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

APPLICATION OF RILEY PERMIAN OPERATING COMPANY LLC, FOR A SALT WATER DISPOSAL WELL, IN EDDY COUNTY, NEW MEXICO.

CASE NOS. 24279

APPLICATION OF RILEY PERMIAN OPERATING COMPANY LLC, FOR A SALT WATER DISPOSAL WELL, IN EDDY COUNTY, NEW MEXICO.

CASE NOS. 24280

PRE-HEARING STATEMENT

This Pre-hearing Statement is submitted by Riley Permian Operating Company LLC by and through its undersigned counsel, Ernest L. Padilla, PADILLA LAW FIRM, P.A., as required by the Oil Conservation Division.

APPEARANCES OF PARTIES

APPLICANT:	Riley Permian Operating Co. LLC
ATTORNEY:	Ernest L. Padilla Padilla Law Firm, P.A. P.O. Box 2523 Santa Fe, New Mexico 87504 (505) 988-7577 padillalawnm@outlook.com
OPPOSITION OR OTHER PARTY:	
MRC Delaware Resources, LLC and MRC Permian Company	Michael H. Feldewert Adam G. Rankin Paula M. Vance Post Office Box 2208 Santa Fe, New Mexico 87504 (505) 988-4421 mfeldewert@hollandhart.com agrankin@hollandhart.com pmvance@hollandhart.com

V-F Petroleum, Inc.

Dana S. Hardy
Jaclyn McLean
P.O. Box 2068
Santa Fe, NM 87504-2068
Phone: (505) 982-4554
Facsimile: (505) 982-8623
dhardy@hinklelawfirm.com
jmclean@hinklelawfirm.com

STATEMENT OF CASE

APPLICANT:

Case No. 24279
Applicant seeks an order proposing a salt water disposal well for its Angel Ranch SWD #1, to be drilled at a location 1,320' FSL and 1,320' FEL, Unit A, Section 12, Township 19 South, Range 27 East, N.M.P.M., Eddy County, New Mexico for injection into the Cisco formation (Pool Code 96099) at depths between 8,586’ through 9,210’ open hole.
Case No. 24280
Applicant seeks an order proposing a salt water disposal well for its Angel Ranch SWD #2, to be drilled at a location 588' FNL and 2,157' FEL, Unit B, Section 11, Township 19 South, Range 27 East, N.M.P.M., Eddy County, New Mexico for injection into the Cisco formation (Pool Code 96099) at depths between 8,450’ through 8,975’ open hole.

OPPOSITION OR OTHER PARTY:

PROPOSED EVIDENCE

APPLICANT

WITNESSES EST. TIME EXHIBITS

Name	Title	Topic	Exhibits
Oliver W. Seekins	Project Manager	Regulatory Requirements	C-108 Applications
Reed Davis	Geophysicist	Seismic Review	C-108 Applications
Thomas E. Tomastik	Chief Geologist	Geological Evaluation and Assessment	C-108 Applications

OPPOSITION

WITNESSES EST. TIME EXHIBITS

PROCEDURAL MATTERS

None

PADILLA LAW FIRM, P.A.

/s/ Ernest L. Padilla
Ernest L. Padilla
Attorney for Riley Permian Operating Co. LLC
PO Box 2523
Santa Fe, New Mexico 87504
505-988-7577
padillalaw@qwestoffice.net

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing Pre-Hearing Statement was served by e-mail to the following listed below on this 16th day of July, 2024.

Michael Feldewert	mfeldewert@hollandhart.com
Adam G. Rankin	agrankin@hollandhart.com
Paula M. Vance	pmvance@hollandhart.com
Dana S. Hardy	dhardy@hinklelawfirm.com
Jaclyn McLean	jmclean@hinklelawfirm.com

/s/ Ernest L. Padilla
Ernest L. Padilla

OIL CONSERVATION DIVISION HEARING

TUESDAY, JULY 23, 2024

EXHIBIT PACKET
SUBMITTED FOR

RILEY PERMIAN OPERATING COMPANY LLC

APPLICATION OF RILEY PERMIAN OPERATING COMPANY LLC, FOR A SALT WATER DISPOSAL WELL, IN EDDY COUNTY, NEW MEXICO.

CASE NOS. 24279

APPLICATION OF RILEY PERMIAN OPERATING COMPANY LLC, FOR A SALT WATER DISPOSAL WELL, IN EDDY COUNTY, NEW MEXICO.

CASE NOS. 24280

Table of Contents

Exhibit A & B

OCD Cases 24279 & 24280
(Angel Ranch SWD #1 & Angel Ranch SWD #2)
Riley Permian Operating Company, LLC

Revised March 23, 2017

RECEIVED:	REVIEWER:	TYPE:	APP NO:

ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Geological & Engineering Bureau –
1220 South St. Francis Drive, Santa Fe, NM 87505

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Applicant: Riley Permian Operating Company, LLC **OGRID Number:** 372290
Well Name: Angel Ranch State State SWD #1 **API:**
Pool: SWD; Cisco **Pool Code:** 96099

SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED BELOW

1) **TYPE OF APPLICATION:** Check those which apply for [A]
A. Location – Spacing Unit – Simultaneous Dedication
☐ NSL ☐ NSP (PROJECT AREA) ☐ NSP (PRORATION UNIT) ☐ SD

B. Check one only for [I] or [II]
[I] Commingling – Storage – Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
[II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

FOR OCD ONLY
☐ Notice Complete
☐ Application Content Complete

2) **NOTIFICATION REQUIRED TO:** Check those which apply.
A. ☒ Offset operators or lease holders
B. ☐ Royalty, overriding royalty owners, revenue owners
C. ☒ Application requires published notice
D. ☒ Notification and/or concurrent approval by SLO
E. ☐ Notification and/or concurrent approval by BLM
F. ☒ Surface owner
G. ☒ For all of the above, proof of notification or publication is attached, and/or,
H. ☐ No notice required

3) **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Oliver Seekins
Print or Type Name

Signature

7/15/2024
Date

918.382.7581
Phone Number

oseekins@all-llc.com
e-mail Address

Ex.A-1

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance X Disposal _____ Storage
Application qualifies for administrative approval? X Yes _____ No SWD application set for Contested Hearing

II. OPERATOR: Riley Permian Operating Company, LLC

ADDRESS: 29 E. Reno, STE 500, Oklahoma City, OK 73104

CONTACT PARTY: Mark Smith PHONE: 405.415.8925

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? _____ Yes X No
If yes, give the Division order number authorizing the project: _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

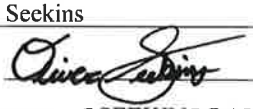
*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Oliver Seekins TITLE: Project Manager / Regulatory Specialist

SIGNATURE:  DATE: 7.15.2024

E-MAIL ADDRESS: OSEEKINS@ALL-LLC.COM

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

Ex.A-2

Side 2

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Ex.A-3

Application for Authorization to Inject
Well Name: Angel Ranch State SWD #1

III – Well Data (*The wellbore diagram is included in **Attachment 1***)

A.

(1) General Well Information:

Operator: Riley Permian Operating Company LLC (OGRID No. 372290)
Lease Name & Well Number: Angel Ranch State SWD #1
Location Footage Calls: 1,320' FNL & 1320' FEL
Legal Location: Lot A, S12 T19S R27E
Ground Elevation: 3,518.8'
Proposed Injection Interval: 8,590' – 9,190'
County: Eddy

(2) Casing Information:

Type	Hole Size	Casing Size	Casing Weight	Setting Depth	Sacks of Cement	Estimated TOC	Method Determined
Surface	17-1/2"	13-3/8"	54.5 lb/ft	485'	320	Surface	Circulation
Intermediate 1	12-1/4""	9-5/8"	43.0 lb/ft	2,200'	865	Surface	Circulation
Production Casing	8-3/4"	7"	26.0 lb/ft	9.360'	1,330	Surface	CBL
Tubing	N/A	4-1/2"	11.6 lb/ft	8,560'	N/A	N/A	N/A

DV Tool set at: 4,600'

(3) Tubing Information:

4-1/2" (26.0 lb/ft) ceramic-coated tubing with setting depth of 8,560'

(4) Packer Information: ACT AS1-X or equivalent packer set at 8,560''

B.

(1) Injection Formation Name: Cisco
Pool Name: SWD; Cisco
Pool Code: 96099

(2) Injection Interval: Perforated injection between 8,590' - 9,190'

(3) Drilling Purpose: New drill for saltwater disposal

(4) Other Perforated Intervals: No other perforated intervals exist.

(5) Overlying Oil and Gas Zones: Below are the approximate formation tops for known oil and gas producing zones in the area.

- Grayburg (1,710')

Underlying Oil and Gas Zones: Below are the approximate formation tops for known oil and gas producing zones in the area.

- Strawn (9,235')
- Morrow (10,485')

Ex.A-4

V – Well and Lease Maps

The following maps and documents are included as ***Attachment 2***:

- 2-mile Oil & Gas Well Map
- ½-mile AOR Well Table
- 2-Mile Lease Map
- 2-Mile Mineral Ownership Map
- 2-Mile Surface Ownership Map
- Karst Risk Map
- Potash Lease Map

VI – AOR Well List

A list of the well(s) within the 1/2-mile AOR is included in ***Attachment 2***.

There are four (4) wells within the ½-mile AOR. Two of them penetrate the proposed injection zone, with one of those being a plugged and abandoned well. Each of the penetrating wells was constructed and/or plugged to isolate the Cisco formation. As such, neither penetrating well will serve as a conduit for injection fluid to migrate out of the proposed injection formation.

VII – Proposed Operation

(1) Proposed Maximum Injection Rate: 20,000 bpd
Proposed Average Injection Rate: 15,000 bpd

(2) A **closed-loop system** will be used.

(3) Proposed Maximum Injection Pressure: 1,718 psi (surface)
Proposed Average Injection Pressure: Approximately 1,288 psi (surface)

(4) Source Water Analysis: The expected injectate will consist of produced water from production wells completed in the Queen, Grayburg, San Andres, Glorieta, and Yeso formations. Analysis of water from these formations is included in ***Attachment 3***.

(5) Injection Formation Water Analysis: The proposed SWD will inject water into the Cisco formation, a non-productive zone known to be compatible with formation water from the Queen, Grayburg, San Andres, Glorieta, and Yeso formations. Water analyses from the Cisco formation in the area are included in ***Attachment 4.***

VIII – Geologic Description

The proposed injection interval includes the Cisco formation from 8,590' – 9,190 feet. This formation consists of interbedded carbonate rocks including dolomites and limestones. Several thick intervals of porous and permeable carbonate rock capable of taking water are present within the subject formation in the area.

Attachment 5 includes further discussion of the injection formation, overlying and underlying confinement zones, and historical use of the field.

The base of the USDW is the Tansill Formation at a depth of approximately 460 feet. The depth of the nearest water well in the area is approximately 80 feet below the ground surface.

IX – Proposed Stimulation Program

A small cleanup acid job may be used to remove mud and drill cuttings from the formation. However, no other formation stimulation is currently planned.

X – Logging and Test Data

Logs will be submitted to the Division upon completion of the well.

XI – Fresh Groundwater Samples

Based on a review of data from the New Mexico Office of the State Engineer, there five (5) water wells within one mile of the proposed location. However, after multiple attempts, including requesting permission to sample the water wells in writing delivered via certified mail, we have been unable to obtain permission to sample. As such, Riley Permian Operating Company LLC is committed to sampling up to two freshwater wells within one 1-mile and submitting the analytical results to NMOCD if permission to sample can be obtained from the well owners.

A 1-mile water well AOR map, a water sampling rationale table, and proof of contacting the water well owners are included in ***Attachment 6.***

XII – No Hydrologic Connection Statement

There is no faulting in the area that would provide a hydrologic connection between the injection interval and overlying USDWs. The casing program has also been designed to ensure no hydrologic connection between the injection interval and overlying USDWs.

A signed No Hydrologic Connection Statement is included as ***Attachment 7.***

In addition, a *Seismic Potential Letter* detailing the minimal risk of injection-induced seismicity associated with the proposed SWD is included as ***Attachment 8.***

XIII – Proof of Notice

A notice of hearing was published in support of this application and will be provided as an exhibit at the hearing.

A copy of the application was mailed to the landowner and all identified affected parties within 1/2 mile of the proposed SWD location. A list of the recipients is included in ***Attachment 9***. An exhibit at the hearing will provide proof of notice.

Attachments

Attachment 1:

- C-102
- Wellbore Diagram
- Packer Diagram

Attachment 2: Area of Review Information:

- 2-Mile Oil & Gas Well Map
- 1/2-Mile AOR Well Table
- 2-Mile Lease Map
- 2-Mile Mineral Ownership Map
- 2-Mile Surface Ownership Map
- Karst Risk Map
- Potash Lease Map

Attachment 3: Source Water Analysis

Attachment 4: Injection Formation Water Analysis

Attachment 5: Reservoir Characterization

Attachment 6: Water Well Map and Well Data

Attachment 7: No Hydrologic Connection Statement

Attachment 8: Seismic Potential Letter

Attachment 9: List of Affected Persons

Ex.A-7

Attachment 1

- C-102
- Wellbore Diagram
- Packer Diagram

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
	96099	SWD; Cisco

[4] Property Code	[5] Property Name	[6] Well Number
	ANGEL RANCH SWD	1

[7] OGRID No.	[8] Operator Name	[9] Elevation
330211	REDWOOD OPERATING, LLC	3515.8

[10] Surface Location

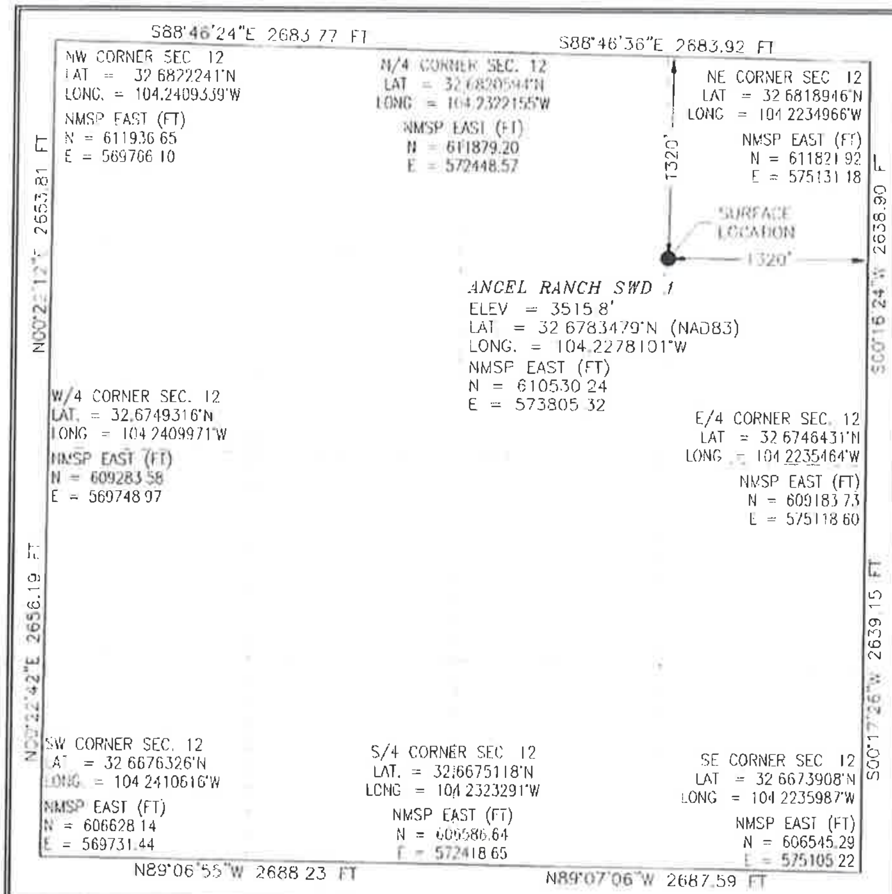
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	12	19 S	27 E		1320	NORTH	1320	EAST	EDDY

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
40			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Deana Weaver 11/29/2022
Signature Date

Deana Weaver
Printed Name

dweaver@mec.com
E-mail Address

[18] SURVEYOR CERTIFICATION

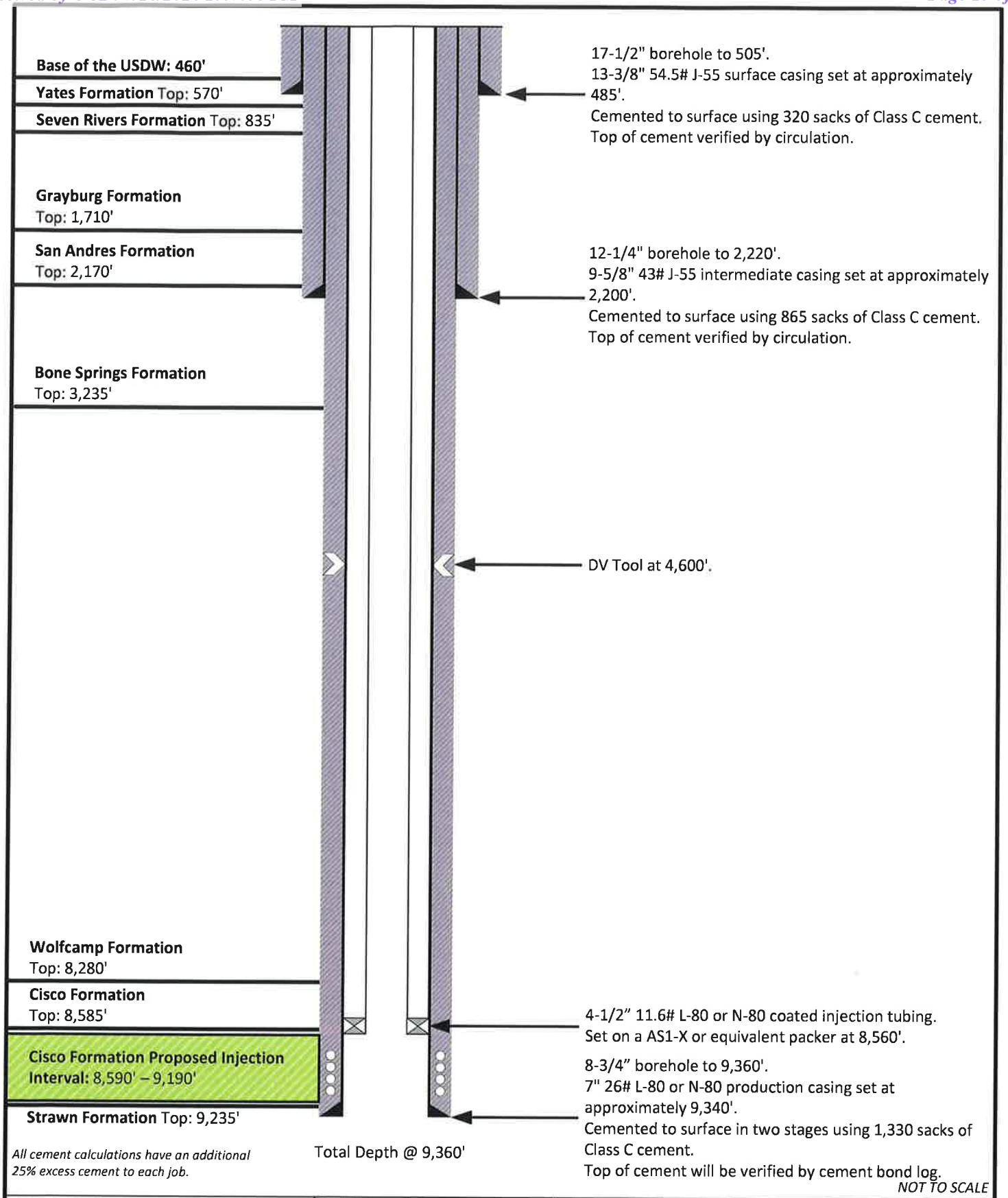
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

NOVEMBER 22, 2022
Date of Survey

Signature and Seal of Professional Surveyor

Certificate Number: FILIMON F. JARAMILLO PLS 12797
SURVEY NO. 9579

Ex.A-9



All cement calculations have an additional 25% excess cement to each job.

NOT TO SCALE

Prepared by: ALL CONSULTING

Prepared for: RILEY PERMIAN

Drawn by: Reed Davis

Project Manager: Oliver Seekins

Date: 6/26/2024

Angel Ranch State SWD #1
Riley Permian Operating Company, LLC
Sec. 12 Town. 19S Rng. 27E
Lat: 32.6783479° Long: -104.2278101° (NAD 83)

Ex. A.10

AS1-X MECHANICAL PACKER

The ACT AS1-X Packer is the most versatile of the mechanically set retrievable packers and may be used in any production application. Treating, testing, injecting, pumping wells, flowing wells, deep or shallow, the AS1-X is suited for all. The packer can be left in tension or compression, depending on well conditions and the required application. A large internal by-pass reduces swabbing when running and retrieving. The by-pass closes when the packer is set and opens prior to releasing the upper slips when retrieving to allow pressure equalization.

The J-slot design allows easy setting and releasing: 1/4 turn right-hand set, right-hand release. A patented upper-slip releasing system reduces the force required to release the packer. A non directional slip is released first, making it easier to release the other slips. The AS1-X packer can withstand 7,000 psi (48 MPa) of differential pressure above or below.

FEATURES, ADVANTAGES AND BENEFITS:

- The design holds high differential pressure from above or below, enabling the packer to meet most production, stimulation, and injection needs
- The packer can be set with compression, tension, or wire line, enabling deployment in shallow and deep applications
- The packer can be set and released with only a one-quarter turn of the tubing
- The bypass valve is below the upper slips so that debris are washed from the slips when the valve is opened, reducing the times for circulation and total retrieval
- The full opening enables unrestricted flow and the passage of wire line tools and other packer systems
- The packer can be run with the T-2 on-off tool, which enables the tubing to be disconnected and removed without retrieving the packer

OPTIONS:

- Elastomer options are available for hostile environments
- Optional safety releases are available

AS1-X MECHANICAL PACKER							
CASING		RECOMMENDED HOLE SIZE (inches)	TOOL OD MAX (inches)	TOOL ID MIN (inches)	THREAD CONNECTION BOX UP / PIN DOWN	PART NO.
SIZE (inches)	WEIGHT (lbs/ft)					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

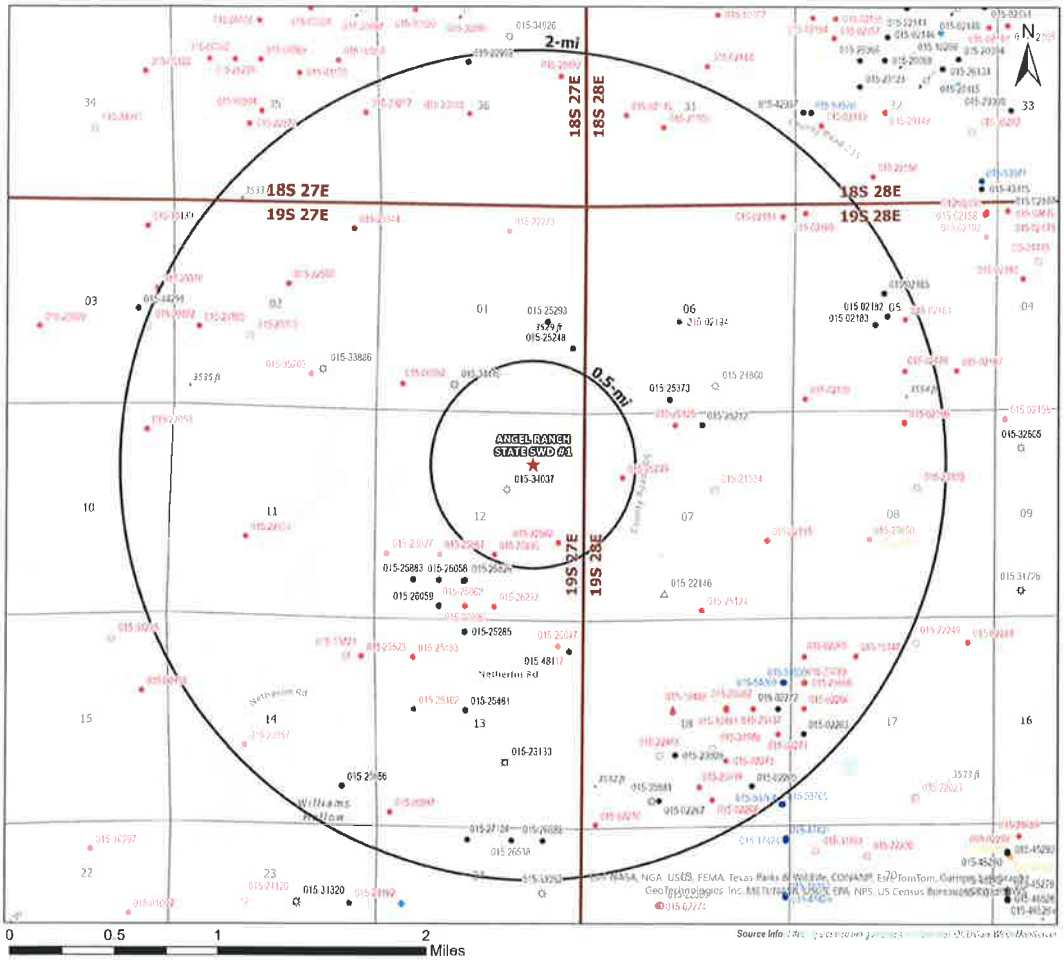
XXXX is changed as per material / elastomer / end connection

Ex.A-11

Attachment 2

Area of Review Information:

- 2-mile Oil & Gas Well Map
- 1/2-Mile AOR Well Table
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership Map
- Karst Risk Map
- Potash Lease Map



Legend

- Proposed SWD
- Gas, Active (13)
- Gas, Plugged (16)
- Gas, Temporarily Abandoned (1)
- Injection, Active (3)
- Injection, Plugged (2)
- Oil, Active (45)
- Oil, New (10)
- Oil, Plugged (92)
- Oil, Temporarily Abandoned (2)
- Salt Water Injection, Active (1)
- Water, Plugged (1)
- Reclamation Fund (3)

2-mile Oil & Gas Well AOR

ANGEL RANCH STATE SWD #1

EDDY COUNTY, NEW MEXICO

Proj Mgr: Mark Kidder	July 10, 2024	Mapped by: Ben Bockelmann

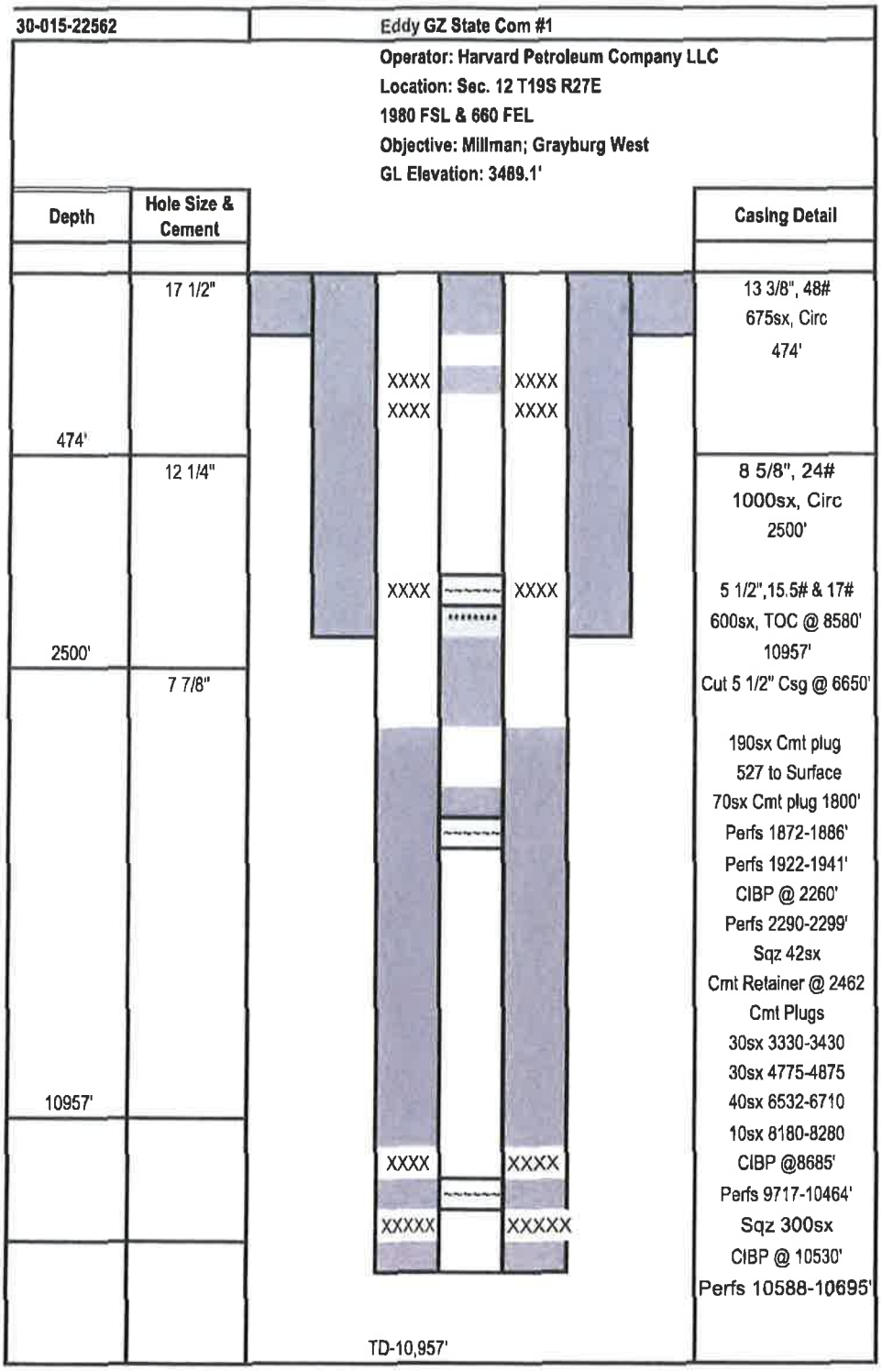
Prepared for: RILEY PERMIAN

Prepared by: ALL CONSULTING

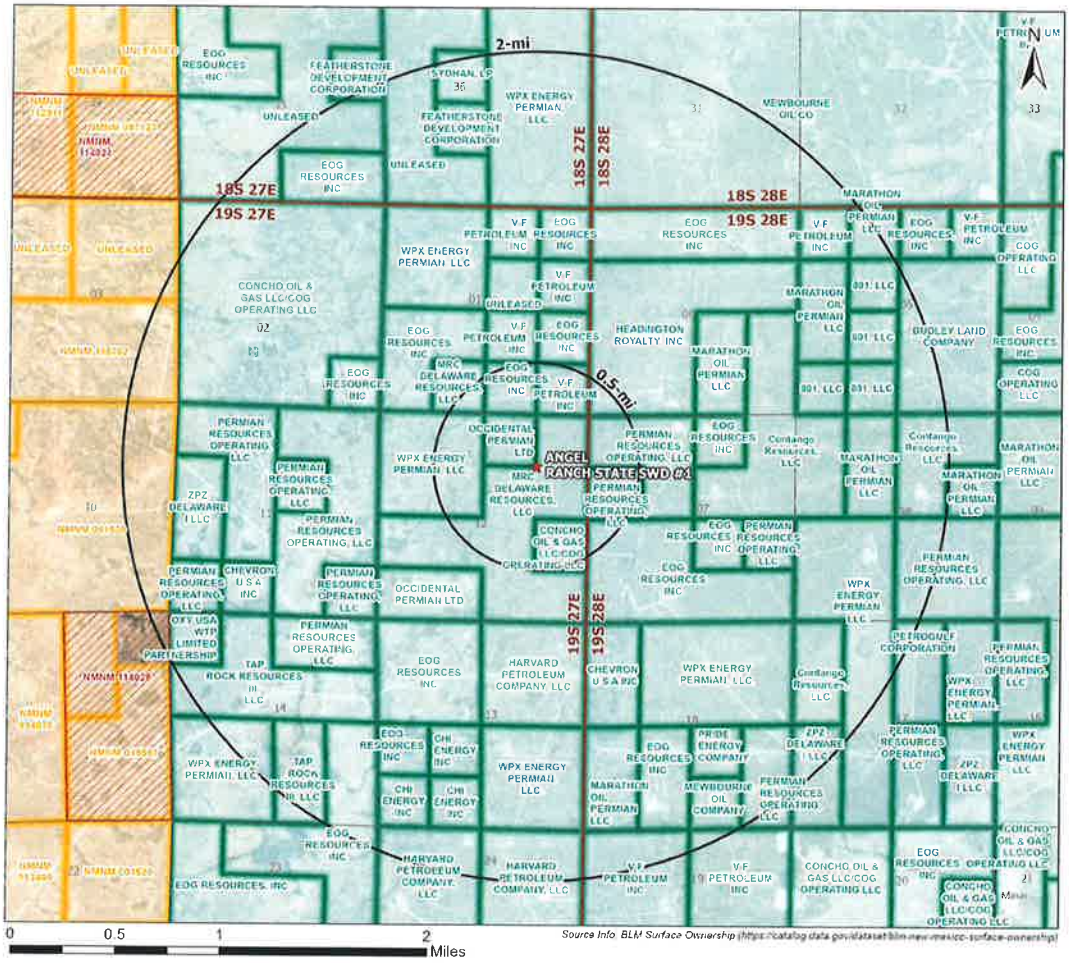
Ex.A-13

1/2-Mile AOR Well Table for Angel Ranch State SWD #1 (Top of Injection Interval: 8,590')							
Well Name	API#	Well Type	Operator	Spud Date	Location (Sec., Tn., Rng.)	Total Vertical Depth (feet)	Penetrate Inj. Zone?
Spanish Dagger State Com #001	015-34037	Gas	COG Operating LLC	6/19/2005	G-12-19S-27E	11000	Yes
Eddy GZ State Com #001	015-22562	Oil (plugged)	Harvard Petroleum Company, LLC	6/5/1978	I-12-19S-27E	10957 (plugged)	Yes
JMD State #003	015-25890	Oil (plugged)	Harvard Petroleum Company, LLC	12/17/1988	J-12-19S-27E	2050 (plugged)	No
Tablero ABF State #002	015-25233	Oil (plugged)	Contango Resources, LLC	3/25/1985	E-07-19S-28E	2357 (plugged)	No
Notes: Two wells within the ½-mile AOR penetrate the proposed injection zone							

Casing Information for Wells Penetrating the Angel Ranch State SWD #1 Injection Zone							
Well Name	Casing	Set Depth	Casing Size	TOC	TOC Method Determined	Sks of Cement	Hole size
Spanish Dagger State Com #001	Surface	306'	13.375"	Surface	Circulated	475	17.5"
	Intermediate	2,051'	9.625"	Surface	Circulated	600	12.25"
	Production	11,000'	5.5"	Surface	Circulated	1975	8.75"
Eddy GZ State Com #001	Surface	474'	13.375"	Surface	Circulated	675	17.5"
	Intermediate	2,500'	8.625"	Surface	Circulated	1000	12.25"
	Production	10,957'	5.5"	8,580'	Temperature Survey	600	7.875"
	Plugging details	CIBP @10,525'. Squeeze perfs from 9,717'-9,742' with 100 sx and 9,434'-9,588' with 150 sx. CIBP @8,685' with 35 sx on top to 8,280'. Plug @8,180'-8,280' with 10 sx. Cut and pull casing at 6,650'. Plug @6,532-6,710' with 40 sx, and @3,330'-3,430' with 30 sx. Squeeze 42 sx below 8,625" cement retainer at 2,480', spot 14 sx on top. CIBP @2,260'. 40 sx plug tagged @1,855', 30 sx plug tagged @1,676'. Circulated 190 sx from 527'-surface.					


