced OD because of clearance requirements, it is recommended to evaluate the connection tensile and compression strengths and the load requirements on a case by case basis.

6.13.2 New Drill Wells

API connections are acceptable for the surface and intermediate casing for the new drill wells.

The recommended connections for the new injection casing, liners, tubing, and completion equipment are connections with metal-to-metal seals and full pipe body strength. The design results in this report assume full pipe body strength for the connections.

6.14 Annular Pressure Management

The A annulus (tubing × injection casing) is subject to pressure changes including maintaining the annulus pressure higher than the tubing surface injection pressure and temperature changes of the annulus fluid caused by injection and shut-in cycles. Maintaining the annulus pressure above the injection is a Class VI requirement. The EPA also requires monitoring and reporting the volume of annulus fluid added.

An annulus pressure management (APM) system is recommended to maintain the correct annulus pressure within a prescribed range to meet the well operating requirements. The APM needs to be designed to add fluid and increase the pressure as the injection pressure rises and to bleed off pressure when the annulus pressure exceeds the upper limit of pressure range. A liquid fluid system is implied to track the volume of fluid added to the annulus as required for Class VI wells. The fluid used to manage the pressure needs to be inert, free of oxygen, and stable for long term maintenance free use. The APM needs a pressure relief system as backup to relieve any excess pressure. The reservoir for the fluid needs to be sized to handle the maximum volume of fluid required to maintain the pressure with excess capacity and a way to measure the volume added. A closed system for the annulus fluid is required to maintain an oxygen free fluid.

When the well is started up the BHP and injection pressure will be low. The APM needs to be designed so that the annulus pressure tracks the injection pressure plus a pressure of approximately 100 psi to meet Class VI requirements. As injection continues, the annulus fluid will heat up and the APM system will bleed fluid to compensate for increasing annulus pressure. If the well is shut-in, the annulus fluid will cool and the pressure will decrease.

Over pressuring the annulus can cause the casing to fail in burst or the tubing to fail in collapse. The APB (annular pressure buildup) for an injection well where the annulus fluid is heated because of injection has been modeled.

Table 72 shows the APB results for the well design with 7 in. casing and 4 1/2 in. tubing. As shown in the table, the change in pressure per unit temperature change is significant. The APB of approximately 4,100 psi for a trapped annulus can be above the burst and collapse strength of the casing and tubing, respectively, so a properly designed and reliable APM system is a requirement. The APB is the additional pressure buildup because of fluid thermal expansion in addition to the original annulus pressure which can be as high as 2,900 psi for the operating annulus pressure for an injection well. The change in volume for the case modeled is approximately 3 bbl.

Table 72: Modeled Injection Well APB Results for the 7 in. × 4 1/2 in. Well Design

Annulus	APB ΔP	Volumetric ΔT	ΔVolume	Ann. ΔVolume	ΔP/ΔT
A (tubing × casing)	4,145 psi	41.7°F	2.5 bbl	2.5 bbl	99.4 psi/°F

7 Nomenclature

7.1 Abbreviations and Acronyms

Term	Definition
APB	Annular Pressure Buildup
APM	Annular Pressure Management
CAC	Calcium aluminate cement
CH_4	Methane
CO_2	Carbon dioxide
CRA	Corrosion Resistant Alloy
DTS	Distributed Temperature Sensing
EOS	Equation of State
EPDM	Ethylene propylene diene monomer
FEED	Front End Engineering and Design
GF	Glass Filled
h	Formation layer thickness
HNBR	Hydrogenated Nitrile Butadiene Rubber
ID	Inside diameter
IPR	Inflow performance relationship
k	Formation Permeability
krg	Formation permeability relative to gas
LCM	Lost circulation material
LTC	Long Thread and Coupled
MAWOP	Maximum Allowable Wellhead Operating Pressure
mpy	Mills per year (0.001 in. per year)
mtpa	Million (metric) tons per annum
N_2	Nitrogen
OD	Outside diameter
P&A	Plug and Abandon
PBR	Polished Bore Receptacle
PEEK	Polyetheretherketone
POE	Probability of Exceedance
POF	Probability of Failure
ppf	Pounds per foot
PTFE	Polytetrafluoroethylene
PVT	Pressure-Volume-Temperature
RBD	Reliability Based Design

Term	Definition
RBW	Remaining Body Wall
RGD	Rapid Gas Decompression
SCSSV	Surface Controlled Subsurface Safety Valve
SITP	Shut In Tubing Pressure
VLP	Vertical Lift Profile
WSD	Working Stress Design

8 References

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9 Appendix A—Materials Additional Information

9.1 Alloy Composition

Table 73 shows the alloy composition of carbon steel and CRA materials used in the OLI corrosion model program.

Table 73: Alloy Composition of Materials used in the OLI Program

Alloy Name	Fe	Ni	Cr	Mo	C	N	W	Al	Cu	Mn	Si	Zn	S	P
13Cr	86.85	0	13	0	0.15	0	0	0	0	0	0	0	0	0
22Cr	68.61	5.5	22.5	3.2	0.02	0.17	0	0	0	0	0	0	0	0
Carbon steel G10100	99.18	0	0	0	0.13	0	0	0	0	0.6	0	0	0.05	0.04
Modified 13Cr	80.09	5.9	12.1	1.9	0.01	0	0	0	0	0	0	0	0	0
Modified 17Cr	74.62	3.9	16.5	2.4	0.01	0	1	0	1	0.37	0.2	0	0	0

9.2 Temperature and Pressure Profile Inputs to Thermodynamic Models

Table 74 and Table 75 show the temperature and pressure inputs from PROSPER that were used in the thermodynamic corrosion model.

