Plan Revision number: 3
Plan revision date: 07/30/2024

POST-INJECTION SITE CARE AND SITE CLOSURE PLAN
40 CFR §146.93(a)

Brown Pelican CO_2 Sequestration Project

Plan Revision number: 3
Plan revision date: 07/30/2024

1.0 Facility Information

Facility name: Brown Pelican CO_2 Sequestration Project
BRP CCS1, BRP CCS2 and BRP CCS3 Wells

Facility contact: [redacted]

Well locations: Penwell, Texas

BRP CCS1	31.76479314	-102.7289311
BRP CCS2	31.76993805	-102.7332448
BRP CCS3	31.76031163	-102.7101566

2.0 Plan Overview

This Post-Injection Site Care and Site Closure (PISC) plan describes the activities that Oxy Low Carbon Ventures, LLC (OLCV) will perform on the Brown Pelican CO_2 Sequestration Project (BRP Project or Project) to meet the requirements of 40 CFR §146.93. OLCV will monitor groundwater quality and track the position of the CO_2 plume and pressure front for 50 years or for the duration of an alternative timeframe approved by the UIC Program Director pursuant to the requirements of 40 CFR §146.93(c) unless OLCV makes a demonstration under 40 CFR §146.93(b)(2) that OLCV has substantial evidence that the geologic sequestration project no longer poses a risk of endangerment to Underground Sources of Drinking Water (USDWs). Pursuant to 40 CFR §146.93(b)(3), OLCV will continue post-injection site care until the UIC Program Director approves a demonstration that no additional monitoring is needed to ensure non-endangerment of USDWs. Following approval for site closure, OLCV will plug all remaining monitoring wells and submit a site closure report and associated documentation.

3.0 Pre- and Post-Injection Pressure Differential [40 CFR §146.93(a)(2)(i)]

Based on modeling the pressure front as part of the Area of Review (AoR) delineation, the maximum predicted pressure differential for the top of the G1 sub-zone and Holt sub-zone is 246 psi in January 2037 and 849 psi in January 2029, respectively. The values are located at the top of injectors BRP CCS1 (G1 sub-zone) and CCS2 (Holt sub-zone). The magnitude and area of elevated pressure gradually decreases until the end of the injection period for the top of the Holt-sub-zone, and there is a sharp decrease in pressure when injection cease for both G4 and G1 injection sub-zones.

Table 1 and Table 2 shows the predicted pressure differential (pressure at Year – initial pressure) vs. time at the top of the G1 sub-zone and Holt sub-zone for the monitoring well locations in the AoR (Figure 9). The G1 sub-zone is reported because it is the top of the Injection Zone including the G1, G4 and Holt sub-zones. The top of the Holt sub-zone is reported because it is the region with the highest pressure differential in the simulation model. Note that the negative values at time zero result from a decrease in pressure due to brine production that starts six months prior to the commencement of CO_2 injection. The purpose of brine withdrawal is to manage reservoir pressure within the AoR.

The highest pressures are expected in the immediate vicinity of each injection well. The pressure is anticipated to quickly decrease below the estimated critical pressure in all areas of the site within a few years after the conclusion of injection operations (i.e., below the pressure levels at which fluids could be forced from the Injection Zone through a conduit into an overlying USDW). The pressure then stabilizes through the end of the post-injection site care period (PISC) and reaches similar values as those observed during pre-injection conditions.

Additional information on the projected post-injection pressure declines and differentials is presented in the Area of Review and Corrective Action Plan document.

Table 1—Pressure Differential to Pre-Injection Conditions at the top of the G1 sub-zone at monitoring well locations.

Well Name	**SLR 1**	**SLR 2**	**SLR 3**	**WW1**	**WW2**	**WW3**	**WW4**
Well distance from BRP CCS1 (ft)	8494	8093	5565	10,837	5772	9174	7598
Top of G1 sub-zone (ft MD)	4521	4538	4622	4470	4598	4463	4561
Year / Pressure Differential	**psi**	**psi**	**psi**	**psi**	**psi**	**psi**	**psi**
Start water production	0	0	0	0	0	0	0
0 (start injection)	-18	-15	-9	-42	-826	-314	-574
1	-34	-21	-26	-62	-856	-327	-646
2	-42	-14	-23	-91	-924	-483	-888
3	-36	-14	-22	-95	-924	-505	-965
4	-29	-7	-20	-92	-916	-497	-976
5	-23	0	-17	-89	-910	-490	-979
10	9	26	0	-67	-895	-463	-979
12 (end of injection)	23	34	6	-56	-892	-454	-978
15	24	39	24	19	47	32	-7
20	22	26	19	21	26	25	13
25	20	21	16	20	19	21	15
35	19	18	14	18	16	18	15
45	18	17	14	18	15	17	14
55	17	16	14	17	15	17	14
62 (site closure)	17	16	14	17	15	16	14

Table 2—Pressure Differential to Pre-Injection Conditions at the top of the Holt sub-zone at monitoring well locations.

Well Name	**SLR 1**	**SLR 2**	**SLR 3**	**WW1**	**WW2**	**WW3**	**WW4**
Well distance from BRP CCS2 (ft)	8,312	4,510	8,720	10,594	9,378	6,788	7,789
Top of Holt sub-zone (ft MD)	4883	4904	4972	4824	4968	4813	5021
Year / Pressure Differential	**psi**	**psi**	**psi**	**psi**	**psi**	**psi**	**psi**
Start water production	0	0	0	0	0	0	0
0 (start injection)	-18	-11	-4	-48	-41	-273	-201
1	-30	47	51	-68	-11	-282	-171
2	-36	74	86	-100	6	-419	-241
3	-24	157	177	-104	82	-430	-193
4	-16	200	236	-101	121	-421	-168
5	-9	225	268	-98	142	-413	-154
10	18	294	308	-76	193	-383	-137
12 (end of injection)	28	302	304	-65	201	-372	-139
15	23	94	120	19	81	42	76
20	21	38	43	21	32	28	32
25	19	24	23	20	21	22	20
35	17	18	15	18	15	18	15
45	17	17	13	17	14	17	14
55	16	16	13	17	14	17	13
62 (site closure)	16	16	13	17	14	16	13

Figure 1 and 2 show the simulated pressure vs. time for the BRP CCS1, CCS2 and CCS3 and monitoring well locations at the top of the commingled G4/G1 sub-zones and the top of the Holt sub-zone, respectively.