30-015-22562
Eddy GZ State Com #1
Operator: Harvard Petroleum Company LLC
Location: Sec. 12 T19S R27E
1980 FSL & 660 FEL
Objective: Millman; Grayburg West
GL Elevation: 3489.1'
Depth
Hole Size & Cement
Casing Detail
17 1/2"
13 3/8", 48#
675sx, Circ
474'
474'
12 1/4"
8 5/8", 24#
1000sx, Circ
2500'
2500'
7 7/8"
5 1/2",15.5# & 17#
600sx, TOC @ 8580'
10957'
Cut 5 1/2" Csg @ 6650'
190sx Cmt plug
527 to Surface
70sx Cmt plug 1800'
Perfs 1872-1886'
Perfs 1922-1941'
CIBP @ 2260'
Perfs 2290-2299'
Sqz 42sx
Cmt Retainer @ 2462
Cmt Plugs
30sx 3330-3430
30sx 4775-4875
40sx 6532-6710
10sx 8180-8280
10957'
CIBP @8685'
Perfs 9717-10464'
Sqz 300sx
CIBP @ 10530'
Perfs 10588-10695'
XXXX
XXXXX
TD-10,957'

Ex.A-15



Legend

- ★ Proposed SWD
- BLM Communitization Units
- NMSLO Mineral Leases
- BLM Authorized O&G Leases

1/2-mile AOR Lessees/Unit Operators

- COG Operating LLC (NMSLO Lessee)
- Concho Oil & Gas LLC (NMSLO Lessee)
- EOG Resources Inc. (NMSLO Lessee)
- Headington Royalty, Inc. (NMSLO Lessee)
- MRC Delaware Resources, LLC (NMSLO Lessee)
- Occidental Permian LTD (NMSLO Lessee)
- Permian Resources Operating, LLC (NMSLO Lessee)
- WPX Energy Permian, LLC (NMSLO Lessee)
- V-F Petroleum Inc. (NMSLO Lessee)

2-mile Mineral Lease AOR

ANGEL RANCH STATE SWD #1

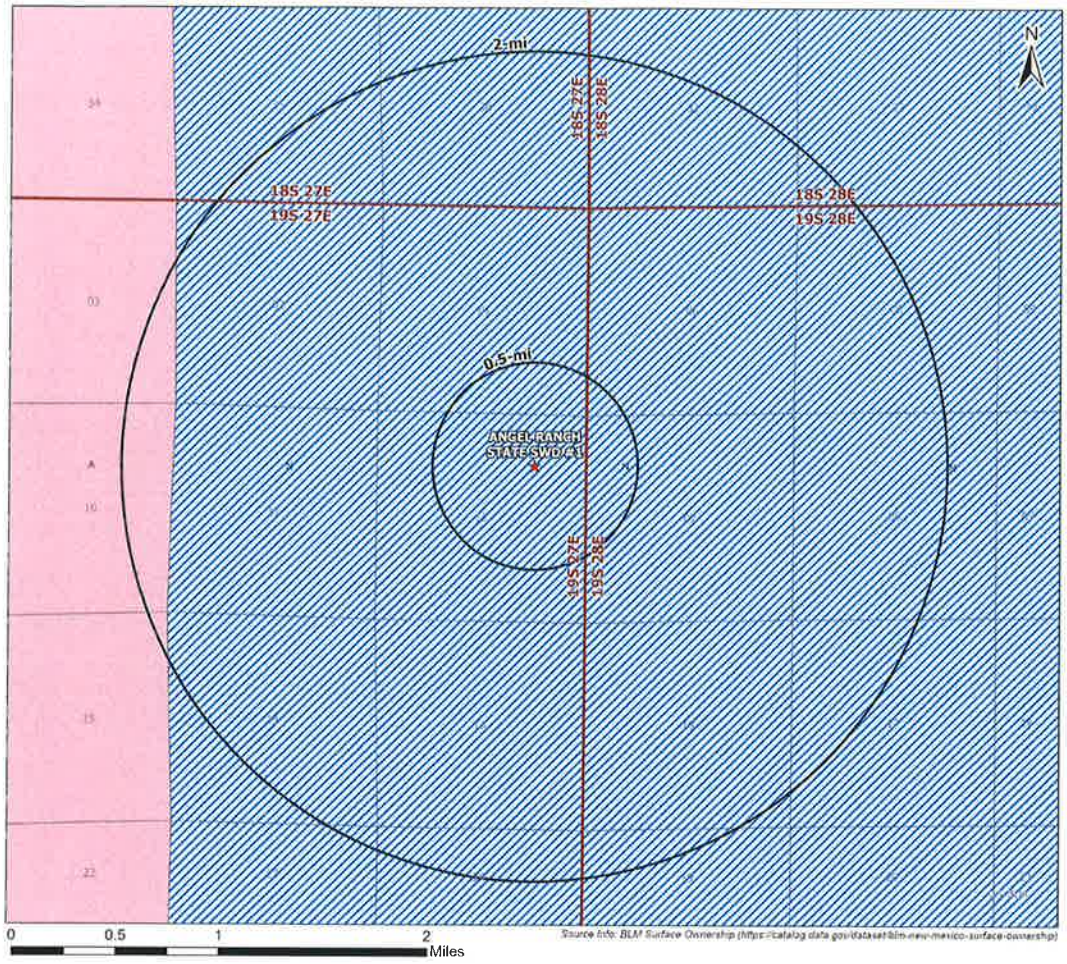
EDDY COUNTY, NEW MEXICO

Proj Mgr: Mark Kidder	July 10, 2024	Mapped by: Bon Bockelmann

Prepared by: RILEY PERMIAN

Prepared by: ALL CONSULTING

Ex.A-16



Legend

- ★ Proposed SWD
- Subsurface minerals (NMSLO)
- A-All minerals are owned by U.S.
- N-No minerals are owned by the U.S.

2-mile Mineral Ownership AOR

ANGEL RANCH STATE SWD #1

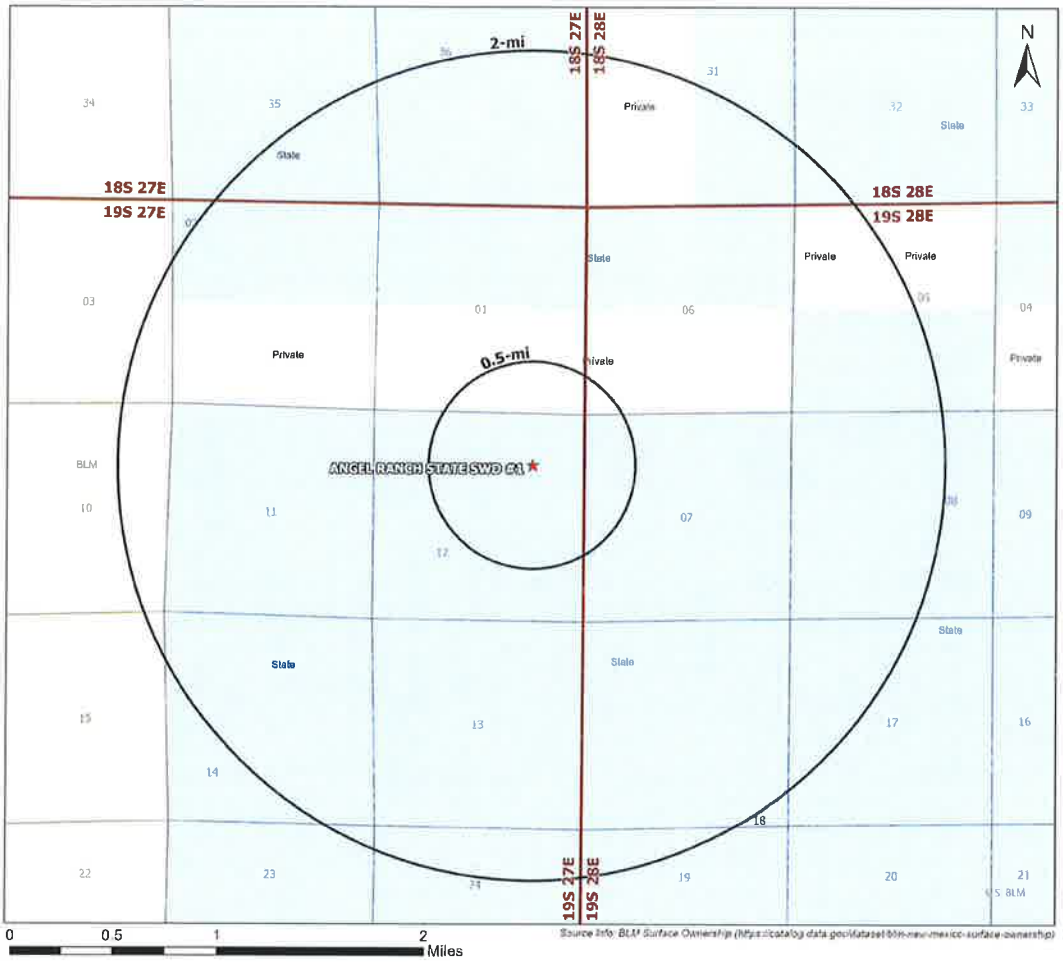
EDDY COUNTY, NEW MEXICO

Proj Mgr: Mark Kidder	July 10, 2024	Mapped by: Ben Bockelmann

Prepared by: RILEY PERMIAN

Prepared for: ALL CONSULTING

Ex.A-17



Source Info: BLM Surface Ownership (https://catalog.data.gov/dataset/blm-new-mexico-surface-ownership)

Legend

★ Proposed SWD

Land Ownership

- BLM
- BOR
- DOD
- DOE
- FS
- FWS
- I
- NPS
- P
- S
- SGF
- SP
- USDA
- VCNP

2-mile Surface Ownership AOR

ANGEL RANCH STATE SWD #1

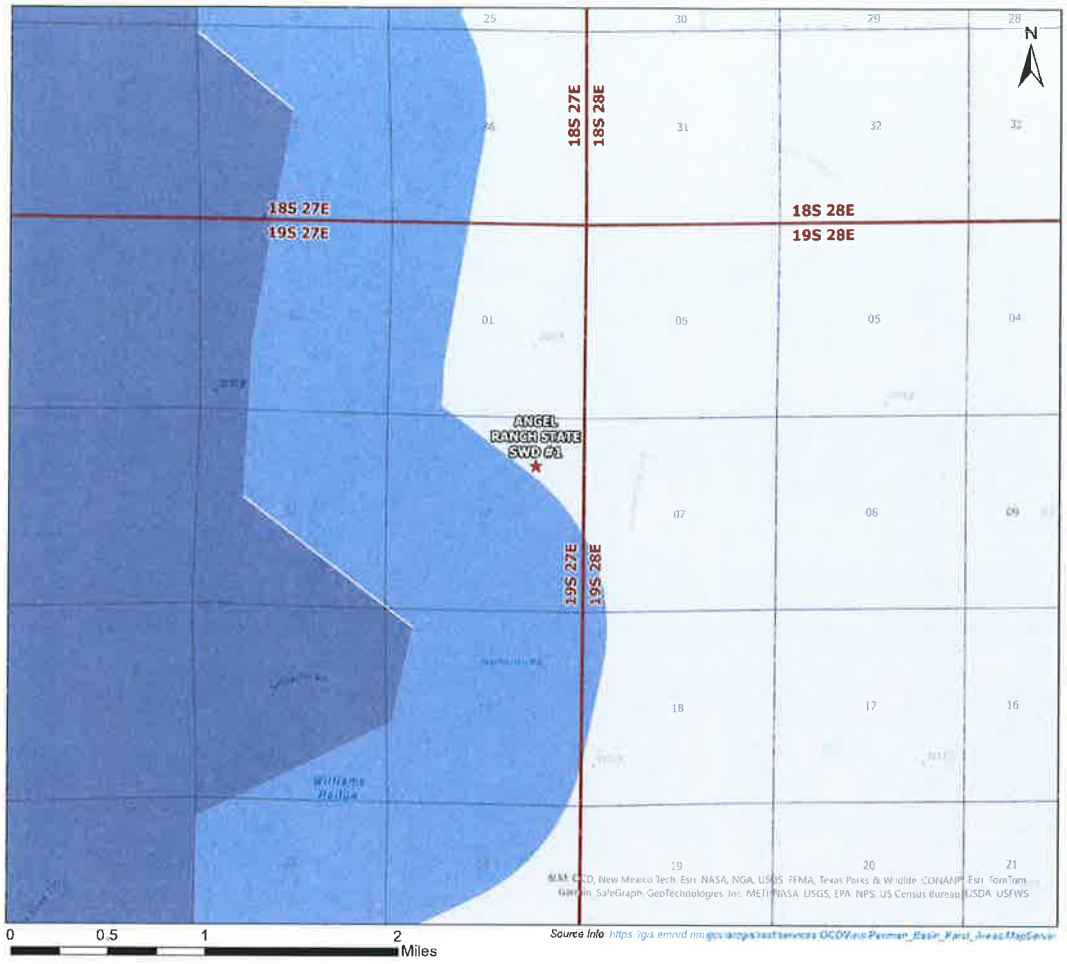
EDDY COUNTY, NEW MEXICO

Proj Mgr: Mark Kidder	July 10, 2024	Mapped by: Ben Bockelmann

Prepared for: RILEY PERMIAN

Prepared by: ALL CONSULTING

Ex.A-18



Legend

- Proposed SWD
- Critical Karst Resource Area

Karst Occurrence Potential

Potential

- High
- Medium
- Low

Karst Potential AOR

ANGEL RANCH STATE SWD #1

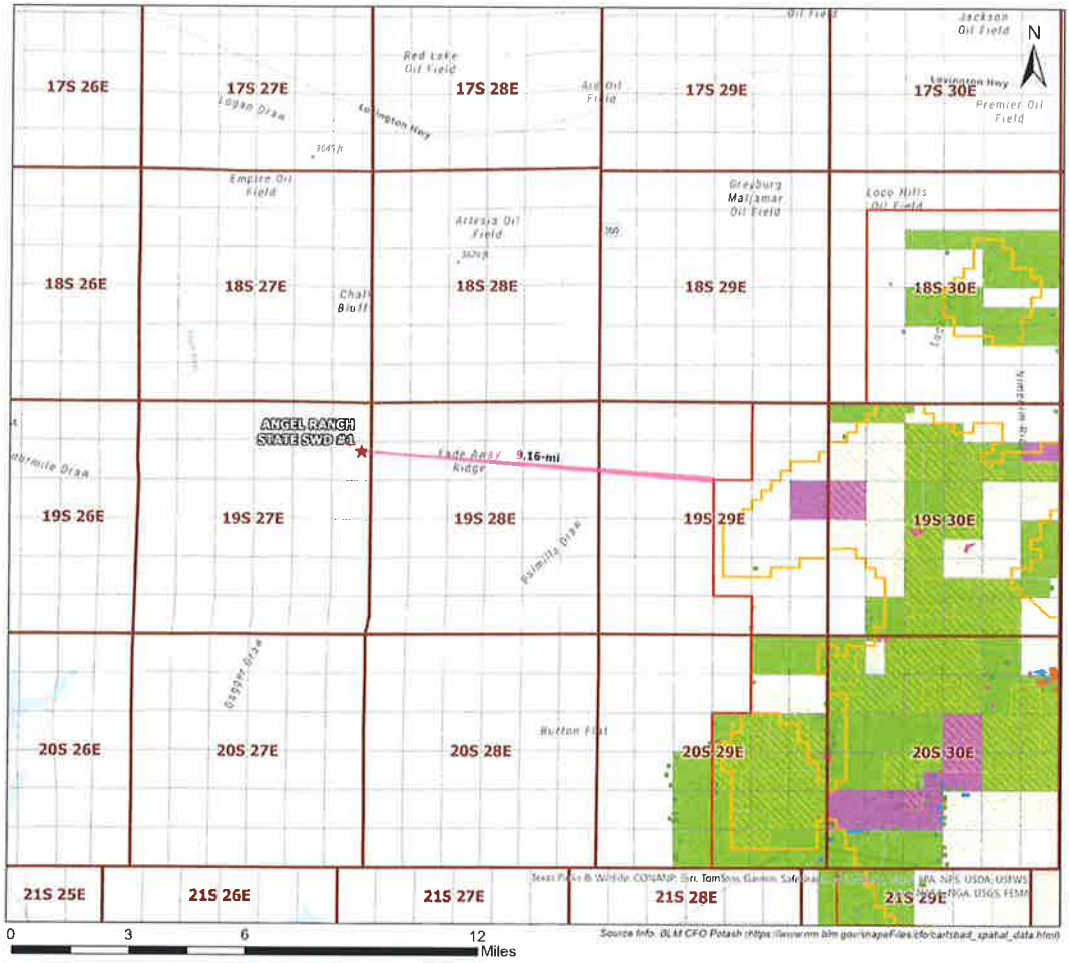
EDDY COUNTY, NEW MEXICO

Proj Mgr: Mark Kidder	July 10, 2024	Mapped by: Ben Bockelmann

Prepared for: RILEY PERMIAN

Prepared by: ALL CONSULTING

Ex A-19



Legend

- ★ Proposed SWD
- SOPA 1986
- Known Potash Leasing Area
- Intrepid and Mosaic Potash Leases

DRILL ISLANDS 2024-06-18

Status,Depth_Buff

- Approved,Half Mile
- Approved,Quarter Mile
- Nominated,Half Mile
- Nominated,Quarter Mile

Development Areas 2024-06-18

Status

- Approved
- Pending

Potash Lease AOR

ANGEL RANCH STATE SWD #1

EDDY COUNTY, NEW MEXICO

Proj Mgr: Mark Kidder	July 10, 2024	Mapped by: Ben Bockelmann

RILEY PERMIAN | ALL CONSULTING

Ex A-20

Attachment 3

Source Water Analyses

Ex.A-21

DownHole SAT™ Water Analysis Report

French Creek Software

SYSTEM IDENTIFICATION

Supreme Technologies
Redwood
Leavitt 13 #2H WH
Glorieta-Yeso

Sample ID#: 0
ID 2021-06-04-39

Sample Date: 06-02-2021 at 2216
Report Date: 06-09-2021

WATER CHEMISTRY

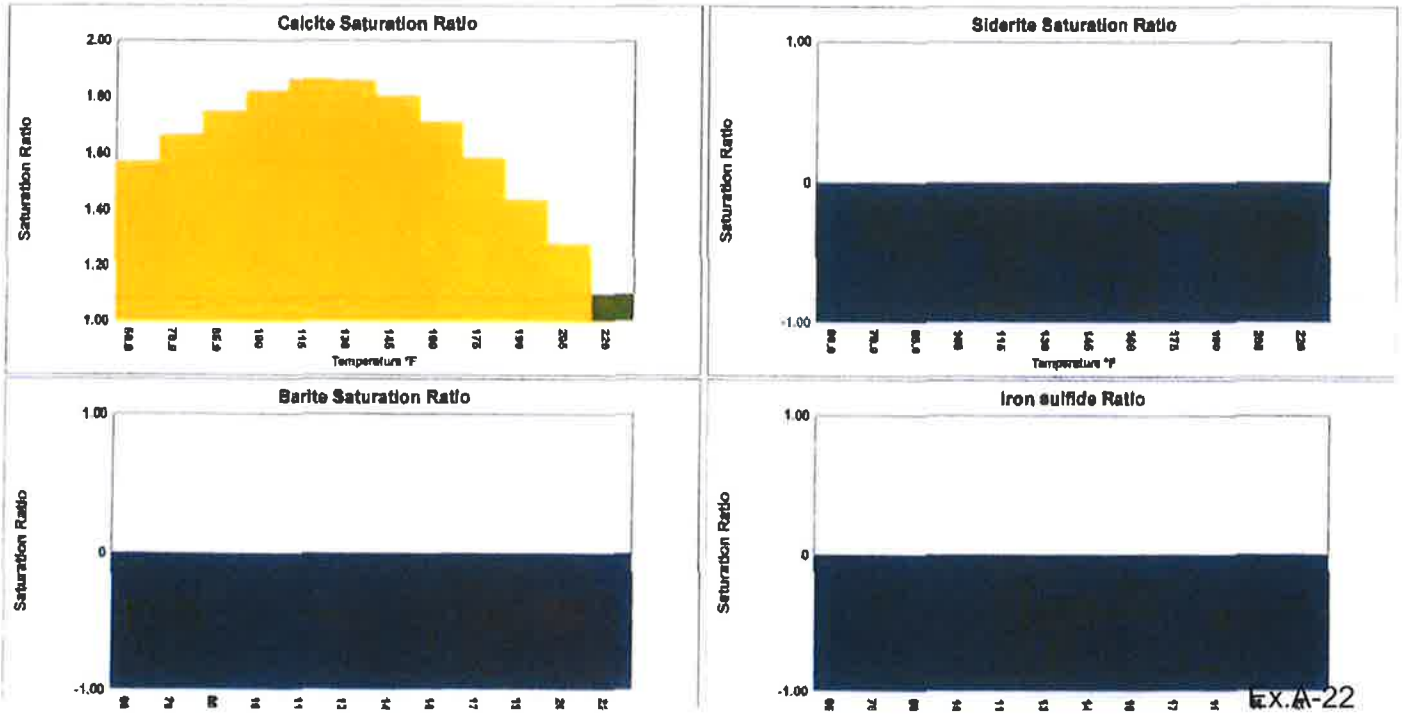
CATIONS		ANIONS	
Calcium(as Ca)	4593	Chloride(as Cl)	121021
Magnesium(as Mg)	984.00	Sulfate(as SO_4)	2179
Barium(as Ba)	0.00	Dissolved CO_2(as CO_2)	225.06
Strontium(as Sr)	88.00	Bicarbonate(as HCO_3)	427.00
Sodium(as Na)	71855	H_2S (as H_2S)	30.00
Potassium(as K)	978.00	Boron(as B)	12.00
Lithium(as Li)	24.00		
Iron(as Fe)	0.00		
Manganese(as Mn)	0.100		
Zinc(as Zn)	0.00		

PARAMETERS			
Temperature(°F)	77.00	Sample pH	6.00
Conductivity	233708	Sp.Gr.(g/mL)	1.130
Resistivity	4.28	T.D.S.	217105

SCALE AND CORROSION POTENTIAL

Temp.	Press.		Calcite		Anhydrite		Gypsum		Barite		Celestite		Siderite		Mackinawite	
(°F)	(psia)		$CaCO_3$		$CaSO_4$		$CaSO_4*2H_2O$		$BaSO_4$		$SrSO_4$		$FeCO_3$		FeS	
60.00	14.70	1.58	0.00963	178.84	1.05	17.58	1.38	108.98	0.00	-0.0736	0.411	-79.55	0.00	-0.395	0.00	-0.46
70.00	15.00	1.67	0.0104	184.07	1.01	3.67	1.28	83.70	0.00	-0.0991	0.388	-86.07	0.00	-0.366	0.00	-0.54
85.00	38.50	1.75	0.0106	174.23	0.989	-3.45	1.16	50.30	0.00	-0.148	0.367	-91.83	0.00	-0.329	0.00	-0.37
100.00	62.00	1.83	0.0106	170.85	1.01	4.28	1.07	23.34	0.00	-0.211	0.357	-94.32	0.00	-0.299	0.00	-0.33
115.00	85.50	1.87	0.0103	168.46	1.09	22.87	1.11	32.79	0.00	-0.289	0.350	-95.57	0.00	-0.274	0.00	-0.33
130.00	109.00	1.86	0.00952	167.78	1.21	47.80	1.18	47.41	0.00	-0.392	0.342	-97.40	0.00	-0.253	0.00	-0.34
145.00	132.50	1.81	0.00841	168.21	1.39	75.32	1.24	58.25	0.00	-0.526	0.333	-99.84	0.00	-0.236	0.00	-0.38
160.00	156.00	1.71	0.00706	169.31	1.65	102.76	1.29	66.46	0.00	-0.700	0.323	-102.76	0.00	-0.221	0.00	-0.43
175.00	179.50	1.59	0.00556	170.82	2.01	127.90	1.34	72.41	0.00	-0.923	0.312	-106.28	0.00	-0.209	0.00	-0.50
190.00	203.00	1.44	0.00403	169.62	2.51	149.92	1.38	76.85	0.00	-1.21	0.300	-110.31	0.00	-0.199	0.00	-0.60
205.00	226.50	1.28	0.00252	168.50	3.20	168.52	1.42	80.17	0.00	-1.57	0.289	-114.86	0.00	-0.190	0.00	-0.71
220.00	250.00	1.10	< 0.001	165.97	4.12	186.86	1.43	81.83	0.00	-2.05	0.273	-122.64	0.00	-0.186	0.00	-0.89
			Lbs per	PP		Lbs per		Lbs per		Lbs per		Lbs per		Lbs per	PP	Lbs pe
		xSAT	1000 Barrels		xSAT	1000 Barrels	xSAT	1000 Barrels	xSAT	1000 Barrels	xSAT	1000 Barrels	xSAT	1000 Barrels		xSAT	1000 Barrels

Saturation Ratios (xSAT) are the ratio of ion activity to solubility, e.g. $(Ca)(CO_3)/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.



DownHole SAT(tm)

SURFACE WATER CHEMISTRY INPUT

Supreme Technologies
Leavitt 13 #2H WH
Glorieta-Yeso

Redwood

Report Date: 06-09-2021
Sample #: 0

Sampled: 06-02-2021 at 2216
Sample ID: 2021-06-04-39

CATIONS		ANIONS	
Calcium (as Ca)	4593	Chloride (as Cl)	121021
Magnesium (as Mg)	984.00	Sulfate (as SO_4)	2179
Barium (as Ba)	0.00	Dissolved CO_2 (as CO_2)	225.06
Strontium (as Sr)	88.00	Bicarbonate (as HCO_3)	427.00
Sodium (as Na)	71855	H_2S (as H_2S)	30.00
Potassium (as K)	978.00	Boron (as B)	12.00
Lithium (as Li)	24.00		
Iron (as Fe)	0.00		
Manganese (as Mn)	0.100		
Zinc (as Zn)	0.00		

PARAMETERS		BOUND IONS	TOTAL	FREE
Calculated T.D.S.	217105	Calcium	5190	4753
Molar Conductivity	233708	Barium	0.00	0.00
Resistivity	4.28	Carbonate	20.07	0.0439
Sp.Gr.(g/mL)	1.130	Phosphate	0.00	0.00
Pressure(psia)	15.00	Sulfate	2462	696.30
Temperature (^{O}F)	77.00			
pH	6.00			

CORROSION RATE PREDICTION

CO_2 - H_2S Rate(mpy) 0.327

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

Ex.A-23

DownHole SAT(tm)

SURFACE WATER
DEPOSITION POTENTIAL INDICATORS

Supreme Technologies — Redwood
Leavitt 13 #2H WH
Glorieta-Yeso

Report Date: 06-09-2021 — Sampled: 06-02-2021 at 2216
Sample #: 0 — Sample ID: 2021-06-04-39

SATURATION RATIO as IAP/Ksp		FREE ION MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite ($CaCO_3$)	1.73	Calcite ($CaCO_3$)	0.0108
Aragonite ($CaCO_3$)	1.60	Aragonite ($CaCO_3$)	0.00959
Witherite ($BaCO_3$)	0.00	Witherite ($BaCO_3$)	-27.73
Strontianite ($SrCO_3$)	0.03	Strontianite ($SrCO_3$)	-1.28
Calcium oxalate (CaC_2O_4)	0.00	Calcium oxalate (CaC_2O_4)	-0.00752
Magnesite ($MgCO_3$)	0.44	Magnesite ($MgCO_3$)	-0.0271
Anhydrite ($CaSO_4$)	1.00	Anhydrite ($CaSO_4$)	-1.15
Gypsum ($CaSO_4*2H_2O$)	1.22	Gypsum ($CaSO_4*2H_2O$)	67.84
Barite ($BaSO_4$)	0.00	Barite ($BaSO_4$)	-0.120
Celestite ($SrSO_4$)	0.38	Celestite ($SrSO_4$)	-89.07
Fluorite (CaF_2)	0.00	Fluorite (CaF_2)	-2.78
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-263.20
Silica (SiO_2)	0.00	Silica (SiO_2)	-27.99
Brucite ($Mg(OH)_2$)	< 0.001	Brucite ($Mg(OH)_2$)	-0.233
Magnesium silicate	0.00	Magnesium silicate	-87.51
Iron hydroxide ($Fe(OH)_3$)	0.00	Iron hydroxide ($Fe(OH)_3$)	-0.211
Strengite ($FePO_4*2H_2O$)	0.00	Strengite ($FePO_4*2H_2O$)	>-0.001
Siderite ($FeCO_3$)	0.00	Siderite ($FeCO_3$)	-0.347
Halite (NaCl)	0.24	Halite (NaCl)	-73627
Thenardite ($Na2SO_4$)	0.00	Thenardite ($Na2SO_4$)	-84955
Iron sulfide (FeS)	0.00	Iron sulfide (FeS)	-0.570

SIMPLE INDICES		CARBONATE PRECIPITATION POTENTIAL (Lbs/1000 Barrels)	
Langelier	0.876	Calcite ($CaCO_3$)	187.56
Ryznar	4.25	Aragonite ($CaCO_3$)	185.27
Puckorius	1.66	Witherite ($BaCO_3$)	0.00
Larson-Skold Index	301.16	Strontianite ($SrCO_3$)	-18.23
Stiff Davis Index	0.732	Magnesite ($MgCO_3$)	135.47
Oddo-Tomson	-0.237	Siderite ($FeCO_3$)	0.00

OPERATING CONDITIONS

Temperature (^oF)	77.00
Time(mins)	3.00

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

Ex.A-24

DownHole SAT™ Water Analysis Report

French Creek Software

SYSTEM IDENTIFICATION

Supreme Technologies
Redwood
Leavitt 14 A #2 WH
Glorieta-Yeso

Sample ID#: 0
ID: 2021-06-03-28

Sample Date: 05-31-2021 at 1553
Report Date: 06-06-2021

WATER CHEMISTRY

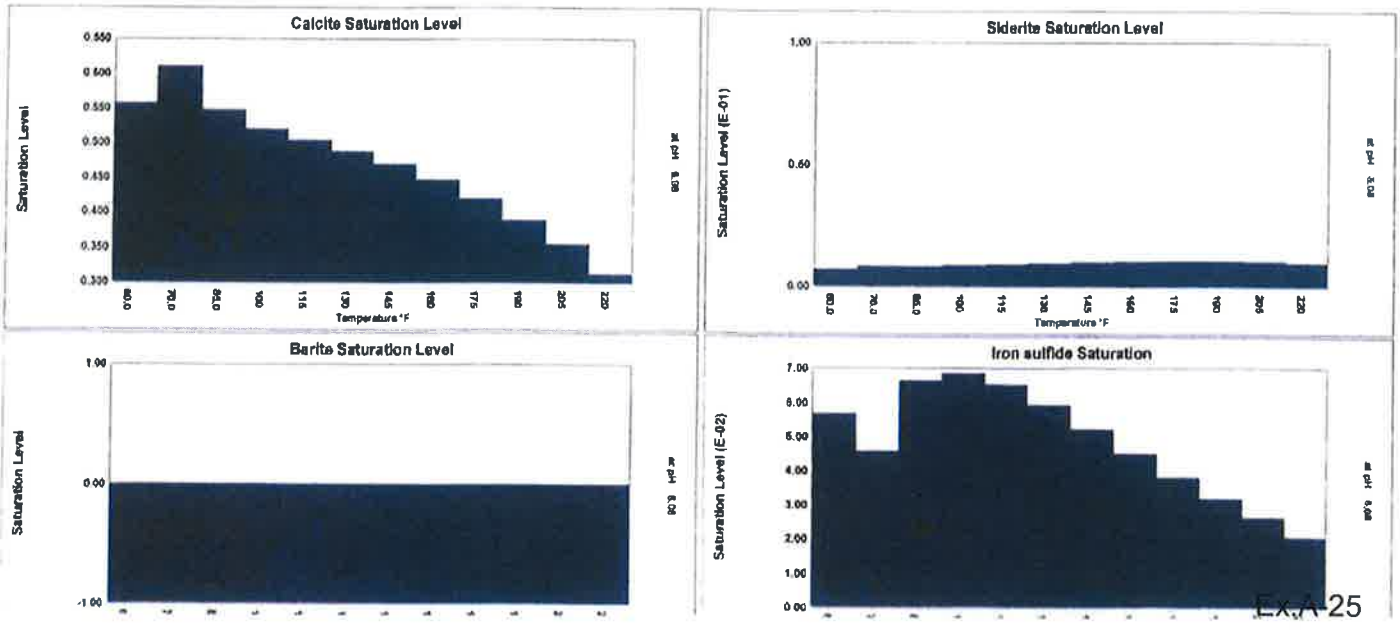
CATIONS		ANIONS	
Calcium(as Ca)	4646	Chloride(as Cl)	[illegible]
Magnesium(as Mg)	964.00	Sulfate(as SO_4)	1796
Barium(as Ba)	0.00	Dissolved CO_2(as CO_2)	180.00
Strontium(as Sr)	87.00	Bicarbonate(as HCO_3)	329.00
Sodium(as Na)	66750	H_2S (as H_2S)	136.00
Potassium(as K)	863.00	Boron(as B)	13.00
Lithium(as Li)	23.00		
Iron(as Fe)	0.100		
Manganese(as Mn)	0.00		
Zinc(as Zn)	0.00		