Table 74: Temperature Inputs to the Thermodynamic Model (°F)

Depth, ft	Shut-in	KLo-10-1	KLo-20-1	KHi-20-1	KHi-20-2	KHi-20-3	KHi-20-4	KHi20-5
0	94	94	94	94	94	94	94	94
500	81	98	97	96	98	97	98	97
1,000	91	102	101	99	102	102	102	100
2,000	111	111	109	105	112	112	109	106
3,000	131	121	120	111	122	123	116	112
4,000	151	132	131	118	131	133	123	119
5,000	171	143	141	125	141	142	130	125
6,000	191	155	151	133	151	151	137	132
7,000	211	167	161	141	161	161	145	139
8,000	231	179	172	150	171	170	152	146
8,400	239	183	174	148	173	173	155	149

Table 75: Pressure Inputs to the Thermodynamic Model (psig)

Depth, ft	Shut-in	KLo-10-1	KLo-20-1	KHi-20-1	KHi-20-2	KHi-20-3	KHi-20-4	KHi20-5
0	1,823	907	1,107	871	1,058	1,183	1,496	1,784
500	1,992	938	1,153	884	1,094	1,251	1,627	1,930
1,000	2,156	971	1,203	897	1,130	1,330	1,760	2,079
2,000	2,475	1,039	1,318	924	1,209	1,505	2,033	2,380
3,000	2,778	1,112	1,444	952	1,291	1,690	2,313	2,687
4,000	3,066	1,189	1,593	981	1,379	1,885	2,600	2,999
5,000	3,340	1,269	1,721	1,011	1,472	2,086	2,891	3,314
6,000	3,603	1,352	1,869	1,040	1,569	2,297	3,185	3,632
7,000	3,857	1,439	2,021	1,069	1,669	2,512	3,482	3,951
8,000	4,103	1,527	2,180	1,099	1,774	2,730	3,781	4,271
8,400	4,200	1,552	2,220	1,046	1,783	2,800	3,887	4,387

9.3 Effect of NH_3 in pH and Corrosion of Carbon Steel and 13Cr

Figure 79 shows the pH of the liquid water (aqueous) phase forming from the injection stream with and without NH_3. The plot indicates that the electrolyte becomes acidic in the absence of NH_3.

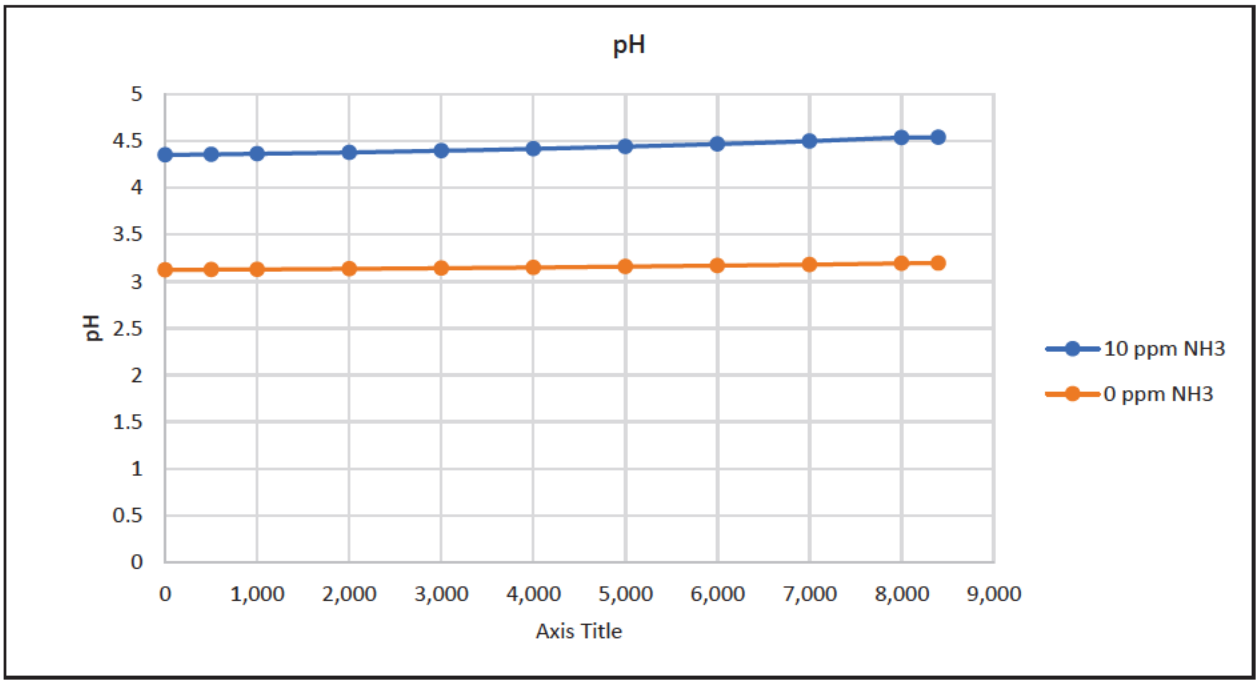

Figure 79: Effect of NH_3 in pH of the Pre-Combustion Stream

Figure 80 and Figure 81 shows the effect of NH_3 in the corrosion rates of carbon steel and 13Cr respectively. The corrosion of these materials increases in the absence of NH_3.

