

STATE OF LOUISIANA  
DEPARTMENT OF CONSERVATION AND ENERGY  
BATON ROUGE, LOUISIANA

**ORDER NO. UIC 2026-09 GS**

Order approving the drilling, construction, and operation of two new Class VI injection wells for geologic sequestration of carbon dioxide for

**GULF COAST SEQUESTRATION, LLC**  
**Operator Code G1037**  
**Site ID Code 8021**

at the

Wildcat-South LA Lafayette Dist Field  
Cameron Parish, Louisiana

\* \* \* \* \*

Pursuant to power delegated under the laws of the State of Louisiana, and particularly Title 30 of the Louisiana Revised Statutes of 1950 as amended and as implemented in the rules and regulations promulgated by the Secretary in LAC 43:XVII, Subpart 6, Chapter 36 (Statewide Order No. 29-N-6) and after a public hearing held on July 23, 2026, in the Hackberry Community Center, 980 Main St., Hackberry, LA 70645 under **Docket No. UIC 2026-06** following lawful publication of notice, the Secretary issues and promulgates the following Order as necessary to carry out the laws of this State. References to “commissioner” in Statewide Order 29-N-6 are read as “Secretary” for purposes of this Order.

**FINDINGS OF FACT**

THE SECRETARY FINDS AS FOLLOWS:

1. That Gulf Coast Sequestration, LLC (“GCS”) of 5599 San Felipe Street, Suite 1450, Houston, Texas 77056 applied to the Department of Conservation and Energy (“C&E”), formerly Department of Natural Resources, as required by Statewide Order 29-N-6 (LAC 43:XVII.3605.C) on February 5, 2024 for approval to drill, complete, and operate two new Class VI injection wells for geologic sequestration of carbon dioxide located at its facility in Section 3, Township 12 South, Range 13 West, in Cameron Parish, Louisiana.
2. That the applications submitted by GCS were assigned Application Nos. 45031 and 45032, as further identified by well name and location in Finding of Fact No. 3 below.
3. That the two proposed Class VI injection wells (“injection wells”) and their locations are identified as:

<u>Well Names &amp; Number</u>	<u>Application Number</u>	<u>Serial Number</u>	<u>API</u>	<u>Sec/Twn/Rge</u>	<u>Latitude*</u>	<u>Longitude*</u>
Minerva South CCS Well No. 001	45031	XXXXXX	XXXXXXXXXXXXXX	3, 12S, 13W	30° 02' 34.10"N	93° 40' 20.63"W
Minerva South CCS Well No. 002	45032	XXXXXX	XXXXXXXXXXXXXX	3, 12S, 13W	30° 02' 33.84"N	93° 40' 20.48"W

*Table 1-Well Information \*Coordinates are listed in the NAD 27 system*

4. That the application submitted by GCS was reviewed by C&E and was determined to be administratively complete on August 14, 2024, and technically complete on June 12, 2026, and supplied all information required by Statewide Order No. 29-N-6 (LAC 43:XVII, Subpart 6) as it pertains to Class VI injection wells.
5. On June 18, 2026, public notice of the draft permit and of the associated public hearing was published in *The Advocate*, the official journal of the State of Louisiana, and the *Cameron Parish Pilot*, the official journal of Cameron Parish, in satisfaction of LAC 43:XVII.3611.E.3.b.
6. C&E provided a copy of the public notice to the interested parties identified in LAC