PARAMETERS	
Temperature(^{0}F)	77.00
Sample pH	6.00
Conductivity	286589
T.D.S.	180517
Resistivity	3.49
Sp.Gr.(g/mL)	1.13

SCALE AND CORROSION POTENTIAL

Temp.	Press.	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2	pCO_2
(^{0}F)	(psig)	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	(mpy)	(atm)
60.00	0.00	0.557	-0.0110	0.677	-140.34	0.950	-18.16	0.00	-0.0765	0.345	-89.18	0.00676	-0.368	0.0566	-0.139	0.239	0.0870
70.00	0.30	0.610	-0.00898	0.652	-151.80	0.885	-42.84	0.00	-0.103	0.326	-95.07	0.00796	-0.338	0.0456	-0.171	0.367	0.0888
85.00	23.80	0.547	-0.00941	0.641	-151.98	0.806	-75.10	0.00	-0.153	0.310	-100.05	0.00794	-0.303	0.0660	-0.115	0.966	0.228
100.00	47.30	0.519	-0.00912	0.661	-133.98	0.748	-100.40	0.00	-0.216	0.303	-101.79	0.00832	-0.273	0.0683	-0.109	1.75	0.367
115.00	70.80	0.503	-0.00871	0.710	-102.98	0.777	-82.25	0.00	-0.295	0.299	-102.38	0.00886	-0.247	0.0651	-0.113	2.25	0.506
130.00	94.30	0.487	-0.00837	0.791	-64.36	0.826	-58.49	0.00	-0.398	0.293	-103.55	0.00940	-0.226	0.0591	-0.122	2.52	0.645
145.00	117.80	0.469	-0.00816	0.912	-22.83	0.870	-40.00	0.00	-0.533	0.287	-105.29	0.00986	-0.208	0.0521	-0.135	2.74	0.784
160.00	141.30	0.447	-0.00809	1.08	17.91	0.911	-25.62	0.00	-0.706	0.279	-107.59	0.0102	-0.193	0.0450	-0.154	2.99	0.923
175.00	164.80	0.419	-0.00814	1.32	55.27	0.946	-14.54	0.00	-0.927	0.271	-110.46	0.0104	-0.180	0.0382	-0.177	3.19	1.06
190.00	188.30	0.388	-0.00831	1.66	87.92	0.976	-6.06	0.00	-1.21	0.261	-113.86	0.0103	-0.169	0.0319	-0.206	1.48	1.20
205.00	211.80	0.355	-0.00857	2.12	115.46	1.00	0.432	0.00	-1.56	0.252	-117.80	0.0102	-0.160	0.0262	-0.244	0.706	1.34
220.00	235.30	0.313	-0.00929	2.72	139.62	1.01	2.06	0.00	-2.04	0.239	-124.90	0.00961	-0.156	0.0205	-0.298	0.273	1.48

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. $(Ca)(CO_3)/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium



DownHole SAT(tm)

SURFACE WATER CHEMISTRY INPUT

Supreme Technologies — Redwood
Leavitt 14 A #2 WH
Glorieta-Yeso

Report Date: 06-06-2021 Sampled: 05-31-2021 at 1553
Sample ID: 2021-06-03-28 Sample ID: 2021-06-03-28

CATIONS		ANIONS	
Calcium (as Ca)	4646	Chloride (as Cl)	111832
Magnesium (as Mg)	964.00	Sulfate (as SO_4)	1796
Barium (as Ba)	0.00	Dissolved CO_2 (as CO_2)	180.00
Strontium (as Sr)	87.00	Bicarbonate (as HCO_3)	329.00
Sodium (as Na)	66750	H_2S (as H_2S)	136.00
Potassium (as K)	863.00	Boron (as B)	13.00
Lithium (as Li)	23.00		
Iron (as Fe)	0.100		
Manganese (as Mn)	0.00		
Zinc (as Zn)	0.00		

PARAMETERS

Calculated T.D.S.	180517
Molar Conductivity	286589
Resistivity	3.49
Sp.Gr.(g/mL)	1.13
Pressure(psia)	15.00
Temperature (^{0}F)	77.00
pH	6.00

CORROSION RATE PREDICTION

CO_2 - H_2S Rate(mpy)	0.452

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Ex.A-26

DownHole SAT(tm)

SURFACE WATER
DEPOSITION POTENTIAL INDICATORS

Supreme Technologies — Redwood
Leavitt 14 A #2 WH
Glorieta-Yeso

Report Date: 06-06-2021 Sampled: 05-31-2021 at 1553
Sample ID: 2021-06-03-28 Sample ID: 2021-06-03-28

SATURATION LEVEL		MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite ($CaCO_3$)	0.561	Calcite ($CaCO_3$)	-0.00958
Aragonite ($CaCO_3$)	0.519	Aragonite ($CaCO_3$)	-0.0114
Witherite ($BaCO_3$)	0.00	Witherite ($BaCO_3$)	-27.60
Strontianite ($SrCO_3$)	0.0118	Strontianite ($SrCO_3$)	-1.47
Calcium oxalate (CaC_2O_4)	0.00	Calcium oxalate (CaC_2O_4)	-0.0111
Magnesite ($MgCO_3$)	0.132	Magnesite ($MgCO_3$)	-0.0681
Anhydrite ($CaSO_4$)	0.644	Anhydrite ($CaSO_4$)	-153.56
Gypsum ($CaSO_4*2H_2O$)	0.847	Gypsum ($CaSO_4*2H_2O$)	-58.02
Barite ($BaSO_4$)	0.00	Barite ($BaSO_4$)	-0.124
Celestite ($SrSO_4$)	0.318	Celestite ($SrSO_4$)	-97.77
Fluorite (CaF_2)	0.00	Fluorite (CaF_2)	-3.47
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-304.59
Silica (SiO_2)	0.00	Silica (SiO_2)	-31.47
Brucite ($Mg(OH)_2$)	< 0.001	Brucite ($Mg(OH)_2$)	< 0.001
Magnesium silicate	0.00	Magnesium silicate	-96.47
Iron hydroxide ($Fe(OH)_3$)	< 0.001	Iron hydroxide ($Fe(OH)_3$)	< 0.001
Strengite ($FePO_4*2H_2O$)	0.00	Strengite ($FePO_4*2H_2O$)	>-0.001
Siderite ($FeCO_3$)	0.00769	Siderite ($FeCO_3$)	-0.321
Halite (NaCl)	0.133	Halite (NaCl)	-102986
Thenardite ($Na2SO_4$)	< 0.001	Thenardite ($Na2SO_4$)	-85717
Iron sulfide (FeS)	0.0429	Iron sulfide (FeS)	-0.181

SIMPLE INDICES		BOUND IONS	TOTAL	FREE
Langelier	0.246	Calcium	4646	4389
Ryznar	5.51	Barium	0.00	0.00
Puckorius	3.56	Carbonate	4.12	0.0211
Larson-Skold Index	660.02	Phosphate	0.00	0.00
Stiff Davis Index	-0.0648	Sulfate	1796	612.62
Oddo-Tomson	-0.901			

OPERATING CONDITIONS

Temperature (^oF)	77.00
Time(mins)	3.00

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

Ex.A-27

DownHole SAT™ Water Analysis Report

French Creek Software

SYSTEM IDENTIFICATION

Supreme Technologies
Redwood
Kaiser B #1 WH
Queen-Grayburg-
San Andres

Sample ID#: 0
ID: 2021-06-03-9

Sample Date: 05-31-2021 at 1553
Report Date: 06-06-2021

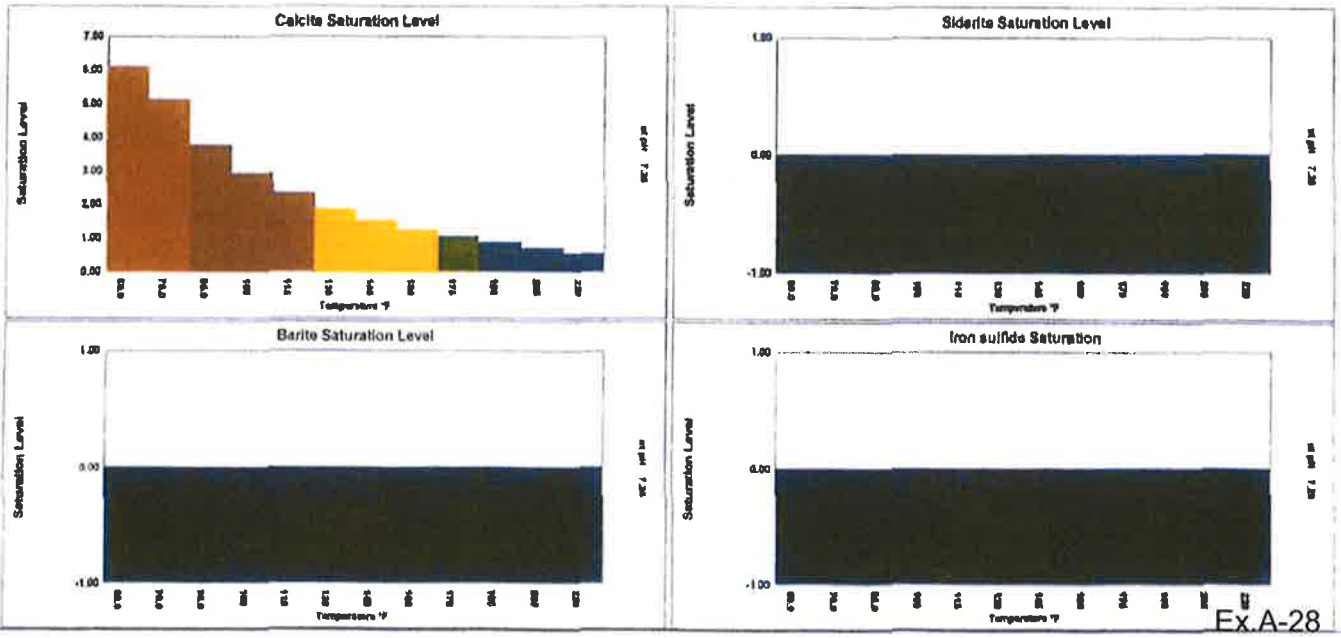
WATER CHEMISTRY

CATIONS		ANIONS	
Calcium(as Ca)	3262	Chloride(as Cl)	139429
Magnesium(as Mg)	556.00	Sulfate(as SO_4)	3973
Barium(as Ba)	0.00	Dissolved CO_2(as CO_2)	250.00
Strontium(as Sr)	59.00	Bicarbonate(as HCO_3)	390.00
Sodium(as Na)	88835	H_2S (as H_2S)	17.00
Potassium(as K)	50.00	Boron(as B)	8.90
Lithium(as Li)	22.00		
Iron(as Fe)	0.00		
Manganese(as Mn)	0.00	**PARAMETERS**	
		Temperature(°F)	77.00
		Sample pH	7.00
		Conductivity	396368
		T.D.S.	223486
		Resistivity	2.52
		Sp.Gr.(g/mL)	1.15
Zinc(as Zn)	0.00		

SCALE AND CORROSION POTENTIAL

Temp.	Press.	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2	pCO_2
(°F)	(psig)															(mpy)	(atm)
60.00	0.00	6.08	0.146	1.21	103.63	1.57	257.16	0.00	-0.0385	0.467	-45.14	0.00	-0.326	0.00	-0.0184	0.0458	0.0225
70.00	0.30	5.12	0.110	1.17	84.09	1.47	218.84	0.00	-0.0514	0.443	-49.29	0.00	-0.315	0.00	-0.0323	0.0447	0.0230
85.00	23.80	3.77	0.0667	1.15	75.36	1.34	167.95	0.00	-0.0761	0.424	-52.94	0.00	-0.299	0.00	-0.0303	0.102	0.0590
100.00	47.30	2.92	0.0423	1.19	89.72	1.25	127.15	0.00	-0.107	0.416	-54.40	0.00	-0.282	0.00	-0.0391	0.167	0.0951
115.00	70.80	2.33	0.0271	1.29	121.66	1.31	145.21	0.00	-0.146	0.412	-55.00	0.00	-0.264	0.00	-0.0535	0.0641	0.131
130.00	94.30	1.89	0.0168	1.45	164.10	1.40	171.41	0.00	-0.196	0.406	-56.09	0.00	-0.248	0.00	-0.0744	0.179	0.167
145.00	117.80	1.54	0.00963	1.68	212.03	1.49	191.96	0.00	-0.261	0.399	-57.55	0.00	-0.234	0.00	-0.103	0.307	0.203
160.00	141.30	1.26	0.00440	2.01	260.44	1.57	207.82	0.00	-0.344	0.390	-59.43	0.00	-0.222	0.00	-0.143	0.489	0.239
175.00	164.80	1.03	< 0.001	2.47	306.07	1.64	220.17	0.00	-0.451	0.380	-61.72	0.00	-0.211	0.00	-0.195	0.677	0.275
190.00	188.30	0.842	-0.00248	3.11	346.75	1.70	229.68	0.00	-0.586	0.368	-64.45	0.00	-0.202	0.00	-0.264	0.339	0.311
205.00	211.80	0.686	-0.00480	4.00	381.83	1.76	237.18	0.00	-0.757	0.356	-67.60	0.00	-0.194	0.00	-0.353	0.307	0.347
220.00	235.30	0.541	-0.00713	5.17	416.73	1.78	242.20	0.00	-0.988	0.337	-73.08	0.00	-0.190	0.00	-0.484	0.414	0.383
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. $(Ca)(CO_3)/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.



Ex.A-28

DownHole SAT(tm)

SURFACE WATER CHEMISTRY INPUT

Supreme Technologies — Redwood
Kaiser B #1 WH
Queen-Grayburg- San Andres

Report Date: 06-06-2021 Sampled: 05-31-2021 at 1553
Sample ID: 2021-06-03-9 Sample ID: 2021-06-03-9

CATIONS		ANIONS	
Calcium (as Ca)	3262	Chloride (as Cl)	139429
Magnesium (as Mg)	556.00	Sulfate (as SO_4)	3973
Barium (as Ba)	0.00	Dissolved CO_2 (as CO_2)	250.00
Strontium (as Sr)	59.00	Bicarbonate (as HCO_3)	390.00
Sodium (as Na)	88835	H_2S (as H_2S)	17.00
Potassium (as K)	50.00	Boron (as B)	8.90
Lithium (as Li)	22.00		
Iron (as Fe)	0.00		
Manganese (as Mn)	0.00		
Zinc (as Zn)	0.00		

PARAMETERS

Calculated T.D.S.	223486
Molar Conductivity	396368
Resistivity	2.52
Sp.Gr.(g/mL)	1.15
Pressure(psia)	15.00
Temperature (^oF)	77.00
pH	7.00

CORROSION RATE PREDICTION

CO_2 - H_2S Rate(mpy)	0.0528

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Ex.A-29

DownHole SAT(tm)

SURFACE WATER
DEPOSITION POTENTIAL INDICATORS

Supreme Technologies — Redwood
Kaiser B #1 WH
Queen-Grayburg-San Andres

Report Date: 06-06-2021 Sampled: 05-31-2021 at 1553
Sample ID: 2021-06-03-9 Sample ID: 2021-06-03-9

SATURATION LEVEL		MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite ($CaCO_3$)	3.94	Calcite ($CaCO_3$)	0.0745
Aragonite ($CaCO_3$)	3.65	Aragonite ($CaCO_3$)	0.0724
Witherite ($BaCO_3$)	0.00	Witherite ($BaCO_3$)	-28.05
Strontianite ($SrCO_3$)	0.0629	Strontianite ($SrCO_3$)	-2.06
Calcium oxalate (CaC_2O_4)	0.00	Calcium oxalate (CaC_2O_4)	-0.0129
Magnesite ($MgCO_3$)	0.793	Magnesite ($MgCO_3$)	-0.0219
Anhydrite ($CaSO_4$)	1.16	Anhydrite ($CaSO_4$)	78.07
Gypsum ($CaSO_4*2H_2O$)	1.41	Gypsum ($CaSO_4*2H_2O$)	194.92
Barite ($BaSO_4$)	0.00	Barite ($BaSO_4$)	-0.0621
Celestite ($SrSO_4$)	0.433	Celestite ($SrSO_4$)	-51.26
Fluorite (CaF_2)	0.00	Fluorite (CaF_2)	-3.67
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-267.07
Silica (SiO_2)	0.00	Silica (SiO_2)	-28.17
Brucite ($Mg(OH)_2$)	< 0.001	Brucite ($Mg(OH)_2$)	0.00303
Magnesium silicate	0.00	Magnesium silicate	-89.14
Iron hydroxide ($Fe(OH)_3$)	0.00	Iron hydroxide ($Fe(OH)_3$)	-0.214
Strengite ($FePO_4*2H_2O$)	0.00	Strengite ($FePO_4*2H_2O$)	>-0.001
Siderite ($FeCO_3$)	0.00	Siderite ($FeCO_3$)	-0.314
Halite (NaCl)	0.259	Halite (NaCl)	-72069
Thenardite ($Na2SO_4$)	< 0.001	Thenardite ($Na2SO_4$)	-86536
Iron sulfide (FeS)	0.00	Iron sulfide (FeS)	-0.0416

SIMPLE INDICES	
Langelier	1.39
Ryznar	4.21
Puckorius	3.03
Larson-Skold Index	570.61
Stiff Davis Index	1.25
Oddo-Tomson	0.281

BOUND IONS	TOTAL	FREE
Calcium	3262	2858
Barium	0.00	0.00
Carbonate	88.17	0.172
Phosphate	0.00	0.00
Sulfate	3973	1385

OPERATING CONDITIONS

Temperature (^oF)	77.00
Time(mins)	3.00

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Ex.A-30

Attachment 4

Injection Formation Water Analyses

Injection Formation Water Analysis

Riley Permian Operating Company LLC - Cisco Formation

Well Name	API	Latitude	Longitude	Section	Township	Range	Unit	Fnsn	Fnsw	County	State	Field	Formation	TDS (mg/L)	Ca (mg/L)	Fe (mg/L)	Chlorides (mg/L)	Bicarbonate (mg/L)	Sulfate (mg/L)	H2S (mg/L)
DAGGER DRAW #002	3001500116	32.62995	-104.51755	30	19S	25E	I	1969S	629E	EDDY	NM	DAGGER DRAW	CISCO	7622	-	-	-	-	-	-
JOHN AGU #002	3001526468	32.57923	-104.55240	14	20S	24E	A	660N	660E	EDDY	NM	DAGGER DRAW	CISCO	216236	4576	1000	53321	72619	952	0
KIMBALL 6 FEDERAL #001	3001510746	32.42635	-104.44072	6	22S	25E	4	718N	801W	EDDY	NM	INDIAN BASIN	CISCO	5606	-	-	1350	476	1900	-
SPRING SWD #001	3001500129	32.52066	-104.394409	4	21S	25E	A	660N	830E	EDDY	NM	SEVEN RIVERS HILLS	CISCO	31580	-	-	17370	502	2310	-
INDIAN BASIN #001	3001510093	32.4759	-104.576233	14	21S	23E	K	1650S	1650W	EDDY	NM	INDIAN BASIN	CISCO	8531	-	-	3238	846	1700	-
MARATHON FEDERAL #001	3001510373	32.46138	-104.559659	24	21S	23E	K	1650S	1650W	EDDY	NM	INDIAN BASIN	CISCO	162225	-	-	99300	32	750	-
JENNY COM #001	3001526469	32.66355	-104.513835	17	19S	25E	E	1750N	660W	EDDY	NM	DAGGER DRAW	CISCO	-	-	-	46850	183	12.5	-

Ex A-32

Attachment 5

Reservoir Characterization

Reservoir Characterization at the Angel Ranch State SWD #1

1. **Injection Formation and Confinement**

   a. **Injection Formation**

   The proposed injection interval includes the Cisco Formation from 8,590 to 9,190 feet. This formation consists of interbedded carbonate rocks including dolomites and limestones. Several thick intervals of porous and permeable carbonate rock capable of taking water are present within the Cisco Formation in the area.

   b. **Upper Confinement**

   Nearby open hole geophysical well logs indicate the proposed Cisco injection interval is overlain by approximately 67 feet of low porosity and low permeability shale within the lower Wolfcamp Formation, which will prevent the upward migration of fluid and act as the upper confining layer.

   c. **Lower Confinement**

   Nearby open hole geophysical well logs indicate the proposed Cisco injection interval is underlain by approximately 24 feet of low porosity and low permeability carbonate rocks within the lower Cisco Formation, which will prevent the downward migration of fluid and act as the lower confining layer.

   Due to the lower confinement zone being present within the Cisco, below is a table of approximate resistivity and porosity measurements of the lower confining layer derived from a nearby resistivity and porosity logs (API# 015-34037).

RILEY PERMIAN - ANGEL RANCH STATE SWD #1- LOWER CONFINEMENT

DEPTHS	RESISTIVITY READINGS (OHM METERS)	POROSITY MEASUREMENTS
9200'	1,000	2%
9202'	1,000	4%
9,204'	1,500	1%
9,206'	2,000	1%
9,208'	2,000	1%
9,210'	2,000	2%
9,212'	1,000	2%
9,214'	1,000	1%
9,216'	200	1%
9,218'	2,000	1%
9,220'	2,000	1%
9,222'	2,000	1%
9,224'	2,000	1%

Ex.A-34

2. Historic Field Usage

a. Offset Production

A review of all wells in the NMOCD database, within a 2-mile radius of the Angel Ranch State SWD #1, does not show any historic or current hydrocarbon production from the Cisco Formation.

b. Commercial Water Sources

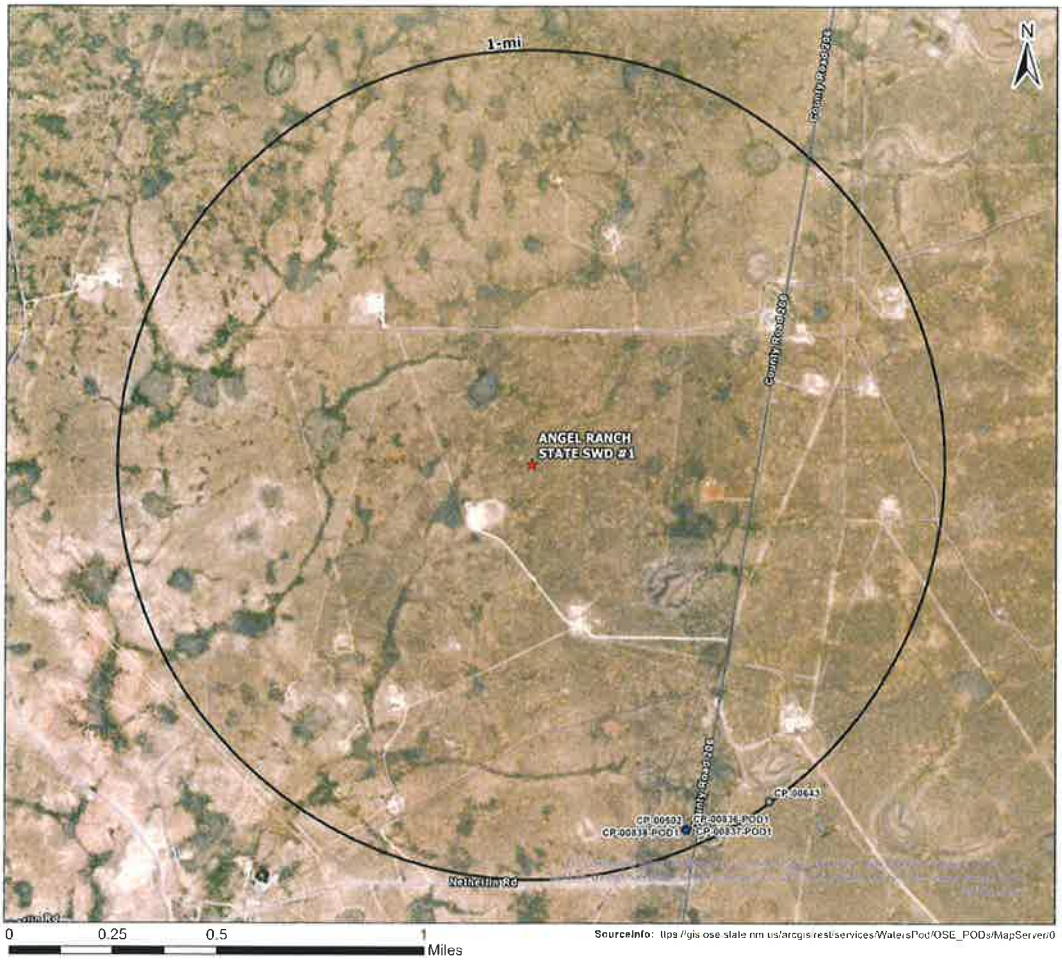
A review of all wells in the NMOCD and OSE databases, within a 2-mile radius of the Angel Ranch State SWD #1, does not show any historic or current commercial water supply sources from the Cisco Formation.

c. Enhanced Oil Recovery

A review of all wells in the NMOCD database, within a 2-mile radius of the Angel Ranch State SWD #1, does not show any historic or current Enhanced Oil Recovery operations utilizing the overlying Wolfcamp Formation, the Cisco Formation, or the underlying Strawn Formation.

Attachment 6

Water Well Map and Well Data



Legend

★ Proposed SWD

OSE Water PODs

POD Status

- Active (4)
- Pending (0)
- Changed Location of Well (0)
- Inactive (0)
- Capped (0)
- Plugged (0)
- Unknown (1)

1-mile Water Well AOR

ANGEL RANCH STATE SWD #1

EDDY COUNTY, NEW MEXICO

Proj Mgr: Mark Kidder	July 10, 2024	Mapped by: Ben Bockelmann

Prepared by: RILEY PERMIAN

Prepared by: ALL CONSULTING

Ex A-37

Water Well Sampling Rationale

Riley Permian Operating Company, LLC - Angel Ranch State SWD #1

Water Wells	Owner	Available Contact Information	Use	Sampling Required	Notes
CP-00643	Edna Angell	Edna Angell Box 283 Carlsbad, NM 88220	Livestock Watering	No	Well plugged 9/13/1982.
CP-00836-POD1	B & W Oil Company Inc	Billy J. Smith R-252 North Haldeman Road Artesia, NM 88210	Domestic & Livestock	No - Permission to sample not obtained	The request to sample the well was sent via certified mail. Proof of mailing is attached.
CP-00837-POD1	B & W Oil Company Inc	Billy J. Smith R-252 North Haldeman Road Artesia, NM 88210	Domestic & Livestock	No - Permission to sample not obtained	The request to sample the well was sent via certified mail. Proof of mailing is attached.
CP-00838-POD1	B & W Oil Company Inc	Billy J. Smith R-252 North Haldeman Road Artesia, NM 88210	Domestic & Livestock	No - Permission to sample not obtained	The request to sample the well was sent via certified mail. Proof of mailing is attached.
CP-00502	Jack Plemons	Jack Plemons 1203 Hermosa Drive Artesia, NM 88210	Livestock Watering	No - Permission to sample not obtained	The request to sample the well was sent via certified mail. Proof of mailing is attached.

Note: If permission to sample any of the above listed water wells is obtained, Riley Permian Operating Company will sample the water wells and provide the analytical results to NMOCD. Please note that this sampling effort will be limited to a maximum of two active fresh water wells.

Ex.A-38

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09/19

Attachment 7

No Hydrologic Connection Statement

ALL CONSULTING

RE: Riley Permian Operating Company LLC – Angel Ranch State SWD #1 application, Eddy County, New Mexico

ALL Consulting LLC (ALL) has performed a thorough hydrologic investigation related to the one saltwater disposal well (SWD) listed above. The investigation was conducted to determine if there were any existing or potential connections between the proposed injection intervals in the Cisco Formation and the deepest underground source of drinking water (USDW).

ALL performed an assessment and analysis of the subsurface geophysical log data along with published documents on the groundwater in this vicinity of Eddy County, New Mexico. The surficial geology is the Tansill Formation consisting predominantly of red silt, clay, gypsum, and dolomite. This area is east of the Pecos River and depths to potable water ranges from 30 to 100 feet below the surface. Based on open hole geophysical log analysis and well completion records, the base of the USDW is approximately 460 feet below the surface.

Based on ALL's assessment and analysis there is containment through multiple confining zones in a shale layer above the top of the Cisco Formation and the USDW and over 7,930 feet of vertical separation between the base of the USDW and the top of the injection interval. Additionally, there is no evidence of faults that would allow for communication between the USDW and Cisco Formation.

Tom Tomastik 6/28/2024

Tom Tomastik Date

Chief Geologist and Regulatory Specialist

ALL Consulting LLC

CERTIFIED PETROLEUM GEOLOGIST Thomas E Tomastik 6354

Ex.A-41

Attachment 8

Seismic Potential Letter

ALL CONSULTING
GOVERNMENT RELATIONS · ENERGY · PLANNING · TECHNOLOGY
ENGINEERING · ENVIRONMENTAL

July 2, 2024

PN 1912.SWD.00

Mr. Phillip Goetze, P.G.
NM EMNRD – Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Subject: **Riley Permian Operating Company, LLC**
Angel Ranch State SWD #1 - Seismic Potential Letter

Dear Mr. Goetze,

At the request of Riley Permian Operating Company, LLC (Riley Permian), ALL Consulting, LLC (ALL) has assessed the potential injection-induced seismicity risks in the vicinity of Riley Permian's Angel Ranch State SWD #1, a proposed saltwater disposal (SWD) facility in Eddy County, New Mexico, and summarized the findings in this letter. This assessment used publicly available data to identify the proximity and characteristics of seismic events and known faults to evaluate the potential for the operation of the Angel Ranch State SWD #1 to contribute to seismic activity in the area.

Geologic Evaluation

The Angel State Ranch SWD #1 is requesting a permit to inject into the Pennsylvanian Cisco Formation (Cisco) at a depth of 8,590-9,190 feet below ground surface (bgs). The Cisco consists of various Pennsylvanian-age carbonates and is overlain by approximately 67 feet of low porosity carbonate rocks within the lower Wolfcamp Formation, which would prevent the upward migration of injection fluid and serve as the upper confining layer (see **Attachment 1**). Additionally, approximately 24 feet of low porosity and low permeability other carbonate rocks lie beneath the proposed injection interval and act as a lower confining zone by preventing downward migration of injected fluids into the underlying Strawn Formation (see **Attachment 1**). A stratigraphic chart depicting the geologic setting is included as **Figure 1**.[1]

Seismic Events and Fault Data

A review of United States Geological Survey (USGS) and New Mexico Tech Seismological Observatory (NMTSO) earthquake catalogues determined that three (3) seismic events have been recorded within a 100 square mile area [9.08-kilometer (km) radius] around the Angel Ranch

[1] Yang, K.-M., & Dorobek, S. L. (1995). The Permian Basin of west Texas and New Mexico: Tectonic history of a "composite" Foreland Basin and its effects on stratigraphic development. *Stratigraphic Evolution of Foreland Basins*, 149–174. https://doi.org/10.2110/pec.95.52.0149

SWD #1. The closest recorded seismic event was a M2.64 that occurred on March 17, 2022, and was located approximately 3.26 miles northeast of the Angel Ranch State SWD #1 (see **Attachment 2**).

Fault data from United States Geological Survey (USGS) and the Texas Bureau of Economic Geology (BEG)[2] indicates that the closest known fault is located approximately 1.06 miles southeast of the Angel Ranch State SWD #1 (see **Attachment 2**). This identified fault is within the Precambrian basement, which is approximately 6,795 feet below the proposed injection interval.[3] A map of the seismic events and faults within 9.08 km of the Angel Ranch State SWD #1 is included as **Attachment 2.**

Figure 1 – Delaware Basin Stratigraphic Chart (Adapted from Yang and Dorobek 1995)

SYSTEM	SERIES/ STAGE	CENTRAL BASIN PLATFORM	DELAWARE BASIN
PERMIAN	OCHOAN	DEWEY LAKE RUSTLER SALADO	DEWEY LAKE RUSTLER SALADO CASTILE
	GUADALUPIAN	TANSILL YATES SEVEN RIVERS QUEEN GRAYBURG SAN ANDRES GLORIETA	DELAWARE MT GROUP BELL CANYON CHERRY CANYON BRUSHY CANYON
	LEONARDIAN	CLEAR FORK WICHITA	BONE SPRING
	WOLFCAMPIAN	WOLFCAMP	WOLFCAMP
PENNSYLVANIAN	VIRGILIAN	CISCO	CISCO
	MISSOURIAN	CANYON	CANYON
	DESMOINESIAN	STRAWN	STRAWN
	ATOKAN	ATOKA — BEND	ATOKA — BEND
	MORROWAN	(ABSENT)	MORROW
MISSISSIPPIAN	CHESTERIAN MERAMECIAN OSAGEAN KINDERHOOKIAN	CHESTER MERAMEC OSAGE "BARNETT"	CHESTER MERAMEC OSAGE "BARNETT"
		KINDERHOOK WOODFORD	KINDERHOOK WOODFORD
DEVONIAN		DEVONIAN	DEVONIAN
SILURIAN		SILURIAN SHALE FUSSELMAN	MIDDLE SILURIAN FUSSELMAN
ORDOVICIAN	UPPER	MONTOYA	SYLVAN MONTOYA
	MIDDLE	SIMPSON	SIMPSON
	LOWER	ELLENBURGER	ELLENBURGER
CAMBRIAN	UPPER	CAMBRIAN	CAMBRIAN
PRECAMBRIAN			

Seismic Potential Evaluation

Experience in evaluating induced seismic events indicates that most injection-induced seismicity throughout the U.S. (e.g., Oklahoma, Ohio, Texas, New Mexico, and Colorado) occurs as a result of injection into Precambrian basement rock, into overlying formations that are in hydraulic communication with the Precambrian basement rock, or as a result of injection near critically stressed and optimally oriented faults. Seismicity at basement depths occurs because critically stressed faults generally originate in crystalline basement rock and may also extend into overlying sedimentary formations. [4]

Injection into either the Precambrian basement rock or its overlying formations that are hydraulically connected to the basement rock through faulting or fracture networks can increase the pore pressure and may lead to the fault slipping, resulting in a seismic event.[4] As such, the vertical distance between the injection formation and Precambrian basement rock and the presence or lack of faulting within the injection interval are major considerations when determining the risk of injection-induced seismicity.

---

[2] Horne E. A., Hennings P. H., and Zahm C. K. 2021. Basement structure of the Delaware Basin, in The Geologic Basement of Texas: A Volume in Honor of Peter Flawn, Callahan O. A., and Eichubl P., The University of Texas at Austin, Bureau of Economic Geology.