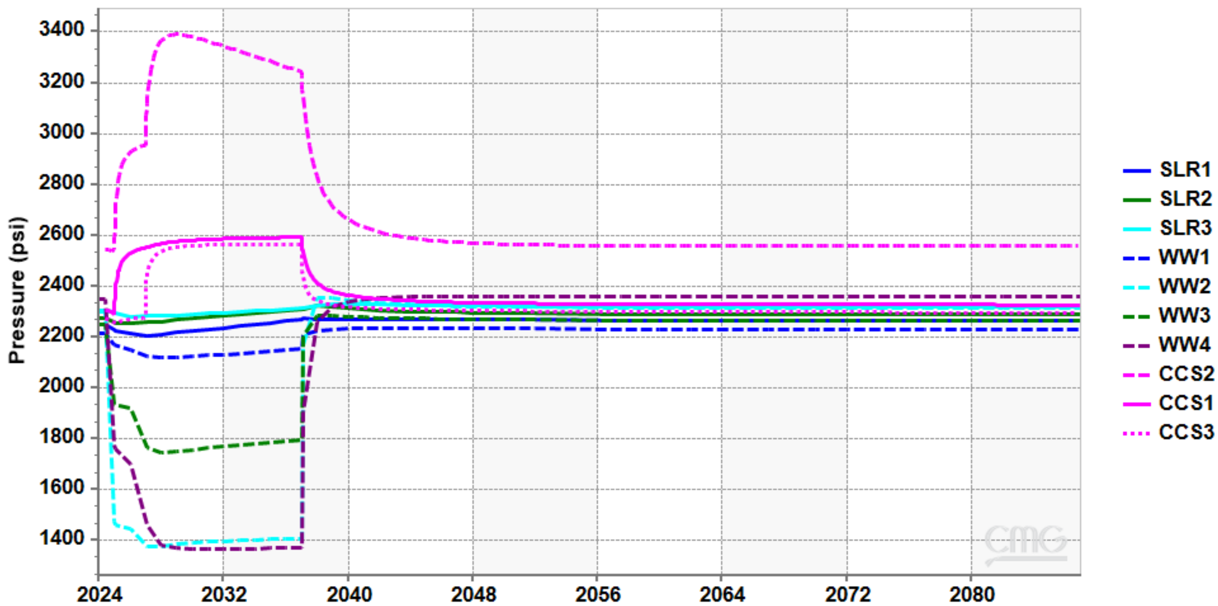

Figure 1--Simulated pressure vs. time at the top perforation in the BRP CCS1, CCS2 and CCS3 injection wells and at the top of the commingled G4/G1 sub-zones at monitoring well locations.

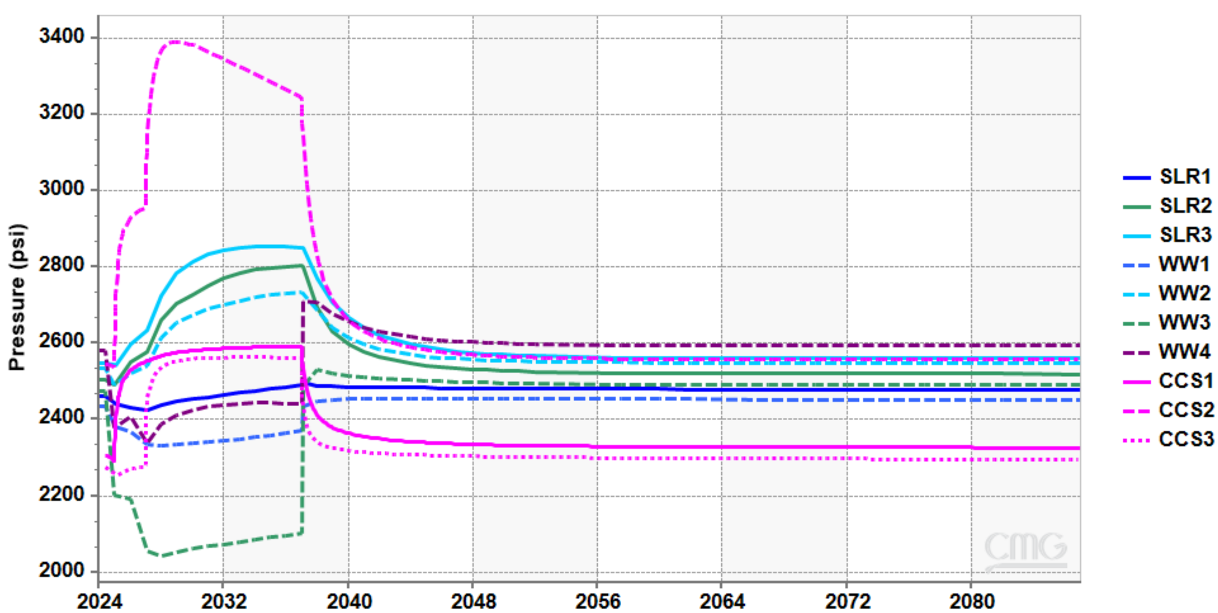

Figure 2--Simulated pressure vs. time at the top perforation in the BRP CCS1, CCS2 and CCS3 injection wells and at the top of the Holt sub-zone at monitoring well locations.

Figure 3 and Figure 4 show the simulated pressure differentials from the critical pressure values at the top of the Holt sub-zone at the end of injection and 50 years after the end of injection, respectively. In Figure 2, only the values that exceed the critical pressure threshold are shown, indicating that any area outside the shown values is below the critical pressure. In Figure 3, the pressure differential shows a negative pressure differential for most of the area, indicating that the pressure has dissipated below the critical pressure in all areas of the site at Year 62, which is anticipated to be the year of site closure.

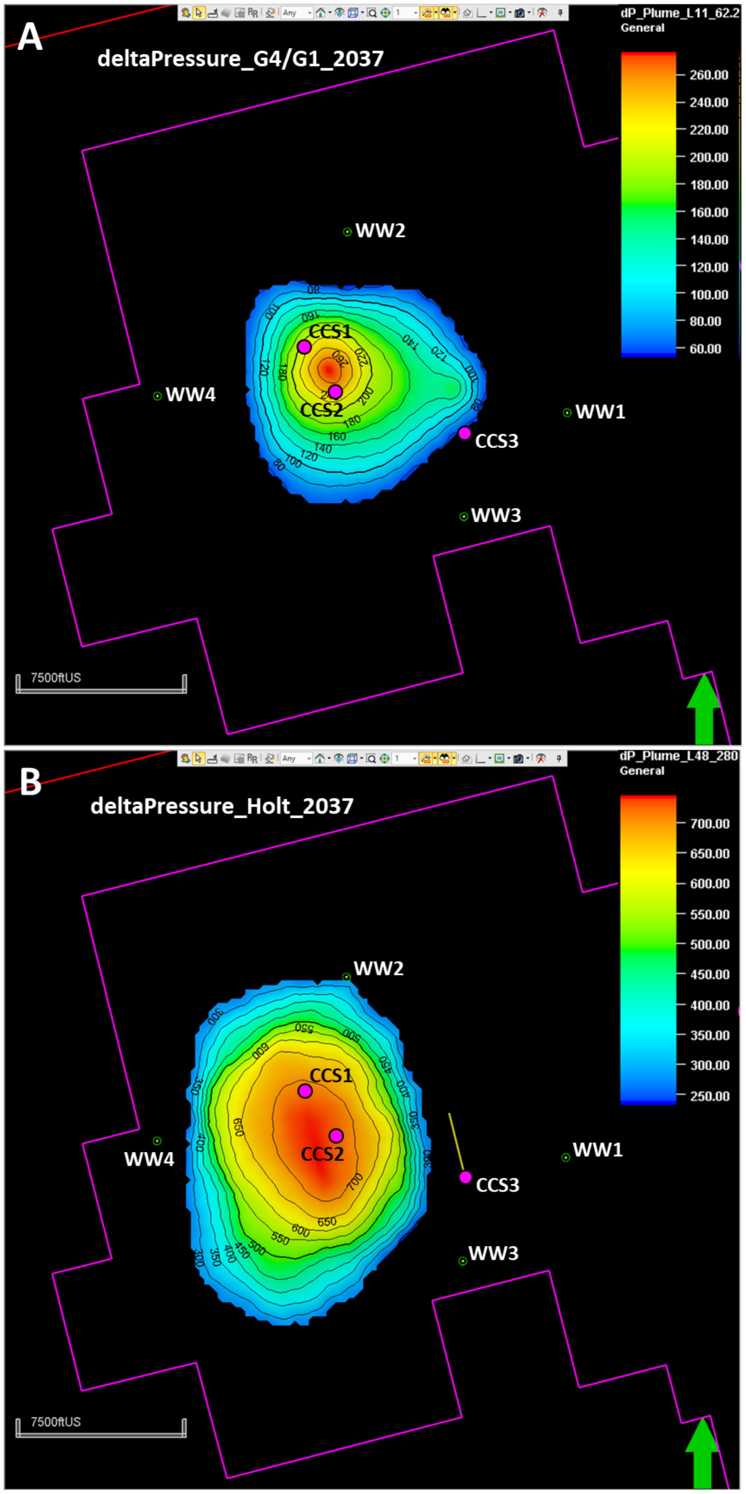

Figure 3--Aqueous pressure differential from the initial condition for commingled sub-zones G4 and G1 (upper Injection Zone – subplot A) and for sub-zone Holt (lower Injection Zone – subplot B) at end of injection in January 2037.

