
Denbury Carbon Solutions, LLC

Geologic Site Characterization

Draco Storage Facility: Allen, Beauregard, and Vernon Parishes, Louisiana



TABLE OF CONTENTS

1.0 FACILITY INFORMATION	1
2.0 GEOLOGY, GEOLOGIC STRUCTURE, AND HYDROGEOLOGY	2
2.1 Geology	2
2.1.1 Data Sources	5
2.1.2 Regional Geology	9
2.1.3 Geology of Major Stratigraphic Units	13
2.1.4 Site-Specific Geology	17
2.2 Geologic Structure.....	36
2.2.1 Faults, Fractures, and Seismic History.....	36
2.2.2 3D Seismic Interpretation.....	41
2.2.3 Seismic Event History	41
2.3 Hydrogeology	49
2.3.1 Primary Aquifer Formations	49
2.3.2 Groundwater Flow	57
2.3.3 Groundwater Quality	57
2.3.4 USDW.....	58
2.4 Geochemistry	62
2.5 Site Suitability	62
3.0 REFERENCES	64

LIST OF TABLES

LIST OF FIGURES

The first of these is the fact that the system is not in a steady state. The system is in a state of flux, and the variables are changing. This is a dynamic system, and the variables are interdependent. The second is the fact that the system is not linear. The relationships between the variables are non-linear, and the system is subject to feedback loops. The third is the fact that the system is not deterministic. The system is subject to random fluctuations, and the future is uncertain. The fourth is the fact that the system is not isolated. The system is open to the environment, and the environment can influence the system. The fifth is the fact that the system is not homogeneous. The system is composed of different parts, and the parts are not identical. The sixth is the fact that the system is not static. The system is in a state of constant change, and the variables are always moving. The seventh is the fact that the system is not simple. The system is complex, and the relationships between the variables are difficult to understand. The eighth is the fact that the system is not predictable. The system is subject to uncertainty, and the future is uncertain. The ninth is the fact that the system is not controllable. The system is not under human control, and the variables are not under human control. The tenth is the fact that the system is not measurable. The system is not measurable, and the variables are not measurable.

ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
AoR	Area of Review
API	American Petroleum Institute
BCZ	Basal Confining Zone
bgs	Below Ground Surface
Ca	Calcium
CI	Contour Interval
CO ₂	Carbon Dioxide
DEM	Digital Elevation Models
DN	Density Neutron
E	East
FeToT	Total Iron
FM	Formation
FMI HD	High-Definition Formation Micro Imager
FS	Flooding Surface
Ft	Feet
GAPI	API Gamma Ray Unit
g/cm ³	Grams per Cubic Centimeter
gpd	Gallons Per Day
HCO ₃	Bicarbonate
HPMI	High Pressure Mercury Injection Capillary Pressure
In	Inch
K	Potassium
km	Kilometer
LA	Louisiana
LIDAR	Light Detection and Ranging
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LGS	Louisiana Geological Survey
LLC	Limited Liability Company

MICP	Mercury Injection Capillary Pressure
MD	Measured Depth
mD	Millidarcies
MDL	Method Detection Limit
Mg	Magnesium
mV	Millivolts
Mgal/d	Million gallons per day
µg/L	Micrograms per liter
mg/L	Milligrams per liter
N	North
Na	Sodium
NAD27	North American Datum of 1927
nd	Neutron Density
NPHI	Neutron Porosity
PCZ	Primary Confining Zone
pH	Potential of Hydrogen
ppt	Parts per Thousand
RCAL	Routine Core Analysis
RES	Resistivity
RHOB	Bulk Density
RT	Resistivity
RW	Water Resistivity
S	South
SB	Sequence Boundary
SCAL	Special Core Analysis
SCZ	Secondary Confining Zone
SMCL	Secondary Maximum Contaminant Levels
SN	Serial Number
SO ₄	Sulfate
SONRIS	Strategic Online Natural Resources Information System
SP	Spontaneous Potential
sq	Square
TD	Total Depth
TS	Transgressive Surface
TVD	True Vertical Depth
TVDSS	True Vertical Depth Subsea
TX	Texas

US	United States
USDW	Underground Source of Drinking Water
USGS	United States Geological Survey
USIT	Ultrasonic Imager Tool
v/v	Neutron Porosity
W	West
XRD	X-ray Diffraction
XRF	X-ray Fluorescence
3D	Three Dimensional
4D	Four Dimensional

1.0 FACILITY INFORMATION

Facility Name: Draco Storage Facility

Facility Location:



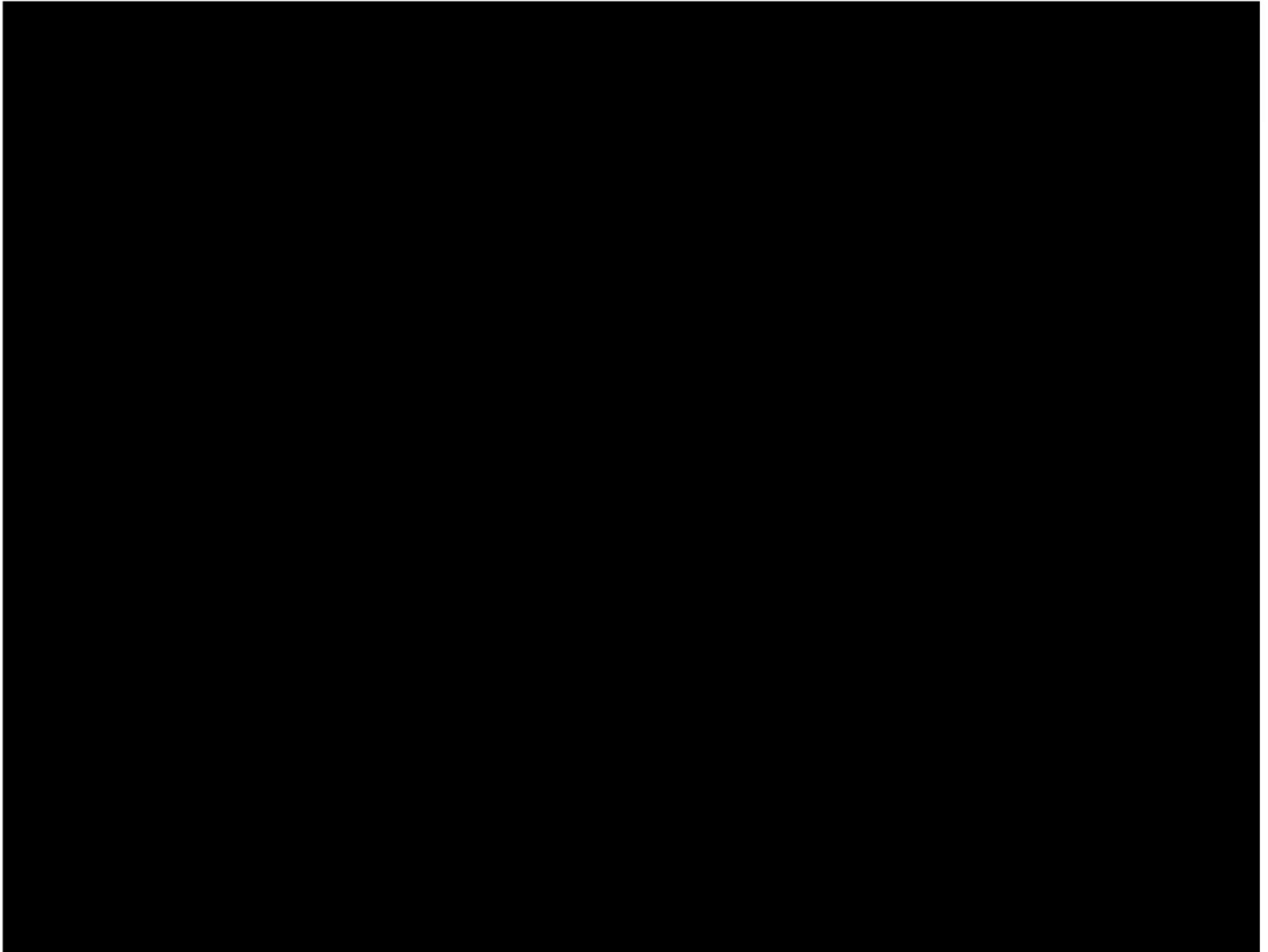
Mailing Address: 5851 Legacy Circle, Suite 1200
Plano, Texas 75024

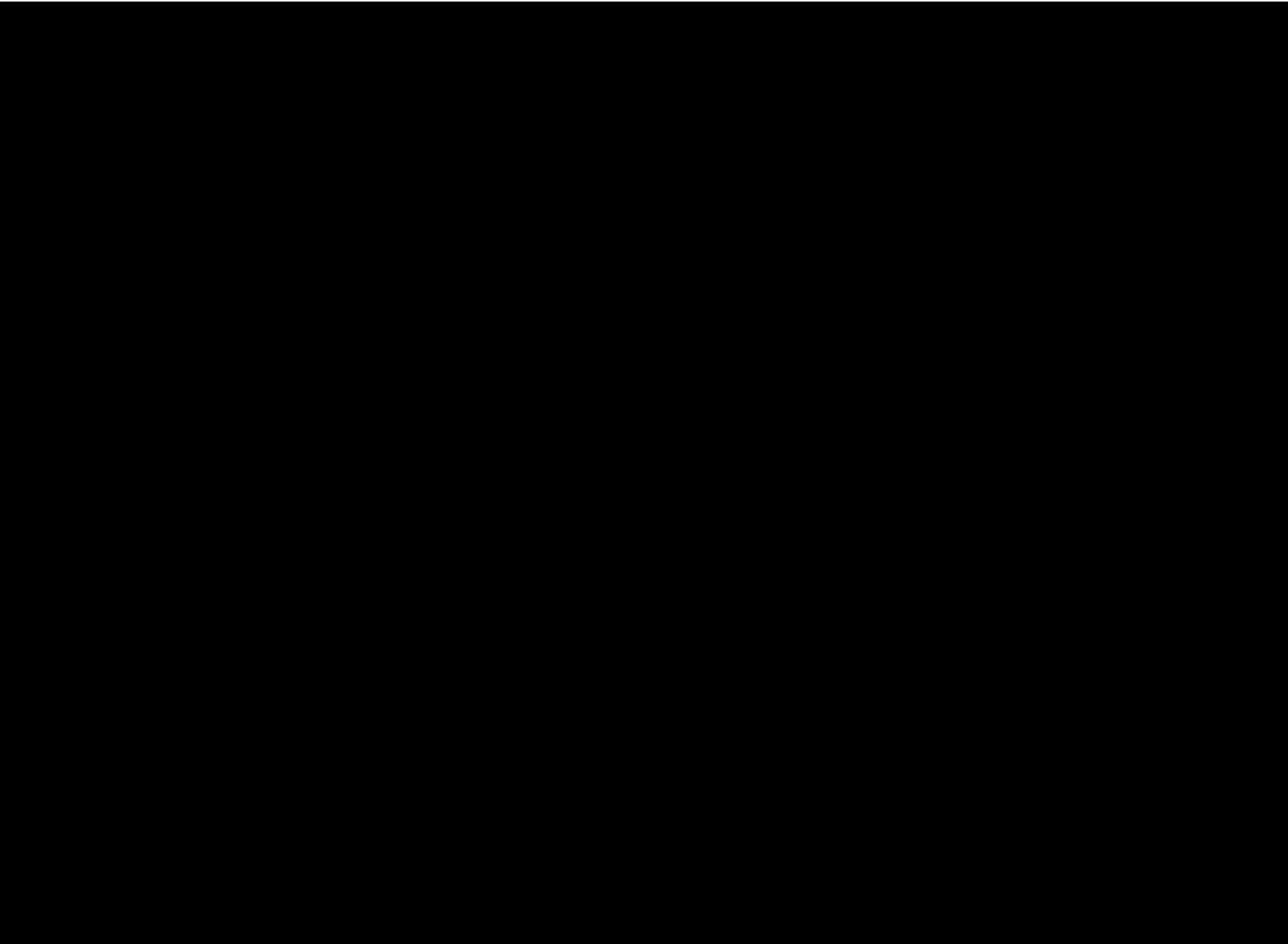
Well Location(s):

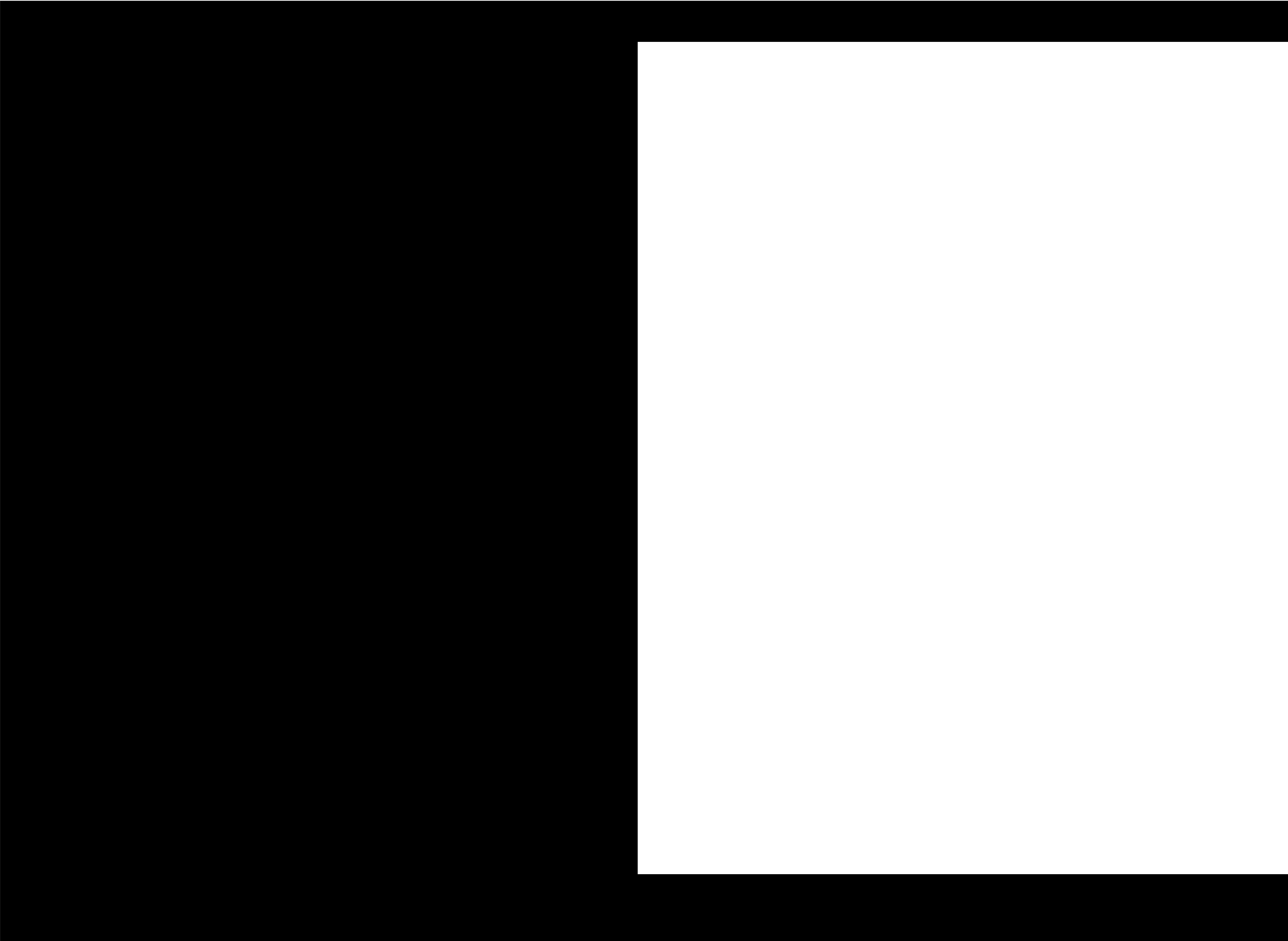


2.0 GEOLOGY, GEOLOGIC STRUCTURE, AND HYDROGEOLOGY


2.1 GEOLOGY

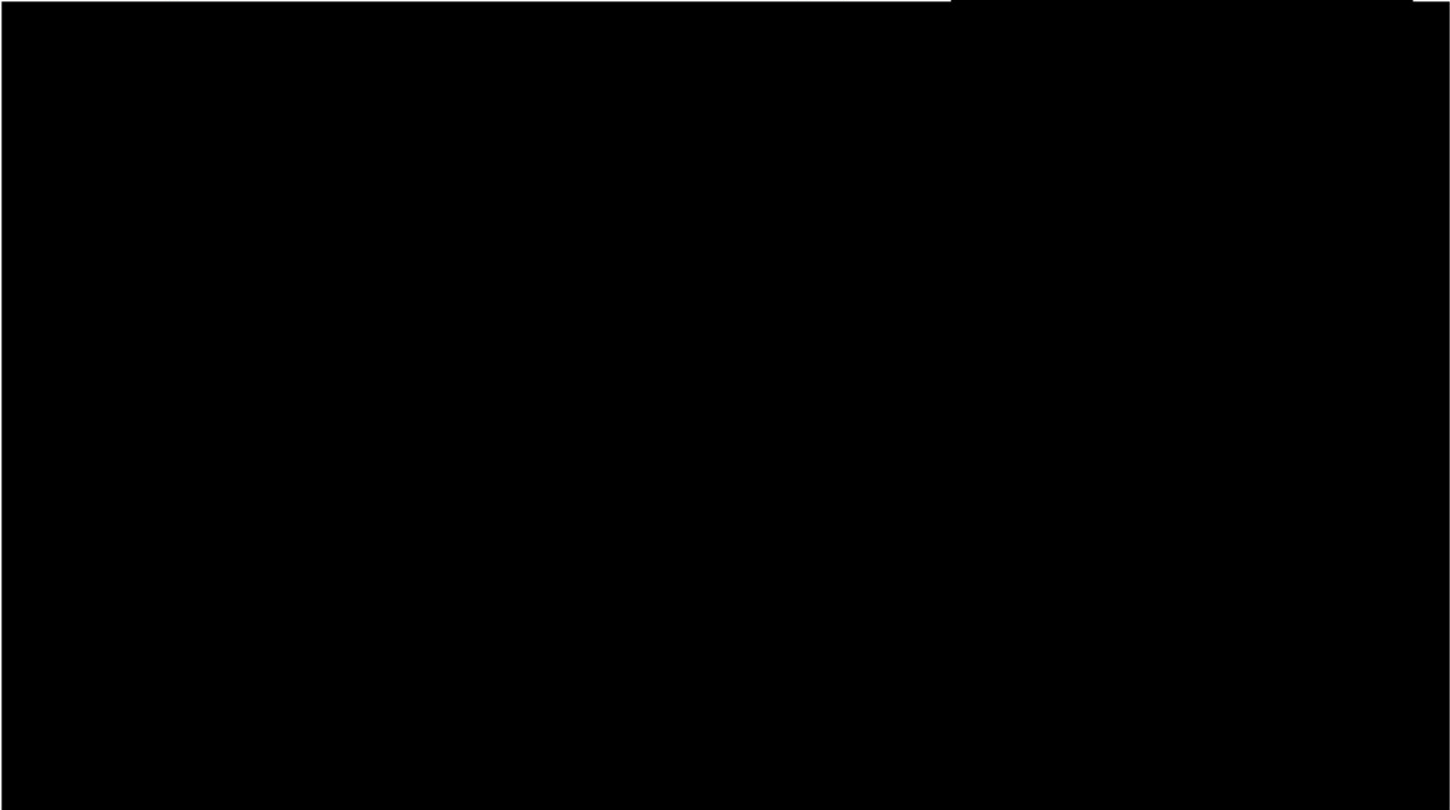








2.1.1 Data Sources

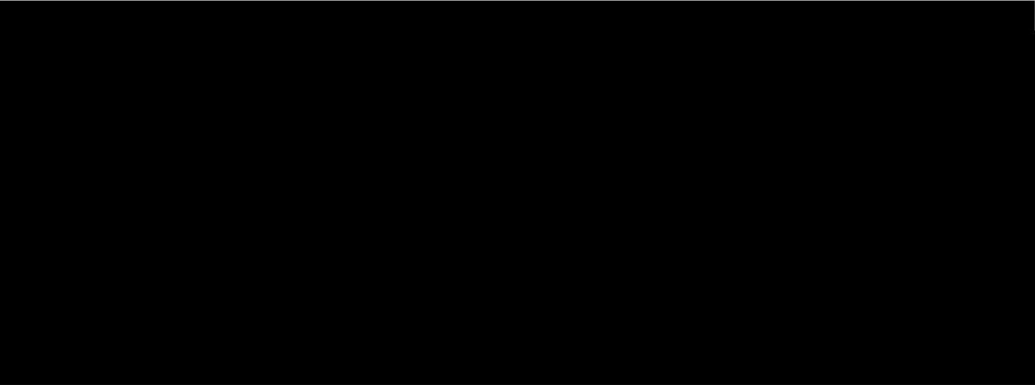
The existing data within the AoR consists of three-dimensional (3D) seismic 



2.1.1.1 Existing Data

Well Data

Data from existing wells in  published literature, and publicly available datasets from the Louisiana Department of Natural Resources (LDNR) and the Louisiana Geological Survey (LGS) were used to characterize the subsurface at the Draco Storage Facility. A more detailed subsurface evaluation was conducted across the Draco Storage Facility 3D geologic model area, which contains 

Within the geomodel area, 

the 1990s, the number of people in the world who are under 15 years of age has increased from 1.1 billion to 1.5 billion. The number of people aged 65 and over has increased from 200 million to 350 million. The number of people aged 15–64 years has increased from 2.5 billion to 3.5 billion.

