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

APPLICATION OF GOODNIGHT MIDSTREAM PERMIAN, LLC FOR APPROVAL OF SALTWATER DISPOSAL WELLS LEA COUNTY, NEW MEXICO **CASE NOS. 24123**

APPLICATIONS OF GOODNIGHT MIDSTREAM PERMIAN, LLC FOR APPROVAL OF SALTWATER DISPOSAL WELLS LEA COUNTY, NEW MEXICO **CASE NOS. 23614-23617**

APPLICATION OF GOODNIGHT MIDSTREAM PERMIAN LLC TO AMEND ORDER NO. R-22026/SWD-2403 TO INCREASE THE APPROVED INJECTION RATE IN ITS ANDRE DAWSON SWD #1, LEA COUNTY, NEW MEXICO. **CASE NO. 23775**

APPLICATIONS OF EMPIRE NEW MEXICO LLC TO REVOKE INJECTION AUTHORITY, LEA COUNTY, NEW MEXICO **CASE NOS. 24018-24027**

GOODNIGHT MIDSTREAM'S MOTION TO COMPEL

Goodnight Midstream Permian, LLC ("Goodnight Midstream"), through undersigned counsel, respectfully moves the Commission to issue an order compelling Empire New Mexico LLC to produce documents responsive to Commission subpoenas and the Prehearing Order issued in these consolidated cases requiring parties and witnesses to produce documents that are relied on or referenced in witness testimony. For the reasons stated herein, the Motion should be granted.

I. ARGUMENT

A. Empire's "Evaluation File" Reflecting Empire's Diligence and Analysis of ROZ Potential in the EMSU

In Goodnight's Fourth Subpoena for Documents (served after formal issuance on January 10, 2025), attached as **Exhibit A**, in Request No. 6 Goodnight seeks "Empire's EMSU evaluation file, including but not limited to all documents and communications relating to Empire's due diligence leading up to the purchase of the EMSU and all documents provided to Empire by XTO." This request was based in part on Empire's presentation of a document titled "Executive Summary—Eunice Assets" as an exhibit in Division Case No. 22626 (the "Piazza case") that was provided as part of the sale of the EMSU. *See* **Exhibit B**. That exhibit established that XTO created a "data room" for Empire containing information, data, and documents relating to the EMSU and claimed potential for residual oil zone development as part of the marketing for the property. Goodnight had previously requested all documents XTO provided to Empire through the data room in its Third Subpoena for documents (Request No. 7). *See* **Exhibit C**. Empire did not object to that request but stated that "Empire has conducted a diligent and thorough search of the records within its possession, custody, or control and discovered no responsive documents." *Id.*

In Empire's Rule 30(b)(6) deposition, Goodnight learned that as part of Empire's diligence prior to purchasing the EMSU Empire prepared an "evaluation file" as part of its assessment of a potential purchase. *See* Depo. Rule 30(b)(6), attached as **Exhibit D**, Tr. 18:19-19:13 (stating that there are "evaluation files" that would "have information going to the purchase of [the EMSU]"). Goodnight also learned that XTO made "presentations" on the "potential for ROZ in the San Andres[.]" *See id.*

But rather than produce all documents responsive to Goodnight's Request No. 6 in its Fourth Subpoena, Empire raises unstated and vague objections, asserts it had previously objected to a related request—it did not—and apparently is withholding additional responsive documents on the basis of those undefined and unsupported objections. While Empire produced 11 responsive documents on January 13, 2025, it is apparent that Empire is withholding additional responsive documents based on its objections. Empire previously stated it had conducted a "diligent and thorough search" for responsive documents and found nothing. *See* Exhibit C. Then, following the 30(b)(6) deposition after the admission that an evaluation file exists, Empire was forced to produce some documents, but has done so only reluctantly and subject to an unsupported and baseless objection. Among the 11 documents produced are internal reserve estimates that should have been produced months ago under the Commission's amended order requiring production of reserves reports. At best, this demonstrates Empire's unwillingness to take its discovery obligations seriously; at worse, it reflects something far more problematic.

The documents requested are clearly relevant—they include XTO's presentations on the potential for an ROZ and, most importantly, Empire's contemporaneous evaluation of the EMSU—and should be produced.

B. Documents and Data Nutech Relied on to Validate Input Parameters and Log Interpretations

Under the Prehearing Order in these consolidated cases, the parties were required to provide copies of documents "that are (1) within the respective party's possession, custody, or control, (2) upon which each party (including their witnesses) relied in preparation for the merits hearing, and (3) referenced in the testimony and exhibits within one week of a request for such documents, without a subpoena." Empire and Goodnight each requested the other to produce

documents required under this provision. On the agreement of the parties, those documents were produced on September 17, 2024. However, not all the documents required to be produced by Empire were produced. In particular, Empire has not provided the wells and data its petrophysics expert with Nutech Energy Alliance, Mr. Galen Dillewyn, relied on to validate the input parameters and interpretations he generated from Nutech's petrophysical model.

Goodnight has specifically requested this information, and Empire has stated it has requested it from Nutech. *See* **Exhibit E**. In particular, Empire should provide the data and information Nutech used to validate the "RW" values in Nutech's petrophysical model, the wells and data used to validate the porosity and permeability ranges Empire provided Nutech, and the regional well data used by Nutech in Mr. Dillewyn's analysis to validate the petrophysical data. *See generally*, **Exhibit F**, Depo. G. Dillewyn (highlighting).

This information should have been provided with the other documents and data relied on and referenced by the parties' experts on September 17, 2024. While Empire states it has requested this information from Nutech, it still has not been provided. The Commission should issue an order compelling Empire to produce the requested information.

C. Nutech's RR Bell #4 Well Log Interpretation and Analysis

Under the Prehearing Order in these consolidated cases, the parties were required to provide copies of documents "that are (1) within the respective party's possession, custody, or control, (2) upon which each party (including their witnesses) relied in preparation for the merits hearing, and (3) referenced in the testimony and exhibits within one week of a request for such documents, without a subpoena." Empire and Goodnight each requested the other to produce documents required under this provision. On the agreement of the parties, those documents were

produced on September 17, 2024. However, not all the documents required to be produced by Empire were produced. In particular, Empire has not provided Nutech's log analysis for the R.R. Bell #4 well, which Nutech relies on to validate the M and N values Nutech used in its analysis. *See* **Exhibit E**, Tr. 236:17-25.

Goodnight has specifically requested this information. *See* **Exhibit F**. Instead of providing it, Empire has directed Goodnight to request the information directly from Nutech. *See id*. Empire should be required to produce the interpreted logs under the terms of the Prehearing Order. It should have been provided with the other documents and data relied on and referenced by the parties' experts on September 17, 2024. The Commission should issue an order compelling Empire to produce the requested information.

D. Documents and Data Reflecting Empire's Plans to Drill New San Andres Wells.

In Goodnight's Fourth Subpoena for Documents (served after formal issuance on January 10, 2025), attached as **Exhibit A**, in Request No. 7 Goodnight seeks "All documents and data, including draft or final authorizations for expenditure, and communications or correspondence of any kind, including to/from EMSU working interest owners, relating to proposed new wells targeting the San Andres formation within the EMSU."

This request was based in part on the deposition testimony of Empire witness William West. He testified that Empire has prepared applications for permit to drill four different wells to the base of the San Andres formation to potential test that formation. He testified that Empire has draft authorizations for expenditures ("AFEs") and is in the process of trying to figure out what types of tests and analyses to do in the proposed wells. *See* **Exhibit G**. In its response, Empire stated that it did not locate any responsive information but it in fact produced four documents

(plats for two proposed wells, one approved APD, and a map showing potential candidates for deepening to the San Andres).

The draft AFEs referred to in Mr. West's testimony are relevant and should be produced. Empire did not object to this request. The AFEs will reflect Empire's estimate for the cost to drill wells to the San Andres. The draft AFEs are highly relevant and clearly responsive. Empire has prepared an economic model that includes estimated well costs and has testified that it assumes approximately 75% of the wells needed for a San Andres ROZ development will be required to be new drills. Goodnight has a right to see whether Empire's AFEs are in line with its economic analysis. In addition, Mr. West testified that Empire is evaluating potential well tests and analyses to evaluate the San Andres formation. It is unlikely Empire has no additional documents, data, analyses, or memoranda that discuss or relate to their plans to drill new San Andres wells. It appears additional responsive documents have not been produced that should have been. The Commission should issue an order compelling Empire to produce the requested information.

CONCLUSION

For the reasons stated, Goodnight's Motion should be granted and the Commission should issue an order compelling Empire to produce all responsive documents.

DATED: January 24, 2025

Respectfully submitted,

HOLLAND & HART LLP

/s/ Adam G. Rankin
By: _____

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CERTIFICATE OF SERVICE

I hereby certify that on January 24, 2025, I served a copy of the foregoing document to the following counsel of record via Electronic Mail to:

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EXHIBIT A

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

APPLICATION OF GOODNIGHT MIDSTREAM PERMIAN, LLC TO AMEND ORDER NO. R-7765 AS AMENDED TO EXCLUDE THE SAN ANDRES FORMATION FROM THE UNITIZED INTERVAL OF THE EUNICE MONUMENT SOUTH UNIT, LEA COUNTY, NEW MEXICO.	**CASE NO. 24278**
APPLICATION OF GOODNIGHT MIDSTREAM PERMIAN, LLC TO AMEND ORDER NO. R-7767 TO EXCLUDE THE SAN ANDRES FORMATION FROM THE EUNICE MONUMENT OIL POOL WITHIN THE EUNICE MONUMENT SOUTH UNIT AREA, LEA COUNTY, NEW MEXICO.	**CASE NO. 24277**
APPLICATIONS OF GOODNIGHT MIDSTREAM PERMIAN, LLC FOR APPROVAL OF SALTWATER DISPOSAL WELLS, LEA COUNTY, NEW MEXICO.	**CASE NOS. 23614-23617**
APPLICATIONS OF EMPIRE NEW MEXICO LLC TO REVOKE INJECTION AUTHORITY, LEA COUNTY, NEW MEXICO.	**CASE NOS. 24018-24027**
APPLICATION OF GOODNIGHT MIDSTREAM PERMIAN LLC TO AMEND ORDER NO. R-22024/SWD-2403 TO INCREASE THE APPROVED INJECTION RATE IN ITS ANDRE DAWSON SWD #1, LEA COUNTY, NEW MEXICO.	**CASE NO. 23775**
APPLICATION OF GOODNIGHT PERMIAN MIDSTREAM, LLC FOR APPROVAL OF A SALTWATER DISPOSAL WELL, LEA COUNTY, NEW MEXICO.	**CASE NO. 24123** **ORDER NO. R-22869-A**

EMPIRE NEW MEXICO LLC'S RESPONSE TO GOODNIGHT MIDSTREAM PERMIAN LLC'S FOURTH SUBPOENA DATED JANUARY 3, 2025

Empire New Mexico, LLC ("Empire") submits the following responses to the Subpoena issued on January 10, 2025 at the request of Goodnight Midstream Permian, LLC ("Goodnight"). A link to responsive documents is provided in the email transmitting this response.