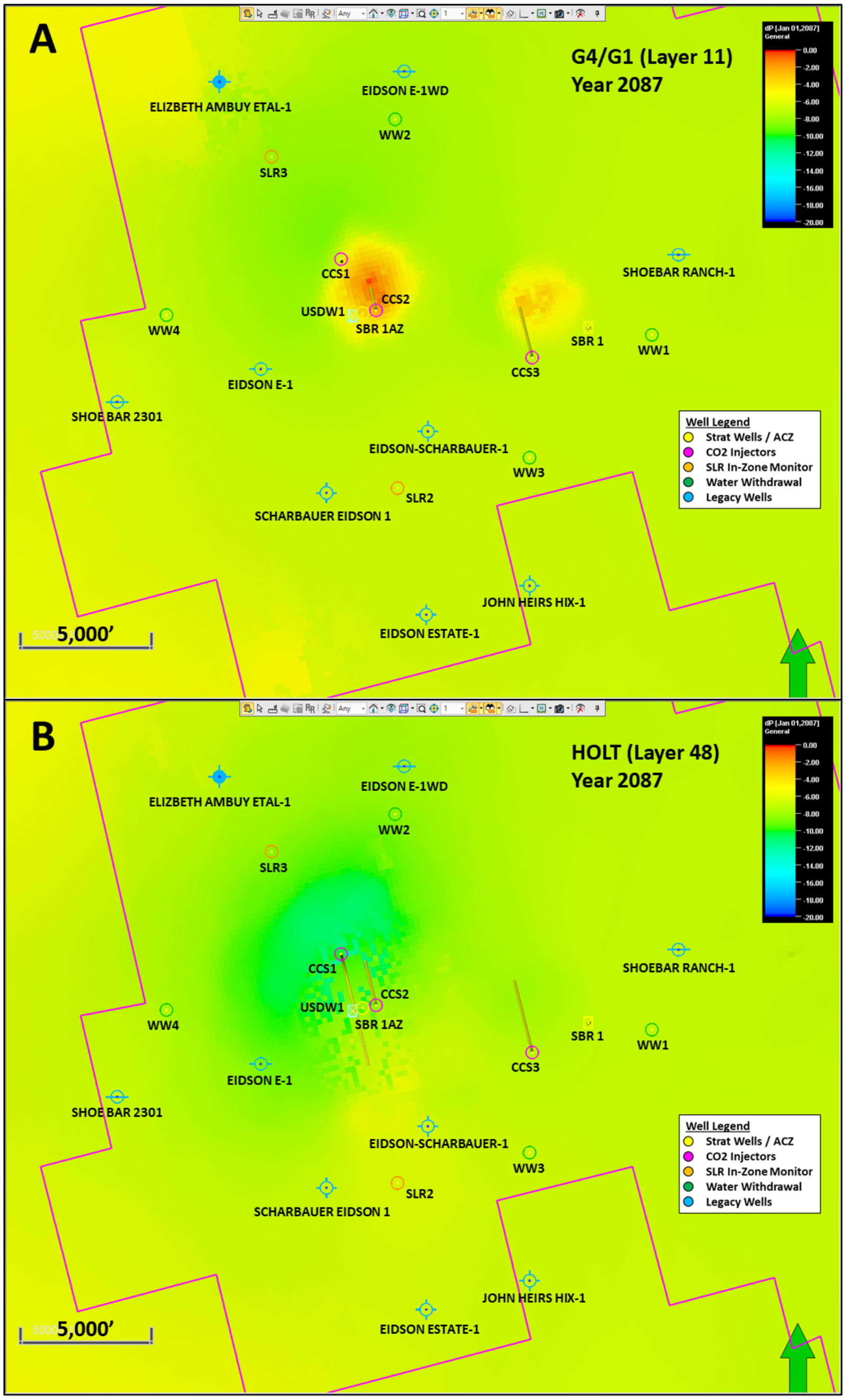

Figure 4--Aqueous pressure differentials from the initial condition at the top of the commingled G4 and G1 sub-zones (subplot A) and the top of the Holt sub-zone (subplot B) in January 2087 (50 years post-injection).

4.0 Predicted Position of the CO_2 Plume and Associated Pressure Front at Site Closure [40 CFR §146.93(a)(2)(ii)]

The reservoir simulation indicates that after injection ceases, the predicted CO_2 plume remains within the Lower San Andres Formation and the area does not expand over time. The colored area in Figure 5 shows the CO_2 plume extent in Year 62, as defined by the global mole fraction of CO_2. Figure 6 to 8 show a N-S cross section with the CO_2 global mole fraction at the end of the injection period at Year 12 and the Year 62 for wells BRP CCS1, CCS2, and CCS3, respectively. There is some minor vertical migration of CO_2 to upper portions of the Injection Zone due to buoyancy forces. The AoR is defined by the plume shape and size in Year 12 (end of injection period) because this is the time with the largest differential pressure and CO_2 plume. Also, as previously shown in Figure 3, all pressures are predicted to have been reduced to levels below the level of endangerment to USDWs by Year 62. Therefore, Year 62 (50 years post-injection) is predicted to be the site closure date.

The map in Figure 5 is based on the final AoR delineation modeling results submitted pursuant to 40 CFR §146.84.