There are a number of factors that have contributed to the increase in the number of people in the world who are under 15 years of age. One of the main factors is the increase in the number of people who are surviving into old age. This is due to a number of factors, including improvements in medical care, better nutrition, and a decline in the number of people who are dying from preventable diseases.

Another factor is the increase in the number of people who are having children. This is due to a number of factors, including a decline in the number of people who are dying from preventable diseases, a decline in the number of people who are having abortions, and a decline in the number of people who are using contraception.

The increase in the number of people in the world who are under 15 years of age has a number of implications. One of the main implications is that it will increase the demand for resources, such as food, water, and shelter. This will put pressure on the environment and on the world's resources.

Another implication is that it will increase the demand for education. This will put pressure on the world's education system and on the world's resources. It will also put pressure on the world's economy, as it will increase the number of people who are dependent on others for support.

The increase in the number of people in the world who are under 15 years of age is a major challenge for the world. It is a challenge that will require the world to work together to find solutions. The world must find ways to meet the needs of the growing population, while also protecting the environment and the world's resources.

The world must also find ways to ensure that everyone has access to education and healthcare. This will require the world to work together to find solutions. The world must find ways to ensure that everyone has access to the resources they need to live a good life.

The world must also find ways to ensure that everyone has access to the resources they need to live a good life. This will require the world to work together to find solutions. The world must find ways to ensure that everyone has access to the resources they need to live a good life.

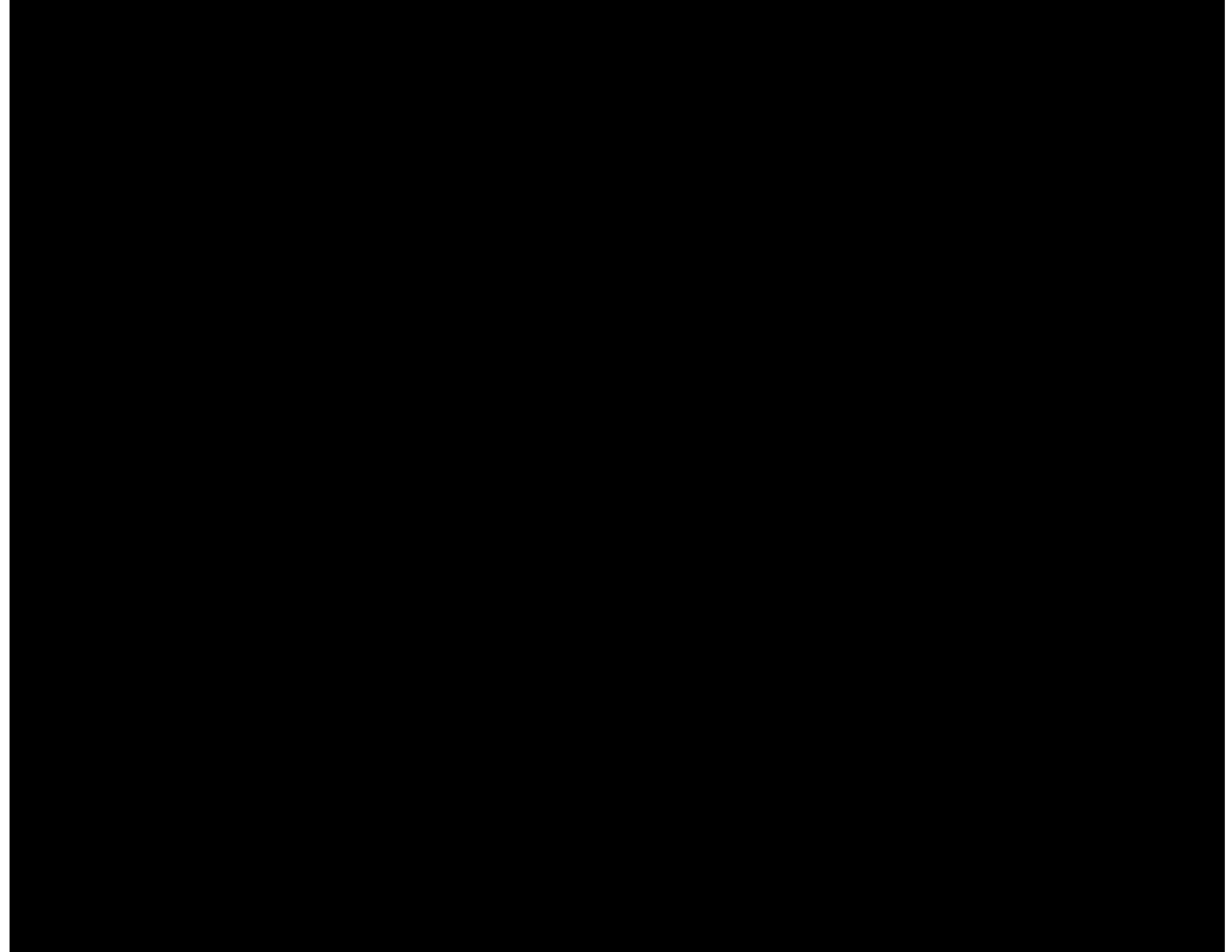
The world must also find ways to ensure that everyone has access to the resources they need to live a good life. This will require the world to work together to find solutions. The world must find ways to ensure that everyone has access to the resources they need to live a good life.

The world must also find ways to ensure that everyone has access to the resources they need to live a good life. This will require the world to work together to find solutions. The world must find ways to ensure that everyone has access to the resources they need to live a good life.

The world must also find ways to ensure that everyone has access to the resources they need to live a good life. This will require the world to work together to find solutions. The world must find ways to ensure that everyone has access to the resources they need to live a good life.

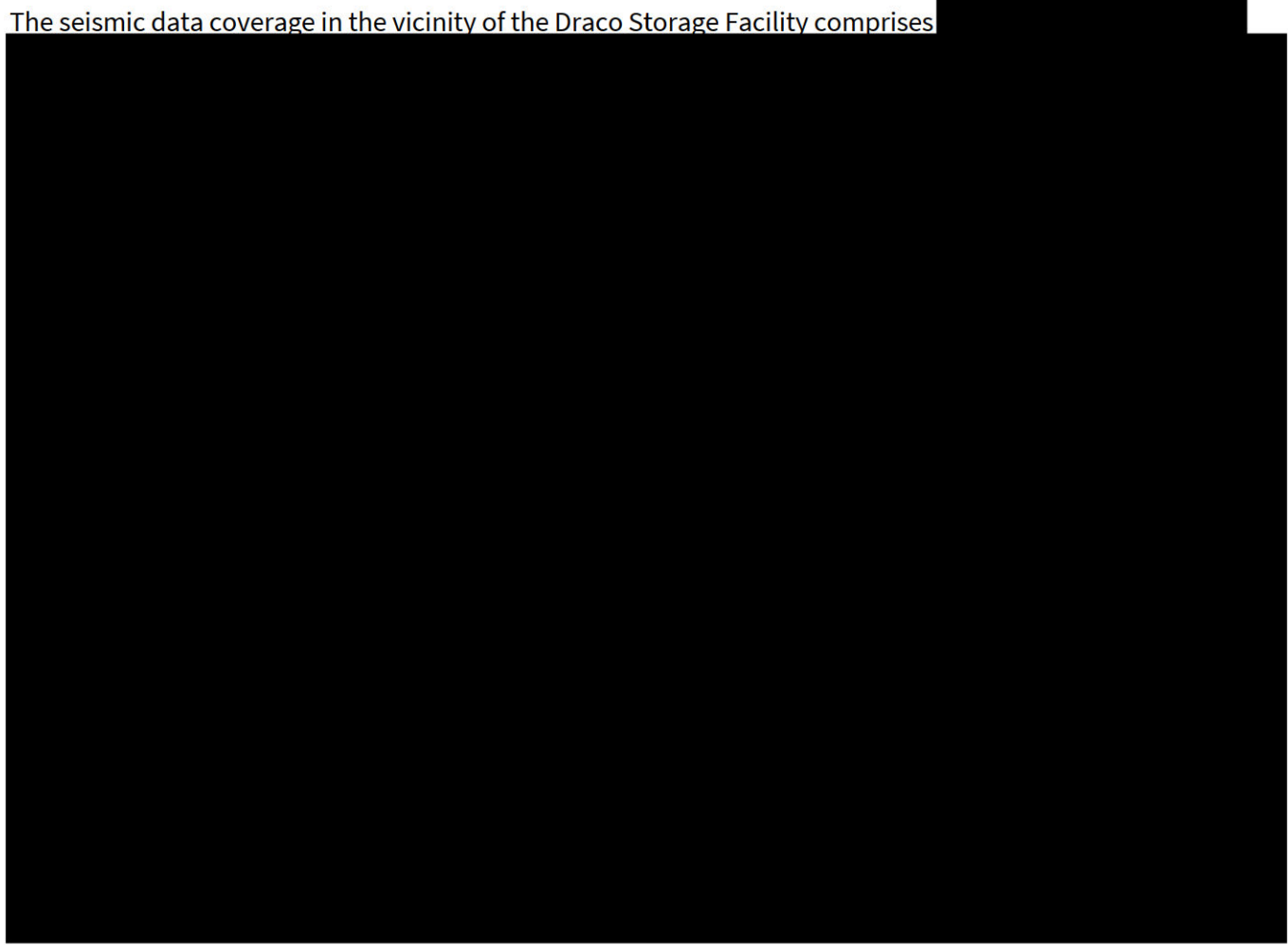
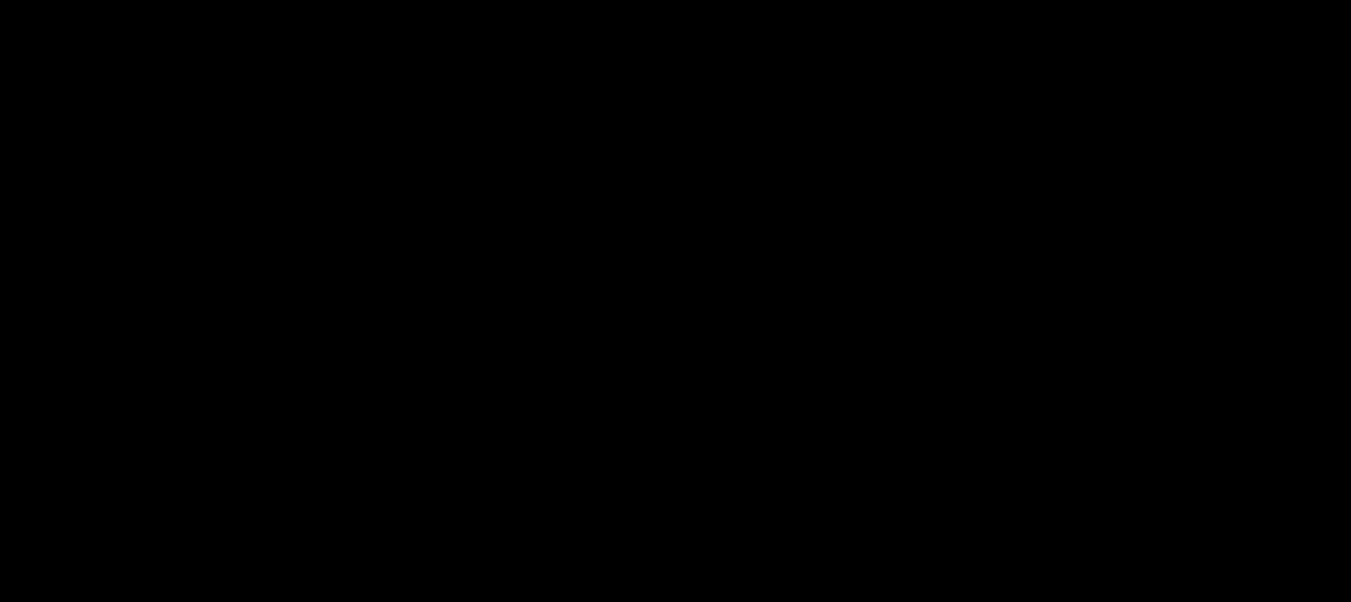
The world must also find ways to ensure that everyone has access to the resources they need to live a good life. This will require the world to work together to find solutions. The world must find ways to ensure that everyone has access to the resources they need to live a good life.

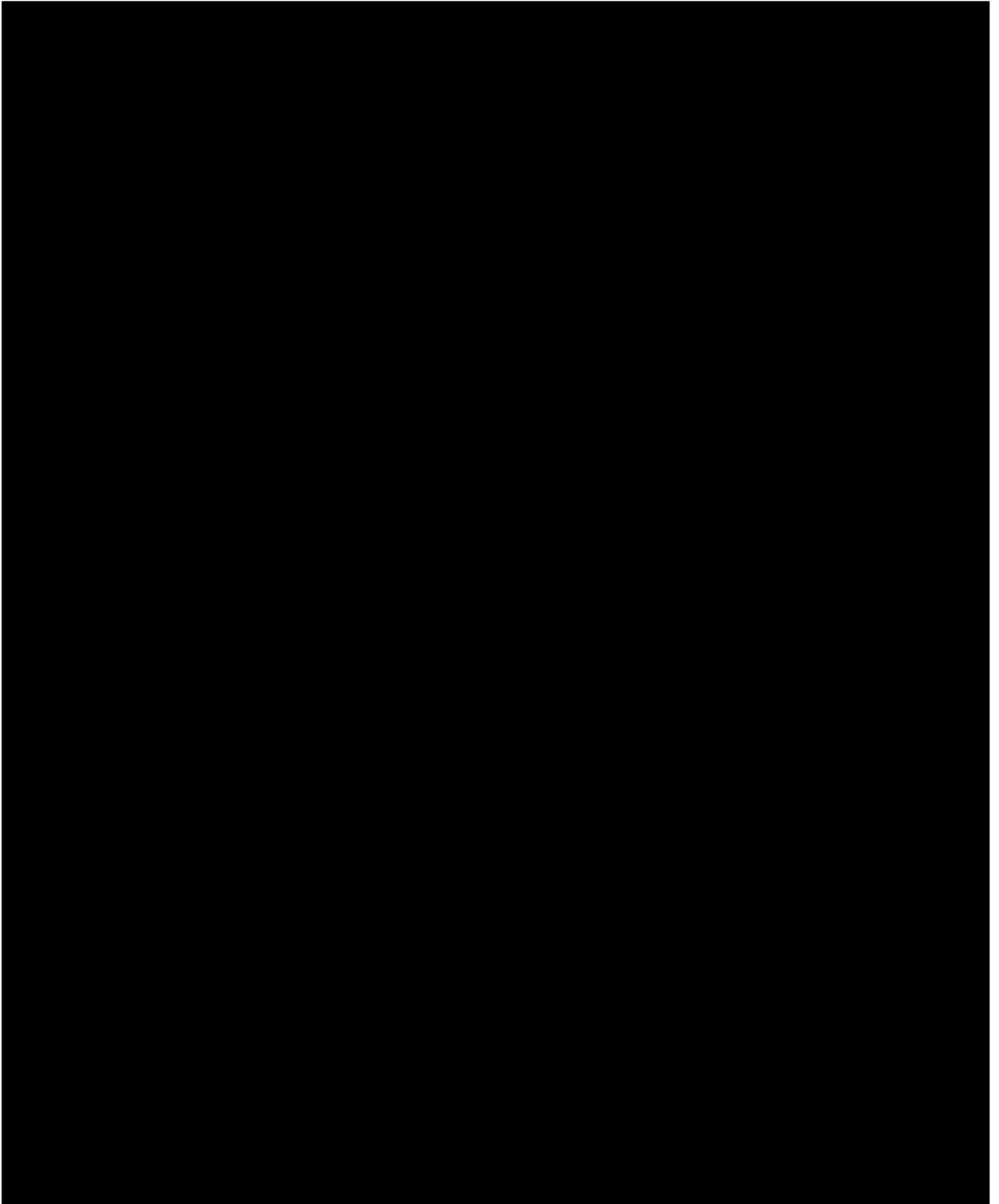
The world must also find ways to ensure that everyone has access to the resources they need to live a good life. This will require the world to work together to find solutions. The world must find ways to ensure that everyone has access to the resources they need to live a good life.

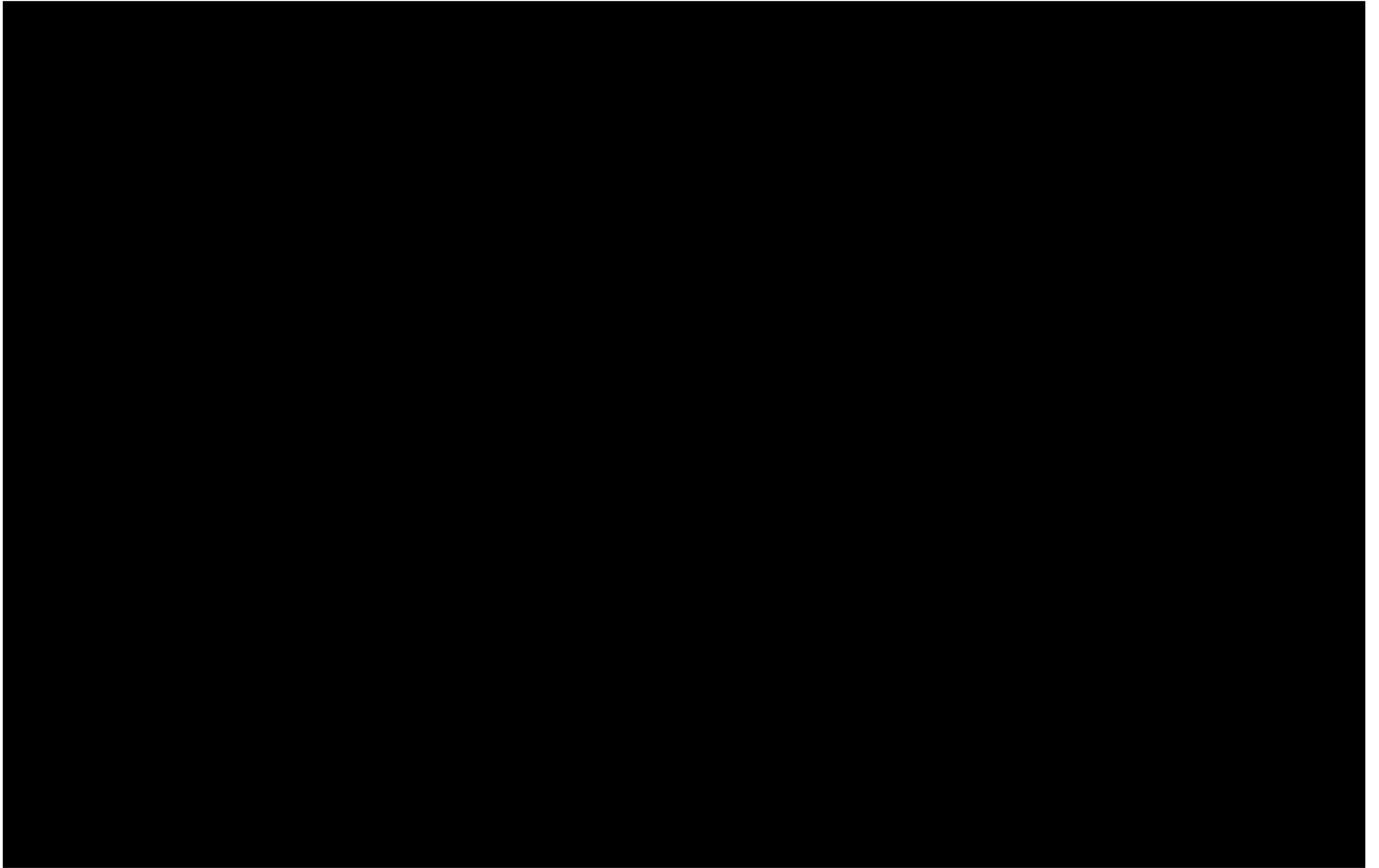


Seismic Data

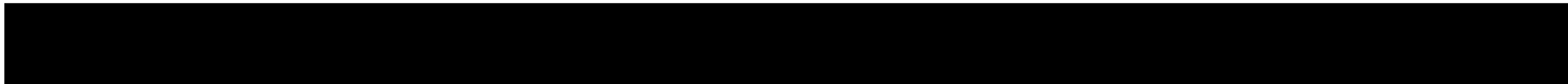
The seismic data coverage in the vicinity of the Draco Storage Facility comprises