[3] G. Randy Keller, J. M. Hills &; Rabah Djeddi, A regional geological and geophysical study of the Delaware Basin, New Mexico and West Texas, Trans Pecos Region (West Texas) (1980).

[4] Ground Water Protection Council and Interstate Oil and Gas Compact Commission. *Potential Injection-Induced Seismicity Associated with Oil & Gas Development: A Primer on Technical and Regulatory Considerations Informing Risk Management and Mitigation.* 2015. 141 pages.

Geophysical logs from nearby well records show at least 6,795 feet of vertical separation between the injection interval and the Precambrian basement.[3] In addition, injection-induced seismicity is not typically associated with shallow disposal wells in the Central Basin Platform and Delaware Basin areas, such as the Angel Ranch State SWD #1.

For injection into the Cisco Formation to contribute to seismic activity, one of two hypothetical geologic scenarios must exist:[5]

1. Scenario #1: Earthquake hypocenters would need to be significantly shallower (several kilometers) than initially identified by the USGS and NMTSO seismic monitoring networks, and thus placing seismic activity high in the sedimentary column, rather than in the Precambrian basement.
2. Scenario #2: This scenario would require that both of the following conditions are met:
    a. Fault Transmissivity: High permeability and transmissive conduits from fault-damaged zones would need to be present below the Cisco, allowing fluid to migrate through the underlying Strawn Formation and through significantly deeper confining intervals, and eventually into the Precambrian basement.
    b. Pore Pressure: The injection fluids and bottom hole pressures in the Cisco would need to exceed existing hydrostatic pressures within the deeper geologic formation in order for injection fluids to migrate downward.

There are no publications or geologic data that suggest either of these scenarios to be true for the area around the Angel Ranch State SWD #1.

Formation Parting Pressure

Class II SWDs in New Mexico are administratively permitted with a maximum pressure gradient of 0.2 psi/ft. Review of New Mexico Oil Conservation Division (OCD) Order IP-542 submitted by Spur Energy Partners LLC in support of the Aid State 14 #001, which is located approximately 11.6 miles northeast of the Angel Ranch State SWD #1, determined the maximum allowable surface pressure for a Cisco SWD in the region to be 2,615 psi, or 0.315 psi/ft, from an approved step-rate test. Typical SWD permitting standards in New Mexico, and the requested operating parameters of the Angel Ranch State SWD #1, would indicate that formation parting pressure would not be exceeded by the Angel Ranch SWD #1.

[5] Skoumal, Robert J., et al. "Induced Seismicity in the Delaware Basin, Texas." *Journal of Geophysical Research: Solid Earth*, vol. 125, no. 1, 2020, doi:10.1029/2019jb018558.

Riley Permian Operating Company, LLC
Angel Ranch State SWD #1 Seismic Information
July 2, 2024

Conclusion

As an expert on the issue of induced seismicity, seismic monitoring, and mitigation, it is my opinion that the potential for the Angel Ranch State SWD #1 to cause injection-induced seismicity is expected to be minimal, at best. This conclusion assumes the Angel Ranch State SWD #1 will be operated below formation parting pressure and is based on (1) the presence of numerous confining layers above and below the injection interval and (2) the significant vertical distance between the injection zone and Precambrian basement rock in which the nearest fault has been identified.

Sincerely,
ALL Consulting

Reed Davis
Geophysicist

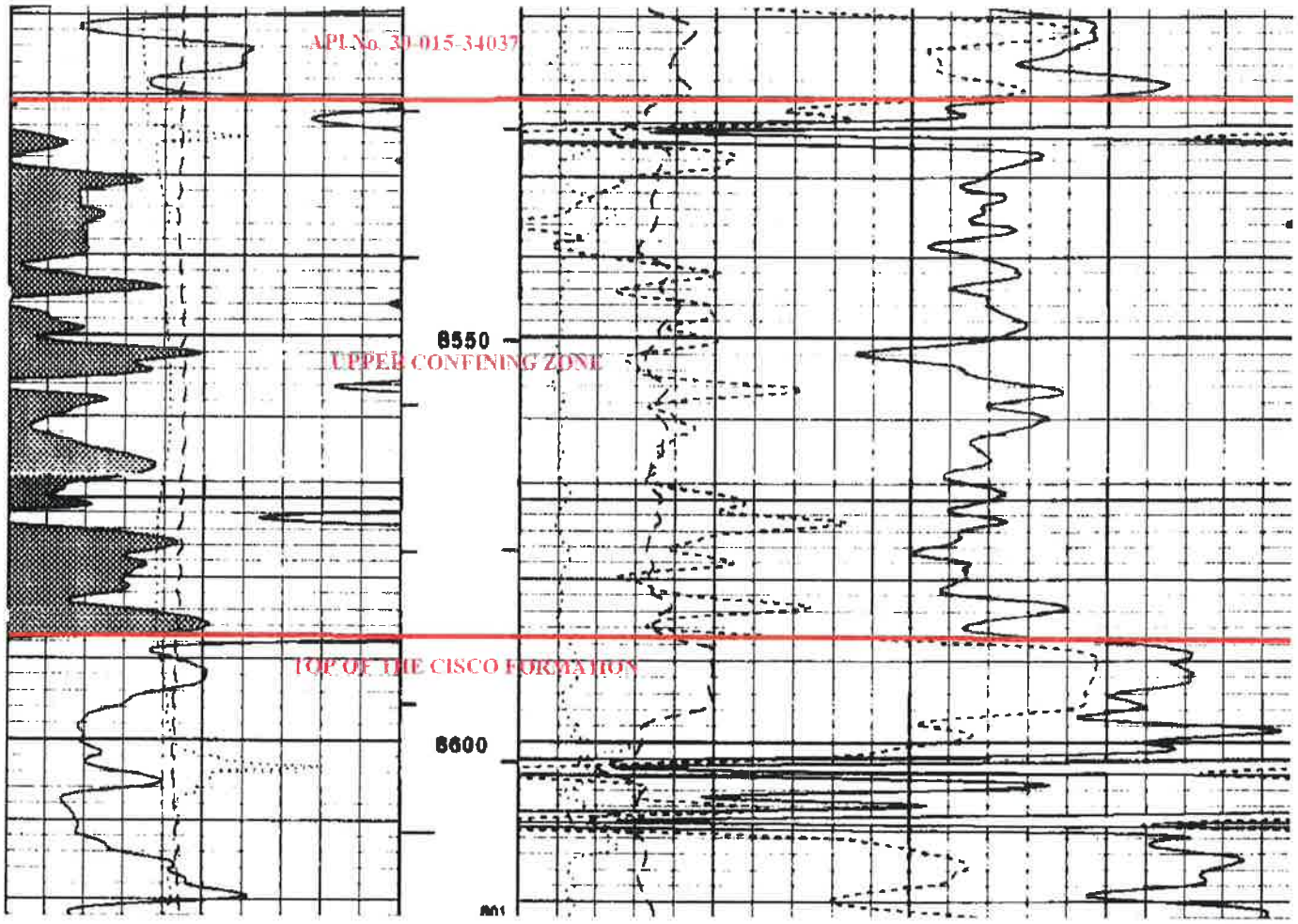
Riley Permian Operating Company, LLC
Angel Ranch State SWD #1 Seismic
Information July 2, 2024

Attachment 1
Upper and Lower Confining Zones

Ex.A-47

Riley Permian Operating Company, LLC
Angel Ranch State SWD #1 Seismic
Information July 2, 2024

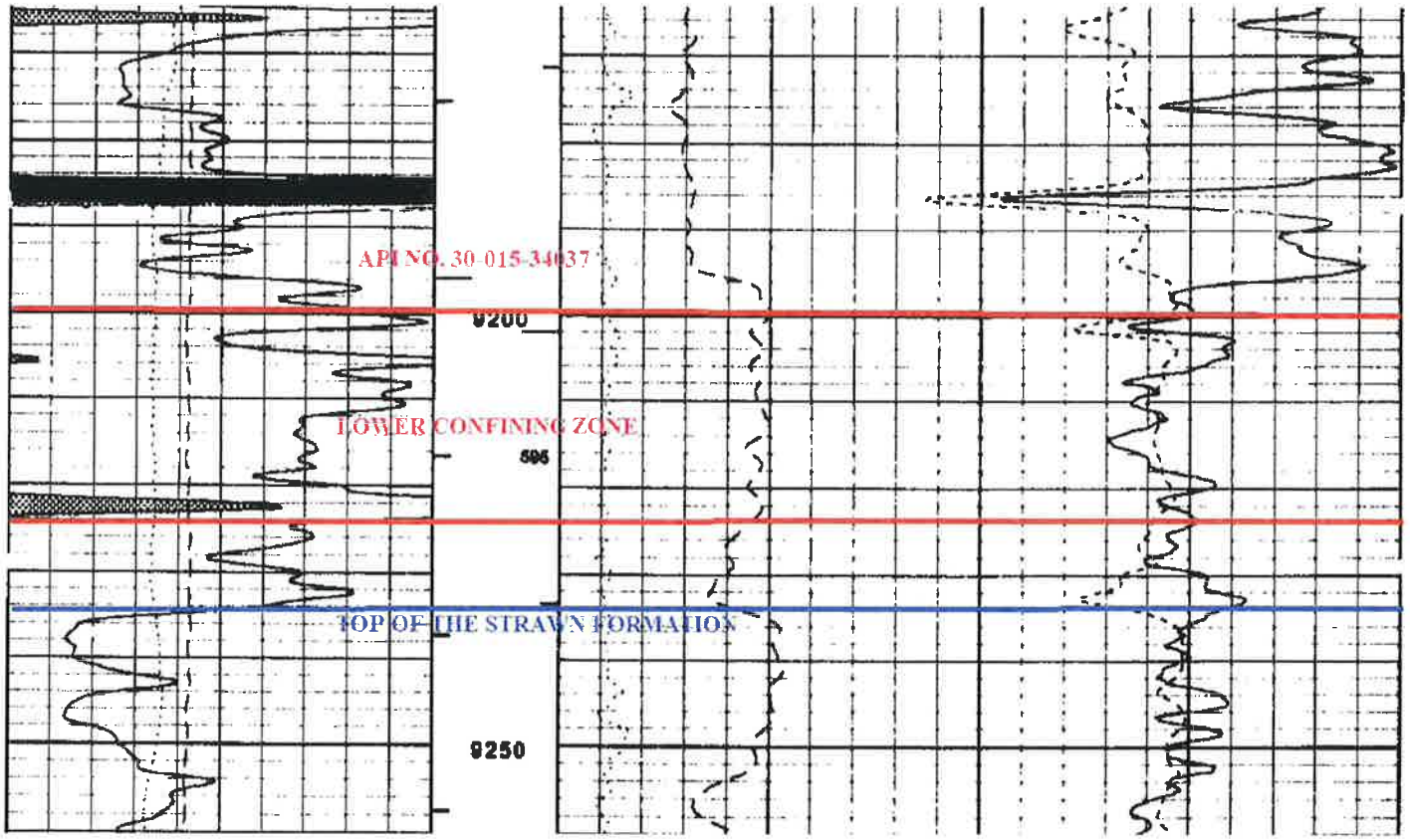
Upper Confining Zone from API No. 015-34037



Ex.A-48

Riley Permian Operating Company, LLC
Angel Ranch State SWD #1 Seismic
Information July 2, 2024

Lower Confining Zone from API No. 015-34037



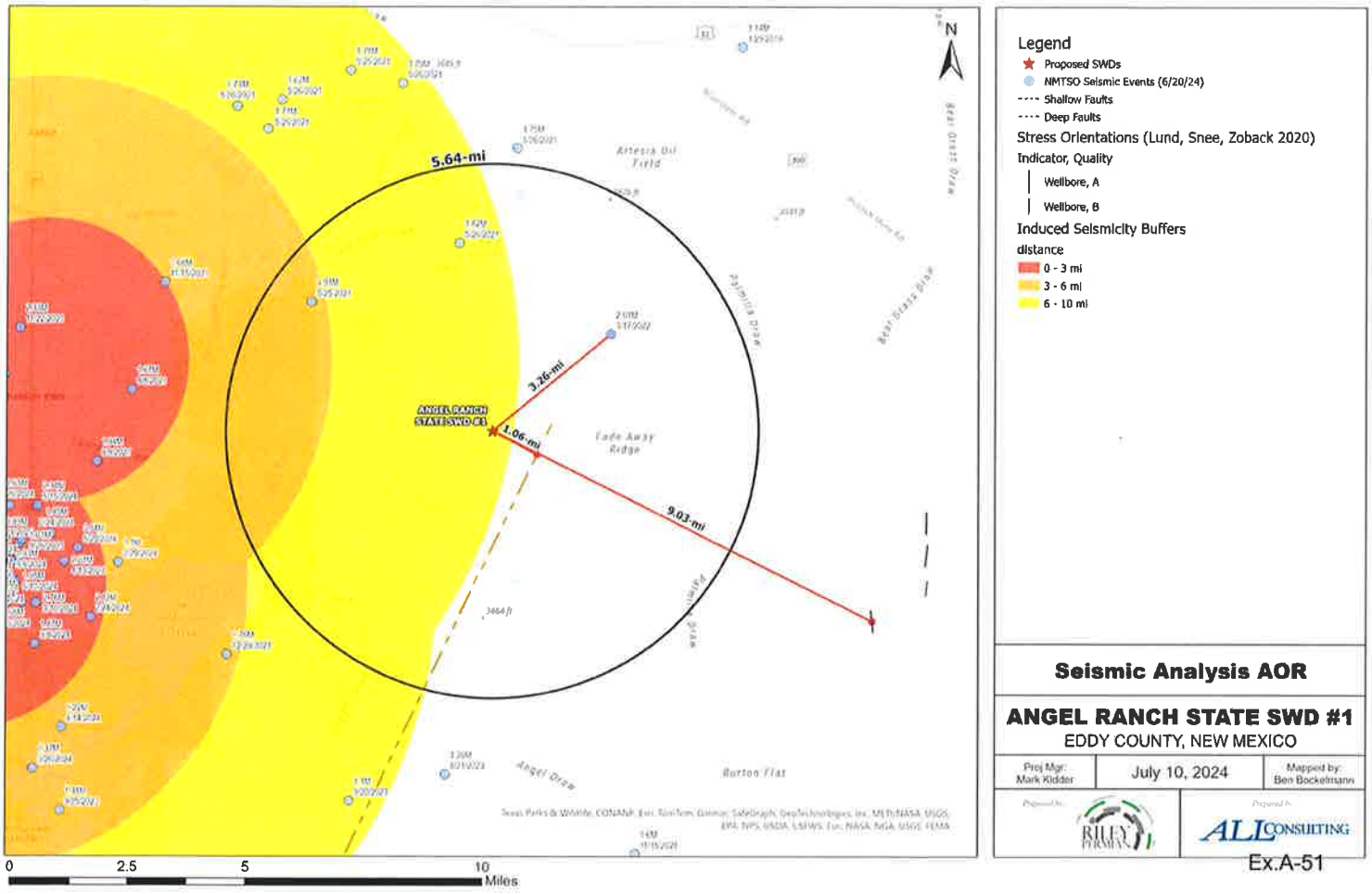
Ex.A-49

Riley Permian Operating Company, LLC
Angel Ranch State SWD #1 Seismic
Information July 2, 2024

Attachment 2
Seismic Event Map

Riley Permian Operating Company, LLC
Angel Ranch State SWD #1 Seismic
Information July 2, 2024

Angel Ranch State SWD #1 Nearby Seismic Events and Faults



Ex.A-51

Attachment 9

List of Affected Persons

Ex.A-52

Riley Permian Operating Company LLC - Angle Ranch SWD #1 - Notice of Application Recipients							
Affected Party Classification	Entity - Proof of Notice	Entity - As Mapped/Exhibited	Address	City	State	Zip Code	Certified Mailing ID (from initial notification)
Surface Owner / Mineral Owner	New Mexico State Land Office	N/A	310 Old Santa Fe Trail	Santa Fe	NM	87501	7015 3430 0000 2209 5939
Well Operator / NMSLO Lessee	COG Operating LLC	COG Operating LLC	600 W. Illinois Ave	Midland	TX	79701	7015 3430 0000 2209 5984
NMSLO - Lessee	MRC Delaware Resources, LLC	MRC Delaware Resources, LLC	108 South 4th Street	Artesia	NM	88210	7015 3430 0000 2209 5946
NMSLO - Lessee	EOG Resources Inc.	EOG Resources INC	P.O. Box 2267	Midland	TX	79702	7015 3430 0000 2209 6004
NMSLO - Lessee	V-F Petroleum Inc.	V-F Petroleum INC	P.O. Box 1889	Midland	TX	79702	7015 3430 0000 2209 5991
NMSLO - Lessee	Headington Royalty, Inc.	Headington Royalty, INC	1501 N. Harding Blv, Suite 100	McKinney	TX	75071	7021 1970 0000 5914 6079
NMSLO - Lessee	Permian Resources Operating, LLC	Permian Resources Operating, LLC	300 N. Marienfeld St. Ste. 1000	Midland	TX	79701	Notified as Colgate Operating
NMSLO - Lessee	Concho Oil & Gas LLC	Concho Oil & Gas LLc	One Concho Center	Midland	TX	79701	7015 3430 0000 2209 5977
NMSLO - Lessee	WPX Energy Permian, LLC	WPX ENERGY PERMIAN, LLC	333 W. Sheridan Ave	Oklahoma City	OK	73102	7015 3430 0000 2209 5960
NMSLO - Lessee	Occidental Permian, LTD	Occidental Permian, LTD	P.O. Box 4294	Houston	TX	77210-4294	7015 3430 0000 2209 5953
NMSLO - Lessee	Colgate Operating LLC	N/A	300 N. Marienfeld St. Suite 1000	Midland	TX	79701	7021 1970 0000 5914 6086
Well Operator (P&A Well)	Contango Resources	N/A	717 Texas Ave Suite 2900	Houston	TX	77002	7021 1970 0000 5914 6093
Notes: The affected parties above received notification of this C-108 application.							

Ex.A-53

Revised March 23, 2017

RECEIVED:	REVIEWER:	TYPE:	APP NO:

ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Geological & Engineering Bureau –
1220 South St. Francis Drive, Santa Fe, NM 87505

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Applicant: Riley Permian Operating Company, LLC **OGRID Number:** 372290
Well Name: Angel Ranch State SWD #2 **API:**
Pool: SWD; Cisco **Pool Code:** 96099

SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED BELOW

1) **TYPE OF APPLICATION:** Check those which apply for [A]
A. Location – Spacing Unit – Simultaneous Dedication
☐ NSL ☐ NSP (PROJECT AREA) ☐ NSP (PRORATION UNIT) ☐ SD

B. Check one only for [I] or [II]
[I] Commingling – Storage – Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
[II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

FOR OCD ONLY
☐ Notice Complete
☐ Application Content Complete

2) **NOTIFICATION REQUIRED TO:** Check those which apply.
A. ☒ Offset operators or lease holders
B. ☐ Royalty, overriding royalty owners, revenue owners
C. ☒ Application requires published notice
D. ☒ Notification and/or concurrent approval by SLO
E. ☐ Notification and/or concurrent approval by BLM
F. ☒ Surface owner
G. ☒ For all of the above, proof of notification or publication is attached, and/or,
H. ☐ No notice required

3) **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Oliver Seekins
Print or Type Name

Signature

7/15/2024
Date

918.382.7581
Phone Number

oseekins@all-llc.com
e-mail Address

Ex.B-54

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____Secondary Recovery _____Pressure Maintenance _X_Disposal _____Storage
Application qualifies for administrative approval? _X_Yes _____No SWD application set for Contested Hearing

II. OPERATOR: Riley Permian Operating Company, LLC

ADDRESS: 29 E. Reno, STE 500, Oklahoma City, OK 73104

CONTACT PARTY: Mark Smith PHONE: 405.415.8925

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? _____Yes _X_No
If yes, give the Division order number authorizing the project: _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

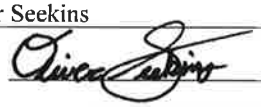
*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Oliver Seekins TITLE: Project Manager / Regulatory Specialist

SIGNATURE:  DATE: 7.15.2024

E-MAIL ADDRESS: OSEEKINS@ALL-LLC.COM

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

Ex.B-55

Side 2

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Ex.B-56

Application for Authorization to Inject
Well Name: Angel Ranch State SWD #2

III – Well Data (*The wellbore diagram is included as **Attachment 1***)

A.

(1) General Well Information:

Operator: Riley Permian Operating Company LLC (OGRID No. 372290)
Lease Name & Well Number: Angel Ranch State SWD #2
Location Footage Calls: 588' FNL & 2,157' FEL
Legal Location: Lot B, S11 T19S R27E
Ground Elevation: 3,505.8'
Proposed Injection Interval: 8,310' – 8,950'
County: Eddy

(2) Casing Information:

Type	Hole Size	Casing Size	Casing Weight	Setting Depth	Sacks of Cement	Estimated TOC	Method Determined
Surface	17-1/2"	13-3/8"	54.5 lb/ft	375'	250	Surface	Circulation
Intermediate 1	12-1/4"	9-5/8"	43.0 lb/ft	2,020'	600	Surface	Circulation
Production Casing	8-3/4"	7"	26.0 lb/ft	9.100'	1,295	Surface	CBL
Tubing	N/A	4-1/2"	11.6 lb/ft	8,290'	N/A	N/A	N/A

DV Tool set at: 4,600'

(3) Tubing Information:

4-1/2" (26.0 lb/ft) ceramic-coated tubing with setting depth of 8,290'

(4) Packer Information: ACT AS1-X or equivalent packer set at 8,290'

B.

(1) Injection Formation Name: Cisco
Pool Name: SWD; Cisco
Pool Code: 96099
(2) Injection Interval: Perforated injection between 8,310' – 8,950'
(3) Drilling Purpose: New drill for saltwater disposal
(4) Other Perforated Intervals: No other perforated intervals exist.
(5) Overlying Oil and Gas Zones: Below are the approximate formation tops for known oil and gas producing zones in the area.

- Grayburg (1,650')

Underlying Oil and Gas Zones: Below are the approximate formation tops for known oil and gas producing zones in the area.

- Strawn (9,010')
- Morrow (10,000')

Ex.B-57

V – Well and Lease Maps

The following maps and documents are included as ***Attachment 2***:

- 2-mile Oil & Gas Well Map
- ½-mile AOR Well Table
- 2-Mile Lease Map
- 2-Mile Mineral Ownership Map
- 2-Mile Surface Ownership Map
- Karst Risk Map
- Potash Lease Map

VI – AOR Well List

A list of the well(s) within the 1/2-mile AOR is included in ***Attachment 2***.

There are three (3) wells within the ½-mile AOR. Two of them penetrate the proposed injection zone, with one of those being a plugged and abandoned well. Each of the penetrating wells was constructed and/or plugged to isolate the Cisco formation. As such, neither penetrating well will serve as a conduit for injection fluid to migrate out of the proposed injection formation.

VII – Proposed Operation

(1) **Proposed Maximum Injection Rate:** 20,000 bpd
Proposed Average Injection Rate: 15,000 bpd
(2) A **closed-loop system** will be used.
(3) **Proposed Maximum Injection Pressure**: 1,662 psi (surface)
Proposed Average Injection Pressure: Approximately 1,247 psi (surface)
(4) **Source Water Analysis:** The expected injectate will consist of produced water from production wells completed in the Queen, Grayburg, San Andres, Glorieta, and Yeso formations. Analysis of water from these formations is included as ***Attachment 3***.
(5) **Injection Formation Water Analysis:** The proposed SWD will be injecting water into the Cisco formation, which is a non-productive zone known to be compatible with formation water from the Queen, Grayburg, San Andres, Glorieta, and Yeso and formations. Water analyses from the Cisco formation in the area are included as ***Attachment 4.***

VIII – Geologic Description

The proposed injection interval includes the Cisco formation from 8,310 – 8,950 feet. This formation consists of interbedded carbonate rocks including dolomites and limestones. Several thick intervals of porous and permeable carbonate rock capable of taking water are present within the subject formation in the area.

Attachment 5 includes further discussion of the injection formation, overlying and underlying confinement zones, and historical use of the field.

The base of the USDW is the Tansill Formation at a depth of approximately 350 feet. The depth of the nearest water well in the area is approximately 80 feet below the ground surface.

IX – Proposed Stimulation Program

A small cleanup acid job may be used to remove mud and drill cuttings from the formation. However, no other formation stimulation is currently planned.

X – Logging and Test Data

Logs will be submitted to the Division upon completion of the well.

XI – Fresh Groundwater Samples

Based on a review of data from the New Mexico Office of the State Engineer, there are no water wells within one mile of the proposed location.

A water well map is included as ***Attachment 6***.

XII – No Hydrologic Connection Statement

There is no faulting in the area that would provide a hydrologic connection between the injection interval and overlying USDWs. Additionally, the casing program has been designed to ensure no hydrologic connection between the injection interval and overlying USDWs.

A signed No Hydrologic Connection Statement is included as ***Attachment 7.***

In addition, a *Seismic Potential Letter* detailing the minimal risk of injection-induced seismicity associated with the proposed SWD is included as ***Attachment 8***.

XIII – Proof of Notice

A notice of hearing was published in support of this application and will be provided as an exhibit at the hearing.

A copy of the application was mailed to the landowner and all identified affected parties within 1/2 mile of the proposed SWD location. A list of the recipients is included in ***Attachment 9***. An exhibit at the hearing will provide proof of notice.

Attachments

Attachment 1:

- C-102
- Wellbore Diagram
- Packer Diagram

Attachment 2: Area of Review Information:

- 2-Mile Oil & Gas Well Map
- 1/2-Mile AOR Well Table
- 2-Mile Lease Map
- 2-Mile Mineral Ownership Map
- 2-Mile Surface Ownership Map
- Karst Risk Map
- Potash Lease Map

Attachment 3: Source Water Analysis

Attachment 4: Injection Formation Water Analysis

Attachment 5: Reservoir Characterization

Attachment 6: Water Well Map and Well Data

Attachment 7: No Hydrologic Connection Statement

Attachment 8: Seismic Potential Letter

Attachment 9: List of Affected Persons

Attachment 1

- C-102
- Wellbore Diagram
- Packer Diagram

District I
1625 N French Dr , Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S First St , Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S St Francis Dr , Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
	96099	SWD; Cisco

[4] Property Code	[5] Property Name	[6] Well Number
	ANGEL RANCH SWD	2

[7] OGRID No.	[8] Operator Name	[9] Elevation
330211	REDWOOD OPERATING, LLC	3505.8

[10] Surface Location

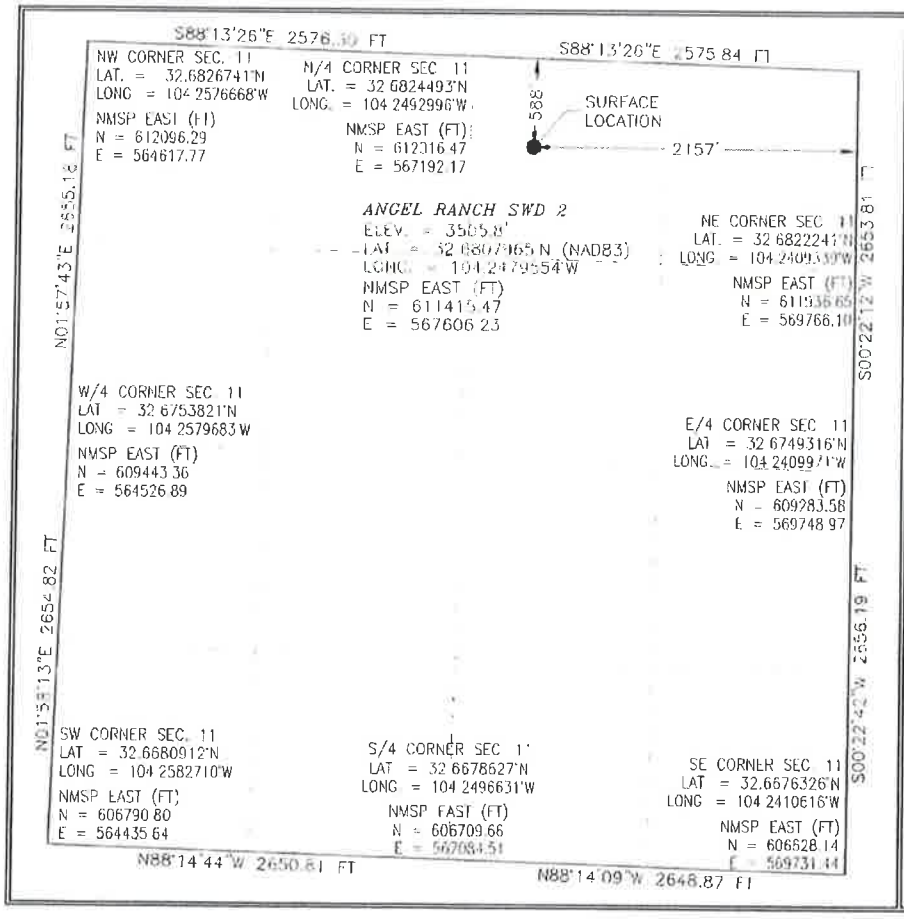
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	11	19 S	27 E		588	NORTH	2157	EAST	EDDY

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
40			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Deana Weaver — 12/13/2022
Signature — Date

Deana Weaver
Printed Name

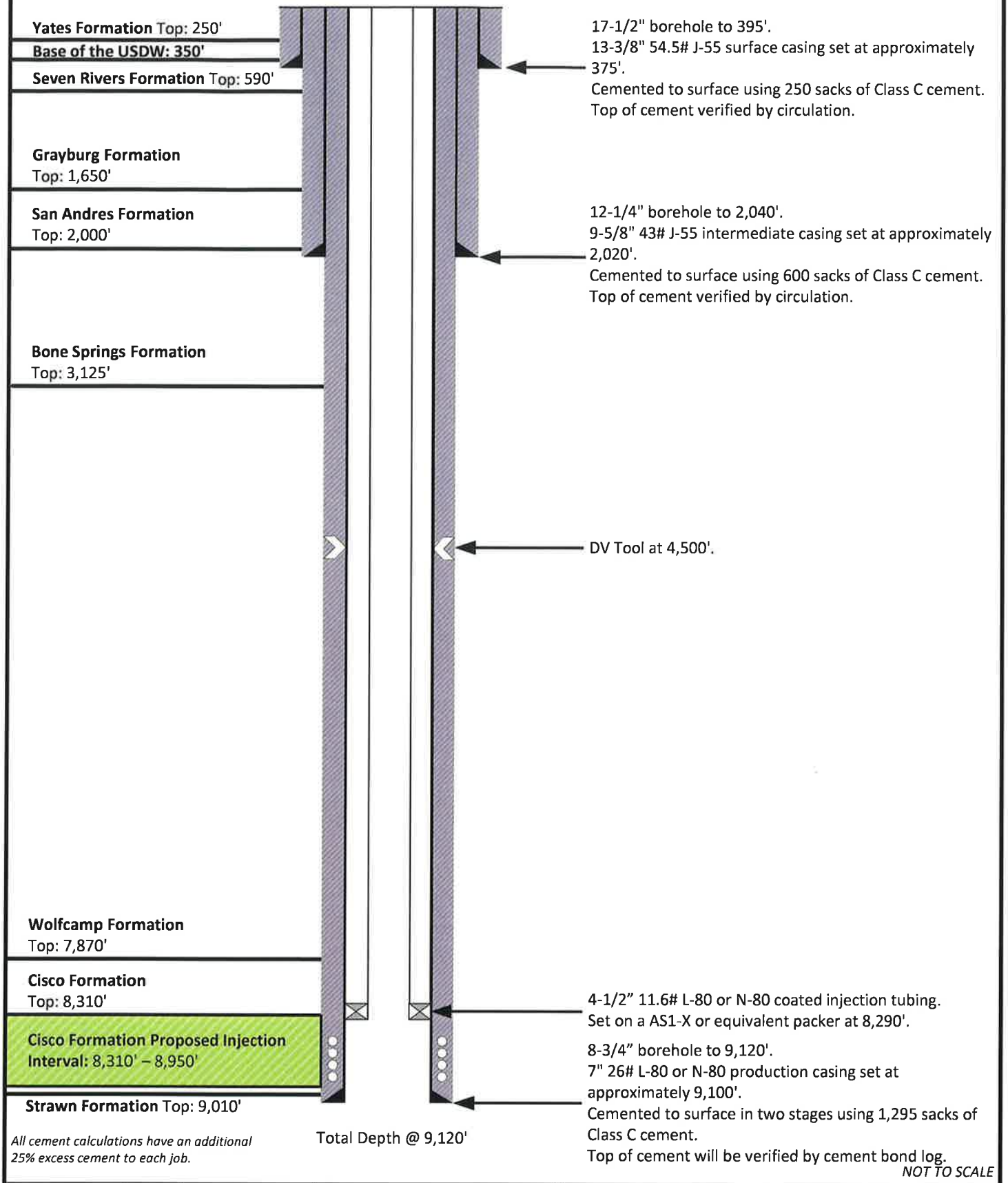
dweaver@mec.com
E-mail Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

DECEMBER 1, 2022
Date of Survey

Signature and Seal of Professional Surveyor:
Certificate Number: 12797



All cement calculations have an additional 25% excess cement to each job.

NOT TO SCALE

Prepared by: ALL CONSULTING *Prepared for:* RILEY PERMIAN	Drawn by: Reed Davis Project Manager: Oliver Seekins Date: 6/26/2024	**Angel Ranch State SWD #2** **Riley Permian Operating Company, LLC** **Sec. 11 Town. 19S Rng. 27E** **Lat: 32.6807965° Long: -104.2479554° (NAD 83)**

Ex B-63

AS1-X MECHANICAL PACKER

The ACT AS1-X Packer is the most versatile of the mechanically set retrievable packers and may be used in any production application. Treating, testing, injecting, pumping wells, flowing wells, deep or shallow, the AS1-X is suited for all. The packer can be left in tension or compression, depending on well conditions and the required application. A large internal by-pass reduces swabbing when running and retrieving. The by-pass closes when the packer is set and opens prior to releasing the upper slips when retrieving to allow pressure equalization.

The J-slot design allows easy setting and releasing: 1/4 turn right-hand set, right-hand release. A patented upper-slip releasing system reduces the force required to release the packer. A non directional slip is released first, making it easier to release the other slips. The AS1-X packer can withstand 7,000 psi (48 MPa) of differential pressure above or below.