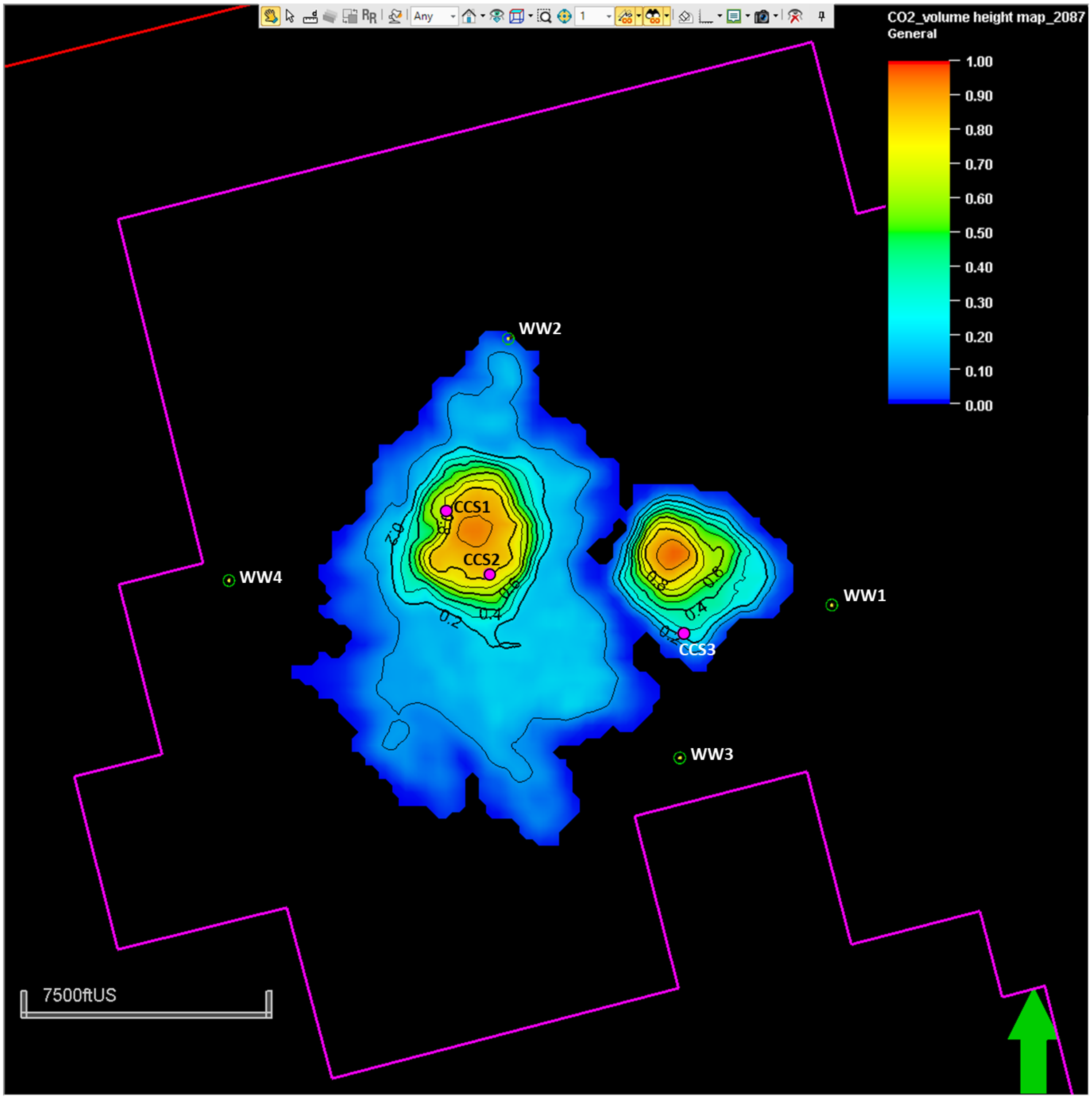

Figure 5--Areal extent of the CO_2 plume at site closure in Year 62 since start of CO_2 injection (2087), defined by the vertical integration of saturation of CO_2 injected.

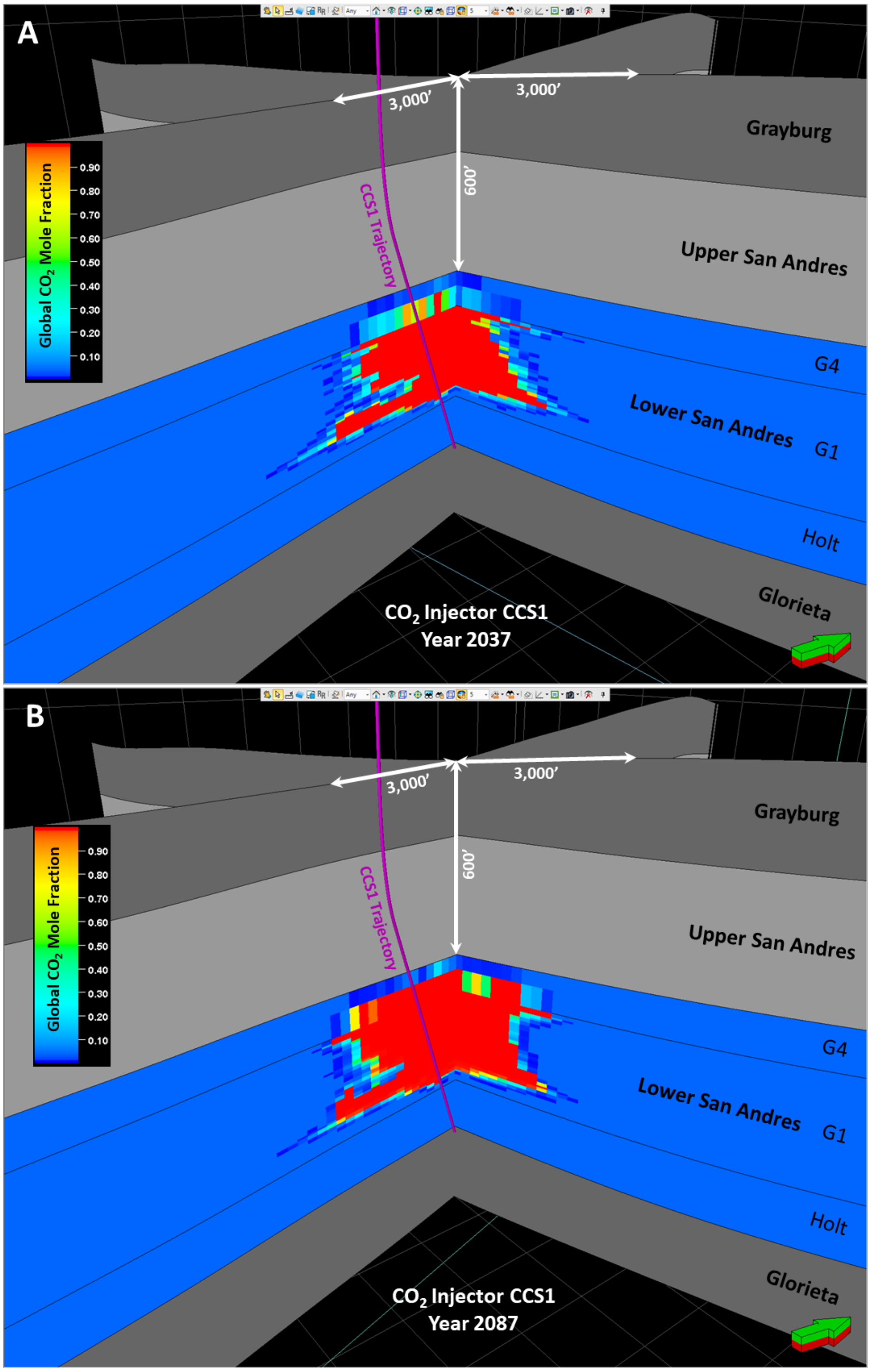

Figure 6--Cross section through the geomodel with simulated CO_2 plume for injector CCS1 at the end of injection period in 2037 (subplot A) and at time of site closure in 2087 (subplot B).