**2.1.1.2 Site-Specific Data**





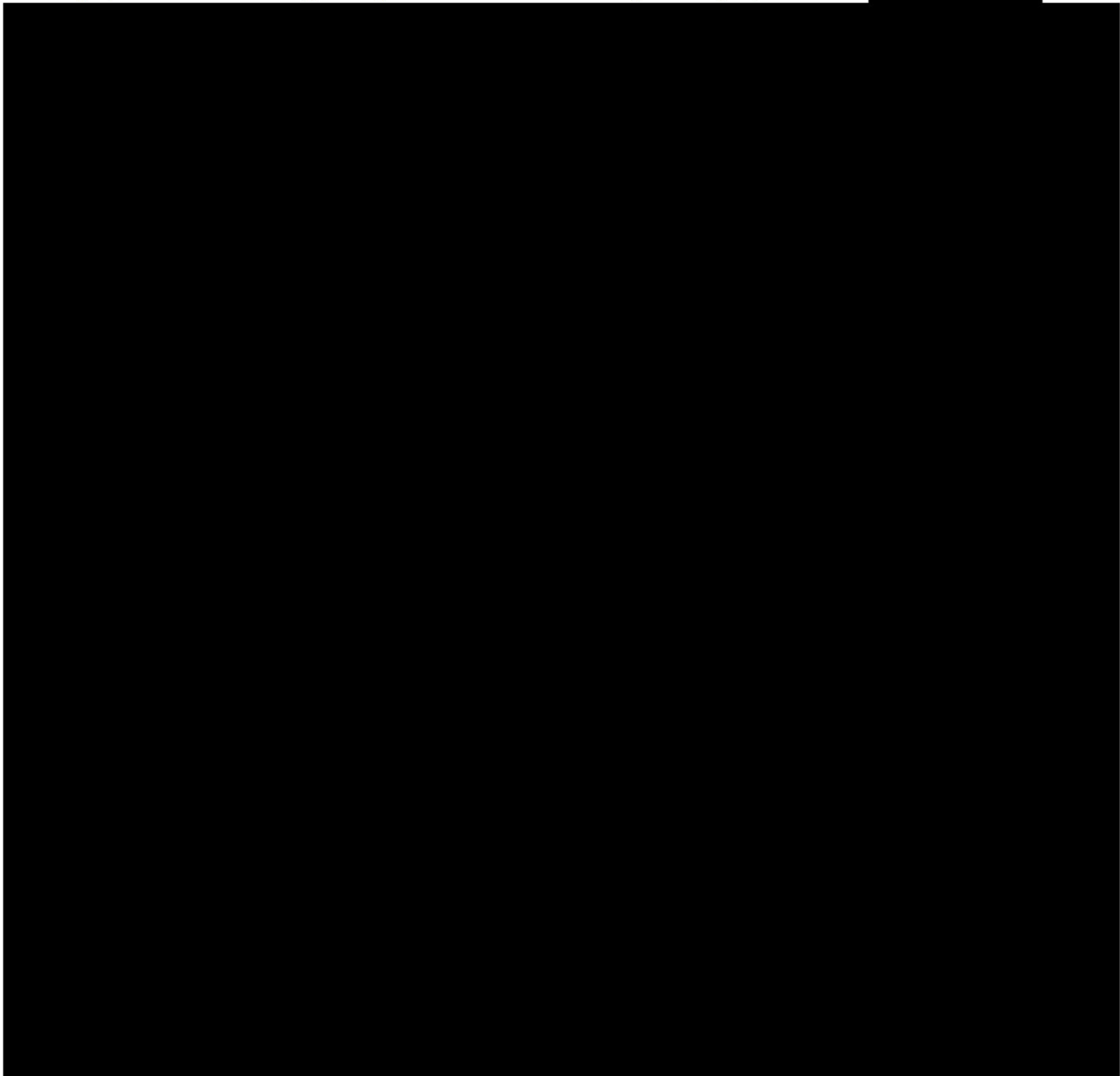


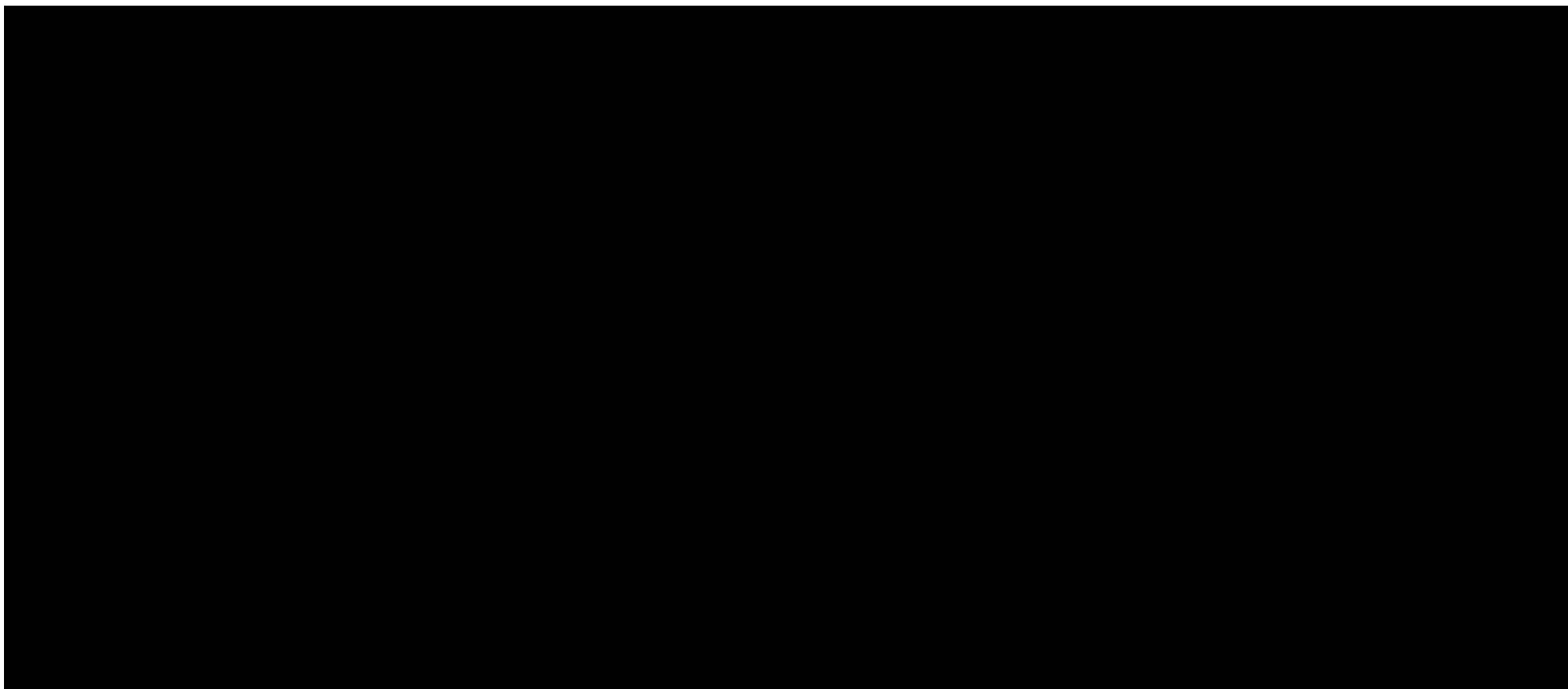


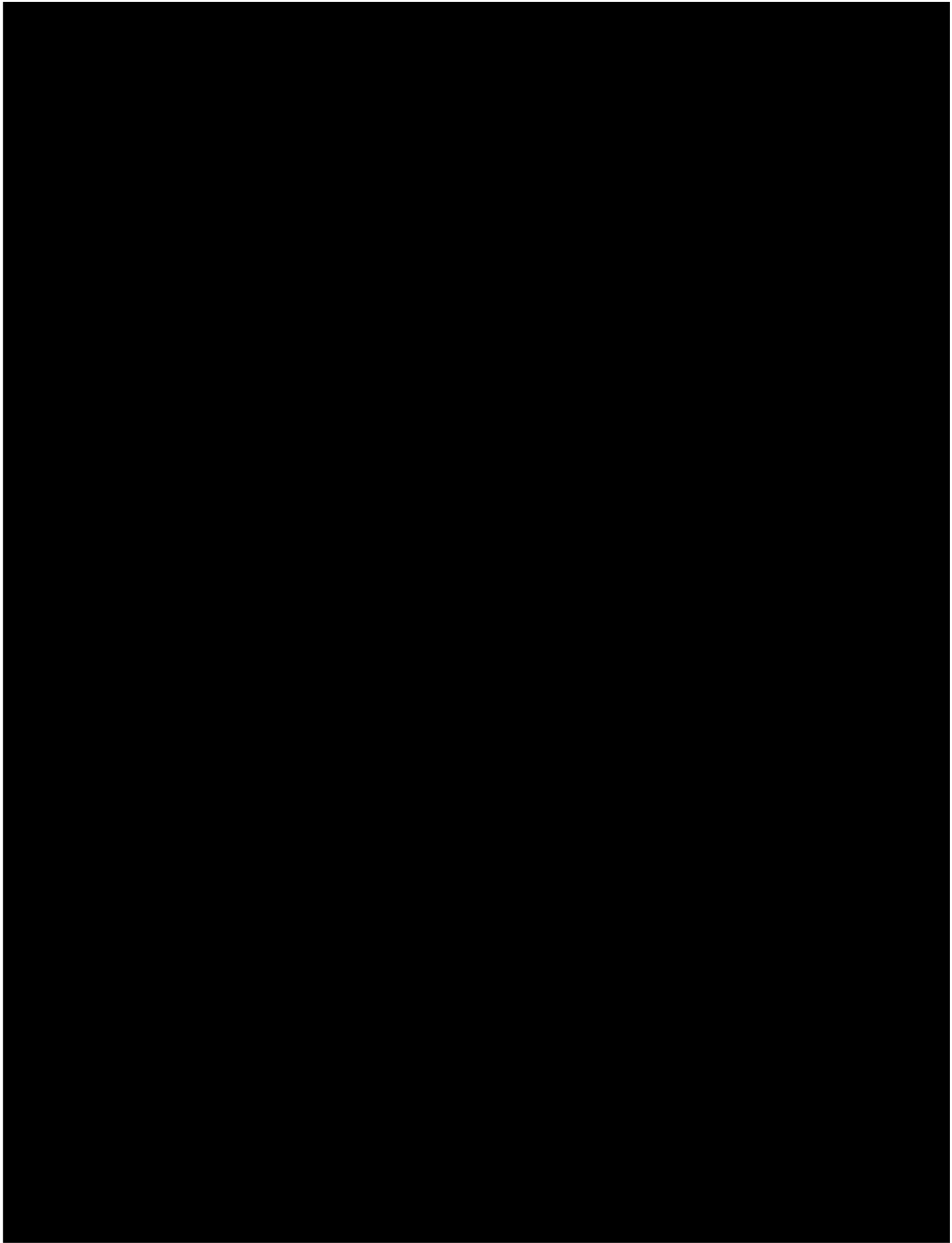
The Wilcox Group, Eocene and Paleocene age [REDACTED] unconformably overlies the Midway Group, consisting of siliciclastic strata and ranging in thickness from 1,000 feet up to 7,000 feet across the Gulf of Mexico. Regionally, the Wilcox Group has been interpreted as an amalgamation of deltaic systems distributed across the Gulf of Mexico Basin by up to five fluvial axes that initially delivered a sediment supply of 150,000 km³ per million years [REDACTED]

2.1.3 Geology of Major Stratigraphic Units

A stratigraphic column showing the key units for the Draco Storage Facility is provided in [REDACTED]

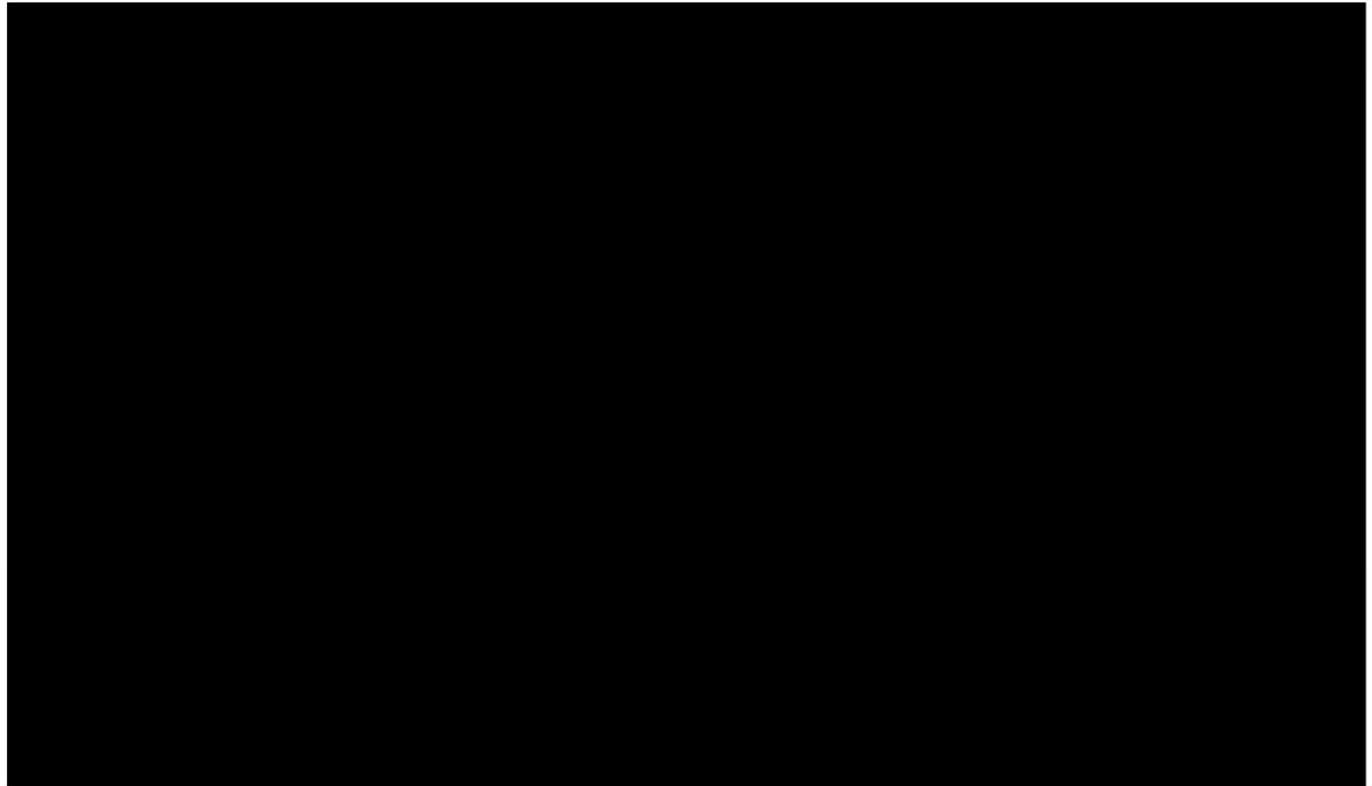






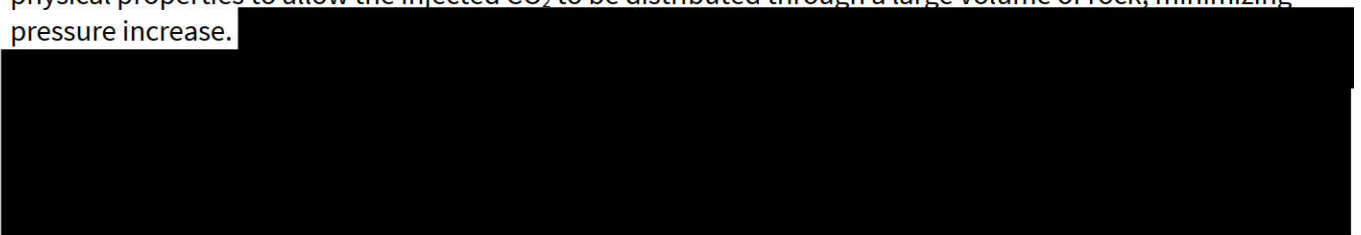
2.1.4 Site-Specific Geology

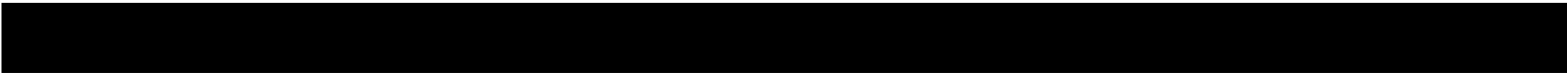
The following discusses the geology in the vicinity of the Draco Storage Facility to demonstrate the continuity and physical properties of critical geological units (Table 3). The site-specific geology has subdivided the injection interval (Section 2.1.4.1) and confining system (Section 2.1.4.2). The petrophysical model is included in Appendix A and outlines the shale correction, porosity, and permeability methodologies facilitating characterization.

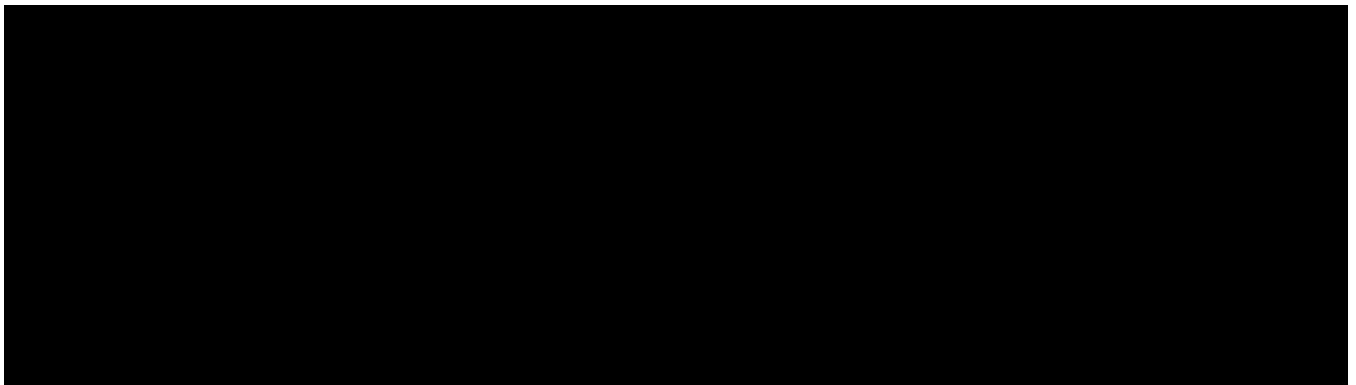


2.1.4.1 Injection Interval Characteristics

The injection interval is a stacked reservoir system that has thick, laterally extensive sands with suitable physical properties to allow the injected CO₂ to be distributed through a large volume of rock, minimizing pressure increase.











