

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

**IN THE MATTER OF THE HEARING CALLED BY
THE OIL CONSERVATION DIVISION FOR THE
PURPOSE OF CONSIDERING:**

**APPLICATION OF GOODNIGHT PERMIAN MIDSTREAM,
LLC FOR APPROVAL OF A SALTWATER DISPOSAL WELL,
LEA COUNTY, NEW MEXICO.**

**CASE NO. 22626
ORDER NO. R-22869-A**

ORDER OF THE DIVISION

This case came in for hearing before the Oil Conservation Division (“OCD”) at 8:15 a.m. on September 15, 2022, in Santa Fe, New Mexico.

The OCD Director, having considered the testimony, the record, the recommendations of Hearing Examiner Phillip R. Goetze, these findings of fact, and conclusions of law issues this Order.

FINDINGS

1. Due public notice has been given, and the OCD has jurisdiction of this case and the subject matter.
2. Goodnight Midstream Permian, LLC (“Applicant” or “Goodnight”) seeks authority to for its proposed Piazza Well No. 1 (API No. 30-025-pending; “Proposed Well”), to be located 1847 feet from the South line and 2537 feet from the West line (Unit K) of Section 9, Township 21 South, Range 36 East, NMPM, Lea County, New Mexico, as an Underground Injection Control (“UIC”) Class II well for commercial disposal of produced water into the San Andres formation from approximately 4125 feet to 5400 feet below surface.
3. Applicant submitted a Form C-108 application (Administrative Application No. pBL2126055537; designated administrative order SWD-2458) on September 17, 2021, for authority to inject into the Proposed Well.
4. The OCD received on September 22, 2021, a formal written notice by Empire New Mexico, LLC (“Protestant” or “Empire”) protesting the application.

5. On March 4, 2022, Goodnight filed an application for hearing for approval of the Proposed Well for disposal of produced water. Subsequently, Empire filed an entry of appearance for this application on March 5, 2022, followed by an objection to the case being conducted by affidavit on March 31, 2022.

6. Following a status conference on April 7, 2022, the OCD Examiner [William Brancard] issued a pre-hearing order which detailed the evidentiary requirements for the hearing and set the hearing date for June 16, 2022.

7. Between the issuance of the OCD Pre-hearing Order and the final hearing on September 15, 2022, the Applicant and Protestant filed the following motions and results by the OCD:

a. OCD issued a Subpoena on May 16, 2022, requiring Empire to provide specific records and information regarding the Eunice Monument South Unit (“EMSU” or “Unit”).

b. OCD issued a second Subpoena on June 6, 2022, requiring Empire to provide specific records and information identified in the first Subpoena but with a new enforcement date of June 9, 2022.

c. A motion hearing on June 16, 2022, oral arguments were presented by both parties to OCD Examiner addressing a Motion to Dismiss filed by Empire on June 7, 2022, along with an Opposed Motion for Continuance.

d. At the same hearing on June 16, 2022, oral arguments were presented by both parties addressing a Motion to Quash Subpoena filed by Empire on June 7, 2022. On July 26, 2022, the OCD issued an Order denying the motion but did modify the conditions of the Subpoena including a revised compliance date of August 25, 2022.

e. A second Pre-Hearing Order was issued following the motion hearing which scheduled an evidentiary hearing in this case for September 15, 2022.

f. On August 24, 2022, the OCD Examiner issued an order on Motion to Dismiss by Empire. The Motion to Dismiss was denied and the scheduled hearing remained in effect.

g. Protestant filed a Motion for Leave to File Late Exhibits and Testimony. On September 12, 2022, Goodnight filed a separate response in opposition to the Motion for Leave along with a Motion in Limine to Exclude Evidence and Testimony regarding the late submittal of the witness testimony and exhibits. At the evidentiary hearing on September 15, 2022, the OCD Examiner heard arguments from both parties and, though expressed disappointment with the late submittal of the exhibits by Empire, allowed the entry of the exhibits into the record while denying the Motion in Limine to Exclude.

8. On June 20, 2022, Goodnight filed a Supplemental Legal Memorandum in response to the OCD Examiner’s statement that a significant issue “*is whether statutory unitization precludes the Division from authorizing injection for disposal, unrelated to unit operations, within a formation*”

included within the vertical limits of a statutory unit". The Memorandum summarizes the following arguments:

- a. The Statutory Unitization Act limits the Division's authority to unitize only underground hydrocarbon reservoirs or pools;
- b. Order No. R-7765 must be read in harmony with the Division's authority to unitize only a pool or part of a pool;
- c. Unitization of the San Andres aquifer conflicts with the New Mexico Constitution; and
- d. Because the Act does not preclude injection into the San Andres formation, the Division must decide Goodnight's application on its merits.