- 43:XVII.3611.E.3.a.i-iv including the governing authority of Cameron Parish, in satisfaction of those subparagraphs and of LA R.S. 30:1105.
7. The public comment period opened on June 18, 2026, and closed on July 24, 2026, providing a comment period satisfying LAC 43:XVII.3611.E.2.a.
  8. That the Secretary held a public hearing in Hackberry, Louisiana on July 23, 2026, on the draft permit, in satisfaction of LAC 43:XVII.3611.G. Notice of the hearing was given in the manner described in Findings 5 and 6 above, as required by LAC 43:XVII.3611.G.1
  9. The Secretary issued a written Response to Comments, attached hereto as Exhibit A, which briefly describes and responds to each significant comment on the draft permit and on Application Nos. 45031 and 45032 raised during the public comment period and at the July 23, 2026 public hearing, satisfying LAC 43:XVII.3611.H.1.b.
  10. Concurrent with the Response to Comments, the Secretary issued a written Basis for Decision, attached hereto as Exhibit B and referenced in the Response to Comments, which specifies the provisions of the draft permit, if any, that have been changed in the final permit decision and the reasons for each change, satisfying LAC 43:XVII.3611.H.1.a.
  11. The Response to Comments and the Basis for Decision together constitute the Secretary's response to comments under LAC 43:XVII.3611.H.1 and have been made available to the public on [Insert Order Date ], satisfying LAC 43:XVII.3611.H.2.
  12. That the deepest underground source of drinking water (“USDW”) in the vicinity of the proposed location of the wells is at a depth of approximately 1,100-1,200 feet, measured depth below ground level (“bgl”).
  13. That GCS conducted a search of available public records of the wells located in the area of review (“AOR”), which GCS delineated using computational modeling, and the search showed that no wells penetrated the confining zone. GCS also conducted a physical ground search and magnetometer survey to evaluate the presence of potential undocumented and abandoned oil and gas wells, and the surveys identified no potential oil and gas wells.
  14. That GCS delineated their AOR using computational modeling with regional geologic data and did not obtain and incorporate site specific data via a stratigraphic test well to support the permit application. GCS proposes to calibrate and update their computational model with data collected during injection well construction as part of the pre-operations requirements of 29-N-6 (LAC 43:XVII.3619.A.1).
  15. That GCS plans to inject into the injection wells for an estimated 30 years.
  16. That GCS plans to inject up to an estimated 0.547 to 0.746 million metric tons of injectate per year.
  17. That GCS demonstrated that the injection wells are sited in an area with suitable geology according to the well siting requirements of Statewide Order No. 29-N-6 (LAC 43:XVII.3615.A).
  18. That GCS will site the injection wells according to the additional siting requirements of Statewide Order No. 29-N-6 (LAC 43:XVII.3615.D).
  19. That GCS will construct the injection wells according to the construction requirements of Statewide Order No. 29-N-6 (LAC 43:XVII.3617) so as not to pose an endangerment to a USDW.
  20. That GCS will adhere to the pre-operations requirements of Statewide Order No. 29-N-6 (LAC 43:XVII.3619) before being granted final approval for the operation of the injection wells.
  21. That GCS will operate the injection wells according to the provisions of Statewide Order No. 29-N-6 (LAC 43:XVII.3621).
  22. That GCS will adhere to the emergency and remedial response requirements of Statewide Order No. 29-N-6 (LAC 43:XVII.3623).
  23. That GCS will meet the testing and monitoring requirements of Statewide Order No. 29-N-6 (LAC 43:XVII.3625) and any additional monitoring requirements as may be defined in this Order beyond those minimum regulatory requirements.
  24. That GCS will reevaluate the AOR at a fixed frequency not to exceed five years or sooner when monitoring and operating conditions warrant as required by Statewide Order No. 29-N-6 (LAC 43:XVII.3615.B).

25. That GCS will maintain the injection wells in such a manner to meet the mechanical integrity requirements of Statewide Order No. 29-N-6 (LAC 43:XVII.3627).
26. That GCS will provide timely reports and keep accurate records of the injection well operation as required by Statewide Order No. 29-N-6 (LAC 43:XVII.3629).
27. That GCS has committed to meeting the plugging and abandonment requirements of Statewide Order No. 29-N-6 (LAC 43:XVII.3631).
28. That GCS will adhere to the closure and post-closure requirements of Statewide Order No. 29-N-6 (LAC 43:XVII.3633).
29. That GCS will maintain the financial resources required by Statewide Order No. 29-N-6 (LAC 43:XVII.3609.C) that are necessary to adequately fulfill corrective action of LAC 43:XVII.3615.C, injection well plugging of LAC 43:XVII.3631, post-injection site care and site closure of LAC 43:XVII.3633, and Emergency and Remedial Response of LAC 43:XVII.3623.
30. That contingency plans to cope with all shut-ins and well failures are reasonable and sound and will be carried out when needed to prevent contamination of USDWs.
31. Consistent with the requirements of Department Guidance DG-B-2025-01-A, GCS has furnished a Community Engagement Plan demonstrating its strategy for outreach, communication, and stakeholder involvement and will implement the plan as approved by C&E.
32. That the proposal of GCS to drill, complete, and operate two new Class VI injection wells identified in Findings of Fact No. 3, as set forth in the application, is suitable for Class VI injection operations subject to construction, testing, monitoring, operating conditions, and limitations and/or conditions imposed by Statewide Order No. 29-N-6 or successor document and any subsequent order issued by the Secretary.
33. That to satisfy the requirements of Louisiana Constitution Article IX, §1, La R.S.30:1104.1, and Statewide Order No. 29-N-6 (LAC 43:XVII.3607.D), C&E required GCS to furnish appropriate information together with sufficient justification and supporting data, which was considered and examined in light of other information available to this Office.
34. Based on information provided by GCS in the application package, and other information available to this office, it is the conclusion of C&E that:
  - a. The potential and real adverse environmental effects have been avoided to the maximum extent possible;
  - b. A cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the project demonstrate that the latter outweighs the former;
  - c. There are no alternative activities which would offer more protection of the environment than the proposed activity without unduly curtailing nonenvironmental benefits;
  - d. There are no alternative sites which would offer more protection to the environment than the proposed site without unduly curtailing nonenvironmental benefits; and
  - e. There are no mitigating measures which would offer more protection to the environment than the proposed activity without unduly curtailing nonenvironmental benefits.
34. After review of available information, the site geology is suitable for geologic sequestration of carbon dioxide subject to any monitoring and operating conditions or limitations stipulated in this Order.
35. For reasons set forth herein and in Exhibit B- Basis for Decision, the Secretary issues this Order.