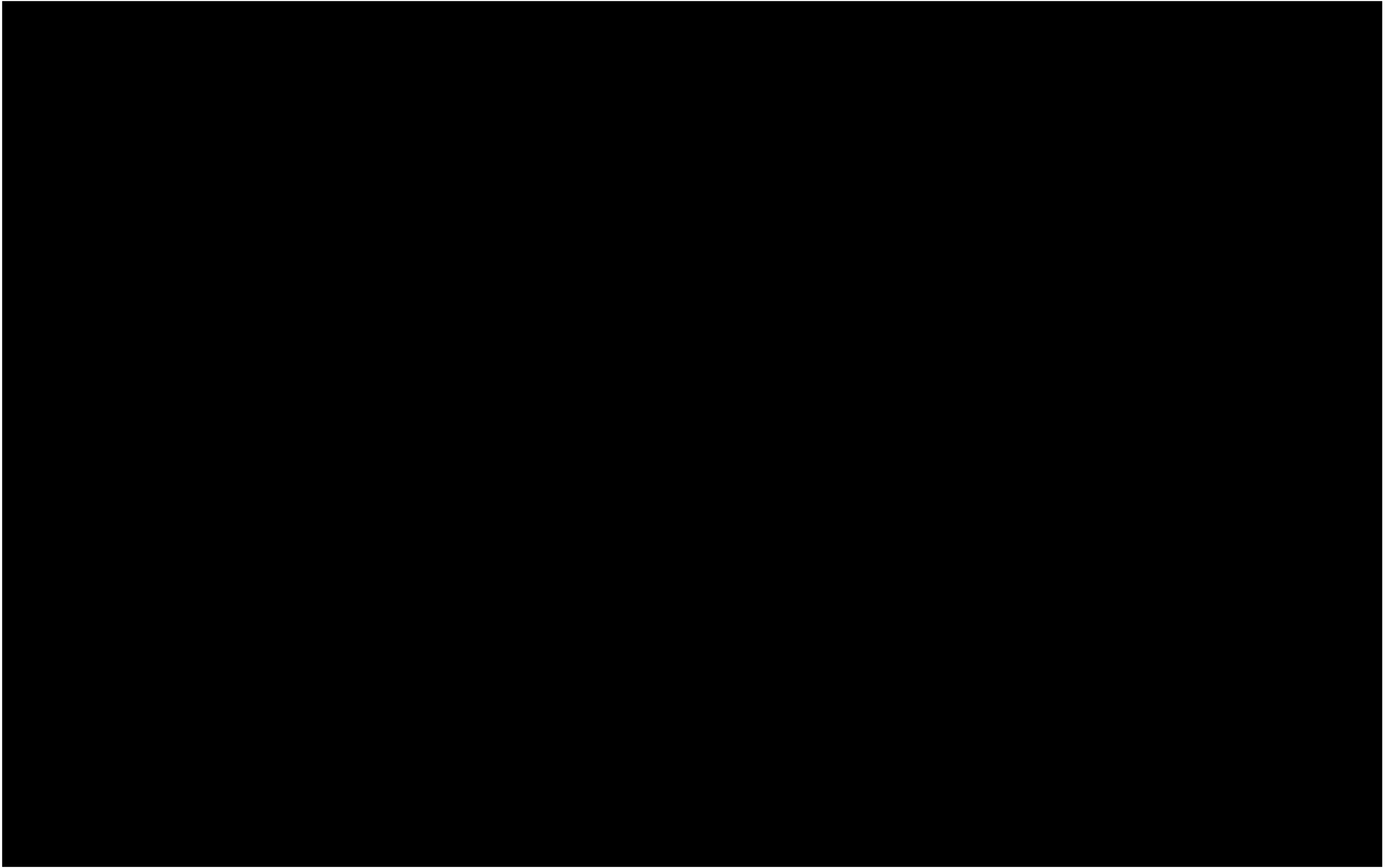
The first part of the paper discusses the importance of understanding the cultural context of the research. It highlights the need for researchers to be sensitive to the values and beliefs of the communities they are studying. This is particularly important in the field of health research, where cultural differences can significantly impact the effectiveness of interventions.

The second part of the paper presents a review of the literature on cultural competence in health care. It examines the various models and frameworks that have been developed to guide practitioners in providing culturally appropriate care. The review also identifies the challenges and barriers to achieving cultural competence in practice.

The third part of the paper describes the methodology used in the study. It details the selection of participants, the data collection methods, and the analysis techniques. The study was conducted in a community-based setting, and the participants were recruited through a snowball sampling method.

The fourth part of the paper presents the findings of the study. It discusses the themes that emerged from the data and provides a detailed analysis of the results. The findings suggest that there is a need for more culturally sensitive health care services and that practitioners should be trained in cultural competence.

The fifth part of the paper discusses the implications of the findings for practice and policy. It suggests ways in which the results can be used to improve the delivery of health care services and to develop more effective interventions. The paper also identifies areas for further research and provides recommendations for future studies.



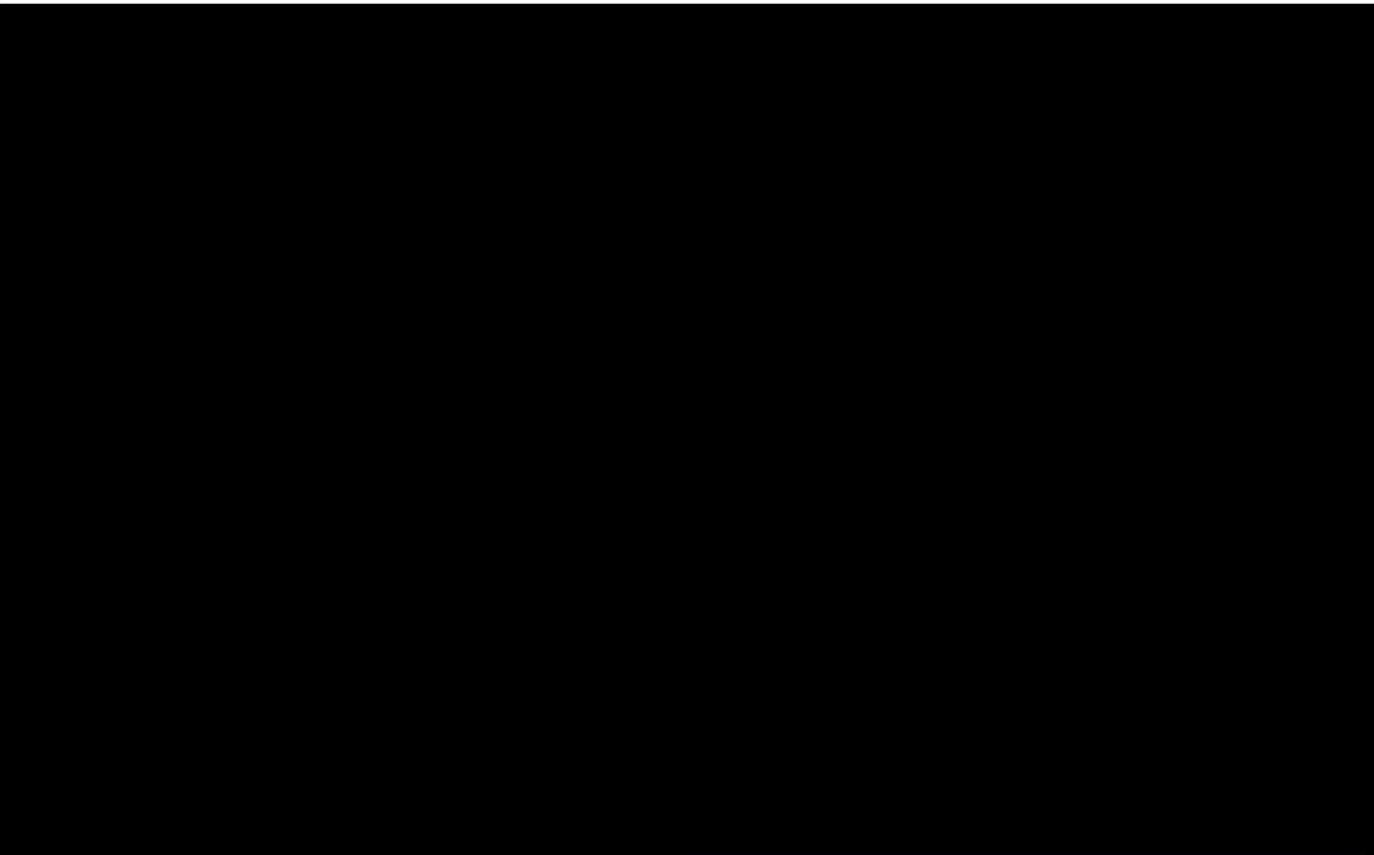
2.1.4.2 Confining System



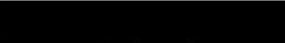

2.1.4.2a Basal Confining Zone

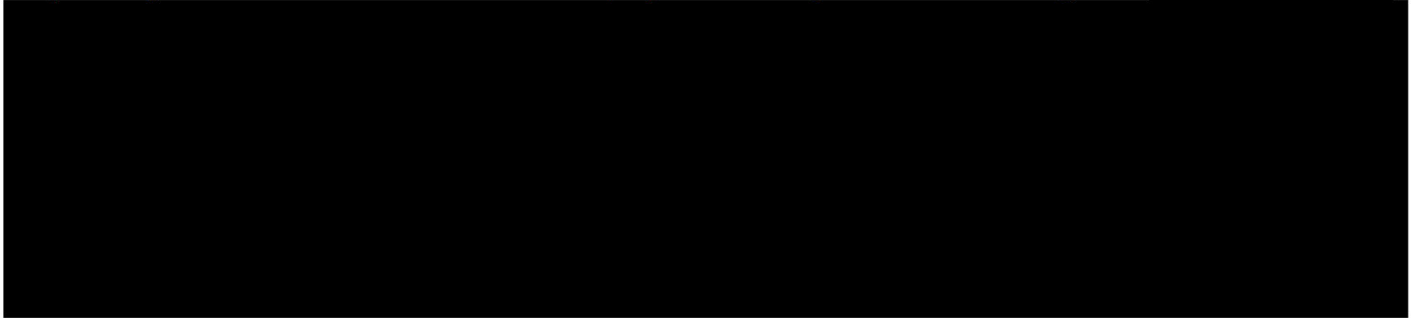


2.1.4.2b Above Injection Zone Confining System

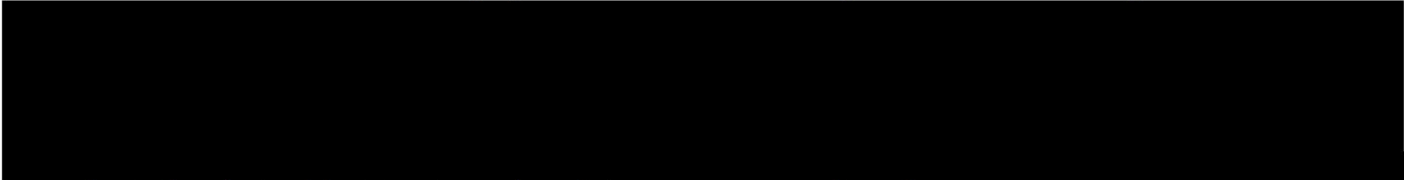
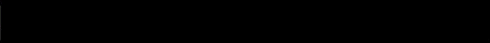



2.1.4.3 Cross-Sections of the AOR

 show north-south and west-east structural cross-sections through the proposed AoR, respectively. These cross-sections illustrate that project-critical injection and confining zones 



2.1.4.4 Geomechanical and Petrophysical Information on Injection and Confining Zones


Petrophysical analysis of the injection and confining zones was conducted 

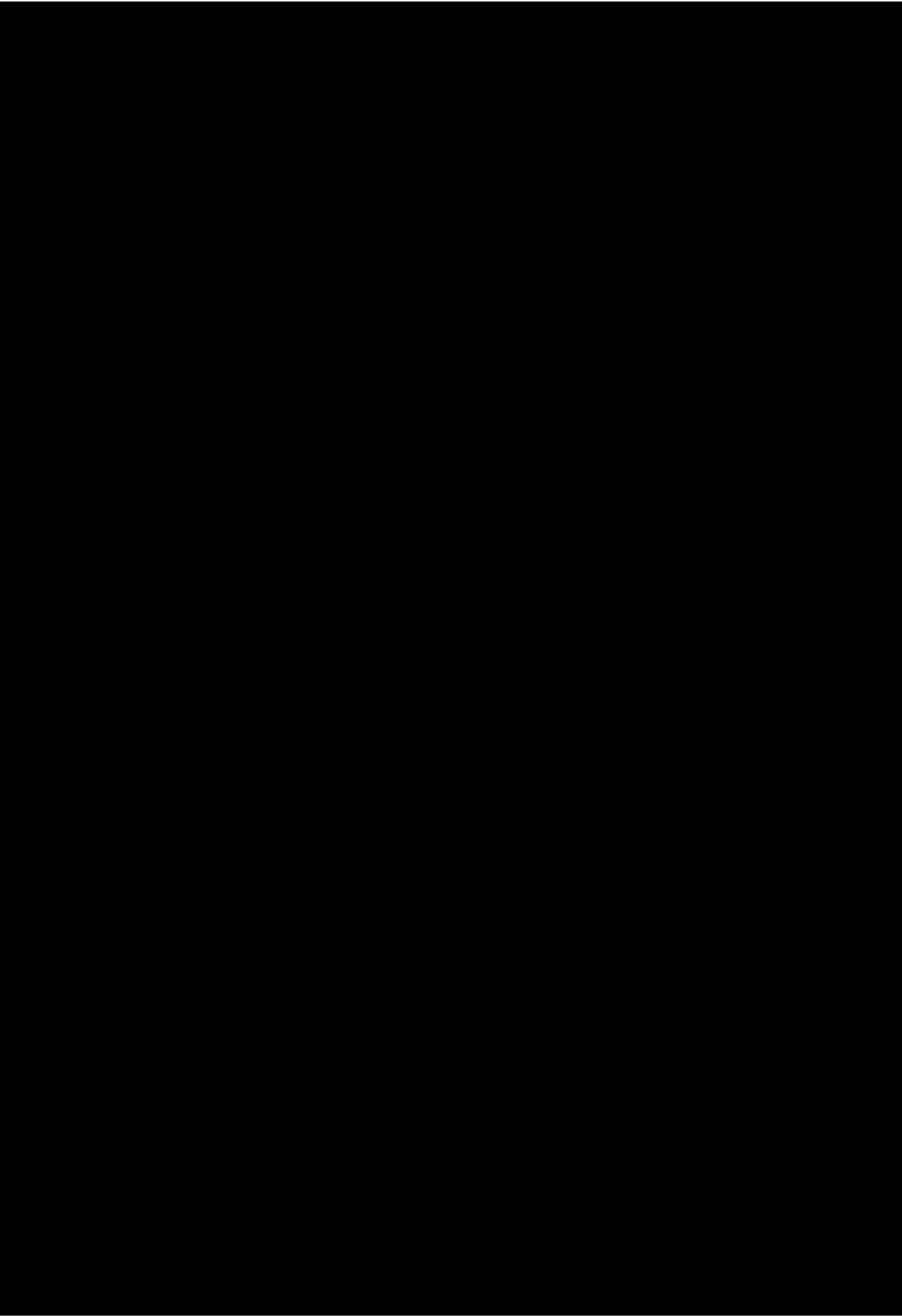


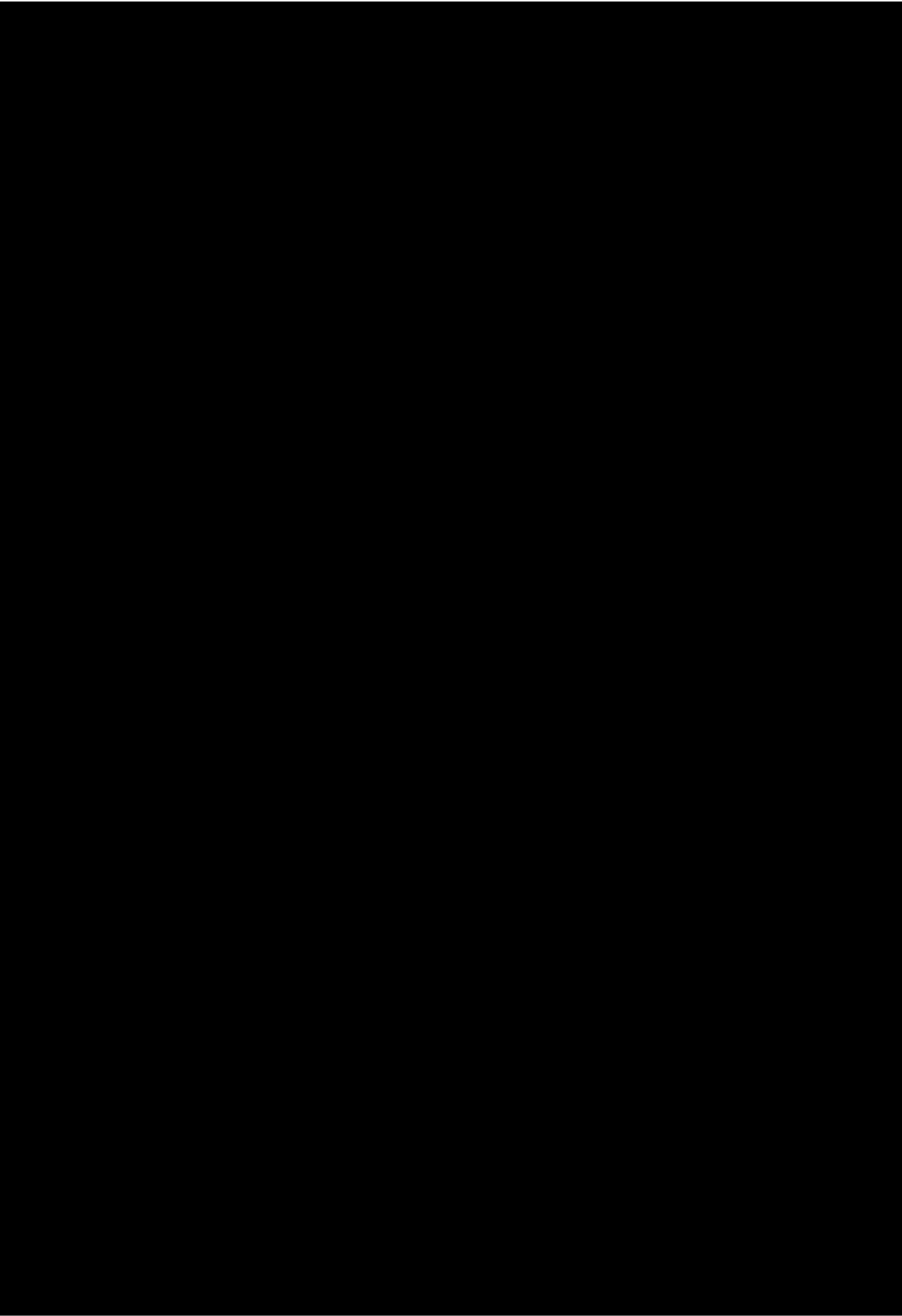
A
detailed description of this process can be found in Appendix A.