1. **Request No. 1:** All documents and data relating to corrosion encountered in each of Empire's EMSU wells that Empire contends is caused in whole or in part by Goodnight's saltwater disposal. If already produced, cite to the documents by bates

Response: Empire objects to Request No. 1 as duplicative of Request Nos. 3 and 4 in Goodnight's Third Subpoena Dated July 2, 2024, *inter alia*. See Empire's responses and documents produced in response thereto, including but not limited to Bates #s OCD 23614-17 03538-3557. In addition, Empire produces additional documents that can be found in the link provided concurrently in the subfolder entitled "Item 1 – Corrosion" under "4th Subpoena" and in the subfolder entitled "Chemicals" under "10_Item for Goodnight JAN 2025→West."

2. **Request No. 2:** All documents and data relating to premature and irregular encroachment of water or any other kind of water encroachment that Empire contends reduces or will tend to reduce the total ultimate recovery of crude petroleum oil or gas or both from the Grayburg or San Andres formations that Empire contends is caused in whole or in part by Goodnight's saltwater disposal. If already produced, cite to the documents by bates.

Response: Empire objects to this request as vague, ambiguous, and overly broad because, for example, responsive documents include documents that are responsive to Requests Nos. 1 and 3 herein. Moreover, this request is duplicative of numerous previous discovery requests and previously produced documents, including but not limited to Bates #s OCD 23614-17-04508 and -5439. In further response, Empire fully incorporates its responses to Request Nos. 1 & 3

herein and responses to Goodnight's previous subpoenas, including but not limited to Request No. 6 in its September 22, 2023 Subpoena and Request No. 14 in its March 5, 2024 Subpoena. In an effort to ensure that Goodnight has any document that it believes may be remotely related to this request, Empire produces one additional document, which can be found in the subfolder entitled Item 2 – Water Encroachment.

3. **Request No. 3:** All water analyses performed for the EMSU from 2020 to the present, including but not limited to (1) produced water from Grayburg producers; (2) water injected into Grayburg waterflood injectors; (3) water injected into the EMSU SWD #1; and (4) water produced from any of the EMSU water supply wells. If already produced, cite to the documents by bates for each forgoing category.

Response: Empire objects to this request as duplicative of previous Goodnight requests, which include but may not be limited to Request Nos. 5 and 6 in Goodnight's March 2, 2024 Subpoena. Empire fully incorporates its responses to Goodnight's previous discovery requests relating to the same subject matter, including but not limited to the Water Samples produced unnumbered on December 4, 2024. In an effort to ensure that Goodnight has any document that it believes may be remotely related to this request, Empire produces additional documents that may be found in the subfolder entitled Item 3 – Water Analyses at the link provided concurrently.

4. **Request No. 4:** Updated daily water injection volumes and wellhead pressures for Empire's EMSU waterflood injection wells.

Response: Responsive information was produced and filed as Notice of Filing Verified Accounting of Waterflood Injections on January 14, 2024.

5. Request No. 5: All documents and data, including communications or correspondence of any kind, relating to skim oil produced or collected from any of the EMSU water supply wells.

Response: Empire has conducted a diligent and thorough search of the records within its possession, custody, or control and discovered no responsive documents or data.

6. Request No. 6: Empire's EMSU evaluation file, including but not limited to all documents and communications relating to Empire's due diligence leading up to the purchase of the EMSU and all documents provided to Empire by XTO.

Response: Empire objects to this request, which has been repeated numerous times, including but not limited to Request No. 7 in Goodnight's Subpoena issued July 2, 2024. Empire incorporates its responses thereto, as well as its response to Goodnight's other related requests. In an effort to ensure that Goodnight has any document that it believes may be remotely related to this request, Empire produces additional documents that may be found in the subfolder entitled Item 6 – EMSU Evaluation File. *See* Index.

7. Request No. 7: All documents and data, including draft or final authorizations for expenditure, and communications or correspondence of any kind, including to/from EMSU working interest owners, relating to proposed new wells targeting the San Andres formation within the EMSU.

Response: Empire has conducted a reasonable search and determined that no responsive documents exist.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served on the following by electronic mail on January 20, 2025.

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EXHIBIT B

XTO ENERGY
An ExxonMobil Subsidiary

Executive Summary - Eunice Assets

Lea County, New Mexico

November 2020

XTO Eunice Opportunity Overview

XTO Energy Inc. ("XTO") is offering for sale a large operated package with assets that include certain oil and gas properties, infrastructure, offices, and personnel located in southeastern Lea County , New Mexico.

ASSET HIGHLIGHTS

Proven Resource & Cash Flow

- Three legacy operated waterflood units (Eunice Monument South Unit A and B, Arrowhead Grayburg Unit)
- An additional ~270 operated lease wells with ~90% working interest
- All leasehold is held by production

Low-Risk Development Potential

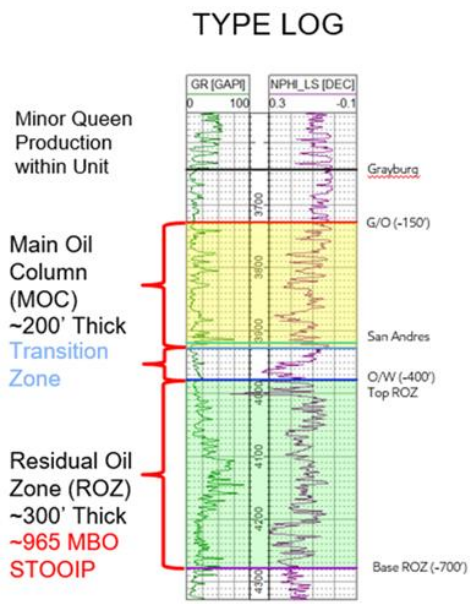
- Numerous workover repair opportunities
- Optimization of waterfloods through conformance work
- Opportunities to reduce operating costs

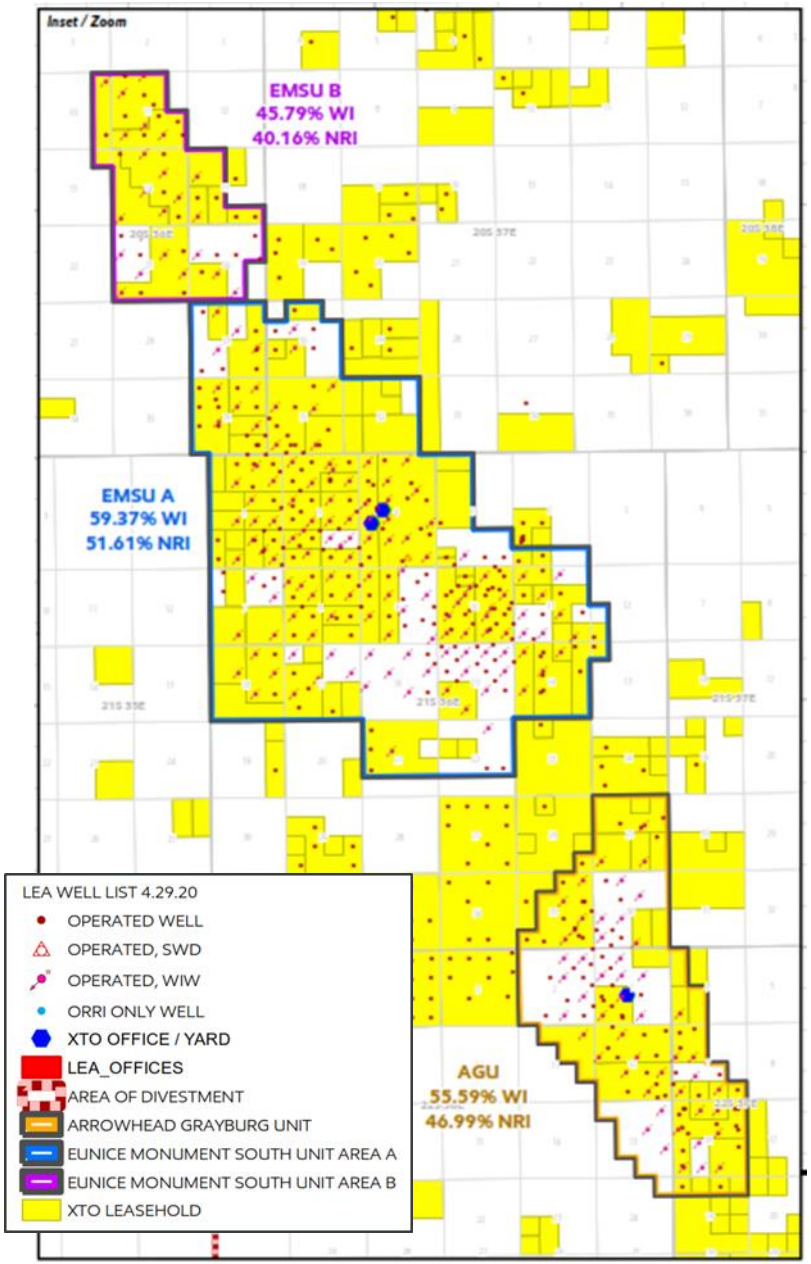
Attractive Upside Opportunities

- Infill drilling locations at 20 acre spacing
- Potential CO2 flooding in the Residual Oil Zone Recent in three units

XTO Eunice Opportunity Snapshot

Acres (Approx.)	GROSS	47k
	NET	40k
PDP Well Count (Approx.)	OP	688
	NON-OP	0
	ROY	14
2019 Net Production	OP	1566 OEBD (23% Gas)
	NON-OP	NONE
	ROY	8 OEBD (90% Gas)





Process Details & Contact Information

- Responses of interest should be directed to XOM-UOG-EUNICE@exxonmobil.com
- Following receipt of executed Confidentiality Agreement, interested parties will be given access to the Virtual Data Room (VDR)
- Questions should be directed to **Jim Laumbach**
- Evaluation materials will include:
  - ARIES database
  - Historical financial data / Lease Operating Statements
  - Well, lease, and key contract schedules
  - Well logs and Wellbore Sketches
  - Lease and well map
- Key Process Dates
  - Virtual Data Room opens November 5th
  - Bids due on December 1st
  - PSA signing on or before December 22nd
  - Estimated closing in 1Q 2021

November 2020						
S	M	T	W	T	F	S
1	2	3	4	**5**	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2020						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	**22**	23	24	25	26
27	28	29	30	31		

VDR OPENS BIDS DUE PSA SIGNED

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Disclaimer

By reviewing this presentation, you acknowledge and agree that XTO makes no express or implied representation or warranty as to, and expressly disclaims any and all liability for, the quality, accuracy and completeness of the information, data or other materials set forth in this presentation, in the data room established by XTO in connection with this opportunity, or otherwise provided to you by XTO or its representatives (the "Information"). You further acknowledge and agree the Information is being furnished to you for discussion purposes only, and that you will rely solely on your own independent investigations, evaluations, and analyses of the Information in satisfying yourself as to the quality, accuracy and completeness of the Information, and you will proceed with this opportunity, if at all, by submitting a bid, entering into definitive agreements or consummating a transaction with XTO solely on the bases of such investigations, evaluations, and analyses.

The Information does not attempt to present all the information, data, or materials you might require to fully investigate, evaluate, or analyze the opportunity, and XTO is under no obligation to update or supplement the Information.