9. On September 8, 2022, Goodnight filed a pre-hearing statement with the following conclusions based on the evidence and testimony filed concurrently:

- a. That the proposed San Andres injection interval does not have a history of hydrocarbon production and is not prospective for hydrocarbon development;
- b. That injection into the San Andres interval would not migrate out the approved zone which would impair correlative rights and cause waste; and
- c. That approval of the San Andres injection interval would not interfere with the waterflood operations of the EMSU.

10. Empire also filed a pre-hearing statement with the following conclusions based on the evidence and testimony filed concurrently:

- a. Applicant does not have a working interest or any other interest in the EMSU which would allow it to operate a commercial UIC Class II disposal well within the vertical and horizontal limits of the Unit;
- b. Location and operation of the Proposed Well with respect to Empire's EMSU Well No. 200H, an active production well, will damage the production of this well; and
- c. Protestant is studying new oil recovery trends of the San Andres formation in this area and the potential to implement new practices for development of these trends.

11. At hearing on September 15, 2022, Goodnight, through counsel, provided exhibits and testimony at hearing in support of the approval of the injection authority for the Proposed Well.

- a. Applicant proposed an injection interval within the San Andres formation between 4,125 feet and 5,400 feet with the Proposed Well operating at a maximum surface injection

pressure of 825 pounds per square inch and an estimated daily injection rate of 25,000 barrels of water per day (“BWPD”).

b. The Proposed Well is to be completed using a two-string casing design: 13³/₈-inch surface casing set at 1,445 feet and 9⁵/₈-inch production casing set at 5,470 feet; both casings completed with cement circulated to surface. Tubing is to be internally coated and have a diameter of 5¹/₂-inch or less set with a Baker Hornet packer at approximately 4,100 feet. Perforations for injection are to be between 4,125 feet and 5,400 feet.

c. Applicant states the proposed injection interval is defined by an upper confining layer composed of low-permeable lithologic barrier at the top of the San Andres formation and a lower confining layer defined by the Glorieta formation. Applicant states that the proposed injection interval is sufficiently isolated as not to impact either deeper producing interval or shallower intervals with development through secondary recovery.

d. The proposed injection interval is characterized as depleted reservoir requiring very low injection pressure with some disposal wells demonstrating the ability to inject 28,000 to 35,000 BWPD using only gravity as the injection pressure. Applicant attributes this reservoir condition to the withdrawal of a significant volume of San Andres formation water for use in the EMSU waterflood.

e. Applicant identified three (3) wells out of total of 24 wells that penetrated the proposed injection interval within the one-half mile Area of Review (AOR) of the surface location of the Proposed Well. Two of these wells are active. The Applicant stated the completion information indicates the three wells are properly cased and cemented to prevent vertical migration of injection fluids.

f. Applicant identified nine (9) points of diversion listed in the New Mexico Water Rights Reporting System database that are within one mile of the surface location of the Proposed Well. Of the nine locations, two wells were sampled for this application while another four wells were sampled for other Form C-108 applications in this area.

g. The analyses of produced water samples provided by Applicant indicates that injection fluids contained significantly higher total dissolved solids concentrations than those values provided for the existing formation fluids in the proposed disposal interval.

h. Applicant stated that the Proposed Well is to be part of their “Llano system” which currently is comprised of 80 miles of pipelines, six recycling/re-use facilities, and nine approved UIC Class II disposal wells. The disposal wells were approved for injection into either the San Andres or Glorieta formations with some of the wells having a combination of these two formations as injection intervals.

i. Applicant identified the EMSU Well No. 200H (API No. 30-025-04492) as being completed only in the Grayburg formation and stated its production has not been impacted by

injection operations that were closer and had been operating for a significant amount of time prior to the submittal of the application for the Proposed Well.

j. Based on its own evaluation, Applicant asserted that the potential for hydrocarbon development of the San Andres formation in this area was not supported by any significant show of hydrocarbons in the vast volume of water produced for the EMSU waterflood operation. Additionally, Applicant stated that the formation was no longer a candidate for development as a Residual Oil Zone (“ROZ”) due to the effects of water production that have altered and degraded the original reservoir conditions.