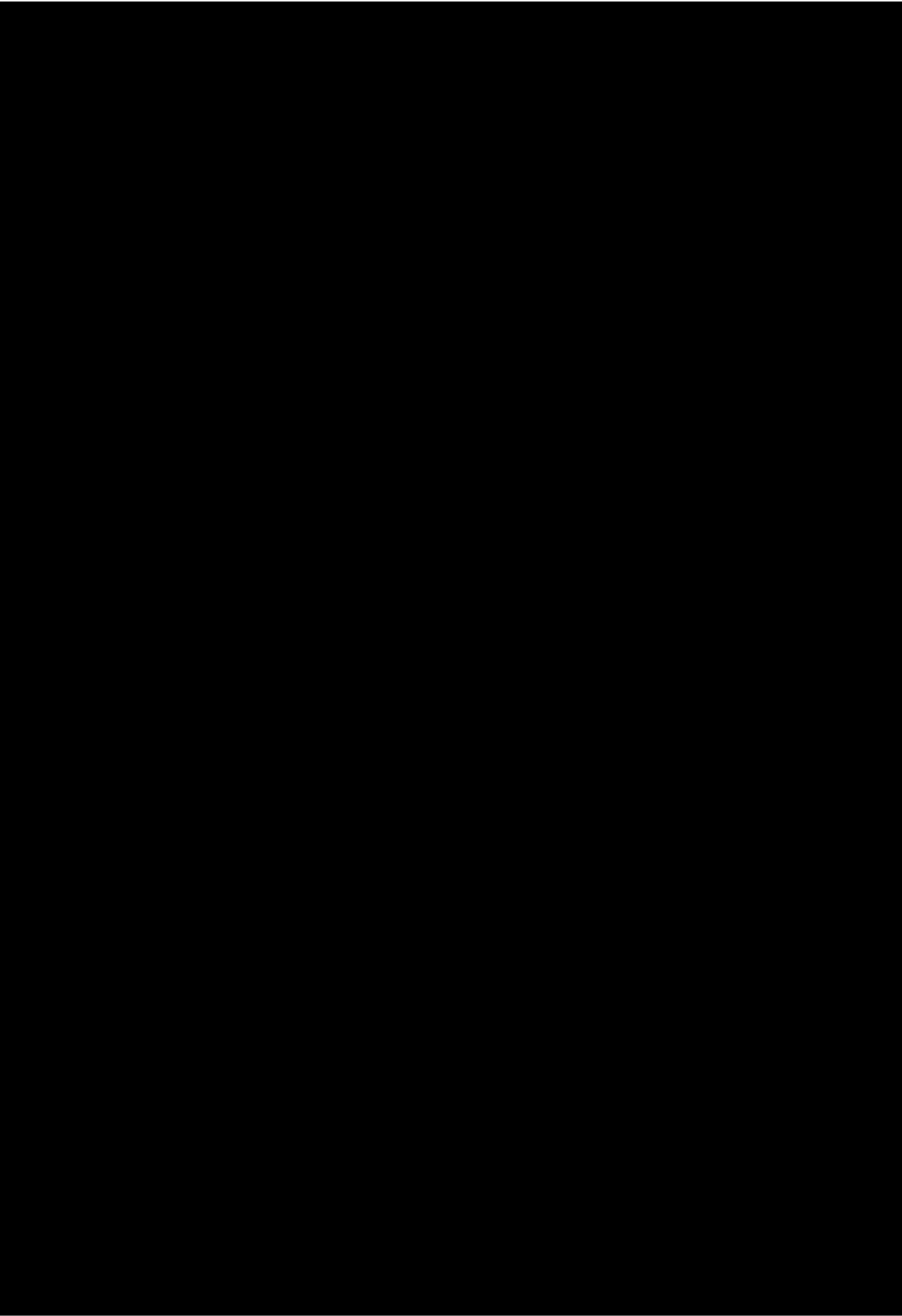
2.1.4.5 Geophysical Model for 3D Volume











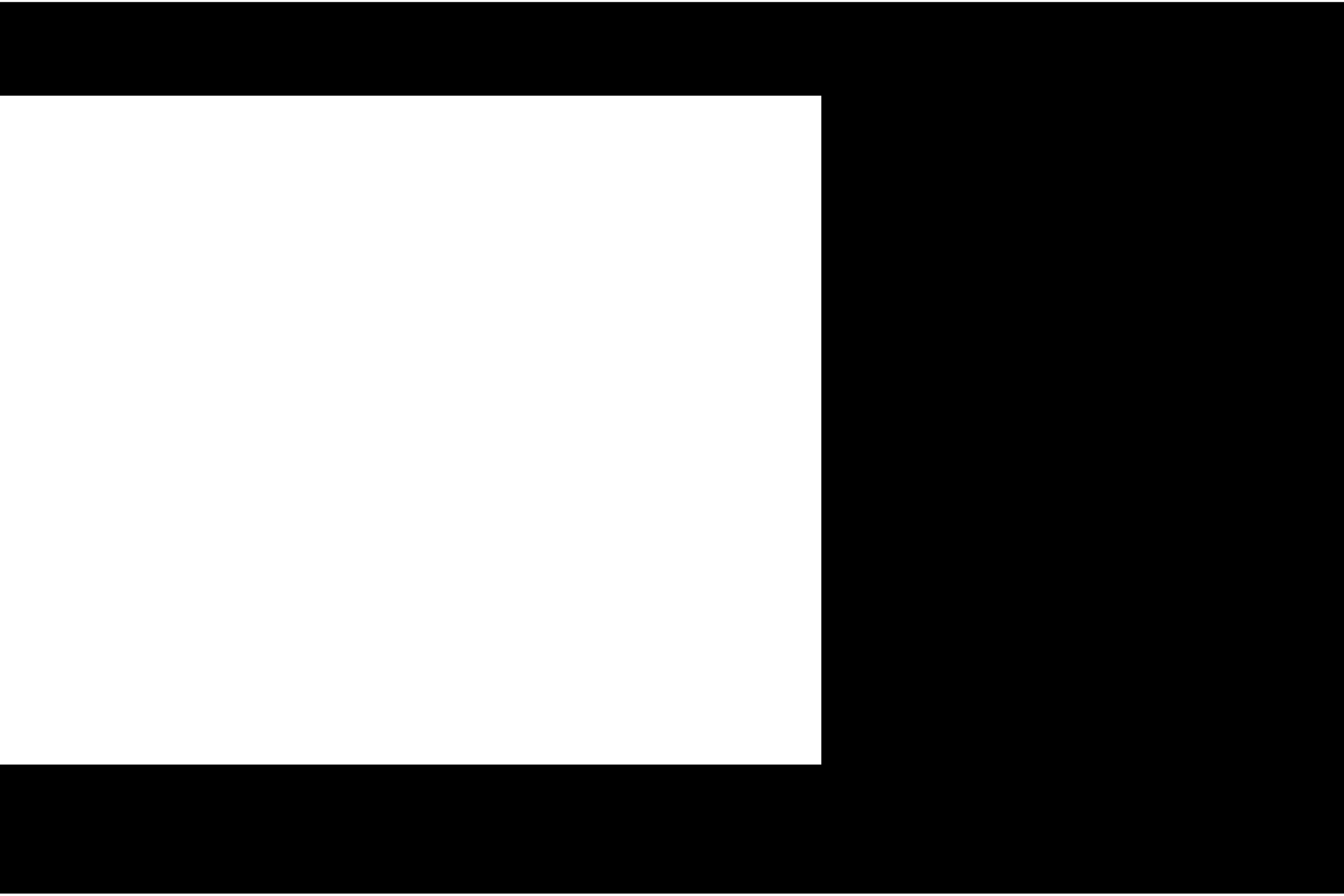
2.2 GEOLOGIC STRUCTURE

2.2.1 Faults, Fractures, and Seismic History

2.2.1.1 Regional Faulting and Fracturing

The regional geologic structure is summarized in Section 2.1.2. The Draco Storage Facility sits in











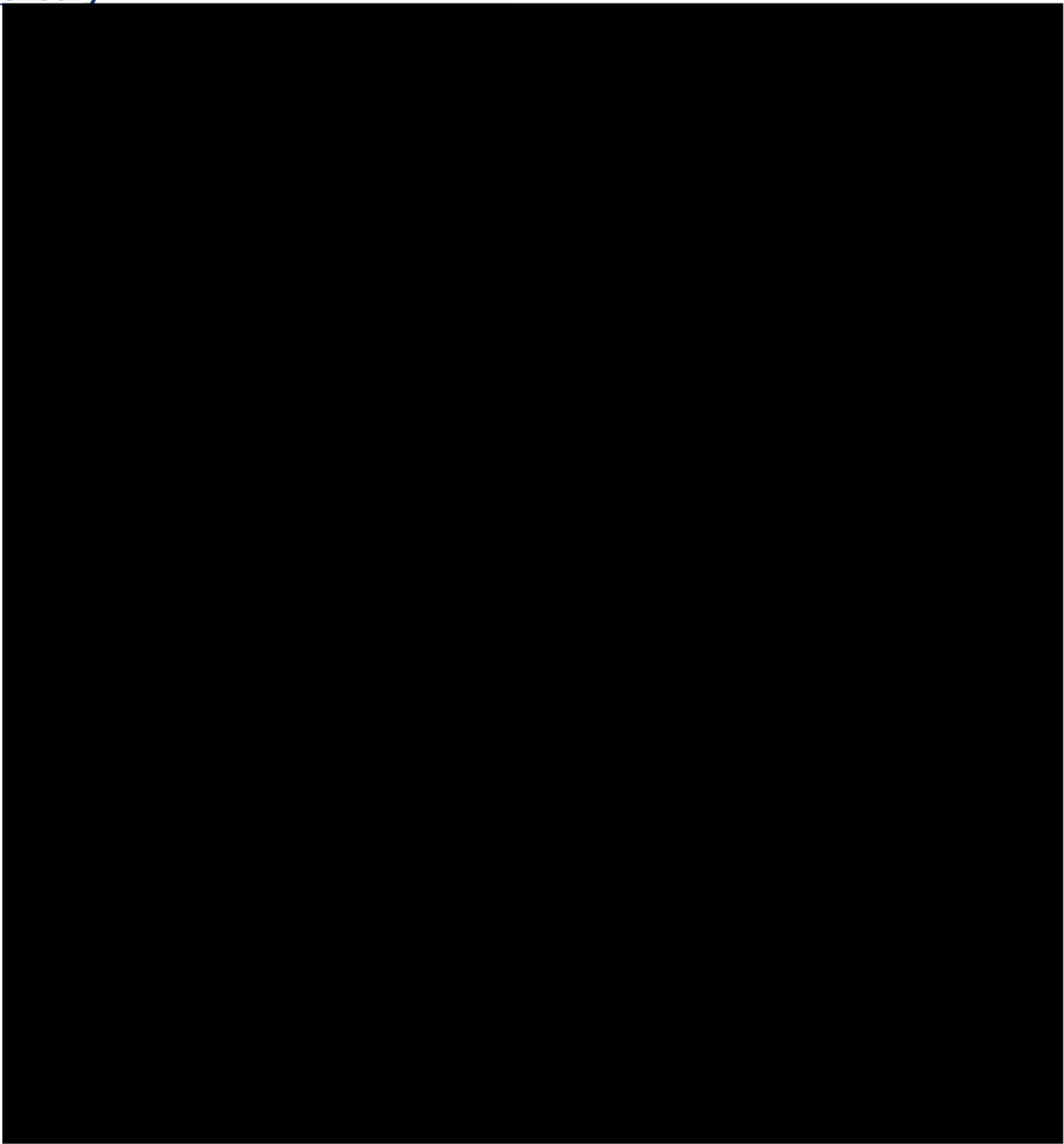
2.2.1.2 Local Faulting and Fracturing

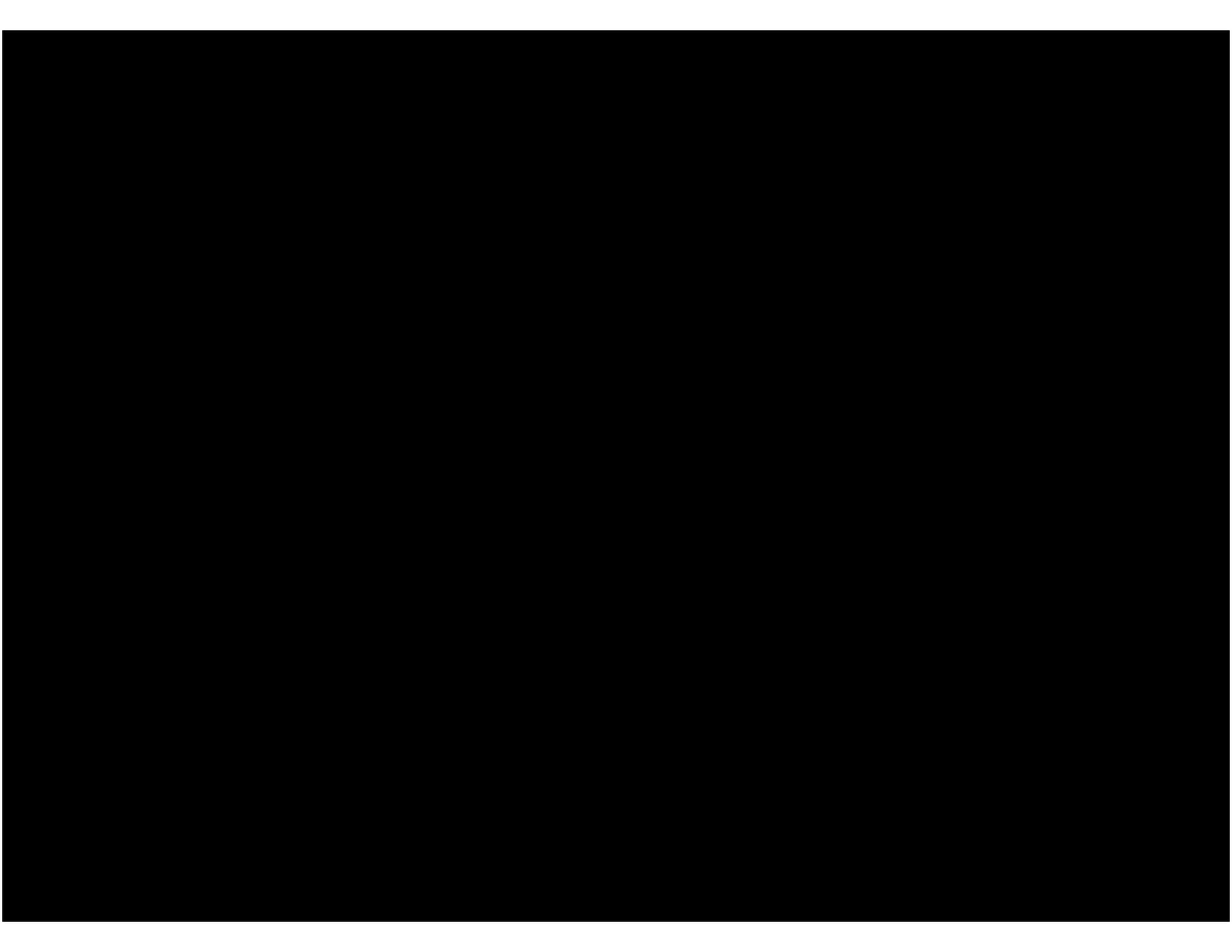
Based on integrated 3D seismic and well analyses,

2.2.2 3D Seismic Interpretation

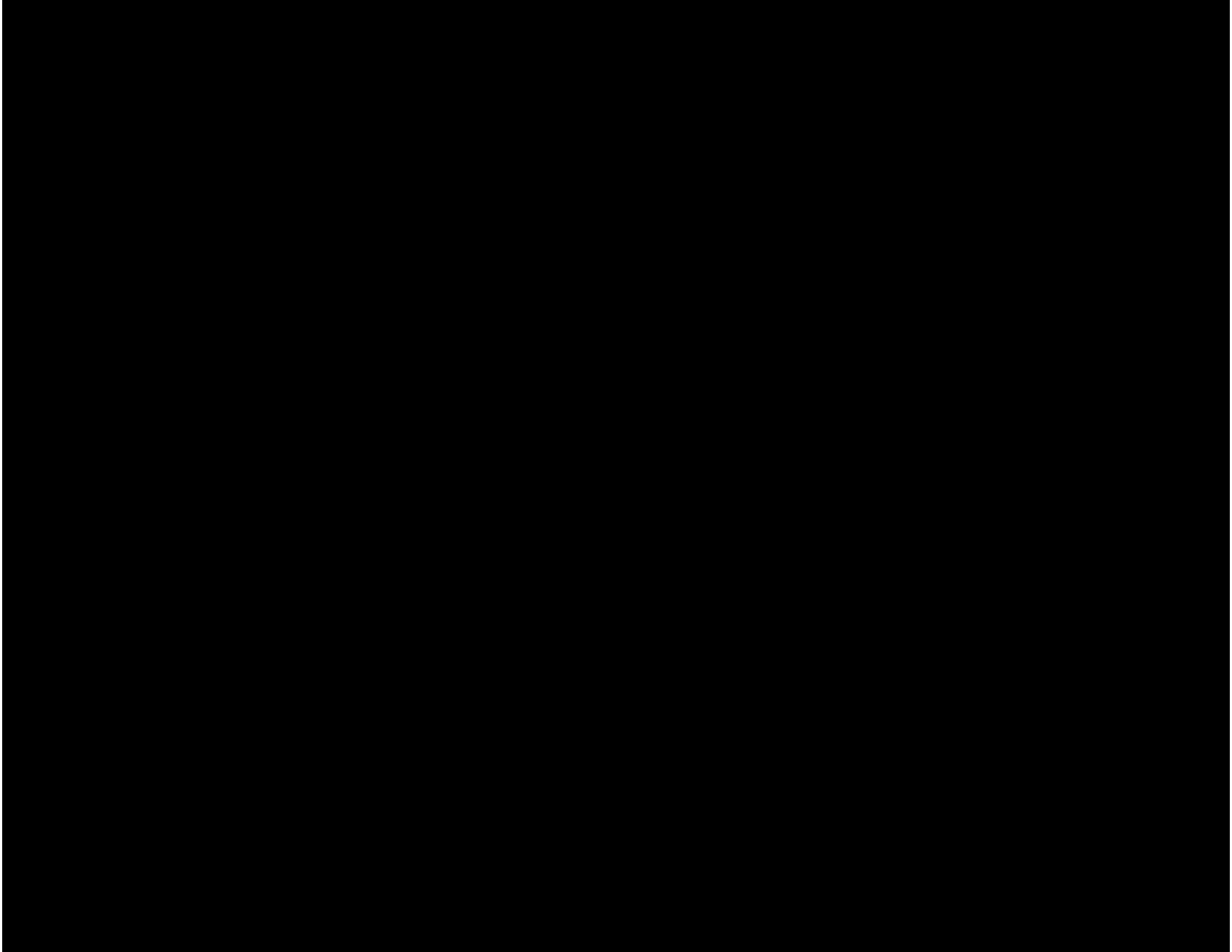
A 3D seismic volume  was interpreted to generate subsurface structural and thickness maps covering key stratigraphic intervals for the geomodel area. The 3D was interpreted in time and converted to depth; the time-depth model conversion process is outlined in Section 2.1.4.4. 

2.2.3 Seismic Event History















2.3 HYDROGEOLOGY

The primary hydrogeologic aquifer units for



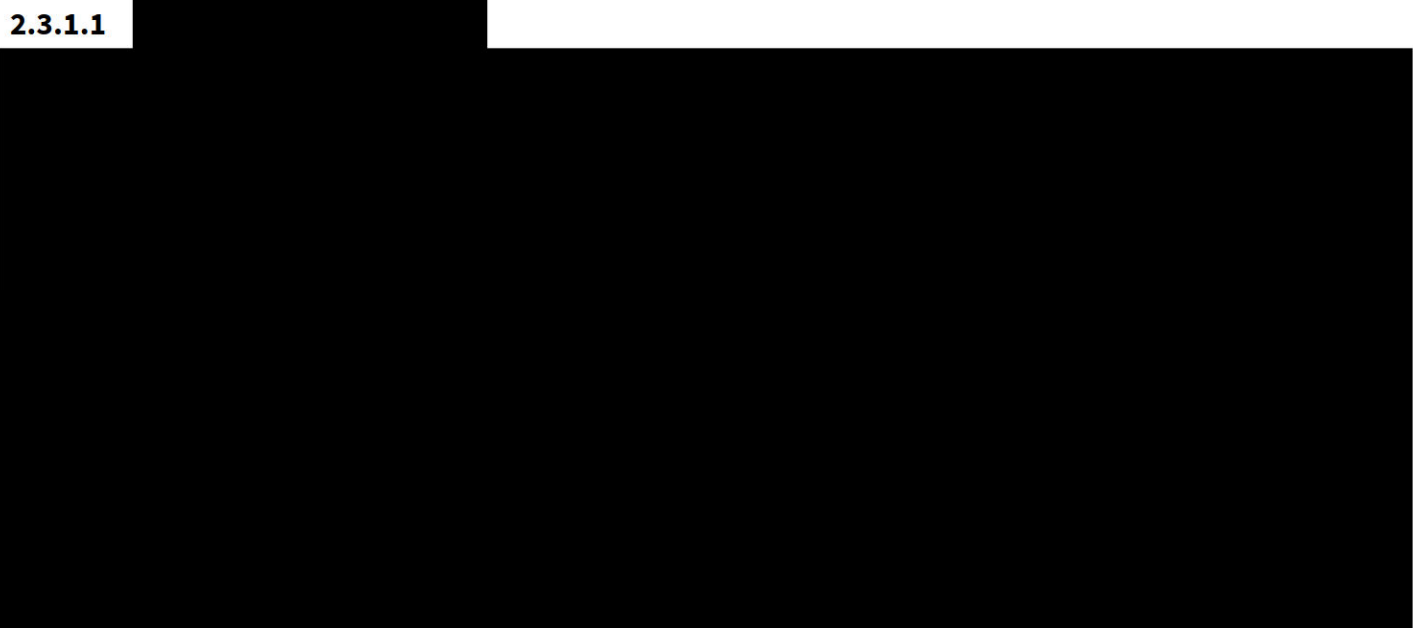
2.3.1 Primary Aquifer Formations

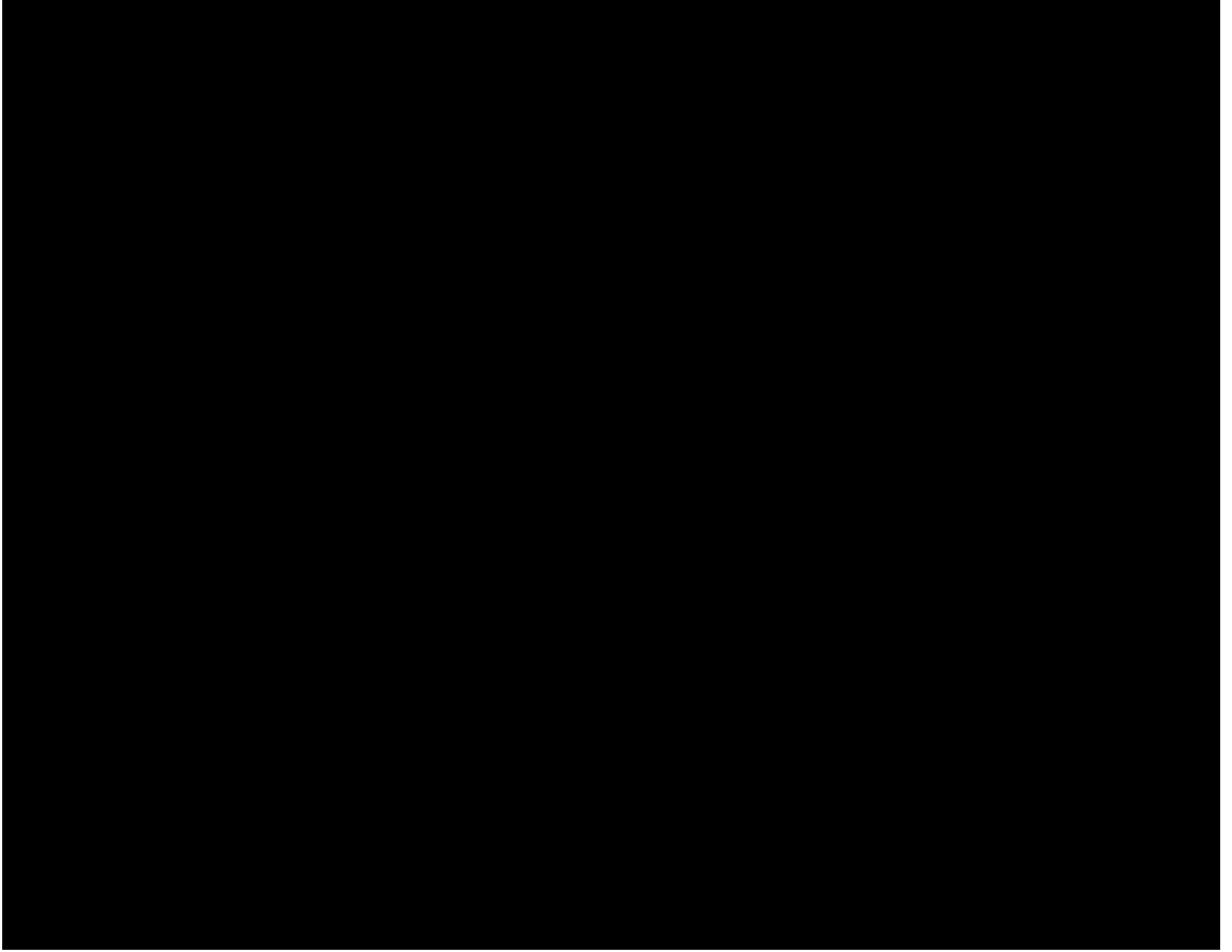
The primary hydrogeologic units for



The aquifer units consist of discontinuous beds of clay, silt, and sand that extend across central and southern Louisiana.