Only the express representations and warranties contained in a definitive agreement (if and when entered into) shall be binding on XTO and you. The Information does not constitute an offer to sell or a solicitation of an offer to buy any security or asset of XTO in any jurisdiction in which such an offer or solicitation is not authorized or would be unlawful.

EXHIBIT C

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

APPLICATION OF GOODNIGHT MIDSTREAM PERMIAN, LLC TO AMEND ORDER NO. R-7765 AS AMENDED TO EXCLUDE THE SAN ANDRES FORMATION FROM THE UNITIZED INTERVAL OF THE EUNICE MONUMENT SOUTH UNIT, LEA COUNTY, NEW MEXICO.	**CASE NO. 24278**
APPLICATION OF GOODNIGHT MIDSTREAM PERMIAN, LLC TO AMEND ORDER NO. R-7767 TO EXCLUDE THE SAN ANDRES FORMATION FROM THE EUNICE MONUMENT OIL POOL WITHIN THE EUNICE MONUMENT SOUTH UNIT AREA, LEA COUNTY, NEW MEXICO.	**CASE NO. 24277**
APPLICATIONS OF GOODNIGHT MIDSTREAM PERMIAN, LLC FOR APPROVAL OF SALTWATER DISPOSAL WELLS, LEA COUNTY, NEW MEXICO.	**CASE NOS. 23614-23617**
APPLICATIONS OF EMPIRE NEW MEXICO LLC TO REVOKE INJECTION AUTHORITY, LEA COUNTY, NEW MEXICO.	**CASE NOS. 24018-24027**
APPLICATION OF GOODNIGHT MIDSTREAM PERMIAN LLC TO AMEND ORDER NO. R-22024/SWD-2403 TO INCREASE THE APPROVED INJECTION RATE IN ITS ANDRE DAWSON SWD #1, LEA COUNTY, NEW MEXICO.	**CASE NO. 23775**

EMPIRE NEW MEXICO LLC'S RESPONSES TO GOODNIGHT MIDSTREAM PERMIAN LLC'S THIRD SUBPOENA DATED JULY 2, 2024

In accordance with the Subpoena issued July 2, 2024, Empire New Mexico, LLC ("Empire") submits the following responses. A link to responsive documents is provided in the email transmitting this response.

1. Documents, communications, reports, protocols, and analyses reflecting treatment of Grayburg production wells within the EMSU for scale, H_2S, or corrosion prior to

commencement of waterflooding operations in the EMSU.

RESPONSE: *See* document(s) Bates# OCD 23614-17 03538-3557, produced herewith.

2. Documents, communications, reports, analyses, and protocols reflecting treatment, including chemicals used with concentrations, volumes, and a description of filtering media and size of filters used on injected fluids, conducted by Gulf Oil, Chevron, and XTO to address scaling, H_2S, and corrosion in Grayburg production wells, Grayburg injection wells, and San Andres water supply wells within the EMSU from creation of the EMSU until acquisition of the EMSU by Empire.

RESPONSE: Empire has conducted a diligent and thorough search of the records within its possession, custody, or control and discovered no responsive documents.

3. Documents, communications, reports, analyses, and protocols reflecting treatment, including volumes and concentrations of chemicals used, and a description of filtering media and size of filters used on injected fluids, and Safety Data Sheets (SDS) for treating chemicals used, conducted by Empire New Mexico LLC to address scaling, H_2S, and corrosion in Grayburg production wells, Grayburg injection wells, and San Andres water supply wells within the EMSU from Empire's acquisition of the EMSU to the present.

RESPONSE: *See* documents Bates# OCD 23614-17 03558-3562, produced herewith.

4. Documents, communications, reports, and analyses reflecting any changes made to treatment protocols or plans to address scaling, H_2S, and corrosion in Grayburg production wells, Grayburg injection wells, and San Andres water supply wells within the EMSU from the

time Empire acquired the EMSU to the present.

RESPONSE: Empire has conducted a diligent and thorough search of the records within its possession, custody, or control and discovered no responsive documents.

5. Please produce a complete, conforming, and legible copy of the ExxonMobil document titled "EMSU, EMSUB, and AGU Upside Potential – Infill Drilling and ROZ" attached, at least in part, as Exhibit A-5 in Empire's Amended Exhibits filed on November 2, 2023, in Division Case Nos. 23614-23617 ("Empire's Exhibit A-5").

RESPONSE: Empire has conducted a diligent and thorough search of the records within its possession, custody, or control and discovered no responsive documents.

6. All documents, communications, reports, analyses, and data provided by XTO to Empire relating to the residual oil zone ("ROZ") referenced in Empire's Exhibit A-5, including but not limited to documents and data provided by XTO in the data room as part of Empire's due diligence review of the EMSU, as well as complete, conforming and legible copies of the analyzed logs used to create the cross section titled "Eunice Area ROZ Cross-section" presented on page 7 of Empire's Exhibit A-5.

RESPONSE: *See* document(s) Bates# OCD 23614-17 03563-3622, produced herewith.

7. Documents and data provided by XTO/ExxonMobil to the EMSU data room as part of Empire's due diligence review prior to acquiring the EMSU reflecting any of the following:

- Scaling, H_2S, and corrosion in Grayburg production wells, Grayburg injection wells, and San Andres water supply wells within the EMSU;

- Potential for ROZ development within the EMSU, including but not limited to reserves estimates and estimated recoveries;
- Communication between the Grayburg and San Andres formations; and
- Well remediation work and any related analyses reflecting potential causes.

RESPONSE: Empire has conducted a diligent and thorough search of the records within its possession, custody, or control and discovered no responsive documents.

8. Documents and data reflecting Grayburg Formation pressure in EMSU production wells and injection wells for the years 2021, 2022, and 2023.

RESPONSE: *See* documents Bates# OCD 23614-17 03623-3627, produced herewith.

9. Documents and data reflecting shut-in well pressure measurements, including shut-in fluid levels, for Grayburg waterflood injection wells within the EMSU for the period beginning immediately after Empire acquired its operating interest(s) the EMSU to Present.

RESPONSE: *See* documents Bates# OCD 23614-17 03628, produced herewith.

10. Empire records, prior-operator records, internally or externally created documents, and data reflecting production (water, oil, or gas) from the EMSU #457, EMSU #458, EMSU #459, EMSU #460, EMSU #461, and EMSU #462 prior to 1994.

RESPONSE: Responsive information was previously produced in supplemental production relating to Goodnight's second subpoena.

11. Documents, data, analyses, reports, and summaries, including but not limited to internal and external correspondence, that address, reflect on, or concern studies prepared by

Empire on the feasibility of conducting tertiary recovery operations in the San Andres formation within the EMSU using carbon dioxide.

RESPONSE: Empire has conducted a diligent and thorough search of the records within its possession, custody, or control and discovered that all responsive documents were previously produced.

12. Documents, data, analyses, reports, and summaries, including internal and external correspondence, that address, reflect on, or concern assessments for capital costs and expenditures estimated to be necessary to institute a tertiary recovery operation in the San Andres formation within the EMSU using carbon dioxide.

RESPONSE: Empire objects to Request No. 12 because it is neither relevant nor reasonably calculated to lead to the discovery of admissible evidence. The Commission's jurisdiction does not include authority to consider "assessments for capital costs and expenditures estimated to be necessary to institute a tertiary recovery operation in the San Andres formation." *See* NMSA 1978, §§ 70-2-6; 70-2-11, 70-2-12 Further, the Commission has expressly narrowed the scope of this hearing. *See* Join Order on Goodnight's Motion to Limit Scope of Hearing ("At said hearing, the parties shall submit all evidence, testimony, and legal argument on the issue of the existence, extent of and possible interference with a residual oil zone [in the EMSU] by produced water injection activities undertaken by Goodnight.").

13. Reservoir studies reflecting monthly carbon dioxide volumes (including total, purchased, and recycled carbon dioxide) Empire estimates will be required to conduct tertiary recovery in the San Andres formation within the EMSU.

RESPONSE: Empire objects to this request for the same reasons stated in response to Request No. 12.

14. Communications with potential suppliers of carbon dioxide for tertiary recovery operations in the San Andres formation within the EMSU.

RESPONSE: Empire objects to this request for the same reasons stated in response to Request No. 12.

15. Communications from Empire to Nutech, including documents, analyses, and data, reflecting "client information and experience" provided by Empire to establish "permeability threshold values" as it pertains to the San Andres formation referenced in Empire Exhibit E-1 in Empire's Amended Exhibits filed on November 2, 2023, in Division Case Nos. 23614-23617.

RESPONSE: Empire has conducted a diligent and thorough search of the records within its possession, custody, or control and discovered no documents reflecting "client information and experience" provided to Nutech by Empire. To Empire's knowledge, the reference to "client information and experience by Mr. Dillewyn relates to information that Nutech had previously received from XTO and other clients operating within the area and Nutech's experience with those clients.

16. To the extent Empire provided instructions to Nutech on input parameters, produce documents and communications between Empire and Nutech reflecting the modified Simandoux equation parameters used for each well (a, Rw, Rsh, n, m, Vsh) referenced in Galen

P. Dillewyn's testimony submitted on November 2, 2023, in Empire's Amended Exhibits filed on November 2, 2023, in Division Case Nos. 23614-23617.

RESPONSE: See response to Request No. 16.

17. Documents, data, and/or communications, whether internal or external, addressing the use of the San Andres formation in the EMSU as a carbon capture project, whether in the alternative to or in association with Empire's proposed carbon flood tertiary recovery project.

RESPONSE: Empire has conducted a diligent and thorough search of the records within its possession, custody, or control and discovered that no responsive documents.

18. The reservoir simulation model of the EMSU "to evaluate performance and impact to SWD injection and long-term flooding into the San Andres" that is referenced in the May 16, 2024 Form 8-K and attached as Exhibit 99, Press Release of Empire Petroleum, dated May 15, 2024, along with data relied on to construct the model, parameters and inputs, and analyses, reports, and summaries, including internal and external correspondence, that address, reflect on, or concern the reservoir model.

RESPONSE: The reservoir simulation model of the EMSU, which is the work of Empire's expert, is not complete. The model and data relied on to construct the model will be produced in accordance with the Commission's Pre-Hearing Order in this matter. *See New Mexicans for Free Enterprise v. The City of Santa Fe*, 2006-NMCA-007, 138 N.M. 785.

19. Documents, data, and/or communications, whether internal or external, related to

the any pilot project for CO_2 flood in the San Andres within the EMSU, to the extent such a pilot project is related to the "[p]rimary, secondary units with CO_2 potential" and the "[p]ilot to begin end of 2024" referenced in slide 12 of the Empire Petroleum Q1 2024 Earnings Slides, dated May 15, 2024, hosted on the "Investor Relations" > "Events & Presentations" page of Empire's website (*see* https://empirepetroleumcorp.com/investor-relations/events-presentations/).

RESPONSE: The reference to a "pilot" in slide 12 pertains to infill drilling and not to CO2 development. Thus, there are no responsive documents.

20. With respect to each person Empire may call as an expert witness at hearing, please provide:

a. the name, address, and qualifications of the expert;
b. the subject matter on which the expert is expected to testify;
c. the substance of the facts and opinions to which the expert is expected to testify and a summary of the grounds for each opinion;
d. any reports prepared by the expert regarding the pending action;
e. a list of all publications authored by the witness within the preceding ten (10) years; and
f. a listing of any other cases in which the witness has testified as an expert at trial or by deposition within the preceding four (4) years.

