

**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 REBUTTAL WITNESS DISCLOSURE

In accordance with paragraph 2¹ of the New Mexico Oil Conservation Commission's ("Commission") Pre-Hearing Order issued on December 5, 2024, Empire New Mexico LLC ("Empire") hereby discloses the following additional witnesses who may be called to provide rebuttal testimony at the evidentiary hearing beginning February 24, 2025. Empire reserves the right to offer previously identified witnesses in rebuttal and will provide their rebuttal statements in accordance with paragraph 7 of the Pre-hearing Order.

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."

1. Ryan Bailey

Mr. Bailey is a geologist employed with OPS Geologic, 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.

2. Scott Birkhead

Mr. Birkhead is a petrophysicist who works as an independent consultant with OPS Geologic 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.

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 6, 2024.

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Ryan Bailey

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Summary Qualifications

- 17 years of geology and multi-disciplinary management experience in field development and exploitation of conventional and unconventional oil and gas resources across US Onshore.
- Team oriented leader with the ability to motivate staff to perform at a high level.
- Proven track history of leading multiple disciplines to execute active drilling programs.
- Delivered high quality mapping and geologic interpretations under short deadlines with technical excellence.

Experience: Ops Geologic (May 2021-Present)

Co-founder and Vice President Geoscience

- Responsible for generating client driven geoscience products from play fairway analysis and prospect generation to field development plans, data acquisition, and ultimately execution of operations.
- Recent projects include multiple M&A process evaluations of the Eagle Ford and Austin Chalk across South Texas from Gonzales to Webb County, evaluation of the Bone Spring and Wolfcamp across Lea and Eddy County, New Mexico, and exploration projects across the East Texas Basin and Texas Gulf Coast.
- Manage multi-disciplinary team of geoscientists and engineers to ensure quality, completion, and delivery of client driven projects.

Arkatex Energy Advisors (August 2020-Present)

Founder and CEO

- Provide contract geoscience services including play fairway analysis, prospect generation, field development, data acquisition, and operations support.
- Developed West Haynesville exploration prospect in the East Texas basin which included reservoir characterization utilizing log, petrophysical, and core analysis to identify the sweet spot of the play. Third party funding has secured leases on ~40k acres to date with plans to operate soon.

JBL Energy Partners (January 2020-August 2020)

Vice President Geology

- Responsible for generating regional geological and rock property maps for Pennsylvanian sands within the Ft. Worth basin, identifying prospect areas, and generating development plans for ~50k acres.
- Managed geological operations for horizontal drilling inclusive of identifying target intervals, generating geopros, and coordinating mudlogging, geosteering, and wireline operations.
- In addition, responsible for generating prospects, screening potential prospects, and providing geological analysis for potential acquisitions.

EXHIBIT A

Anadarko Petroleum (July 2007-November 2019)

Area Asset Manager - Delaware Basin (Midland, TX)

June 2019-November 2019

- Responsible for developing & delivering a value-based business strategy for the exploitation of Anadarko's Blacktip-Monroe asset area (55k gross acres). Identified & recommended strategic business options such as acquisitions, divestitures, trades & facility buildouts. Coordinated the efforts of multiple disciplines including geology, reservoir, drilling, completions, production, and regulatory teams to focus on critical tasks.

G&G Manager Delaware Basin (Midland, TX)

September 2016-June 2019

- Managed a multi-disciplinary geology & geophysics staff focused on generating a series of regional geologic interpretations for the key development horizons of the Delaware Basin. Integrated the results into a multivariate analysis process to isolate key productivity drivers for each formation.
- Designed & managed appraisal studies to better describe the resource potential & development recipes for key geologic areas across the basin including the Department of Energy sponsored HFTS #2 study.
- Implemented comprehensive test programs to optimize well spacing and completion designs. Tests included production, open-hole & lateral logs, micro-seismic, fiber optic and bottom-hole pressure surveys, fluid & time-lapse geochemistry sampling.
- Sponsored the acquisition and negotiated contracts for 1,800 sq. miles of new 3D seismic data (900 sq. miles of multicomponent data) to better understand geomechanical properties and their influence on productivity.

G&G Manager - Base Assets (The Woodlands, TX)

January 2016 – September 2016

- Managed a team of geoscientists responsible for the development of Anadarko's Eaglebine, Marcellus, East Chalk, Ozona, and Hugoton assets. Assisted with divestment of assets by providing geologic assessments of future development and potential upside targets to prospective buyers.

G&G Supervisor - Appalachian Basin (The Woodlands, TX)

September 2013 – December 2015

- Responsible for the geoscience staff in the Appalachian Basin which delivered more than 100,000 BOEPD production.
- Identified additional deep and shallow exploitation plays within the basin.
- Assisted in the prediction of "sweet spots" through multivariate regression analyses of geologic and completions data. This model workflow was integrated into other assets.
- Mentored young staff to facilitate their understanding of operations and development as well as advancing mapping and interpretation skill sets.