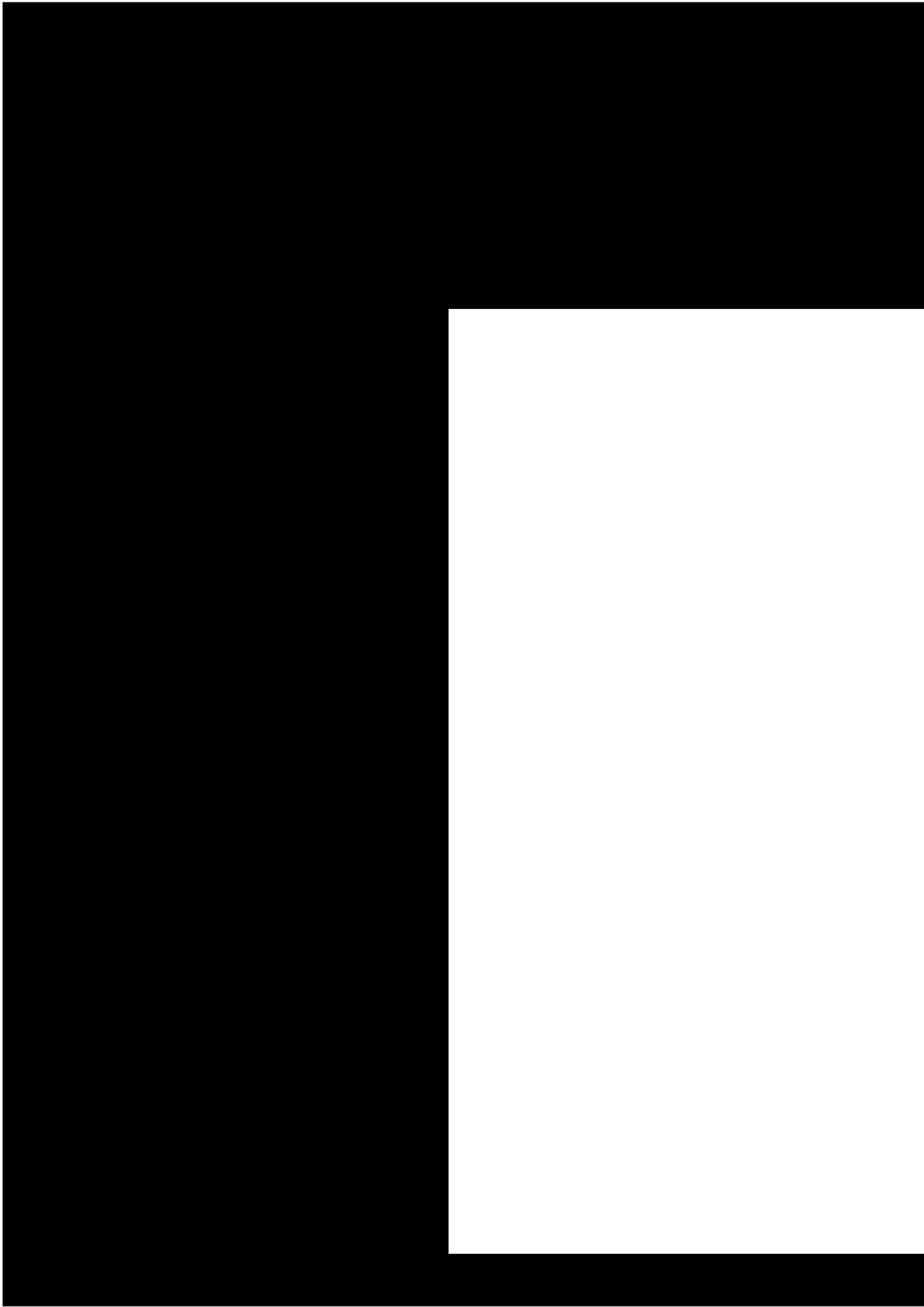
2.3.1.1





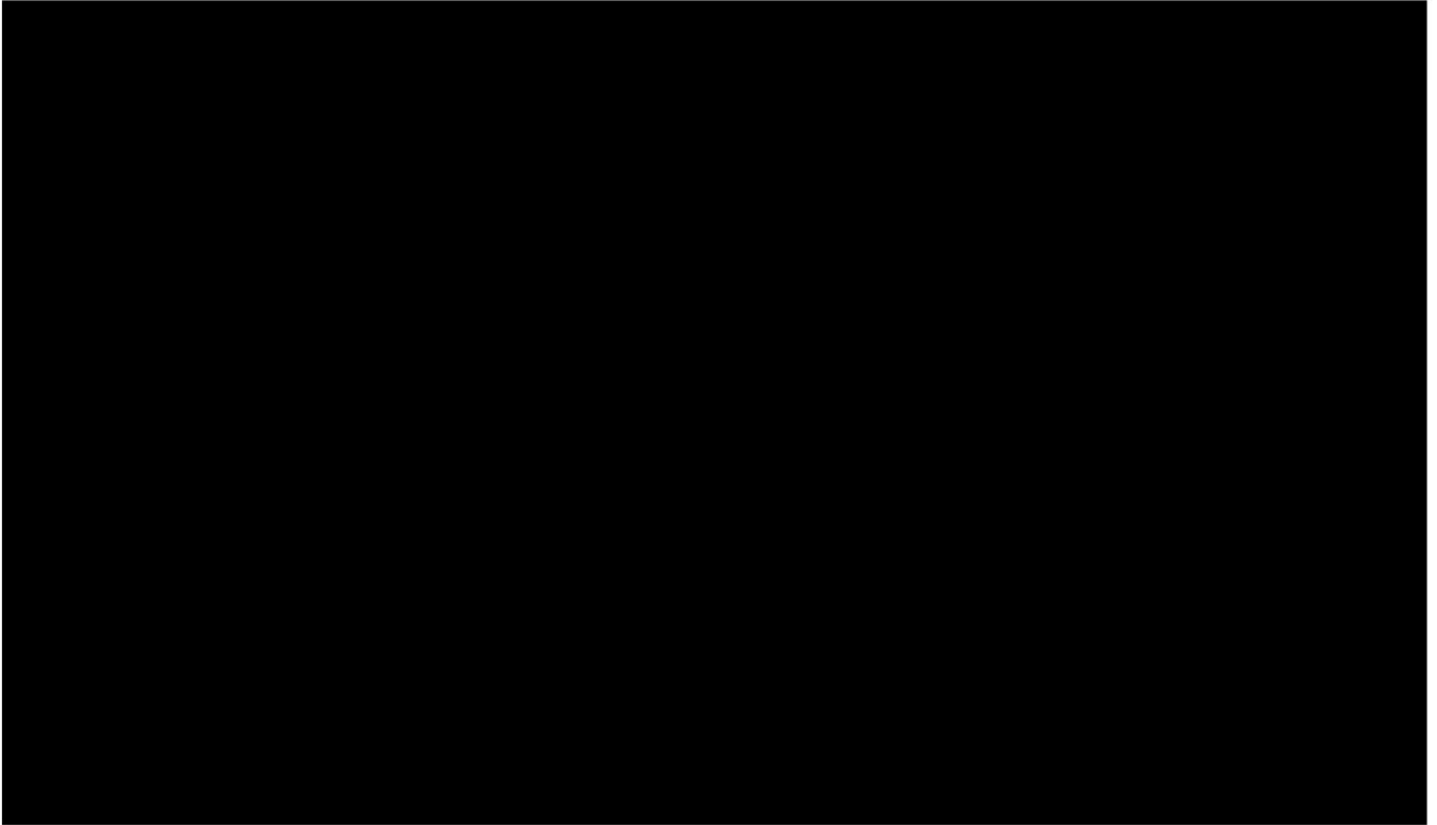


[REDACTED]

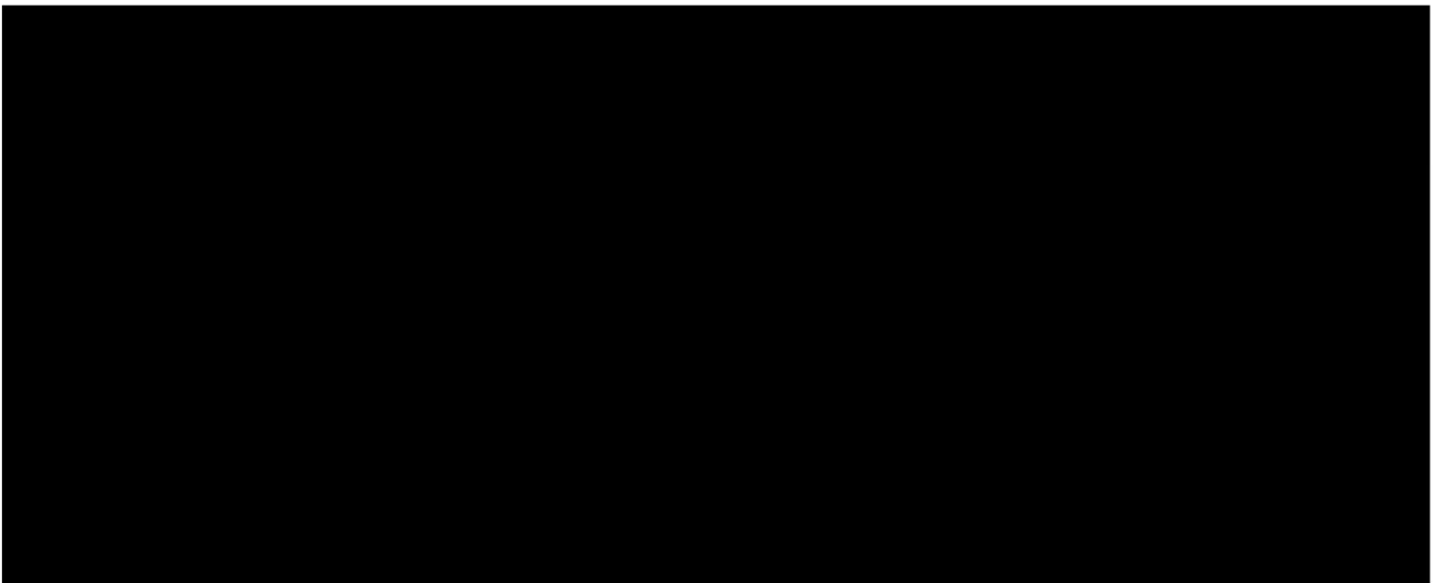


2.3.2 Groundwater Flow

Aquifer recharge is primarily from precipitation, which generally moves downward into the aquifer, then groundwater flow is either toward the coast within the aquifer or discharges to small streams at the surface. Recharge and groundwater flow of each aquifer unit is outlined below (LDEQ, 2021).



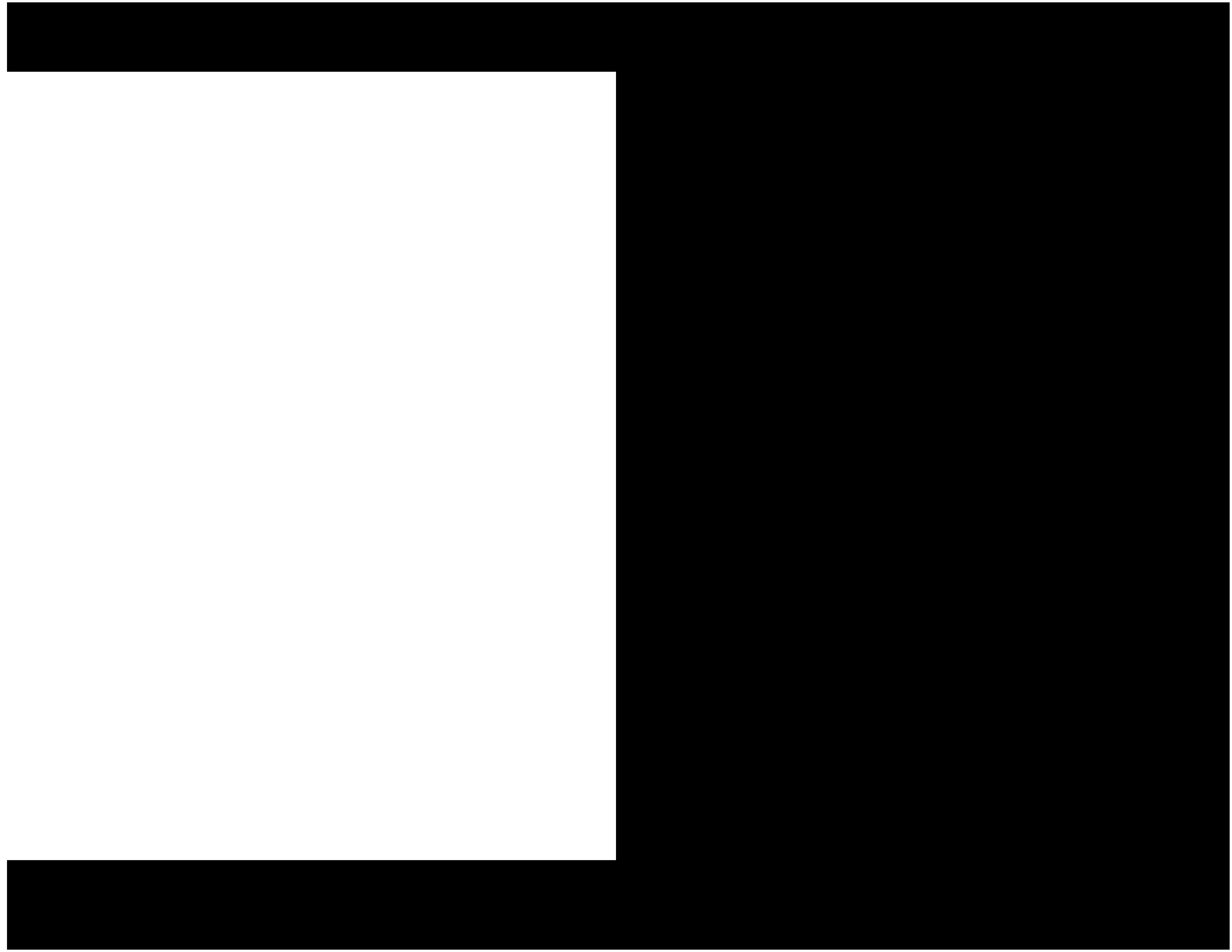
2.3.3 Groundwater Quality



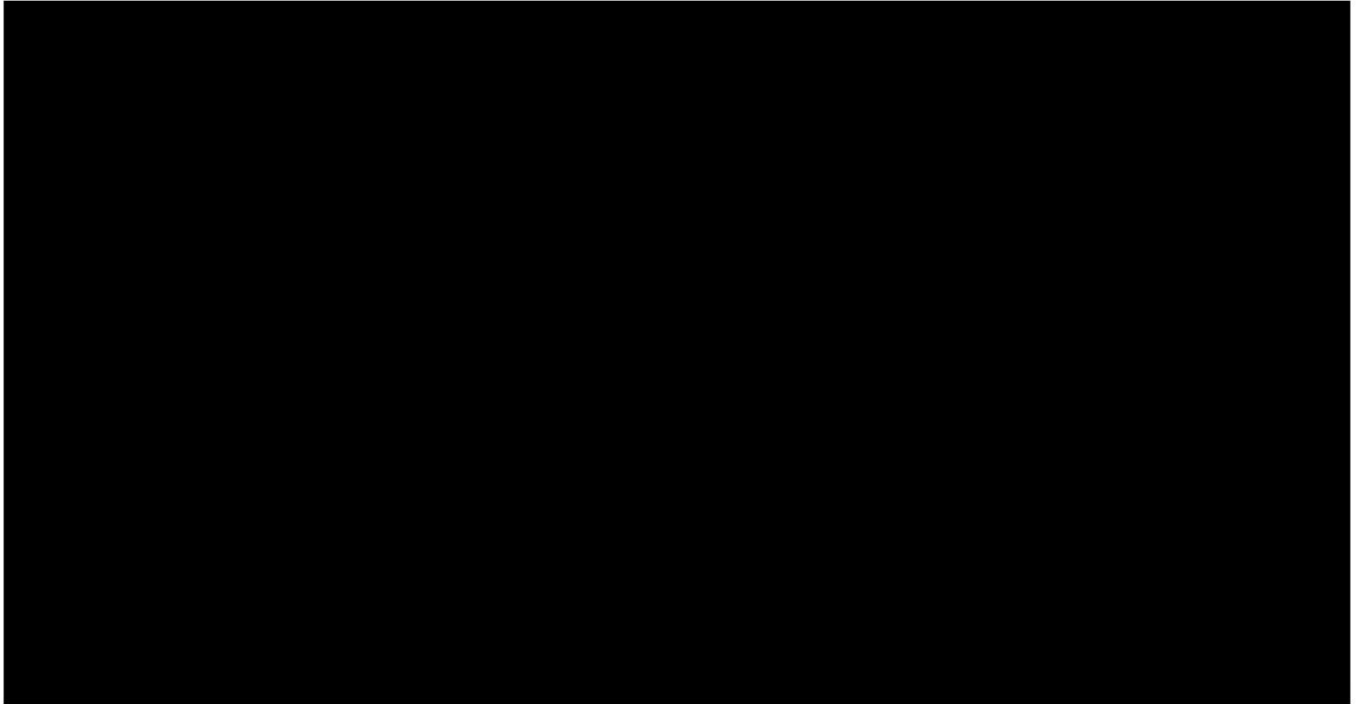
2.3.4 USDW

The base of the lowest USDW [REDACTED] was determined from public data, review of offset wells and literature review. The lowest USDW base was determined using a resistivity log-based method outlined by the Louisiana Department of Natural Resources. This method uses the deep induction curve of the electric log along with depth and resistivity cutoffs to determine the lowermost USDW [REDACTED]. The USDW base is then established at the base of the sand unit containing the lowermost USDW, if at least 100 feet of net shale exists between the USDW base and the next zone [REDACTED]

In the vicinity of the Draco Storage Facility, the base USDW is interpreted using electric logs and integrated