RESPONSE: Empire previously provided information responsive to subparts a-b in its witness disclosure filed July 8, 2024. See documents Bates# OCD 23614-17 03629-3645 for information responsive to subpart e.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served on the following by electronic mail on August 1, 2024.

/s/ Sharon T. Shaheen

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EXHIBIT D

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

APPLICATIONS OF GOODNIGHT MIDSTREAM PERMIAN LLC FOR APPROVAL OF SALTWATER DISPOSAL WELLS LEA COUNTY, NEW MEXICO

CASE NOS. 23614-23617

APPLICATION OF GOODNIGHT MIDSTREAM PERMIAN LLC TO AMEND ORDER NO. R-22026/SWD-2403 TO INCREASE THE APPROVED INJECTION RATE IN ITS ANDRE DAWSON SWD #1, LEA COUNTY, NEW MEXICO.

CASE NO. 23775

APPLICATIONS OF EMPIRE NEW MEXICO LLC TO REVOKE INJECTION AUTHORITY LEA COUNTY, NEW MEXICO

CASE NOS. 24018-24020, 24025

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

DIVISION CASE NO. 24123
ORDER NO. R-22869-A

VIDEO DEPOSITION OF RULE 30(b)6 WITNESS

December 3, 2024
9:04 a.m.
VIA ZOOM
Albuquerque, New Mexico

PURSUANT TO THE NEW MEXICO RULES OF CIVIL PROCEDURE, this DEPOSITION was:

TAKEN BY: ADAM G. RANKIN
ATTORNEY FOR GOODNIGHT MIDSTREAM PERMIAN LLC

REPORTED BY: RUTH A. ELWELL
CCR 166
Kendra Tellez Reporting, A Veritext Company
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I N D E X

WILLIAM WEST

Examination by Mr. Rankin
Examination by Mr. Moander
Further Examination by Mr. Rankin
Certificate of Completion of Deposition
Correction and Signature Page

E X H I B I T S

Exhibit 4 Empire's Project Plan
Exhibit 5 Evaluation
Exhibit 6 Development Plan Lea County
Exhibit 7 Chart
Exhibit 8 NuTech Revised Analysis
Exhibit 9 APD EMSU NO. 800

VIDEOGRAPHER: Good morning. We are going on the record at 9:04 a.m. on the 3rd of December 2024. Please note that this deposition is being conducted virtually. Quality of recording depends on the quality of camera and internet connection of the participants. What is seen from the witness and heard on the screen is what will be recorded. Audio and video recording will continue to take place unless all parties agree to go on or off the record. This is Media Unit No. 1 in the video recorded deposition of William West in the matter of the Applications of Goodnight Midstream Permian LLC, et al. filed in the State of New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Commission, Case Nos. 24018 through 24020 and 24025.

My name is Steven Milner representing Moir Litigation Video and I am the videographer. The court reporter is Ruth Elwell from the firm Veritext Legal Solutions. I am not authorized to administer an oath, and I am not related to any party in this action, nor am I financially interested in the outcome.

If there are any objections to the proceeding, please state them at the time of your appearance.

Counsel and all present, including remotely, will now state their appearances and affirmations for the record beginning with the noticing attorney.

MR. RANKIN: Morning. Adam Rankin with the law firm of Holland Hart in Santa Fe appearing in this deposition on behalf of Goodnight Midstream LLC.

MS. HARDY: Dana Hardy with the Santa Fe office of Hinkle Shanor appearing on behalf of Empire New Mexico LLC.

MR. MOANDER: Chris Moander, Assistant General Counsel New Mexico Oil Conservation Division.

MR. PADILLA: Ernest Padilla, counsel for Empire New Mexico LLC.

MS. SHAHEEN: Sharon Shaheen, Santa Fe office of Spencer Fane, appearing on behalf of Empire New Mexico. I'll just note on the record that Ms. Hardy will be defending the witness on behalf of Empire. I'll just be listening in.

MR. BECK: Matt Beck on behalf of Rice Operating Company and Permian Line Service LLC.

VIDEOGRAPHER: Is that all counsel? Would the court reporter now please swear in the witness.

WILLIAM WEST

was called as a witness and, having been first duly sworn, was examined and testified as follows:

EXAMINATION

BY MR. RANKIN:

Q. Good morning, Mr. West.

were saying petroleum board, and I didn't know what that was.
Q. Well, that's why -- thank you for asking me to clarify. So did you speak with any Empire Petroleum's board of directors in preparation for this hearing?
A. We just had a board meeting last night so, yes, this was a piece of topic of it; so, yes, I would have spoke to the board members.
Q. Okay. Outside of that board meeting, did you speak with any of the directors of the board?
A. Yes, there was follow-up conversations with everybody.
Q. Were those by -- were those verbal conversations?
A. Yes, just verbal.
Q. Okay. And so there were no emails or text messages with any of the board members relating to the preparing or buildup of this deposition?
A. No, sir.
Q. Okay. Now, did you attend any of the depositions that have been conducted in these cases to date?
A. I have not attended them. I've passed by a couple of them going on, but I've not "set" there and watched them.
Q. Riveting material, I know. Have you reviewed any of the draft deposition transcripts from any of the

depositions that were conducted in this case?
A. I've seen some pieces of it and reviewed some pieces of it but not in its entirety, no.
Q. Do you which ones you've reviewed pieces of deposition transcripts?
A. I reviewed a little bit from Yvette's [phonetic].
Q. Okay. That's the only one that you've reviewed to date?
A. Yes.
Q. Okay. Now, in this deposition notice that I shared with you -- I'll put it back on the screen -- in addition to the topics that we're going to discuss today, it also requests that Empire put together and provide the documents that the company reviewed, referred to or relied on in preparation for the deposition. Did you prepare a set of documents that you reviewed in preparation for today's deposition?
A. Yes.
Q. I'll coordinate with counsel to collect those after this deposition. Did you also prepare documents that you reviewed to refresh your recollection?
A. Yes.
Q. Okay. Same -- same there. Okay. So I'll follow up with counsel to collect those documents as well -- or at least if they've been previously been produced, I'll

coordinate with them to get the Bates or references for those. Okay. Thank you.
Now, I guess I'll get into the topics. The first topic on the list is "Engineering and reservoir plans for recovery of the alleged San Andres ROZ as a part of Empire's project plan."
Do you understand when I use the acronym ROZ that I'm referring to residual oil zone?
A. Yes, sir.
Q. Just saying it for the record. Has Empire ever evaluated a residual oil zone for development through tertiary recovery?
A. Yes.
Q. Where?
A. So define "evaluated."
Q. Well, what do you mean by evaluated?
A. So was the zone evaluated or be a part of the evaluation process of the purchase of the asset in the plans of purchasing it from the beginning, yes.
Q. Which -- which property was that?
A. EMSU, EMSU B, AGU.
Q. Prior to the review of those properties as part of the purchase, has Empire ever evaluated a potential property for development of an ROZ through tertiary recovery?
A. So you're -- restate your question here, that

you're looking for that if Empire, as a company, looked before the purchase of these assets in '21 adds stuff for CO2 evaluate -- CO2 EOR if we've ever looked at anything in the company?
Q. Yeah.
A. I'll have to get back with you on that answer. It's before my time.
Q. Okay. But as to your -- as you sit here today, you're not aware of any -- any prior evaluation assessment or characterization of an ROZ that was conducted by Empire prior to the EMSU, EMSU B or an AGU?
A. Not to my knowledge.
Q. Okay.
A. As I sit here right now.
Q. But you're -- but you're aware that Empire did conduct an evaluation of -- prior to purchasing the EMSU, EMSU B and an AGU, it evaluated those three properties. Agree?
A. So define "evaluation."
Q. I'm asking you. I mean, do you -- they reviewed it; right?
A. So evaluation would be -- as you're purchasing to evaluate the property, you would look at other offsetting fields and prospects, and you would see that the San Andres is a very prolific ROZ zone and you would refer that and

that would go to part of your evaluation process to purchase.
Q. Okay. So in this situation, have you evaluated or -- have you, yourself -- let me step back and ask this question again.
Empire conducted what you described as an evaluation, in the way you described it, before it purchased these properties. Agree?
A. So Exxon presented, you know, in their presentations, you know, potential for ROZ in the San Andres, so those presentations, and they're stating that as part of their evaluation to purchase it.
Q. Did Empire conduct, itself, a separate independent evaluation of the information that ExxonMobile presented to Empire?
A. Prior to purchase?
Q. Yes.
A. I don't know.
Q. Okay. Does Empire keep records -- did Empire keep records of what it did prior to purchasing these properties?
A. I'd have to look to see if there's anything we can find in the evaluation files.
Q. Okay. But there are evaluation files?
A. To what extent there are evaluation files, I don't know. But would there be, you know, information

A. Yes.
Q. Who's that?
A. Darrell Davis.
Q. Anybody else?
A. Lucy King.
Q. Who's Lucy King?
A. She's another reservoir engineer on staff.
Q. Okay. Do you know where Mr. Davis has had experience of producing an ROZ?
A. He worked for Ben Berry [phonetic].
Q. And when did he join Empire, do you know?
A. Approximately August of 2023.
Q. Just so I know. When did you join Empire?
A. I joined in May of 2023.
Q. Okay. Do you know when Ms. King joined Empire?
A. She joined prior to when I did. Approximately the beginning of 2023. But I'd have to -- we could pull her employment date and...
Q. That's good enough. Approximate is fine. Roughly, the beginning of 2023 is your recollection, your understanding?
A. She was either the beginning of '23 or the end of -- the latter part of '22, I believe, but I don't -- she was here before I came here, so I don't, you know, don't know. I haven't looked -- I haven't had any need to look

going to the purchase of it, yes. I don't know what's in those files. But we can look -- we can look through them and see what we find.
Q. Do you understand that we've asked for those files previously, you understand that?
A. So an evaluation. So for the purchase, whenever you evaluate a deal, they say, Hey, this is what our PDP is, this is what the other prospectives are, that goes into part of the process of the evaluation. That is not an in-depth study.
Q. Okay. What is it -- you mentioned this phrase PDP. What does that mean?
A. Develop producing properties.
Q. Okay. I'm going to explore this with you a little bit as we go on. But the next question I want to ask around this is has Empire ever itself operated a residual oil zone that was being produced prior to these three units?
A. No.
Q. Has Empire ever itself operated a CO2 tertiary recovery project of any kind?
A. No.
Q. A CO2 Huff-n-Puff?
A. Not to my knowledge.
Q. Does anyone at Empire currently have any experience producing a residual oil zone?

back on her.
Q. Well, it's not a dispositive issue, Mr. West, so no worries.
A. Yeah.
Q. Anybody else that you can think of, Mr. West, that has experience operating or developing or working on a residual oil zone?
A. Here at the company, also the other one, Anibal has too, worked with CO2 EOR floods and, you know, which inherently has some ROZ.
Q. So just to distinguish between the two, you know that he's worked on CO2 floods, but whether it was specifically a residual oil zone or not, can you distinguish that for me? I mean, do -- you know he worked on a CO2 flood, but was it actually a residual oil zone?
A. So if you had a water flood in place first and that swept through, what is left is the ROZ, by definition, so that's whenever the CO2 comes into -- almost virtually every CO2 flood is an ROZ.
Q. Okay. Do you know where he -- what fields he worked on?
A. Not off the top of my head.
Q. Okay. Now, I want to get into -- before we get into this topic in more detail, I want to come to some sort of understanding about terminology, or at least I'm going to