FEATURES, ADVANTAGES AND BENEFITS:

- The design holds high differential pressure from above or below, enabling the packer to meet most production, stimulation, and injection needs
- The packer can be set with compression, tension, or wire line, enabling deployment in shallow and deep applications
- The packer can be set and released with only a one-quarter turn of the tubing
- The bypass valve is below the upper slips so that debris are washed from the slips when the valve is opened, reducing the times for circulation and total retrieval
- The full opening enables unrestricted flow and the passage of wire line tools and other packer systems
- The packer can be run with the T-2 on-off tool, which enables the tubing to be disconnected and retrieved without removing the packer

OPTIONS:

- Elastomer options are available for hostile environments
- Optional safety releases are available

AS1-X MECHANICAL PACKER						
CASING		RECOMMENDED HOLE SIZE (inches)	TOOL OD MAX (inches)	TOOL ID MIN (inches)	THREAD CONNECTION BOX UP / PIN DOWN	PART NO
SIZE (inches)	WEIGHT (lbs ft)					
4 1/2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5 1/2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5 1/2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5 1/2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5 1/2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6 5/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7 5/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7 5/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7 5/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7 5/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8 5/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8 5/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9 5/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9 5/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

XXXX is changed as per material / elastomer / end connection

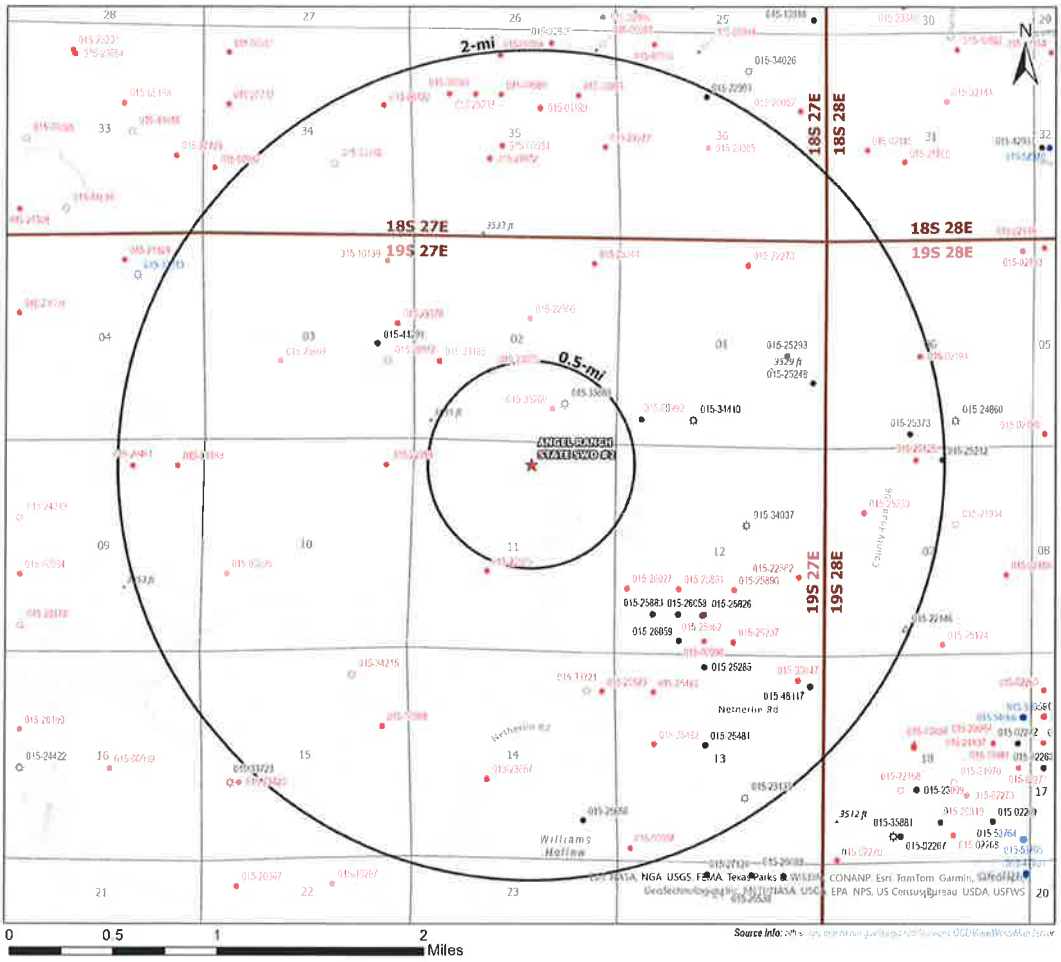
Ex.B-64

Attachment 2

Area of Review Information:

- 2-mile Oil & Gas Well Map
- 1/2-Mile AOR Well Table
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership Map
- Karst Risk Map
- Potash Lease Map

Ex.B-65



Legend

- ★ Proposed SWD
- Gas, Active (10)
- Gas, New (1)
- Gas, Plugged (14)
- Injection, Plugged (3)
- Oil, Active (24)
- Oil, New (7)
- Oil, Plugged (88)
- △ Salt Water Injection, Active (1)
- Water, Plugged (1)

2-mile Oil & Gas Well AOR

ANGEL RANCH STATE SWD #2

EDDY COUNTY, NEW MEXICO

Proj Mgr: Mark Kidder	July 10, 2024	Mapped by: Ben Bockelmann

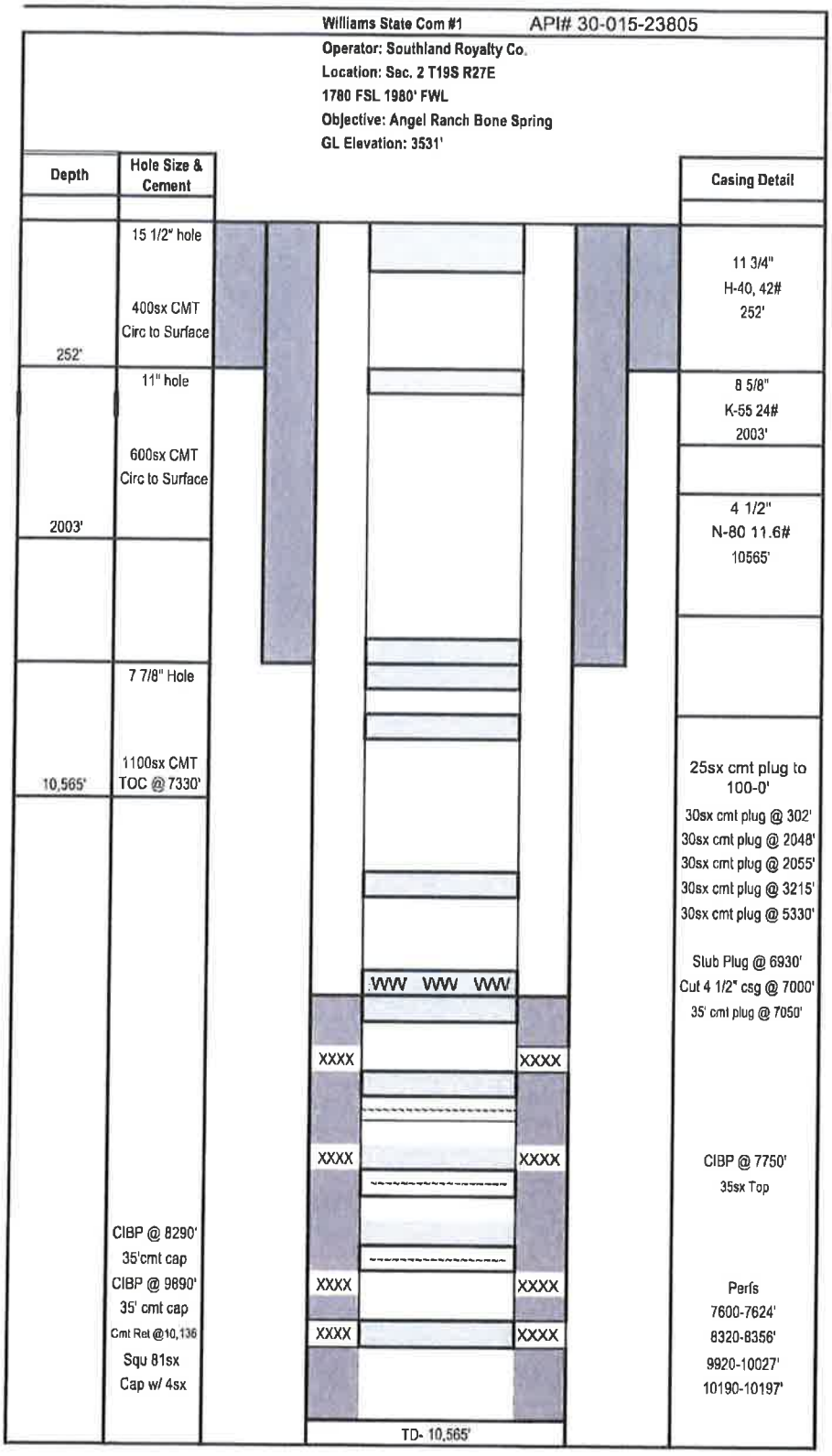
Prepared by: RILEY PERMIAN

Prepared by: ALL CONSULTING

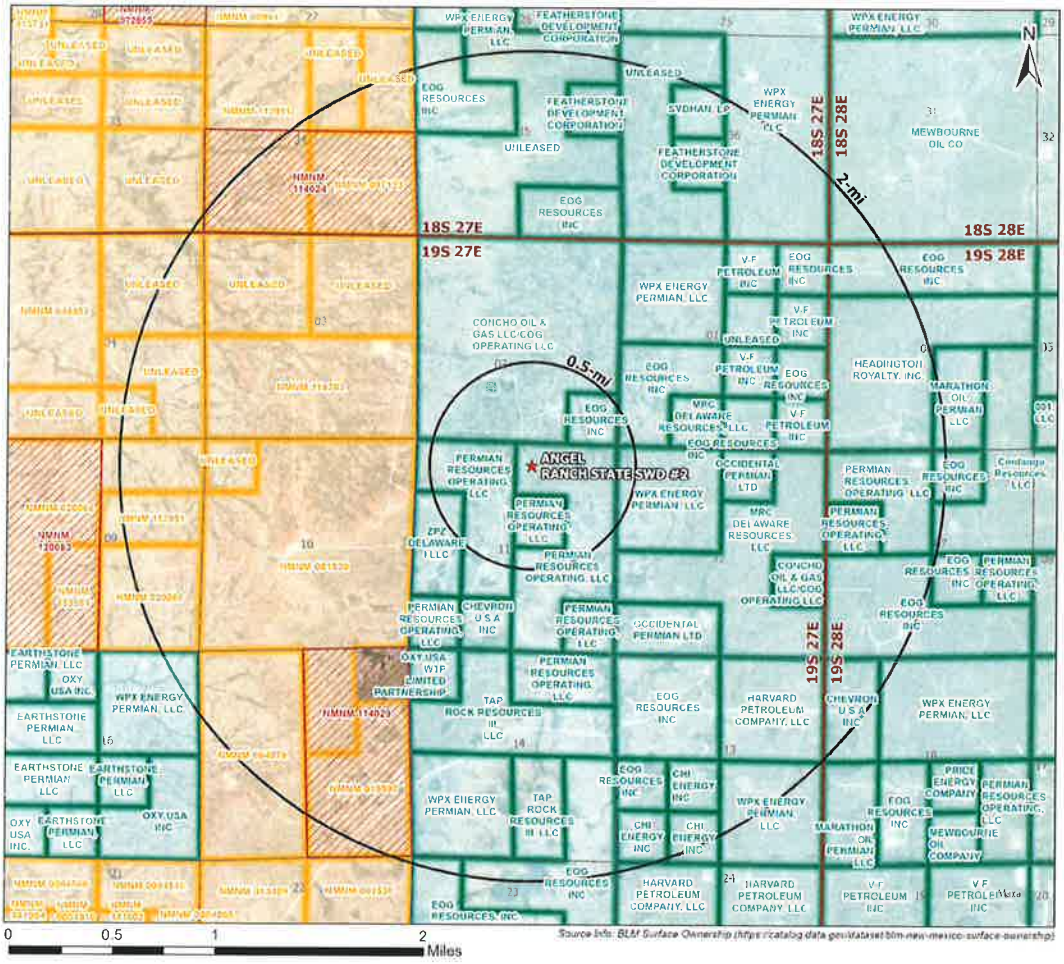
Ex.B-66

1/2-Mile AOR Well Table for Angel Ranch State SWD #2 (Top of Injection Interval: 8,310')							
Well Name	API#	Well Type	Operator	Spud Date	Location (Sec., Tn., Rng.)	Total Vertical Depth (feet)	Penetrate Inj. Zone?
Williams State COM #001	30-015-23805	Gas (Plugged)	Southland Royalty Co	10/8/1981	K-02-19S-27E	10,565' (plugged)	Yes
Ugly Stik State #001	30-015-35209	Oil (plugged)	Marbob Energy Corp	1/29/2007	O-02-19S-27E	2,800' (plugged)	No
Eagle Claw State COM #001	30-015-33886	Gas	Apache Corporation	3/8/2005	O-02-19S-27E	10,700'	Yes
Notes: Two wells within the ½-mile AOR penetrate the proposed injection zone							

Casing Information for Wells Penetrating the Angel Ranch State SWD #2 Injection Zone							
Well Name	Casing	Set Depth	Casing Size	TOC	TOC Method Determined	Sks of Cement	Hole size
Eagle Claw State COM #001	Surface	313'	13.375"	Surface	Circulated	375	17.5"
	Intermediate	1,975'	9.625"	Surface	Circulated	550	12.25"
	Production	10,700'	5.5"	1,750'	Temperature Survey	1910	8.75"
Williams State COM #001	Surface	252'	11.75"	Surface	Circulated	400	15.5"
	Intermediate	2,003'	8.625"	Surface	Circulated	600	11"
	Production	10,565'	4.5"	7,330'	Unknown	1100	7.875"
	Plugging Details	Cement retainer @10,136' squeezed with 81 sx capped with 4 sx. CIBP @9,890' with 35' cement on top, @8,290' with 35' cement on top, @7,550' with 35' cement on top. Cut 4.5" casing @7,000'. Plug @6,930'-7,050' with 30 sx, @5,330' with 30 sx, @3,215' with 30 sx, @2,055' - 2,048' with 30 sx, @302 with 30 sx, and @100'-surface with 25 sx.					


Williams State Com #1
API# 30-015-23805
Operator: Southland Royalty Co.
Location: Sec. 2 T19S R27E
1780 FSL 1980' FWL
Objective: Angel Ranch Bone Spring
GL Elevation: 3531'
Depth
Hole Size & Cement
Casing Detail
15 1/2" hole
400sx CMT
Circ to Surface
252'
11 3/4"
H-40, 42#
252'
11" hole
600sx CMT
Circ to Surface
2003'
8 5/8"
K-55 24#
2003'
4 1/2"
N-80 11.6#
10565'
7 7/8" Hole
1100sx CMT
TOC @ 7330'
10,565'
25sx cmt plug to 100-0'
30sx cmt plug @ 302'
30sx cmt plug @ 2048'
30sx cmt plug @ 2055'
30sx cmt plug @ 3215'
30sx cmt plug @ 5330'
Stub Plug @ 6930'
Cut 4 1/2" csg @ 7000'
35' cmt plug @ 7050'
XXXX
CIBP @ 7750'
35sx Top
CIBP @ 8290'
35'cmt cap
CIBP @ 9890'
35' cmt cap
Cmt Ret @10,136
Squ 81sx
Cap w/ 4sx
Perfs
7600-7624'
8320-8356'
9920-10027'
10190-10197'
TD- 10,565'

Ex.B-68



Legend

- ★ Proposed SWD
- BLM Communitization Units
- NMSLO Mineral Leases
- BLM Authorized O&G Leases

1/2-mile AOR Lessees/Unit Operators

- COG Operating LLC (NMSLO Lessee)
- Concho Oil & Gas LLC (NMSLO Lessee)
- EOG Resources Inc. (NMSLO Lessee)
- Permian Resources Operating, LLC (NMSLO Lessee)
- WPX Energy Permian, LLC (NMSLO Lessee)
- ZPZ Delaware I LLC (NMSLO Lessee)

2-mile Mineral Lease AOR

ANGEL RANCH STATE SWD #2

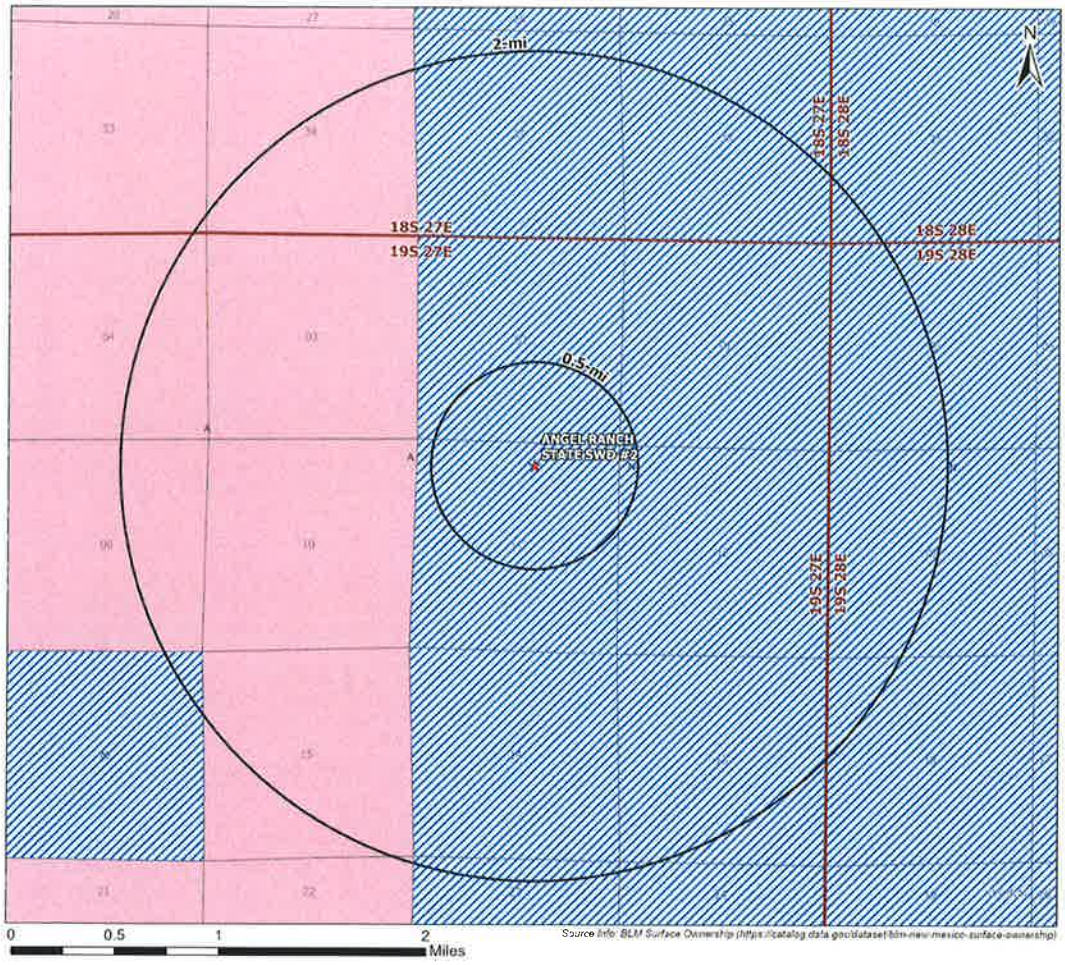
EDDY COUNTY, NEW MEXICO

Proj Mgr: Mark Kiddor	July 10, 2024	Mapped by: Ben Bockelmann

Prepared for: RILEY PERMIAN

Prepared by: ALL CONSULTING

Ex.B-69



Legend

- ★ Proposed SWD
- Subsurface minerals (NMSLO)
- A-All minerals are owned by U.S.
- N-No minerals are owned by the U.S.

2-mile Mineral Ownership AOR

ANGEL RANCH STATE SWD #2

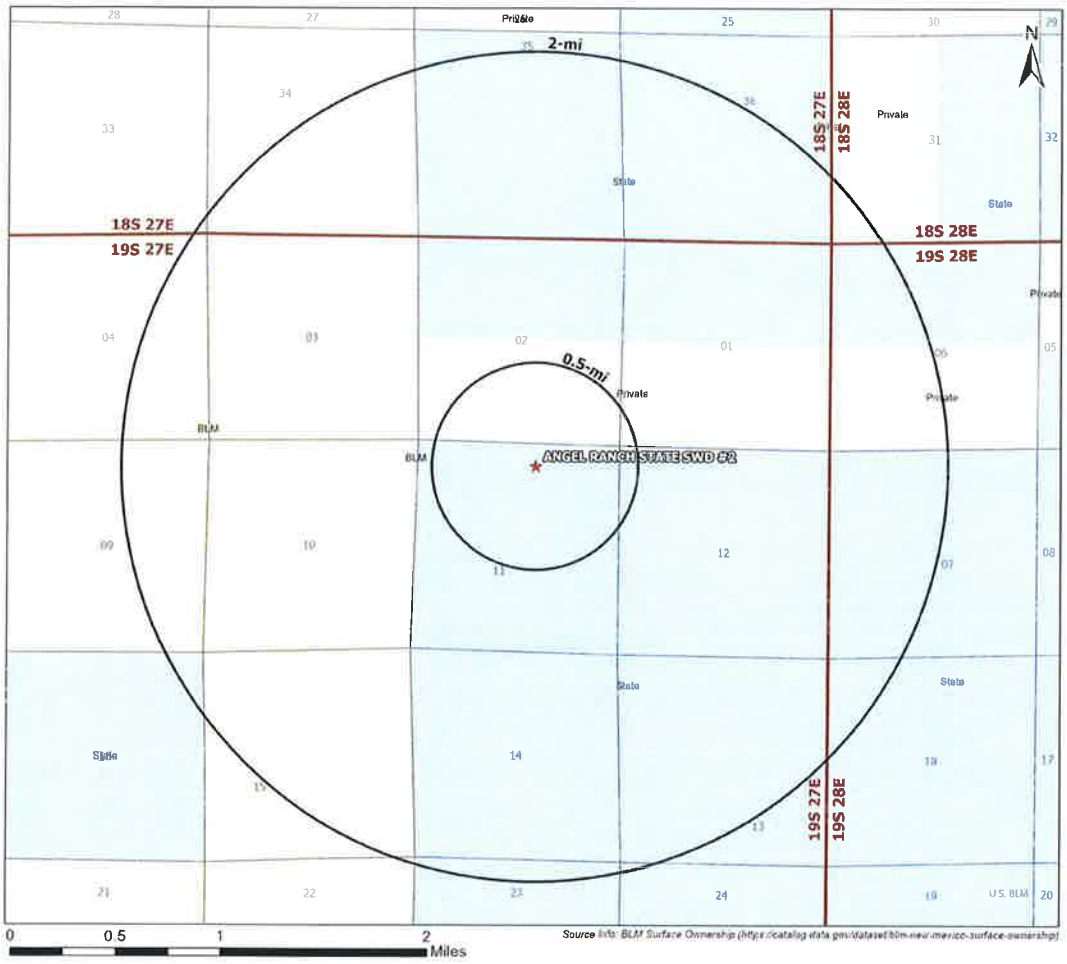
EDDY COUNTY, NEW MEXICO

Proj Mgr: Mark Kidder	July 10, 2024	Mapped by: Ben Beckelmann

Prepared for: RILEY PERMIAN

Prepared by: ALL CONSULTING

Ex B-70



Legend

★ Proposed SWD

Land Ownership

- BLM
- BOR
- DOD
- DOE
- FS
- FWS
- I
- NPS
- P
- S
- SGF
- SP
- USDA
- VCNP

2-mile Surface Ownership AOR

ANGEL RANCH STATE SWD #2

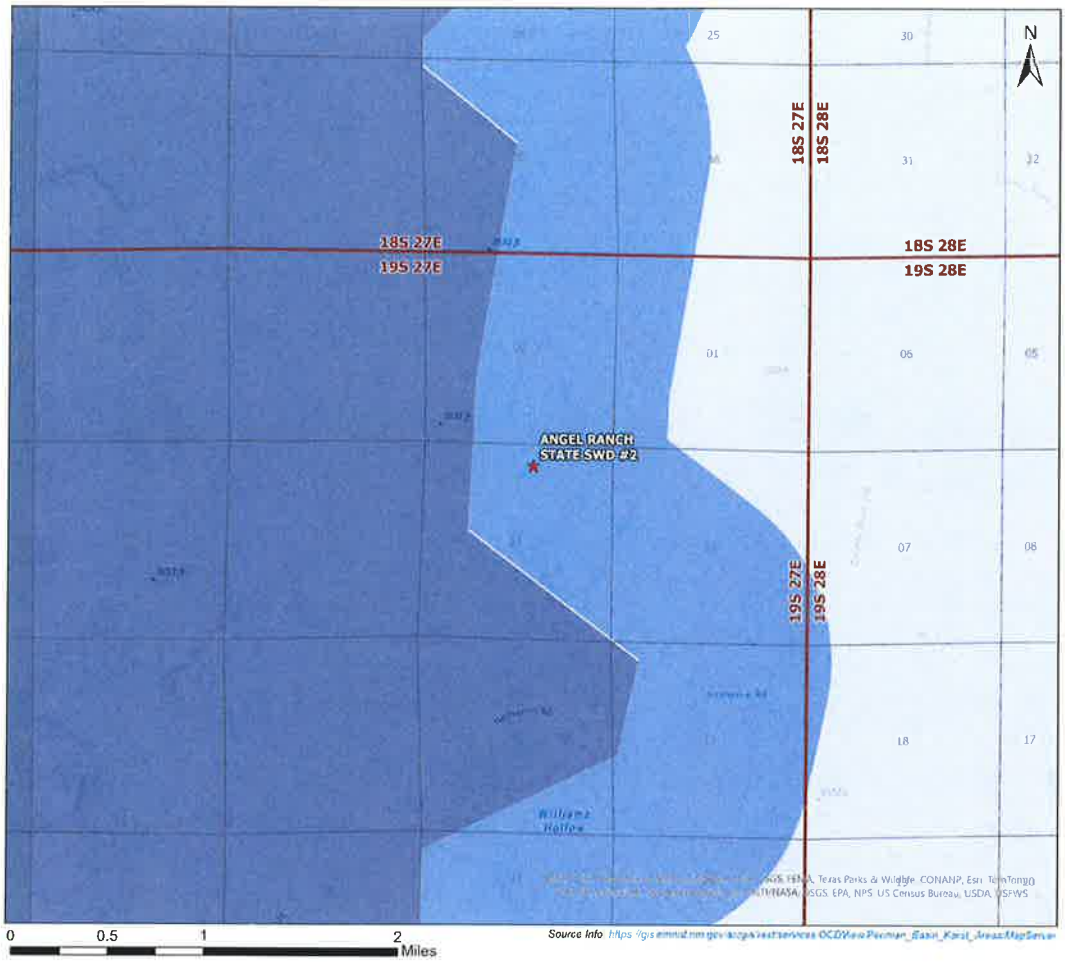
EDDY COUNTY, NEW MEXICO

Proj Mgr: Mark Kidder	July 10, 2024	Mapped by: Ben Bockelmann

Prepared by: RILEY PERMIAN

Prepared by: ALL CONSULTING

Ex.B-71



Legend

- ★ Proposed SWD
- Critical Karst Resource Area

Karst Occurrence Potential

Potential

- High
- Medium
- Low

Karst Potential AOR

ANGEL RANCH STATE SWD #2

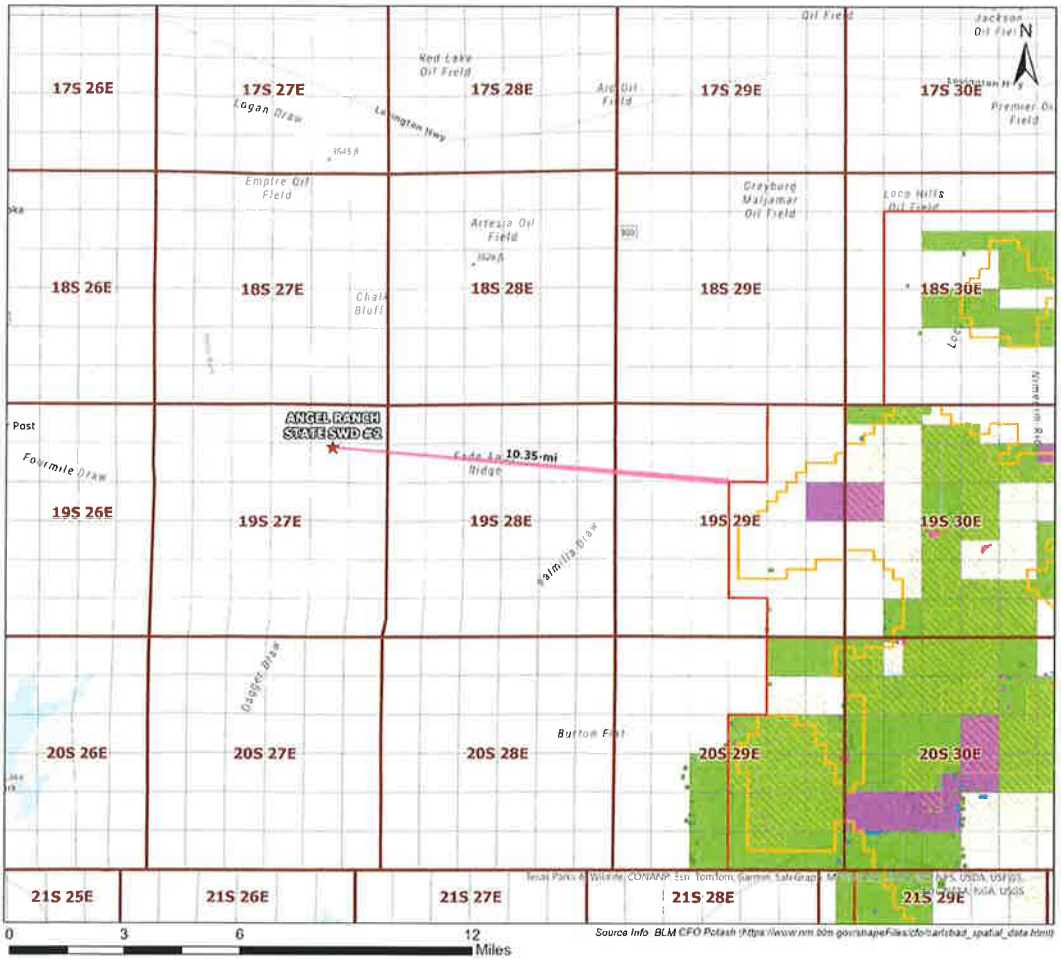
EDDY COUNTY, NEW MEXICO

Proj Mgr: Mark Kidder	July 10, 2024	Mapped by: Ben Bockelmann

Prepared for: RILEY PERMIAN

Prepared by: ALL CONSULTING

Ex.B-72



Source Info: BLM CFO Potash (https://www.nm.blm.gov/shapeFiles/cfo/carlsbad_spatial_data.html)

Legend

- ★ Proposed SWD
- SOPA 1986
- Known Potash Leasing Area
- Intrepid and Mosaic Potash Leases

DRILL ISLANDS 2024-06-18

Status,Depth_Buff

- Approved,Half Mile
- Approved,Quarter Mile
- Nominated,Half Mile
- Nominated,Quarter Mile

Development Areas 2024-06-18

Status

- Approved
- Pending

Potash Lease AOR

ANGEL RANCH STATE SWD #2

EDDY COUNTY, NEW MEXICO

Proj Mgr: Mark Kidder	July 10, 2024	Mapped by: Ben Bockelmann

Prepared for: RILEY PERMIAN

Prepared by: ALL CONSULTING

Ex.B-73

Attachment 3

Source Water Analyses

DownHole SAT™ Water Analysis Report

French Creek Software

SYSTEM IDENTIFICATION

Supreme Technologies
Redwood
Leavitt 13 #2H WH
Glorieta-Yeso

Sample ID#: 0
ID 2021-06-04-39

Sample Date: 06-02-2021 at 2216
Report Date: 06-09-2021

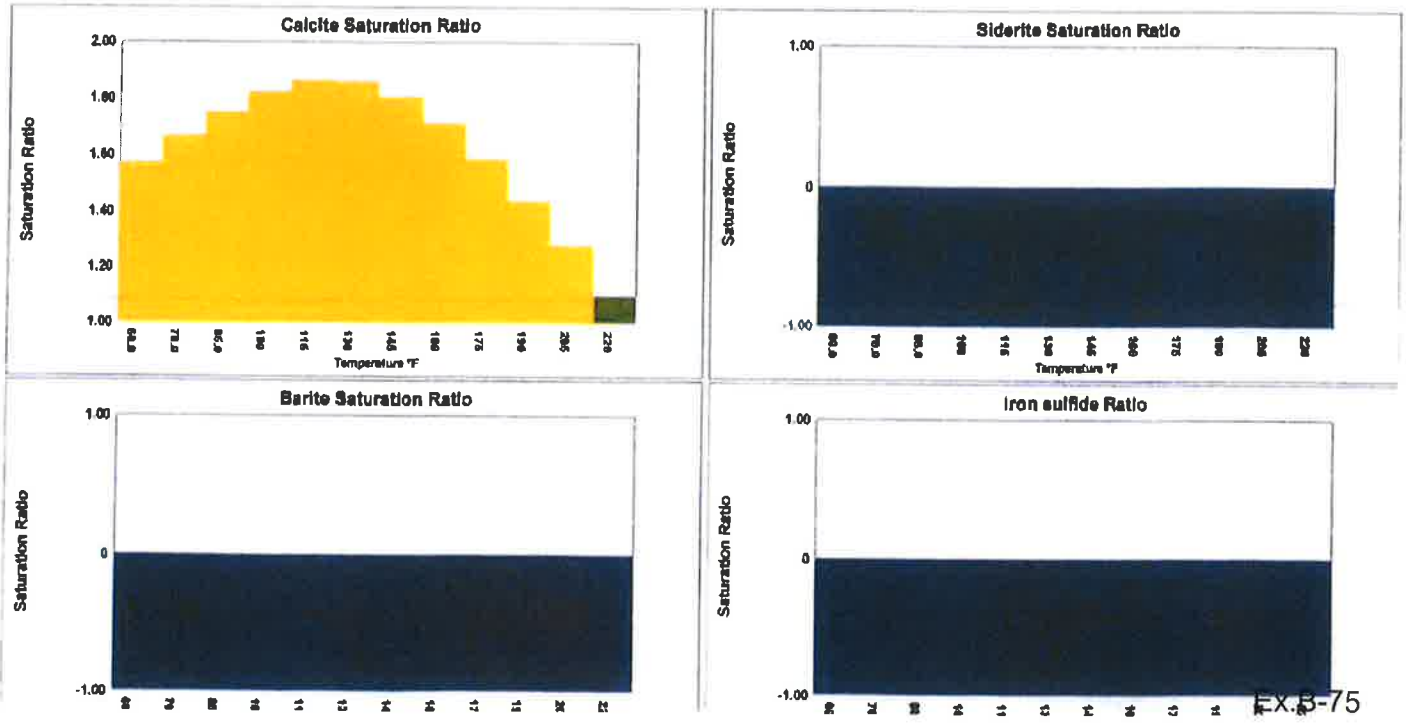
WATER CHEMISTRY

CATIONS		ANIONS	
Calcium(as Ca)	4593	Chloride(as Cl)	121021
Magnesium(as Mg)	984.00	Sulfate(as SO_4)	2179
Barium(as Ba)	0.00	Dissolved CO_2(as CO_2)	225.06
Strontium(as Sr)	88.00	Bicarbonate(as HCO_3)	427.00
Sodium(as Na)	71855	H_2S (as H_2S)	30.00
Potassium(as K)	978.00	Boron(as B)	12.00
Lithium(as Li)	24.00		
Iron(as Fe)	0.00		
Manganese(as Mn)	0.100		
Zinc(as Zn)	0.00		
PARAMETERS			
Temperature(°F)	77.00	Sample pH	6.00
Conductivity	233708	Sp.Gr.(g/mL)	1.130
Resistivity	4.28	T.D.S.	217105

SCALE AND CORROSION POTENTIAL

Temp. (°F)	Press. (psia)	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackinawite FeS	
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels
60.00	14.70	1.58	0.00963	1.05	17.58	1.38	108.98	0.00	-0.0736	0.411	-79.55	0.00	-0.395	0.00	-0.46
70.00	15.00	1.67	0.0104	1.01	3.67	1.28	83.70	0.00	-0.0991	0.388	-86.07	0.00	-0.366	0.00	-0.54
85.00	38.50	1.75	0.0106	0.989	-3.45	1.16	50.30	0.00	-0.148	0.367	-91.83	0.00	-0.329	0.00	-0.37
100.00	62.00	1.83	0.0106	1.01	4.28	1.07	23.34	0.00	-0.211	0.357	-94.32	0.00	-0.299	0.00	-0.33
115.00	85.50	1.87	0.0103	1.09	22.87	1.11	32.79	0.00	-0.289	0.350	-95.57	0.00	-0.274	0.00	-0.33
130.00	109.00	1.86	0.00952	1.21	47.80	1.18	47.41	0.00	-0.392	0.342	-97.40	0.00	-0.253	0.00	-0.34
145.00	132.50	1.81	0.00841	1.39	75.32	1.24	58.25	0.00	-0.526	0.333	-99.84	0.00	-0.236	0.00	-0.38
160.00	156.00	1.71	0.00706	1.65	102.76	1.29	66.46	0.00	-0.700	0.323	-102.76	0.00	-0.221	0.00	-0.43
175.00	179.50	1.59	0.00556	2.01	127.90	1.34	72.41	0.00	-0.923	0.312	-106.28	0.00	-0.209	0.00	-0.50
190.00	203.00	1.44	0.00403	2.51	149.92	1.38	76.85	0.00	-1.21	0.300	-110.31	0.00	-0.199	0.00	-0.60
205.00	226.50	1.28	0.00252	3.20	168.52	1.42	80.17	0.00	-1.57	0.289	-114.86	0.00	-0.190	0.00	-0.71
220.00	250.00	1.10	< 0.001	4.12	186.86	1.43	81.83	0.00	-2.05	0.273	-122.64	0.00	-0.186	0.00	-0.89

Saturation Ratios (xSAT) are the ratio of ion activity to solubility, e.g. $(Ca)(CO_3)/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.