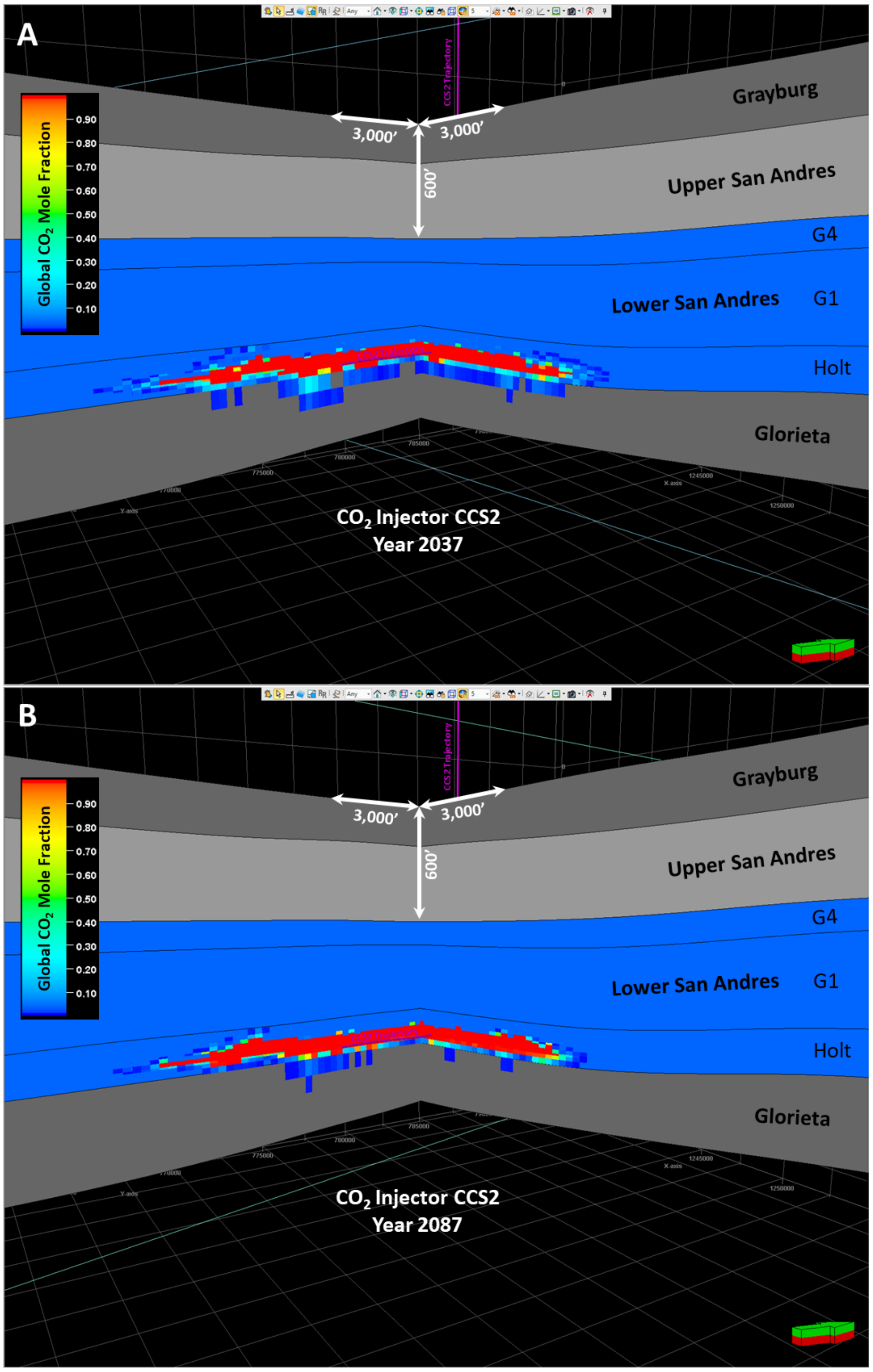

Figure 7--Cross section through the geomodel with simulated CO_2 plume for injector CCS2 at the end of injection period in 2037 (subplot A) and at time of site closure in 2087 (subplot B). Note that the large grid blocks in the Glorieta formation are an upscaling artifact. CO_2 is only pushed into the uppermost part of the Glorieta formation and moves upward over time due to buoyancy.

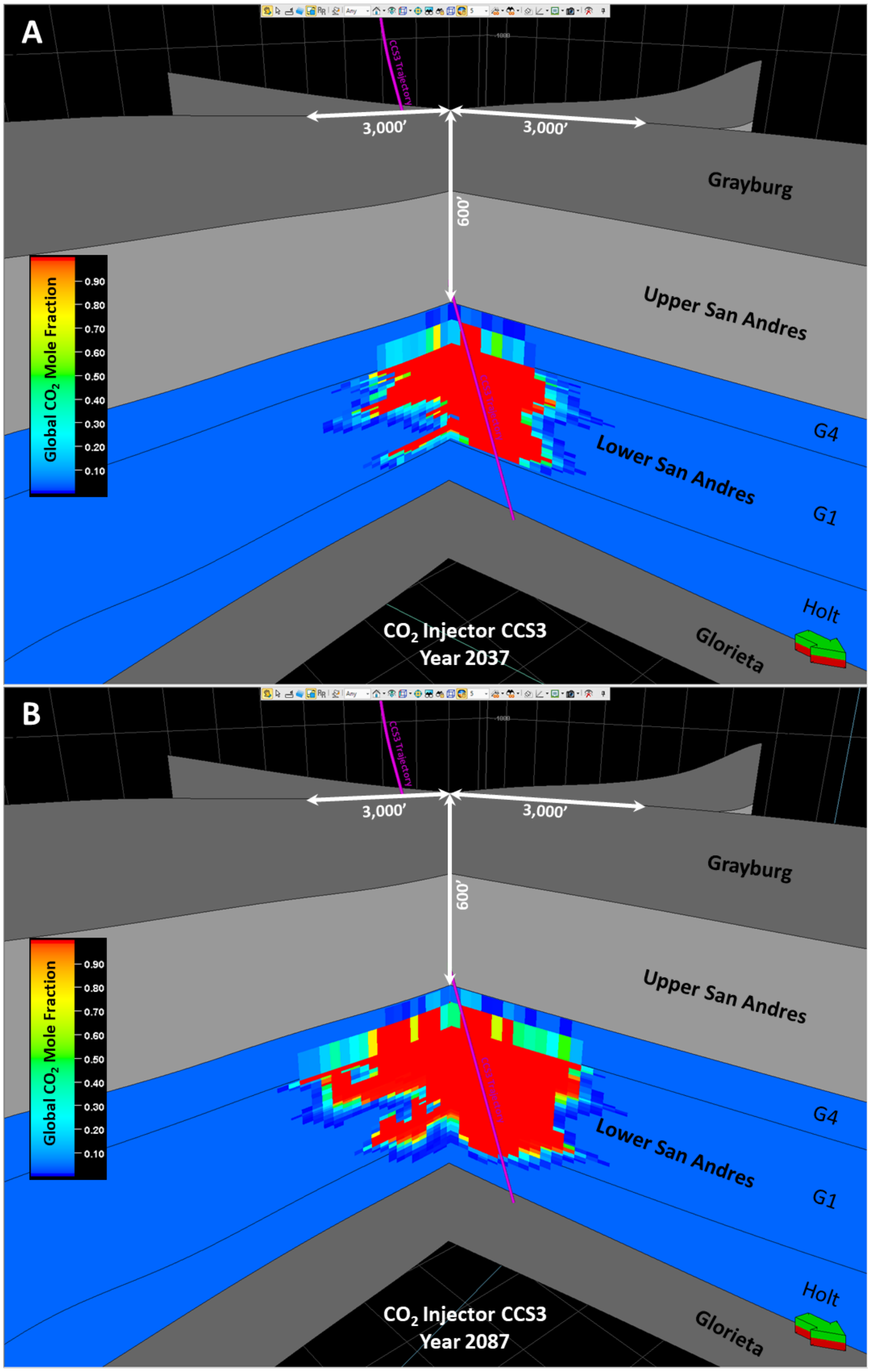

Figure 8--Cross section through the geomodel with simulated CO_2 plume for injector CCS3 at the end of injection period in 2037 (subplot A) and at time of site closure in 2087 (subplot B).

Figure 9 shows the CO_2 plume size, injected mass, and storage capacity as a function of time, with Year 0 being the initiation of injection. The simulation model predicts that the CO_2 plume (defined as the area containing 99% of the total volume of injected CO_2) increases rapidly during injection. The maximum CO_2 plume area is 4.8 mi^2 at the end of the injection period with a storage capacity of 1.77 MMT/mi^2. The plume shrinks after the injection stops from Year 12 to Year 50 and stabilizes in the following years. The shrink behavior of the plume after is due to the buoyancy of the mobile supercritical CO_2 phase which moves in upward direction, and continued dissolution in aqueous phase, decreasing its concentration in the plume edges. Thus, the storage capacity increase until a maximum of 1.95 MMT/mi^2. Figure 10 depicts areal plume movement based on CO_2 global mole fraction with a 0.1% cutoff. The plume slightly moves from west to east direction, close to Shoe Bar 1 well, due to the model geological features combined with compressibility effect (lower pressure in that region from WW1 water withdraw) allowing small plume migration in the strata. The change in plume size is negligible 50 years after injection, which is the proposed site closure time.