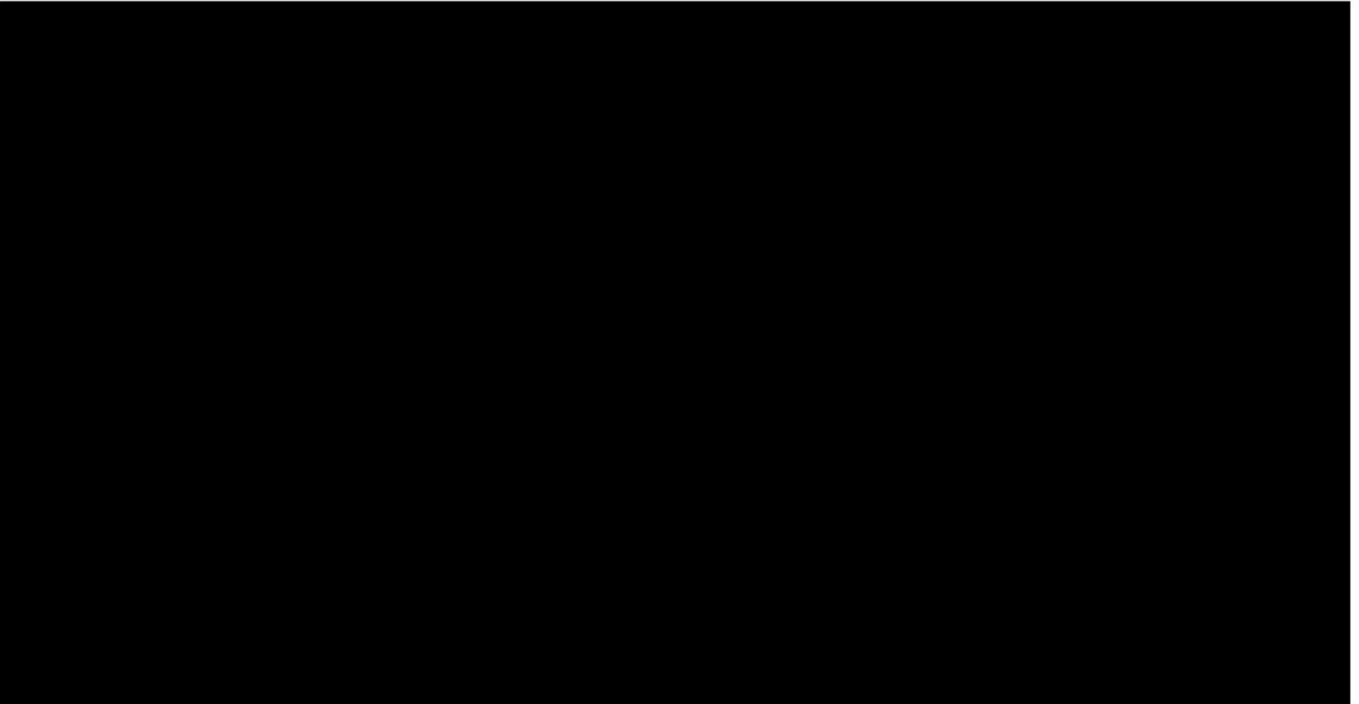


2.4 GEOCHEMISTRY



2.5 SITE SUITABILITY

The Draco Storage Facility has favorable geologic controlling factors related to injectivity, capacity, and containment. Critical favorable factors include:





3.0 REFERENCES

- Albuquerque Seismological Laboratory* | U.S. Geological Survey. (n.d.).
<https://www.usgs.gov/centers/geologic-hazards-science-center/albuquerque-seismological-laboratory>
- ANSS Stations*. (n.d.).
https://earthquake.usgs.gov/monitoring/operations/network.php?virtual_network=ANSS
- APPENDIX A: 2020 Integrated Report of Water Quality in Louisiana*. (2020). Louisiana Department of Environmental Quality.
https://deq.louisiana.gov/assets/docs/Water/Integrated_Report/2020_Integrated_Report/20_IR1_App_A_Text_FINAL_For_ATTAINS_09-10-20.pdf
- ANSS Stations*. (n.d.).
https://earthquake.usgs.gov/monitoring/operations/network.php?virtual_network=ANSS
- Asset aquifer summaries 2021*. Louisiana Department of Environmental Quality (LDEQ). (n.d.).
<https://deq.louisiana.gov/page/525>
- Bureau of Economic Geology. (2021). *New Database Featuring Northern Gulf of Mexico Reservoir Quality Now Available*. Bureau of Economic Geology (utexas.edu).
<https://www.beg.utexas.edu/articles/new-database-featuring-northern-gulf-of-mexico-reservoir-quality-now-available>
- Bhattacharya, J. (2010). Chapter 10: Deltas. In N. James & R. Dalrymple (Eds.), *Facies Models 4* (6th ed., pp. 233–251). Geological Association of Canada.
- Borrok, D. M., & Broussard, W. P. (2016). Long-term geochemical evaluation of the coastal Chicot aquifer system, Louisiana, USA. *Journal of Hydrology*, 533, 320–331.
<https://doi.org/10.1016/j.jhydrol.2015.12.022>
- Briney, A. (2019). Geography of River Deltas. *ThoughtCo*. <https://www.thoughtco.com/geography-of-river-deltas-1435824>
- Coates, E. J., Groat, C., & Hart, G. (1980). Subsurface Wilcox Lignite in West-Central Louisiana: ABSTRACT. *AAPG Bulletin*, 64. <https://doi.org/10.1306/2f9195ee-16ce-11d7-8645000102c1865d>
- Collier, A., & Sargent, B. P. (2018). Water Use in Louisiana, 2015. *Water Resources Special Report*, 18, 18.
https://wise.er.usgs.gov/dp/pdfs/WaterUseinLouisiana_2015.pdf
- Delaney, P. J. (1963). Stratigraphy of the Vicksburg Equivalent of Louisiana. *AAPG Bulletin*, 47(2), 355.
- Dixon, L. H. (1963). *Cenozoic cyclic deposition in the subsurface of central Louisiana*. [Doctoral dissertation, Louisiana State University and Agricultural & Mechanical College].
- Douglas, S. W. (2011). *The Jurassic Norphlet Formation of the deep-water Eastern Gulf of Mexico: a sedimentologic investigation of aeolian facies, their reservoir characteristics, and their depositional history*. [Doctoral dissertation, Baylor University].
- Earthquake & Earth Monitoring Solutions* | Raspberry Shake. (n.d.). Raspberry Shake.
<https://raspberrysake.org/>

- Ellisor, A. C. (1929). Correlation of the Claiborne of east Texas with the Claiborne of Louisiana. *AAPG Bulletin*, 13(10), 1335-1346.
- EPA Cleanups In My Community Map. (n.d.). <https://www.epa.gov/cleanups/cleanups-my-community>. Retrieved August 2023, from <https://cimc.epa.gov/ords/cimc/f?p=cimc:map:::71>
- EPA Drinking Water Mapping Application. (n.d.). <https://www.epa.gov/sourcewaterprotection/drinking-water-mapping-application-protect-source-waters-dwmaps>. Retrieved August 2023, from <https://geopub.epa.gov/DWWWidgetApp/>
- EPA EnviroAtlas. (n.d.). <https://www.epa.gov/enviroatlas>. Retrieved August 2023, from <https://enviroatlas.epa.gov/enviroatlas/interactivemap/>
- EPA UST Finder. (n.d.). <https://www.epa.gov/ust/ust-finder>. Retrieved August 2023, from <https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=b03763d3f2754461adf86f121345d7bc>
- Ewing, T. E. (1994). The Cook Mountain Problem: Stratigraphic Reality and Semantic Confusion: ABSTRACT. *AAPG GCAGS Transactions*, 78. <https://doi.org/10.1306/a25fee0f-171b-11d7-8645000102c1865d>
- FDSN: AG: Arkansas Seismic Network. (n.d.). <https://www.fdsn.org/networks/detail/AG/>
- FDSN: N4: Central and Eastern US Network. (n.d.). <http://www.fdsn.org/networks/detail/N4/>
- Fendick, Jr, R. B. (2005). Louisiana ground-water map no. 21, generalized potentiometric surface of the Evangeline Aquifer in south-central Louisiana, January-March 2004. In *USGS.gov* (No. 2880). U.S. Geological Survey. <https://doi.org/10.3133/sim2880>
- Fendick, Jr, R. B., & Carter, K. (2015). Potentiometric Surface, 2013, and Water-Level Differences, 1991–2013, of the Carrizo-Wilcox Aquifer in Northwest Louisiana. In *USGS.gov* (Scientific Investigations Map 3311). U.S. Geological Survey. <https://dx.doi.org/10.3133/sim3311>
- Frederick, B. C., Blum, M. D., Snedden, J. W., & Fillon, R. (2020). Early Mesozoic synrift Eagle Mills Formation and coeval siliciclastic sources, sinks, and sediment routing, northern Gulf of Mexico basin. *Geological Society of America Bulletin*, 132(11–12), 2631–2650. <https://doi.org/10.1130/b35493.1>
- Galloway, W. E. (2008). Chapter 15 Depositional Evolution of the Gulf of Mexico Sedimentary Basin. In *Sedimentary basins of the world* (pp. 505–549). Elsevier BV. [https://doi.org/10.1016/s1874-5997\(08\)00015-4](https://doi.org/10.1016/s1874-5997(08)00015-4)
- Galloway, W. E., Whiteaker, T. L., & Ganey-Curry, P. (2011). History of Cenozoic North American drainage basin evolution, sediment yield, and accumulation in the Gulf of Mexico basin. *Geosphere*, 7(4), 938–973. <https://doi.org/10.1130/ges00647.1>
- Heinrich, P. V. (2005). Distribution and Origin of Fault-Line Scarps of Southwest Louisiana, USA. *Gulf Coast Association of Geological Societies*, 55, 284–293.
- Holland, W. C., Hough, L. W., & Murray, G. E. (1952). Geology of Beauregard and Allen Parishes (No. 27). Department of Conservation Louisiana Geological Survey.
- Huff, G. F., Fendick, R. B., & Stuart, C. G. (1986). Louisiana Ground-Water Quality (No. 87–0728). U.S. Geological Survey.

- Hussey, K. M. (1940). *Louisiana Cane River Eocene foraminifera*. [Doctoral Dissertation, Louisiana State University and Agricultural & Mechanical College].
- IRIS: Data Services. (n.d.). <https://ds.iris.edu/ds/>
- ISLA – Investigation of Seismicity in Louisiana – EES Research. (n.d.). <https://ebinger.wp.tulane.edu/research/isla/>
- Lawless, P., & Hart, G. (1990). The LaSalle Arch and its Effects on Lower Paleogene Genetic Sequence Stratigraphy, Nebo-Hemphill Field, LaSalle Parish, Louisiana: ABSTRACT. *AAPG GCAGS Transactions*, 40. <http://archives.datapages.com/data/doi/10.1306/A1ADDCBD-0DFE-11D7-8641000102C1865D>
- Li, P. (2006). Reconstruction of Burial History of Strata in the North Louisiana Salt Basin Area. *AAPG GCAGS Transactions*, 56, 455–471.
- Loucks, R. G., & Dutton, S. P. (2019). Insights into deep, onshore Gulf of Mexico Wilcox sandstone pore networks and reservoir quality through the integration of petrographic, porosity and permeability, and mercury injection capillary pressure analyses. *AAPG Bulletin*, 103(3), 745–765. <https://doi.org/10.1306/09181817366>
- Lovelace, J. K., Frederick, C. P., Fontenot, J. W., & Naanes, M. S. (2001). *Louisiana ground-water map no. 12: Potentiometric surface of the Chicot aquifer system in southwestern Louisiana, June 2000*. In *USGS.gov* (No. 2001-4128). US Geological Survey. <https://doi.org/10.3133/wri014128>
- Lowry, P. J. (1988). *Stratigraphic Framework and Sedimentary Facies of a Clastic Shelf-Margin: Wilcox Group (Paleocene-Eocene), Central Louisiana*. [Doctorate Dissertation, Louisiana State University]. https://doi.org/10.31390/gradschool_disstheses.4516
- Mancini, E. A., & Puckett, T. M. (2005). Jurassic and Cretaceous transgressive-regressive (TR) cycles, northern Gulf of Mexico, USA. *Stratigraphy*, 2(1), 31-48.
- Mancini, E. A., Aharon, P., Goddard, D. A., Horn, M., & Barnaby, R. (2012). Basin Analysis and Petroleum System Characterization and Modeling, Interior Salt Basins, Central and Eastern Gulf of Mexico* Part 3: Tectonic/Depositional History, Resource Assessment. *AAPG Search and Discovery Article*, 10395.
- Martin, R. E. (1978). Northern and Eastern Gulf of Mexico Continental Margin. *AAPG Special Volumes*, A117. <https://doi.org/10.1306/st7399c2>
- McCulloh, R. P., & Heinrich, P. V. (2013). Surface faults of the south Louisiana growth-fault province. In *Recent Advances in North American Paleoseismology and Neotectonics East of the Rockies* (Vol. 493, pp. 37–49). Geological Association of America. [https://doi.org/10.1130/2012.2493\(03\)](https://doi.org/10.1130/2012.2493(03))
- Nehring, R. (1991). Chapter 15: Oil and gas resources. In Vol. J, The Gulf of Mexico Basin. *The Geology of North America*, 445-494. Colorado: Geological Society of America.
- NetQuakes. (n.d.). <https://earthquake.usgs.gov/monitoring/netquakes>
- Ocamb, R. D. (1961). Growth Faults of South Louisiana. *AAPG GCAGS Transactions*, 11, 139–175. <https://archives.datapages.com/data/gcags/data/011/011001/pdfs/0139.pdf>
- Petkovsek, C. (2018). *Structural Controls and Depositional Environments of the Glen Rose Subgroup in Pelahatchie Field in Rankin County, Mississippi* [Masters Thesis]. The University of Mississippi.

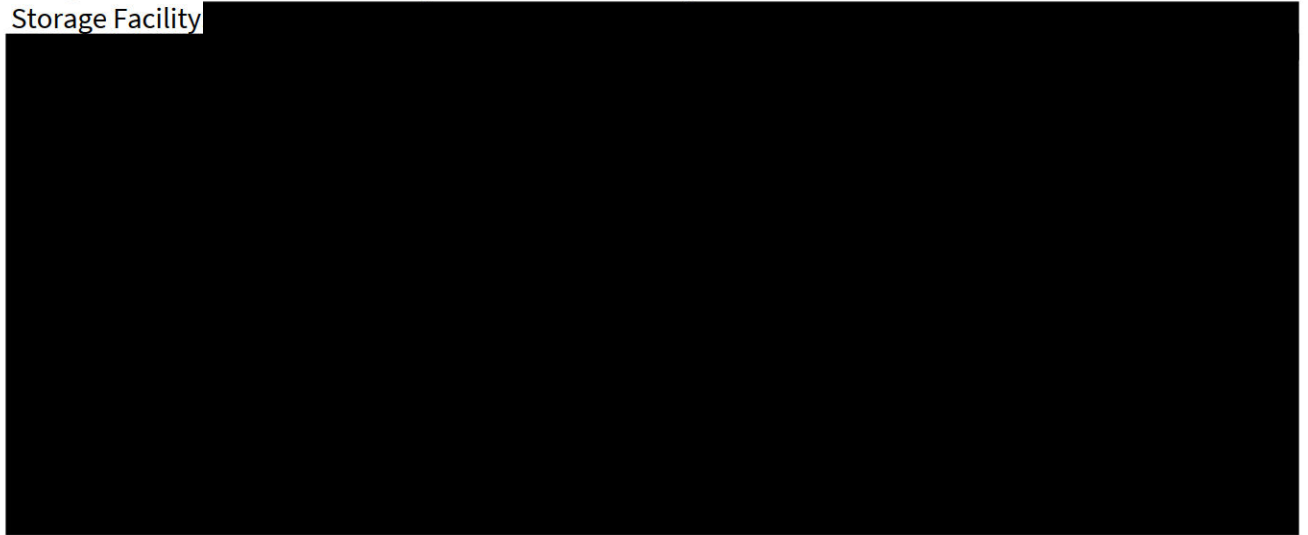
- Prakken, L. B., Griffith, J. M., & Fendick, Jr., R. B. (2012a). Water Resources of Allen Parish. In *Fact Sheet 2012* (No. 3064). U.S. Geological Survey.
- Prakken, L. B., Griffith, J. M., & Fendick, Jr., R. B. (2012b). Water Resources of Beauregard Parish. In *Fact Sheet 2012* (No. 3065). U.S. Geological Survey.
- Prakken, L. B., Griffith, J. M., & Fendick, Jr., R. B. (2012c). Water Resources of Vernon Parish. In *Fact Sheet 2012* (No. 3063). U.S. Geological Survey.
- Raymond, D. E., Osborne, E. W., Copeland, C. W., & Neathery, T. L. (1988). *Alabama Stratigraphy* (Circular 140). Geological Survey of Alabama.
- Renken, R. A. (1998). *Ground Water Atlas of the United States: Segment 5, Arkansas, Louisiana, Mississippi* (No. 730-F). U.S. Geological Survey. <https://doi.org/10.3133/ha730f>
- Roberts-Ashby, T. L., Brennan, S. T., Buursink, M. L., Covault, J. A., Craddock, W. H., Drake, R. M., ... & Corum, M. D. (2014). Geologic Framework for the National Assessment of Carbon Dioxide Storage Resources—U.S. Gulf Coast. (2014). In *USGS.gov* (No. 2012–1024–H). U.S. Geological Survey.
- Roth Jr, M. M. (2017). *Depositional Environment of the Carbonate Cap Rock at the Pine Prairie Field, Evangeline Parish, Louisiana: Implications of Salt Diapirism on Cook Mountain Reservoir Genesis* [Doctoral dissertation, University of Louisiana at Lafayette].
- Salvador, A. (2015). Origin and development of the Gulf of Mexico basin. In *Geological Society of America eBooks* (pp. 389–444). <https://doi.org/10.1130/dnag-gna-j.389>
- Seismic Information. (n.d.). CERl - the University of Memphis. <https://www.memphis.edu/ceri/seismic/>
- Seismology, I.-. I. R. I. F. (n.d.). *USArray - Reference Network*. IRIS - Incorporated Research Institutions for Seismology. <http://www.usarray.org/researchers/obs/reference>
- Smoot, C. W., & Seanor, R. C. (1992). Louisiana ground-water map no. 4: Potentiometric surface, 1989, and water-level changes, 1984-89, of the Jasper aquifer system in west-central Louisiana. (1992). In *USGS.gov* (No. 91–4137). U.S. Geological Survey. <https://doi.org/10.3133/wri914137>
- SONRIS DP Menu. (n.d.). Sonlite.dnr.state.la.us. Retrieved May 11, 2023, from <https://sonlite.dnr.state.la.us/pls/apex/f?p=108:2:3330069376139:::>
- Station IU HKT. (n.d.). <https://earthquake.usgs.gov/monitoring/operations/stations/IU/HKT/>
- Swanson, S. M., Karlsen, A. W., & Valentine, B. J. (2013). Geologic Assessment of Undiscovered Oil and Gas Resources—Oligocene Frio and Anahuac Formations, United States Gulf of Mexico Coastal Plain and State Waters. (2013). In *USGS.gov*. U.S. Geological Survey. <https://doi.org/10.3133/ofr20131257>
- Tew, B. H., Raymond, D. E., Smith, C. C., Rindsberg, A. K., King, Jr., D. T., Skotnicki, M. C., & Savrda, C. (1988). Regional Setting – Upper Cretaceous and Tertiary lithostratigraphy and biostratigraphy of West-central Alabama. *AAPG Alabama Geological Society*.
- Texas Seismological Network Earthquake Catalog. (n.d.). <https://www.beg.utexas.edu/texnet-cisr/texnet/earthquake-catalog>

- Todd, J. A., & Roper, F. (1940). Sparta-Wilcox Trend, Texas and Louisiana. *AAPG Bulletin*, 24(4), 701–715. <https://doi.org/10.1306/3d9331d0-16b1-11d7-8645000102c1865d>
- Turcan Jr, A. N., Wesselman, J. B., & Kilburn, C. (1966). Interstate Correlation of Aquifers, Southwestern Louisiana and Southeastern Texas. (1967). In *Geological Survey Research 1966* (pp. 231–236). United States Government Printing Office.
- Tye, R. S., Moslow, T. F., Kimbrell, W., & Wheeler, C. (1991). Lithostratigraphy and Production Characteristics of the Wilcox Group (Paleocene-Eocene) in Central Louisiana. *AAPG Bulletin*, 75(11). <https://doi.org/10.1306/0c9b29d9-1710-11d7-8645000102c1865d>
- U.S. Department of Interior Office of Surface Mining Reclamation and Enforcement National Mine Map Repository. (n.d.). <https://www.osmre.gov/programs/national-mine-map-repository>. Retrieved August 2023, from <https://mmr.osmre.gov/MultiPub.aspx>
- Water Quality Data Home*. National Water Quality Monitoring Council. (n.d.b). <https://www.waterqualitydata.us/Appendix B: Petrophysical Analysis Workflow>