EXHIBIT E

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

APPLICATION OF GOODNIGHT MIDSTREAM PERMIAN, LLC TO AMEND ORDER NO. R-7765 AS AMENDED TO EXCLUDE THE SAN ANDRES FORMATION FROM THE UNITIZED INTERVAL OF THE EUNICE MONUMENT SOUTH UNIT, LEA COUNTY, NEW MEXICO.	**CASE NO. 24278**
APPLICATION OF GOODNIGHT MIDSTREAM PERMIAN, LLC TO AMEND ORDER NO. R-7767 TO EXCLUDE THE SAN ANDRES FORMATION FROM THE EUNICE MONUMENT OIL POOL WITHIN THE EUNICE MONUMENT SOUTH UNIT AREA, LEA COUNTY, NEW MEXICO.	**CASE NO. 24277**
APPLICATIONS OF GOODNIGHT MIDSTREAM PERMIAN, LLC FOR APPROVAL OF SALTWATER DISPOSAL WELLS, LEA COUNTY, NEW MEXICO.	**CASE NOS. 23614-23617**
APPLICATIONS OF EMPIRE NEW MEXICO LLC TO REVOKE INJECTION AUTHORITY, LEA COUNTY, NEW MEXICO.	**CASE NOS. 24018-24027**
APPLICATION OF GOODNIGHT MIDSTREAM PERMIAN LLC TO AMEND ORDER NO. R-22024/SWD-2403 TO INCREASE THE APPROVED INJECTION RATE IN ITS ANDRE DAWSON SWD #1, LEA COUNTY, NEW MEXICO.	**CASE NO. 23775**
APPLICATION OF GOODNIGHT PERMIAN MIDSTREAM, LLC FOR APPROVAL OF A SALTWATER DISPOSAL WELL, LEA COUNTY, NEW MEXICO.	**CASE NO. 24123** **ORDER NO. R-22869-A**

EMPIRE NEW MEXICO LLC'S RESPONSE TO GOODNIGHT MIDSTREAM PERMIAN LLC'S DECEMBER 20 & 31, 2024 DOCUMENT REQUESTS ARISING OUT OF DEPOSITION TESTIMONY

Empire responds below to all of the additional requests Goodnight is now making with respect to witness testimony at deposition, which were identified in your emails of December 20, 2024 9:07 PM and December 31, 2024 2:00 PM, as represented in your email of January 7, 2025 12:55 pm. *See id.* ("The attached email and its attachment, which I sent on 12/31 and 12/20, have the outstanding data/information requests in one place."). I note that we provided to you last week the requested EMSU production/injection data by well from 11/23 forward until the date that OCD's public data are correct going forward.

Mr. Cestari

- NUTECH log interpretation images and associated LAS files referenced by Cestari.

  RESPONSE: These were provided to you by production on Monday, January 13, 2025 4:37 PM, which I believe included some logs and LAS files that had been previously produced. The same images and associated LAS files support the testimony of Joe McShane filed in August 2024. In other words, the NUTECH analysis for Mr. McShane's testimony is the same analysis that Mr. Cestari's testimony reflected. The analysis did not change. Thus, Goodnight incorrectly concludes that NUTECH's analysis has changed four times. The NUTECH analysis for Empire changed only once, as explained in my email of Thursday, December 5, 2024 8:16:58 AM, and as will be memorialized in the notice regarding the revisions.

Dr. Buchwalter

- List of wells for which KZ values were modified as part of his model

  RESPONSE: This list was previously provided by email on Tue 1/7/2025 10:40 AM

- Geologic inputs for his model
  - Logs, core, poro/perm, ect, by zone provided by Empire

  RESPONSE: This data was previously produced to Goodnight in the spreadsheet entitled Empire Base Case Model Simulation Input Grids IMPORTANT DATA, as Bates # 6520.

- Relative perm curves used in his model

  RESPONSE: This data was previously produced to Goodnight in the spreadsheet entitled Empire Base Case Model Simulation Input Grids IMPORTANT DATA, as

Bates # 6520. As a courtesy, I provide a simple table that we believe addresses this specific data.

Layer	KX	KY	KZ	Comments
1	100	100	1	Penrose
2	100	100	0.2	Penrose
3	500	500	1	Grayburg
4	500	500	1	Grayburg
5	100	100	1	Grayburg
6	100	100	1	Grayburg
7	100	100	1	Grayburg
8	250	250	Variable	San Andres
9	250	250	1	San Andres
10	250	250	1	San Andres

- Structure and isopach maps used in his model provided by Empire.

  RESPONSE: These documents were previously produced as Bates #s 3730-3739. The spreadsheet identified above as Bates # 6520 has the actual cell by cell tops.

- "fluid data" provided to Dr. Buchwalter (see depo page 53:4)

  RESPONSE: This data was previously produced to Goodnight in the spreadsheet entitled Empire Base Case Model Simulation Input Grids IMPORTANT DATA, as Bates # 6520.

- Communications on oil saturations used in his model to/from Empire and Dr. Buchwalter

  RESPONSE: This will be produced.

- Documents/data/inputs that show base of ROZ used by Dr. Buchwalter in his model (and justification for it)

  RESPONSE: Empire provided Dr. Buchwalter with estimated oil in place, 900MMBO for the entire model (including EMSU, AGU, EMSU-B, and outlying areas), and he adjusted the base of the ROZ accordingly.

- pressure data from the "five or six wells" used to match the model (see depo page 233:5-6) or, if already provided, identify by Bates.

  RESPONSE: This will be produced.

Mr. Dillewyn

- RR Bell #4 log interpretation - PDF image and LAS (relied on in Nutech's interpretation)

  RESPONSE: This was run by Nutech for XTO. Nutech did not provide this log interpretation to Empire because Empire did not pay for it. Goodnight can acquire this log interpretation directly from Nutech. *See* Pre-Hearing Order, ¶ 7 ("The parties agree to provide copies of documents that are (1) within the respective party's possession, custody, or control[.]").

- Original XTO interpretations - PDF image and LAS (reviewed and relied on by Nutech)

  RESPONSE: These were produced on 1/13/25.

- Communications from Empire to Nutech requesting adjustments to geologic tops and new log interpretations/analyses

  RESPONSE: These were produced on 1/13/25.

- Communications from Empire to Nutech on M&N values to use

  RESPONSE: These were produced on 1/13/25.

- Communications on poro/perm ranges from EMSU 679 provided by Empire to Nutech for Nutech's original testimony.

  RESPONSE: This was produced on 1/13/25.

- All data, including San Andres wells and data, Nutech relied on to validate input parameters/interpretations, as testified to by Mr. Dillewyn.

  RESPONSE: This information has been requested from NUTECH.

West

- Deposition notes Mr. West was reviewing and relying on during his deposition.

  RESPONSE: This will be produced with the mental impressions of Empire's attorneys redacted.

- Empire's EMSU evaluation file, diligence file, and data room documents provided by XTO.

  RESPONSE: Empire objects to this request, which has been repeated numerous times, including but not limited to Request No. 7 in Goodnight's Subpoena issued July 2, 2024. Empire incorporates its responses thereto, as well as its response to Goodnight's other related requests. In an effort to ensure that Goodnight has any

document that it believes may be remotely related to this request, Empire produces additional documents in response to Request No. 6 in Goodnight's Fourth Subpoena.

- Skim oil reports on EMSU water supply wells referenced by Mr. West, or confirm no documentation exists or has been identified.

  RESPONSE: Empire has conducted a reasonable search and determined that no responsive documents exist.

- Oil-water-contact documents provided to Dr. Buchwalter.

  RESPONSE: This will be produced in the Buchwalter folder.

- Internal emails and follow-up reports or analyses relating to (1) Davis Memo (Memo to File); (2) 250 & 72 pattern economic models; and (3) "Bubble Map" document (Exhibit 1a) from Piazza hearing)

  RESPONSE: Empire has conducted a reasonable search and determined that no responsive documents exist.

- Updated EMSU production numbers (water, oil, gas, water injection) from October 2023 to present

  RESPONSE: Responsive information was previously provided by email of Tue 1/7/2025 10:40 AM as EMSU Production and Water Injection Volumes.

- Emails/communications/notes reflecting or regarding EMSU chemical treatment, including provider's invoices, communications, analyses, recommendations, historical treatments, results, etc.

  RESPONSE: Responsive documents were previously produced in response to similar requests, such as Request No. 5 in Goodnight's Subpoena March 5, 2024 and Request Nos. 3 and 4 in Goodnight's Subpoena July 2, 2024. See Empire's response(s) thereto. Additional documents will also be produced.

- Emails/communications/documents reflecting CO2 supply discussion/proposals and with potential natural and anthropogenic CO2 sources.

  RESPONSE: These will be produced, with the exception of those documents subject to the NDA, which Dana will share with you as we discussed (Email RE CPV NDA – Empire Petroleum and pdf CPV Basin Ranch Communication).

- OIP and recovery factor documents

  RESPONSE: Any responsive documents that have not been produced will be produced.

- Communications to Nutech reflecting changes to requested San Andres top picks

RESPONSE: This was produced on 1/13/25.

- 45Q tax credits documents/communications/emails/analyses

RESPONSE: Empire has conducted a reasonable search and determined that no responsive documents exist.

- AFEs on workovers and maintenance for "wells impacted by disposal"

RESPONSE: These will be produced.

- AFEs on new San Andres drills

RESPONSE: Empire has conducted a reasonable search and determined that no responsive documents exist.

Respectfully submitted,

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I hereby certify that a true and correct copy of the foregoing was served on the following by electronic mail on January 20, 2025.

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EXHIBIT F

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

APPLICATIONS OF GOODNIGHT MIDSTREAM PERMIAN, LLC FOR APPROVAL OF SALTWATER DISPOSAL WELLS
LEA COUNTY, NEW MEXICO

CASE NOS. 23614-23617

APPLICATION OF GOODNIGHT MIDSTREAM PERMIAN, LLC TO AMEND ORDER NO. R-22026/SWD-2403 TO INCREASE THE APPROVED INJECTION RATE IN ITS ANDRE DAWSON SWD #1,
LEA COUNTY, NEW MEXICO

CASE NO. 23775

APPLICATIONS OF EMPIRE NEW MEXICO, LLC TO REVOKE INJECTION AUTHORITY,
LEA COUNTY, NEW MEXICO

CASE NOS. 24018-24020, 24025

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

DIVISION CASE NO. 24123
ORDER NO. R-22869-A

VIDEO-RECORDED & VIDEOCONFERENCE DEPOSITION OF
GALEN DILLEWYN

DECEMBER 17, 2024
9:01 A.M. MOUNTAIN STANDARD TIME

HOUSTON, TEXAS

PREPARED BY:
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THE VIDEOGRAPHER: Good morning. We are going on the record at 9:01 a.m. on December 17th, 2024. Please note that this deposition is being conducted virtually. Quality of recording depends on the quality of camera and internet connection of participants. What is seen from the witness and heard on the screen is what will be recorded. Audio and video recording will continue to take place unless all parties agree to go off the record.