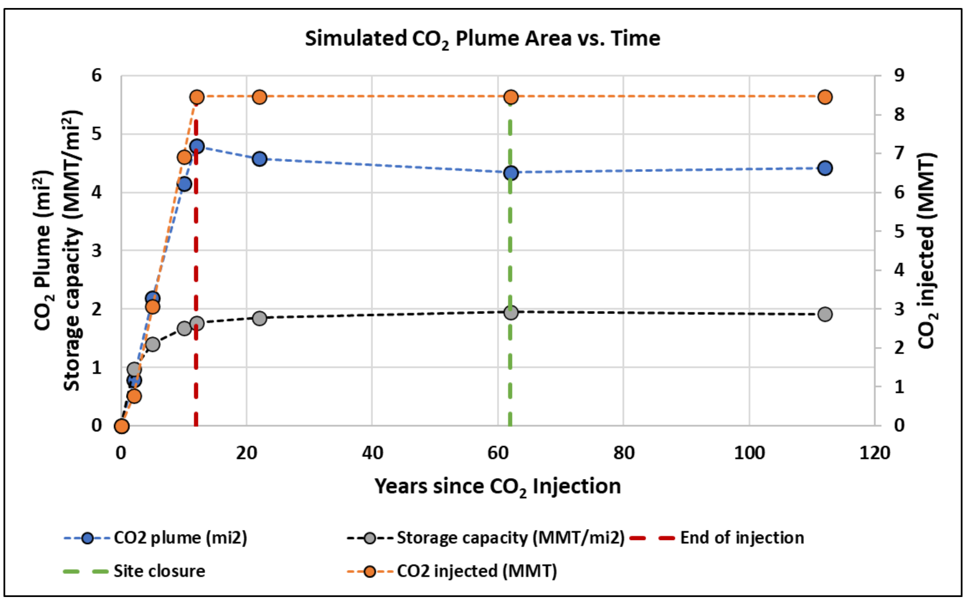

Figure 9--Simulated CO_2 plume area, injected mass, and storage capacity over time. The red and green dashed line denotes the time of end of injection and site closure, respectively.

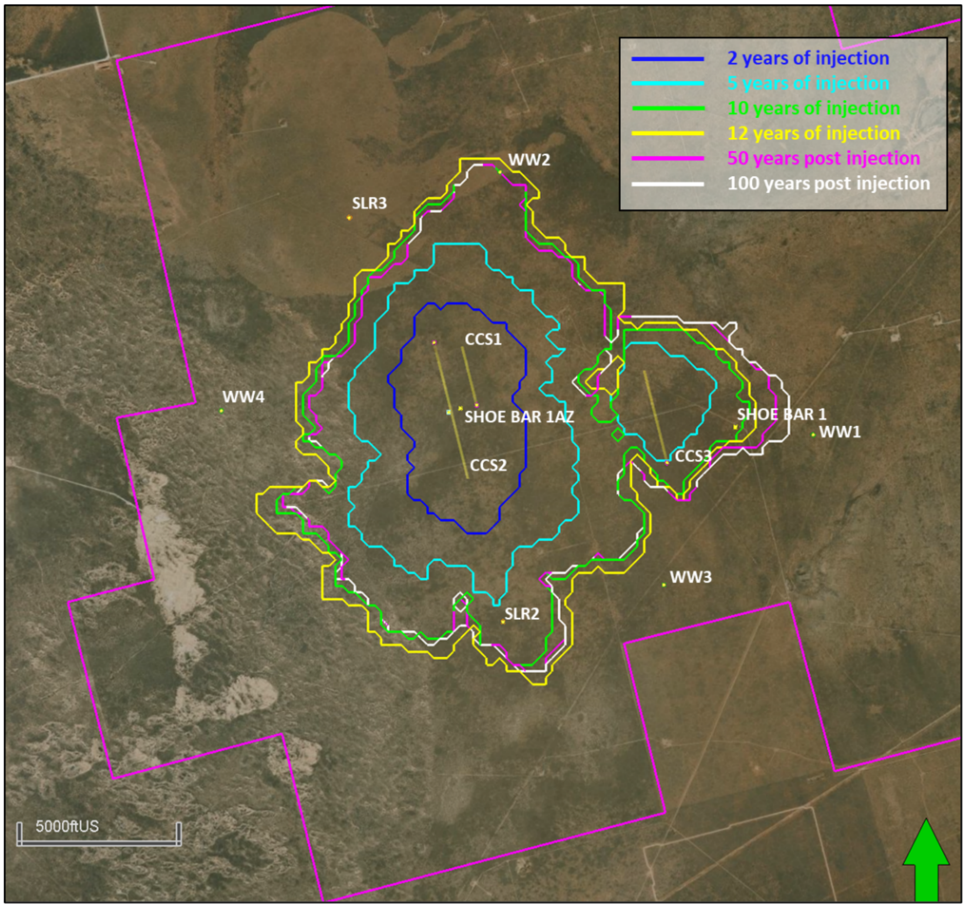

Figure 10--Simulated areal extent of the CO_2 plume from injection start-up to shut-in, then to 100 years after shut-in. Colored outlines represent the migration of the 1% CO_2 saturation front through time.

5.0 Post-Injection Monitoring Plan [40 CFR §146.93(b)(1)]

As described in the following sections, groundwater quality monitoring and plume and pressure-front tracking during the post-injection phase will meet the requirements of 40 CFR §146.93(b)(1). The results of all post-injection phase testing and monitoring will be submitted annually, within 60 days of the anniversary of the date that injection ceases, as described below under Section 5.3 Schedule for Submitting Post-Injection Monitoring Results [40 CFR §146.93(a)(2)(iv)]. Please refer to the Testing and Monitor Plan and Quality Assurance and Surveillance Plan (QASP) document included as part of this application for additional details on testing and monitoring activities during the Post-Injection phase.

A summary of key components of the PISC plan is as follows:

- After the injection ceases, the Injector wells will be plugged and abandoned according to the procedure proposed in the Plugging Plan document of this permit application.
- Pending an approved PISC Plan, for the first 10 years after the cessation of injection, direct measurements of pressure and temperature in the Injection Zone will be obtained in Single Layer Reservoir (SLR) monitoring wells that have not yet been plugged. Fluid samples will be collected if pressure or temperature indicate a change in fluid encountered by the wellbore. If pressure and temperature data are consistent with lack of continued CO_2 migration, pressure and temperature monitoring in the Injection Zone will be continued annually after 10 years until plugging.
- Pending an approved PISC Plan, for the first 10 years following the cessation of injection operations, OLCV will annually collect and analyze the geochemistry of fluids and dissolved gasses from the lowermost USDW in the USDW1 well. These data will confirm the integrity of the Upper Confining Zone. Measurements will be event-driven thereafter. If geochemistry data of fluids and dissolved gasses in the lowermost USDW are consistent with the absence of introduced Injection Zone brine or CO_2 injectate into the USDW, this monitoring method will be discontinued after 10 years.
- If pressure or temperature data in the SLR wells indicates a change in the Injection Zone that could indicate migration of CO_2 plume out of the storage complex, soil gas analysis will be conducted. If changes in soil gas are detected, an attribution study will be performed.
- Annual saturation logging will be conducted in SLR2 and SLR3 wells until plugging and saturation logging will be conducted once every five-year period in ACZ1 and SLR1 if triggered by other data.
- Time-lapse VSP data will be collected in selected SLR wells that have DAS fiber once every five-year period until plugging.
- 2D time-lapse surface seismic will be collected once every five-year period until plume stabilization.
- DInSar and GPS data will be analyzed annually for the first five years post injection.