## ORDER

NOW, THEREFORE, IT IS ORDERED:

1. Authority to Drill and Construct
  - a. The proposal of GCS to drill and construct Minerva South CCS Well No. 001, Serial Number XXXXXX and Minerva South CCS Well No. 002, Serial Number XXXXXX, at its facility located in Section 3, Township 12 South, Range 13 West, in Cameron Parish, Louisiana as set forth in the application and this Order is hereby approved subject to limitations and/or conditions

imposed by this Office as may be defined in this Order.

- b. Approval to drill and construct Minerva South CCS Well No. 001, Serial Number XXXXXX and Minerva South CCS Well No. 002, Serial Number XXXXXX will remain in effect for a period of one year and if not begun in that time, the permit shall be null and void. The permittee may request an extension of this one-year requirement; however the Secretary shall approve the request for extenuating circumstances only.

## 2. Siting Criteria, Area of Review, and Corrective Action

- a. The final AOR shall be based on the updated modeling as proposed by GCS in AOR Section 1.5 to 1.6 & Appendix A, using data obtained during logging and testing of the wells and formation as required by Statewide Order 29-N-6 (LAC 43:XVII.3619).
- b. Based on Finding of Fact No. 14 above, GCS shall reevaluate the AOR:
  - i. No later than the second anniversary of commencement of injection; and
  - ii. No later than the fifth anniversary of commencement of injection.
  - iii. Thereafter, at a fixed frequency approved by the Secretary not to exceed five years or sooner, supported by monitoring and operational data.
  - iv. The AOR reevaluation frequency established in this Order Item is predicated on the computational modeling presented by GCS for the permit to construct and is subject to modification by the Secretary. As part of the pre-operating requirements of Statewide Order No. 29-N-6 (LAC 43:XVII.3619) and prior to authorization to inject, GCS shall submit for the Secretary's review and approval, the final AOR based on modeling and any associated computational model updates developed from the site-specific data obtained during well logging, coring, and testing. Following the review of the submitted pre-operating requirements, including the final AOR, the Secretary may revise the reevaluation frequency required by this Order Item as deemed necessary.
- c. At the frequency stated above or sooner when monitoring and operating conditions warrant, GCS shall:
  - i. Reevaluate the AOR in the same manner specified in LAC 43:XVII.3615.B;
  - ii. Identify all wells in the reevaluated AOR that require corrective action in the same manner specified in LAC 43:XVII.3615.B;
  - iii. Perform corrective action on wells requiring corrective action in the reevaluated AOR in the same manner specified in LAC 43:XVII.3615.C; and
  - iv. Submit an amended AOR and corrective action plan (CAP), or demonstrate to the Secretary through monitoring data and modeling results that no change to the AOR and CAP is needed.
- d. Following each AOR reevaluation or a demonstration that no amendment to the AOR and CAP is needed, GCS shall submit a report of the resultant information to the Secretary for review and approval.
- e. If, at any time prior to or during injection operations, GCS identifies any additional wells or penetrations within the Area of Review, including but not limited to those identified through magnetometer surveys, records review, field reconnaissance, or modeling updates, the permittee shall:
  - i. Notify the Office of Permitting and Compliance in writing within ten (10) days of identification;
  - ii. Evaluate such wells or penetrations in accordance with the approved AOR and CAP to determine whether they may provide a pathway for fluid movement that could result in endangerment of a USDW;
  - iii. Submit for approval a proposed CAP and schedule, if corrective action is required; and
  - iv. Implement all Secretary-approved corrective action measures in accordance with the approved schedule prior to commencement of injection, unless otherwise authorized in writing by the Secretary.