APPENDIX A: PETROPHYSICAL ANALYSIS OF DRACO STORAGE FACILITY AREA WELLS

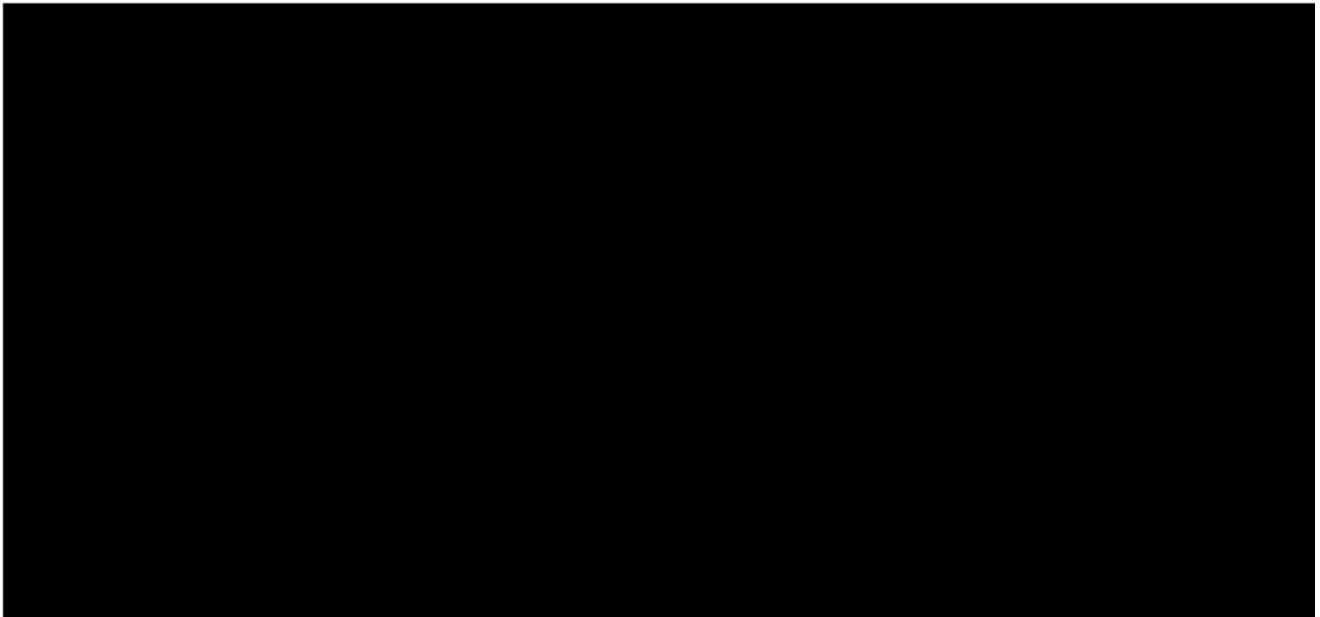
1.1 INTRODUCTION

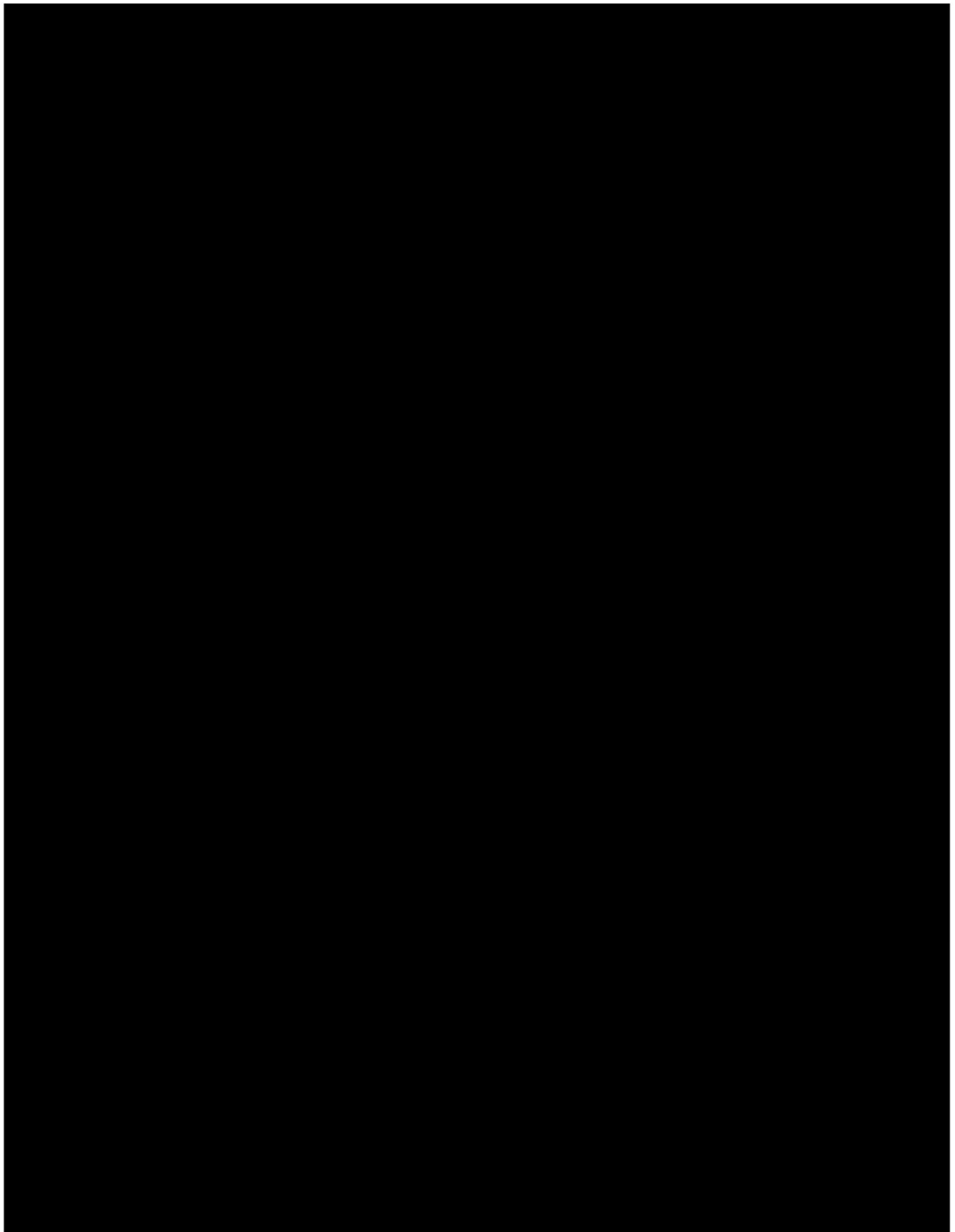
As part of the geologic site characterization at the Draco Storage Facility, open-hole wireline well logs in digital and raster form were acquired from several exploration wells in the area of the Draco Storage Facility



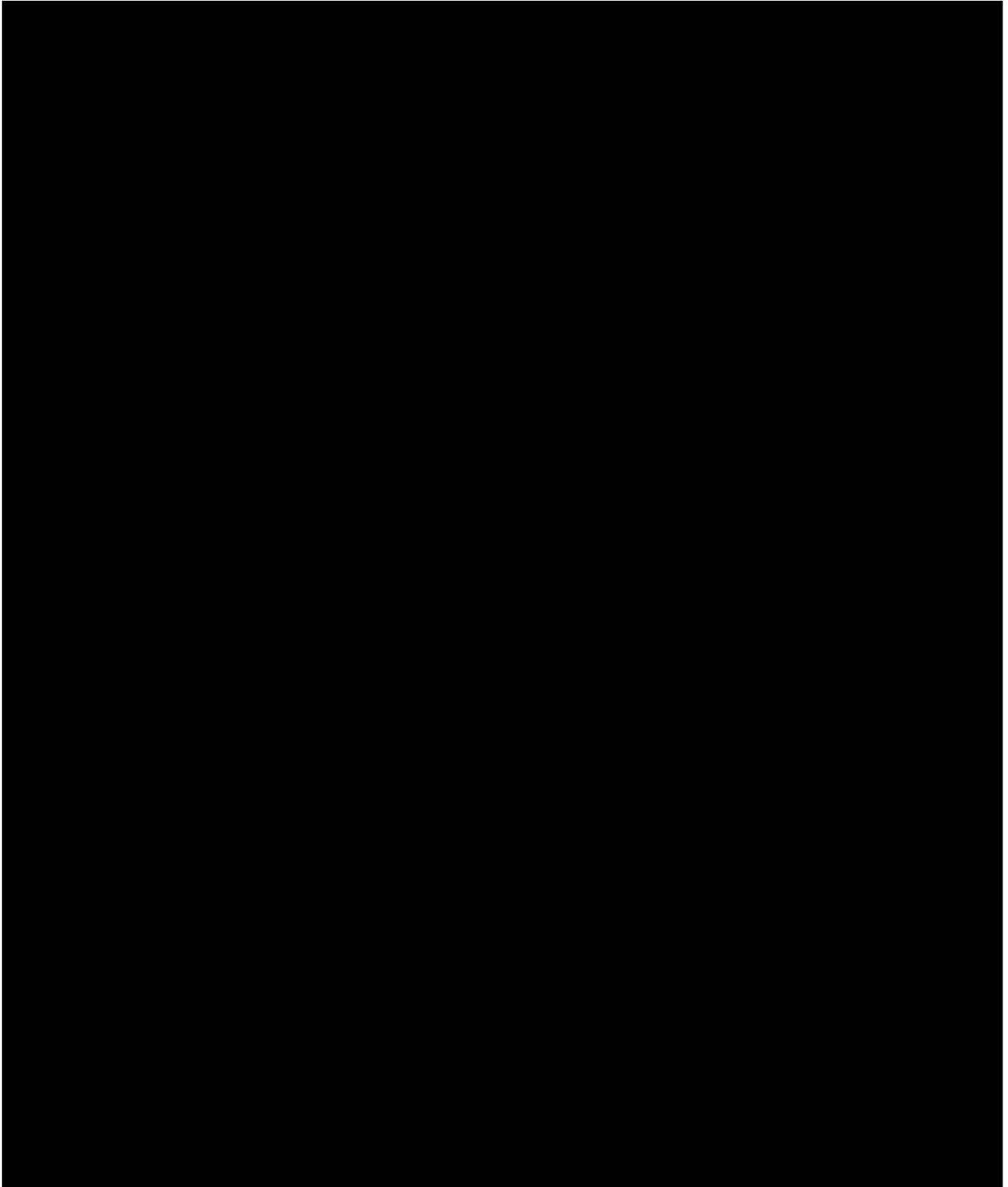
The objective of shale volume and porosity analyses was to establish key lithofacies distributions and porosity ranges for use in the geologic model.

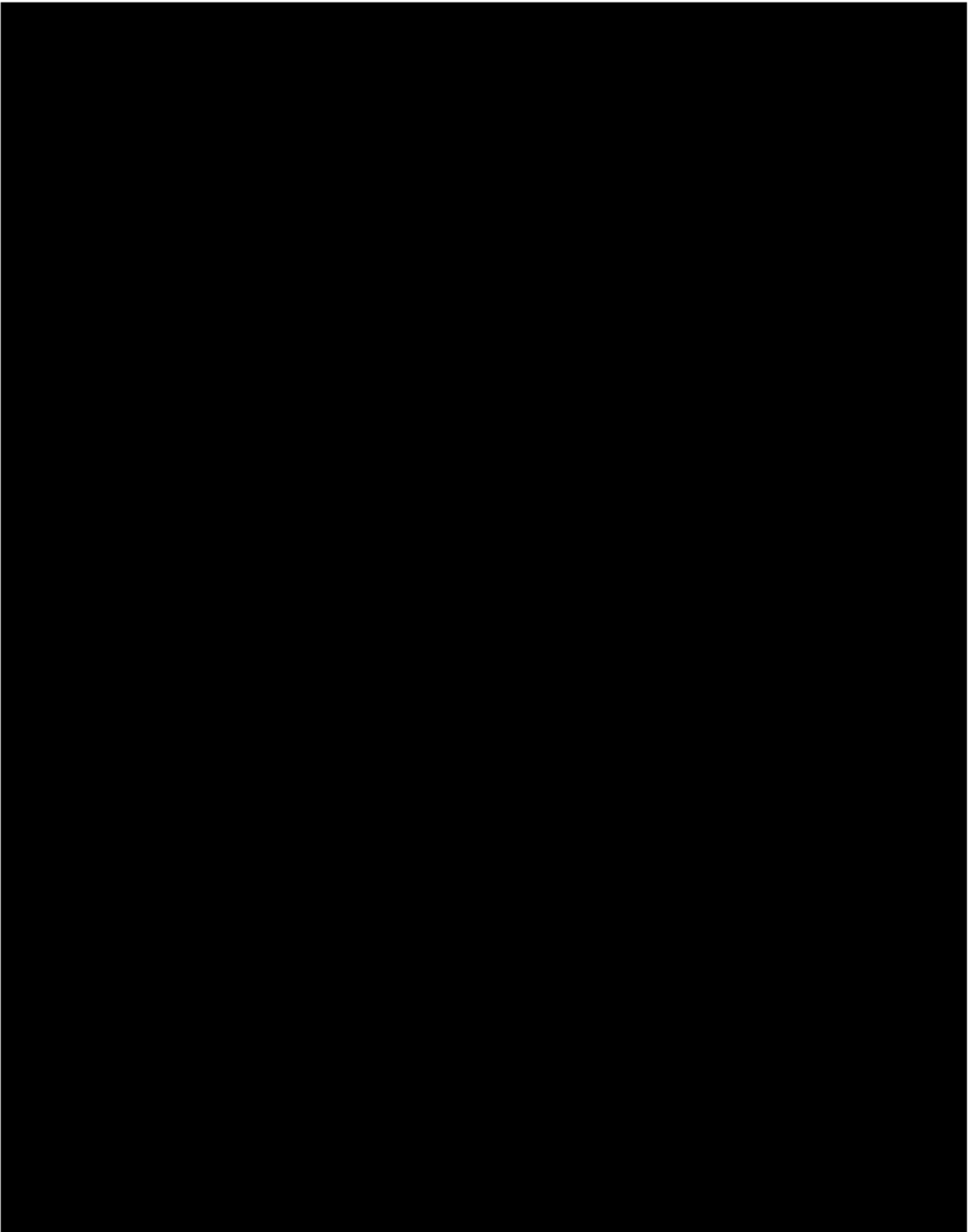
1.2 WORKFLOW

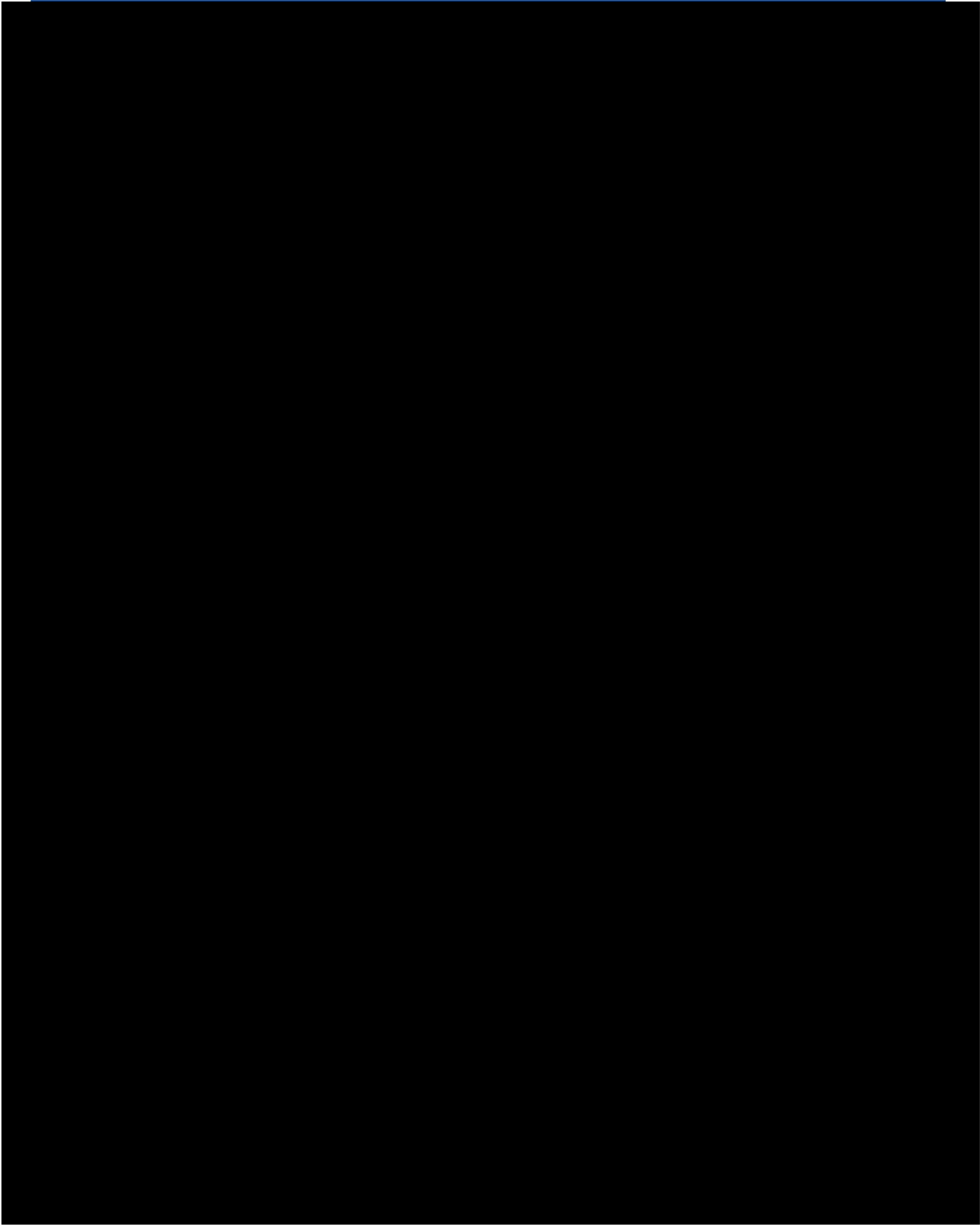


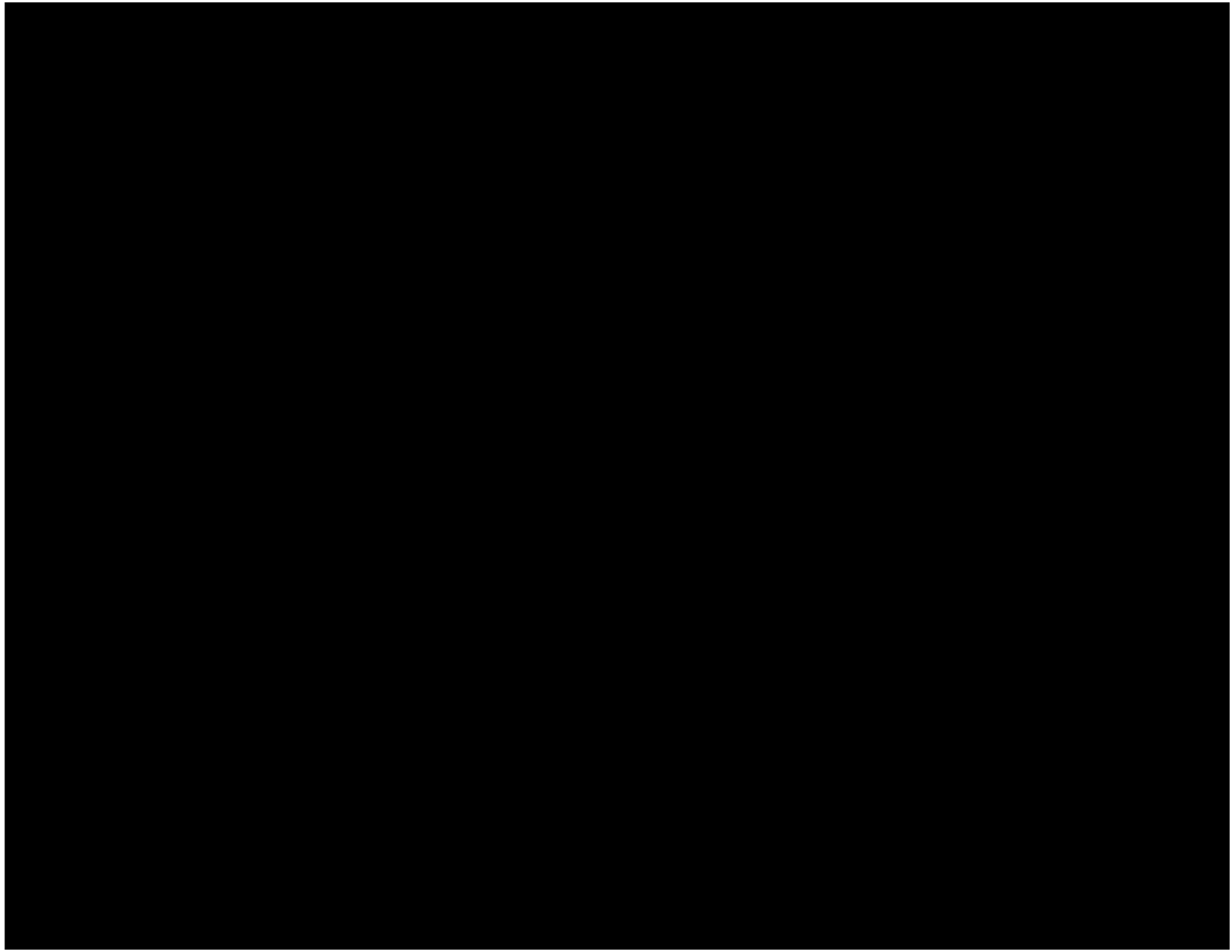


Vsh = Final shale volume











APPENDIX B: EXISTING WELL DATA USED FOR SITE CHARACTERIZATION