This is media unit one of the video-recorded deposition of Galen Dillewyn in the matter of applications of Goodnight Midstream Permian, LLC, for approval of saltwater disposal wells, Lea County, New Mexico, et al., filed in the state of New Mexico, Energy, Minerals and Natural Resources Department, Oil Conservation Commission, case numbers 23614 to 23617.

My name is Jenny Sherman representing Veritext and I am the videographer. The court reporter is Jovanna Roman of the firm Veritext.

I am not related to any party in this action nor am I financially interested in its outcome. If there are any objections to proceeding, please state them for -- at the time of your appearance.

Counsel and all present will now state their appearances and affiliations for the record beginning with the noticing attorney.

different types of reservoirs, like does it account for a carbonate reservoir versus a sand reservoir, or does it apply the same process without regard to whether it's carbonate or sand?
A. The process is the same. The calculations within the process are different.
Q. Okay. And who -- who decides what calculations to apply?
A. The analyst.
Q. Okay. So there's still some discretion about what calculations are appropriate for what reservoir; correct?
A. Correct.
Q. Okay. So somebody needs to decide in a given system what the nature of that reservoir is and which calculations would -- are appropriate for that analysis, right?
A. Yes.
Q. Okay. So with that in mind, let's walk through the process just at a high level. I mean I guess I can read this myself so maybe -- maybe I'd be better served to kind of scroll up to, not the tracks, but the steps here, okay, starting with Step 1.
Now, do each of these steps correspond to each of the images on F-1?

A. Yes.
Q. Okay. So with that in mind, you know, just at a high level, without restating your testimony here, like number one step is to validate the data. Tell me how do you validate the data. What's -- what's the first thing you do to validate it?
A. We look at the data to see whether the borehole is rugous or not, if there's density data. We look to see if the curves to each other have the correct reference. We look to see against multiple wells, if multiple wells are being analyzed at the same time, whether the baseline measurements within the shale within the tight formations are all similar. And we look at the different vintages of the tools, what tools were actually run to give you the measurements to make sure that you're making a true comparison between values that you can make a comparison between.
Q. So the validation step here is all internal to the tools, the vintage of the tools, the quality of the borehole, things internal to the analysis, is that fair summary -- characterization?
A. Yes.
Q. Okay. Okay. Once that's done, the next -- we're onto Step 2, right?
A. Yes.

Q. And Step 2 is to calculate the shale. We talked about this just a moment ago, but I understood you to say that the shale is not -- you know really didn't apply here; is that -- is that correct?
A. Shale does apply. It's the organic shale model does not apply here. This is an inorganic shale.
Q. Okay. So tell me about how this -- this step applies in this case, Step 2.
A. Step 2 when you're looking at an inorganic shale, depending on the type of reservoir you're in, denotes a portion of the reservoir in which the fluid contained within that is immovable, whether it's from water that is bound within clay or whether that is intersticular forces that are between the grains of the rock.
Q. How do you calculate -- and how does the NULOOK process calculate the volume of shale here?
A. So we baseline -- we look at the resistivity tool to see where there's changes in resistivity. We look at the gamma ray to see that clean to dirty that we referenced earlier. Spontaneous potential also does that in a different manner. And then we look at the difference between the neutron density tools on their porosity to see where we are in reservoir rock versus where we are in shale rock.
Q. What's the primary driver here in terms of

identifying presence of inorganic shale? What tool is the primary tool that identifies the presence of inorganic shale?
A. Largely it's the gamma ray and SP together.
Q. Okay. And -- and here in this -- in this environment, is it your opinion that gamma ray is a reliable indicator of shale in this system?
A. It's a general relative indicator, yes. It's decent, yes.
Q. Did you make any corrections or adjustments based on the tools, the raw data to adjust up or down the volume of shale?
A. Not that I know of, no.
Q. Okay. Let's talk about Step 3. You mentioned -- you mentioned the bound water issue when there's shale present, right? Tell me a little bit about this next Step 3.
A. So once we know how clean or dirty the formation is, we can therefore determine the amount of irreducible water within the system.
Q. How do you make that -- sorry. Go ahead.
A. Sorry. The -- in this situation where we have a dolomite, you tend to have shales equal to the amount of clay you have in the system. And once you have that number, then the understanding of how much of that

wells identified on your table F-1, NuTech did not have the core data or the logs associated with the core, right? So how did NuTech -- how did NuTech calibrate the 10 log analyses if it didn't have the core data or the logs associated with that core?

A. We had other data within the San Andres looking at a multitude of datasets. We have a model with parameters that we run and that R.R. Bell well that we had evaluated previously also gave us a calibration point for understanding that porosity-PERM relationship.

Q. So the model that you run I think, tell me if I'm wrong, but does it -- does it take into account -- this is Exhibit F-2 -- does it take into account the data associated with the wells on this map on F-2?

A. Not all of them. That's impossible to all incorporate, but the models are continually developed using data as we acquire it so, yes.

Q. So on this Exhibit F-2 it identifies a bunch of wells. There's three well types I guess on the legend. One is the grey wells that are called the NULOOK wells, right?

A. Correct.

Q. What are those?

A. Those are wells we have performed NULOOK interpretation on.

Q. Okay. Do those go into your database that against which you're calibrating Empire's log analyses against?

A. For those that are in the same reservoir, yes.

Q. So are all the grey wells here in the same reservoir as Empire's wells that you're conducting analysis for?

A. No.

Q. No. So looking at this map, I can't tell which wells you're using or relying on as part of your calibration, can I?

A. Correct.

Q. Okay. How about the green wells that are a triangle, those are wells with cores. Do all of those wells go into NuTech's calibration analysis?

A. Yes.

Q. Okay. And you've -- you've confirmed that they are completed in the same formation?

A. No, not all of them are completed in the same formation.

Q. If they're not, how are they used to calibrate your analysis?

A. It is used to -- in a situation where the core is not in the same formation, like the San Andres in this case. I'm going to give you a hypothetical example

because without pulling up an individual analysis I can't show you exactly.

However, the core analysis can be used to validate the log data itself and make sure that it is valid, and so even though the core tie may be on a deeper formation, it can help us validate the raw measurements as part of Step 1 within our NULOOK process.

Q. Okay. But I don't quite understand how that's the case if it's not in the same formation. How -- how can a core offsetting that's in a different -- in a different depth or formation be used to validate your log analysis in a different formation?

A. If the data was acquired within the same run, then it validates that that tool is reading accurately.

Q. So it's a validation of the accuracy of data?

A. Yes.

Q. Okay. Can I tell looking at this map which of these wells that are green triangles were used to validate NuTech's calibration of its Empire Petroleum log analyses?

A. No, you can't.

Q. Is it all of them or just a portion of them?

A. No. As stated in the above here, it was purely the R.R. Bell #3.

Q. Or #4, right?

A. #4. Sorry.

Q. And then the EMSU-679 porosity ranges and permeability ranges, right?

A. Until we got the entire analysis and then.

Q. Yeah. Okay. Now -- okay. But on this map the R.R. Bell #4 is not identified on this map, right? I can't tell where that is, right?

A. No, it's not.

Q. Okay. Just so I'm clear, I mean the only wells then that are -- so which wells are being used to calibrate? Is it just the R.R. Bell #4?

A. To create the porosity-PERM relationship, yes.

Q. Okay. And then tell me -- so what's the point of this map then, what is this telling me?

A. Just the other data in the area. I was wanting to show you that it was -- that we have other data in and around these data points and that -- that data is ultimately rolled up in NuTech's intellectual property to provide analysis.

Q. But is that rolled up data used -- was it used at all to inform NuTech's petrophysical analysis of -- of the well logs in these cases?

A. To perform the first step, which is validating the data, yes.

Q. Okay. Just that's it, just to validate the data?

A. Correct. The --

Q. Okay.
A. There's an adage, right, that says a model is only as good as the information that goes in or you may have commonly heard to it as garbage in equals garbage out.
Q. I hear that a lot, yeah. Okay. All right. Well, yeah, not -- I guess you understand not -- not actually seeing how this works it's a little hard to visualize, but I think I'm following you, okay. All right. We're at 2:30.
And so before I leave this, the red diamonds here these are -- if I zoom in, I think these are all the 10 wells, right, that -- except for the 679 that NuTech did its analyses on, right?
A. Correct. Those are the 10 wells with the one well to the southeast being that AGU well.
Q. Okay. All right. Got it. Okay. Got it. Okay.
Now, is -- is the NULOOK process, is it calibrated in any way to any -- to available analog well data in this area?
MS. SHAHEEN: Objection. Form.
Q. BY MR. RANKIN: You can answer if you understand.
A. We use other San Andres analyzed wells to understand the porosity-PERM relationship, yes.
Q. Okay. And you did that in this instance?

A. Yes.
Q. Okay. Which wells did you look at? Were there specific wells?
A. I don't know. If there were specific wells, I would have to go look for that. I don't have that information in front of me. That's done by the analyst.
Q. Okay. All right. Now, just sort of generally we talked about -- we started talking a little bit, just introduced the concept of M and N. You talked a little bit about it with me, the cementation exponent, which is M as in Mary, and then the saturation exponent, which is N as in Nancy, but and I -- I talked with you a little bit about it when I was showing you the original log analyses that were provided to us and that have been updated and -- and you told me that -- that for those original ones the M and N values were used were standard values and were two, right, for both exponent values and that value was used throughout the log interval, right?
A. Yes.
Q. Okay. Is that generally what -- does NULOOK -- does the NULOOK process generally just use the standard M and N values when it does its analysis?
A. Within carbonate reservoirs, yes.
Q. Okay. But outside of carbonates would you use -- you tend to use a more variable M and N value?