5.1 Monitoring Above the Upper Confining Zone

Table 3 presents the monitoring methods, locations, and frequencies for monitoring above the Upper Confining Zone.

Table 3—Post-Injection Monitoring Techniques in/above the Confining Zone

Location	Objective	Method	Monitoring Post-Injection
Lowermost USDW / first permeable zone above the confining zone monitoring	Geochemical and isotopic monitoring to detect deviations from expected fluid chemistry	Fluid and dissolved gas sampling	Event-driven*, until plugging
Vadose Zone, Near surface	Isotopic analysis and chemical evaluation to detect changes from expected vadose zone chemistry	Isotopic analysis and chemical evaluation at a minimum of 15 locations	Event-driven*, triggered by P/T data in SLR or ACZ1 wells and fluids sample results
ACZ1 and/or SLR1	Confirming integrity of the Upper Confining Zone	Saturation logging (RST/PNL)	Event-driven*, until plugging
		DTS (SLR1 only)	Continuously for the first 10 years, pending an approved PISC plan

*OLCV will monitor pressure and temperature data obtained from downhole gauges and/or DTS fiber daily, and also routinely evaluate long-term data trends to detect deviations from the reference temperature or pressure gradient. If persistent deviations in temperature or pressure are detected, OLCV will obtain reservoir fluid samples and analyze fluid and dissolved gas chemistry to determine the presence or absence of increased CO_2. In addition, fluid and dissolved gas chemistry data from the lowermost USDW and soil gas chemistry from shallow soils will be monitored for trends to detect deviations from reference chemistry. If persistent and/or abrupt anomalies in chemistry are detected additional fluid or soil gas samples will be obtained to confirm the presence or absence of increased CO_2. Saturation logging may also be conducted to further support or refute the presence of increased CO_2.

5.2 Carbon Dioxide Plume and Pressure Front Tracking [40 CFR §146.93(a)(2)(iii)]

OLCV will employ direct and indirect methods to track the extent of the CO_2 plume and the presence or absence of elevated pressure. Table 4 presents the direct and indirect methods that OLCV will use to monitor the CO_2 plume, including the activities, locations, and frequencies. Fluid sampling, sampling handling and custody, quality control, and quality assurance will be performed as described in the QASP.

Table 4—Post-Injection Monitoring Techniques Plume and Pressure Front Tracking

Location	Objective	Method	Monitoring Post-Injection
SLR2 and SLR3, Injection Zone monitor wells	Fluid and dissolved gas chemistry	Fluid and dissolved gas sampling via wireline	Event-driven* until plugging
	Direct monitoring of pressure and temperature to ensure seal integrity	P/T gauges or DTS	Continuously for the first 10 years pending an approved PISC plan, then annually until plugging

	Indirect monitoring of CO_2 concentration	PNL or RST	Annually until plugging
	Plume and pressure extent over time	2D VSP	Once every five-year period until plugging or plume stabilization
	Internal and external mechanical integrity	Pressure and temperature gauges; external MIT	MIT log once every five-year period and before plugging
	Surface leak detection	Visual inspection at wellhead, LDAR/OGI cameras, surface sensors	Continuous surface monitoring and quarterly visual inspection until site closure
ACZ1 and SLR1, Confining Zone monitoring wells	Direct monitoring of pressure and temperature to ensure Upper Confining Zone integrity	DTS (SLR1 only)	Continuously for the first 10 years or until plugging, pending an approved PISC Plan
	Internal and external mechanical integrity	Pressure and temperature gauges; external MIT	MIT log once every five-year period and before plugging
	Indirect monitoring of CO_2 presence above the Injection Zone	PNL or RST	Event-driven* until plugging
	Surface leak detection	Visual inspection at wellhead, LDAR/OGI cameras, surface sensors	Continuous surface monitoring and quarterly visual inspection until site closure
Lowermost USDW monitor well	Geochemical and isotopic monitoring to detect deviations from expected fluid chemistry	Fluid and dissolved gas sampling	Annually for first 10 years post injection pending an approved PISC plan; event-driven*, triggered by P/T data in SLR wells or soil gas chemistry
Vadose Zone, Near surface	Isotopic analysis and chemical evaluation to detect changes from expected vadose zone chemistry	Isotopic analysis and chemical evaluation at a minimum of 15 locations	Event-driven*, triggered by P/T data in SLR wells or fluid sample results
2D VSP in selected SLR wells and 2D surface seismic	Estimate CO_2 plume and pressure extent	2D VSP and 2D surface seismic	Once approximately every five-year period until plugging or plume stabilization
DInSAR with GPS	Estimate CO_2 plume and pressure extent	DInSAR with GPS	Annually for five years or until plume stabilizes
Surface seismicity	Presence or absence of seismicity	Seismometers	Continuous monitoring and recording until site closure

*OLCV will monitor pressure and temperature data obtained from downhole gauges and/or DTS fiber daily, and also routinely evaluate long-term data trends to detect deviations from the reference temperature or pressure gradient. If persistent deviations in temperature or pressure are detected, OLCV will obtain reservoir fluid samples and analyze fluid and dissolved gas chemistry to determine the presence or absence of increased CO_2. In addition, fluid and dissolved gas chemistry data from the lowermost USDW and soil gas chemistry from shallow soils will be monitored for trends to detect deviations from reference chemistry. If persistent and/or abrupt anomalies in chemistry are detected additional fluid or soil gas samples will be obtained to confirm the presence or absence of increased CO_2. Saturation logging may also be conducted to further support or refute the presence of increased CO_2.

5.3 Schedule for Submitting Post-Injection Monitoring Results [40 CFR §146.93(a)(2)(iv)]

OLCV will re-evaluate the AoR every five years during the post-injection phases. In addition, monitoring and operational data will be reviewed periodically by OLCV during the injection and post-injection phases. Monitoring reports will be prepared and submitted to the EPA Region 6 UIC Branch office twice per year. These reports will summarize methods and results of groundwater quality monitoring, CO_2 Injection Zone pressure tracking, and indirect geophysical monitoring for CO_2 plume tracking.

The PISC and Site Closure Plan will be reviewed every five years during the PISC period. Results of the plan review will be included in the PISC monitoring reports. The operational and monitoring results will be reviewed for adequacy in relation to the objectives of the PISC. The monitoring locations, methods, and schedule will be analyzed in relation to the size of the CO_2 Injection Zone, pressure front, and protection of USDWs. In case of changes to the PISC plan, a modified plan will be submitted to the EPA Region 6 UIC Branch Office within 30 days of such changes.

6.0 Non-Endangerment Demonstration Criteria

Prior to approval of the end of the post-injection phase, OLCV will submit a demonstration of non-endangerment of USDWs to the UIC Program Director, per 40 CFR §146.93(b)(2) and (3). This demonstration of USDW non-endangerment will be based on the evaluation of the site monitoring data used in conjunction with the project's computational model. The demonstration will include all relevant monitoring data and interpretations upon which the non-endangerment demonstration is based, model documentation and all supporting data, and any other information necessary for the UIC Program Director to review the analysis. The demonstration will include the following sections:

6.1 Introduction and Overview

A summary of relevant background information will be provided, including the operational history of the injection project, the date of the non-endangerment demonstration relative to the post-injection period outlined in this PISC and Site Closure Plan, and a general overview of how monitoring and modeling results will be used together to support a demonstration of USDW non-endangerment.