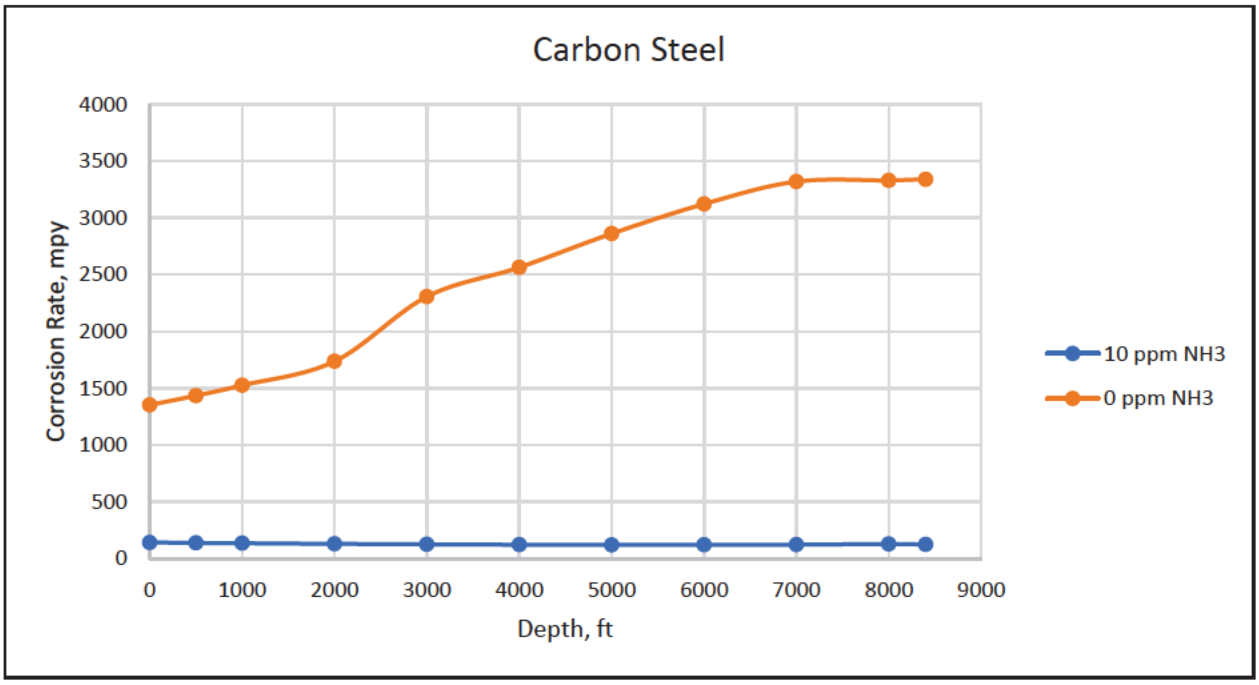

Figure 80: Effect of NH_3 in the Corrosion of Carbon Steel

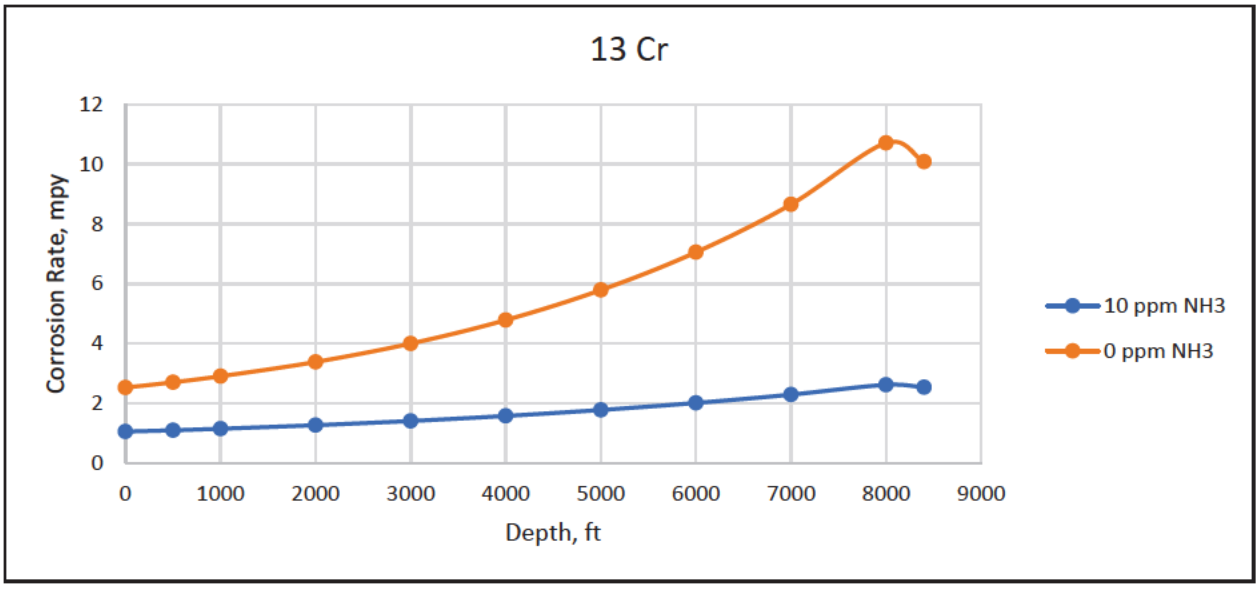

Figure 81: Effect of NH_3 in the Corrosion of 13Cr

10 Appendix B—Reliability Based Design Overview

Consideration of uncertainty is imperative in all design approaches. In traditional WSD, the uncertainty in load and strength is addressed using elastic strength estimates based on minimum properties, only within its elastic limit. This design method has been used widely and successfully by the oil and gas industry for decades.

WSD relies on the demonstration of design adequacy through satisfaction of prescribed design factors, such that only an allowable fraction of minimum strength is used in design. One limitation of the approach is the lack of insight into the implications of not satisfying these prescribed safety factors.

RBD methods have been in use for decades in the design of load-bearing structures. In RBD, it is explicitly recognized that strength and load are stochastic (i.e., of random distribution) in nature because they depend upon parameters that exhibit uncertainty and variability. For example, for tubulars, strength is based on parameters such as diameter, wall thickness, yield strength, and ultimate tensile strength. It is well recognized that because of the manufacturing and measurement processes involved, there is uncertainty in these parameters. For this reason, manufacturing specifications set allowable limits and ranges on many of these parameters. Likewise, load parameters also have uncertainty and variability associated with them. For example, in well design, parameters that define loads, such as pore pressure, fracture pressure, and temperature are uncertain and cause variability in the magnitude of the load. Further, a given load considered in design may not occur at all and yet introduces uncertainty associated with the probability of occurrence of the load itself.

In RBD, strength and load are treated as random variables with known or measurable statistical distributions (probability density functions). Load effect distribution is more difficult to characterize because the required data are not always readily available, and RBD often requires the application of extreme value statistics. For this reason, the extreme event may be absent from available load data sets. In the most general applications of probabilistic design, both the load and the tubular ratings