DownHole SAT(tm)

SURFACE WATER CHEMISTRY INPUT

Supreme Technologies
Leavitt 13 #2H WH
Glorieta-Yeso

Redwood

Report Date: 06-09-2021
Sample #: 0

Sampled: 06-02-2021 at 2216
Sample ID: 2021-06-04-39

CATIONS		ANIONS	
Calcium (as Ca)	4593	Chloride (as Cl)	121021
Magnesium (as Mg)	984.00	Sulfate (as SO_4)	2179
Barium (as Ba)	0.00	Dissolved CO_2 (as CO_2)	225.06
Strontium (as Sr)	88.00	Bicarbonate (as HCO_3)	427.00
Sodium (as Na)	71855	H_2S (as H_2S)	30.00
Potassium (as K)	978.00	Boron (as B)	12.00
Lithium (as Li)	24.00		
Iron (as Fe)	0.00		
Manganese (as Mn)	0.100		
Zinc (as Zn)	0.00		

PARAMETERS	
Calculated T.D.S.	217105
Molar Conductivity	233708
Resistivity	4.28
Sp.Gr.(g/mL)	1.130
Pressure(psia)	15.00
Temperature (^{0}F)	77.00
pH	6.00

BOUND IONS	TOTAL	FREE
Calcium	5190	4753
Barium	0.00	0.00
Carbonate	20.07	0.0439
Phosphate	0.00	0.00
Sulfate	2462	696.30

CORROSION RATE PREDICTION

CO_2 - H_2S Rate(mpy)	0.327

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

Ex.B-76

DownHole SAT(tm)

SURFACE WATER
DEPOSITION POTENTIAL INDICATORS

Supreme Technologies
Leavitt 13 #2H WH
Glorieta-Yeso

Redwood

Report Date: 06-09-2021
Sample #: 0

Sampled: 06-02-2021 at 2216
Sample ID: 2021-06-04-39

SATURATION RATIO as IAP/Ksp	
Calcite ($CaCO_3$)	1.73
Aragonite ($CaCO_3$)	1.60
Witherite ($BaCO_3$)	0.00
Strontianite ($SrCO_3$)	0.03
Calcium oxalate (CaC_2O_4)	0.00
Magnesite ($MgCO_3$)	0.44
Anhydrite ($CaSO_4$)	1.00
Gypsum ($CaSO_4*2H_2O$)	1.22
Barite ($BaSO_4$)	0.00
Celestite ($SrSO_4$)	0.38
Fluorite (CaF_2)	0.00
Calcium phosphate	0.00
Hydroxyapatite	0.00
Silica (SiO_2)	0.00
Brucite ($Mg(OH)_2$)	< 0.001
Magnesium silicate	0.00
Iron hydroxide ($Fe(OH)_3$)	0.00
Strengite ($FePO_4*2H_2O$)	0.00
Siderite ($FeCO_3$)	0.00
Halite (NaCl)	0.24
Thenardite ($Na2SO_4$)	0.00
Iron sulfide (FeS)	0.00

FREE ION MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite ($CaCO_3$)	0.0108
Aragonite ($CaCO_3$)	0.00959
Witherite ($BaCO_3$)	-27.73
Strontianite ($SrCO_3$)	-1.28
Calcium oxalate (CaC_2O_4)	-0.00752
Magnesite ($MgCO_3$)	-0.0271
Anhydrite ($CaSO_4$)	-1.15
Gypsum ($CaSO_4*2H_2O$)	67.84
Barite ($BaSO_4$)	-0.120
Celestite ($SrSO_4$)	-89.07
Fluorite (CaF_2)	-2.78
Calcium phosphate	>-0.001
Hydroxyapatite	-263.20
Silica (SiO_2)	-27.99
Brucite ($Mg(OH)_2$)	-0.233
Magnesium silicate	-87.51
Iron hydroxide ($Fe(OH)_3$)	-0.211
Strengite ($FePO_4*2H_2O$)	>-0.001
Siderite ($FeCO_3$)	-0.347
Halite (NaCl)	-73627
Thenardite ($Na2SO_4$)	-84955
Iron sulfide (FeS)	-0.570

SIMPLE INDICES	
Langelier	0.876
Ryznar	4.25
Puckorius	1.66
Larson-Skold Index	301.16
Stiff Davis Index	0.732
Oddo-Tomson	-0.237

CARBONATE PRECIPITATION POTENTIAL (Lbs/1000 Barrels)	
Calcite ($CaCO_3$)	187.56
Aragonite ($CaCO_3$)	185.27
Witherite ($BaCO_3$)	0.00
Strontianite ($SrCO_3$)	-18.23
Magnesite ($MgCO_3$)	135.47
Siderite ($FeCO_3$)	0.00

OPERATING CONDITIONS

Temperature (^oF)	77.00
Time(mins)	3.00

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

Ex.B-77

DownHole SAT™ Water Analysis Report

French Creek Software

SYSTEM IDENTIFICATION

Supreme Technologies
Redwood
Leavitt 14 A #2 WH
Glorieta-Yeso

Sample ID#: 0
ID: 2021-06-03-28

Sample Date: 05-31-2021 at 1553
Report Date: 06-06-2021

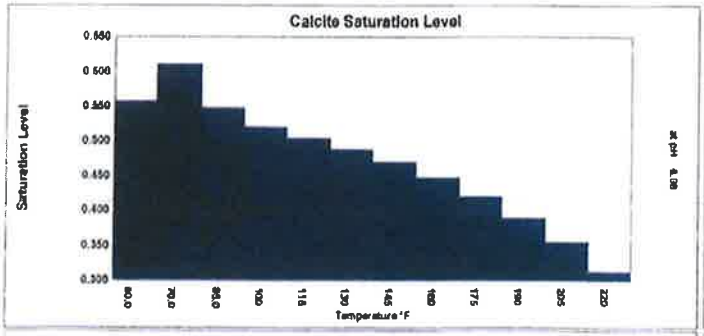
WATER CHEMISTRY

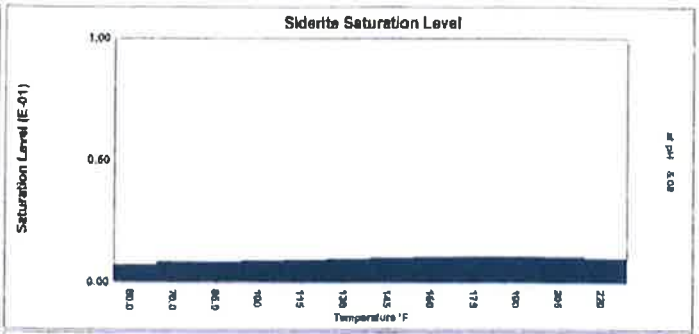
CATIONS		ANIONS	
Calcium(as Ca)	4646	Chloride(as Cl)	[illegible]
Magnesium(as Mg)	964.00	Sulfate(as SO_4)	1796
Barium(as Ba)	0.00	Dissolved CO_2(as CO_2)	180.00
Strontium(as Sr)	87.00	Bicarbonate(as HCO_3)	329.00
Sodium(as Na)	66750	H_2S (as H_2S)	136.00
Potassium(as K)	863.00	Boron(as B)	13.00
Lithium(as Li)	23.00		
Iron(as Fe)	0.100		
Manganese(as Mn)	0.00	**PARAMETERS**	
		Temperature(°F)	77.00
		Sample pH	6.00
		Conductivity	286589
		T.D.S.	180517
		Resistivity	3.49
		Sp.Gr.(g/mL)	1.13
Zinc(as Zn)	0.00		

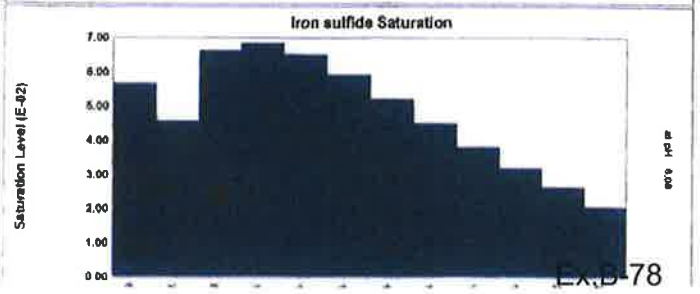
SCALE AND CORROSION POTENTIAL

Temp. (°F)	Press. (psig)	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2 (mpy)	pCO_2 (atm)
60.00	0.00	0.557	-0.0110	0.677	-140.34	0.950	-18.16	0.00	-0.0765	0.345	-89.18	0.00676	-0.368	0.0566	-0.139	0.239	0.0870
70.00	0.30	0.610	-0.00898	0.652	-151.80	0.885	-42.84	0.00	-0.103	0.326	-95.07	0.00796	-0.338	0.0456	-0.171	0.367	0.0888
85.00	23.80	0.547	-0.00941	0.641	-151.98	0.806	-75.10	0.00	-0.153	0.310	-100.05	0.00794	-0.303	0.0660	-0.115	0.966	0.228
100.00	47.30	0.519	-0.00912	0.661	-133.98	0.748	-100.40	0.00	-0.216	0.303	-101.79	0.00832	-0.273	0.0683	-0.109	1.75	0.367
115.00	70.80	0.503	-0.00871	0.710	-102.98	0.777	-82.25	0.00	-0.295	0.299	-102.38	0.00886	-0.247	0.0651	-0.113	2.25	0.506
130.00	94.30	0.487	-0.00837	0.791	-64.36	0.826	-58.49	0.00	-0.398	0.293	-103.55	0.00940	-0.226	0.0591	-0.122	2.52	0.645
145.00	117.80	0.469	-0.00816	0.912	-22.83	0.870	-40.00	0.00	-0.533	0.287	-105.29	0.00986	-0.208	0.0521	-0.135	2.74	0.784
160.00	141.30	0.447	-0.00809	1.08	17.91	0.911	-25.62	0.00	-0.706	0.279	-107.59	0.0102	-0.193	0.0450	-0.154	2.99	0.923
175.00	164.80	0.419	-0.00814	1.32	55.27	0.946	-14.54	0.00	-0.927	0.271	-110.46	0.0104	-0.180	0.0382	-0.177	3.19	1.06
190.00	188.30	0.388	-0.00831	1.66	87.92	0.976	-6.06	0.00	-1.21	0.261	-113.86	0.0103	-0.169	0.0319	-0.206	1.48	1.20
205.00	211.80	0.355	-0.00857	2.12	115.46	1.00	0.432	0.00	-1.56	0.252	-117.80	0.0102	-0.160	0.0262	-0.244	0.706	1.34
220.00	235.30	0.313	-0.00929	2.72	139.62	1.01	2.06	0.00	-2.04	0.239	-124.90	0.00961	-0.156	0.0205	-0.298	0.273	1.48
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. $(Ca)(CO_3)/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.







DownHole SAT(tm)

SURFACE WATER CHEMISTRY INPUT

Supreme Technologies — Redwood
Leavitt 14 A #2 WH
Glorieta-Yeso

Report Date: 06-06-2021 Sampled: 05-31-2021 at 1553
Sample ID: 2021-06-03-28 Sample ID: 2021-06-03-28

CATIONS		ANIONS	
Calcium (as Ca)	4646	Chloride (as Cl)	111832
Magnesium (as Mg)	964.00	Sulfate (as SO_4)	1796
Barium (as Ba)	0.00	Dissolved CO_2 (as CO_2)	180.00
Strontium (as Sr)	87.00	Bicarbonate (as HCO_3)	329.00
Sodium (as Na)	66750	H_2S (as H_2S)	136.00
Potassium (as K)	863.00	Boron (as B)	13.00
Lithium (as Li)	23.00		
Iron (as Fe)	0.100		
Manganese (as Mn)	0.00		
Zinc (as Zn)	0.00		

PARAMETERS

Calculated T.D.S.	180517
Molar Conductivity	286589
Resistivity	3.49
Sp.Gr.(g/mL)	1.13
Pressure(psia)	15.00
Temperature (^{0}F)	77.00
pH	6.00

CORROSION RATE PREDICTION

CO_2 - H_2S Rate(mpy)	0.452

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

Ex.B-79

DownHole SAT(tm)

SURFACE WATER
DEPOSITION POTENTIAL INDICATORS

Supreme Technologies
Leavitt 14 A #2 WH
Glorieta-Yeso

Redwood

Report Date: 06-06-2021 Sampled: 05-31-2021 at 1553
Sample ID: 2021-06-03-28 Sample ID: 2021-06-03-28

SATURATION LEVEL	
Calcite ($CaCO_3$)	0.561
Aragonite ($CaCO_3$)	0.519
Witherite ($BaCO_3$)	0.00
Strontianite ($SrCO_3$)	0.0118
Calcium oxalate (CaC_2O_4)	0.00
Magnesite ($MgCO_3$)	0.132
Anhydrite ($CaSO_4$)	0.644
Gypsum ($CaSO_4*2H_2O$)	0.847
Barite ($BaSO_4$)	0.00
Celestite ($SrSO_4$)	0.318
Fluorite (CaF_2)	0.00
Calcium phosphate	0.00
Hydroxyapatite	0.00
Silica (SiO_2)	0.00
Brucite ($Mg(OH)_2$)	< 0.001
Magnesium silicate	0.00
Iron hydroxide ($Fe(OH)_3$)	< 0.001
Strengite ($FePO_4*2H_2O$)	0.00
Siderite ($FeCO_3$)	0.00769
Halite (NaCl)	0.133
Thenardite ($Na2SO_4$)	< 0.001
Iron sulfide (FeS)	0.0429

MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite ($CaCO_3$)	-0.00958
Aragonite ($CaCO_3$)	-0.0114
Witherite ($BaCO_3$)	-27.60
Strontianite ($SrCO_3$)	-1.47
Calcium oxalate (CaC_2O_4)	-0.0111
Magnesite ($MgCO_3$)	-0.0681
Anhydrite ($CaSO_4$)	-153.56
Gypsum ($CaSO_4*2H_2O$)	-58.02
Barite ($BaSO_4$)	-0.124
Celestite ($SrSO_4$)	-97.77
Fluorite (CaF_2)	-3.47
Calcium phosphate	>-0.001
Hydroxyapatite	-304.59
Silica (SiO_2)	-31.47
Brucite ($Mg(OH)_2$)	< 0.001
Magnesium silicate	-96.47
Iron hydroxide ($Fe(OH)_3$)	< 0.001
Strengite ($FePO_4*2H_2O$)	>-0.001
Siderite ($FeCO_3$)	-0.321
Halite (NaCl)	-102986
Thenardite ($Na2SO_4$)	-85717
Iron sulfide (FeS)	-0.181

SIMPLE INDICES	
Langelier	0.246
Ryznar	5.51
Puckorius	3.56
Larson-Skold Index	660.02
Stiff Davis Index	-0.0648
Oddo-Tomson	-0.901

BOUND IONS	TOTAL	FREE
Calcium	4646	4389
Barium	0.00	0.00
Carbonate	4.12	0.0211
Phosphate	0.00	0.00
Sulfate	1796	612.62

OPERATING CONDITIONS

Temperature (^oF)	77.00
Time(mins)	3.00

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

Ex.B-80

DownHole SAT™ Water Analysis Report

French Creek Software

SYSTEM IDENTIFICATION

Supreme Technologies
Redwood
Kaiser B #1 WH
Queen-Grayburg-
San Andres

Sample ID#: 0
ID: 2021-06-03-9

Sample Date: 05-31-2021 at 1553
Report Date: 06-06-2021

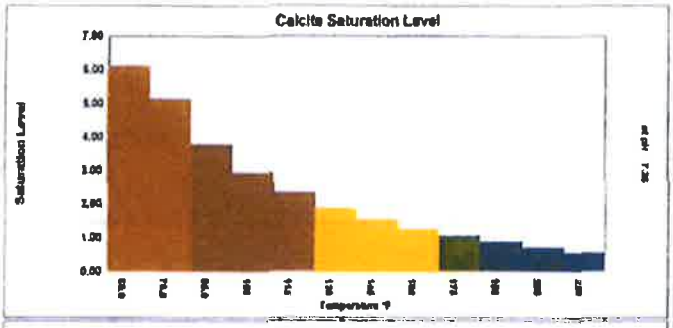
WATER CHEMISTRY

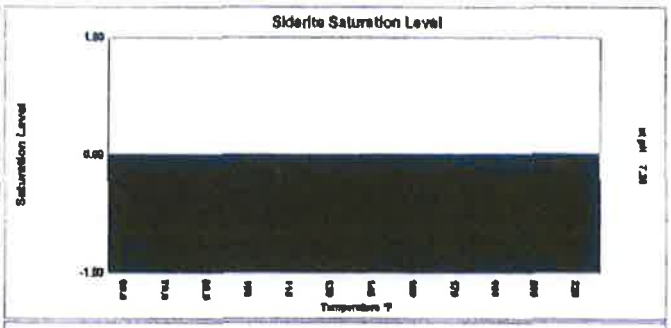
CATIONS		ANIONS	
Calcium(as Ca)	3262	Chloride(as Cl)	139429
Magnesium(as Mg)	556.00	Sulfate(as SO_4)	3973
Barium(as Ba)	0.00	Dissolved CO_2(as CO_2)	250.00
Strontium(as Sr)	59.00	Bicarbonate(as HCO_3)	390.00
Sodium(as Na)	88835	H_2S (as H_2S)	17.00
Potassium(as K)	50.00	Boron(as B)	8.90
Lithium(as Li)	22.00		
Iron(as Fe)	0.00		
Manganese(as Mn)	0.00	**PARAMETERS**	
		Temperature(°F)	77.00
		Sample pH	7.00
		Conductivity	396368
		T.D.S.	223486
		Resistivity	2.52
		Sp.Gr.(g/mL)	1.15
Zinc(as Zn)	0.00		

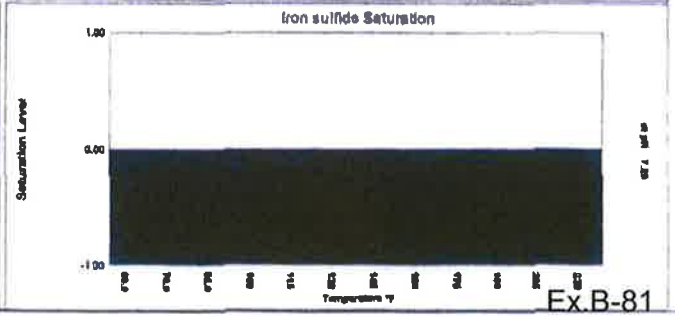
SCALE AND CORROSION POTENTIAL

Temp.	Press.	Calcite		Anhydrite		Gypsum		Barite		Celestite		Siderite		Mackawenite		CO_2	pCO_2
(°F)	(psig)	$CaCO_3$		$CaSO_4$		$CaSO_4*2H_2O$		$BaSO_4$		$SrSO_4$		$FeCO_3$		FeS		(mpy)	(atm)
60.00	0.00	6.08	0.146	1.21	103.63	1.57	257.16	0.00	-0.0385	0.467	-45.14	0.00	-0.326	0.00	-0.0184	0.0458	0.0225
70.00	0.30	5.12	0.110	1.17	84.09	1.47	218.84	0.00	-0.0514	0.443	-49.29	0.00	-0.315	0.00	-0.0323	0.0447	0.0230
85.00	23.80	3.77	0.0667	1.15	75.36	1.34	167.95	0.00	-0.0761	0.424	-52.94	0.00	-0.299	0.00	-0.0303	0.102	0.0590
100.00	47.30	2.92	0.0423	1.19	89.72	1.25	127.15	0.00	-0.107	0.416	-54.40	0.00	-0.282	0.00	-0.0391	0.167	0.0951
115.00	70.80	2.33	0.0271	1.29	121.66	1.31	145.21	0.00	-0.146	0.412	-55.00	0.00	-0.264	0.00	-0.0535	0.0641	0.131
130.00	94.30	1.89	0.0168	1.45	164.10	1.40	171.41	0.00	-0.196	0.406	-56.09	0.00	-0.248	0.00	-0.0744	0.179	0.167
145.00	117.80	1.54	0.00963	1.68	212.03	1.49	191.96	0.00	-0.261	0.399	-57.55	0.00	-0.234	0.00	-0.103	0.307	0.203
160.00	141.30	1.26	0.00440	2.01	260.44	1.57	207.82	0.00	-0.344	0.390	-59.43	0.00	-0.222	0.00	-0.143	0.489	0.239
175.00	164.80	1.03	< 0.001	2.47	306.07	1.64	220.17	0.00	-0.451	0.380	-61.72	0.00	-0.211	0.00	-0.195	0.677	0.275
190.00	188.30	0.842	-0.00248	3.11	346.75	1.70	229.68	0.00	-0.586	0.368	-64.45	0.00	-0.202	0.00	-0.264	0.339	0.311
205.00	211.80	0.686	-0.00480	4.00	381.83	1.76	237.18	0.00	-0.757	0.356	-67.60	0.00	-0.194	0.00	-0.353	0.307	0.347
220.00	235.30	0.541	-0.00713	5.17	416.73	1.78	242.20	0.00	-0.988	0.337	-73.08	0.00	-0.190	0.00	-0.484	0.414	0.383
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. $(Ca)(CO_3)/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.







Ex.B-81

DownHole SAT(tm)

SURFACE WATER CHEMISTRY INPUT

Supreme Technologies — Redwood
Kaiser B #1 WH
Queen-Grayburg- San Andres

Report Date: 06-06-2021 Sampled: 05-31-2021 at 1553
Sample ID: 2021-06-03-9 Sample ID: 2021-06-03-9

CATIONS		ANIONS	
Calcium (as Ca)	3262	Chloride (as Cl)	139429
Magnesium (as Mg)	556.00	Sulfate (as SO_4)	3973
Barium (as Ba)	0.00	Dissolved CO_2 (as CO_2)	250.00
Strontium (as Sr)	59.00	Bicarbonate (as HCO_3)	390.00
Sodium (as Na)	88835	H_2S (as H_2S)	17.00
Potassium (as K)	50.00	Boron (as B)	8.90
Lithium (as Li)	22.00		
Iron (as Fe)	0.00		
Manganese (as Mn)	0.00		
Zinc (as Zn)	0.00		

PARAMETERS

Calculated T.D.S.	223486
Molar Conductivity	396368
Resistivity	2.52
Sp.Gr.(g/mL)	1.15
Pressure(psia)	15.00
Temperature (^oF)	77.00
pH	7.00

CORROSION RATE PREDICTION

CO_2 - H_2S Rate(mpy)	0.0528

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

Ex.B-82

DownHole SAT(tm)

SURFACE WATER
DEPOSITION POTENTIAL INDICATORS

Supreme Technologies — Redwood
Kaiser B #1 WH
Queen-Grayburg-San Andres

Report Date: 06-06-2021 Sampled: 05-31-2021 at 1553
Sample ID: 2021-06-03-9 Sample ID: 2021-06-03-9

SATURATION LEVEL		MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite ($CaCO_3$)	3.94	Calcite ($CaCO_3$)	0.0745
Aragonite ($CaCO_3$)	3.65	Aragonite ($CaCO_3$)	0.0724
Witherite ($BaCO_3$)	0.00	Witherite ($BaCO_3$)	-28.05
Strontianite ($SrCO_3$)	0.0629	Strontianite ($SrCO_3$)	-2.06
Calcium oxalate (CaC_2O_4)	0.00	Calcium oxalate (CaC_2O_4)	-0.0129
Magnesite ($MgCO_3$)	0.793	Magnesite ($MgCO_3$)	-0.0219
Anhydrite ($CaSO_4$)	1.16	Anhydrite ($CaSO_4$)	78.07
Gypsum ($CaSO_4*2H_2O$)	1.41	Gypsum ($CaSO_4*2H_2O$)	194.92
Barite ($BaSO_4$)	0.00	Barite ($BaSO_4$)	-0.0621
Celestite ($SrSO_4$)	0.433	Celestite ($SrSO_4$)	-51.26
Fluorite (CaF_2)	0.00	Fluorite (CaF_2)	-3.67
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-267.07
Silica (SiO_2)	0.00	Silica (SiO_2)	-28.17
Brucite ($Mg(OH)_2$)	< 0.001	Brucite ($Mg(OH)_2$)	0.00303
Magnesium silicate	0.00	Magnesium silicate	-89.14
Iron hydroxide ($Fe(OH)_3$)	0.00	Iron hydroxide ($Fe(OH)_3$)	-0.214
Strengite ($FePO_4*2H_2O$)	0.00	Strengite ($FePO_4*2H_2O$)	>-0.001
Siderite ($FeCO_3$)	0.00	Siderite ($FeCO_3$)	-0.314
Halite (NaCl)	0.259	Halite (NaCl)	-72069
Thenardite ($Na2SO_4$)	< 0.001	Thenardite ($Na2SO_4$)	-86536
Iron sulfide (FeS)	0.00	Iron sulfide (FeS)	-0.0416

SIMPLE INDICES		BOUND IONS	TOTAL	FREE
Langelier	1.39	Calcium	3262	2858
Ryznar	4.21	Barium	0.00	0.00
Puckorius	3.03	Carbonate	88.17	0.172
Larson-Skold Index	570.61	Phosphate	0.00	0.00
Stiff Davis Index	1.25	Sulfate	3973	1385
Oddo-Tomson	0.281			

OPERATING CONDITIONS

Temperature (°F)	77.00
Time(mins)	3.00

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

Ex.B-83

Attachment 4

Injection Formation Water Analyses

Injection Formation Water Analysis

Riley Permian Operating Company LLC - Cisco Formation

Well Name	API	Latitude	Longitude	Section	Township	Range	Unit	Ftgns	Ftgew	County	State	Field	Formation	Tds (mg/l)	Ca (mg/l)	Fe (mg/l)	Chlorides (mg/l)	Bicarbonate (mg/l)	Sulfate (mg/l)	H2S (mg/l)
DAGGER DRAW #002	3001500116	32.62995	-104.51755	30	19S	25E	I	1995S	629E	EDDY	NM	DAGGER DRAW	CISCO	7622	-	-	-	-	-	-
JOHN AGC #002	3001526468	32.57923	-104.55240	14	20S	24E	A	660N	660E	EDDY	NM	DAGGER DRAW	CISCO	216236	4576	1000	53321	72619	952	0
KIMBALL 6 FEDERAL #001	3001510746	32.42635	-104.44072	6	22S	25E	4	718N	801W	EDDY	NM	INDIAN BASIN	CISCO	5606	-	-	1350	476	1900	-
SPRING SWD #001	3001500129	32.52066	-104.364408	4	21S	25E	A	660N	830E	EDDY	NM	SEVEN RIVERS HILLS	CISCO	31580	-	-	17370	502	2310	-
INDIAN BASIN #001	3001510093	32.4759	-104.576233	14	21S	23E	K	1650S	1650W	EDDY	NM	INDIAN BASIN	CISCO	8531	-	-	3238	846	1700	-
MARATHON FEDERAL #001	3001510373	32.46138	-104.559059	24	21S	23E	K	1650S	1650W	EDDY	NM	INDIAN BASIN	CISCO	162225	-	-	99300	32	750	-
JENNY COM #001	3001526469	32.66355	-104.513435	17	19S	25E	E	1750N	660W	EDDY	NM	DAGGER DRAW	CISCO	-	-	-	46850	183	12.5	-

Ex B-85

Attachment 5

Reservoir Characterization

Reservoir Characterization at the Angel Ranch State SWD #2

1. Injection Formation and Confinement

a. Injection Formation

The proposed injection interval includes the Cisco Formation from 8,310 to 8,950 feet. This formation consists of interbedded carbonate rocks including dolomites and limestones. Several thick intervals of porous and permeable carbonate rock capable of taking water are present within the Cisco Formation in the area.

b. Upper Confinement

Nearby open hole geophysical well logs indicate the proposed Cisco injection interval is overlain by approximately 59 feet of low porosity and low permeability shale within the lower Wolfcamp Formation, which will prevent the upward migration of fluid and act as the upper confining layer.

c. Lower Confinement

Nearby open hole geophysical well logs indicate the proposed Cisco injection interval is underlain by approximately 36 feet of low porosity and low permeability carbonate rocks within the lower Cisco Formation, which will prevent the downward migration of fluid and act as the lower confining layer.

Due to the lower confinement zone being present within the Cisco, below is a table of approximate resistivity and porosity measurements of the lower confining layer derived from a nearby resistivity and porosity logs (API# 015-33886).

RILEY PERMIAN - ANGEL RANCH STATE SWD #2 - LOWER CONFINEMENT

DEPTHS	RESISTIVITY READINGS (OHM METERS)	POROSITY MEASUREMENTS
8,964'	2,000	1%
8,966'	1,800	2%
8,968'	1,700	3%
8,970'	2,000	1%
8,972'	2,000	2%
8,974'	2,000	1%
8,976'	2,000	4%
8,978'	2,000	1%
8,980'	2,000	4%
8,982'	2,000	1%
8,984'	1,900	2%
8,986'	2,000	1%
8,988'	2,000	1%
8,990'	2,000	1%
8,992'	2,000	1%
8,994'	1,100	1%
8,996'	2,000	2%
8,998'	1,200	1%
9,000'	2,000	2%

Ex.B-87

2. **Historic Field Usage**

   a. **Offset Production**

   A review of all wells in the NMOCD database, within a 2-mile radius of the Angel Ranch State SWD #2, does not show any historic or current hydrocarbon production from the Cisco Formation.

   b. **Commercial Water Sources**

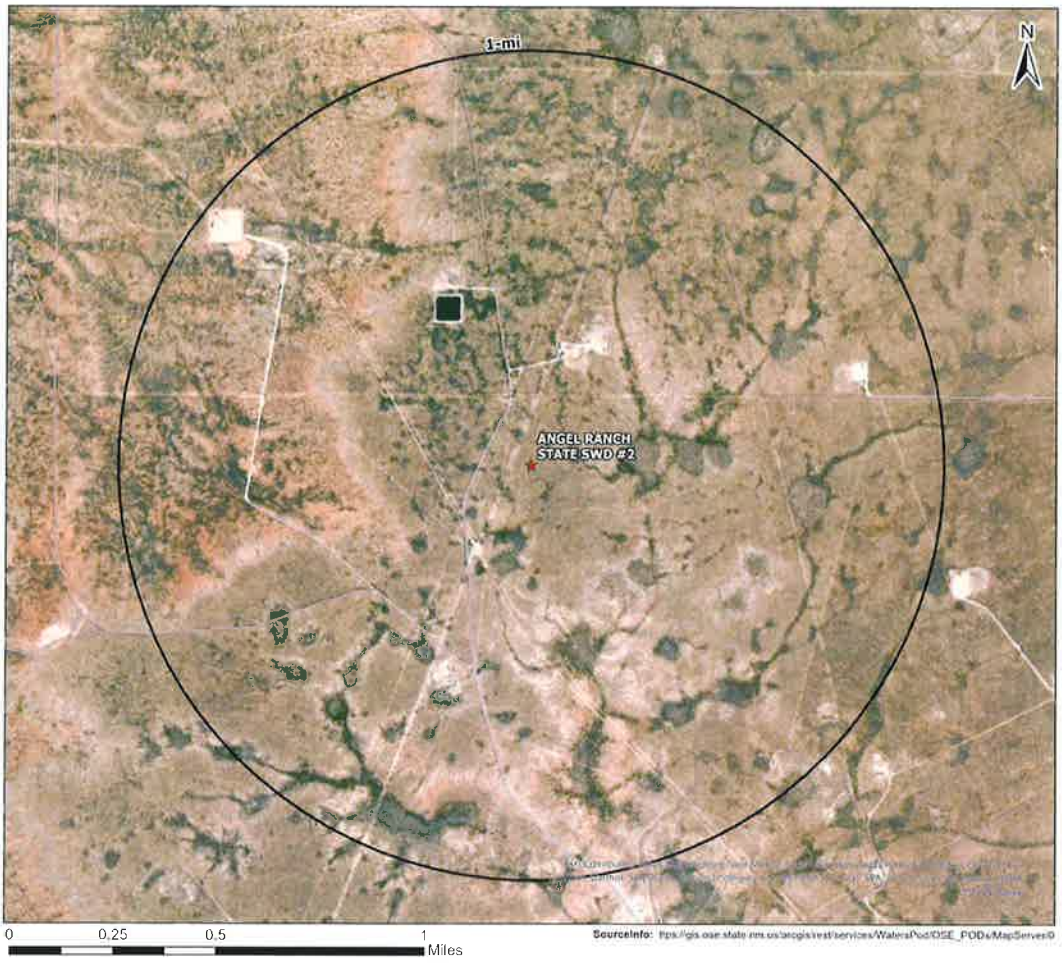
   A review of all wells in the NMOCD and OSE databases, within a 2-mile radius of the Angel Ranch State SWD #2, does not show any historic or current commercial water supply sources from the Cisco Formation.

   c. **Enhanced Oil Recovery**

   A review of all wells in the NMOCD database, within a 2-mile radius of the Angel Ranch State SWD #2, does not show any historic or current Enhanced Oil Recovery operations utilizing the overlying Wolfcamp Formation, the Cisco Formation, or the underlying Strawn Formation.