12. At the same September hearing, Empire appeared through counsel and provided exhibits and testimony regarding the potential impacts on the EMSU with the approval of the Proposed Well.

a. Protestant stated the EMSU was acquired in 2021 with the intent of renewing the operation of the waterflood to increase the performance of the Unit and to assess the entire Unitized Interval for additional hydrocarbon potential. Empire did not provide a plan of development for this project at hearing.

b. Empire exhibits included a recent prospectus by the previous unit operator for renewal of the current waterflood operation and expansion. Protestant also noted that the prior unit operator required an override on production as a condition of the sale.

c. Empire stated that it was assessing the potential of ROZ occurrences which would include the San Andres formation but did not provide any specific details at hearing.

d. Empire maintained that the geologic parameters of the San Andres formation and the current reservoir conditions of the waterflood unit are not fully characterized and that disposal into the Unitized Interval would degrade any future efforts for an increased recovery of the remaining oil in place.

13. NGL Water Solutions Permian, LLC filed an entry of appearance but did not oppose the application at hearing. No other party appeared at hearing or otherwise opposed the granting of this application.

14. Following the hearing of the case in September and prior to an order being issued by the OCD Director, three additional motions were filed by the parties in this case.

a. Goodnight filed a Motion to Compel on November 3, 2022, regarding EMSU Well No. 462 and the required filing of the completion report for well. Empire did not respond to the motion.

b. On January 10, 2023, Goodnight filed a Motion to Withhold Allowable for the EMSU No. 462 contending Empire was noncompliant with OCD rule on the proper filing of Form C-105 for this well thus requiring the OCD to withhold the allowable for the well.

c. The OCD issued an Order dated January 23, 2023, approving the Motion to Compel by ordering Empire to provide the well information within 15 days or provide a sworn statement that all records for this well have been provided. In the same Order, the Motion to Withhold was denied by the OCD Examiner and later became the subject matter for a separate case, Case No. 23775.

d. On August 25, 2023, Empire filed a Motion to Stay Issuance of Order citing that four pending cases involving protested disposal well applications by Goodnight in the same area should be considered in conjunction with Case No. 22626. Empire contended that the technical evaluation for the pending cases was relevant to Case No. 22626 and that a single order should be issued only after considering the evidence of the pending cases. Goodnight filed a response in opposition to the motion. Subsequently, OCD issued Order No. R-22869 dated September 8, 2023, which denied the Motion to Stay.

CONCLUSIONS OF LAW

1. Applicant provided the information required by 19.15.26 NMAC and the Form C-108 for an application to inject produced water into a Class II UIC well.

2. Applicant complied with the notice requirements of 19.15.4 NMAC.

3. Empire entered an appearance and pre-hearing statement for the case in a proper and timely manner.

4. On November 7 and 8, 1984, the Oil Conservation Commission (“OCC”) heard consolidated Cases No. 8397, No. 8398 and No. 8399 which established the EMSU and the parameters under which the Unit was to operate.

a. Case No. 8397 was an application for statutory unitization of the EMSU and was approved as Commission Order No. R-7765.

b. Case No. 8398 was an application for the waterflood project and operation which was approved as Commission Order No. R-7766.

c. Case No. 8399 was an application for pool extension and contraction for the EMSU which was approved as Commission Order No. R-7767.

5. On December 27, 1984, Commission Order No. R-7765 established the EMSU with the vertical limits including the San Andres formation (Ordering Paragraph (3)). Concurrently, Commission Order No. R-7766 also included the San Andres formation as part of the Unitized Interval (or “Unitized Formation”). Finally, Ordering Paragraphs (1) and (2) of Commission Order No. R-7767 realigned the vertical limits for the shallower Eumont Gas Pool and the deeper Eunice Monument Oil pool [Eunice Monument Grayburg-San Andres pool; pool code 23000]. This

separate order on nomenclature changes also reaffirmed that the lower limit of the Eunice Monument Oil pool as the base of the San Andres formation.