are treated as random variables. These probability distributions are developed based on rigorous statistical analysis of field load histories and actual test results on tubular performance. Reliability methods are then used to combine these distributions and quantify the *probability* that the load will exceed the strength under specified conditions. This is the P_f, and its magnitude quantitatively conveys the risk of failure. In design, the maximum P_f calculated should be less than a *target probability of failure*.

In practice, it is often difficult and cumbersome to obtain load data and rigorously quantify load side distributions. Moreover, designers often seek to understand whether a given tubular can withstand a given load at a *prescribed* magnitude. This is best answered by using a subset of RBD, known as *Level-4 RBD*. In Level-4 RBD, the load is deterministic at a prescribed (usually extreme) magnitude, and the strength is probabilistic, with distributions constructed from the statistical data on strength parameters (Figure 82). The failure probability, that is, the probability that the deterministic load exceeds the stochastic strength, is given by the yellow-shaded area under the strength probability density function to the left of the load distribution, which is a vertical line (it is deterministic). This is the P_f if the load under consideration occurs at the assumed magnitude for the given tubular.

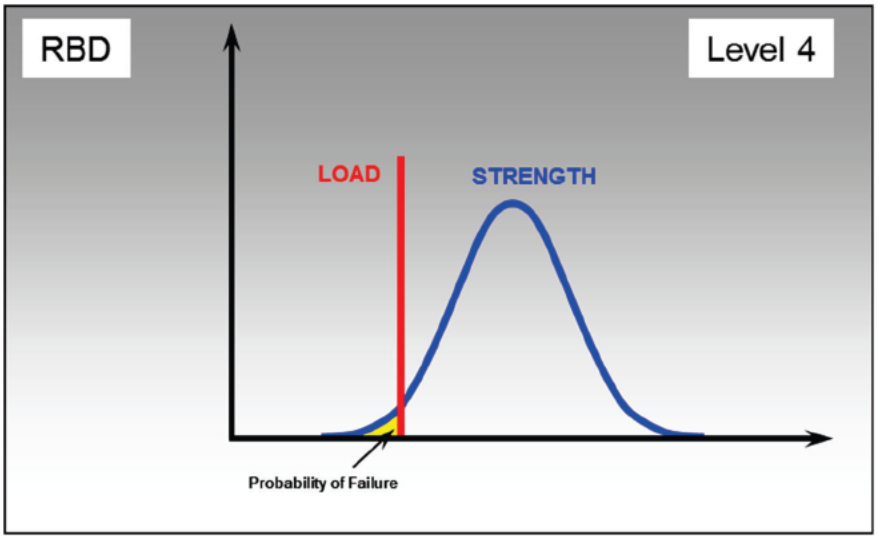

Figure 82: Level-4 Reliability-Based Design Analysis

Level-4 RBD is used to determine if the casing is likely to fail for a given load condition. The Klever-Stewart tension-burst limit state, as described in API Technical Report 5C3 [21], is used as the limit state strength. Strength uncertainty is characterized by using statistical data on strength-defining parameters. The P_f is calculated based on the Klever-Stewart tension-burst limit state. Also, the Probability of Exceedance (POE) is calculated as the probability that the VME stress will exceed the yield strength of the casing. Although this does not necessarily imply failure, it is an important indicator of impending failure and is sometimes of interest in design situations where yielding is not acceptable. The POE is also indicative of the probability of connection leaks because connection performance is usually referenced to the pipe body yield envelope. Design criteria for Level-4 RBD analysis are shown in Table 76.