Attachment 6

Water Well Map and Well Data



Legend

- Proposed SWD

OSE Water PODs

POD Status

- Active (0)
- Pending (0)
- Changed Location of Well (0)
- Inactive (0)
- Capped (0)
- Plugged (0)
- Unknown (0)

1-mile Water Well AOR

ANGEL RANCH STATE SWD #2

EDDY COUNTY, NEW MEXICO

Proj Mgr: Mark Kidder	July 10, 2024	Mapped by: Ben Bockelmann

Prepared for: RILEY PERMIAN

Prepared by: ALL CONSULTING

Ex.B-90

Water Well Sampling Rationale					
Riley Permian Operating Company, LLC - Angel Ranch State SWD #2					
Water Wells	Owner	Available Contact Information	Use	Sampling Required	Notes
Note: No water wells are present within 1 mile of the proposed SWD location.					

Ex.B-91

Attachment 7

No Hydrologic Connection Statement

ALL CONSULTING

RE: Riley Permian Operating Company LLC – Angel Ranch SWD #2 application, Eddy County, New Mexico

ALL Consulting LLC (ALL) has performed a thorough hydrologic investigation related to the one saltwater disposal well (SWD) listed above. The investigation was conducted to determine if there were any existing or potential connections between the proposed injection intervals in the Cisco Formation and the deepest underground source of drinking water (USDW).

ALL performed an assessment and analysis of the subsurface geophysical log data along with published documents on the groundwater in this vicinity of Eddy County, New Mexico. The surficial geology is the Tansill Formation consisting predominantly of red silt, clay, gypsum, and dolomite. This area is east of the Pecos River and depths to potable water ranges from 30 to 100 feet below the surface. Based on open hole geophysical log analysis and well completion records, the base of the USDW is approximately 350 feet below the surface.

Based on ALL's assessment and analysis there is containment through multiple confining zones in a shale layer above the top of the Cisco Formation and the USDW and over 7,960 feet of vertical separation between the base of the USDW and the top of the injection interval. Additionally, there is no evidence of faults that would allow for communication between the USDW and Cisco Formation.

Tom Tomastik 6/28/2024

Tom Tomastik Date

Chief Geologist and Regulatory Specialist

ALL Consulting LLC

CERTIFIED PETROLEUM GEOLOGIST Thomas E Tomastik 6354

Ex.B-93

Attachment 8

Seismic Potential Letter

ALL CONSULTING
GOVERNMENT RELATIONS · ENERGY · PLANNING · TECHNOLOGY
ENGINEERING · ENVIRONMENTAL

July 2, 2024

PN 1912.SWD.00

Mr. Phillip Goetze, P.G.
NM EMNRD – Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Subject: **Riley Permian Operating Company, LLC**
Angel Ranch State SWD #2 - Seismic Potential Letter

Dear Mr. Goetze,

At the request of Riley Permian Operating Company, LLC (Riley Permian), ALL Consulting, LLC (ALL) has assessed the potential injection-induced seismicity risks in the vicinity of Riley Permian's Angel Ranch State SWD #2, a proposed saltwater disposal (SWD) facility in Eddy County, New Mexico, and summarized the findings in this letter. This assessment used publicly available data to identify the proximity and characteristics of seismic events and known faults to evaluate the potential for the operation of the Angel Ranch State SWD #2 to contribute to seismic activity in the area.

Geologic Evaluation

The Angel Ranch State SWD #2 is requesting a permit to inject into the Pennsylvanian Cisco Formation (Cisco) at a depth of 8,310-8,950 feet below ground surface (bgs). The Cisco consists of various Pennsylvanian-age carbonates and is overlain by approximately 59 feet of low porosity carbonate rocks within the lower Wolfcamp Formation, which would prevent the upward migration of injection fluid and serve as the upper confining layer (see **Attachment 1**). Additionally, approximately 36 feet of low porosity and low permeability other carbonate rocks lie beneath the proposed injection interval and act as a lower confining zone by preventing downward migration of injected fluids into the underlying Strawn Formation (see **Attachment 1**). A stratigraphic chart depicting the geologic setting is included as **Figure 1**.[1]

Seismic Events and Fault Data

A review of United States Geological Survey (USGS) and New Mexico Tech Seismological Observatory (NMTSO) earthquake catalogues determined that three (3) seismic events have been recorded within a 100 square mile area [9.08-kilometer (km) radius] around the proposed Angel

[1] Yang, K.-M., & Dorobek, S. L. (1995). The Permian Basin of west Texas and New Mexico: Tectonic history of a "composite" Foreland Basin and its effects on stratigraphic development. *Stratigraphic Evolution of Foreland Basins*, 149–174. https://doi.org/10.2110/pec.95.52.0149

Ranch State SWD#1. The closest recorded seismic event was a M1.91 that occurred on May 25, 2021, and was located approximately 3.7 miles northwest of the Angel Ranch State SWD #2 (see **Attachment 2**).

Fault data from United States Geological Survey (USGS) and the Texas Bureau of Economic Geology (BEG)[2] indicates that the closest known fault is located approximately 2.16 miles southeast of the Angel Ranch State SWD #2 (see **Attachment 2**). This identified fault is within the Precambrian basement, which is approximately 7,035 feet below the proposed injection interval.[3] A map of the seismic events and faults within 9.08 km of the Angel Ranch State SWD #2 is included as **Attachment 2.**

Figure 1 – Delaware Basin Stratigraphic Chart (Adapted from Yang and Dorobek 1995)

SYSTEM	SERIES/ STAGE	CENTRAL BASIN PLATFORM	DELAWARE BASIN
PERMIAN	OCHOAN	DEWEY LAKE RUSTLER SALADO	DEWEY LAKE RUSTLER SALADO CASTILE
	GUADALUPIAN	TANSILL YATES SEVEN RIVERS QUEEN GRAYBURG SAN ANDRES GLORIETA CLEAR FORK WICHITA	DELAWARE MT GROUP BELL CANYON CHERRY CANYON BRUSHY CANYON
	LEONARDIAN		BONE SPRING
	WOLFCAMPIAN	WOLFCAMP	WOLFCAMP
PENNSYLVANIAN	VIRGILIAN	CISCO	CISCO
	MISSOURIAN	CANYON	CANYON
	DESMOINESIAN	STRAWN	STRAWN
	ATOKAN	ATOKA — BEND	ATOKA — BEND
	MORROWAN	(ABSENT)	MORROW
MISSISSIPPIAN	CHESTERIAN MERAMECIAN OSAGEAN KINDERHOOKIAN	CHESTER MERAMEC OSAGE "BARNETT"	CHESTER MERAMEC OSAGE "BARNETT"
		KINDERHOOK	KINDERHOOK
DEVONIAN		WOODFORD DEVONIAN	WOODFORD DEVONIAN
SILURIAN		SILURIAN SHALE FUSSELMAN	MIDDLE SILURIAN FUSSELMAN
ORDOVICIAN	UPPER	MONTOYA	SYLVAN MONTOYA
	MIDDLE	SIMPSON	SIMPSON
	LOWER	ELLENBURGER	ELLENBURGER
CAMBRIAN	UPPER	CAMBRIAN	CAMBRIAN
PRECAMBRIAN			

Seismic Potential Evaluation

Experience in evaluating induced seismic events indicates that most injection-induced seismicity throughout the U.S. (e.g., Oklahoma, Ohio, Texas, New Mexico, and Colorado) occurs as a result of injection into Precambrian basement rock, into overlying formations that are in hydraulic communication with the Precambrian basement rock, or as a result of injection near critically stressed and optimally oriented faults. Seismicity at basement depths occurs because critically stressed faults generally originate in crystalline basement rock and may also extend into overlying sedimentary formations. [4]

Injection into either the Precambrian basement rock or its overlying formations that are hydraulically connected to the basement rock through faulting or fracture networks can increase the pore pressure and may lead to the fault slipping, resulting in a seismic event.[4] As such, the vertical distance between the injection formation and Precambrian basement rock and the presence or lack of faulting within the injection interval are major considerations when determining the risk of injection-induced seismicity.

---

[2] Horne E. A. Hennings P. H., and Zahm C. K. 2021. Basement structure of the Delaware Basin, in The Geologic Basement of Texas: A Volume in Honor of Peter Flawn, Callahan O. A., and Eichubl P., The University of Texas at Austin, Bureau of Economic Geology.

[3] G. Randy Keller, J. M. Hills &; Rabah Djeddi, A regional geological and geophysical study of the Delaware Basin, New Mexico and West Texas, Trans Pecos Region (West Texas) (1980).

[4] Ground Water Protection Council and Interstate Oil and Gas Compact Commission. *Potential Injection-Induced Seismicity Associated with Oil & Gas Development: A Primer on Technical and Regulatory Considerations Informing Risk Management and Mitigation.* 2015. 141 pages.

Geophysical logs from nearby well records show at least 7,035 feet of vertical separation between the injection interval and the Precambrian basement.[3] In addition, injection-induced seismicity is not typically associated with shallow disposal wells in the Central Basin Platform and Delaware Basin areas, such as the Angel Ranch State SWD #2.

For injection into the Cisco Formation to contribute to seismic activity, one of two hypothetical geologic scenarios must exist:[5]

1. Scenario #1: Earthquake hypocenters would need to be significantly shallower (several kilometers) than initially identified by the USGS and NMTSO seismic monitoring networks, and thus placing seismic activity high in the sedimentary column, rather than in the Precambrian basement.
2. Scenario #2: This scenario would require that both of the following conditions are met:
    a. Fault Transmissivity: High permeability and transmissive conduits from fault-damaged zones would need to be present below the Cisco, allowing fluid to migrate through the underlying Strawn Formation and through significantly deeper confining intervals, and eventually into the Precambrian basement.
    b. Pore Pressure: The injection fluids and bottom hole pressures in the Cisco would need to exceed existing hydrostatic pressures within the deeper geologic formation in order for injection fluids to migrate downward.

There are no publications or geologic data that suggest either of these scenarios to be true for the area around the Angel Ranch State SWD #2.

Formation Parting Pressure

Class II SWDs in New Mexico are administratively permitted with a maximum pressure gradient of 0.2 psi/ft. Review of New Mexico Oil Conservation Division (OCD) Order IP-542 submitted by Spur Energy Partners LLC in support of the Aid State 14 #001, which is located approximately 12 miles northeast of the Angel Ranch State SWD #2, determined the maximum allowable surface pressure for a Cisco SWD in the region to be 2,615 psi, or 0.315 psi/ft, from an approved step-rate test. Typical SWD permitting standards in New Mexico, and the requested operating parameters of the Angel Ranch SWD #2, would indicate that formation parting pressure would not be exceeded by the Angel Ranch State SWD #2.

[5] Skoumal, Robert J., et al. "Induced Seismicity in the Delaware Basin, Texas." *Journal of Geophysical Research: Solid Earth*, vol. 125, no. 1, 2020, doi:10.1029/2019jb018558.

Conclusion

As an expert on the issue of induced seismicity, seismic monitoring, and mitigation, it is my opinion that the potential for the Angel Ranch State SWD #2 to cause injection-induced seismicity is expected to be minimal, at best. This conclusion assumes the Angel Ranch State SWD #2 will be operated below formation parting pressure and is based on (1) the presence of numerous confining layers above and below the injection interval and (2) the significant vertical distance between the injection zone and Precambrian basement rock in which the nearest fault has been identified.

Sincerely,
ALL Consulting

Reed Davis
Geophysicist

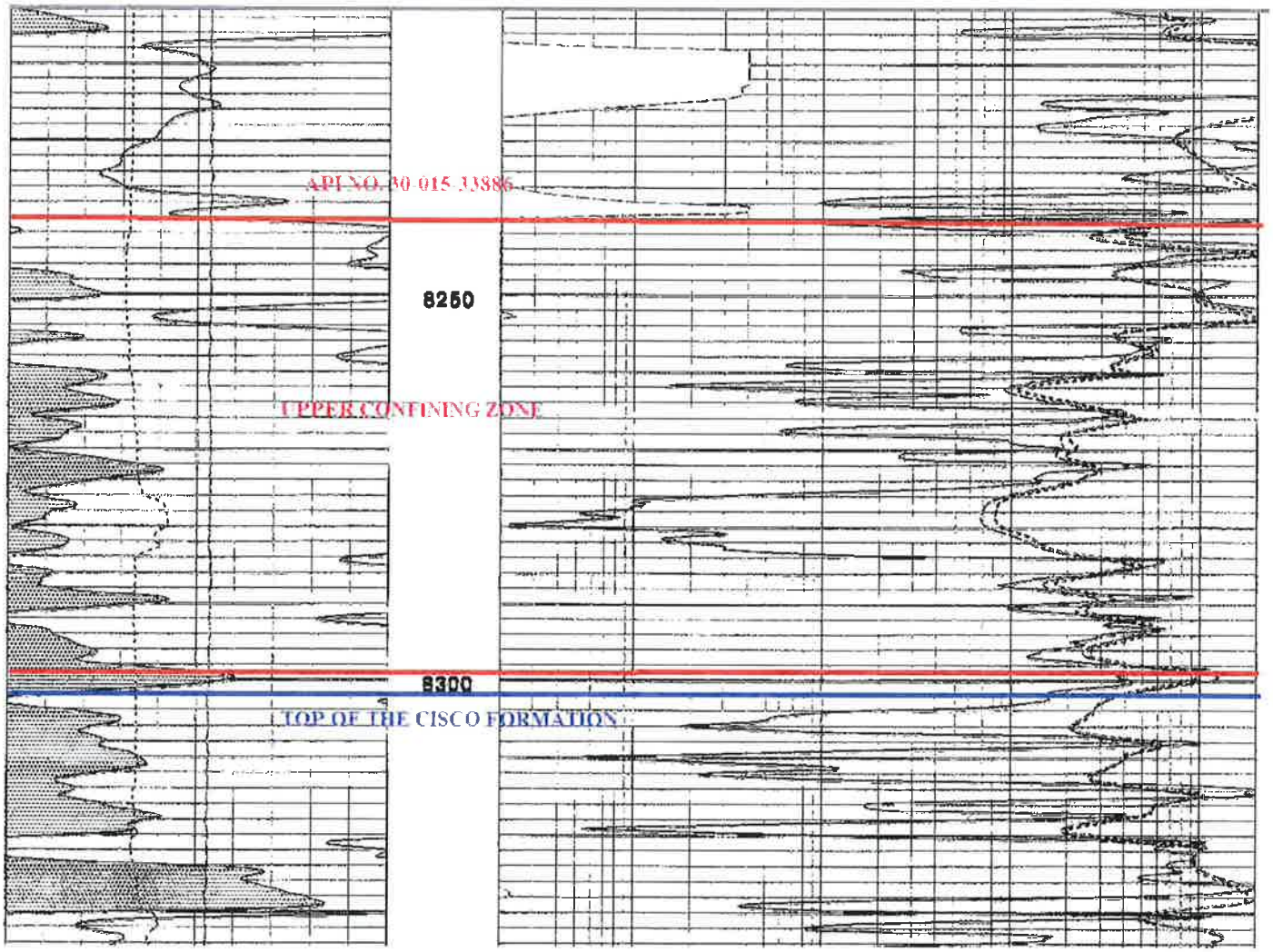
Riley Permian Operating Company, LLC
Angel Ranch State SWD #2 Seismic
Information July 2, 2024

Attachment 1
Upper and Lower Confining Zones

Ex.B-99

Riley Permian Operating Company, LLC
Angel Ranch State SWD #2 Seismic
Information July 2, 2024

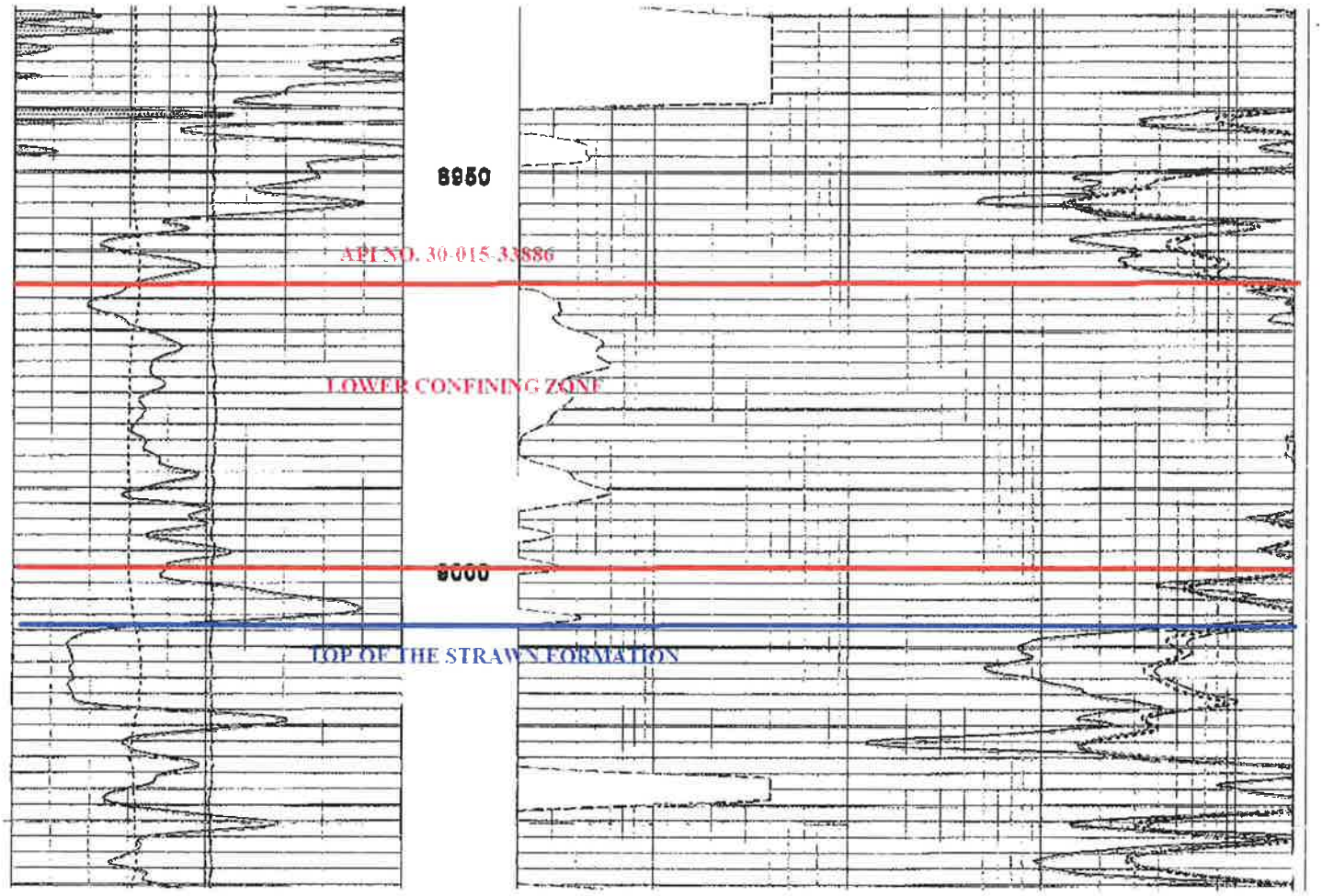
Upper Confining Zone from API No. 015-33886



Ex.B-100

Riley Permian Operating Company, LLC
Angel Ranch State SWD #2 Seismic
Information July 2, 2024

Lower Confining Zone from API No. 015-33886



Ex.B-101

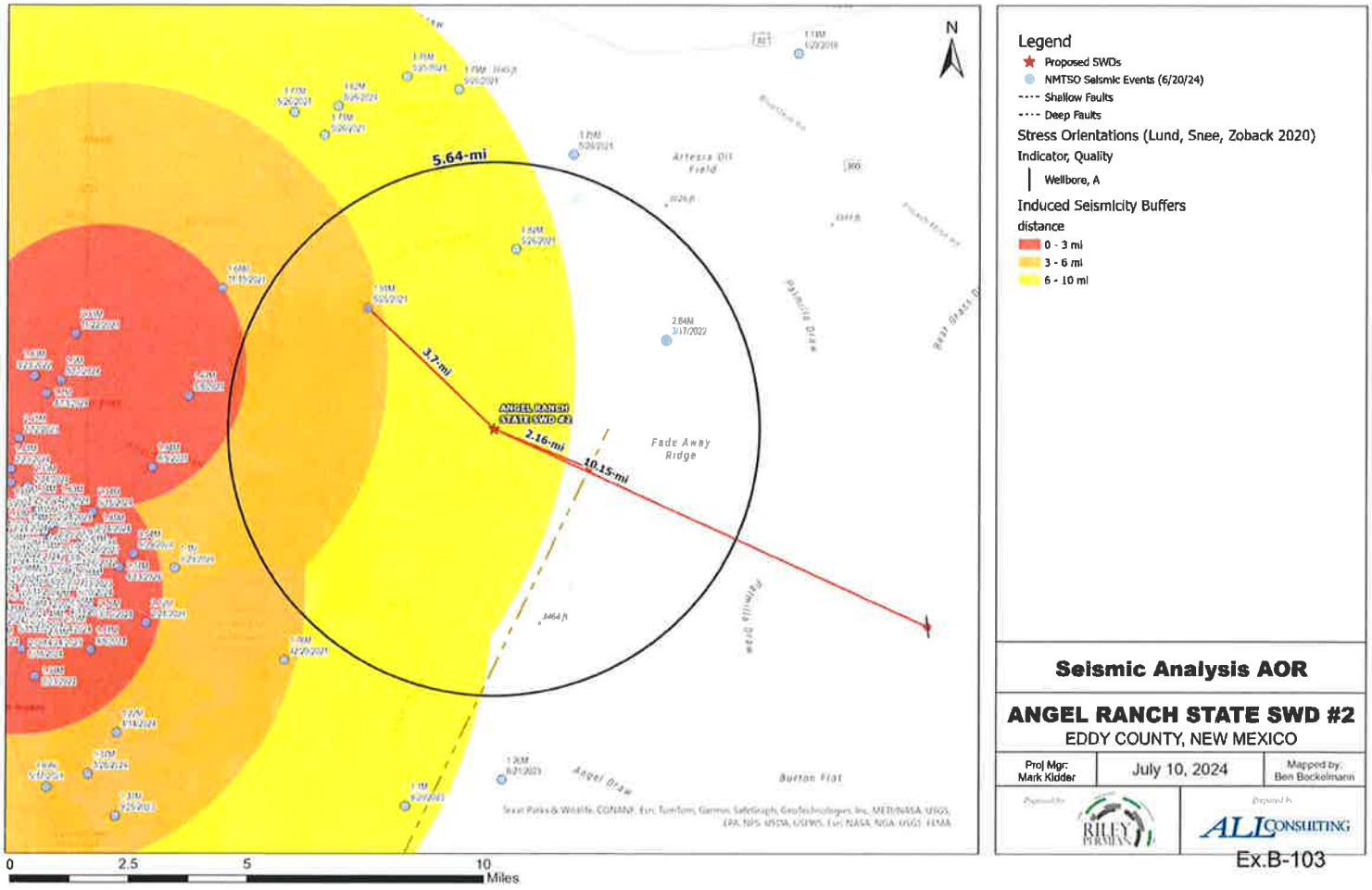
Riley Permian Operating Company, LLC
Angel Ranch State SWD #2 Seismic
Information July 2, 2024

Attachment 2
Seismic Event Map

Ex.B-102

Riley Permian Operating Company, LLC
Angel Ranch State SWD #2 Seismic
Information July 2, 2024

Angel Ranch State SWD #2 Nearby Seismic Events and Faults



Ex.B-103

Attachment 9

List of Affected Persons

Riley Permian Operating Company LLC - Angel Ranch State SWD #2 - Notice of Application Recipients							
Affected Party Classification	Entity - Proof of Notice	Entity - As Mapped/Exhibited	Address	City	State	Zip Code	Certified Mailing ID (from initial notification)
Surface Owner / Mineral Owner	New Mexico State Land Office	N/A	P.O. Box 1148	Santa Fe	NM	87504	7021 1970 0000 5914 6109
Well Operator	Apache Corporation	Apache Corporation	303 Veterans Airpark Ln #1000	Midland	Tx	79705	N/A
NMSLO - Lessee	COG Operating LLC	COG Operating LLC	600 W. Illinois Ave	Midland	TX	79701	7015 3430 0000 2217 2296
NMSLO - Lessee	Concho Oil & Gas LLC	Concho Oil & Gas LLC	600 W. Illinois Ave	Midland	TX	79701	7015 3430 0000 2217 2289
NMSLO - Lessee	EOG Resources, Inc.	EOG Resources Inc.	5509 Champions Drive	Midland	TX	79706	7015 3430 0000 2217 3583
NMSLO - Lessee	Permian Resources Operating, LLC	Permian Resources Operating, LLC	300 N. Marienfeld St Ste 1000	Midland	TX	79701	Notified as Colgate Operating, LLC
NMSLO - Lessee	WPX Energy Permian, LLC	WPX Energy Permian, LLC	333 West Sheridan Ave.	Oklahoma City	OK	73102	7015 3430 0000 2217 2487
NMSLO - Lessee	ZPZ Delaware I, LLC	ZPZ Delaware I LLC	2000 Post Oak Blvd., Suite 100	Houston	TX	77056	7015 3430 0000 2217 2265
BLM - Lessee (outside 1/2-mile AOR)	OXY Y-1 CO	N/A	5 Greenway Plz Ste 110	Houston	TX	77046	7015 3430 0000 2209 5922
NMSLO - lease now held by Permian	Colgate Operating LLC	N/A	300 N Marienfeld St Suite 1000	Midland	TX	79701	7015 3430 0000 2217 2258
NMSLO - Lessee (outside 1/2-mile AOR)	Chevron USA INC	N/A	6301 Deauville Blvd	Midland	TX	79706	7015 0640 0006 7024 4745
NMSLO - Lessee (Lease now help by Permian)	Devon Energy Production Company LP	N/A	333 W. Sheridan Ave.	Oklahoma City	OK	73102	7015 3430 0000 2217 2456
NMSLO - Lessee (outside 1/2-mile AOR)	Occidental Permian LTD	N/A	P.O. Box 4294	Houston	TX	77210	7015 3430 0000 2217 2463
NMSLO - Lessee (outside 1/2-mile AOR)	MRC Delaware Resources, LLC	N/A	108 South Fourth St	Artesia	NM	88210	7015 3430 0000 2217 2470
NMSLO - Lessee (outside 1/2-mile AOR)	V-F Petroleum Inc	N/A	P.O. Box 1889	Midland	TX	79702	7015 3430 0000 2217 2494
Notes: The affected parties above received notification of this C-108 application.							

Ex B-105

Table of Contents

Exhibit C

Affidavit of
Ernest L. Padilla

OCD Cases 24279 & 24280
(Angel Ranch SWD #1 & Angel Ranch SWD #2)
Riley Permian Operating Company, LLC

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

APPLICATION OF RILEY PERMIAN OPERATING COMPANY LLC, FOR A SALT WATER DISPOSAL WELL, IN EDDY COUNTY, NEW MEXICO.

CASE NOS. 24279

APPLICATION OF RILEY PERMIAN OPERATING COMPANY LLC, FOR A SALT WATER DISPOSAL WELL, IN EDDY COUNTY, NEW MEXICO.

CASE NOS. 24280

AFFIDAVIT

STATE OF NEW MEXICO }
}ss
COUNTY OF SANTA FE }

AFFIANT, ERNEST L. PADILLA, first being duly sworn on oath states:

Ernest L. Padilla, attorney for Riley Permian Operating Company LLC, the Applicant herein, notice of the above-referenced Applications were mailed to the interested parties shown on Exhibit C attached hereto in accordance with Oil Conservation Division Rules, and that true and correct copies of the notice letter and proof of notice are attached along with the publication notices that were published in the Carlsbad Current Argus.

ERNEST L. PADILLA

SWORN TO AND SUBCRIBED to before me this 16th day of July, 2024 by ERNEST L. PADILLA.

Notary Public

JoANN B. GALLEGOS
Notary Public-State of New Mexico
Commission # 1090479
My Comm. Expires April 9,2025

Ex.C-106

Angel Ranch SWD #1 24279

Name	Address	City	State	Zip
New Mexico State Land Office	310 Old Santa Fe Trail	Santa Fe	NM	87501
MRC Delaware Resources LLC	108 South 4th Street	Artesia	NM	88210
Occidental Permian LTD	P.O.Box 4294	Houston	TX	77210-4294
WPX Energy Permian LLC	333 W. Sheridan Ave	Oklahoma City	OK	73102
Concho Oil & Gas LLC	One Concho Center	Midland	TX	79701
COG Operating LLC	600 W. Illinois Ave	Midland	TX	79701
V-F Petroleum Inc	P.O. Box 1889	Midland	TX	79702
EOG Resources Inc	P.O. Box 2267	Midland	TX	79702
Headington Royalty, Inc	1501 N. Harding Blv. Suite 100	McKinney	TX	75071
Colgate Operating LLC	300 N. Marienfeld Street Suite 1000	Midland	TX	79701
Contango Resources Inc	717 Texas Ave. Suite 2900	Houston	TX	77002

Ex.C-107

Angel Ranch SWD 2 34280

Name	Address	City	State	Zip
New Mexico State Land Office	310 Old Santa Fe Trail	Santa Fe	NM	87501
Bureau Of Land Management	620 E. Greene St	Carlsbad	NM	88220-6292
Concho Oil & Gas LLC	One Concho Center	Midland	TX	79701
COG Operating LLC	600 W. Illinois Ave	Midland	TX	79701
EOG Resources Inc	1111 Bagby St Lbby 2	Houston	TX	77002-2589
OXY Y-1 CO	5 Greenway Plz Ste 110	Houston	TX	77046-0521
Colgate Operating LLC	300 N. Marienfeld St Suite 1000	Midland	TX	79701
ZPZ Delaware LLC Attn: Peggy Clark	2000 Post Oak Blvd Suite 100	Houston	TX	77056
Chevron USA INC	6301 Deauville Blvd	Midland	TX	79706
Devon Energy Production Company LP	333 W. Sheridan Ave	Oklahoma City	OK	73102
Occidental Permian LTD	P.O. Box 4294	Houston	TX	77210-4294
MRC Delaware Resources, LLC	108 South Fourth St	Artesia	NM	88210
WPX Energy Permian LLC	333 W. Sheridan Ave	Oklahoma City	OK	73102
V-F Petroleum Inc	P.O. Box 1889	Midland	TX	79702

Ex.C-108

PADILLA LAW FIRM, P.A.
STREET ADDRESS
1512 S. ST. FRANCIS DRIVE
SANTA FE, NM 87505
MAILING ADDRESS
P.O. BOX 2523
SANTA FE, NEW MEXICO 87504-2523
EMAIL ADDRESS
padillalawnm@outlook.com

TELEPHONE
505-988-7577

FACSIMILE
505-988-7592

February 20, 2024

CERTIFIED MAIL/RETURN RECEIPT REQUESTED

TO: ALL INTEREST OWNERS

Re: NMOCD Case Number #24279 In the Matter of the Application of Riley Permian Operating Company LLC, for a salt water disposal well in Eddy County, New Mexico.

Ladies and Gentlemen:

This letter will advise that Riley Permian Operating Company LLC has refiled an application with the New Mexico Oil Conservation Division seeking an order for salt water disposal well, in Lea County, New Mexico as referenced above. A copy of the application is enclosed. To obtain a copy of the C-108 document submitted with the application it is posted on the OCD website: OCD.Imaging@emnrd.nm.gov.

This hearing will be conducted remotely on Thursday, April 4, 2024 beginning at 8:15 a.m. To participate in the electronic hearing, see the instructions posted on the OCD Hearings website: OCD.Hearings@emnrd.nm.gov. Alternatively, you may participate at the live hearing at the Energy Minerals and Natural Resources Department located in the Wendell Chino Building at 1220 South Sainta Francis Drive, Santa Fe, NM 87505. Nonetheless, to stay informed as to any changes for hearing procedures you should consult the OCD website for further instructions. You are not required to attend these hearings, but as an owner of an interest or offset operator that may be affected, you may appear and present testimony. Failure to appear at the time and become a party of record will preclude you from challenging these applications at a later time. If you intend to attend the hearing and present testimony or evidence, you must enter your appearance and serve the Division, counsel for the Applicant, and other parties with a pre-hearing statement at least four business days before the scheduled hearing date in accordance with Division Rule 1211.