Senior Geologist - Maverick Basin (The Woodlands, TX)

May 2011 – September 2013

- Assisted the team with development of the Eagleford shale horizontal program to deliver 200,000 BOEPD of production to the company.
- Responsible for the geosteering of two rigs, designing field development plans for ~100,000 acres, and regional mapping for the Eagleford shale petrophysical and core properties.
- Presented well proposals for management approval and partner meetings.

- Mentored new geologists on development and operational roles and responsibilities and led several core workshops.
- Led an exploitation team to test two separate targets both of which were geologic successes.

Geologist I & II - US Onshore (The Woodlands, TX)**July 2007 – May 2011**

- Appalachian Basin – Lead development geologist for the start-up of the Marcellus shale horizontal drilling program. Responsibilities included designing development plans, geosteering wells for four rigs, presenting wells to management for funding, and regional mapping of core and petrophysical properties.
- East Texas/Carthage - Recommended & managed an active development drilling program as lead geologist for the Cotton Valley sand & Haynesville shale horizontal program in Oak Hill and Henderson Fields.
- Performed detailed geologic mapping studies of the Hugoton field, Kansas and Golfinho field offshore Brazil.

Education**University of Alabama- M.S. & B.S. Geology****July 2007**

M.S. Thesis: Seismic Interpretation And Structural Restoration Of A Seismic Profile Through The Southern Appalachian Thrust Belt Under Gulf Coastal Plain Sediments

Undergraduate Research: Analysis of Acid Mine Drainage on The Water Quality of Lake Harris Via Geochemical Analysis

Skills

- Exceptional leadership and management ability to implement business strategy
- Excellent interpersonal and communication skills at all levels
- Strong organizational and time management skills leading geoscience & asset teams
- Experienced in managing large data acquisition & appraisal programs for value optimization
- High level community involvement in charity/fundraising (Midland Junior Achievement Board)
- Software expertise in Microsoft Office, Petra, Kingdom Suite, and Rockpilot steering software

Stanley 'Scott' Birkhead (M.Sc.)

Principal Petrophysicist/Owner
Petrobrane Petrophysical Consulting LLC

Stanley.birkhead@gmail.com

(979) 219-0892

Profile

Extensive knowledge and experience in the petrophysical evaluation and assessment of conventional, unconventional, carbonate, multimineral, CO2 injection, and geothermal wells	Wide experience working with core data and with core/log integration including mudlogs
Field studies, Operational Petrophysics, Reserves calculation, Experimental Design	Low Resistivity Low Contrast Pay evaluation expertise.
Formation Evaluation Planning, wireline tendering and execution	Exploration and development petrophysics
Years of experience and great love of training and mentoring in Petrophysics from the intern to the classroom level.	Broad experience working with modern, historic, as well as Eastern European logs.

Professional Experience

Independent Petrophysical Consulting

Principal Petrophysicist (full time) 9/15/22

Petrobrane Petrophysical Consulting LLC

Owner, Principal Petrophysicist 10/05/2022 - current

Projeo Corporation 07/2024 - current

- Petrophysical consultant evaluating the petrophysical potential for upcoming CCUS project and for input into reservoir models

ARI (Advanced Resources International, Inc) 07/2024 - current

- Petrophysical mentoring
- Evaluating planned logging programs for operational wells, meeting with vendors
- Recommendations for logging strategies, sticking mitigation, etc.
- Evaluating the petrophysical potential for upcoming CCUS project and for input into reservoir models

Alpha Energy 06/2024 - 08/2024

- Petrophysical field study for field optimization

Armstrong Oil and Gas 12/23 - present

- Petrophysical consultant for spring drilling campaign on North Slope of Alaska
- Worked wellsite wireline operations on companies behalf
- Consulted on Wireline program with operator and partners
- Troubleshoot wellsite issues and ensured data quality
- Petrophysical interpretation

Quidnet Energy 11/2023 - present

- Petrophysical consultant reviewing appropriateness of reservoirs for application and testing of new technology

EXHIBIT B

Stanley 'Scott' Birkhead

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Ops Geologic 9/2022 - present

- Petrophysical consultant to clients of Ops Geologic
- Projects include exploration, field studies, bypassed pay, LRLC, conventional, and unconventional reservoirs
- Worked on multiple projects in the continental US

Criterion Energy Partners 9/2022-7/2023

- Consulting Petrophysicist to Criterion geothermal projects
- Projects include exploration, field studies, outputs for modelling, correlation, delineation of objective zones for production and salt water disposal

Talos Low Carbon Solutions 10/2022-4/2024

- **Planned, executed, and interpreted the formation evaluation of the first offshore CCUS well in the Gulf Coast**
- Consulting Petrophysicist for Talos Low Carbon Solutions
- Assessed viability of several areas in the Gulf Coast arena for CCUS
- Petrophysical support and guidance for multiple projects
- Wireline tendering, vendor selection, program design
- Formation evaluation related Class VI permitting experience
- Communication and integration with partners
- Work with modelers to ensure proper distribution of properties