6. The Commission approved the inclusion of the San Andres formation in the Unitized Interval based on the Technical Committee findings presented in the hearing for the consolidated cases. The Technical Committee Report (*Proposed Eunice Monument South Unit, Lea County, New Mexico* dated April 1983; "Report") concluded that the southern portion of the Eunice Monument Oil pool should be unitized and a waterflood initiated. The Report further recommended "*The unitized interval shall include the formations from a lower limit defined by the base of the San Andres formation, to an upper limit defined by the top of the Grayburg formation or a -100 foot subsea datum, whichever is higher.*" [Recommendations and page 43]

In the Facility Design section of the Report, the Technical Committee described the following sources of water for use in the operation of the waterflood:

"The total water requirement will be provided by reinjection of produced water, and from make-up water provided by nine San Andres supply wells. For this cost estimate, the assumption was made that new water supply wells would be drilled; however there is a possibility that existing wellbores may be available which could be purchased and completed in the San Andres." [Page 29]

The economic evaluation presented in the Report for a waterflood operation in this area of the Eunice Monument Oil pool included the use of formation water of the San Andres to supplement the fluid volumes required to successfully conduct the secondary recovery project. Additionally, the testimony for the consolidated cases emphasized that the San Andres formation water were compatible for use as supplemental injection (or "make-up") water for the waterflood operation.

7. Chevron USA, Incorporated, as subsequent Unit operator of the EMSU, expanded the use of San Andres formation waters for the waterflood operation with the completion and operation of six (6) water supply wells. The volume of formation water produced from these wells for use in the waterflood was estimated at approximately 348 million barrels.

8. The same Unitized Interval (with the San Andres formation included) was later presented in the testimony for Case No. 10253 which resulted in Order No. R-9494 for the approval of the North Monument Grayburg-San Andres Unit. From the hearing transcript dated April 4, 1991 [Pages 25 and 26], the testimony of the Amerada Hess expert summarized the reasons for the inclusion of the formation:

Question: Now does Amerada Hess propose to interject both the Grayburg and the San Andres?

Answer: We propose to inject into the Grayburg formation. The primary target for this injection are the lower two zones, Zones 3 and 3C.

Question: Why is the San Andres included in this application?

Answer: The San Andres is included for three reasons: Number one, the San Andres may be a source of water for the injection. Number two, there is potential for tertiary production from the San Andres. And thirdly, this interval is comparable to the unitized intervals in the Eunice Monument South.

9. The approval of both Statutory Units with the inclusion of the San Andres formation in the Unitized Interval is consistent with the OCC recognition of this formation as critical element for a successful waterflood operation and for the potential of undeveloped hydrocarbon resources. This approval is concordant with the authority provided to the OCC under the provisions of NMSA 1978, §70-7-7(J) which states that the Division order providing for unitization and unit operation of a pool or part of a pool shall include “*such additional provisions as are found to be appropriate for carrying on the unit operations and for the protection of correlative rights and the prevention of waste.*”

10. Applicant’s proposed operation for the Proposed Well would expand the use of the San Andres formation as a disposal interval. Approval of the Proposed Well with the injection of UIC Class II fluids into the Unitized Interval would encroach towards the northeast and the interior of the EMSU and the use of the San Andres formation as a compatible source of make-up water for waterflood operations.

11. Empire has provided sufficient evidence for continued assessment of the Unitized Interval for potential recovery of any additional hydrocarbon resources remaining in place. Approval of the Proposed Well would contradict the responsibility of the OCD “*to prevent the drowning by water of any stratum or part thereof capable of producing oil or gas or both oil and gas in paying quantities and to prevent the premature and irregular encroachment of water or any other kind of water encroachment that reduces or tends to reduce the total ultimate recovery of crude petroleum oil or gas or both oil and gas from any pool.*”

IT IS THEREFORE ORDERED THAT:

1. The application of Goodnight Midstream Permian, LLC for authority to inject produced water into the San Andres formation using the proposed Piazza SWD Well No. 1 as a UIC Class II disposal well is hereby **denied**.

2. Empire New Mexico, LLC, as the unit operator of the Eunice Monument South Unit, shall comply with Commission Order No. R-7766, Ordering Paragraph (8) and reinstitute submitting monthly reports for the waterflood project. The unit operator shall provide these reports to OCD through the OCD Engineering e-mail (ocd.engineer@emnr.dnm.gov) with electronic copies also provided to the New Mexico State Land Office (“NMSLO”) and the appropriate office of the Bureau of Land Management. OCD shall have the authority without hearing to reduce the reporting frequency to biannual two years after the approval of this order. Additionally, Empire shall provide a copy of any Plans of Operation and/or Plans of Development that are annually submitted to the NMSLO for this Unit.

3. Jurisdiction is retained by the OCD for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh or protectable waters or (2) consistent with the requirements in this order; whereupon the OCD may, after notice and hearing or prior to notice and hearing in event of an emergency, terminate the disposal authority granted herein.



DYLAN M. FUGE
DIRECTOR (Acting)

Date: 11/29/23

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