Very truly yours,

ERNEST L. PADILLA

ELP:jbg

cc: Riley Permian Operating Company LLC

Ex.C-109

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

APPLICATION OF RILEY PERMIAN OPERATING COMPANY LLC, FOR A SALT WATER DISPOSAL WELL, IN EDDY COUNTY, NEW MEXICO.

Case No. 24279

RE-FILED APPLICATION FOR SALT WATER DISPOSAL

Riley Permian Operating Company LLC, (OGRID 330211) by and through its undersigned attorney, applies for an order approving a salt water disposal well, and in support thereof, states:

1. Applicant seeks an order proposing a salt water disposal well for its Angel Ranch SWD #1, to be drilled at a location 1,320' FSL and 1,320' FEL, Unit A, Section 12, Township 19 South, Range 27 East, N.M.P.M., Eddy County, New Mexico.

2. Applicant proposes to set a packer at 8,300' feet below the surface of the earth and then inject into the Cisco formation (Pool Code 96099) at depths between 8,586' through 9,210' open hole, as stated in the C-108, being the administrative application filing for the proposed injection well.

3. Attached hereto as Exhibit A is the C-108.

4. The granting of this application will prevent waste and protect correlative rights.

WHEREFORE, Applicant requests that, after notice and hearing, the Division enter its order approving this application.

Respectfully submitted,

PADILLA LAW FIRM, P.A.

/s/ Ernest L. Padilla

Ernest L. Padilla
Attorney for Riley Permian Operating Company, LLC
PO Box 2523
Santa Fe, New Mexico 87504
505-988-7577
padillalawnm@outlook.com

Ex.C-110

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☐ Adult Signature Restricted Delivery $
Postage $ .63
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City, State, ZIP+4® McKinney, TX 75071

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PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION
- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

Headington Royalty, Inc.
1501 N. Harding Blv. Suite 100
McKinney, TX 75071

9590 9402 5941 0062 9301 86

2. Article Number (Transfer from service label)
7020 2450 0002 1363 9910

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

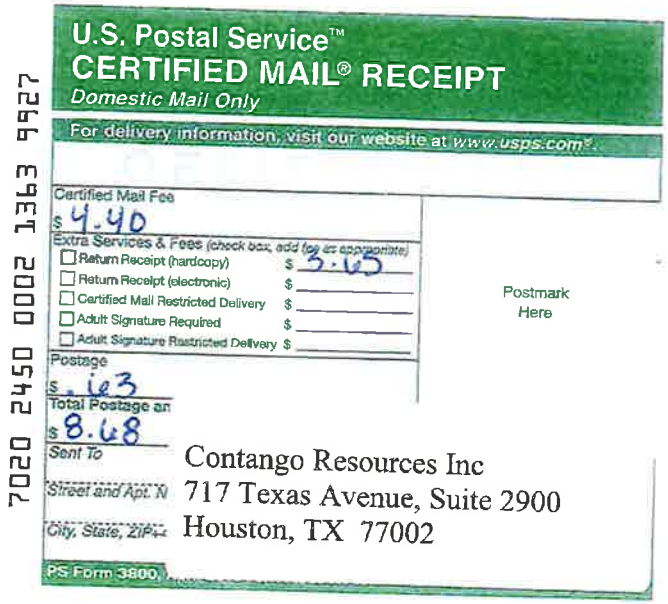
A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Rebecca Pfeil
C. Date of Delivery 2/26/24

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☒ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt



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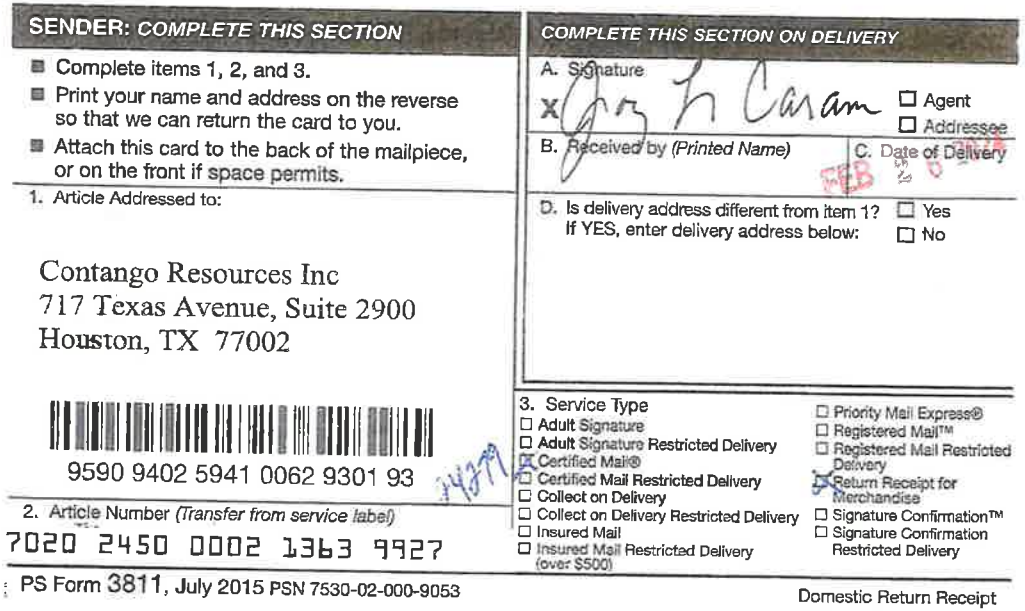
7020 2450 0002 1363 9927

Certified Mail Fee $ 4.40
Extra Services & Fees (check box, add fee as appropriate)
☐ Return Receipt (hardcopy) $ 3.65
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .63
Total Postage an $ 8.68
Sent To Contango Resources Inc
Street and Apt. N 717 Texas Avenue, Suite 2900
City, State, ZIP+4 Houston, TX 77002

Postmark Here

PS Form 3800,



SENDER: COMPLETE THIS SECTION
- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Contango Resources Inc
717 Texas Avenue, Suite 2900
Houston, TX 77002

9590 9402 5941 0062 9301 93

2. Article Number (Transfer from service label)
7020 2450 0002 1363 9927

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery FEB 26 2024

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☒ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

Ex.C-111

PADILLA LAW FIRM, P.A.
STREET ADDRESS
1512 S. ST. FRANCIS DRIVE
SANTA FE, NM 87505
MAILING ADDRESS
P.O. BOX 2523
SANTA FE, NEW MEXICO 87504-2523
EMAIL ADDRESS
padillalawnm@outlook.com

TELEPHONE
505-988-7577

FACSIMILE
505-988-7592

February 20, 2024

CERTIFIED MAIL/RETURN RECEIPT REQUESTED

TO: ALL INTEREST OWNERS

Re: NMOCD Case Number #24280 In the Matter of the Application of Riley Permian Operating Company LLC, for a salt water disposal well in Eddy County, New Mexico.

Ladies and Gentlemen:

This letter will advise that Riley Permian Operating Company LLC has refiled an application with the New Mexico Oil Conservation Division seeking an order for salt water disposal well, in Lea County, New Mexico as referenced above. A copy of the application is enclosed. To obtain a copy of the C-108 document submitted with the application it is posted on the OCD website: OCD.Imaging@emnrd.nm.gov.

This hearing will be conducted remotely on Thursday, April 4, 2024 beginning at 8:15 a.m. To participate in the electronic hearing, see the instructions posted on the OCD Hearings website: OCD.Hearings@emnrd.nm.gov. Alternatively, you may participate at the live hearing at the Energy Minerals and Natural Resources Department located in the Wendell Chino Building at 1220 South Sainta Francis Drive, Santa Fe, NM 87505. Nonetheless, to stay informed as to any changes for hearing proccdures you should consult the OCD website for further instructions. You are not required to attend these hearings, but as an owner of an interest or offset operator that may be affected, you may appear and present testimony. Failure to appear at the time and become a party of record will preclude you from challenging these applications at a later time. If you intend to attend the hearing and present testimony or evidence, you must enter your appearance and serve the Division, counsel for the Applicant, and other parties with a pre-hearing statement at least four business days before the scheduled hearing date in accordance with Division Rule 1211.

Very truly yours,

ERNEST L. PADILLA

ELP:jbg

cc: Riley Permian Operating Company LLC

Ex.C-112

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

APPLICATION OF RILEY PERMIAN OPERATING COMPANY LLC, FOR A SALT WATER DISPOSAL WELL, IN EDDY COUNTY, NEW MEXICO.

Case No. 24280

RE-FILED APPLICATION FOR SALT WATER DISPOSAL

Riley Permian Operating Company LLC, (OGRID 330211) by and through its undersigned attorney, applies for an order approving a salt water disposal well, and in support thereof, states:

1. Applicant seeks an order proposing a salt water disposal well for its Angel Ranch SWD #2, to be drilled at a location 588' FNL and 2,157' FEL, Unit B, Section 11, Township 19 South, Range 27 East, N.M.P.M., Eddy County, New Mexico.

2. Applicant proposes to set a packer at 8,100' feet below the surface of the earth and then inject into the Cisco formation (Pool Code 96099) at depths between 8,450' through 8,975' open hole, as stated in the C-108, being the administrative application filing for the proposed injection well.

3. Attached hereto as Exhibit A is the C-108.

4. The granting of this application will prevent waste and protect correlative rights.

WHEREFORE, Applicant requests that, after notice and hearing, the Division enter its order approving this application.

Respectfully submitted,

PADILLA LAW FIRM, P.A.

/s/ Ernest L. Padilla

Ernest L. Padilla
Attorney for Riley Permian Operating Company LLC
PO Box 2523
Santa Fe, New Mexico 87504
505-988-7577
padillalawnm@outlook.com

Ex.C-113

7020 2450 0002 1363 9972

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- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postmark Here

Postage $ .63
Total Postage an $ 8.68
Sent To: OXY Y-1 CO
Street and Apt. N: 5 Greenway Plz Ste 110
City, State, ZIP+4: Houston, TX 77046-0521

PS Form 3800, April 2015 PSN 7530-02-000-9047 — See Reverse for Instructions

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1. Article Addressed to:

OXY Y-1 CO
5 Greenway Plz Ste 110
Houston, TX 77046-0521

9590 9402 6769 1074 5677 78

24280

2. Article Number (Transfer from service label)
7020 2450 0002 1363 9972

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature X [signature] ☑ Agent ☐ Addressee
B. Received by (Printed Name)
C. Date of Delivery 2/23/24
D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

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7020 2450 0002 1363 9941

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Certified Mail Fee $ 4.40
Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $ 3.65
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postmark Here

Postage $ .63
Total Postage $ 8.68
Sent To: ZPZ Delaware LLC
Attn: Peggy Clark
Street and Apt.: 2000 Post Oak Blvd Suite 100
City, State, ZIP+4: Houston, TX 77056

PS Form 3800, April 2015 PSN 7530-02-000-9047 — See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

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1. Article Addressed to:

ZPZ Delaware LLC
Attn: Peggy Clark
2000 Post Oak Blvd Suite 100
Houston, TX 77056

9590 9402 5941 0062 9301 62

24280

2. Article Number (Transfer from service label)
7020 2450 0002 1363 9941

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature X Sharon Vann ☐ Agent ☐ Addressee
B. Received by (Printed Name) S Vann
C. Date of Delivery 2/26/24
D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☑ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

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Ex.C-114

7020 2450 0002 1363 9934

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Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $ 3.65
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage an $ 8.68
Sent To Bureau of Land Management
Street and Apt. N 620 E. Green Street
City, State, ZIP+4 Carlsbad, NM 88220-6292

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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1. Article Addressed to:

Bureau of Land Management
620 E. Green Street
Carlsbad, NM 88220-6292

9590 9402 5941 0062 9301 79

2. Article Number (Transfer from service label)
7020 2450 0002 1363 9934

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery 2/23/24

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☑ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

7020 2450 0002 1363 9965

U.S. Postal Service™
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Certified Mail Fee $ 4.40
Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $ 3.65
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage an $ 8.68
Sent To Chevron USA Inc
Street and Apt. N 6301 Deauville Blvd
City, State, ZIP+4 Midland, TX 79706

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION
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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Chevron USA Inc
6301 Deauville Blvd
Midland, TX 79706

9590 9402 6769 1074 5680 58

2. Article Number (Transfer from service label)
7020 2450 0002 1363 9965

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery 2/23/24

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Ex.C-115

7020 2450 0002 1363 9958

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
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For delivery information, visit our website at www.usps.com®

Certified Mail Fee
$ 4.40

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $ 3.05
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$ .63

Total Postage and Fees
$ 8.68

Sent To
Devon Energy Production Co LP
333 W. Sheridan Ave
Oklahoma City, OK 73102

Street and Apt. No.

City, State, ZIP+4

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Devon Energy Production Co LP
333 W. Sheridan Ave
Oklahoma City, OK 73102

9590 9402 6769 1074 5679 83

2. Article Number (Transfer from service label)
7020 2450 0002 1363 9958

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X
☐ Agent
☐ Address

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

Ex.C-116

PADILLA LAW FIRM, P.A.
STREET ADDRESS
1512 S. ST. FRANCIS DRIVE
SANTA FE, NM 87505
MAILING ADDRESS
P.O. BOX 2523
SANTA FE, NEW MEXICO 87504-2523
EMAIL ADDRESS
padillalawnm@outlook.com

TELEPHONE
505-988-7577

FACSIMILE
505-988-7592

February 20, 2024

CERTIFIED MAIL/RETURN RECEIPT REQUESTED

TO: ALL INTEREST OWNERS

Re: NMOCD Case Number #24279-24280 In the Matter of the Application of Riley Permian Operating Company LLC, for a salt water disposal well in Eddy County, New Mexico.

Ladies and Gentlemen:

This letter will advise that Riley Permian Operating Company LLC has refiled an application with the New Mexico Oil Conservation Division seeking an order for salt water disposal well, in Lea County, New Mexico as referenced above. A copy of the application is enclosed. To obtain a copy of the C-108 document submitted with the application it is posted on the OCD website: OCD.Imaging@emnrd.nm.gov.

This hearing will be conducted remotely on Thursday, April 4, 2024 beginning at 8:15 a.m. To participate in the electronic hearing, see the instructions posted on the OCD Hearings website: OCD.Hearings@emnrd.nm.gov. Alternatively, you may participate at the live hearing at the Energy Minerals and Natural Resources Department located in the Wendell Chino Building at 1220 South Sainta Francis Drive, Santa Fe, NM 87505. Nonetheless, to stay informed as to any changes for hearing procedures you should consult the OCD website for further instructions. You are not required to attend these hearings, but as an owner of an interest or offset operator that may be affected, you may appear and present testimony. Failure to appear at the time and become a party of record will preclude you from challenging these applications at a later time. If you intend to attend the hearing and present testimony or evidence, you must enter your appearance and serve the Division, counsel for the Applicant, and other parties with a pre-hearing statement at least four business days before the scheduled hearing date in accordance with Division Rule 1211.

Very truly yours,

ERNEST L. PADILLA

ELP:jbg

cc: Riley Permian Operating Company LLC

Ex.C-117

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

APPLICATION OF RILEY PERMIAN OPERATING COMPANY LLC, FOR A SALT WATER DISPOSAL WELL, IN EDDY COUNTY, NEW MEXICO.

Case No. 24279

RE-FILED APPLICATION FOR SALT WATER DISPOSAL

Riley Permian Operating Company LLC, (OGRID 330211) by and through its undersigned attorney, applies for an order approving a salt water disposal well, and in support thereof, states:

1. Applicant seeks an order proposing a salt water disposal well for its Angel Ranch SWD #1, to be drilled at a location 1,320' FSL and 1,320' FEL, Unit A, Section 12, Township 19 South, Range 27 East, N.M.P.M., Eddy County, New Mexico.

2. Applicant proposes to set a packer at 8,300' feet below the surface of the earth and then inject into the Cisco formation (Pool Code 96099) at depths between 8,586' through 9,210' open hole, as stated in the C-108, being the administrative application filing for the proposed injection well.

3. Attached hereto as Exhibit A is the C-108.

4. The granting of this application will prevent waste and protect correlative rights.

WHEREFORE, Applicant requests that, after notice and hearing, the Division enter its order approving this application.

Respectfully submitted,

PADILLA LAW FIRM, P.A.

/s/ Ernest L. Padilla

Ernest L. Padilla
Attorney for Riley Permian Operating Company, LLC
PO Box 2523
Santa Fe, New Mexico 87504
505-988-7577
padillalawnm@outlook.com

Ex.C-118

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

APPLICATION OF RILEY PERMIAN OPERATING COMPANY LLC, FOR A SALT WATER DISPOSAL WELL, IN EDDY COUNTY, NEW MEXICO.

Case No. 24280

RE-FILED APPLICATION FOR SALT WATER DISPOSAL

Riley Permian Operating Company LLC, (OGRID 330211) by and through its undersigned attorney, applies for an order approving a salt water disposal well, and in support thereof, states:

1. Applicant seeks an order proposing a salt water disposal well for its Angel Ranch SWD #2, to be drilled at a location 588' FNL and 2,157' FEL, Unit B, Section 11, Township 19 South, Range 27 East, N.M.P.M., Eddy County, New Mexico.

2. Applicant proposes to set a packer at 8,100' feet below the surface of the earth and then inject into the Cisco formation (Pool Code 96099) at depths between 8,450' through 8,975' open hole, as stated in the C-108, being the administrative application filing for the proposed injection well.

3. Attached hereto as Exhibit A is the C-108.

4. The granting of this application will prevent waste and protect correlative rights.

WHEREFORE, Applicant requests that, after notice and hearing, the Division enter its order approving this application.

Respectfully submitted,

PADILLA LAW FIRM, P.A.

/s/ Ernest L. Padilla
Ernest L. Padilla
Attorney for Riley Permian Operating Company LLC
PO Box 2523
Santa Fe, New Mexico 87504
505-988-7577
padillalawnm@outlook.com

Ex.C-119

PADILLA LAW FIRM, P.A.
STREET ADDRESS
1512 S. ST. FRANCIS DRIVE
SANTA FE, NM 87505
MAILING ADDRESS
P.O. BOX 2523
SANTA FE, NEW MEXICO 87504-2523
EMAIL ADDRESS
padillalawnm@outlook.com

TELEPHONE
505-988-7577

FACSIMILE
505-988-7592

March 5, 2024

CERTIFIED MAIL/RETURN RECEIPT REQUESTED

TO: ALL INTEREST OWNERS

Re: NMOCD Case Number #24279-24280 In the Matter of the Application of Riley Permian Operating Company LLC, for a salt water disposal well in Eddy County, New Mexico.

Ladies and Gentlemen:

This letter will advise that Riley Permian Operating Company LLC has refiled an application with the New Mexico Oil Conservation Division seeking an order for salt water disposal well, in Lea County, New Mexico as referenced above. A copy of the application is enclosed. To obtain a copy of the C-108 document submitted with the application it is posted on the OCD website: OCD.Imaging@emnrd.nm.gov.

This hearing will be conducted remotely on Thursday, April 4, 2024 beginning at 8:15 a.m. To participate in the electronic hearing, see the instructions posted on the OCD Hearings website: OCD.Hearings@emnrd.nm.gov. Alternatively, you may participate at the live hearing at the Energy Minerals and Natural Resources Department located in the Wendell Chino Building at 1220 South Sainta Francis Drive, Santa Fe, NM 87505. Nonetheless, to stay informed as to any changes for hearing procedures you should consult the OCD website for further instructions. You are not required to attend these hearings, but as an owner of an interest or offset operator that may be affected, you may appear and present testimony. Failure to appear at the time and become a party of record will preclude you from challenging these applications at a later time. If you intend to attend the hearing and present testimony or evidence, you must enter your appearance and serve the Division, counsel for the Applicant, and other parties with a pre-hearing statement at least four business days before the scheduled hearing date in accordance with Division Rule 1211.

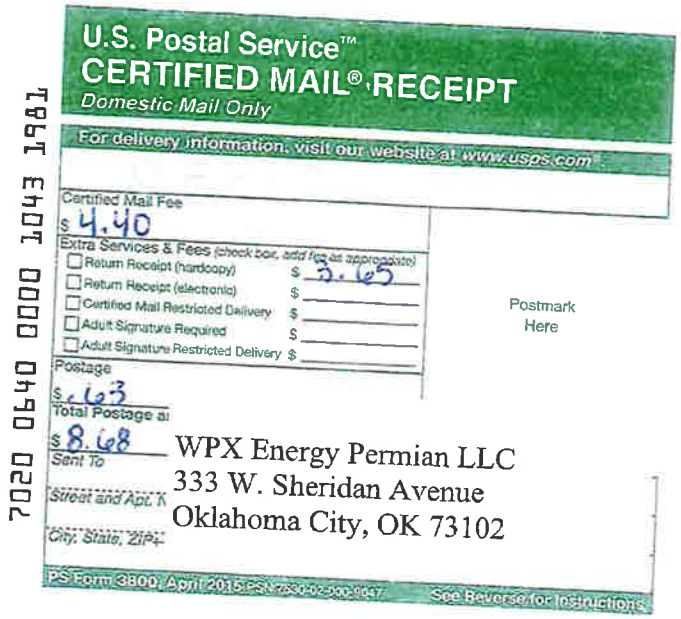
Very truly yours,

ERNEST L. PADILLA

ELP:jbg

cc: Riley Permian Operating Company LLC

Ex.C-120



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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .63
Total Postage and Fees $ 8.68

Postmark Here

Sent To: WPX Energy Permian LLC
Street and Apt. No.: 333 W. Sheridan Avenue
City, State, ZIP+4: Oklahoma City, OK 73102

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0640 0000 1043 1981

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

WPX Energy Permian LLC
333 W. Sheridan Avenue
Oklahoma City, OK 73102

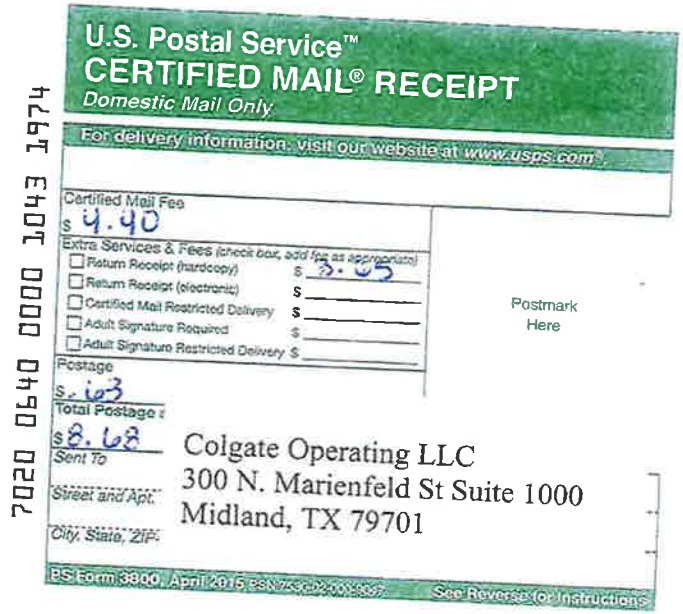
9590 9402 6769 1074 5680 03

2. Article Number (Transfer from service label)
7020 0640 0000 1043 1981

COMPLETE THIS SECTION ON DELIVERY
A. Signature X ☐ Agent ☐ Addressee
B. Received by (Printed Name) C. Date of Delivery
D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
Insured Mail Restricted Delivery (over $500)
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt



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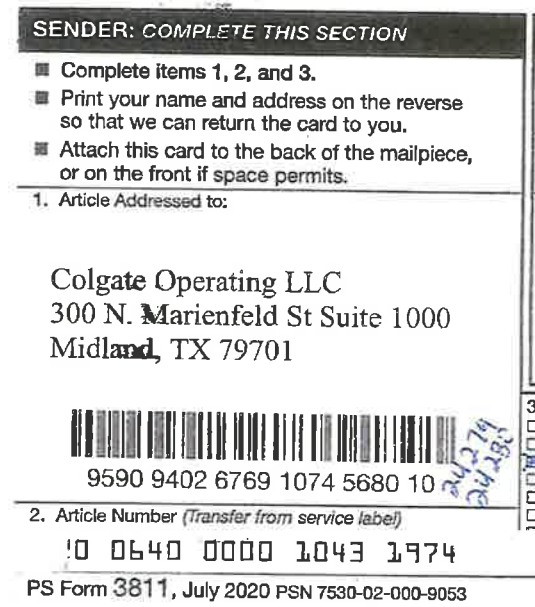
Certified Mail Fee $ 4.40
Extra Services & Fees (check box, add fee as appropriate)
☐ Return Receipt (hardcopy) $ 3.65
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .63
Total Postage and Fees $ 8.68

Postmark Here

Sent To: Colgate Operating LLC
Street and Apt. No.: 300 N. Marienfeld St Suite 1000
City, State, ZIP+4: Midland, TX 79701

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0640 0000 1043 1974



SENDER: COMPLETE THIS SECTION
- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Colgate Operating LLC
300 N. Marienfeld St Suite 1000
Midland, TX 79701

9590 9402 6769 1074 5680 10

2. Article Number (Transfer from service label)
!0 0640 0000 1043 1974

COMPLETE THIS SECTION ON DELIVERY
A. Signature X L Kalisek ☐ Agent ☐ Addressee
B. Received by (Printed Name) C. Date of Delivery 2/22/24
D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
Insured Mail Restricted Delivery (over $500)
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

Ex.C-121

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

Certified Mail Fee $ 4.40
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $ 3.65
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage $ .63
Total Postage and Fees $ 8.68
Sent To: NM State Land Office
Street and Apt. No.: 310 Old Santa Fe Trail
City, State, ZIP+4®: Santa Fe, NM 87501

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 2450 0002 1364 0008

SENDER: COMPLETE THIS SECTION
- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

NM State Land Office
310 Old Santa Fe Trail
Santa Fe, NM 87501

9590 9402 6769 1074 5680 27

2. Article Number (Transfer from service label)
7020 2450 0002 1364 0008

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

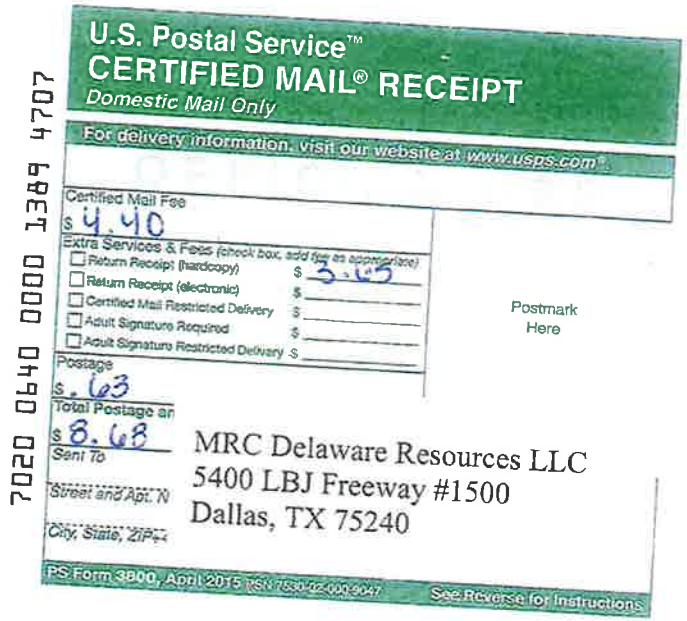
A. Signature
X
☐ Agent
☐ Addressee

B. Received by (Printed Name)
C. Date of Delivery
2/22/24

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

Certified Mail Fee $ 4.40
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $ 3.65
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage $ .63
Total Postage and Fees $ 8.68
Sent To: MRC Delaware Resources LLC
Street and Apt. No.: 5400 LBJ Freeway #1500
City, State, ZIP+4®: Dallas, TX 75240

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0640 0000 1389 4707

SENDER. COMPLETE THIS SECTION
- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MRC Delaware Resources LLC
5400 LBJ Freeway #1500
Dallas, TX 75240

9590 9402 6769 1074 5677 47

2. Article Number (Transfer from service label)
7020 0640 0000 1389 4707

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X
☐ Agent
☐ Addressee

B. Received by (Printed Name)
C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

Ex.C-122

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

Certified Mail Fee $ 4.40
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $ 3.65
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage $ .63
Total Postage and Fees $ 8.68
Sent To
Street and Apt. No.
City, State, ZIP+4

Postmark Here

EOG Resources Inc
1111 Bagby St. Lbby 2
Houston, TX 77002-2589

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0640 0000 1389 4691

SENDER: COMPLETE THIS SECTION
- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

EOG Resources Inc
1111 Bagby St. Lbby 2
Houston, TX 77002-2589

9590 9402 6769 1074 5680 72

2. Article Number (Transfer from service label)
7020 0640 0000 1389 4691

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) M. Criles C. Date of Delivery 7-26-24

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

Certified Mail Fee $ 4.40
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $ 3.65
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage $ .63
Total Postage and Fees $ 8.68
Sent To
Street and Apt. No.
City, State, ZIP+4

Postmark Here

COG Operating LLC
600 W. Illinois Avenue
Midland, TX 79701

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0640 0000 1043 1998

SENDER: COMPLETE THIS SECTION
- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

COG Operating LLC
600 W. Illinois Avenue
Midland, TX 79701

9590 9402 6769 1074 5680 65

2. Article Number (Transfer from service label)
7020 0640 0000 1043 1998

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) [illegible] C. Date of Delivery 7-26

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

Ex.C-123

7020 0640 0000 1043 4562

U.S. Postal Service
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Certified Mail Fee $ 4.40

Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $ 3.05
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $ .64

Total Postage and $ 8.09

Postmark Here

Sent To
Street and Apt. No.
City, State, ZIP+4

V-F Petroleum Inc
PO Box 1889
Midland, TX 79702

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

V-F Petroleum Inc
PO Box 1889
Midland, TX 79702

9590 9402 6769 1074 5680 89

2. Article Number (Transfer from service label)
7020 0640 0000 1043 4562

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X D. Hall
☐ Agent
☐ Addressee

B. Received by (Printed Name) D. Hall
C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

7020 2450 0002 1363 9989

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Certified Mail Fee $ 4.40

Extra Services & Fees (check box, add fee as appropriate)
- [ ] Return Receipt (hardcopy) $ 3.05
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $ .63

Total Postage and $ 8.08

Postmark Here

Sent To
Street and Apt. No.
City, State, ZIP+4

Occidental Permian LTD
PO Box 4294
Houston, TX 77210-4294

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 2450 0002 1363 9996

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Certified Mail Fee $ 4.40

Extra Services & Fees (check box, add fee as appropriate)
- [ ] Return Receipt (hardcopy) $ 3.05
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $ .63

Total Postage and $ 8.08

Postmark Here

Sent To
Street and Apt. No.
City, State, ZIP+4

Concho Oil & Gas LLC
One Concho Center
Midland, TX 79701

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

LocaliQ
Texas/New Mexico
GANNETT

PO Box 631667 Cincinnati, OH 45263-1667

PROOF OF PUBLICATION

Padilla Law Firm
Pobox 2523
Santa Fe NM 87504

STATE OF WISCONSIN, COUNTY OF BROWN

The Carlsbad Current Argus, a newspaper published in the city of Carlsbad, Eddy County, State of New Mexico, and personal knowledge of the facts herein state and that the notice hereto annexed was Published in said newspapers in the issue:

03/08/2024

and that the fees charged are legal.
Sworn to and subscribed before on 03/08/2024

Legal Clerk

Notary, State of WI, County of Brown

My commission expires 1-7-25

Publication Cost:	$172.24		
Order No:	9931237	# of Copies:	
Customer No:	1366456	0	
PO #:			

THIS IS NOT AN INVOICE!

Please do not use this form for payment remittance.

KATHLEEN ALLEN
Notary Public
State of Wisconsin

Ex.C-125

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
SANTA FE, NEW MEXICO

The State of New Mexico through its Oil Conservation Division hereby gives notice pursuant to law and the Rules and Regulations of the Division. These hearings will be conducted remotely on April 4th, 2024 at 8:15 a.m. To participate in the electronic hearing, see the instructions posted on the OCD Hearings website: OCD.Hearings@emnrd.nm.gov Nonetheless, to stay informed as to any changes for hearing procedures you should consult the OCD website for further instructions. You are not required to attend these hearings, but as an owner of an interest or offset operator that may be affected, you may appear and present testimony. Failure to appear at the time and become a party of record will preclude you from challenging these applications at a later time. If you intend to attend the hearing and present testimony or evidence, you must enter your appearance and serve the Division, counsel for the Applicant, and other parties with a pre-hearing statement at least four business days before the scheduled hearing date in accordance with Division Rule 1211.

STATE OF NEW MEXICO:
All named parties and persons
having any right, title, interest
or claim in the following case
and notice to the public.

(NOTE: All land descriptions herein refer to the New Mexico Principal Meridian whether or not so stated.)

To: New Mexico State Land Office, MRC Delaware Resources LLC, Occidental Permian LTD, WPX Energy Permian LLC, Concho Oil & Gas LLC, COG Operating LLC, V-F Petroleum Inc., EOG Resources Inc, Headington Royalty, Inc., Colgate Operating LLC, Contango Resources Inc., Bureau of Land Management, OXY Y-1 CO, ZPZ Delaware LLC, Chevron USA Inc, Devon Energy Production Company LP.

Case No. 24279: Applicant seeks an order for a salt water disposal well for its Angel Ranch SWD#1, (Pool Code 96099) to be drilled at a location 1,320' FSL and 1,320' FEL, Unit A, Section 12, Township 19 South, Range 27 East, N.M.P.M., Eddy County, New Mexico for injection into the Cisco formations at depths between 8,586' through 9,210' open hole. The well will be located approximately 18 miles north of Carlsbad, New Mexico.

Case No. 24280: Applicant seeks an order for a salt water disposal well for its Angel Ranch SWD#2, (Pool Code 96099) to be drilled at a location 588' FNL and 2,157' FEL, Unit B, Section 11, Township 19 South, Range 27 East, N.M.P.M., Eddy County, New Mexico for injection into the Cisco formations at depths between 8,450' through 8,975' open hole. The well will be located approximately 18 miles north of Carlsbad, New Mexico.
Mar. 8, 2024.

Ex.C-126

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

QUESTIONS

Action 364592

QUESTIONS

Operator: RILEY PERMIAN OPERATING COMPANY, LLC 29 E Reno Avenue, Suite 500 Oklahoma City, OK 73104	OGRID: 372290
	Action Number: 364592
	Action Type: [HEAR] Prehearing Statement (PREHEARING)

QUESTIONS

Testimony

Please assist us by provide the following information about your testimony.

Number of witnesses	*Not answered.*
Testimony time (in minutes)	*Not answered.*