The Secretary may require acceleration, modification, or completion of corrective action measures at any time if necessary to prevent endangerment of a USDW.

Injection operations shall not commence in any injection zone for which required corrective action measures have not been implemented in accordance with the Secretary-approved corrective action plan and schedule. Failure to do so shall be a violation of this order and will result in cessation of any injection operations already underway.

- f. Amendments to the AOR are subject to the permit modification requirements of LAC 43:XVII.3613.
- 3. Authority to operate Minerva South CCS Well No. 001 (Serial Number XXXXXX) and Minerva South CCS Well No. 002 (Serial Number XXXXXX) is subject to provisions of those applicable portions of the pre-operating requirements of Statewide Order 29-N-6 (LAC 43:XVII.3619).
- 4. Injection Zone, Injection Interval, and Maximum Authorized Bottom-Hole Injection Pressure (MABHIP)
  - a. The injection zone, injection intervals, and maximum authorized bottom-hole injection pressure for the Class VI wells are as indicated in the following table:

Well	Injection Zone	Injection Interval (ft TVD)	Maximum Authorized Bottom-Hole Injection Pressure
Minerva South CCS Well No. 001	Frio 5	9,996 - 10,056	To be determined
	Frio 4	9,736 - 9,896	To be determined
	Frio 0.5 & Frio 1	9,194 - 9,494	To be determined
Minerva South CCS Well No. 002	Frio 5	9,870 - 9,930	To be determined
	Frio 4	9,593 - 9,770	To be determined
	Frio 0.5 & Frio 1	9,041 - 9,350	To be determined

*Table 2- Depths in the table are from the application. Actual depths and authorized parameters will be determined from Minerva South CCS Well No. 001, Serial Number XXXXXX and Minerva South CCS Well No. 002, Serial Number XXXXXX. MABHIP shall not exceed ninety percent (90%) of the fracture pressure of the currently authorized injection formation, pursuant to LAC 43:XVII.3621.A.1, and shall be established in accordance with Order Item 3 upon completion of formation testing under LAC 43:XVII.3619.*

- b. Maximum authorized bottom-hole injection pressure for each interval shall be limited to 90 percent of the fracture pressure of the currently authorized injection formation.
- c. The approved injection zone depths, injection interval depths, and maximum authorized bottom-hole injection pressures are subject to administrative revision by the Secretary based on well completion data, recompletion data, open-hole logs, formation integrity testing, step-rate testing, injectivity testing, or other pertinent operational or geological data obtained prior to injection.

No injection shall commence in any well or injection interval until the Secretary has established in writing the MABHIP for that well and interval as part of the permit to inject.

If any well is recompleted in a different injection interval, the Secretary shall establish a new MABHIP for that interval prior to commencement of injection.

The Secretary may modify any MABHIP at any time if monitoring data, modeling updates, mechanical integrity results, or other information indicate that modification is necessary to prevent endangerment of a USDW.

- 5. GCS shall submit a quarterly monitoring report to C&E using Form UIC-61 (Class VI Quarterly Report), or subsequent form. The report is due within 30 days after the end of the respective calendar quarter.
- 6. Continuous Monitoring of Injection and Annulus Parameters
  - a. GCS shall install, use, and maintain in proper working order continuous recording devices for the injection wells in accordance with LAC 43:XVII.3621.A.6 and LAC 43:XVII.3625.A.2. The continuous recording devices shall monitor and record, at a minimum: surface injection pressure and bottom-hole pressure; flow rate, volume and/or mass, and temperature of the carbon dioxide stream; tubing-casing annulus pressure and the volume of annulus fluid added; and any additional data specified by the Secretary. All continuous recordings shall consist of digital recordings. Instruments shall be weatherproof or housed in weatherproof enclosures when located in areas

exposed to climatic conditions. Pressure gauges showing pressure on the injection tubing and tubing-casing annulus shall be installed at the wellhead, shall be designed to read in increments of 10 PSIG, and shall be properly calibrated and maintained in good working order, with pressure valves having one-half inch female fittings, as required by LAC 43:XVII.3621.A.10.