Table 76: Level-4 RBD Design Criteria

Failure Mode and Load Type	Minimum Design Criterion
Probability of Exceedance (VME)	
Service Loads	$\leq 10^{-4}$
Survival Loads	$\leq 10^{-3}$
Probability of Failure (Burst-Tension)	
Service Loads	$\leq 10^{-6}$
Survival Loads	$\leq 10^{-5}$
Probability of Failure (Collapse)	
Service Loads	$\leq 10^{-3}$
Survival Loads	$\leq 10^{-2}$

Here, probability of failure (POF) is the probability of the load exceeding the limit state strength and probability of exceedance (POE) is the probability of exceeding the VME criterion, i.e., the probability the casing will yield (but not fail).

11 Appendix C—Undisturbed Temperature Profile

Table 77 shows the undisturbed geothermal temperature profile assumed for the analysis. Figure 83 shows the geothermal temperature vs. TVD.

Table 77: Undisturbed Geothermal Temperature Data

No.	TVD (ft)	Temperature (°F)	Gradient (°F/ft)
1	0	75	–
2	200	75	0.0000
3	7,700	225[v]	0.0200
4	8,500	241	0.0195

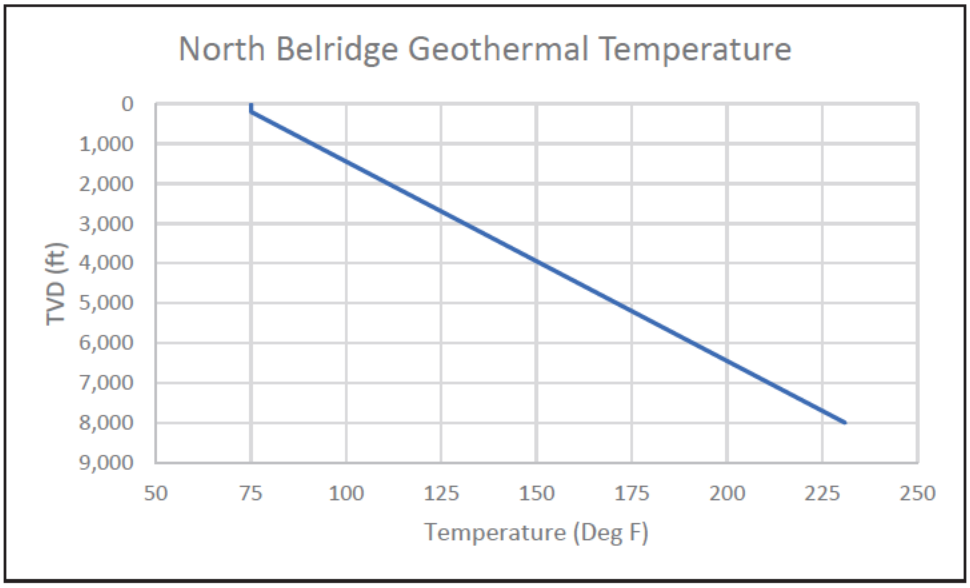

Figure 83: Geothermal Temperature Profile

[v] Email from Rod Guice May 19, 2022.

12 Appendix D—Pore Pressure and Fracture Pressure

Table 78 shows the estimated pore pressure that is proposed for the tubing and casing design analysis[vi]. Figure 84 shows the data plotted. While there is some uncertainty in the pore pressure data, the well design loads are not very sensitive to the pore pressure.

Table 78: Pore Pressure Data

Interval	TVD (ft)	PP (ppg)	PP (psi)
Tulare	100	10.2	53
Tulare	300	10.2	159
Diatomite	500	9.3	243
Diatomite	700	8.9	323
Diatomite	900	8.0	373
Diatomite	1,100	7.4	421
Diatomite	1,300	7.9	533
Diatomite	1,500	7.2	558
Diatomite	1,700	5.5	490
Diatomite	1,900	8.6	849
Diatomite	2,100	5.8	637
Diatomite	2,300	8.7	1,035
Diatomite	2,500	8.7	1,128
Reef Ridge	2,700	8.7	1,215
Reef Ridge	2,900	8.7	1,305
Reef Ridge	3,100	8.7	1,395
Antelope	3,300	6.2	1,056
Antelope	3,500	6.2	1,120
Antelope	3,700	10.2	1,961
McDonald	3,900	10.2	2,067
McDonald	4,100	10.2	2,173
McDonald	4,300	10.2	2,279
McDonald	4,500	10.2	2,385