Western Midstream 10/2022-present

- Operations Petrophysics for Western Midstream salt-water disposal wells
- Communication and instruction to wireline crews regarding logging
- Interpretation of data in near real time for wells being evaluated.
- Deliver high quality interpretation to client.
- Detailed work on Geomechanics to support permitting and geology
- Petrophysical support for assessing new objectives for water injection

DeGolyer and MacNaughton

Independent Consultant 11/2/20 - 4/19/21

Senior Petrophysicist (full time) 4/19/21 – 5/20/22

Highlights: Work in the Reservoir Studies Division included petrophysical reserve reviews, reserve upgrades, exploration concept assessment, and uncertainty analysis. Part of a select group that developed a new workflow to correctly bracket client uncertainty deterministically. Also improved communication and morale between petrophysicists by instigating monthly technical Zoom meetings.

Responsibilities:

- Developed petrophysical models and characterized reservoir properties for numerous projects
- Quality control of well logging data from modern, vintage, and Russian sources
- Managed simultaneous projects while maintaining stakeholder communication
- Utilized data specific petrophysical techniques to deal with poor and/or uncalibrated data
- Communicated results through detailed and peer reviewed technical documentation and figures, verbally with clients using translators when necessary, and through a series of presentations documenting the phases of the project.
- Collaborated closely with geologists to ensure quality results with tight deadlines

Kerr McGee | Anadarko Petroleum Corporation | Occidental Petroleum

9/26/2005 – 6/25/2020

Stanley 'Scott' Birkhead

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Senior Staff Petrophysicist

Highlights: Principal petrophysicist for major assets at different times during their life cycle including Ghana, Mozambique, and unconventional assets. In Mozambique, I worked the multi-billion dollar project to the Final Investment Decision. Post FID and sale of the asset to Total, I finalized the complex multiscale petrophysical model and transferred the knowledge to the new owners. I also have extensive experience in fresh water and low resistivity/low contrast reservoirs.

Responsibilities:

- Extensive international experience
- Developed petrophysical models, characterized reservoir properties for numerous projects, and presented results to management, partners, and NOCs.
- Communicated with drilling rig regarding operations and evaluation program.
- Characterized reservoirs for geologic environments using an array of petrophysical techniques.
- Developed workflows for new techniques and new experiments in log and core analysis.
- Integrated with the teams for major studies, technical documentation, data analytics, peer reviews, wireline tendering, dataroom evaluation, asset sales, and new ventures work.
- Handed off projects, interpretations, and data to new companies such as Total post-acquisition of multi-billion dollar assets such as Golfinho and Prosperidade.
- Trained and mentored staff and secondees.

Regions worked:

International: Algeria, Australia, Benin, Brazil, China, Colombia, Equatorial Guinea, The Falklands, Gabon, Ghana, India, Indonesia, Ivory Coast, Kenya, Liberia, Madagascar, Mozambique, Namibia, Newfoundland, New Zealand, Nigeria, Nova Scotia, Peru, Poland, Russian Federation, Senegal, Sierra Leone, South Africa, Trinidad and Tobago, Tunisia, U.K., Ukraine, Uzbekistan, and others

US: Marcellus, Carthage, GOM Deepwater, Gulf Coast (Texas, Louisiana), Natural Buttes, Haynesville, Wamsutter, Eagleford, Eaglebine, Wattenberg, Alaska, Permian Basin, South Texas, Delaware Basin, Wyoming, Mississippi, and more

External Experience**URTEC**

Member of volunteer group planning the technical program for the Petrophysical portion of the conference. Involved for 2023, 2024, and starting planning for 2025.

Responsibilities: Part of committee in charge of building Theme 2 (Petrophysics) for the program. Also part of the committee to build a program of special topics and lunches.

Stanley 'Scott' Birkhead

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Unconventional Resources Special Interest Group/SPWLA

Steering Committee Member holding various officer positions

Responsibilities: Key planning member of the group that hosted several annual one-day conferences and funded several college scholarships focused on unconventional petrophysical topics. The special interest group has now been dissolved.

Petrophysical Interest Group/AAPG

Steering Committee Member / Instructor

Responsibilities: While still in its formational years, an established goal of the group is education and awareness. Group is currently on hiatus.

Leukemia and Lymphoma Society's Light the Night Walk

Team Captain

Responsibilities: A key leader in Anadarko's main fundraising efforts for this charity for several years.

URTEC 2023-2024

Session Chair/Reviewer/moderator volunteering within the Petrophysical themes and topics for the conventions

Education

Texas A&M University

2001 Bachelor of Arts: Geology

2005 Master of Science: Geology

Thesis: Architecture of the Upper Sego Sandstone, Book Cliffs, Utah

Advisor: Dr. Brian Willis

Professional Interests

Teaching, mentoring, research/data integration, freshwater aquifers, low resistivity/low contrast pay, upscaling, modern sedimentary processes, uncertainty analysis, unconventional reservoirs, CO2 sequestration and capture, multimineral analysis, bridging between geology and data science.