- b. GCS shall maintain a tubing-casing annulus pressure that exceeds the operating injection pressure, unless the Secretary determines that such requirement might harm the integrity of the well or endanger a USDW. The minimum tubing-casing annulus pressure maintained in the injection well shall be 200 psig. A request to operate the well at a reduced annulus pressure must be submitted in writing and approved by the Secretary. The annulus between the tubing and the long-string casing shall be filled with a non-corrosive fluid, or a fluid containing a corrosion inhibitor, approved by the Secretary in accordance with LAC 43:XVII.3621.A.3.
- c. During periods of actual injection, the tubing-casing annular pressure shall be at least 50 psig greater than the well's actual operating surface injection pressure.
- d. The conditions of Order Items 6.b and 6.c above do not apply during well workovers, well maintenance, or well remedial work approved by the Secretary as contemplated by LAC 43:XVII.3621.A.5 and LAC:XVII.3625.A.2, or for time periods of less than four consecutive hours where well mechanical integrity is not determined to be lacking and timely action is taken to correct pressure fluctuations.
- e. GCS shall thoroughly investigate and take timely action to address all fluctuations below the minimum annular pressure requirements, except as noted in Order Item 6.d. GCS shall include an attachment to the Form UIC-61 submission that details the total time duration and cause of each pressure deviation below the minimum, and the action taken to comply with the minimum annular pressure requirements.
- f. GCS shall maintain a strict accounting of fluid that is added to or removed from the annulus. The values shall be reported on the Class VI Quarterly Report.
- g. All continuous monitoring records, including calibration and maintenance records and all original digital recordings, shall be retained by GCS for a minimum of three (3) years from the date of the measurement, in accordance with LAC 43:XVII.3625.B.2.a, subject to extension at the request of the Secretary.

#### 7. Alarm and Automatic Shutdown Systems

- a. GCS shall install, test, and maintain alarms and automatic surface shut-off valves or, at the discretion of the Secretary, down-hole shut-off systems (e.g., automatic shut-off, check valves) or, other mechanical devices that provide equivalent protection designed to actuate on exceedance of operating parameters such as injection pressure, annulus pressure differential, or any other parameter specified in this Order.
- b. If a shutdown (i.e., down-hole or at the surface) is triggered or evidence of a loss of mechanical integrity is discovered, GCS must immediately investigate and identify as expeditiously as possible the cause of the shutoff or the evidence of a loss of mechanical integrity. If, upon such investigation, the well is lacking mechanical integrity, or if monitored well parameters indicate that the well may be lacking mechanical integrity, GCS must:
  - i. Immediately cease injection;
  - ii. Take all steps reasonably necessary to determine whether there may have been a release of the injected carbon dioxide stream or formation fluids into any unauthorized zone;
  - iii. Notify the Secretary within 24 hours;
  - iv. Restore and demonstrate mechanical integrity to the satisfaction of the Secretary prior to resuming injection; and
  - v. Notify the Secretary when injection can be expected to resume.
- c. All emergency shutdown systems shall be fail-safe. GCS shall function-test all critical systems of control and safety at least once every six months. This includes testing of alarms, test tripping of emergency shutdown valves ensuring their closure times are within design specifications, and ensuring the integrity of all electrical, pneumatic, and hydraulic circuits. Test dates and results shall be documented and be available for inspection by an agent of C&E.