Interval	TVD (ft)	PP (ppg)	PP (psi)
McDonald	4,700	10.2	2,491
McDonald	4,900	10.2	2,597
Temblor	5,100	4.0	1,071
Temblor	5,300	4.0	1,113
Media	5,500	10.2	2,914
Media	5,700	10.2	3,020
Media	5,900	10.2	3,126
Media	6,100	10.2	3,232
Upper Carneros	6,300	2.7	882
Upper Santos	6,500	10.2	3,444
Lower Carneros	6,700	2.1	737
Lower Santos	6,900	10.2	3,656
Agua	7,100	1.4	533
Lower Santos	7,300	10.2	3,868
Lower Santos	7,500	10.2	3,974
64-U/W	7,700	1.3	501
64-U/W	7,900	1.4	585
64-U/W	8,100	1.6	672
64-U/W	8,300	1.8	764
64-U/W	8,500	1.9	859
Oceanic	8,700	1.9	879
Oceanic	8,900	1.9	899

[vi] Pore pressure – File 010 North Belridge Pore Pressure-v-TVD 220609.xlsx

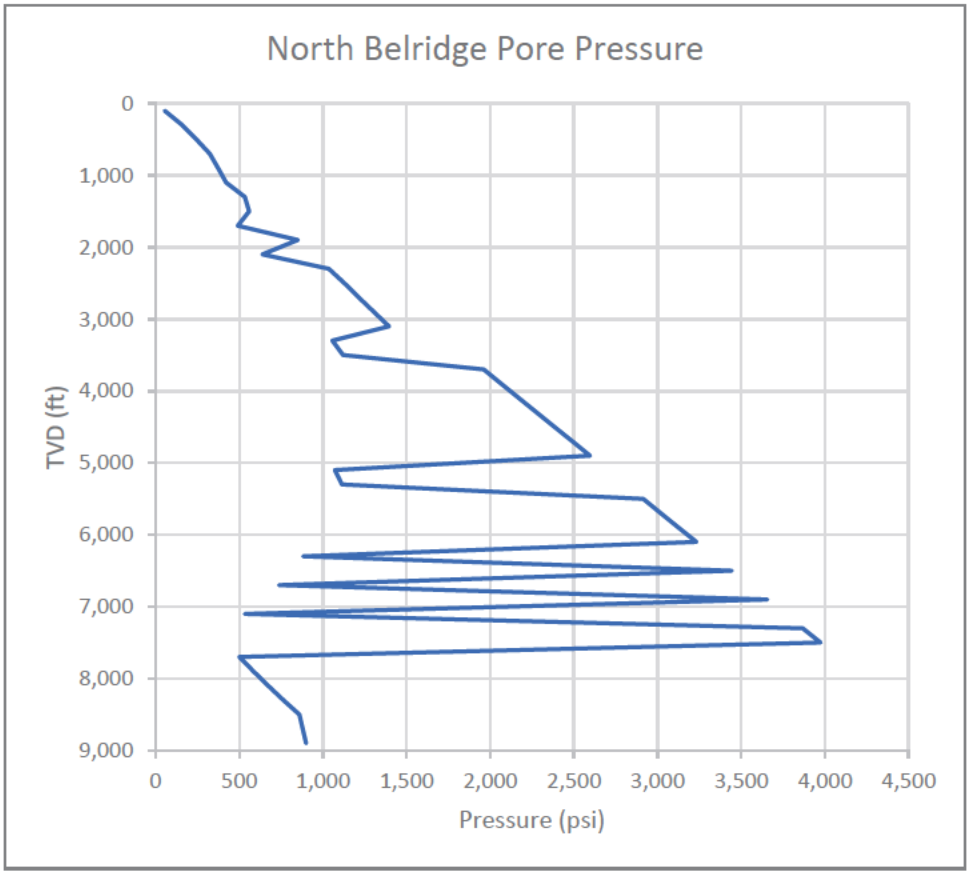

Figure 84: Estimated Pore Pressure vs. TVD

Table 79 shows the fracture pressure vs. depth that will be used for design analysis. Figure 85 shows the data plotted.

Table 79: Fracture Pressure Data

TVD (ft)	Fracture Pressure (psi)
1,215	680
2,520	1,625
3,720	2,360
6,949	5,393
8,102	5,995
8,414	6,226

