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

APPLICATION OF GOODNIGHT MIDSTREAM PERMIAN, LLC FOR APPROVAL OF A SALTWATER DISPOSAL WELL, LEA COUNTY, NEW MEXICO	**CASE NO. 24123** **ORDER NO. R-22869-A**
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**

EMPIRE NEW MEXICO LLC'S SUPPLEMENTAL
REBUTTAL WITNESS DISCLOSURE

Empire New Mexico LLC ("Empire") hereby supplements its rebuttal witness disclosure, which was previously filed on January 6, 2024 ("January 6 Rebuttal Disclosure"). Therein, Empire identified Empire's two additional witnesses for rebuttal, their particular areas of expertise, and the subject matter for their anticipated testimony, in accordance with paragraph 2[1] of the New Mexico Oil Conservation Commission's ("Commission") Pre-Hearing Order issued on December 5, 2024 ("Pre-Hearing Order"). Nonetheless, in response to Goodnight's assertions that the Pre-Hearing Order requires more than expressly stated, Empire identifies all of its witnesses who may be called to provide rebuttal testimony at the evidentiary hearing beginning February 24, 2025.

[1] Paragraph 2 of the December 5, 2024 Pre-Hearing Order states that the parties "shall disclose their *additional* witnesses for rebuttal, each rebuttal witness's particular area of expertise, and identify the subject matter of each rebuttal witness's anticipated testimony, by Monday, January 6, 2025." (emphasis added)

1. Ryan Bailey

Mr. Bailey is a geologist employed with OPS Geo1ogic, LLC ("OPS Geologic"), where he serves as Vice-President of Geoscience. Mr. Bailey has 17 years of experience in the upstream oil and gas industry, including time managing operations in the most successful US onshore plays in the last two decades. He began his career at Anadarko Petroleum where he worked as an Asset Manager and Geoscience Manager. More recently, Mr. Bailey was the Vice President of Geoscience at JBL Energy Partners. Mr. Bailey received his Bachelor of Science and Master's of Science in geology from the University of Alabama. For further details regarding Mr. Bailey's professional experience and qualifications, a copy of Mr. Bailey's curriculum vitae is attached as Exhibit A.

Mr. Bailey is expected to testify regarding, *inter alia*, the structure of the San Andres formation and San Andres oil-in place volumes for the Eunice Monument South Unit ("EMSU") in light of petrophysical modeling developed by OPS Geologic and Scott Birkhead. Mr. Bailey's testimony will rebut the following testimony presented by Goodnight's witnesses:

- Testimony of Goodnight witnesses regarding the existence and extent of a residual oil zone in the Upper and Lower San Andres
- Preston McGuire opinions, including but not limited to the following:
    - That formation tops should be picked using engineering data rather than geologic data
    - That there is a regional laterally continuous seal

2. Scott Birkhead

Mr. Birkhead is a petrophysicist who works as an independent consultant with OPS Geo1ogic LLC, among others. Mr. Birkhead received his Bachelor of Arts in Geology and his Master's of Science degree in Geology from Texas A&M University. For almost 20 years, Mr. Birkhead has assisted oil and gas companies in developing petrophysical models to characterize reservoir properties throughout the world. Among other things, Mr. Birkhead utilizes data-specific

petrophysical techniques to provide quality control of well logging data. For further details regarding Mr. Birkhead's professional experience and qualifications, a copy of Mr. Birkhead's curriculum vitae is attached as Exhibit B.

Mr. Birkhead is expected to testify regarding, *inter alia*, log calculated oil saturation values in light of petrophysical modeling developed by Mr. Birkhead together with OPS Geologic. Mr. Birkhead's testimony will rebut the following testimony presented by Goodnight's witnesses:

- James A. Davidson opinions, including but not limited to the following:
    - That intervals with less than 20% oil saturation should be excluded from the analysis of whether a residual oil zone ("ROZ") is economically recoverable
    - Relating to his log analyses
- William J. Knights opinions, including but not limited to his opinions regarding the depths of residual oil zones
- Preston McGuire opinions, including but not limited to his opinion that the San Andres does not meet the criteria for a residual oil zone
- Goodnight witness opinions regarding the amount of oil loss while recovering the core in the EMSU-679

3. Robert Lindsay

Dr. Lindsay was previously identified as a witness on behalf of Empire. His education, experience, and expertise are detailed in his self-affirmed statement filed on August 26, 2024 and his curriculum vitae attached thereto.

In addition to the subject matter of his direct testimony, Dr. Lindsay is expected to rebut to the following testimony presented by Goodnight's witnesses:

- Preston McGuire, including but not limited to Mr. McGuire's opinions regarding the following:
    - Picks for the top of the San Andres
    - That there is no communication between the formations
    - That there is an impermeable barrier or "seal" between the San Andres and the Grayburg formations

- That fracture studies do not reflect the San Andres formation

- Thomas Tomastik, including but not limited to Mr. Tomastik's opinions regarding the following:
  - That vertical fluid flow is limited notwithstanding existing fractures
  - That vertical fractures in Goodnight's injection zones could not extend into the Lower Grayburg Formation
  - That the top of the San Andres Formation would act as a barrier against upward fluid migration and is confirmed by Lindsay's Ph. D. dissertation as a geologic seal
  - That there would be no vertical fractures extending from the "injection zones" of Goodnight's wells in the San Andres Formation into the Lower Grayburg Formation

4. William West

Mr. West was previously identified as a witness on behalf of Empire. His education, experience, and expertise are detailed in his self-affirmed statement filed on August 26, 2024 and his curriculum vitae attached thereto.

In addition to the subject matter of his direct testimony, Mr. West is expected to rebu the following testimony by Goodnight's witnesses:

- Preston McGuire, including but not limited to Mr. McGuire's opinions regarding the following:
  - That Goodnight's disposal operations will not cause waste or impair correlative rights in the "San Andres disposal zone"
  - That Goodnight's "San Andres disposal zone" is confined to intervals below any potential ROZ that is isolated by a "sustained and geographically extensive geologic seal"
  - That pressure within the San Andres formation is much lower than pressure within the Grayburg formation
  - That the San Andres does not meet the criteria for a ROZ because oil saturations are below 20%
  - Representations regarding the Piazza hearing

- Dr. Larry Lake, including but not limited to Dr. Lake's opinions regarding the following:

- That there is a 200' barrier across the field because no wells have perforated that interval
- That there is no oil production from the San Andres aquifer in the EMSU

- John McBeath, including but not limited to Mr. McBeath's opinion that there is no movable oil in the San Andres
- Thomas Tomastik, including but not limited to Mr. Tomastik's opinions regarding the following:
  - That there have been "longstanding known corrosion issues"
  - That "Empire's proposed CO2 EOR for the EMSU is seriously lacking in detailed technical considerations"
- Testimony of Goodnight's witnesses that oil in the San Andres is not economically recoverable
- Testimony of Goodnight's witnesses relating to exceedance of maximum surface injection pressures in Empire's injection wells

4. James L. Buchwalter

Mr. Buchwalter was previously identified as a witness on behalf of Empire. His education, experience, and expertise are detailed in his self-affirmed statement filed on August 26, 2024 and his curriculum vitae attached thereto.

In addition to the subject matter of his direct testimony, Mr. Buchwalter is expected to rebut the following testimony by Goodnight's witnesses:

- That water production occurred in some crestal wells because they were completed below the oil-water contact
- That there is no communication between the Grayburg and San Andres
- That the Goat Seep and Grayburg aquifers were the source of excessive water production by Grayburg wells

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served upon the following counsel of record by electronic mail on January 22, 2024.

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