8. GCS shall report to the Secretary any noncompliance which may endanger health or the environment including but not limited to those occurrences listed in a-e below. Any information pertinent to the noncompliance shall be reported by telephone at (225) 342-5515 within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances and shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the non-compliance.
  - a. Any evidence that the injected carbon dioxide stream or associated pressure front may cause an endangerment to the USDW;
  - b. Any noncompliance with a permit condition or malfunction of the injection system, which may cause fluid migration out of the injection zone or into or between USDWs;
  - c. Any triggering of a shut-off system, either downhole or at surface;
  - d. Any release of carbon dioxide to the atmosphere or biosphere indicated by any of the monitoring technologies required by Statewide Order No. 29-N-6 (LAC 43:XVII.3625) or the Testing and Monitoring Plan; and
  - e. Any failure to maintain mechanical integrity.
9. Well Mechanical Integrity and Injection Reservoir Testing Requirements After Well Construction
  - a. GCS shall perform an annulus pressure test at least once every 12 months witnessed by an agent of C&E, and after performing any well remedial work.
  - b. GCS shall perform an approved test method at least once every 12 months to determine the absence of significant fluid movement.
  - c. GCS shall conduct annual pressure fall-off testing on each active Class VI injection well for the first three (3) years following commencement of injection. GCS shall also conduct a pressure fall-off test on each active Class VI injection well in the fifth (5th) year following commencement of injection, to coincide with and support the area of review reevaluation required under LAC 43:XVII.3615.C.2. After completion of the year-five (5) fall-off test, GCS may petition the Secretary of C&E in writing, supported by then-current monitoring and operational data, to revert to the five-year frequency established by Statewide Order No. 29-N-6 (LAC 43:XVII.3625.A.6). The five-year frequency shall apply only upon written approval by the Secretary of C&E. Additional pressure fall-off testing, computational model updates, and AOR reevaluation shall be required if continuous bottomhole pressure data, injection-rate-normalized pressure trends, fall-off test results, or any other monitoring data indicate material deviation from modeled reservoir performance — as defined in the approved Testing and Monitoring Plan — including but not limited to:
    - i. pressure buildup exceeding modeled predictions;
    - ii. pressure dissipation slower than modeled;
    - iii. evidence of boundary effects, compartmentalization, or reduced transmissivity;
    - iv. pressure-front migration inconsistent with the approved AOR;
    - v. exceedance of an approved operating pressure threshold; or
    - vi. other information indicating that the approved model may no longer adequately represent reservoir behavior.

The pressure fall-off testing frequency established in this Order Item is predicated on the computational modeling presented by GCS for the permit to construct and is subject to modification by the Secretary. As part of the pre-operating requirements of Statewide Order No. 29-N-6 (LAC 43:XVII.3619), GCS shall submit for the Secretary's review and approval, prior to authorization to inject, the final AOR based on modeling and any associated computational model updates developed from the site-specific data obtained during well logging, coring, and testing. Following the review of the submitted pre-operating requirements, including the final AOR, the Secretary may revise the fall off testing frequency required by this Order Item as deemed necessary.

- d. GCS shall perform a casing inspection log to determine the presence or absence of corrosion in the long-string casing as required by Statewide Order No. 29-N-6 (LAC 43:XVII.3627.A.4). The Secretary may require casing inspection logs following workovers or whenever deemed necessary to evaluate the condition of the well.
  - e. The Secretary may require other tests to evaluate mechanical integrity.
10. GCS shall review the Testing and Monitoring Plan at least once every five years in accordance with Statewide Order No. 29-N-6 (LAC 43:XVII.3625.A.10). Based on this review, GCS shall submit an amended Testing and Monitoring Plan or demonstrate to the Secretary that no amendment to the Testing and Monitoring Plan is needed. Amended plans or demonstrations shall be submitted to the Secretary as follows:
- a. Within one year of an AOR reevaluation;
  - b. Following any significant changes to the facility, such as addition of monitoring wells or newly permitted injection wells within the AOR, on a schedule determined by the Secretary; or
  - c. When required by the Secretary.

#### 11. Carbon Dioxide Stream Analysis

- a. Prior to issuance of a permit to inject, GCS shall perform a detailed analysis of the carbon dioxide stream sufficient to characterize its chemical and physical composition in accordance with the pre-operational and testing requirements of Statewide Order No. 29-N-6 (LAC 43:XVII.3619 and 3625.A.1). The results of such analysis shall be submitted to the Secretary for review and approval prior to commencement of injection.
- b. GCS shall analyze the carbon dioxide stream on a quarterly basis in order to yield data representative of its chemical and physical characteristics in accordance with Statewide Order No. 29-N-6 (LAC 43:XVII.3625.A.1). The injection stream has been identified as including the following constituents at these relative concentrations in Table 3:

Carbon Dioxide (CO <sub>2</sub> )	> 97% vol
Total non-condensable gases	< 3% vol
Oxygen (O <sub>2</sub> )	< 10 ppmv
Methane (CH <sub>4</sub> )	< 1.5% vol
Nitrogen (N <sub>2</sub> ), Argon (Ar), Hydrogen (H <sub>2</sub> ), Carbon Monoxide (CO), and Ethane (C <sub>2</sub> H <sub>6</sub> )	< 1.5% vol
Water (H <sub>2</sub> O)	< 100 ppmv
Hydrogen Sulfide (H <sub>2</sub> S)	< 15 ppmv
Mercury (Hg)	< 1 ppbv

Table 3

- c. GCS shall report the maximum fluctuation in relative concentration for each constituent quarterly using Form UIC-61 or subsequent form. Substantial fluctuations in relative concentrations of the injection steam constituents may result in the amendment of permit conditions by the Secretary.