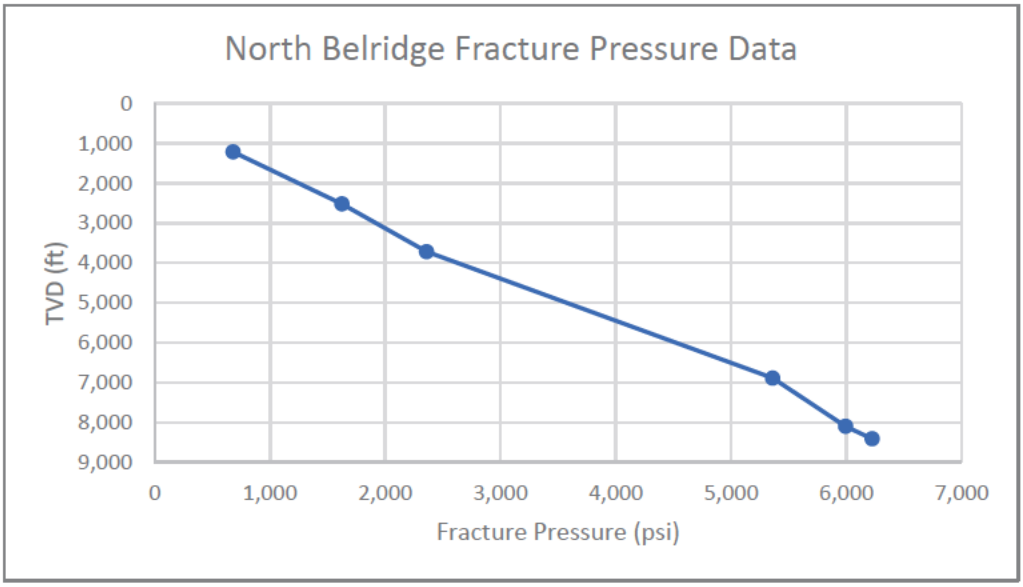

Figure 85: Estimated Fracture Pressure vs. TVD

13 Appendix E—Cementing Design Assumptions

Cement density and pressure affect the casing initial condition. Table 80 shows the lead and tail slurry densities that will be used in the casing design evaluations. A low cement density for the liner will be assumed because of the expected low BHP. Similar to drilling fluid density, cement density and top of cement have a minor impact on the final loads and stresses.

Table 80: Cement Density

Hole Section	Lead Cement (ppg)	Tail (ppg) (height)	TOC
Surface Casing	12.5	13.5 (300 ft)	Surface
Intermediate Casing	12.5	15.8 (300 ft)	Surface
Injection Casing	12.5	15.8 (500 ft)	Surface
Injection Liner	N/A	12.5	Top of liner

14 Appendix F—Design Analysis Results for 9 in. Casing

The repurposed well's 9 in. production casing was evaluated for injection well design loads to see if it is feasible to consider using the existing 9 in. casing for the injection casing. The 9 in. casing in well 64-35N was evaluated using the design loads as documented in the DPD Version 4.

The conclusion is that the even if the 9 in. casing is inspected and is found to have nominal wall thickness, the burst strength of the 9 in. casing is not sufficient to meet the load requirements. Therefore, it is recommended to isolate the 9 in. casing with inner casing cemented to surface for a well design that meets the requirements for Class IV wells.

The analysis results for 9 in. casing also applies to wells with other size casing such as 8 1/8 in. OD with similar burst strengths.

14.1 9 in. Casing with Nominal Wall Design Results

Table 81 shows the minimum safety factors for the 9 in. 45 and 46.1 ppf J55 casing loads. The load number corresponds to the load number in Section 6.2. The safety factors assume nominal wall thickness with a tolerance of –12.5% resulting in remaining body wall (RBW) of 87.5%. Most of the minimum burst and triaxial safety factors do not meet the design factors shown in Table 23 with nominal wall. If it is found that the actual remaining wall is less than 87.5% the safety factors will be further reduced. Therefore, it is not recommended to consider the 9 in. casing as the secondary barrier for CO_2 injection wells.

RBD methodology was developed and calibrated based on modern API specifications and casing manufacturing data. While RBD analysis is not valid for this non-API casing, Table 82 shows the RBD results for the load analysis. Some of the critical design loads including "5) Pressure Test 4000 psi" and "10) Tubing Leak with 3650 psi SITP with CH4" do not meet the acceptance criteria for RBD as shown in Table 25.

Table 81: Minimum Safety Factors for the 9 in. J55 Casing with Nominal Wall with Injection Well Loads

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
3) Initial Condition	--	--	>3	7,820	>3	9	>3	7,820	>3	9
4) Kick: Casing Full of Gas	1.39	7,700	--	--	2.47	9	>3	7,498	1.45	7,700
5) Pressure Test 4000 psi	0.75	7,101	>3	7,498	2.19	9	>3	7,498	0.80	7,101
6) 1850 psi Press Test for SITP CO2 to Surface	1.12	7,101	>3	7,498	2.68	9	>3	7,498	1.18	7,101
7) Leak from 'A' annulus with 2500 psi operating pressure	0.97	7,101	--	--	2.54	9	>3	7,498	1.03	7,101

	Burst		Collapse		Tension		Compression		Triaxial	
Load Case	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)	SF	MD (ft)
8) Tubing Leak with 2400 psi Operating Pressure	1.01	7,101	--	--	2.32	7,101	--	--	1.12	7,101
9) Tubing Leak with 1850 psi SITP with CO2	1.12	7,101	--	--	2.74	9	>3	7,498	1.18	7,101
10) Tubing Leak with 3650 psi SITP with CH4	0.79	7,101	--	--	2.26	9	>3	7,498	0.84	7,101
11) Collapse - 50% evacuation	--	--	1.90	7,820	>3	9	>3	7,820	2.28	7,820
12) Bullhead Kill Initial 2900 psi	0.92	7,101	--	--	2.21	7,101	--	--	1.01	7,101
13) Bullhead Kill Final 500 psi	1.29	7,820	>3	7,300	2.96	9	--	--	1.34	7,820
14) Loss of Containment 2500 psi	0.97	7,101	--	--	2.30	9	>3	7,498	1.03	7,101
15) Loss of Containment 2500 psi Geo Temp	0.97	7,101	--	--	2.54	9	>3	7,498	1.03	7,101