A. By doing our textural approach we do vary M. We -- we adjust that exponent to what we call W just so that there is a -- you can see that there is a big difference between the two and it gets varied based off of that textural element that you talked about earlier.
Q. But -- okay. So but -- but generally when NuTech is analyzing logs in carbonate systems, the -- NuTech's practice is to use standard values for M and N?
A. Yes, unless detailed reason is provided to move away from those values.
Q. Okay. All right. And -- and you -- you told me at the beginning that you did review Dr. Davidson's testimony that was provided in this case, right?
A. Yes. A while back, but yes.
Q. Yeah, and do you recall that Dr. Davidson did use a variable M value in his log analyses?
A. He used -- there was a plot where he was trying to calculate M and N and I saw that he used different values for it, yes.
Q. Okay. Now -- okay. Just catching up. I asked a lot -- I asked a bunch of these questions already so it's good. I'm kind of skipping through some of these things.
A. Get done early then.
Q. Well, we'll see about that.
I guess I kind of -- maybe we'll do this

before -- maybe right before a break we'll just kind of walk through one of these logs. I just kind of want you to get me -- get me familiar with the tracks, okay. I'm going to pull up -- this is the 746 well, okay?
A. Okay.
Q. And while I'm on this topic, I just want to ask. So one thing I meant to ask at the beginning when I was talking to you about these headers before our lunch break, so here at the top, right, it says evaluated for Empire Petroleum, right? That's the -- that's the company who's the client, right?
A. Correct.
Q. But then down here it says under the -- under this portion of the -- of the title or cover page it says XTO. Why -- why wouldn't -- why wouldn't it say Empire there?
A. Because XTO Energy -- well, this is the header from the wireline run. It shows who the company was at the time of acquisition of the data.
Q. Okay. All right. That -- that makes sense. I just wanted to make sure. I didn't actually think of that, but that makes sense. Okay. I got it now. Okay. So that -- that -- this is just straight off the wireline log run data?
A. And the information below where it says run one,

asking my confidence in the initial August interpretation of the data?
Q. I think you already gave me that, right? You told me that you stand by it. You're confident in it, right?
A. Yes.
Q. Okay. And I'm not hearing great confidence in this revised analysis.
MS. SHAHEEN: Objection. Form.
Q. BY MR. RANKIN: Are you confident in the revised analysis?
A. If the inputs used in that calculation are accurate, then the revised interpretation is correct.
Q. Okay. Relative to the analysis you did back in August, which is the more correct analysis?
MS. SHAHEEN: Objection. Form.
THE WITNESS: They are both correct with the inputs supplied. Other inputs could also change saturation values.
Q. BY MR. RANKIN: Mr. Dillewyn, you're being qualified -- you're seeking to be qualified as an expert in petrophysics.
A. Yes.
Q. And your job I think before the Commission is to advise them on what your opinion is in terms of what is

saturation.
Q. So how do you use that to determine an uncertainty, to calculate uncertainty?
A. Well, you take a water sample. One of the parameters with that is the amount of chlorides in there, which can be different across different portions of fields as well as to depth of different formations.
Q. So I think what I hear you saying is that NuTech will do a validation of it, the individual input parameters to try to narrow the uncertainty, right?
A. Yes.
Q. But I'm asking you how -- does NuTech do an overall assessment of its log analyses for uncertainty? Can you quantify NuTech's uncertainty of its individual log analyses?
A. On a case-by-case basis.
Q. How would you do it -- how would you quantify -- like say I pick out say 679, the one we were just looking at, how would I quantify NuTech's uncertainty of this log analysis? Is there a way to quantify it?
A. No, ideally we would have -- one of the parameters of which we use to validate our log interpretation is production as that is a quantity that is generally accurately reported and therefore we can tie back the analysis to.

the reality, what is the most likely.
So as you -- as you prepare to appear in front of the Commission in February, what are you going to tell the Commission? Which of these potential analyses is the most likely in terms of oil in place or oil saturation? You can't tell them they're both right. Which one is it? Which is more likely the correct answer?
A. Given the values we have, we stand by our initial interpretation.
Q. Okay. Did NuTech conduct an uncertainty analysis of its petrophysical modeling results in its original -- of its original analysis associated with the August 2024 petrophysical logs?
A. No.
Q. How would you -- does NuTech ever do an uncertainty analysis of any kind of its petrophysical analyses?
A. In regards of looking at the analysis and the variance due to different parameters to then tie to production and actual other measured data, yes.
Q. How do you do that?
A. One example is to -- if we want to validate the type of formation water being produced, we will get a water sample from either client or an offset client to validate that value as RW has an immediate impact on water

Q. But you didn't do that in any of these wells, did you?
A. No, we did not.
Q. So how would you -- how would you go about determining uncertainty if you didn't use production or if you didn't have production or didn't ask for the production for these wells, how would you -- how would you determine NuTech's uncertainty? Could you?
A. When we look at areas with -- there's certain areas in which we calibrate our log interpretation to to validate what we see, areas of little to no porosity to make sure that the saturation equation does calculate to 100 percent in areas of known movable water and only movable water, such as aquifers up hole. Those values we use to tie to understand and by calculate RW as well as to ensure that models do not go above 100 percent water saturation as that is physically impossible.
We look at the adherence of the density and neutron to each other so that whether you're in a depleted reservoir, whether you're in a gas reservoir, all of these components have varying components to make sure that the logs are valid, that they don't exceed physical -- physical constraints of the world. Certain things can't happen, right.
Q. So again I hear -- I hear you saying that you

would look at individual input parameters to ascertain the validity of those individual input parameters, right?
A. Yes.
Q. Okay. And -- and short of having the production values or production data for the wells against which you're doing a log analyses, could you take your petrophysical model and apply it to other -- other wells to see if it matched up with -- with the raw core data in those other wells to see if it made any sense for offsetting wells?
A. Yes.
Q. Did you do that here?
A. When we received the data for the 679 well, we looked at the adherence to the model to the core, which was shown in that original interpretation that -- in the testimony. At that point where we saw the difference in water saturation at the bottom, it was presented to Empire saying that there is not an adherence in the model at the bottom, but we don't have a driver to understand why that is not there. There could be a number of reasons.
Q. So one question is why -- why -- why reevaluate the entire log interval for adherence to water saturation only when it seems like the only issue is at the bottom of the -- of the log?
A. If you pull up my testimony and go to our

page 24.
Q. PDF page 24?
A. Yes, 2-4. And you look at this -- this one, which is the original interpretation of the 679 well. Scroll down a little bit.
If you look at the Grayburg section, which is the top section, and you look at those data points plotted against our interpreted curves, those look like good adherence to a model. They look the same. Would you not agree?
Q. That's your -- I mean I'm asking -- I get to ask the questions.
A. I say they look the same. I say they look the same.
Q. Okay.
A. When you look below it, that line that says San Andres, you will see a deviation between our model and the core values, which then -- where your cursor is you see below that it starts going to the left where water saturation on the core is increasing. However, our values are staying low.
If you go down further another 30, 40 feet -- no, too far. Right there. You'll see we have a relatively decent adherence back to the model again. And then when you see below it there's an adherence not.

Whenever you're matching core because the nature of the vertical resolution of tools being different, the vertical resolution of the gamma ray tool is not the same as the vertical resolution of the resistivity tool is not the same as the vertical resolution of the density or the neutron tool, and you are looking at averaging these values across against a specific point measurement within a core value. Then when you try to match a model, it is very rare that you have all of the data points land exactly on the line that you're calculating because you don't have the exact same input data.
Therefore when you look at tieing these in together, I would have -- changing the model, as you see in the bottom there, it's possible. However, to make a better fit to that model, as we were asked to do, we were asked using those other four sets of M and N values could there be a better adherence, yes. Could I make this match in other ways, yes.
Q. And if you -- what other ways can you make it match?
A. The majority -- the way that mostly done is in RW, which is the resistivity of the formation water.
Q. Okay. So let me -- I'm glad you reminded me about RW. I'm sorry to everybody who is tired of hearing about all this stuff, but I need to ask about it.

So M and N how -- would you agree that M and N values have the biggest impact on the calculation of water saturation?
A. It has a large impact. RW also has a large impact.
Q. Okay. So M and N would have -- I mean do you agree that M and N would have the biggest impact on water saturation?
A. Yes.
Q. Okay. Now, RW, my understanding from your previous testimony was that you discussed RW as a parameter -- input parameter with Empire, but you did not change RW; correct?
A. Correct.
Q. Where -- what -- where did you get your value for RW?
A. We looked at areas within the log that had zero porosity and balanced it there, such as the interval -- if you see towards the top of this log that you're looking at here to see where the -- just a little higher. Right there.
You'll see where porosity approaches zero. The resistivity tool is spiking to the right. Permeability goes to below .01. We're approaching an area where there is no reservoir there for the entire porosity

is water or bound water. Doesn't matter. It's the makeup of it and therefore it's a place where we can balance.

You also see in the middle you'll see where that water saturation approaches 100 percent below the San Andres green line. You'll see the white shading going to the left there. Again, it does not go above 100 percent.

If you go in and you calculate a water saturation of 110 percent using assumed values or some other values, you can't have saturations over 100 percent so that's one of the big issues within calculating these values of what they are and that's how we validate those things.

As you can see here towards the bottom of the San Andres zone analyzed here in those cores, you see different spikes to the left that start approaching 100 percent. When I start to adjust M and N values or RW values, that can easily overdrive your saturation values making them physically impossible to happen.

Q. So the RW value you select -- once you -- once you arrived at an R value -- RW value, you used that same value in all your wells?

A. Yes, without a reason depicted, yes.

Q. Okay. And you derived your RW from -- from each well individually or did you use one RW value across all the wells?

A. There's one RW value used across all of these wells that we validated with after the interpretation with Empire against their produced water samples.

Q. And the example you're giving me of how you came to the RW value, was that in the 679 well or was it -- which well did you use?

A. It's in each of the wells. In each of the wells by using that same value, we made sure that it did not break the physical model.

MR. RANKIN: Okay. Okay. Let me just take five minutes and make sure I don't have any further questions. We can go off the record for five minutes. We'll come back at 4:16.

MR. MOANDER: Sounds good.

THE VIDEOGRAPHER: We are off the record. The time is 4:11 p.m.

(Off the record.)

THE VIDEOGRAPHER: We are back on the record. The time is 4:16 p.m.

Q. BY MR. RANKIN: Mr. Dillewyn, just a couple -- one line of question. When we were talking about RW right before we took a short break, I understood you to say that -- that you derived an RW value that you validated in each of the wells and it was the same RW value. And then in addition to validating it within each well to make sure

it didn't break the model, you provided that RW value to Empire and they verified it against one of their produced water samples, is that right?

A. Yes.

Q. Did they give you the water sample?

A. No.

Q. You gave them the RW value and they confirmed for you that it was validated?

A. Yes.

MR. RANKIN: Okay. All right. No further questions.

MR. MOANDER: Excellent. So with that I'll proceed unless there are objections.

EXAMINATION

Q. BY MR. MOANDER: So, Mr. Dillewyn, my name is Chris Moander. We sort of briefly met earlier today at the beginning of your deposition. I'm counsel for OCD. I've got a set of questions for you. They will not be as technical or particular as Mr. Rankin's, but we'll go ahead and get started on that.

I'm not clear on -- on this issue so help me out here. Are your opinions today, are they final as they stand through your testimony and your supplemental self-affirmed statement?

A. Yes, until more data comes in light that might adjust things. You know interpretations are always changing as more data becomes available.

Q. Naturally. And then I may pause for a second to take some notes so please bear with me.

Have you been -- have you discussed in any way, shape or form rebuttal testimony in this case with Empire's attorneys?

A. No.

Q. Do you anticipating -- do you anticipate giving rebuttal testimony in this matter?

A. I don't know.

Q. Did you review any of OCD's filings in this case or these cases?

A. No, I don't believe so.

Q. And so would it then be fair to say you don't have any opinions on OCD's case at least as of today?

A. Correct.

Q. All right. Let's go to slightly more technical stuff. From what I can tell from both your original and revised self-affirmed statement and your testimony today, your analyses focused on the Grayburg and San Andres formations in EMSU, is that right?