#### 12. Carbon Dioxide Plume and Pressure Front Tracking

- a. GCS shall utilize the direct and indirect methods identified in the Testing and Monitoring Plan to detect potential vertical fluid migration around the wellbore and shall notify the Secretary within 24 hours of detecting fluid migration outside the permitted injection zone.
- b. GCS shall utilize the direct and indirect methods identified in the Testing and Monitoring Plan to collect dynamic data from the injection zones including but not limited to: pressure, temperature, carbon dioxide saturation distribution, and permeability in order to calibrate the AOR model.
- c. GCS shall utilize the direct and indirect methods identified in the Testing and Monitoring Plan to track the extent of the carbon dioxide plume.

13. GCS shall submit the appropriate work permit request form (Form UIC-17 or successor document) to C&E for approval before well recompletion, any workover, well/formation stimulation, well cleanout, injection reservoir test, or other well maintenance.

14. GCS shall maintain current and up-to-date documentation of financial responsibility acceptable to C&E

to fulfill the requirements of corrective action, closure (plug and abandon), post-injection site care and site closure, and emergency and remedial response as required by Statewide Order No. 29-N-6 (LAC 43:XVII.3609.C).

15. GCS shall allow entry into and inspection of the permitted facility by C&E personnel as prescribed in La R.S. 30:1104.
16. Except as to the extent supplemented by these Findings and Order, the provisions of Statewide Order No. 29-N-6 (LAC 43:XVII, Subpart 6) of C&E shall apply to the operation of the wells in particular the Legal Permit Conditions of Statewide Order No. 29-N-6 (LAC 43:XVII.3609).
17. GCS shall refer to Statewide Order No. 29-N-7 (LAC 43:XVII.Chapter 38) or any subsequent Order or Act for regulatory fees and fee schedule associated with the operation of the Class VI injection wells.
18. GCS shall comply with the notification requirements of LAC 43:XVII.3611.J within 30 days of permit approval.
19. This Order is granted exclusively unto GCS for Minerva South CCS Well No. 001 (Serial Number XXXXXX) and Minerva South CCS Well No. 002 (Serial Number XXXXXX). The decisions rendered by and through this Order shall establish no precedence on similar proposals for any other existing or future Class VI injection well, operation, or project at this or other sites under the jurisdiction of C&E.
20. The decision to issue this Order was preceded by a determination made on the record as a whole that the proposal to drill, construct, and operate Minerva South CCS Well No. 001 (Serial Number XXXXXX) and Minerva South CCS Well No. 002 (Serial Number XXXXXX), as set forth in the application and this Order is reasonable, is justified by the particular circumstances, is consistent with the intent of applicable regulations and laws of the State of Louisiana regarding physical and environmental safety and the prevention of waste, is proposed in a way that will ensure protection of the State's natural resources, and is consistent with protection of the health, safety, and welfare of the people.
21. This Order is subject to modification, revocation and reissuance, or termination upon receipt and review by this Office of future mechanical integrity test data or any information or data that would show the conditions by which this Order was issued are no longer valid.
22. The Findings of Fact set forth herein are hereby approved, adopted, and incorporated into this Order.
23. This Order shall be effective on and after Month Day, Year, and shall be valid for the operating life of the facility and the post-injection site care period, unless modified, revoked and reissued, or terminated by the Secretary in accordance with applicable laws and regulations. The Secretary may modify, revoke and reissue, terminate, or require minor modifications to this Order at any time as authorized under Statewide Order No. 29-N-6 (LAC 43:XVII). The Secretary shall review this Order at least once every five years to determine whether it should be modified, revoked and reissued, terminated, or a minor modification made.

**BY ORDER OF:**

**DUSTIN H. DAVIDSON  
DEPARTMENT OF CONSERVATION AND ENERGY**

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**KEITH LOVELL  
OFFICE OF PERMITTING AND COMPLIANCE**