Table 82: RBD Results for the 9 in. Casing with Nominal Wall

Load Name	Section	Grade	MD (ft)	TVD (ft)	Fail Mode	Min SF	Prob. of Failure / Exceedance (10^)	Failure Rate (1 in -)
5) Pressure Test 4000 psi	1	J55	7,101	7,101	Burst	0.75	–3.22	1.7E+03
5) Pressure Test 4000 psi	1	J55	7,101	7,101	Triaxial	0.80	–1.14	1.4E+01
6) 1850 psi Press Test for SITP CO2 to Surface	1	J55	7,101	7,101	Burst	1.12	< –9	> 1 bil
6) 1850 psi Press Test for SITP CO2 to Surface	1	J55	7,101	7,101	Triaxial	1.18	–7.06	1.1E+07
7) Leak from 'A' annulus with 2500 psi operating pressure	1	J55	7,101	7,101	Burst	0.97	< –9	> 1 bil

Load Name	Section	Grade	MD (ft)	TVD (ft)	Fail Mode	Min SF	Prob. of Failure / Exceedance (10^)	Failure Rate (1 in -)
7) Leak from 'A' annulus with 2500 psi operating pressure	1	J55	7,101	7,101	Triaxial	1.03	–4.66	45,754
8) Tubing Leak with 2400 psi Operating Pressure	1	J55	7,101	7,101	Burst	1.01	< –9	> 1 bil
8) Tubing Leak with 2400 psi Operating Pressure	1	J55	7,101	7,101	Triaxial	1.12	-5.87	742,203
9) Tubing Leak with 1850 psi SITP with CO2	1	J55	7,101	7,101	Burst	1.12	< –9	> 1 bil
9) Tubing Leak with 1850 psi SITP with CO2	1	J55	7,101	7,101	Triaxial	1.18	–7.06	1.1E+07
10) Tubing Leak with 3650 psi SITP with CH4	1	J55	7,101	7,101	Burst	0.79	–4.40	25,088
10) Tubing Leak with 3650 psi SITP with CH4	1	J55	7,101	7,101	Triaxial	0.84	–1.72	53
12) Bullhead Kill Initial 2900 psi	1	J55	7,101	7,101	Burst	0.92	–8.29	1.9E+08
12) Bullhead Kill Initial 2900 psi	1	J55	7,101	7,101	Triaxial	1.01	–4.25	17,651
13) Bullhead Kill Final 500 psi	1	J55	7,820	7,820	Burst	1.29	< –9	> 1 bil
14) Loss of Containment 2500 psi	1	J55	7,101	7,101	Burst	0.97	< –9	> 1 bil
14) Loss of Containment 2500 psi	1	J55	7,101	7,101	Triaxial	1.03	–4.68	47,411
15) Loss of Containment 2500 psi Geo Temp	1	J55	7,101	7,101	Burst	0.97	< –9	> 1 bil
15) Loss of Containment 2500 psi Geo Temp	1	J55	7,101	7,101	Triaxial	1.03	–4.66	45,754

9 in. Injection Casing with Nominal Wall VME Plots

Figure 86 shows the VME plot for the design loads.

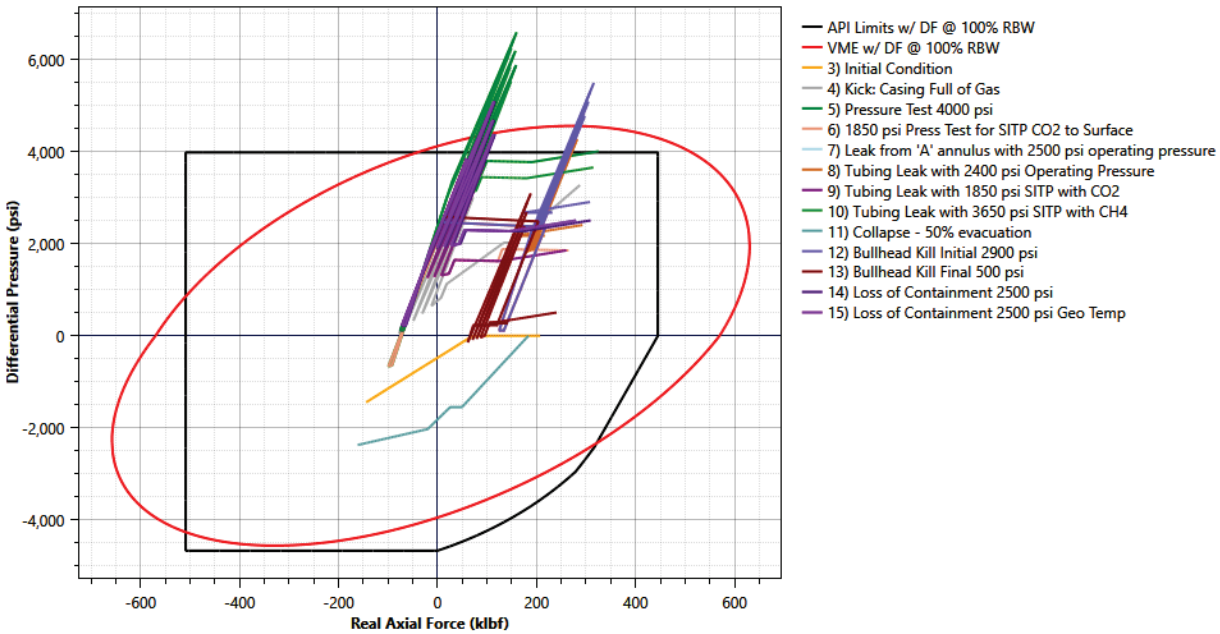

Figure 86: 9 in. Injection Casing with Nominal Wall VME