6.2 Summary of Existing Monitoring Data

A summary of all previous monitoring data collected at the site, pursuant to the Testing and Monitoring Plan document and this PISC and Site Closure Plan, including data collected during the injection and post-injection phases of the project, will be submitted to help demonstrate non-endangerment. Data submittals will be in a format acceptable to the UIC Program Director, and will include a narrative explanation of monitoring activities, including the dates of all monitoring events, changes to the monitoring program over time, and an explanation of all monitoring infrastructure that has existed at the site. Data will be compared with baseline data collected during site characterization.

6.3 Summary of Computational Modeling History

The computational modeling results used for the AoR delineation will be compared to monitoring data collected during the operational and PISC periods. Monitoring data will also be compared with baseline data collected during the site characterization required under 40 CFR §146.82(a)(6) and §146.87(d)(3). The data will be used to update the computational model and monitor the site and will include both direct and indirect geophysical methods. Direct methods include measurements of pressure, temperature, fluid and dissolved gas chemistry. Indirect methods include Vertical Seismic Profile (VSP) and 2D seismic, Differential Interferometric Synthetic-Aperture Radar (DInSAR), and saturation logging using Pulsed Neutron (PNL).

Data generated during the PISC period will be used to show that the computational model accurately represents the storage site and can be used as a proxy to determine the plume's properties and size. OLCV will demonstrate this degree of accuracy by comparing the monitoring data obtained during the PISC period with the model's predicted properties (i.e., plume location, rate of movement, and pressure decay). Statistical methods will be employed to correlate the data and confirm the model's ability to represent the storage site accurately. The validation of the computational model with the large quantity of measured data will be a significant element to support the non-endangerment demonstration. Further, the validation of the complete model over the entire area, and at the points where direct data collection has taken place, will ensure confidence in the model for those areas with no direct observation wells where the surface infrastructure precludes geophysical data collection.

6.4 Evaluation of Reservoir Pressure

OLCV will demonstrate non-endangerment to USDWs by showing that the pressure within the Injection Zone will rapidly decrease to levels near its pre-injection static reservoir pressure during the PISC period. Because increased pressure is the primary driving force for fluid movement that could endanger a USDW, the decay in the pressure differential provides strong justification that the injectate will no longer pose a risk to any USDWs.

OLCV will monitor the downhole reservoir pressure at various locations and intervals using a combination of surface and downhole pressure gauges. The measured pressure at a specific depth interval will be compared with the pressure predicted by the computational model, which was previously shown in Figure 1, Figure 2, and Figure 3. Agreement between the actual and predicted values will validate the accuracy of the model and further demonstrate non-endangerment.

6.5 Evaluation of Carbon Dioxide Plume

OLCV will use a combination of monitoring data, logs, geophysical surveys, and seismic methods to locate and track the movement of the CO_2 plume. The data produced by these activities will be compared with the modeled predictions (previously shown in Figure 7) using statistical methods to validate the model's ability to represent the storage site accurately. PISC monitoring data will be used to show the stabilization of the CO_2 plume as the reservoir pressure returns to its near-pre-injection state. The risk to USDWs will decrease when the extent of pure-phase CO_2 ceases to grow either laterally or vertically. The stabilization of the CO_2 plume combined with the lack of unmitigated Artificial Penetrations in the confining formation will be significant factors in the Project's demonstration of non-endangerment.

Fluids and dissolved gasses collected from USDW1 or soil or soil gas samples may be used to determine aqueous-phase CO_2 concentrations and mobilized constituents to assess USDW endangerment. If a demonstration can be made that the majority of the CO_2 has been immobilized via trapping mechanisms, then there is strong evidence that the risk to USDWs posed by the CO_2 plume has decreased. Modeling results, including sensitivity analyses, may also be used to demonstrate that plume migration rates are negligible based on available site characterization, monitoring, and operational data.

6.6 Evaluation of Emergencies or Other Events

In addition to the CO_2 plume, mobilized fluids may also pose a risk to USDWs, as the reservoir fluids include brines that are high in total dissolved solids (TDS) and contain hydrogen sulfide. The geochemical data collected from monitoring wells will be used to demonstrate that no mobilized fluids have moved above the Upper Confining Zone and therefore would not pose a risk to USDWs after the PISC period. Monitoring data indicating steady or decreasing trends of potential drinking water contaminants below actionable levels (e.g., secondary, and maximum contaminant levels) will be used for this demonstration.

To demonstrate non-endangerment, OLCV will compare the operational and PISC period fluid and dissolved gas samples from the lowermost USDW with the pre-injection baseline samples. This comparison is expected to show chemical similarity to baseline samples. Changes in chemistry will be evaluated to demonstrate attribution. This work will demonstrate the absence of CO_2 injectate or brine forced from the Injection Zone into the lowermost USDW.

Corrective action will be performed on Artificial Penetrations identified to be potential leak pathways. Based on this information, the potential for fluid movement through artificial penetrations of the confining formation does not present a risk of endangerment to any USDWs.

7.0 Site Closure Plan

OLCV will conduct site closure activities to meet the requirements of 40 CFR §146.93(e) as described below. OLCV will submit a final Site Closure Plan and notify the permitting agency at least 120 days in advance of its intent to close the site. Once the permitting agency has approved closure of the site, OLCV will plug the monitoring wells and submit a site closure report to EPA within 90 days of site closure. The activities described below represent the planned activities based on information provided to EPA. The actual site closure plan may employ different methods and procedures. A final Site Closure Plan will be submitted to the UIC Program Director for approval with the notification of the intent to close the site.

7.1 Plugging Monitoring Wells

Upon receiving authorization for site closure from the Director, all monitoring wells will be plugged within 90 days of site closure. All Injection Zone monitoring wells at the site will be plugged and abandoned using best practices to prevent any upward migration of the CO_2 or communication of fluids between the Injection Zone and USDWs. The deep monitoring wells in the Injection Zone have a direct connection between the injection formation and the ground surface; therefore, the well plugging program is specifically designed to prevent communication between the Injection Zone and USDWs. Details of the Plugging Program are located in the Plugging Plan document.

Before the wells are plugged, the internal and external integrity of the wells will be confirmed by conducting a pressure test and a cement and casing inspection log. The results of this logging and testing will be reviewed and approved by the appropriate regulatory agencies before plugging the wells.

Infrastructure removal and site restoration efforts will comply with applicable state and local requirements

7.2 Site Closure Report

A Site Closure Report (SCR) will be prepared and submitted to the Director within 90 days after site closure. The SCR will document the following aspects of the site closure process:

- Plugging of all injection, water withdraw and monitoring wells;
- Details of site restoration activities;
- Location of the sealed injection well on a survey plat submitted to the local zoning authority, a copy of which will be sent to the Regional Administrator for EPA Region 6;
- Notifications sent to state and local authorities;
- Records regarding the nature, composition, and volume of CO_2 injected;
- Records of pre-injection, injection, and post-injection monitoring; and
- Certifications that all injection and storage activities have been completed.

OLCV will record a notation on the deed of the property on which the injection well was located, which will include the following:

- An indication that the property was used for carbon dioxide sequestration,
- The name of the local agency to which the survey plat with injection well location was submitted,
- The volume of fluid injected,
- The Injection Zone or zones into which the fluid was injected, and
- The period over which the injection occurred.

The site closure report will be submitted to the permitting agency and maintained by the owner or operator for a period of 10 years following site closure. Additionally, the owner or operator will maintain the records collected during the post-injection site care period for a period of 10 years after which these records will be delivered to the UIC Program Director.