A. Yes.

Q. Any other formations that you reviewed on behalf

of Empire?
A. Not that I remember.
Q. And during the course of your analysis of the Grayburg and San Andres formations in the EMSU, did you at any point contemplate the Safe Drinking Water Act?
A. No.
Q. All right. We're almost done. So there's three other topics I just want to touch on.
Do you have any opinions on the existence of migration of injection fluids from the San Andres in the Hobbs channel into the Capitan Reef?
A. No, I don't have any.
Q. Do you have any opinions on broad scale impacts of injection into the EMSU?
A. That is not anything I've looked to, been asked to investigate.
Q. So would that be a no?
A. No.
Q. And then my last question, do you have any opinions on the seismicity in and around the EMSU?
A. No, we did not investigate any seismicity anything.
MR. MOANDER: All right. Well, as promised that will be the end of my examination. I will pass the witness for any further additional inquiry. Thank you for

your time. We appreciate you showing up today and dealing with us.
THE WITNESS: Thank you.
THE COURT REPORTER: And, counsel, this is the court reporter. Before anyone logs off, if you are requesting a copy will you just give me your name.
MR. BECK: I actually have a couple questions so I'm speaking out of turn here but.
EXAMINATION
Q. BY MR. BECK: Mr. Dillewyn, I just have a couple questions following up on what Mr. Rankin asked you.
My understanding was you said that NuTech checked sort of the accuracy of the analysis -- of its analysis of the wells by looking at production data after -- after the analysis, is that right?
A. Yes. We used the fluids produced to validate the interpretation, yes.
Q. And is that different than the water sampling testing for the RW value that you discussed a minute ago?
A. It can be. One, if the reservoir in question doesn't produce water we can't do a water sample. Ideally produced water comes as a byproduct. We're not looking for water generally, but if it is obtained, getting a measurement of that does help us validate the accuracy of the interpretation.

Q. Okay. Does it give you more information than just whether the RW value is correct?
A. No, it generally just gives us the RW which allows us to check the water saturation component.
Q. And another way I think you said NuTech checks the accuracy of the analysis is to look at core samples from wells, either wells that you've looked at before, that you've analyzed or offsetting wells, is that right?
A. Yes, we are continually developing or checking our models to make sure that, one, regionally they're not changing or, two, new techniques have not uncovered something new.
Q. And the only core data that you had to look at to evaluate the wells here for Empire was the 679 well core data, is that right?
A. And the R.R. Bell #4.
Q. Okay. And the R.R. Bell #4. But you didn't do an analysis, you didn't have a model of the R.R. Bell #4, right?
A. We have one and the data is internal to NuTech. It was not provided to Empire.
Q. Okay. But it was used to check the M and the N values in the models for the Empire -- in the models for Empire?
A. Yes.

Q. And how often does NuTech use production information, production water to check and confirm its analysis?
A. As often as we're able to obtain it.
Q. Sort of piggybacking off of that, the lack of the ability to check against production data here for your -- for NuTech's analysis is this unique, is it sort of in the heartland of analyses that you do or how would you rate that in terms of comparing it to the rest of NuTech's work?
A. This is very common. The issue in Empire's position here is that it is under an active waterflood, which means other waters are being injected. It's not just the formation water that is there so validating what is formation water versus injected water is extremely difficult.
Q. And does that affect the certainty or uncertainty of the analysis you provided to Empire, in your opinion?
A. Using that value -- if we were to use the RW that Empire had from their produced water sample as an exact, it would cause a change to the model, which could be a change over time with more waters that get injected through the formation. However, as I said to Mr. Rankin that those logs are a snapshot in time at the time of the data is acquired and so you have to look at the conditions

EXHIBIT G

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

APPLICATIONS OF GOODNIGHT MIDSTREAM PERMIAN, LLC FOR APPROVAL OF SALTWATER DISPOSAL WELLS
LEA COUNTY, NEW MEXICO

CASE NOS. 23614-23617

APPLICATION OF GOODNIGHT MIDSTREAM PERMIAN LLC TO AMEND ORDER NO. R-22026/SWD-2403 TO INCREASE THE APPROVED INJECTION RATE IN ITS ANDRE DAWSON SWD #1,
LEA COUNTY, NEW MEXICO.

CASE NO. 23775

APPLICATIONS OF EMPIRE NEW MEXICO LLC TO REVOKE INJECTION AUTHORITY,
LEA COUNTY, NEW MEXICO

CASE NOS. 24018-24020, 24025

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

DIVISION CASE NO. 24123
ORDER NO. R-22869-A

DEPOSITION OF WILLIAM WEST
December 4, 2024
9:00 a.m. MST

PURSUANT TO NMSA 1978, §70-2-8 and Rule 19.15.4.16.A NMAC, this Deposition was:

TAKEN BY: Adam Rankin, Esq.
Attorney for Goodnight Midstream Permian

REPORTED BY: Barbara Jean Morgenweck
NCRA, RPR, NM CCR No. 526

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THE VIDEOGRAPHER: Good morning. We are on the record at 9:07 a.m. on December 4, 2024.

Please note that this deposition is being conducted virtually. Quality of recording depends on the quality of camera and Internet connection of participants.

What is seen from the witness and heard on screen is what will be recorded. Audio and video recording will continue to take place unless all parties agree to go off the record.

This is Media Unit 1 of the video-recorded deposition of William West in the matter of Application of Goodnight Midstream Permian, LLC, et al., filed in the State of New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Commission. Case No. 23614-23617.

This deposition is being conducted remotely using Zoom virtual technology. My name is Jenny Sherman representing Veritext and I am the videographer.

The court reporter is Barbara Morgenweck from the firm Veritext.

I am not related to any party in this action nor am I financially interested in its

that XTO or ExxonMobil had provided Empire with marketing materials promoting the potential for ROZ development in the -- these units?
Are you aware personally -- maybe you cut out, Mr. West -- but do you have personal knowledge that XTO had provided Empire with materials promoting the ROZ potential in these units?
A. I did not personally evaluate the deal. I was not with the company whenever this happened.
Q. I understand.
A. So I was not part of the data room.
Q. I understand. But are you aware that XTO provided Empire with materials promoting the ROZ potential in these fields?
A. I don't know if I've ever seen the exact document on it. I know that they were promoting it.
Q. Okay. Now, you mentioned diligence. Are you aware whether at the time this press release was issued -- I mean, how are you aware that -- about due diligence? Is it your understanding that Empire did some diligence prior to acquiring these properties?

A. I was not part of that process.
Q. I know. But is it your understanding that Empire conducted diligence prior to the acquisition of these properties?
A. Could be some diligence in a acquisition process, but I was not part of them.
Q. Okay.
MR. RANKIN: I'm going to move on to another exhibit that I want to introduce into the record. This is going to be Exhibit No. 6.
Oops. I'm having problems with my motor function this morning.
(Exhibit 6 was marked for identification.)
BY MR. RANKIN:
Q. Mr. West, have you seen this document that's titled "Executive Summary, Eunice Assets, Lea County, New Mexico, November 2020"?
A. I have not seen this document.
Q. Mr. West, I'll represent to you that this document was labeled as Exhibit E in Empire's Piazza case, No. 22626, that went before the division and is now part of these cases on de novo review in Case No. 24123.
Are you familiar with that? If I refer

to this as "the Piazza case," are you familiar with that case?
A. I'm familiar with the name of the case and the case. I've not reviewed all the documents.
Q. So this executive summary is four pages and it's titled an executive summary, which suggests that there are additional materials or different, additional records. This is a summary of those.
Would you agree, normally when you see something defined as an executive summary, you would expect some additional documents that it's summarizing, correct?
A. Summary typically would be a summary of something, right?
Q. Right. Now, do you yourself review the documents or the materials that XTO has provided to Empire as part of the transaction where Empire acquired these properties?
A. I was not involved with the transaction.
Q. I know you weren't.
Did you review the documents that XTO provided?
A. No, sir.

Q. Okay. So when you came into the company in May or June of 2023 and you hit the ground at a sprint, you did not review any of the materials that XTO provided the company?
MS. HARDY: Object to the form.
BY MR. RANKIN:
Q. You can answer.
A. There's, you know, well files and things that would be, you know, documents from XTO, so, yeah, I've seen those.
Q. But when you came into the company and hit the ground at a sprint, you didn't review any of the materials that XTO provided Empire relating to the -- the promoted residual oil zone?
MS. HARDY: Object to the form.
BY MR. RANKIN:
Q. You can answer.
A. Do not recall seeing them.
Q. Okay. And it's kind of funny, I mean, this is the prime issue in this dispute is whether or not there's a residual oil zone in the EMSU, and you didn't review any of the documents provided to Empire by -- from XTO?
MS. HARDY: Object to the form.

model assumes that 75 percent of the wells would be new drills.
Does that include both producing wells and injection wells?
A. Yes.
Q. It's sort of a gross number. A percentage of whatever wells are needed are going to be --
A. The cost difference between the two is -- for a model is irrelevant.
Q. Okay. And then -- and the same assumption is built into both models, the 72-pattern model and the 250-pattern model?
A. Correct. The 250 is a scale-up of the 72.
Q. Okay. And when I go to the monthly economics, would that be the cost to drill a well? The new drills would be under gross working interest capital costs?
A. It would be capital costs.
Q. Okay. I'm looking at column S. Is that where the new drill costs would be found?
A. Yes, the new drill would be the capital costs.
Q. Okay. All right. I just wanted to make

sure I understood where I would find those.
We talked yesterday about Empire's APD for its proposed EMSU No. 800 well.
Do you recall that?
A. Part of the testimony yesterday.
Q. Do you remember talking with me about the EMSU 800 APD that you guys filed for?
A. Yes.
Q. Has Empire issued AFEs for that well under the EMSU operating agreement?
A. Not yet.
Q. Have you prepared draft AFEs for that well?
A. Draft AFEs are in progress.
Q. But they haven't been prepared yet?
A. They're in progress of preparing. We're not at the final version. That's why we haven't sent them out yet.
Q. When do you plan to send those out?
A. Before we drill oil.
Q. Sometime in the first quarter of 2025?
A. Yeah, it would be somewhere in there.
Q. Because you're still in process, do you know -- do you have an estimated cost yet for that well?

A. Not that I'm ready to talk about. I mean, it's still on -- we're still on draft and we're still trying to figure out, you know, what analysis to do or not to do, and that scales it up and scales it down.
Q. How about just for the drilling in the equipping the well?
A. I didn't prepare myself for that for this conversation today.
Q. Okay. So as you sit here, you don't know what that would be?
A. We have lots of different drilling well proposals and things, and I wouldn't want to quote you wrong.
Q. Okay. Yeah, I don't want -- I'm not asking you to speculate, okay?
All right. I'm going to move off your testimony, Mr. West. There's a few things I want to talk about. I think we're getting close to the end.
I'm going to share with you a Goodnight exhibit. This is a Goodnight -- I guess this is now -- oh, boy, let's see. I think the 72-pattern economic analysis would be Exhibit 11. I don't remember.

This may be Exhibit 12, which is Goodnight Exhibit B-22.
(Exhibit 11 was marked for identification.)
Q. This is Goodnight's analysis of pressure gradient calculated in several of Empire's EMSU wells.
Did you review this exhibit, Mr. West?
A. No, I did not.
Q. You've never looked at this exhibit?
A. No, sir.
Q. Okay. My question for you is -- you know, when we went through the OCD records, we were looking for wells that we could potentially calculate a shut-in tubing pressure for.
And on this exhibit, you'll see one, two, three, four, five, in the fifth column over, there's a column header that says report of shut-in tubing pressure.
Do you see that?
A. I see it's what the column's labeled.
Q. Yeah. And in the column immediately to the left is a -- has an injection volume, and there's a zero for each of the wells.
Do you see that?